

Thursday, February 25, 2010

Page 1 of 3
REQUEST NUMBER: 10-2091

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: 10-2091

Per Agreement Number: 126310011

Project Cost Code: MFR3A05529E00

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/25/2010

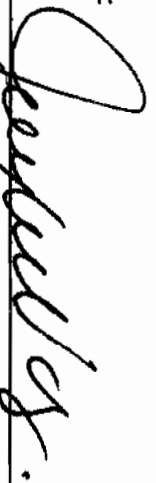
TURNAROUND/REPORT DUE: 3/27/2010

TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background
LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature:



PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA-901.1	1	1	RE15-10-8393	R	2/22/2010	
	1	1	RE15-10-8394	R	2/22/2010	
	1	1	RE15-10-8395	R	2/22/2010	
	1	1	RE15-10-8396	R	2/22/2010	
	1	1	RE15-10-8397	R	2/22/2010	
	1	1	RE15-10-8398	R	2/22/2010	
	1	1	RE15-10-8399	R	2/22/2010	
	1	1	RE15-10-8404	R	2/22/2010	
EPA-906.0	1	1	RE15-10-8393	R	2/22/2010	

Thursday, February 25, 2010

Page 3 of 3
REQUEST NUMBER: 10-2091

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:ISOU						
		1	RE15-10-8398	R	2/22/2010	
		1	RE15-10-8399	R	2/22/2010	
		1	RE15-10-8404	R	2/22/2010	

Final Page of REQUEST NUMBER 10-2091

Thursday, February 25, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2091

LOS ALAMOS

REQUEST NUMBER: 10-2091

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/27/2010

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
RE15-10-8404	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8404	1	POLY	H3	Ice	R
RE15-10-8396	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8396	1	POLY	H3	Ice	R
RE15-10-8393	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8393	1	POLY	H3	Ice	R
RE15-10-8395	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8395	1	POLY	H3	Ice	R
RE15-10-8398	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8398	1	POLY	H3	Ice	R
RE15-10-8394	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8394	1	POLY	H3	Ice	R
RE15-10-8399	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8399	1	POLY	H3	Ice	R
RE15-10-8397	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8397	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: 2508

EVENT NAME: 4th Qtr. FY09 - SWMU 15-009(h) - Threemile Canyon

SAMPLE ID: RE15-10-8393

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/22/2010	MEDIA:	QBT3	ok
TIME COLLECTED (HH:MM)		0902	SUB-MEDIA:	TUFF1	2
PRS ID:	15-009(h)	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	15-610858	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	G.C	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	8.1	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	R	EXCAVATED: YES/NO/NA		
COMPOSITE TYPE:	NA		COMPOSITE TIME INTERVAL:	NA	
			WATER FLOWING: YES/NO/NA		
BOREHOLE: YES/NO/NA			BOREHOLE DECLINATION:	NA	
			BOREHOLE DIRECTION:	NA	

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

SAMPLE DESC:

Gray weathered ~~rock~~

SAMPLE COMMENTS:

NA

LOCATION DESC:

9h-5
2nd depth

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 35 dpm
Beta/Gamma = 2530 dpm

PID Ambient Reading = ppm

73m 2/22/10

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Dante B. [Signature]

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy [Signature]	Date/Time 2/22/10 1327	RECEIVED BY (Printed Name) Sherri Sherwood (Signature) Sherri Sherwood	Date/Time 2/22/10 1327
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2508

EVENT NAME: 4th Qtr. FY09 - SWMU 15-009(h) - Threemile Canyon

SAMPLE ID: RE15-10-8394

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/22/2010		MEDIA: QBT3		Alpha	
TIME COLLECTED (HH:MM)		955		SUB-MEDIA: TUFF 1		NA	
PRS ID: 15-009(h)		ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID: 15-610852		↓		FIELD QC TYPE: NA		↓	
LOCATION TYPE: GENERIC		↓		FIELD PREP: NA		↓	
TOP DEPTH: 0		4.8		SAMPLE USAGE: INV		↓	
BOTTOM DEPTH: 0		6.0		SCREEN/PORT DESC:		NA	
FIELD MATRIX: B		S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

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

SAMPLE DESC:

Brown sandy silt and gray weathered tuff

SAMPLE COMMENTS:

NA

LOCATION DESC:

9h-7 beachfield

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 23 dpm

Beta/Gamma = 2250 dpm

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

Tm 2/22/10

COLLECTED BY (PRINT)

TLMcFarlane

REVIEWED BY (PRINT)

Daniel Byars

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) TLMcFarlane	2/22/10	(Printed Name) Sheri Sherwood	2/22/10
(Signature) Tm 2/22	1327	(Signature) Sheri Sherwood	1327
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2508

EVENT NAME: 4th Qtr. FY09 - SWMU 15-009(h) - Threemile Canyon

SAMPLE ID: RE15-10-8395

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/22/2010		MEDIA:		QBT3	
TIME COLLECTED(HH:MM)		1032		SUB-MEDIA:		TUFF1	
PRS ID:	15-009(h)	ok		SAMPLE TECH CODE:		HA	
LOCATION ID:	15-610859	↓		FIELD QC TYPE:		NA	
LOCATION TYPE:	GENERIC	↓		FIELD PREP:		NA	
TOP DEPTH:	0	6.0		SAMPLE USAGE:		INV	
BOTTOM DEPTH:	0	7.1		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	R		EXCAVATED: YES (NO) / NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES (NO) / NA			
BOREHOLE: YES (NO) / NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

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

SAMPLE DESC:

Whitish gray, tuff

SAMPLE COMMENTS:

NA

LOCATION DESC:

9h-7 roadfield

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 6 dpm
Beta/Gamma = 2330 dpm

PID ^{Ambient} Reading = ppm

T3m 2/22/10

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Daniel Byars

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy Z...	Date/Time 2/22/10 1327	RECEIVED BY (Printed Name) Sherri Sherwood (Signature) Sherri Sherwood	Date/Time 2/22/10 1327
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2508

EVENT NAME: 4th Qtr. FY09 - SWMU 15-009(h) - Threemile Canyon

SAMPLE ID: RE15-10-8396

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/22/2010		MEDIA: OBT3		73m 2/22/10 ATT FILL	
TIME COLLECTED (HH:MM)		10 59		SUB-MEDIA: TUFF 1		NA	
PRS ID:	15-009(h)	OK		SAMPLE TECH CODE: HA		OK	
LOCATION ID:	15-610860	↓		FIELD QC TYPE: NA		↓	
LOCATION TYPE:	GENERIC	↓		FIELD PREP: NA		↓	
TOP DEPTH:	0	4.8		SAMPLE USAGE: INV		↓	
BOTTOM DEPTH:	0	7.0		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

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

SAMPLE DESC:

Brown silt and cobbles

SAMPLE COMMENTS:

NA

FD: RE15-10-8404

LOCATION DESC:

9h-8, beachfield

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 41 dpm
Beta/Gamma = 227 dpm

PID ~~Ambient Reading~~ = 73m 2/22/10 ppm

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Daniel Byers

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) TLMcFarland	2/22/10	(Printed Name) Sheri Sherwood	2/22/10
(Signature) Tracy 3.02	1327	(Signature) Sheri Sherwood	1327
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2508

EVENT NAME: 4th Qtr. FY09 - SWMU 15-009(h) - Threemile Canyon

SAMPLE ID: RE15-10-8397

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/22/2010	MEDIA:		QBT3
TIME COLLECTED (HH:MM)		1121	SUB-MEDIA:		TUFF1
PRS ID:	15-009(h)	OK	SAMPLE TECH CODE:		HA
LOCATION ID:	15-610860	↓	FIELD QC TYPE:		NA
LOCATION TYPE:	GENERIC	↓	FIELD PREP:		NA
TOP DEPTH:	0	7.0	SAMPLE USAGE:		INV
BOTTOM DEPTH:	0	7.3	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	S	EXCAVATED: YES/NO/NA		
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA	WATER FLOWING: YES/NO/NA		
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA	BOREHOLE DIRECTION: NA		

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

SAMPLE DESC:

Brown sandy silt with cobbles

SAMPLE COMMENTS:

NA

LOCATION DESC:

9h-8 beachfield

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = 35 dpm
Beta/Gamma = 196 dpm

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

72m 2/22/10

COLLECTED BY (PRINT)

T. McFarland

REVIEWED BY (PRINT)

Dante/Breer

ELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
Printed Name) T. McFarland	2/22/10	(Printed Name)	2/22/10
Signature) Tracy McInt	1327	(Signature)	1327
ELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2508

EVENT NAME: 4th Qtr. FY09 - SWMU 15-009(h) - Threemile Canyon

SAMPLE ID: RE15-10-8398

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/22/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		1136		SUB-MEDIA:		TUFF1	
PRS ID: 15-009(h)		OK		SAMPLE TECH CODE:		HA	
LOCATION ID: 15-610861		↓		FIELD QC TYPE:		NA	
LOCATION TYPE: GENERIC		↓		FIELD PREP:		NA	
TOP DEPTH: 0		4.8		SAMPLE USAGE:		INV	
BOTTOM DEPTH: 0		7m 6.4 6.1		SCREEN/PORT DESC:		NA	
FIELD MATRIX: R		2/22/10 S		EXCAVATED: YES (NO) / NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES (NO) / NA			
BOREHOLE: YES (NO) / NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

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

SAMPLE DESC:

Brown silt and sand

SAMPLE COMMENTS:

NA

LOCATION DESC:

9h-6, leachfield location moved 2 ft W of stake

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 47 dpmBeta/Gamma \leq 2190 dpmPID $\frac{\text{Ambient Reading}}{1000} =$ ppm

72m 2/22/10

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Dante Byers

RELINQUISHED BY (Printed Name) TL McFarland (Signature) <i>TL McFarland</i>	Date/Time 2/22/10 1327	RECEIVED BY (Printed Name) Sheri Sherwood (Signature) <i>Sheri Sherwood</i>	Date/Time 2/22/10 1327
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2508

EVENT NAME: 4th Qtr. FY09 - SWMU 15-009(h) - Threemile Canyon

SAMPLE ID: RE15-10-8404

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/22/2010		MEDIA:		OBT3	
TIME COLLECTED (HH:MM)		10 59		SUB-MEDIA:		TUFF 1	
PRS ID: 15-009(h)		OK		SAMPLE TECH CODE:		HA	
LOCATION ID: UNK		15-610860		FIELD QC TYPE:		ED	
LOCATION TYPE: GENERIC		OK		FIELD PREP:		NA	
TOP DEPTH: 0		4.8		SAMPLE USAGE:		QC	
BOTTOM DEPTH: 0		3.0		SCREEN/PORT DESC:		NA	
FIELD MATRIX: B		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	8082+8270+NME D-EXP	500 ML AMBER GLASS	Ice	Y	
1		8260B	125 ML SEPTUM AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		113	500 ML POLY	Ice	Y	
1		Perchlorate+CN+ N03+pH	500 ML POLY	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	
1		METALS+U-GEL	125 ML POLY	Ice	Y	

SAMPLE DESC: QC Sample of

RE15-10-8396

Brown silt and cobbles

SAMPLE COMMENTS:

NA

LOCATION DESC:

9h-8 beachfield

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 41 dpm
Beta/Gamma \leq 2270 dpm

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

74m 2/22/10

COLLECTED BY (PRINT)

T. M. C. Farland

REVIEWED BY (PRINT)

Daniel Byars

RELINQUISHED BY (Printed Name) T. M. C. Farland (Signature) T. M. C. Farland	Date/Time 2/22/10 1327	RECEIVED BY (Printed Name) [Signature] (Signature) [Signature]	Date/Time 2/22/10 1327
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2508

EVENT NAME: 4th Qtr. FY09 - SWMU 15-009(h) - Threemile Canyon

SAMPLE ID: RE15-10-8399

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		02/22/2010		MEDIA:		QBT3	
TIME COLLECTED (HH:MM)		12:15		SUB-MEDIA:		TUFF 1	
PRS ID: 15-009(h)		ok		SAMPLE TECH CODE:		HA	
LOCATION ID: 15-610861		↓		FIELD QC TYPE:		NA	
LOCATION TYPE: GENERIC		↓		FIELD PREP:		NA	
TOP DEPTH: 0		6.1		SAMPLE USAGE:		INV	
BOTTOM DEPTH: 0		7.0		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			

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

SAMPLE DESC:

Brown silt with gray tuff

FR: RE15-10-8407

SAMPLE COMMENTS:

NA

LOCATION DESC:

9h-6 beachfield

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \pm 35 dpm
Beta/Gamma \pm 2310 dpm

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

Tsm 2/22/10

COLLECTED BY (PRINT)

Th McFarlane

REVIEWED BY (PRINT)

Daniel Byers

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) TLM cFarlane	2/22/10	(Printed Name) [Signature]	2/22/10
(Signature) Tracy 267	1327	(Signature)	1327
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2508

EVENT NAME: 4th Qtr. FY09 - SWMU 15-009(h) - Threemile Canyon

SAMPLE ID: RE15-10-8407

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/22/2010	MEDIA:		NA
TIME COLLECTED(HH:MM)		1255	SUB-MEDIA:		OTHER
PRS ID:	15-009(h)	OK	SAMPLE TECH CODE:		DC
LOCATION ID:	UNK	15-610 861	FIELD QC TYPE:		ER
LOCATION TYPE:	GENERIC	OK	FIELD PREP:		UF
TOP DEPTH:	0		SAMPLE USAGE:		QC
BOTTOM DEPTH:	0		SCREEN/PORT DESC:		NA
FIELD MATRIX:	W		EXCAVATED: YES/NO/NA		
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA	WATER FLOWING: YES/NO/NA		
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA	BOREHOLE DIRECTION: NA		

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

SAMPLE DESC: QC Sample of RE15-10-8399

SAMPLE COMMENTS:

Rinse

LOCATION DESC:

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha = ~~_____~~ dpmBeta/Gamma = ~~_____~~ dpm

72m 2/22/10

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Daniel Byers

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy Z...	Date/Time 2/22/10 1327	RECEIVED BY (Printed Name) (Signature) Jay W...	Date/Time 2/22/10 1327
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- 8393
8394
8395
8396
8397
8398
8399
8404

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- 8407

Reason:

.....

Print Last Name Mcfarland Signature [Signature] Date 2/22/10

DATA VALIDATION COVER SHEET

5119-1

Data Validation Cover Sheet

Records Use only



Section I.

REQUEST NUMBER: 10-2091 VALIDATION DATE: 04/06/10 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: John A. Bailey ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

- | | | | |
|--|--|---|---|
| <input type="checkbox"/> TPH-GRO | <input type="checkbox"/> HIGH EXPLOSIVES | <input type="checkbox"/> DIOXIN FURANS | <input type="checkbox"/> LCMSMS PERCHLORATES |
| <input type="checkbox"/> TPH-DRO | <input type="checkbox"/> METALS | <input type="checkbox"/> PCB CONGENERS | <input type="checkbox"/> ORGANOCHLORINE |
| <input type="checkbox"/> GENERAL CHEMISTRY | <input checked="" type="checkbox"/> RADIOCHEMISTRY | <input type="checkbox"/> LCMSMS HIGH EXPLOSIVES | <input type="checkbox"/> PESTICIDES/POLYCHLORINATED BIPHENYLS |
| <input type="checkbox"/> OTHER (DESCRIBE): _____ | | | |

Section II. Completeness Check

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

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

1. The gamma spec results that were rejected by the laboratory due to high peak width, interference, or low abundance were qualified R,R5a.
2. The gamma spec K-40 duplicate RER was > the laboratory's UAL. All associated sample results were detects and, thus, were qualified J,R10.
3. An MS was not analyzed for tritium. However, an LCS was analyzed, met acceptance criteria and, thus, no sample results were qualified.
4. It should be noted that the parent sample for all QC analyses except tritium was a LANL sample from another RN. No sample data were qualified as a result.

Reviewed by: Susan Ball


Level: I

Date: 04/07/10


VALIDATOR'S SIGNATURE: _____

A handwritten signature in black ink, appearing to read "John A. Bailey".


DATE: 04/06/10

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

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

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

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

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

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8404
Sample ID: 248112001
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 9.44%

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	0.00437	0.0227	+/-0.00262	0.050	pCi/g		MXE1	03/24/10	0800	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00169	0.0311	+/-0.00289	0.050	pCi/g		MXE1	03/25/10	2023	962685	2
Plutonium-239/240		0.0271	0.0263	+/-0.00895	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.60	0.128	+/-0.145	0.100	pCi/g		MXE1	03/24/10	1551	962688	4
Uranium-235/236		0.106	0.0781	+/-0.0256	0.100	pCi/g						
Uranium-238		1.94	0.0899	+/-0.170	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0837	0.300	+/-0.0968	0.200	pCi/g		MXR1	03/10/10	1237	959270	5
Bismuth-211	UI	3.77	R,R5a	0.399	+/-0.299	pCi/g						
Bismuth-214		1.06		0.128	+/-0.102	pCi/g						
Cadmium-109	UI	2.30	R,R5a	1.47	+/-0.507	pCi/g						
Cerium-139	U	-0.0113	0.0566	+/-0.0166	0.050	pCi/g						
Cesium-134	U	0.0748	0.098	+/-0.0265	0.100	pCi/g						
Cesium-137	U	0.0256	0.0765	+/-0.0218	0.100	pCi/g						
Cobalt-60	U	0.00688	0.0654	+/-0.0192	0.100	pCi/g						
Europium-152	U	-0.0117	0.183	+/-0.0632	0.200	pCi/g						
Lanthanum-140	U	0.0387	0.185	+/-0.0535		pCi/g						
Lead-212		1.74	0.101	+/-0.109	0.100	pCi/g						
Lead-214		1.37	0.139	+/-0.115	0.100	pCi/g						
Mercury-203	U	0.0626	0.0861	+/-0.0242	0.100	pCi/g						
Potassium-40		26.7	J,R10	0.568	+/-1.51	1.00	pCi/g					
Radium-223	U	-0.334		1.17	+/-0.363	pCi/g						
Radium-224	UI	5.35	R,R5a	1.08	+/-0.820	pCi/g						
Radium-226		1.06		0.128	+/-0.102	pCi/g						
Radium-228		1.61		0.250	+/-0.189	0.500	pCi/g					
Ruthenium-106	U	-0.0379	0.573	+/-0.171	0.800	pCi/g						
Sodium-22	U	-0.00536	0.0844	+/-0.0255	0.080	pCi/g						
Strontium-85	U	0.0608	0.0827	+/-0.0264		pCi/g						

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8404
Sample ID: 248112001
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		0.541	0.061	+/-0.0499	0.080	pCi/g						
Thorium-227	U	-0.0508	0.490	+/-0.146		pCi/g						
Thorium-231	U	-0.334	1.17	+/-0.363		pCi/g						
Thorium-234		2.56	2.54	+/-1.29	2.00	pCi/g						
Tin-113	U	-0.0157	0.0826	+/-0.0256	0.100	pCi/g						
Uranium-235	U	-0.019	0.372	+/-0.110	0.500	pCi/g						
Yttrium-88	U	0.0328	0.0673	+/-0.017	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		252	246	+/-79.4	250	pCi/L		KXK2	03/19/10	1424	964052	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, 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"	81.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	58.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	76.1	(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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8396
Sample ID: 248112002
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 8.69%

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	-0.00606	0.0239	+/-0.0031	0.050	pCi/g		MXE1	03/24/10	1612	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00439	0.0291	+/-0.00311	0.050	pCi/g		MXE1	03/25/10	2023	962685	2
Plutonium-239/240	U	-0.00132	0.0246	+/-0.00519	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.62	0.128	+/-0.147	0.100	pCi/g		MXE1	03/24/10	1552	962688	4
Uranium-235/236		0.0951	0.0779	+/-0.0241	0.100	pCi/g						
Uranium-238		1.85	0.0897	+/-0.164	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.140	0.379	+/-0.114	0.200	pCi/g		MXR1	03/10/10	1320	959270	5
Bismuth-211	UI	3.86	R,R5a	0.314	+/-0.265	pCi/g						
Bismuth-214		1.18		0.114	+/-0.0954	pCi/g						
Cadmium-109	UI	2.17	R,R5a	1.40	+/-0.569	pCi/g						
Cerium-139	U	0.0265	0.0475	+/-0.0135	0.050	pCi/g						
Cesium-134	U	0.0637	0.0832	+/-0.0276	0.100	pCi/g						
Cesium-137	U	-0.0236	0.0676	+/-0.0202	0.100	pCi/g						
Cobalt-60	U	-0.00561	0.0588	+/-0.018	0.100	pCi/g						
Europium-152	U	-0.0731	0.143	+/-0.0443	0.200	pCi/g						
Lanthanum-140	U	0.0224	0.143	+/-0.0417		pCi/g						
Lead-212		1.58	0.0916	+/-0.0854	0.100	pCi/g						
Lead-214		1.40	0.114	+/-0.104	0.100	pCi/g						
Mercury-203	U	0.0467	0.0551	+/-0.0203	0.100	pCi/g						
Potassium-40		26.1	J,R10	0.569	+/-1.25	1.00	pCi/g					
Radium-223	U	0.0767	1.02	+/-0.335		pCi/g						
Radium-224	UI	4.05	R,R5a	0.982	+/-0.653	pCi/g						
Radium-226		1.18	0.114	+/-0.0954		pCi/g						
Radium-228		1.83	0.202	+/-0.176	0.500	pCi/g						
Ruthenium-106	U	0.261	0.572	+/-0.166	0.800	pCi/g						
Sodium-22	U	0.0143	0.0814	+/-0.0236	0.080	pCi/g						
Strontium-85	UI	0.0728	R,R5a	0.0687	+/-0.0202	pCi/g						
Thallium-208		0.483	0.0578	+/-0.0415	0.080	pCi/g						

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8396
Sample ID: 248112002
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	0.0624	0.403	+/-0.114		pCi/g						
Thorium-231	U	0.0767	1.02	+/-0.335		pCi/g						
Thorium-234		3.22	2.84	+/-1.40	2.00	pCi/g						
Tin-113	U	0.00239	0.0714	+/-0.0211	0.100	pCi/g						
Uranium-235	U	0.141	0.320	+/-0.0918	0.500	pCi/g						
Yttrium-88	U	0.0052	0.0532	+/-0.0159	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		446	244	+/-86.9	250	pCi/L		KXK2	03/19/10	1532	964052	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, 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"	76.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	63.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	76.1	(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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8393
Sample ID: 248112003
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 20.1%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.000214	0.0235	+/-0.00161	0.050	pCi/g		MXE1	03/24/10	1612	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0155	0.0271	+/-0.00655	0.050	pCi/g		MXE1	03/24/10	1707	962685	2
Plutonium-239/240	U	0.00262	0.0229	+/-0.00325	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.576	0.102	+/-0.0619	0.100	pCi/g		MXE1	03/24/10	1552	962688	3
Uranium-235/236	U	0.0224	0.0624	+/-0.012	0.100	pCi/g						
Uranium-238		0.576	0.0718	+/-0.0621	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.00783	0.310	+/-0.101	0.200	pCi/g		MXR1	03/10/10	1320	959270	4
Bismuth-211	UI	3.25	R,R5a	+/-0.301		pCi/g						
Bismuth-214		0.971		+/-0.114	0.200	pCi/g						
Cadmium-109	UI	2.49	R,R5a	+/-0.552		pCi/g						
Cerium-139	U	0.00507	0.0546	+/-0.0167	0.050	pCi/g						
Cesium-134	U	0.0886	0.102	+/-0.0434	0.100	pCi/g						
Cesium-137	U	-0.0513	0.0638	+/-0.0217	0.100	pCi/g						
Cobalt-60	U	-0.0161	0.0694	+/-0.0225	0.100	pCi/g						
Europium-152	U	-0.0435	0.171	+/-0.0553	0.200	pCi/g						
Lanthanum-140	U	-0.0713	0.126	+/-0.0452		pCi/g						
Lead-212		1.51	0.103	+/-0.0999	0.100	pCi/g						
Lead-214		1.18	0.133	+/-0.114	0.100	pCi/g						
Mercury-203	U	0.0064	0.0797	+/-0.0236	0.100	pCi/g						
Potassium-40		34.2	J,R10	+/-1.93	1.00	pCi/g						
Radium-223	U	-0.623	1.16	+/-0.375		pCi/g						
Radium-224	UI	3.53	R,R5a	+/-0.642		pCi/g						
Radium-226		0.971	0.130	+/-0.114		pCi/g						
Radium-228		1.79	0.299	+/-0.219	0.500	pCi/g						
Ruthenium-106	U	-0.151	0.531	+/-0.167	0.800	pCi/g						
Sodium-22	U	0.029	0.107	+/-0.0313	0.080	pCi/g						
Strontium-85	UI	0.0843	R,R5a	+/-0.024		pCi/g						
Thallium-208		0.457	0.0647	+/-0.051	0.080	pCi/g						

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8393
Sample ID: 248112003

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	0.153	0.503	+/-0.145		pCi/g					
Thorium-231	U	-0.623	1.16	+/-0.375		pCi/g					
Thorium-234		2.47	2.41	+/-1.05	2.00	pCi/g					
Tin-113	U	-0.0254	0.0835	+/-0.0265	0.100	pCi/g					
Uranium-235	U	0.0743	0.372	+/-0.114	0.500	pCi/g					
Yttrium-88	U	0.0199	0.0652	+/-0.0176	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
H3 "As Received"											
Tritium	U	84.7	244	+/-73.2	250	pCi/L		KXK2	03/19/10	1639 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"	79.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	71.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	93.8	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8395
Sample ID: 248112004
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 4.41%

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	0.000696	0.0235	+/-0.00273	0.050	pCi/g		MXE1	03/24/10	1612	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0211	0.028	+/-0.00679	0.050	pCi/g		MXE1	03/24/10	1707	962685	2
Plutonium-239/240	U	-0.00185	0.0237	+/-0.00425	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.419	0.0946	+/-0.0484	0.100	pCi/g		MXE1	03/24/10	1552	962688	3
Uranium-235/236	U	0.0166	0.0578	+/-0.0102	0.100	pCi/g						
Uranium-238		0.460	0.0665	+/-0.0514	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.282	0.506	+/-0.156	0.200	pCi/g		MXR1	03/10/10	1321	959270	4
Bismuth-211	UI	3.25	R,R5a	0.449	+/-0.317	pCi/g						
Bismuth-214		0.909		0.149	+/-0.101	pCi/g						
Cadmium-109	U	1.59		2.19	+/-0.835	pCi/g						
Cerium-139	U	-0.0247	0.0614	+/-0.0194	0.050	pCi/g						
Cesium-134	U	0.0382	0.0973	+/-0.0276	0.100	pCi/g						
Cesium-137	U	0.0515	0.0834	+/-0.0229	0.100	pCi/g						
Cobalt-60	U	-0.0226	0.0731	+/-0.0244	0.100	pCi/g						
Europium-152	U	0.0814	0.216	+/-0.0807	0.200	pCi/g						
Lanthanum-140	U	-0.00455	0.173	+/-0.0527		pCi/g						
Lead-212		1.52	0.127	+/-0.115	0.100	pCi/g						
Lead-214		1.18	0.163	+/-0.120	0.100	pCi/g						
Mercury-203	U	-0.0359	0.0879	+/-0.027	0.100	pCi/g						
Potassium-40		36.8	J,R10	0.713	+/-2.17	1.00	pCi/g					
Radium-223	U	-1.46		1.35	+/-0.462	pCi/g						
Radium-224	UI	3.99	R,R5a	1.36	+/-0.643	pCi/g						
Radium-226		0.909		0.149	+/-0.101	pCi/g						
Radium-228		1.51		0.292	+/-0.216	0.500	pCi/g					
Ruthenium-106	U	0.349		0.706	+/-0.204	0.800	pCi/g					
Sodium-22	U	0.0408		0.100	+/-0.029	0.080	pCi/g					
Strontium-85	UI	0.115	R,R5a	0.0984	+/-0.030	pCi/g						
Thallium-208		0.419		0.0693	+/-0.0514	0.080	pCi/g					

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID:
Sample ID:

RE15-10-8395
248112004

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	-0.128	0.546	+/-0.164		pCi/g						
Thorium-231	U	-1.46	1.35	+/-0.462		pCi/g						
Thorium-234	U	0.103	4.20	+/-1.23	2.00	pCi/g						
Tin-113	U	-0.0328	0.0965	+/-0.0301	0.100	pCi/g						
Uranium-235	U	0.064	0.439	+/-0.134	0.500	pCi/g						
Yttrium-88	U	-0.023	0.0559	+/-0.0199	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium		345	287	+/-96.2	250	pCi/L		KXK2	03/19/10	0050	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"	78.0	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	74.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.3	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8398
Sample ID: 248112005
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 12.8%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0152	0.0243	+/-0.00544	0.050	pCi/g		MXE1	03/24/10	1612	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0188	0.0266	+/-0.00995	0.050	pCi/g		MXE1	03/24/10	1707	962685	2
Plutonium-239/240	U	0.00281	0.0225	+/-0.00553	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.36	0.149	+/-0.132	0.100	pCi/g		MXE1	03/24/10	1552	962688	3
Uranium-235/236		0.117	0.091	+/-0.0305	0.100	pCi/g						
Uranium-238		1.94	0.105	+/-0.177	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.108	0.253	+/-0.0746	0.200	pCi/g		MXR1	03/10/10	1322	959270	4
Bismuth-211	UI	3.50	R,R5a	0.305	+/-0.233	pCi/g						
Bismuth-214		1.15		0.103	+/-0.0857	0.200	pCi/g					
Cadmium-109	U	1.40		1.45	+/-0.564	pCi/g						
Cerium-139	U	-0.00405		0.0502	+/-0.015	0.050	pCi/g					
Cesium-134	UI	0.106	R,R5a	0.090	+/-0.0389	0.100	pCi/g					
Cesium-137	U	-0.0057		0.0623	+/-0.019	0.100	pCi/g					
Cobalt-60	U	0.0252		0.0679	+/-0.019	0.100	pCi/g					
Europium-152	U	0.0394		0.153	+/-0.0561	0.200	pCi/g					
Lanthanum-140	U	-0.0685		0.121	+/-0.0452	pCi/g						
Lead-212		1.55		0.0967	+/-0.0803	0.100	pCi/g					
Lead-214		1.27		0.111	+/-0.0917	0.100	pCi/g					
Mercury-203	U	0.00657		0.0646	+/-0.0184	0.100	pCi/g					
Potassium-40		25.1	J,R10	0.505	+/-1.22	1.00	pCi/g					
Radium-223	U	-0.968		1.06	+/-0.341	pCi/g						
Radium-224	UI	3.81	R,R5a	1.04	+/-0.637	pCi/g						
Radium-226		1.15		0.103	+/-0.0857	pCi/g						
Radium-228		1.53		0.236	+/-0.174	0.500	pCi/g					
Ruthenium-106	U	-0.0403		0.489	+/-0.148	0.800	pCi/g					
Sodium-22	U	-0.0119		0.0686	+/-0.0212	0.080	pCi/g					
Strontium-85	UI	0.0967	R,R5a	0.0751	+/-0.0218	pCi/g						
Thallium-208		0.477		0.0567	+/-0.0421	0.080	pCi/g					

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8398
Sample ID: 248112005
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	0.0828	0.431	+/-0.130		pCi/g						
Thorium-231	U	-0.968	1.06	+/-0.341		pCi/g						
Thorium-234	U	0.850	2.30	+/-0.653	2.00	pCi/g						
Tin-113	U	0.0202	0.0732	+/-0.0208	0.100	pCi/g						
Uranium-235	U	0.169	0.349	+/-0.102	0.500	pCi/g						
Yttrium-88	U	0.00847	0.0484	+/-0.0139	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	192	250	+/-78.4	250	pCi/L		KXK2	03/19/10	1747	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"	77.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	75.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	61.5	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8394
Sample ID: 248112006
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 10.3%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.003	0.024	+/-0.00202	0.050	pCi/g		MXE1	03/24/10	1612	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0177	0.0281	+/-0.0103	0.050	pCi/g		MXE1	03/24/10	1707	962685	2
Plutonium-239/240	U	-0.00246	0.0238	+/-0.00339	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.732	0.115	+/-0.0764	0.100	pCi/g		MXE1	03/24/10	1552	962688	3
Uranium-235/236	U	0.0603	0.070	+/-0.0193	0.100	pCi/g						
Uranium-238		0.728	0.0806	+/-0.0765	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0252	0.211	+/-0.0672	0.200	pCi/g		MXR1	03/10/10	1323	959270	4
Bismuth-211	UI	2.98	R,R5a	0.319	+/-0.249	pCi/g						
Bismuth-214		1.01		0.104	+/-0.0971	pCi/g						
Cadmium-109	UI	2.28	R,R5a	1.06	+/-0.467	pCi/g						
Cerium-139	U	-0.0081		0.0468	+/-0.0138	pCi/g						
Cesium-134	U	0.0344		0.073	+/-0.0215	pCi/g						
Cesium-137	U	-0.0315		0.0508	+/-0.0164	pCi/g						
Cobalt-60	U	-0.014		0.0607	+/-0.0197	pCi/g						
Europium-152	U	-0.0041		0.150	+/-0.0542	pCi/g						
Lanthanum-140	U	-0.0976		0.118	+/-0.041	pCi/g						
Lead-212		1.52		0.0854	+/-0.112	pCi/g						
Lead-214		1.08		0.112	+/-0.0953	pCi/g						
Mercury-203	U	0.0444		0.065	+/-0.0192	pCi/g						
Potassium-40		32.1	J,R10	0.470	+/-1.65	pCi/g						
Radium-223	U	0.527		0.931	+/-0.301	pCi/g						
Radium-224	UI	4.34	R,R5a	0.915	+/-0.700	pCi/g						
Radium-226		1.01		0.104	+/-0.0971	pCi/g						
Radium-228		1.58		0.198	+/-0.175	pCi/g						
Ruthenium-106	U	0.0307		0.478	+/-0.142	pCi/g						
Sodium-22	U	-0.0433		0.0654	+/-0.0213	pCi/g						
Strontium-85	UI	0.0995	R,R5a	0.0721	+/-0.023	pCi/g						
Thallium-208		0.457		0.049	+/-0.038	pCi/g						

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID:
Sample ID:

RE15-10-8394
248112006

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	-0.148	0.386	+/-0.121		pCi/g						
Thorium-231	U	0.527	0.931	+/-0.301		pCi/g						
Thorium-234		2.85	1.76	+/-0.937	2.00	pCi/g						
Tin-113	U	0.0477	0.0727	+/-0.0207	0.100	pCi/g						
Uranium-235	U	0.0527	0.325	+/-0.0951	0.500	pCi/g						
Yttrium-88	U	0.00836	0.0438	+/-0.0127	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium		318	294	+/-96.7	250	pCi/L		KXK2	03/19/10	0325	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"	78.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	66.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	82.9	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8399
Sample ID: 248112007
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 11.7%

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	0.00278	0.0225	+/-0.00207	0.050	pCi/g		MXE1	03/24/10	1612	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0044	0.0292	+/-0.00312	0.050	pCi/g		MXE1	03/25/10	2023	962685	2
Plutonium-239/240		0.0286	0.0247	+/-0.00811	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.837	0.109	+/-0.0834	0.100	pCi/g		MXE1	03/24/10	1552	962688	4
Uranium-235/236	U	0.0334	0.0665	+/-0.0128	0.100	pCi/g						
Uranium-238		0.938	0.0765	+/-0.091	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.00516	0.0738	+/-0.0243	0.200	pCi/g		MXR1	03/10/10	1325	959270	5
Bismuth-211	UI	3.56	R,R5a	0.320	+/-0.273	pCi/g						
Bismuth-214		1.20		0.121	+/-0.107	0.200	pCi/g					
Cadmium-109	UI	4.13	R,R5a	0.718	+/-0.407	pCi/g						
Cerium-139	U	0.00681		0.0414	+/-0.0121	0.050	pCi/g					
Cesium-134	U	0.0571		0.0915	+/-0.0255	0.100	pCi/g					
Cesium-137	UI	0.165	R,R5a	0.0617	+/-0.051	0.100	pCi/g					
Cobalt-60	U	-0.000801		0.0758	+/-0.0232	0.100	pCi/g					
Europium-152	U	-0.0695		0.136	+/-0.0424	0.200	pCi/g					
Lanthanum-140	U	-0.00306		0.153	+/-0.0462	pCi/g						
Lead-212		1.67		0.0764	+/-0.109	0.100	pCi/g					
Lead-214		1.29		0.109	+/-0.105	0.100	pCi/g					
Mercury-203	U	0.0228		0.0582	+/-0.0173	0.100	pCi/g					
Potassium-40		33.7	J,R10	0.593	+/-1.76	1.00	pCi/g					
Radium-223	U	0.0553		0.997	+/-0.328	pCi/g						
Radium-224	UI	5.05	R,R5a	0.820	+/-0.675	pCi/g						
Radium-226		1.20		0.121	+/-0.107	pCi/g						
Radium-228		1.60		0.235	+/-0.185	0.500	pCi/g					
Ruthenium-106	U	-0.301		0.482	+/-0.155	0.800	pCi/g					
Sodium-22	U	0.00228		0.0887	+/-0.0269	0.080	pCi/g					
Strontium-85	U	-0.209		0.0656	+/-0.0286	pCi/g						
Thallium-208		0.501		0.0672	+/-0.0462	0.080	pCi/g					

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8399
Sample ID: 248112007
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	0.00314	0.372	+/-0.114		pCi/g					
Thorium-231	U	0.0553	0.997	+/-0.328		pCi/g					
Thorium-234		1.96	0.743	+/-0.492	2.00	pCi/g					
Tin-113	U	-0.0435	0.0644	+/-0.0208	0.100	pCi/g					
Uranium-235	U	0.0815	0.275	+/-0.0803	0.500	pCi/g					
Yttrium-88	U	0.0231	0.0631	+/-0.0169	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium		358	288	+/-97.0	250	pCi/L		KXK2	03/19/10 0407	964052	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, 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"	83.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	66.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	84.3	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8397
Sample ID: 248112008
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 6.13%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00138	0.0234	+/-0.0016	0.050	pCi/g		MXE1	03/24/10	1612	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0134	0.0254	+/-0.00513	0.050	pCi/g		MXE1	03/24/10	2109	962685	2
Plutonium-239/240	U	0.00383	0.0215	+/-0.00272	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.79	0.142	+/-0.164	0.100	pCi/g		MXE1	03/24/10	1552	962688	3
Uranium-235/236		0.118	0.0867	+/-0.0285	0.100	pCi/g						
Uranium-238		2.68	0.0998	+/-0.232	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0545	0.125	+/-0.0408	0.200	pCi/g		MXR1	03/10/10	1342	959270	4
Bismuth-211	UI	3.81	R,R5a	0.430	+/-0.289	pCi/g						
Bismuth-214		1.15		0.128	+/-0.107	0.200	pCi/g					
Cadmium-109	UI	3.31	R,R5a	1.13	+/-0.537	pCi/g						
Cerium-139	U	0.00472		0.0589	+/-0.0179	0.050	pCi/g					
Cesium-134	UI	0.189	R,R5a	0.116	+/-0.0442	0.100	pCi/g					
Cesium-137	U	0.0207		0.0851	+/-0.0256	0.100	pCi/g					
Cobalt-60	U	0.000323		0.0789	+/-0.0245	0.100	pCi/g					
Europium-152	U	-0.00578		0.203	+/-0.070	0.200	pCi/g					
Lanthanum-140	U	0.0238		0.188	+/-0.055	pCi/g						
Lead-212		1.69		0.110	+/-0.111	0.100	pCi/g					
Lead-214		1.38		0.152	+/-0.112	0.100	pCi/g					
Mercury-203	U	-0.00574		0.0798	+/-0.0238	0.100	pCi/g					
Potassium-40		27.4	J,R10	0.780	+/-1.30	1.00	pCi/g					
Radium-223	U	-1.57		1.24	+/-0.432	pCi/g						
Radium-224	UI	4.74	R,R5a	1.18	+/-0.820	pCi/g						
Radium-226		1.15		0.128	+/-0.107	pCi/g						
Radium-228		1.90		0.352	+/-0.236	0.500	pCi/g					
Ruthenium-106	U	-0.459		0.588	+/-0.203	0.800	pCi/g					
Sodium-22	U	0.00131		0.0907	+/-0.028	0.080	pCi/g					
Strontium-85	U	0.0196		0.0797	+/-0.0272	pCi/g						
Thallium-208		0.570		0.0723	+/-0.054	0.080	pCi/g					

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID:
Sample ID:

RE15-10-8397
248112008

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	0.203	0.519	+/-0.149		pCi/g						
Thorium-231	U	-1.57	1.24	+/-0.432		pCi/g						
Thorium-234		3.49	1.20	+/-0.742	2.00	pCi/g						
Tin-113	U	0.0529	0.098	+/-0.028	0.100	pCi/g						
Uranium-235	U	0.123	0.405	+/-0.121	0.500	pCi/g						
Yttrium-88	U	0.00867	0.0703	+/-0.0206	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium	U	150	245	+/-75.6	250	pCi/L		KXK2	03/19/10	1854	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"	77.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	82.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	62.6	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

Thursday, February 25, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2091

LOS ALAMOS

REQUEST NUMBER: 10-2091

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/27/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

248112

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-8404	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8404	1	POLY	H3	Ice	R
RE15-10-8396	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8396	1	POLY	H3	Ice	R
RE15-10-8393	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8393	1	POLY	H3	Ice	R
RE15-10-8395	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8395	1	POLY	H3	Ice	R
RE15-10-8398	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8398	1	POLY	H3	Ice	R
RE15-10-8394	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8394	1	POLY	H3	Ice	R
RE15-10-8399	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8399	1	POLY	H3	Ice	R
RE15-10-8397	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8397	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

Thursday, February 25, 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: 2/25/2010

TURNAROUND/REPORT DUE: 3/27/2010

TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background

LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature: 

REQUEST NUMBER: 10-2091

These Samples are on:

LANL Request Number: 10-2091

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-901.1	1	RE15-10-8393	R	2/22/2010	
		1	RE15-10-8394	R	2/22/2010	
		1	RE15-10-8395	R	2/22/2010	
		1	RE15-10-8396	R	2/22/2010	
		1	RE15-10-8397	R	2/22/2010	
		1	RE15-10-8398	R	2/22/2010	
		1	RE15-10-8399	R	2/22/2010	
		1	RE15-10-8404	R	2/22/2010	
	EPA-906.0	1	RE15-10-8393	R	2/22/2010	

Thursday, February 25, 2010

Page 2 of 3

REQUEST NUMBER: 10-2091

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-906.0	1	RE15-10-8394	R	2/22/2010	
		1	RE15-10-8395	R	2/22/2010	
		1	RE15-10-8396	R	2/22/2010	
		1	RE15-10-8397	R	2/22/2010	
		1	RE15-10-8398	R	2/22/2010	
		1	RE15-10-8399	R	2/22/2010	
		1	RE15-10-8404	R	2/22/2010	
	HASL-300:AM-241	1	RE15-10-8393	R	2/22/2010	
		1	RE15-10-8394	R	2/22/2010	
		1	RE15-10-8395	R	2/22/2010	
		1	RE15-10-8396	R	2/22/2010	
		1	RE15-10-8397	R	2/22/2010	
		1	RE15-10-8398	R	2/22/2010	
		1	RE15-10-8399	R	2/22/2010	
		1	RE15-10-8404	R	2/22/2010	
	HASL-300:ISOPU	1	RE15-10-8393	R	2/22/2010	
		1	RE15-10-8394	R	2/22/2010	
		1	RE15-10-8395	R	2/22/2010	
		1	RE15-10-8396	R	2/22/2010	
		1	RE15-10-8397	R	2/22/2010	
		1	RE15-10-8398	R	2/22/2010	
		1	RE15-10-8399	R	2/22/2010	
		1	RE15-10-8404	R	2/22/2010	
	HASL-300:ISOU	1	RE15-10-8393	R	2/22/2010	
		1	RE15-10-8394	R	2/22/2010	
		1	RE15-10-8395	R	2/22/2010	
		1	RE15-10-8396	R	2/22/2010	
		1	RE15-10-8397	R	2/22/2010	

REQUEST NUMBER: 10-2091

Thursday, February 25, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE15-10-8398	R	2/22/2010	
		1	RE15-10-8399	R	2/22/2010	
		1	RE15-10-8404	R	2/22/2010	

Final Page of REQUEST NUMBER 10-2091



March 05, 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: 248112
SDG: 10-2091

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on February 26, 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: 10-2091
Enclosures

Los Alamos National Laboratory (72733-001-09)

LANL ER Project

Work Order #: 248112

SDG: 10-2091

TABLE OF CONTENTS

Case Narrative.....	1
Chain of Custody and Supporting Documentation.....	4
Data Review Qualifier Flag Definition Sheet.....	16
Radiological Analysis.....	18
Sample Data Summary.....	31
Quality Control Data.....	57
Raw Data.....	64
Background and Efficiency Data.....	513
Standards Data.....	633
Runlogs.....	664

Case Narrative

**Case Narrative for
Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Workorder #: 248112
SDG # : 10-2091**

March 05, 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 26, 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 11,14-17C temperatures. Shipping container temperature was within specification (0 - 6C).

Sample Identification The laboratory received the following samples:

<u>Laboratory ID</u>	<u>Client ID</u>
248112001	RE15-10-8404
248112002	RE15-10-8396
248112003	RE15-10-8393
248112004	RE15-10-8395
248112005	RE15-10-8398
248112006	RE15-10-8394
248112007	RE15-10-8399
248112008	RE15-10-8397

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

Valerie Davis
Project Manager

List of current GEL Certifications as of 05 March 2010

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

Chain of Custody and Supporting Documentation

Thursday, February 25, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-2091

LOS ALAMOS

REQUEST NUMBER: 10-2091

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/27/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

248112

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE15-10-8404	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8404	1	POLY	H3	Ice	R
RE15-10-8396	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8396	1	POLY	H3	Ice	R
RE15-10-8393	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8393	1	POLY	H3	Ice	R
RE15-10-8395	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8395	1	POLY	H3	Ice	R
RE15-10-8398	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8398	1	POLY	H3	Ice	R
RE15-10-8394	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8394	1	POLY	H3	Ice	R
RE15-10-8399	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8399	1	POLY	H3	Ice	R
RE15-10-8397	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE15-10-8397	1	POLY	H3	Ice	R

Relinquished By:

Date Time

Received By:

Date Time

Printed Name

Signature

2/25/10 1400

Printed Name

Signature

Patricia Dover-Dent P. W. Dent 2/26/10 08:45

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date Time

Remarks:

Printed Name

Signature

Thursday, February 25, 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: 2/26/2010

TURNAROUND/REPORT DUE: 3/27/2010

TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background

LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature: 

Page 1 of 3

REQUEST NUMBER: 10-2091

These Samples are on:

LANL Request Number: 10-2091

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE15-10-8393	R	2/22/2010	
		1	RE15-10-8394	R	2/22/2010	
		1	RE15-10-8395	R	2/22/2010	
		1	RE15-10-8396	R	2/22/2010	
		1	RE15-10-8397	R	2/22/2010	
		1	RE15-10-8398	R	2/22/2010	
		1	RE15-10-8399	R	2/22/2010	
		1	RE15-10-8404	R	2/22/2010	
	EPA:906.0	1	RE15-10-8393	R	2/22/2010	

Thursday, February 25, 2010

REQUEST NUMBER: 10-2091

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:906.0	1	RE15-10-8394	R	2/22/2010	
		1	RE15-10-8395	R	2/22/2010	
		1	RE15-10-8396	R	2/22/2010	
		1	RE15-10-8397	R	2/22/2010	
		1	RE15-10-8398	R	2/22/2010	
		1	RE15-10-8399	R	2/22/2010	
		1	RE15-10-8404	R	2/22/2010	
	HASL-300:AM-241	1	RE15-10-8393	R	2/22/2010	
		1	RE15-10-8394	R	2/22/2010	
		1	RE15-10-8395	R	2/22/2010	
		1	RE15-10-8396	R	2/22/2010	
		1	RE15-10-8397	R	2/22/2010	
		1	RE15-10-8398	R	2/22/2010	
		1	RE15-10-8399	R	2/22/2010	
		1	RE15-10-8404	R	2/22/2010	
	HASL-300:ISOPU	1	RE15-10-8393	R	2/22/2010	
		1	RE15-10-8394	R	2/22/2010	
		1	RE15-10-8395	R	2/22/2010	
		1	RE15-10-8396	R	2/22/2010	
		1	RE15-10-8397	R	2/22/2010	
		1	RE15-10-8398	R	2/22/2010	
		1	RE15-10-8399	R	2/22/2010	
		1	RE15-10-8404	R	2/22/2010	
	HASL-300:ISOU	1	RE15-10-8393	R	2/22/2010	
		1	RE15-10-8394	R	2/22/2010	
		1	RE15-10-8395	R	2/22/2010	
		1	RE15-10-8396	R	2/22/2010	
		1	RE15-10-8397	R	2/22/2010	

REQUEST NUMBER: 10-2091

Thursday, February 25, 2010

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE15-10-8398	R	2/22/2010	
		1	RE15-10-8399	R	2/22/2010	
		1	RE15-10-8404	R	2/22/2010	

Final Page of REQUEST NUMBER 10-2091

SAMPLE RECEIPT & REVIEW FORM

Client: LANL		SDG/ARCOC/Work Order: 10-2091	
Received By: Patricia Dover-Dent		Date Received: 2/26/10	
Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		X	Maximum Counts Observed*: 60CPM
Classified Radioactive II by RSO?		X	
COC/Samples marked containing PCBs?		X	
Shipped as a DOT Hazardous?		X	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		X	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	X			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within 0 ≤ 6 deg. C?	X			Preservation Method: ice bags blue ice dry ice none other 1-3,6C 11-14,17
3 Chain of custody documents included with shipment?	X			
4 Sample containers intact and sealed?	X			Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?		X		Sample ID's, containers affected and observed pH:
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 2341 1C 7209 7850 2319 2C 7209 7850 2352 12C
 7209 7850 2320 1C 7209 7850 2422 3C 7209 7850 2271 13C
 7209 7850 2396 2C 7209 7850 2385 3C 7209 7850 2466 13C
 7209 7850 2374 2C 7209 7850 2444 6C 7209 7850 2282 14C
 7209 7850 2330 2C 7209 7850 2400 6C 7209 7850 2293 17C
 7209 7850 2455 2C 7209 7850 2477 6C
 7209 7850 2308 2C 7209 7850 2433 6C
 7209 7850 2411 2C 7209 7850 2260 11C

PM (or PMA) review: Initials

ms

Date

3/1/10

ORIGIN ID: SAFA (705) 665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 25FEB10
ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2450
BILL SENDER

ORIGIN ID: SAFA (505) 665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 25FEB10
ACTWGT: 50.0 LB MAN
CAD: 0014176/CAFE2450
BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR1A03AGWMO

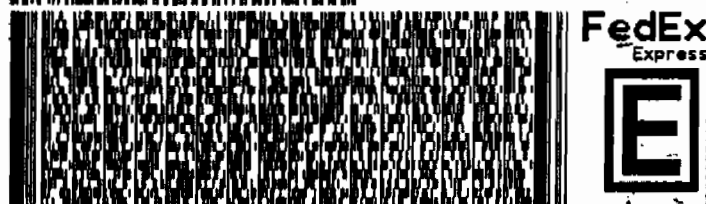
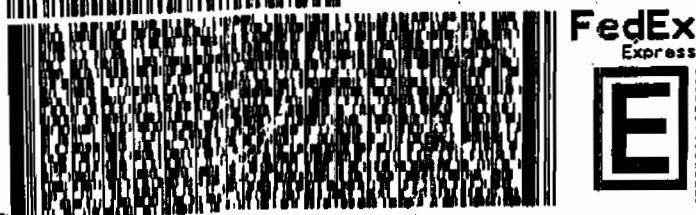
2c

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

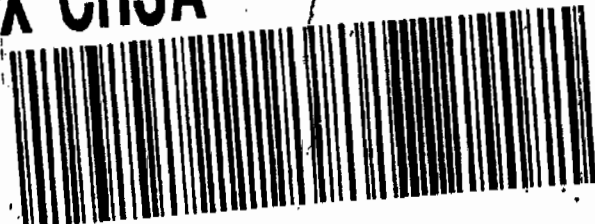
(843) 556-8171
REF: 6B010AMR3A05529E00

2c



2 of 2
FedEx
TRK# 7209 7850 2330
0201
XX CHSA

FRI - 26FEB A1
FRI - 26 FEB A1
PRIORITY OVERNIGHT
29407
SC-US
CHS



Emp# 133998 25FEB10 SAFA

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

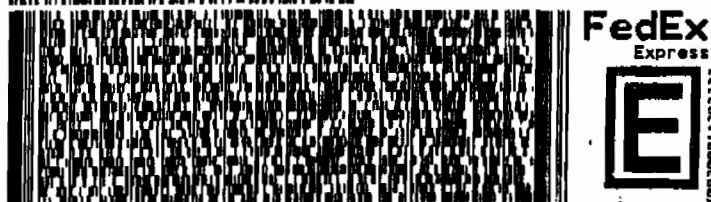
ACTWGT: 52.0 LB MAN
CAD: 0014176/CAFE2450
BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR1A015AGWMO

2c



TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171
REF: 6B010AMR3A05529E00

2c



1 of 2
TRK# 7209 7850 2308
0201
NN MASTER NN

FRI - 26FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

Page 11 of 669

2 of 2
TRK# 7209 7850 2411
0263
NN MASTER NN

FRI - 26FEB 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: 25FEB10
ACTWGT: 53.0 LB MAN
CAD: 0014176/CAFE2450

BILL SENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

2C

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

0014176/CAFE2450



2 of 2
MPS# 7209 7850 2319
0263
Matr# 7209 7850 2308 0201

FRI - 26FEB 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: 25FEB10
ACTWGT: 52.0 LB MAN
CAD: 0014176/CAFE2450

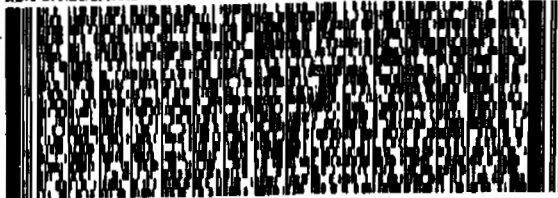
BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

3C

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AARDW01EA1S00

0014176/CAFE2450



1 of 2
FedEx
TRK# 7209 7850 2385
0201

FRI - 26FEB
FRI - 26 FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

VV 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: 25FEB10
ACTWGT: 58.0 LB MAN
CAD: 0014176/CAFE2450

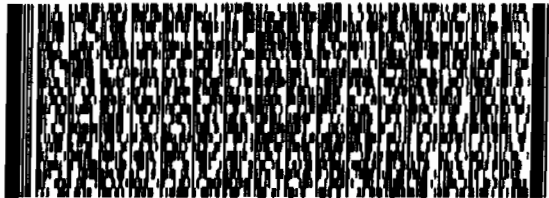
BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

3C

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

0014176/CAFE2450

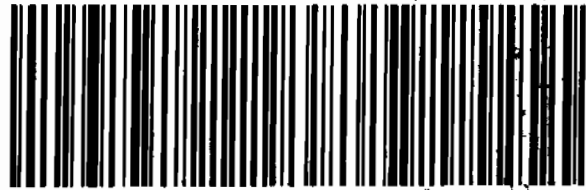


1 of 2
TRK# 7209 7850 2422
0201
NN MASTER NN

FRI - 26FEB 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: 25FEB10
ACTWGT: 63.0 LB MAN
CAD: 0014176/CAFE2450

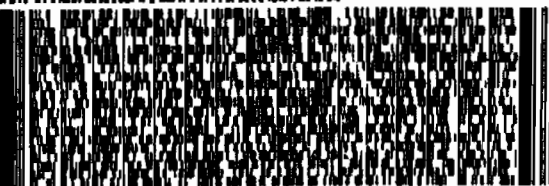
BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

6

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

0014176/CAFE2450



FRI - 26FEB
FRI - 26 FEB A1
PRIORITY OVERNIGHT

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

SHIP DATE: 25FEB10
ACTWGT: 59.0 LB MAN
CAD: 0014176/CAFE2450

LOS ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR3A022DXL00

12

0014176/CAFE2450



FedEx
Express



J09200911302271

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

SHIP DATE: 25FEB10
ACTWGT: 60.0 LB MAN
CAD: 0014176/CAFE2450

LOS ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR2A0515BYDO

13

0014176/CAFE2450



FedEx
Express



J09200911302271

2 of 2
MPS# 0263 7209 7850 2352
Mstr# 7209 7850 2341 0201

FRI - 26FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS



LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

CAD: 0014176/CAFE2450

LOS ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR2A0515BYDO

14

0014176/CAFE2450



FedEx
Express



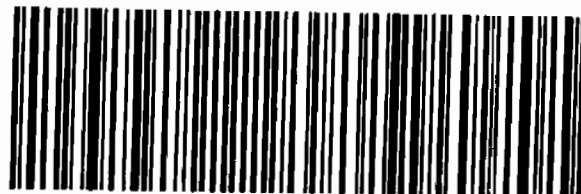
J09200911302271

3 of 3
MPS# 0263 7209 7850 2271
Mstr# 7209 7850 2250 0201

FRI - 26FEB 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

SHIP DATE: 25FEB10
ACTWGT: 36.0 LB MAN
CAD: 0014176/CAFE2450

LOS ALAMOS, NM 87545
UNITED STATES US

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 556-8171

REF: 6B010AMR3A0529E00

13

0014176/CAFE2450



FedEx
Express



J09200911302271

1 of 2
TRK# 0201 7209 7850 2282
NN MASTER NN

FRI - 26FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS

Page 14 of 660

2 of 3
MPS# 0263 7209 7850 2466
Mstr# 7209 7850 2455 0201

FRI - 26FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS

ORIGIN ID: SAFA (505) 865-9988
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGG BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 25FEB10
ACTWGT: 40.0 LB MAN
CAD: 0014176/CAFE2450
BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-9171
REF: 6B010AMR2A0515BYDO

170

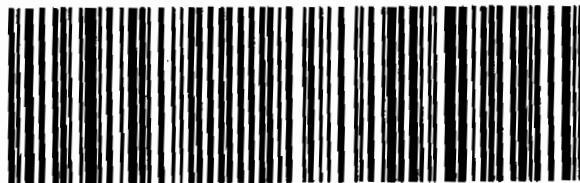


2 of 2
MPS# 0263 7209 7850 2293
Matr# 7209 7850 2282 0201

FRI - 26FEB A1
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US
CHS



Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

Qualifier Explanation

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

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Los Alamos National Laboratory (LANL)
SDG 10-2091**

Method/Analysis Information

Product: AM241
Analytical Method: DOE EML HASL-300, Am-05-RC Modified
Prep Method: Dry Soil Prep
Analytical Batch Number: 962684
Prep Batch Number: 959181

Sample ID	Client ID
248112001	RE15-10-8404
248112002	RE15-10-8396
248112003	RE15-10-8393
248112004	RE15-10-8395
248112005	RE15-10-8398
248112006	RE15-10-8394
248112007	RE15-10-8399
248112008	RE15-10-8397
1202065298	Method Blank (MB)
1202065299	248115001(RE36-10-8448) Sample Duplicate (DUP)
1202065300	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 1202065298 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248115001 (RE36-10-8448). The QC was from LANL work order 248115.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

Data Exception (DER) Documentation

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population.

Blank Decision Level

The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	ISOPU
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	962685
Prep Batch Number:	959181

Sample ID	Client ID
248112001	RE15-10-8404
248112002	RE15-10-8396
248112003	RE15-10-8393
248112004	RE15-10-8395
248112005	RE15-10-8398
248112006	RE15-10-8394
248112007	RE15-10-8399
248112008	RE15-10-8397
1202075072	Method Blank (MB)
1202075073	248115001(RE36-10-8448) Sample Duplicate (DUP)
1202075074	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 1202075072 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248115001 (RE36-10-8448). The QC was from LANL work order 248115.

QC Information

All of the QC samples met the required acceptance limits.

CSU

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

Technical Information:**Holding Time**

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

Sample Re-prep/Re-analysis

Samples 248112001 (RE15-10-8404), 248112002 (RE15-10-8396) and 248112007 (RE15-10-8399) were given additional clean-up steps and recounted in order to improve resolution.

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

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population.

Blank Decision Level

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

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	ISOU
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	962688
Prep Batch Number:	959181

Sample ID	Client ID
248112001	RE15-10-8404
248112002	RE15-10-8396
248112003	RE15-10-8393
248112004	RE15-10-8395
248112005	RE15-10-8398
248112006	RE15-10-8394
248112007	RE15-10-8399
248112008	RE15-10-8397
1202065307	Method Blank (MB)
1202065308	248115001(RE36-10-8448) Sample Duplicate (DUP)
1202065309	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 1202065307 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 248115001 (RE36-10-8448). The QC was from LANL work order 248115.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The U233/234 and U235 blank results are greater than 1.65 times the CSU but less than the MDC.

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

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

Miscellaneous Information:

Data Exception (DER) Documentation

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

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population.

Blank Decision Level

The 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:	959270
Prep Batch Number:	959181

Sample ID	Client ID
248112001	RE15-10-8404
248112002	RE15-10-8396
248112003	RE15-10-8393
248112004	RE15-10-8395
248112005	RE15-10-8398
248112006	RE15-10-8394
248112007	RE15-10-8399
248112008	RE15-10-8397
1202057335	Method Blank (MB)
1202057336	248137001(WST16-10-13288) Sample Duplicate (DUP)
1202057337	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, October 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: 248137001 (WST16-10-13288). The QC was from LANL work order 248137.

QC Information

Refer to Data Exception Report (DER).

CSU

The blank, 1202057335 (MB), result for Cs-137 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. The following DER was generated for this SDG:

DER 803280 was generated due to Other. 1. Failed RER for DUP: Sample 248137001 and Duplicate sample 1202057336 did not meet the required relative error ratio limits for K-40. However, all other nuclides meet the precision requirements. 1. Reporting results.

Additional Comments

Additional comments were not required for this sample set.

Blank Decision Level

The blank, 1202057335 (MB), result for Cs-137 is greater than the decision level but less than the MDC.

Qualifier information

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to high peak-width.	Cesium-137	248112007	RE15-10-8399
UI	Data rejected due to interference.	Bismuth-211	248112001	RE15-10-8404
			248112002	RE15-10-8396
			248112003	RE15-10-8393
			248112004	RE15-10-8395
			248112005	RE15-10-8398
			248112006	RE15-10-8394
			248112007	RE15-10-8399
			248112008	RE15-10-8397
			1202057336	WST16-10-13288(248137001DUP)

UI	Data rejected due to low abundance.	Cadmium-109	248112001	RE15-10-8404
			248112002	RE15-10-8396
			248112003	RE15-10-8393
			248112006	RE15-10-8394
			248112007	RE15-10-8399
			248112008	RE15-10-8397
			1202057336	WST16-10-13288(248137001DUP)
		Radium-224	248112001	RE15-10-8404
			248112002	RE15-10-8396
			248112003	RE15-10-8393
			248112004	RE15-10-8395
			248112005	RE15-10-8398
			248112006	RE15-10-8394
			248112007	RE15-10-8399
			248112008	RE15-10-8397
			1202057336	WST16-10-13288(248137001DUP)
		Cesium-134	248112005	RE15-10-8398
			248112008	RE15-10-8397
			1202057336	WST16-10-13288(248137001DUP)
		Strontium-85	248112002	RE15-10-8396
			248112003	RE15-10-8393
			248112004	RE15-10-8395
			248112005	RE15-10-8398
			248112006	RE15-10-8394
			1202057336	WST16-10-13288(248137001DUP)

Method/Analysis Information

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

Sample ID	Client ID
248112001	RE15-10-8404
248112002	RE15-10-8396
248112003	RE15-10-8393
248112004	RE15-10-8395
248112005	RE15-10-8398
248112006	RE15-10-8394
248112007	RE15-10-8399
248112008	RE15-10-8397
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), 248112001 (RE15-10-8404), 248112002 (RE15-10-8396), 248112003 (RE15-10-8393), 248112005 (RE15-10-8398) and 248112008 (RE15-10-8397) 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

Sample 248112005 (RE15-10-8398) 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:

Reviewer/Date:

 9/26/10

DATA EXCEPTION REPORT

Mo.Day Yr. 12-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: 959270	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 248112(10-2091),248115(10-2094),248137(10-2099)			
Application Issues: Other			
Specification and Requirements Exception Description:		DER Disposition:	
1. Failed RER for DUP: Sample 248137001 and Duplicate sample 1202057336 did not meet the required relative error ratio limits for K-40. However, all other nuclides meet the precision requirements.		1. Reporting results.	

Originator's Name:

Jimmy Hartley

12-MAR-10

Data Validator/Group Leader:

Shenise Euland

13-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: 10-2091 GEL Work Order: 248112

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 26, 2010

Client Sample ID: RE15-10-8404
Sample ID: 248112001
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 9.44%

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	0.00437	0.0227	+/-0.00262	0.050	pCi/g		MXE1	03/24/10	0800	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00169	0.0311	+/-0.00289	0.050	pCi/g		MXE1	03/25/10	2023	962685	2
Plutonium-239/240		0.0271	0.0263	+/-0.00895	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.60	0.128	+/-0.145	0.100	pCi/g		MXE1	03/24/10	1551	962688	4
Uranium-235/236		0.106	0.0781	+/-0.0256	0.100	pCi/g						
Uranium-238		1.94	0.0899	+/-0.170	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0837	0.300	+/-0.0968	0.200	pCi/g		MXR1	03/10/10	1237	959270	5
Bismuth-211	UI	3.77	0.399	+/-0.299		pCi/g						
Bismuth-214		1.06	0.128	+/-0.102	0.200	pCi/g						
Cadmium-109	UI	2.30	1.47	+/-0.507		pCi/g						
Cerium-139	U	-0.0113	0.0566	+/-0.0166	0.050	pCi/g						
Cesium-134	U	0.0748	0.098	+/-0.0265	0.100	pCi/g						
Cesium-137	U	0.0256	0.0765	+/-0.0218	0.100	pCi/g						
Cobalt-60	U	0.00688	0.0654	+/-0.0192	0.100	pCi/g						
Europium-152	U	-0.0117	0.183	+/-0.0632	0.200	pCi/g						
Lanthanum-140	U	0.0387	0.185	+/-0.0535		pCi/g						
Lead-212		1.74	0.101	+/-0.109	0.100	pCi/g						
Lead-214		1.37	0.139	+/-0.115	0.100	pCi/g						
Mercury-203	U	0.0626	0.0861	+/-0.0242	0.100	pCi/g						
Potassium-40		26.7	0.568	+/-1.51	1.00	pCi/g						
Radium-223	U	-0.334	1.17	+/-0.363		pCi/g						
Radium-224	UI	5.35	1.08	+/-0.820		pCi/g						
Radium-226		1.06	0.128	+/-0.102		pCi/g						
Radium-228		1.61	0.250	+/-0.189	0.500	pCi/g						
Ruthenium-106	U	-0.0379	0.573	+/-0.171	0.800	pCi/g						
Sodium-22	U	-0.00536	0.0844	+/-0.0255	0.080	pCi/g						
Strontium-85	U	0.0608	0.0827	+/-0.0264		pCi/g						

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8404
Sample ID: 248112001

Project: LANL01004
Client ID: LANL010

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

Rad Gamma Spec Analysis

GAMMA SPEC "Dry Weight Corrected"

Thallium-208		0.541	0.061	+/-0.0499	0.080	pCi/g						
Thorium-227	U	-0.0508	0.490	+/-0.146		pCi/g						
Thorium-231	U	-0.334	1.17	+/-0.363		pCi/g						
Thorium-234		2.56	2.54	+/-1.29	2.00	pCi/g						
Tin-113	U	-0.0157	0.0826	+/-0.0256	0.100	pCi/g						
Uranium-235	U	-0.019	0.372	+/-0.110	0.500	pCi/g						
Yttrium-88	U	0.0328	0.0673	+/-0.017	0.100	pCi/g						

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium		252	246	+/-79.4	250	pCi/L	KXX2	03/19/10	1424	964052	6	
---------	--	-----	-----	---------	-----	-------	------	----------	------	--------	---	--

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, 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"	81.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	58.5	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	76.1	(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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8404
Sample ID: 248112001

Project: LANL01004
Client ID: LANL010

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

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8396
Sample ID: 248112002
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 8.69%

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	-0.00606	0.0239	+/-0.0031	0.050	pCi/g		MXE1	03/24/10	1612	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00439	0.0291	+/-0.00311	0.050	pCi/g		MXE1	03/25/10	2023	962685	2
Plutonium-239/240	U	-0.00132	0.0246	+/-0.00519	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.62	0.128	+/-0.147	0.100	pCi/g		MXE1	03/24/10	1552	962688	4
Uranium-235/236		0.0951	0.0779	+/-0.0241	0.100	pCi/g						
Uranium-238		1.85	0.0897	+/-0.164	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.140	0.379	+/-0.114	0.200	pCi/g		MXR1	03/10/10	1320	959270	5
Bismuth-211	UI	3.86	0.314	+/-0.265		pCi/g						
Bismuth-214		1.18	0.114	+/-0.0954	0.200	pCi/g						
Cadmium-109	UI	2.17	1.40	+/-0.569		pCi/g						
Cerium-139	U	0.0265	0.0475	+/-0.0135	0.050	pCi/g						
Cesium-134	U	0.0637	0.0832	+/-0.0276	0.100	pCi/g						
Cesium-137	U	-0.0236	0.0676	+/-0.0202	0.100	pCi/g						
Cobalt-60	U	-0.00561	0.0588	+/-0.018	0.100	pCi/g						
Europium-152	U	-0.0731	0.143	+/-0.0443	0.200	pCi/g						
Lanthanum-140	U	0.0224	0.143	+/-0.0417		pCi/g						
Lead-212		1.58	0.0916	+/-0.0854	0.100	pCi/g						
Lead-214		1.40	0.114	+/-0.104	0.100	pCi/g						
Mercury-203	U	0.0467	0.0551	+/-0.0203	0.100	pCi/g						
Potassium-40		26.1	0.569	+/-1.25	1.00	pCi/g						
Radium-223	U	0.0767	1.02	+/-0.335		pCi/g						
Radium-224	UI	4.05	0.982	+/-0.653		pCi/g						
Radium-226		1.18	0.114	+/-0.0954		pCi/g						
Radium-228		1.83	0.202	+/-0.176	0.500	pCi/g						
Ruthenium-106	U	0.261	0.572	+/-0.166	0.800	pCi/g						
Sodium-22	U	0.0143	0.0814	+/-0.0236	0.080	pCi/g						
Strontium-85	UI	0.0728	0.0687	+/-0.0202		pCi/g						
Thallium-208		0.483	0.0578	+/-0.0415	0.080	pCi/g						

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8396
Sample ID: 248112002
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	0.0624	0.403	+/-0.114		pCi/g						
Thorium-231	U	0.0767	1.02	+/-0.335		pCi/g						
Thorium-234		3.22	2.84	+/-1.40	2.00	pCi/g						
Tin-113	U	0.00239	0.0714	+/-0.0211	0.100	pCi/g						
Uranium-235	U	0.141	0.320	+/-0.0918	0.500	pCi/g						
Yttrium-88	U	0.0052	0.0532	+/-0.0159	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
H3 "As Received"												
Tritium		446	244	+/-86.9	250	pCi/L		KXK2	03/19/10	1532	964052	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, 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"	76.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	63.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	76.1	(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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8396
Sample ID: 248112002

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.

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8393
Sample ID: 248112003
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 20.1%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.000214	0.0235	+/-0.00161	0.050	pCi/g		MXE1	03/24/10	1612	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0155	0.0271	+/-0.00655	0.050	pCi/g		MXE1	03/24/10	1707	962685	2
Plutonium-239/240	U	0.00262	0.0229	+/-0.00325	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.576	0.102	+/-0.0619	0.100	pCi/g		MXE1	03/24/10	1552	962688	3
Uranium-235/236	U	0.0224	0.0624	+/-0.012	0.100	pCi/g						
Uranium-238		0.576	0.0718	+/-0.0621	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.00783	0.310	+/-0.101	0.200	pCi/g		MXR1	03/10/10	1320	959270	4
Bismuth-211	UI	3.25	0.365	+/-0.301		pCi/g						
Bismuth-214		0.971	0.130	+/-0.114	0.200	pCi/g						
Cadmium-109	UI	2.49	1.47	+/-0.552		pCi/g						
Cerium-139	U	0.00507	0.0546	+/-0.0167	0.050	pCi/g						
Cesium-134	U	0.0886	0.102	+/-0.0434	0.100	pCi/g						
Cesium-137	U	-0.0513	0.0638	+/-0.0217	0.100	pCi/g						
Cobalt-60	U	-0.0161	0.0694	+/-0.0225	0.100	pCi/g						
Europium-152	U	-0.0435	0.171	+/-0.0553	0.200	pCi/g						
Lanthanum-140	U	-0.0713	0.126	+/-0.0452		pCi/g						
Lead-212		1.51	0.103	+/-0.0999	0.100	pCi/g						
Lead-214		1.18	0.133	+/-0.114	0.100	pCi/g						
Mercury-203	U	0.0064	0.0797	+/-0.0236	0.100	pCi/g						
Potassium-40		34.2	0.623	+/-1.93	1.00	pCi/g						
Radium-223	U	-0.623	1.16	+/-0.375		pCi/g						
Radium-224	UI	3.53	1.11	+/-0.642		pCi/g						
Radium-226		0.971	0.130	+/-0.114		pCi/g						
Radium-228		1.79	0.299	+/-0.219	0.500	pCi/g						
Ruthenium-106	U	-0.151	0.531	+/-0.167	0.800	pCi/g						
Sodium-22	U	0.029	0.107	+/-0.0313	0.080	pCi/g						
Strontium-85	UI	0.0843	0.0822	+/-0.024		pCi/g						
Thallium-208		0.457	0.0647	+/-0.051	0.080	pCi/g						

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8393
Sample ID: 248112003

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	0.153	0.503	+/-0.145		pCi/g					
Thorium-231	U	-0.623	1.16	+/-0.375		pCi/g					
Thorium-234		2.47	2.41	+/-1.05	2.00	pCi/g					
Tin-113	U	-0.0254	0.0835	+/-0.0265	0.100	pCi/g					
Uranium-235	U	0.0743	0.372	+/-0.114	0.500	pCi/g					
Yttrium-88	U	0.0199	0.0652	+/-0.0176	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium	U	84.7	244	+/-73.2	250	pCi/L		KXK2	03/19/10	1639 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"	79.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	71.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	93.8	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8393 Project: LANL01004
Sample ID: 248112003 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.

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8395
Sample ID: 248112004
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 4.41%

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	0.000696	0.0235	+/-0.00273	0.050	pCi/g		MXE1	03/24/10	1612	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0211	0.028	+/-0.00679	0.050	pCi/g		MXE1	03/24/10	1707	962685	2
Plutonium-239/240	U	-0.00185	0.0237	+/-0.00425	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.419	0.0946	+/-0.0484	0.100	pCi/g		MXE1	03/24/10	1552	962688	3
Uranium-235/236	U	0.0166	0.0578	+/-0.0102	0.100	pCi/g						
Uranium-238		0.460	0.0665	+/-0.0514	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.282	0.506	+/-0.156	0.200	pCi/g		MXR1	03/10/10	1321	959270	4
Bismuth-211	UI	3.25	0.449	+/-0.317		pCi/g						
Bismuth-214		0.909	0.149	+/-0.101	0.200	pCi/g						
Cadmium-109	U	1.59	2.19	+/-0.835		pCi/g						
Cerium-139	U	-0.0247	0.0614	+/-0.0194	0.050	pCi/g						
Cesium-134	U	0.0382	0.0973	+/-0.0276	0.100	pCi/g						
Cesium-137	U	0.0515	0.0834	+/-0.0229	0.100	pCi/g						
Cobalt-60	U	-0.0226	0.0731	+/-0.0244	0.100	pCi/g						
Europium-152	U	0.0814	0.216	+/-0.0807	0.200	pCi/g						
Lanthanum-140	U	-0.00455	0.173	+/-0.0527		pCi/g						
Lead-212		1.52	0.127	+/-0.115	0.100	pCi/g						
Lead-214		1.18	0.163	+/-0.120	0.100	pCi/g						
Mercury-203	U	-0.0359	0.0879	+/-0.027	0.100	pCi/g						
Potassium-40		36.8	0.713	+/-2.17	1.00	pCi/g						
Radium-223	U	-1.46	1.35	+/-0.462		pCi/g						
Radium-224	UI	3.99	1.36	+/-0.643		pCi/g						
Radium-226		0.909	0.149	+/-0.101		pCi/g						
Radium-228		1.51	0.292	+/-0.216	0.500	pCi/g						
Ruthenium-106	U	0.349	0.706	+/-0.204	0.800	pCi/g						
Sodium-22	U	0.0408	0.100	+/-0.029	0.080	pCi/g						
Strontium-85	UI	0.115	0.0984	+/-0.030		pCi/g						
Thallium-208		0.419	0.0693	+/-0.0514	0.080	pCi/g						

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8395
Sample ID: 248112004
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	-0.128	0.546	+/-0.164		pCi/g					
Thorium-231	U	-1.46	1.35	+/-0.462		pCi/g					
Thorium-234	U	0.103	4.20	+/-1.23	2.00	pCi/g					
Tin-113	U	-0.0328	0.0965	+/-0.0301	0.100	pCi/g					
Uranium-235	U	0.064	0.439	+/-0.134	0.500	pCi/g					
Yttrium-88	U	-0.023	0.0559	+/-0.0199	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium		345	287	+/-96.2	250	pCi/L		KXK2	03/19/10	0050 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"	78.0	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	74.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	92.3	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8395
Sample ID: 248112004
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.

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8398
Sample ID: 248112005
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 12.8%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.0152	0.0243	+/-0.00544	0.050	pCi/g		MXE1	03/24/10	1612	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0188	0.0266	+/-0.00995	0.050	pCi/g		MXE1	03/24/10	1707	962685	2
Plutonium-239/240	U	0.00281	0.0225	+/-0.00553	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.36	0.149	+/-0.132	0.100	pCi/g		MXE1	03/24/10	1552	962688	3
Uranium-235/236		0.117	0.091	+/-0.0305	0.100	pCi/g						
Uranium-238		1.94	0.105	+/-0.177	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.108	0.253	+/-0.0746	0.200	pCi/g		MXR1	03/10/10	1322	959270	4
Bismuth-211	UI	3.50	0.305	+/-0.233		pCi/g						
Bismuth-214		1.15	0.103	+/-0.0857	0.200	pCi/g						
Cadmium-109	U	1.40	1.45	+/-0.564		pCi/g						
Cerium-139	U	-0.00405	0.0502	+/-0.015	0.050	pCi/g						
Cesium-134	UI	0.106	0.090	+/-0.0389	0.100	pCi/g						
Cesium-137	U	-0.0057	0.0623	+/-0.019	0.100	pCi/g						
Cobalt-60	U	0.0252	0.0679	+/-0.019	0.100	pCi/g						
Europium-152	U	0.0394	0.153	+/-0.0561	0.200	pCi/g						
Lanthanum-140	U	-0.0685	0.121	+/-0.0452		pCi/g						
Lead-212		1.55	0.0967	+/-0.0803	0.100	pCi/g						
Lead-214		1.27	0.111	+/-0.0917	0.100	pCi/g						
Mercury-203	U	0.00657	0.0646	+/-0.0184	0.100	pCi/g						
Potassium-40		25.1	0.505	+/-1.22	1.00	pCi/g						
Radium-223	U	-0.968	1.06	+/-0.341		pCi/g						
Radium-224	UI	3.81	1.04	+/-0.637		pCi/g						
Radium-226		1.15	0.103	+/-0.0857		pCi/g						
Radium-228		1.53	0.236	+/-0.174	0.500	pCi/g						
Ruthenium-106	U	-0.0403	0.489	+/-0.148	0.800	pCi/g						
Sodium-22	U	-0.0119	0.0686	+/-0.0212	0.080	pCi/g						
Strontium-85	UI	0.0967	0.0751	+/-0.0218		pCi/g						
Thallium-208		0.477	0.0567	+/-0.0421	0.080	pCi/g						

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8398
Sample ID: 248112005

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	0.0828	0.431	+/-0.130		pCi/g					
Thorium-231	U	-0.968	1.06	+/-0.341		pCi/g					
Thorium-234	U	0.850	2.30	+/-0.653	2.00	pCi/g					
Tin-113	U	0.0202	0.0732	+/-0.0208	0.100	pCi/g					
Uranium-235	U	0.169	0.349	+/-0.102	0.500	pCi/g					
Yttrium-88	U	0.00847	0.0484	+/-0.0139	0.100	pCi/g					

Rad Liquid Scintillation Analysis

H3 "As Received"

Tritium	U	192	250	+/-78.4	250	pCi/L	KXK2	03/19/10	1747	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"	77.8	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	75.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	61.5	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

** Analyte is a surrogate compound

< Result is less than value reported

> Result is greater than value reported

A The TIC is a suspected aldol-condensation product

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

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

C Analyte has been confirmed by GC/MS analysis

D Results are reported from a diluted aliquot of the sample

F Estimated Value

H Analytical holding time was exceeded

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8398
Sample ID: 248112005

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.

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8394
Sample ID: 248112006
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 10.3%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.003	0.024	+/-0.00202	0.050	pCi/g		MXE1	03/24/10	1612	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0177	0.0281	+/-0.0103	0.050	pCi/g		MXE1	03/24/10	1707	962685	2
Plutonium-239/240	U	-0.00246	0.0238	+/-0.00339	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.732	0.115	+/-0.0764	0.100	pCi/g		MXE1	03/24/10	1552	962688	3
Uranium-235/236	U	0.0603	0.070	+/-0.0193	0.100	pCi/g						
Uranium-238		0.728	0.0806	+/-0.0765	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0252	0.211	+/-0.0672	0.200	pCi/g		MXR1	03/10/10	1323	959270	4
Bismuth-211	UI	2.98	0.319	+/-0.249		pCi/g						
Bismuth-214		1.01	0.104	+/-0.0971	0.200	pCi/g						
Cadmium-109	UI	2.28	1.06	+/-0.467		pCi/g						
Cerium-139	U	-0.0081	0.0468	+/-0.0138	0.050	pCi/g						
Cesium-134	U	0.0344	0.073	+/-0.0215	0.100	pCi/g						
Cesium-137	U	-0.0315	0.0508	+/-0.0164	0.100	pCi/g						
Cobalt-60	U	-0.014	0.0607	+/-0.0197	0.100	pCi/g						
Europium-152	U	-0.0041	0.150	+/-0.0542	0.200	pCi/g						
Lanthanum-140	U	-0.0976	0.118	+/-0.041		pCi/g						
Lead-212		1.52	0.0854	+/-0.112	0.100	pCi/g						
Lead-214		1.08	0.112	+/-0.0953	0.100	pCi/g						
Mercury-203	U	0.0444	0.065	+/-0.0192	0.100	pCi/g						
Potassium-40		32.1	0.470	+/-1.65	1.00	pCi/g						
Radium-223	U	0.527	0.931	+/-0.301		pCi/g						
Radium-224	UI	4.34	0.915	+/-0.700		pCi/g						
Radium-226		1.01	0.104	+/-0.0971		pCi/g						
Radium-228		1.58	0.198	+/-0.175	0.500	pCi/g						
Ruthenium-106	U	0.0307	0.478	+/-0.142	0.800	pCi/g						
Sodium-22	U	-0.0433	0.0654	+/-0.0213	0.080	pCi/g						
Strontium-85	UI	0.0995	0.0721	+/-0.023		pCi/g						
Thallium-208		0.457	0.049	+/-0.038	0.080	pCi/g						

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8394
Sample ID: 248112006

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	-0.148	0.386	+/-0.121		pCi/g					
Thorium-231	U	0.527	0.931	+/-0.301		pCi/g					
Thorium-234		2.85	1.76	+/-0.937	2.00	pCi/g					
Tin-113	U	0.0477	0.0727	+/-0.0207	0.100	pCi/g					
Uranium-235	U	0.0527	0.325	+/-0.0951	0.500	pCi/g					
Yttrium-88	U	0.00836	0.0438	+/-0.0127	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
<i>H3 "As Received"</i>											
Tritium		318	294	+/-96.7	250	pCi/L		KXK2	03/19/10	0325 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"	78.4	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	66.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	82.9	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8394
Sample ID: 248112006

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.

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8399
Sample ID: 248112007
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 11.7%

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	0.00278	0.0225	+/-0.00207	0.050	pCi/g		MXE1	03/24/10	1612	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0044	0.0292	+/-0.00312	0.050	pCi/g		MXE1	03/25/10	2023	962685	2
Plutonium-239/240		0.0286	0.0247	+/-0.00811	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.837	0.109	+/-0.0834	0.100	pCi/g		MXE1	03/24/10	1552	962688	4
Uranium-235/236	U	0.0334	0.0665	+/-0.0128	0.100	pCi/g						
Uranium-238		0.938	0.0765	+/-0.091	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.00516	0.0738	+/-0.0243	0.200	pCi/g		MXR1	03/10/10	1325	959270	5
Bismuth-211	UI	3.56	0.320	+/-0.273		pCi/g						
Bismuth-214		1.20	0.121	+/-0.107	0.200	pCi/g						
Cadmium-109	UI	4.13	0.718	+/-0.407		pCi/g						
Cerium-139	U	0.00681	0.0414	+/-0.0121	0.050	pCi/g						
Cesium-134	U	0.0571	0.0915	+/-0.0255	0.100	pCi/g						
Cesium-137	UI	0.165	0.0617	+/-0.051	0.100	pCi/g						
Cobalt-60	U	-0.000801	0.0758	+/-0.0232	0.100	pCi/g						
Europium-152	U	-0.0695	0.136	+/-0.0424	0.200	pCi/g						
Lanthanum-140	U	-0.00306	0.153	+/-0.0462		pCi/g						
Lead-212		1.67	0.0764	+/-0.109	0.100	pCi/g						
Lead-214		1.29	0.109	+/-0.105	0.100	pCi/g						
Mercury-203	U	0.0228	0.0582	+/-0.0173	0.100	pCi/g						
Potassium-40		33.7	0.593	+/-1.76	1.00	pCi/g						
Radium-223	U	0.0553	0.997	+/-0.328		pCi/g						
Radium-224	UI	5.05	0.820	+/-0.675		pCi/g						
Radium-226		1.20	0.121	+/-0.107		pCi/g						
Radium-228		1.60	0.235	+/-0.185	0.500	pCi/g						
Ruthenium-106	U	-0.301	0.482	+/-0.155	0.800	pCi/g						
Sodium-22	U	0.00228	0.0887	+/-0.0269	0.080	pCi/g						
Strontium-85	U	-0.209	0.0656	+/-0.0286		pCi/g						
Thallium-208		0.501	0.0672	+/-0.0462	0.080	pCi/g						

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8399
Sample ID: 248112007

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	0.00314	0.372	+/-0.114		pCi/g					
Thorium-231	U	0.0553	0.997	+/-0.328		pCi/g					
Thorium-234		1.96	0.743	+/-0.492	2.00	pCi/g					
Tin-113	U	-0.0435	0.0644	+/-0.0208	0.100	pCi/g					
Uranium-235	U	0.0815	0.275	+/-0.0803	0.500	pCi/g					
Yttrium-88	U	0.0231	0.0631	+/-0.0169	0.100	pCi/g					
Rad Liquid Scintillation Analysis											
H3 "As Received"											
Tritium		358	288	+/-97.0	250	pCi/L		KXK2	03/19/10	0407 964052	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, 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"	83.5	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	66.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	84.3	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8399
Sample ID: 248112007

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.

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8397
Sample ID: 248112008
Matrix: R
Collect Date: 22-FEB-10
Receive Date: 26-FEB-10
Collector: Client
Moisture: 6.13%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00138	0.0234	+/-0.0016	0.050	pCi/g		MXE1	03/24/10	1612	962684	1
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0134	0.0254	+/-0.00513	0.050	pCi/g		MXE1	03/24/10	2109	962685	2
Plutonium-239/240	U	0.00383	0.0215	+/-0.00272	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.79	0.142	+/-0.164	0.100	pCi/g		MXE1	03/24/10	1552	962688	3
Uranium-235/236		0.118	0.0867	+/-0.0285	0.100	pCi/g						
Uranium-238		2.68	0.0998	+/-0.232	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0545	0.125	+/-0.0408	0.200	pCi/g		MXR1	03/10/10	1342	959270	4
Bismuth-211	UI	3.81	0.430	+/-0.289		pCi/g						
Bismuth-214		1.15	0.128	+/-0.107	0.200	pCi/g						
Cadmium-109	UI	3.31	1.13	+/-0.537		pCi/g						
Cerium-139	U	0.00472	0.0589	+/-0.0179	0.050	pCi/g						
Cesium-134	UI	0.189	0.116	+/-0.0442	0.100	pCi/g						
Cesium-137	U	0.0207	0.0851	+/-0.0256	0.100	pCi/g						
Cobalt-60	U	0.000323	0.0789	+/-0.0245	0.100	pCi/g						
Europium-152	U	-0.00578	0.203	+/-0.070	0.200	pCi/g						
Lanthanum-140	U	0.0238	0.188	+/-0.055		pCi/g						
Lead-212		1.69	0.110	+/-0.111	0.100	pCi/g						
Lead-214		1.38	0.152	+/-0.112	0.100	pCi/g						
Mercury-203	U	-0.00574	0.0798	+/-0.0238	0.100	pCi/g						
Potassium-40		27.4	0.780	+/-1.30	1.00	pCi/g						
Radium-223	U	-1.57	1.24	+/-0.432		pCi/g						
Radium-224	UI	4.74	1.18	+/-0.820		pCi/g						
Radium-226		1.15	0.128	+/-0.107		pCi/g						
Radium-228		1.90	0.352	+/-0.236	0.500	pCi/g						
Ruthenium-106	U	-0.459	0.588	+/-0.203	0.800	pCi/g						
Sodium-22	U	0.00131	0.0907	+/-0.028	0.080	pCi/g						
Strontium-85	U	0.0196	0.0797	+/-0.0272		pCi/g						
Thallium-208		0.570	0.0723	+/-0.054	0.080	pCi/g						

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8397
Sample ID: 248112008

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	0.203	0.519	+/-0.149		pCi/g						
Thorium-231	U	-1.57	1.24	+/-0.432		pCi/g						
Thorium-234		3.49	1.20	+/-0.742	2.00	pCi/g						
Tin-113	U	0.0529	0.098	+/-0.028	0.100	pCi/g						
Uranium-235	U	0.123	0.405	+/-0.121	0.500	pCi/g						
Yttrium-88	U	0.00867	0.0703	+/-0.0206	0.100	pCi/g						
Rad Liquid Scintillation Analysis												
<i>H3 "As Received"</i>												
Tritium	U	150	245	+/-75.6	250	pCi/L		KXK2	03/19/10	1854	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"	77.1	(50%-105%)
Plutonium-236 Tracer	ISOPU "Dry Weight Corrected"	82.0	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	62.6	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: March 26, 2010

Client Sample ID: RE15-10-8397
Sample ID: 248112008

Project: LANL01004
Client ID: LANL010

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

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

QUALITY CONTROL DATA

GEL LABORATORIES LLC

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

QC Summary

Report Date: March 26, 2010

Page 1 of 6

Client : Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm
Los Alamos, New Mexico
Contact: Ms. Joylene Valdez
Workorder: 248112

Parmname		NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec												
Batch	962684											
QC1202065299	248115001	DUP										
Americium-241			U	-0.00314	U	0.000542	pCi/g	0.353	(0-1)	MXE1	03/24/1020:55	
			TPU:	+/-0.00267		+/-0.00254						
			Yield:	83.8		85.1						
QC1202065300	LCS											
Americium-241		33.1			28.3	pCi/g		85.2	(75%-125%)		03/24/1020:55	
			TPU:		+/-2.10							
			Yield:		95.0							
QC1202065298	MB											
Americium-241				U	-0.00228	pCi/g					03/24/1020:55	
			TPU:		+/-0.00186							
			Yield:		87.9							
Batch	962685											
QC1202075073	248115001	DUP										
Plutonium-238			U	0.012	U	0.0198	pCi/g	0.294	(0-1)	MXE1	03/24/1021:09	
			TPU:	+/-0.00583		+/-0.00748						
			Yield:	70.4		57.1						
Plutonium-239/240			U	-0.00435	U	0.0109	pCi/g	0.540	(0-1)			
			TPU:	+/-0.00775		+/-0.00637						
			Yield:	70.4		57.1						
QC1202075074	LCS											
Plutonium-238					6.07	pCi/g			(75%-125%)			
			TPU:		+/-0.589							
			Yield:		62.2							
Plutonium-239/240		41.8			36.7	pCi/g		87.8	(75%-125%)			
			TPU:		+/-2.75							
			Yield:		62.2							
QC1202075072	MB											
Plutonium-238				U	0.0227	pCi/g					03/24/1021:09	
			TPU:		+/-0.00814							
			Yield:		63.8							
Plutonium-239/240				U	-0.00658	pCi/g						
			TPU:		+/-0.00641							
			Yield:		63.8							
Batch	962688											
QC1202065308	248115001	DUP										
Uranium-233/234				1.14		1.31	pCi/g	0.402	(0-1)	MXE1	03/24/1008:14	
			TPU:	+/-0.107		+/-0.109						
			Yield:	74.2		81.9						
Uranium-235/236			U	0.0541		0.0812	pCi/g	0.385	(0-1)			
			TPU:	+/-0.0168		+/-0.0184						
			Yield:	74.2		81.9						
Uranium-238				1.22		1.24	pCi/g	0.0374	(0-1)			
			TPU:	+/-0.114		+/-0.104						

GEL LABORATORIES LLC

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

QC Summary

Workorder: 248112

Page 2 of 6

Parname		NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec												
Batch	962688											
		Yield:	74.2		81.9							
QC1202065309	LCS											
Uranium-233/234					5.84	pCi/g					03/24/1008:14	
		TPU:			+/-0.508							
		Yield:			98.2							
Uranium-235/236					0.374	pCi/g						
		TPU:			+/-0.0762							
		Yield:			98.2							
Uranium-238		5.75			5.75	pCi/g		100	(75%-125%)			
		TPU:			+/-0.501							
		Yield:			98.2							
QC1202065307	MB											
Uranium-233/234			U		0.0118	pCi/g					03/24/1008:14	
		TPU:			+/-0.00473							
		Yield:			96.4							
Uranium-235/236			U		0.00715	pCi/g						
		TPU:			+/-0.00432							
		Yield:			96.4							
Uranium-238			U		0.00578	pCi/g						
		TPU:			+/-0.0045							
		Yield:			96.4							
Rad Gamma Spec												
Batch	959270											
QC1202057336	248137001	DUP										
Americium-241			U	0.0624	U	0.111	pCi/g	0.149	(0-1)	MXR1	03/10/1015:42	
		TPU:		+/-0.0942		+/-0.069						
Bismuth-211			UI	2.76	UI	3.79	pCi/g	0.933	(0-1)			
		TPU:		+/-0.259		+/-0.292						
Bismuth-214				1.01		1.17	pCi/g	0.422	(0-1)			
		TPU:		+/-0.0984		+/-0.0972						
Cadmium-109			U	1.32	UI	3.86	pCi/g	1.06	(0-1)			
		TPU:		+/-0.670		+/-0.527						
Cerium-139			U	-0.00869	U	0.0185	pCi/g	0.462	(0-1)			
		TPU:		+/-0.0156		+/-0.0138						
Cesium-134			U	0.0363	UI	0.115	pCi/g	0.661	(0-1)			
		TPU:		+/-0.0283		+/-0.031						
Cesium-137			U	0.00439	U	0.0204	pCi/g	0.219	(0-1)			
		TPU:		+/-0.0203		+/-0.0163						
Cobalt-60			U	-0.0402	U	0.00367	pCi/g	0.562	(0-1)			
		TPU:		+/-0.021		+/-0.018						
Europium-152			U	-0.058	U	-0.0411	pCi/g	0.076	(0-1)			
		TPU:		+/-0.0619		+/-0.0491						
Lanthanum-140			U	0.0178	U	-0.0761	pCi/g	0.515	(0-1)			
		TPU:		+/-0.0506		+/-0.0405						
Lead-212				1.35		1.71	pCi/g	0.832	(0-1)			
		TPU:		+/-0.0922		+/-0.125						
Lead-214				1.00		1.38	pCi/g	0.887	(0-1)			
		TPU:		+/-0.0979		+/-0.112						
Mercury-203			U	0.0218	U	0.0226	pCi/g	0.0089	(0-1)			
		TPU:		+/-0.0215		+/-0.0218						

GEL LABORATORIES LLC

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

QC Summary

Workorder: 248112

Page 3 of 6

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	959270										
Potassium-40		37.4		28.7	pCi/g	1.26		(0-1)			
	TPU:	+/-1.99		+/-1.50							
Radium-223	U	-0.188	U	-0.0856	pCi/g	0.0758		(0-1)			
	TPU:	+/-0.352		+/-0.326							
Radium-224	UI	3.08	UI	4.19	pCi/g	0.521		(0-1)			
	TPU:	+/-0.556		+/-0.515							
Radium-226		1.01		1.17	pCi/g	0.422		(0-1)			
	TPU:	+/-0.0984		+/-0.0972							
Radium-228		1.28		1.78	pCi/g	0.661		(0-1)			
	TPU:	+/-0.193		+/-0.183							
Ruthenium-106	U	0.0182	U	-0.0211	pCi/g	0.0654		(0-1)			
	TPU:	+/-0.158		+/-0.143							
Sodium-22	U	-0.0335	U	-0.00854	pCi/g	0.276		(0-1)			
	TPU:	+/-0.026		+/-0.0194							
Strontium-85	U	0.073	UI	0.136	pCi/g	0.633		(0-1)			
	TPU:	+/-0.0276		+/-0.0221							
Thallium-208		0.427		0.523	pCi/g	0.532		(0-1)			
	TPU:	+/-0.0465		+/-0.0433							
Thorium-227	U	-0.00213	U	-0.084	pCi/g	0.161		(0-1)			
	TPU:	+/-0.133		+/-0.122							
Thorium-231	U	-0.188	U	-0.0856	pCi/g	0.0758		(0-1)			
	TPU:	+/-0.352		+/-0.326							
Thorium-234	UI	2.91	U	1.84	pCi/g	0.292		(0-1)			
	TPU:	+/-1.07		+/-0.761							
Tin-113	U	-0.0362	U	-0.00883	pCi/g	0.309		(0-1)			
	TPU:	+/-0.0244		+/-0.0198							
Uranium-235	U	-0.01	U	-0.0535	pCi/g	0.106		(0-1)			
	TPU:	+/-0.108		+/-0.0975							
Yttrium-88	U	-0.00861	U	0.0159	pCi/g	0.380		(0-1)			
	TPU:	+/-0.0173		+/-0.0149							
QC1202057337	LCS										
Americium-241	16.3			13.8	pCi/g		84.8 (75%-125%)			03/10/1015:44	
	TPU:			+/-0.737							
Bismuth-211				2.59	pCi/g						
	TPU:			+/-0.341							
Bismuth-214				1.08	pCi/g						
	TPU:			+/-0.155							
Cadmium-109				38.8	pCi/g						
	TPU:			+/-2.25							
Cerium-139			U	0.0226	pCi/g						
	TPU:			+/-0.0196							
Cesium-134			U	0.0187	pCi/g						
	TPU:			+/-0.0491							
Cesium-137	5.69			6.42	pCi/g		113 (75%-125%)				
	TPU:			+/-0.383							
Cobalt-60	6.50			6.74	pCi/g		104 (75%-125%)				
	TPU:			+/-0.326							
Europium-152			U	-0.0239	pCi/g						
	TPU:			+/-0.0832							
Lanthanum-140			U	-0.0879	pCi/g						
	TPU:			+/-0.0449							

GEL LABORATORIES LLC

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

QC Summary

Workorder: 248112

Page 4 of 6

Partname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch	959270								
Lead-212			1.42	pCi/g					
	TPU:		+/-0.108						
Lead-214			0.941	pCi/g					
	TPU:		+/-0.126						
Mercury-203		U	0.00583	pCi/g					
	TPU:		+/-0.0274						
Potassium-40		U	0.945	pCi/g					
	TPU:		+/-0.301						
Radium-223		U	-0.734	pCi/g					
	TPU:		+/-0.538						
Radium-224			3.83	pCi/g					
	TPU:		+/-0.848						
Radium-226			1.08	pCi/g					
	TPU:		+/-0.155						
Radium-228			1.48	pCi/g					
	TPU:		+/-0.349						
Ruthenium-106		U	0.0481	pCi/g					
	TPU:		+/-0.282						
Sodium-22		U	0.0193	pCi/g					
	TPU:		+/-0.0255						
Strontium-85		U	-0.215	pCi/g					
	TPU:		+/-0.0409						
Thallium-208			0.442	pCi/g					
	TPU:		+/-0.0674						
Thorium-227		U	0.0649	pCi/g					
	TPU:		+/-0.198						
Thorium-231		U	-0.734	pCi/g					
	TPU:		+/-0.538						
Thorium-234		U	0.395	pCi/g					
	TPU:		+/-0.407						
Tin-113		U	0.0435	pCi/g					
	TPU:		+/-0.0381						
Uranium-235		U	-0.118	pCi/g					
	TPU:		+/-0.118						
Yttrium-88		U	0.0427	pCi/g					
	TPU:		+/-0.0279						
QC1202057335 MB									
Americium-241		U	-0.0416	pCi/g					03/10/1015:41
	TPU:		+/-0.0306						
Bismuth-211		U	0.0426	pCi/g					
	TPU:		+/-0.0495						
Bismuth-214		U	0.0145	pCi/g					
	TPU:		+/-0.0223						
Cadmium-109		U	-0.348	pCi/g					
	TPU:		+/-0.158						
Cerium-139		U	0.00343	pCi/g					
	TPU:		+/-0.0059						
Cesium-134		U	0.0035	pCi/g					
	TPU:		+/-0.0118						
Cesium-137		U	0.0193	pCi/g					
	TPU:		+/-0.00885						

GEL LABORATORIES LLC

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

QC Summary

Workorder: 248112

Page 5 of 6

Parname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	959270										
Cobalt-60			U	0.0127	pCi/g						
	TPU:			+/-0.0109							
Europium-152			U	0.0371	pCi/g						
	TPU:			+/-0.0234							
Lanthanum-140			U	-0.0114	pCi/g						
	TPU:			+/-0.0167							
Lead-212			U	0.000168	pCi/g						
	TPU:			+/-0.0162							
Lead-214			U	0.0167	pCi/g						
	TPU:			+/-0.0177							
Mercury-203			U	0.00527	pCi/g						
	TPU:			+/-0.00803							
Potassium-40			U	-0.117	pCi/g						
	TPU:			+/-0.130							
Radium-223			U	-0.249	pCi/g						
	TPU:			+/-0.159							
Radium-224			U	-0.147	pCi/g						
	TPU:			+/-0.157							
Radium-226			U	0.0145	pCi/g						
	TPU:			+/-0.0223							
Radium-228			U	0.030	pCi/g						
	TPU:			+/-0.0342							
Ruthenium-106			U	-0.0105	pCi/g						
	TPU:			+/-0.0887							
Sodium-22			U	0.00592	pCi/g						
	TPU:			+/-0.00945							
Strontium-85			U	-0.047	pCi/g						
	TPU:			+/-0.0149							
Thallium-208			U	-0.00796	pCi/g						
	TPU:			+/-0.011							
Thorium-227			U	-0.048	pCi/g						
	TPU:			+/-0.0711							
Thorium-231			U	-0.249	pCi/g						
	TPU:			+/-0.159							
Thorium-234			U	-0.566	pCi/g						
	TPU:			+/-0.305							
Tin-113			U	0.0141	pCi/g						
	TPU:			+/-0.0108							
Uranium-235			U	0.0077	pCi/g						
	TPU:			+/-0.050							
Yttrium-88			U	-0.0119	pCi/g						
	TPU:			+/-0.00981							
Rad Liquid Scintillation											
Batch	964052										
QC1202068208	248112006	DUP									
Tritium			318	U	188	pCi/L	0.374	(0-1)	KXX2	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						

GEL LABORATORIES LLC

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

QC Summary

Workorder: 248112

Page 6 of 6

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					
	TPU:		+/-73.5						

03/19/1020:02

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#

962 684

Product:

Am

Date:

3/25/10

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

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By:

J. L. M. - 3/25/10

Secondary Review Performed By:

C. J. M. - 3/25/10

3/26
LANL

Am/Cm Que Sheet

08-MAR-10

Batch #: 962684

Analyst: MXE1

First Client Due Date: 26-MAR-10

Internal Due Date: 15-MAR-10

Comments:

Tracer(s): Am241/Cm244

LCS Code(s): Am241/Cm244

Expiration Date: 5/11/10

Vol: 0.1

Vol(s): NA

Vol(s): NA

Spike Isotope(s): Am241/Cm244

LCS Code(s): NA

Expiration Date: NA

Vol(s): NA

Vol(s): NA

Vol(s): NA

Prep Date: 2/11/10

Initials: MW

Pipet ID: 297108

Balance ID: 50410272

Witness: JMO 12/18/10

Web

Sample ID	Client Description	Type	Hazard	Min	Code	CRDL	Matrix	Client	Collection Date	Pos.	Label #	Aliquot (g/1/1)	Am/Cm	Det #
248112001-1	RE15-10-8404	SAMPLE	.05 pCi/g				SOIL	LANL010	22-FEB-10	1	1	1.267	244	
248112002-1	RE15-10-8396	SAMPLE	.05 pCi/g				SOIL	LANL010	22-FEB-10	2	2	1.264	221	
248112003-1	RE15-10-8393	SAMPLE	.05 pCi/g				SOIL	LANL010	22-FEB-10	3	3	1.255	212	
248112004-1	RE15-10-8395	SAMPLE	.05 pCi/g				SOIL	LANL010	22-FEB-10	4	4	1.266	225	
248112005-1	RE15-10-8398	SAMPLE	.05 pCi/g				SOIL	LANL010	22-FEB-10	5	5	1.264	224	
248112006-1	RE15-10-8394	SAMPLE	.05 pCi/g				SOIL	LANL010	22-FEB-10	6	6	1.265	225	
248112007-1	RE15-10-8399	SAMPLE	.05 pCi/g				SOIL	LANL010	22-FEB-10	7	7	1.266	226	
248112008-1	RE15-10-8397	SAMPLE	.05 pCi/g				SOIL	LANL010	22-FEB-10	8	8	1.258	231	
248115001-1	RE36-10-8448	SAMPLE	.05 pCi/g				SOIL	LANL010	22-FEB-10	9	9	1.264	232	
248115002-1	RE36-10-8456	SAMPLE	.05 pCi/g				SOIL	LANL010	22-FEB-10	10	10	1.266	233	
248115003-1	RE36-10-8451	SAMPLE	.05 pCi/g				SOIL	LANL010	22-FEB-10	11	11	1.254	234	
248115004-1	RE36-10-8450	SAMPLE	.05 pCi/g				SOIL	LANL010	22-FEB-10	12	12	1.264	211	
248115005-1	RE36-10-8449	SAMPLE	.05 pCi/g				SOIL	LANL010	22-FEB-10	13	13	1.250	212	
248115006-1	RE36-10-8453	SAMPLE	.05 pCi/g				SOIL	LANL010	22-FEB-10	14	14	1.254	213	
248115007-1	RE36-10-8452	SAMPLE	.05 pCi/g				SOIL	LANL010	22-FEB-10	15	15	1.254	214	
1202065298-1	MB for batch 962684	MB	.05 pCi/g				QC ACCOUNT	QC ACCOUNT		16	16	1.00	215	
1202065299-1	RE36-10-8448(248115001DUP)	DUP	.05 pCi/g				QC ACCOUNT	QC ACCOUNT	22-FEB-10	17	17	1.261	216	
1202065300-1	LCS for batch 962684	LCS	.05 pCi/g				QC ACCOUNT	QC ACCOUNT		18	18	0.102	217	

X SEM 0244-B EXP: 04/30/20

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

Solid Sample Dissolution by: LEACH or DIGESTION

Circle One

Data Reviewed By: JMO 12/18/10

GEL Laboratories LLC, Radiochemistry Division

Page 1 of 1

Blank Correction Report

Batch ID 962684

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Allquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202065299	DUP	Americium-241	1.26 g	0.000542	0.00254	0.0221	-.00180952	pCi/g	NO
1202065300	LCS	Americium-241	0.102 g	28.3	2.10	0.246	-.02235294	pCi/g	NO
1202065298	MB	Americium-241	1.00 g	-0.00228	0.00186	0.0273	-.00228	pCi/g	NO
248112001	RE15-10-8404	Americium-241	1.25 g	0.00437	0.00262	0.0227	-.001824	pCi/g	NO
248112002	RE15-10-8396	Americium-241	1.26 g	-0.00608	0.0031	0.0239	-.00180952	pCi/g	NO
248112003	RE15-10-8393	Americium-241	1.26 g	-0.000214	0.00161	0.0235	-.00180952	pCi/g	NO
248112004	RE15-10-8395	Americium-241	1.27 g	0.000696	0.00273	0.0235	-.00179528	pCi/g	NO
248112005	RE15-10-8398	Americium-241	1.26 g	0.0152	0.00544	0.0243	-.00180952	pCi/g	NO
248112006	RE15-10-8394	Americium-241	1.26 g	-0.003	0.00202	0.024	-.00180952	pCi/g	NO
248112007	RE15-10-8399	Americium-241	1.26 g	0.00278	0.00207	0.0225	-.00180952	pCi/g	NO
248112008	RE15-10-8397	Americium-241	1.26 g	0.00138	0.0016	0.0234	-.00180952	pCi/g	NO
248115001	RE36-10-8448	Americium-241	1.27 g	-0.00314	0.00267	0.0223	-.00179528	pCi/g	NO
248115002	RE36-10-8456	Americium-241	1.26 g	-0.000187	0.00162	0.0237	-.00180952	pCi/g	NO
248115003	RE36-10-8451	Americium-241	1.25 g	0.00149	0.00166	0.0243	-.001824	pCi/g	NO
248115004	RE36-10-8450	Americium-241	1.27 g	0.00979	0.00408	0.0243	-.00179528	pCi/g	NO
248115005	RE36-10-8449	Americium-241	1.25 g	0.00126	0.00154	0.0226	-.001824	pCi/g	NO
248115006	RE36-10-8453	Americium-241	1.26 g	-0.000909	0.00232	0.0238	-.00180952	pCi/g	NO
248115007	RE36-10-8452	Americium-241	1.26 g	-0.0029	0.00186	0.0221	-.00180952	pCi/g	NO

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962684		CHAMBER : 244		LIB FILE : ENV_ALPHA_AM	
SAMPLE ID : S0248112001_AM		DETECTOR S/N : 79437		BKG FILE : B244.CNF;91	
SAMPLE QTY : 1.253 G		AVERAGE %EFFICIENCY : 39.5742		BKG DATE : 21-MAR-2010	
SAMPLE DATE : 22-FEB-2010 00:00:00		COUNT DATE : 24-MAR-2010 08:00:02		BKG LIVE TIME(SEC) : 60000.00	
ANALYST : MXE1		ELAPSED LIVE TIME(SEC) : 43200.00		EFF FILE : W244.CNF;30	
% YIELD : 81.525				CAL DATE : 28-FEB-2010	

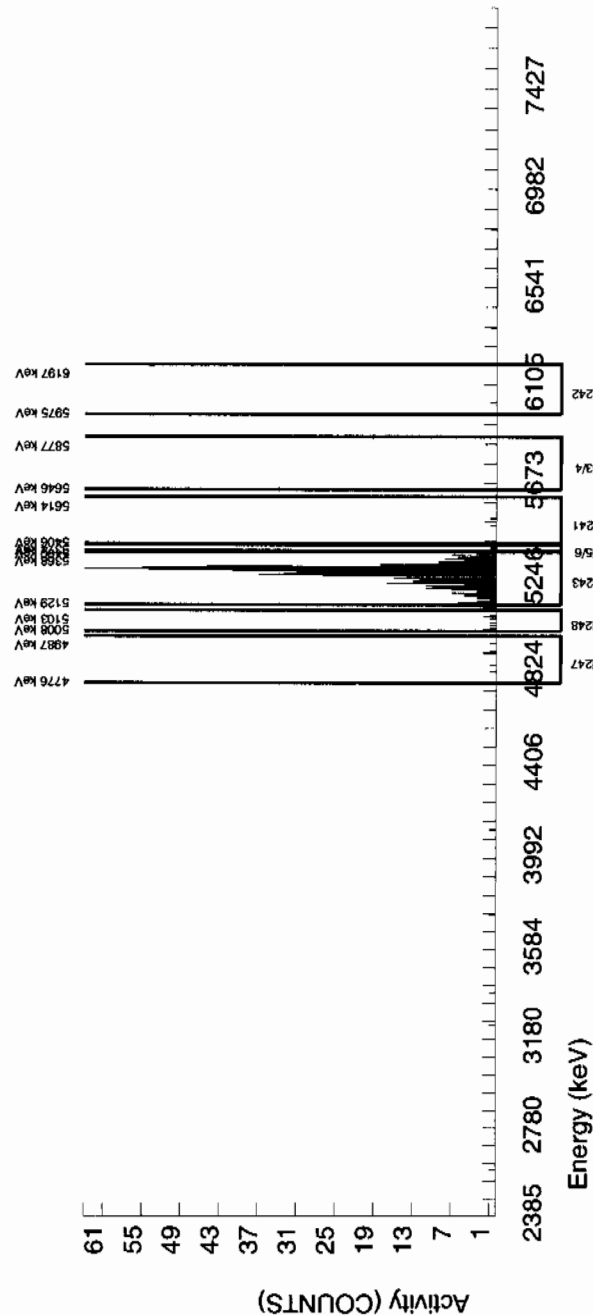
TRACER		MS/MSD		LCS/LCSD	
ID : 445-96-2-SS		ID : 0244-B		ID : 0244-B	
NUCLIDE : AM243		NUCLIDE : AM-241		NUCLIDE : AM-241	
NOMINAL : 2.9166E+00 dpm		NOMINAL : 3.3152E+01 pCi/G		NOMINAL : 3.3152E+01 pCi/G	
RESULTS : 2.3777E+00 dpm					

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5533.697	98.126	4.000	2.824	0.000	2.7707	99.94000	4.37E-03	2.62E-03	9.26E-03	2.27E-02	2.60E-03
AM-243	5270.000	5276.049	38.935	676.000	676.000	0.000	0.0000	99.78000	1.05E+00	7.83E-02	0.00E+00	4.20E-03	4.03E-02
CM-242	6102.000	6034.170	4.906	1.000	1.000	0.000	4.0092	100.0000	1.76E-03	1.77E-03	1.34E-02	3.10E-02	1.76E-03
CM-3/4	5795.020	5761.637	0.000	0.000	-2.160	2.160	4.8510	100.0000	-3.35E-03	2.48E-03	1.62E-02	3.66E-02	2.48E-03
CM-5/6	5386.000	5389.561	14.106	3.000	3.000	0.000	6.1294	86.09000	5.39E-03	3.13E-03	2.38E-02	5.24E-02	3.11E-03
CM-247	4946.000	4902.365	7.206	6.000	6.000	0.000	6.3427	79.30000	1.17E-02	4.84E-03	2.67E-02	5.87E-02	4.78E-03
CM-248	5078.600	5048.678	7.206	8.000	7.280	0.720	11.0244	91.00000	1.24E-02	5.03E-03	4.04E-02	8.55E-02	4.96E-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

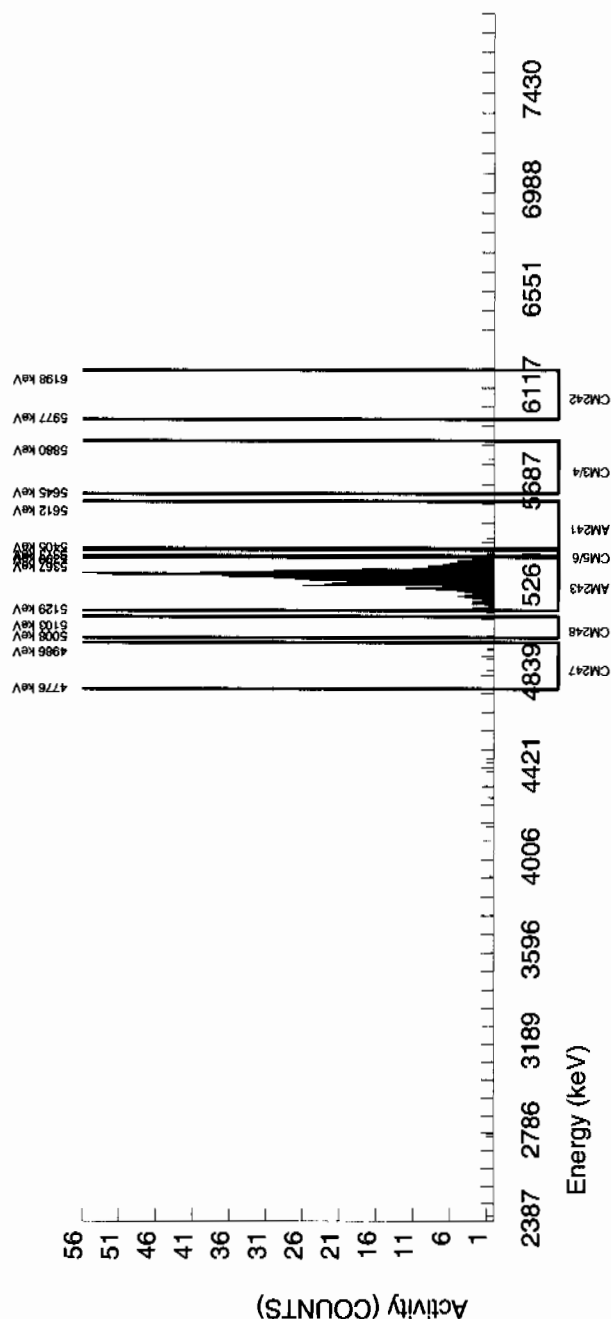
BATCH NUMBER : 962684 SAMPLE ID : S0248112002_AM SAMPLE QTY : 1.257 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 76.761	CHAMBER : 221 DETECTOR S/N : 79414 AVERAGE %EFFICIENCY : 39.7297 COUNT DATE : 24-MAR-2010 16:12:17 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_AM BKG FILE : B221.CNF;91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W221.CNF;30 CAL DATE : 28-FEB-2010
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.2388E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5452.518	4.965	1.000	-3.712	3.600	2.7707	99.94000	-6.06E-03	3.10E-03	9.76E-03	2.39E-02	3.10E-03
AM243	5270.000	5280.927	37.486	639.000	0.000	0.000	0.0000	99.78000	1.05E+00	7.92E-02	0.00E+00	4.43E-03	4.13E-02
CM-242	6102.000	6087.438	0.000	0.000	0.000	0.000	4.0092	100.0000	0.00E+00	1.87E-03	1.41E-02	3.27E-02	1.86E-03
CM-3/4	5795.020	5805.107	4.965	1.000	-1.880	2.880	4.8510	100.0000	-3.08E-03	2.87E-03	1.71E-02	3.86E-02	2.87E-03
CM-5/6	5386.000	5381.604	6.155	6.000	5.280	0.720	6.1294	86.09000	1.00E-02	4.88E-03	2.51E-02	5.53E-02	4.84E-03
CM-247	4946.000	4925.890	99.304	4.000	4.000	0.000	6.3427	79.30000	8.23E-03	4.15E-03	2.82E-02	6.19E-02	4.12E-03
CM-248	5078.600	5018.083	14.896	2.000	2.000	0.000	11.0244	91.00000	3.59E-03	2.55E-03	4.27E-02	9.02E-02	2.54E-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

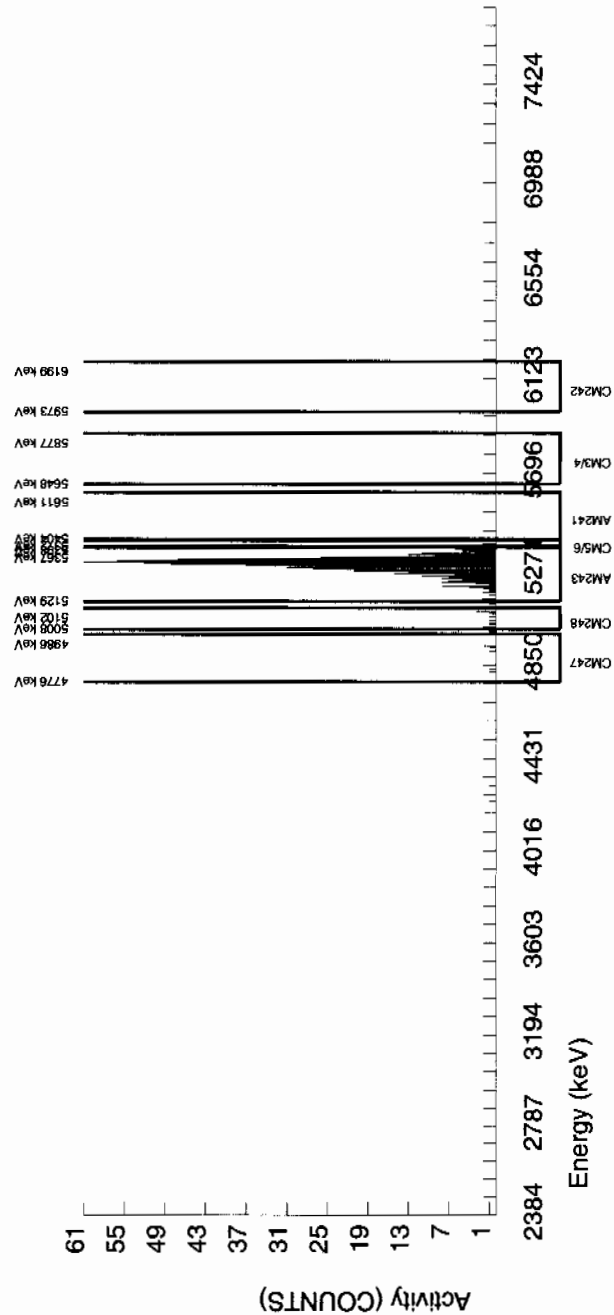


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962684 SAMPLE ID : S0248112003_AM SAMPLE QTY : 1.255 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 79.782				CHAMBER : 222 DETECTOR S/N : 79415 AVERAGE %EFFICIENCY : 38.9602 COUNT DATE : 24-MAR-2010 16:12:18 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B222.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W222.CNF:30 CAL DATE : 28-FEB-2010					
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.3269E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5507.112	0.000	1.000	-0.133	0.000	2.7707	99.94000	-2.14E-04	1.61E-03	9.59E-03	2.35E-02	1.60E-03
AM243	5270.000	5292.716	44.410	652.000	651.280	0.720	0.8485	99.78000	1.05E+00	7.90E-02	2.94E-03	1.02E-02	4.11E-02
CM-242	6102.000	6085.910	0.000	0.000	0.000	0.000	4.0092	100.0000	0.00E+00	1.83E-03	1.39E-02	3.21E-02	1.83E-03
CM-3/4	5795.020	5762.488	0.000	0.000	-1.440	1.440	4.8510	100.0000	-2.32E-03	2.30E-03	1.68E-02	3.79E-02	2.30E-03
CM-5/6	5386.000	5378.241	0.000	20.000	20.000	0.000	6.1294	86.09000	3.73E-02	8.67E-03	2.46E-02	5.43E-02	8.33E-03
CM-247	4946.000	4877.346	110.544	4.000	3.280	0.720	6.3427	79.30000	6.63E-03	4.32E-03	2.77E-02	6.08E-02	4.30E-03
CM-248	5078.600	5063.335	5.025	10.000	10.000	0.000	11.0244	91.00000	1.76E-02	5.69E-03	4.19E-02	8.86E-02	5.57E-03

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 962684 SAMPLE ID : S0248112004_AM SAMPLE QTY : 1.266 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 77.993</p>	<p>CHAMBER : 223 DETECTOR S/N : 79416 AVERAGE %EFFICIENCY : 39.5920 COUNT DATE : 24-MAR-2010 16:12:20 ELAPSED LIVE TIME(SEC) : 43200.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B223.CNF;93 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W223.CNF;30 CAL DATE : 28-FEB-2010</p>
---	---	--

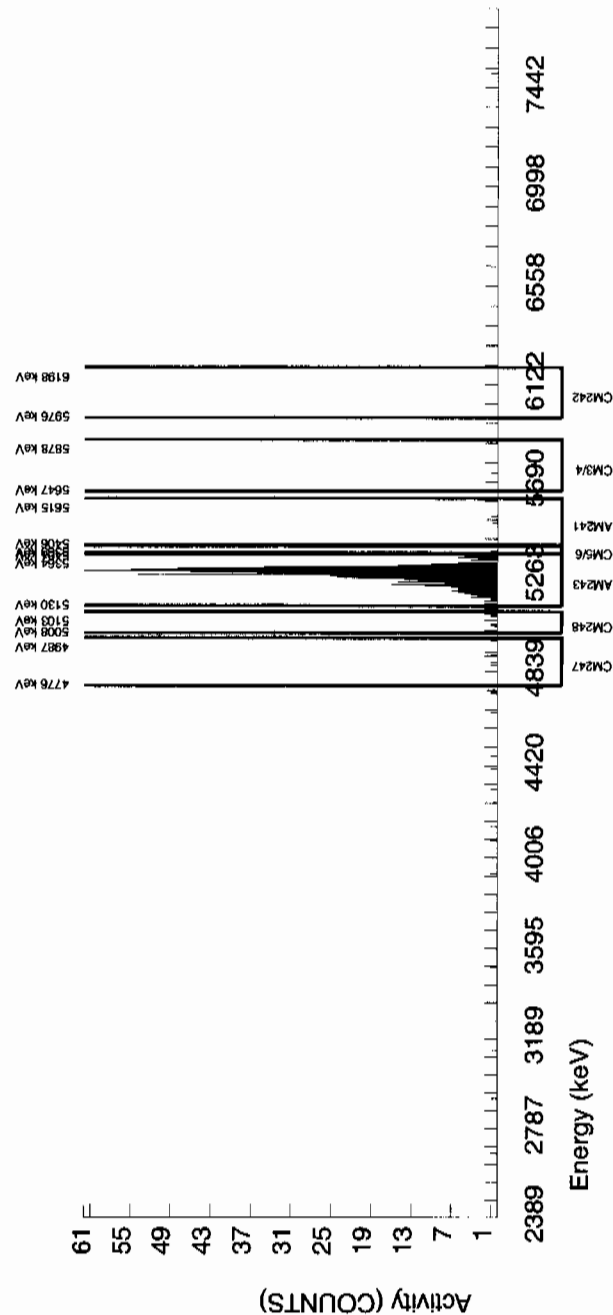
<p>TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.2747E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G</p>
--	---	---

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5525.683	29.676	3.000	0.434	1.440	2.7707	99.94000	6.96E-04	2.73E-03	9.57E-03	2.35E-02	2.73E-03
AM243	5270.000	5278.112	35.741	647.000	647.000	0.000	0.0000	99.78000	1.04E+00	7.84E-02	0.00E+00	4.35E-03	4.08E-02
CM-242	6102.000	6086.428	0.000	1.000	1.000	0.000	4.0092	100.00000	1.83E-03	1.83E-03	1.38E-02	3.20E-02	1.83E-03
CM-3/4	5795.020	5732.996	4.946	1.000	0.280	0.720	4.8510	100.00000	4.50E-04	1.98E-03	1.67E-02	3.78E-02	1.98E-03
CM-5/6	5386.000	5375.731	7.264	4.000	4.000	0.000	6.1294	86.09000	7.44E-03	3.75E-03	2.46E-02	5.42E-02	3.72E-03
CM-247	4946.000	4902.635	7.264	7.000	7.000	0.000	6.3427	79.30000	1.41E-02	5.42E-03	2.76E-02	6.07E-02	5.34E-03
CM-248	5078.600	5068.569	76.663	12.000	12.000	0.000	11.0244	91.00000	2.11E-02	6.24E-03	4.18E-02	8.84E-02	6.09E-03

NOTES:

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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962684		CHAMBER : 224		LIB FILE : ENV_ALPHA_AM	
SAMPLE ID : S0248112005_AM		DETECTOR S/N : 79417		BKG FILE : B224.CNF:91	
SAMPLE QTY : 1.264 G		AVERAGE %EFFICIENCY : 38.4049		BKG DATE : 21-MAR-2010	
SAMPLE DATE : 22-FEB-2010 00:00:00		COUNT DATE : 24-MAR-2010 16:12:23		BKG LIVE TIME(SEC) : 60000.00	
ANALYST : MXE1		ELAPSED LIVE TIME(SEC) : 43200.00		EFF FILE : W224.CNF:30	
% YIELD : 77.794				CAL DATE : 28-FEB-2010	

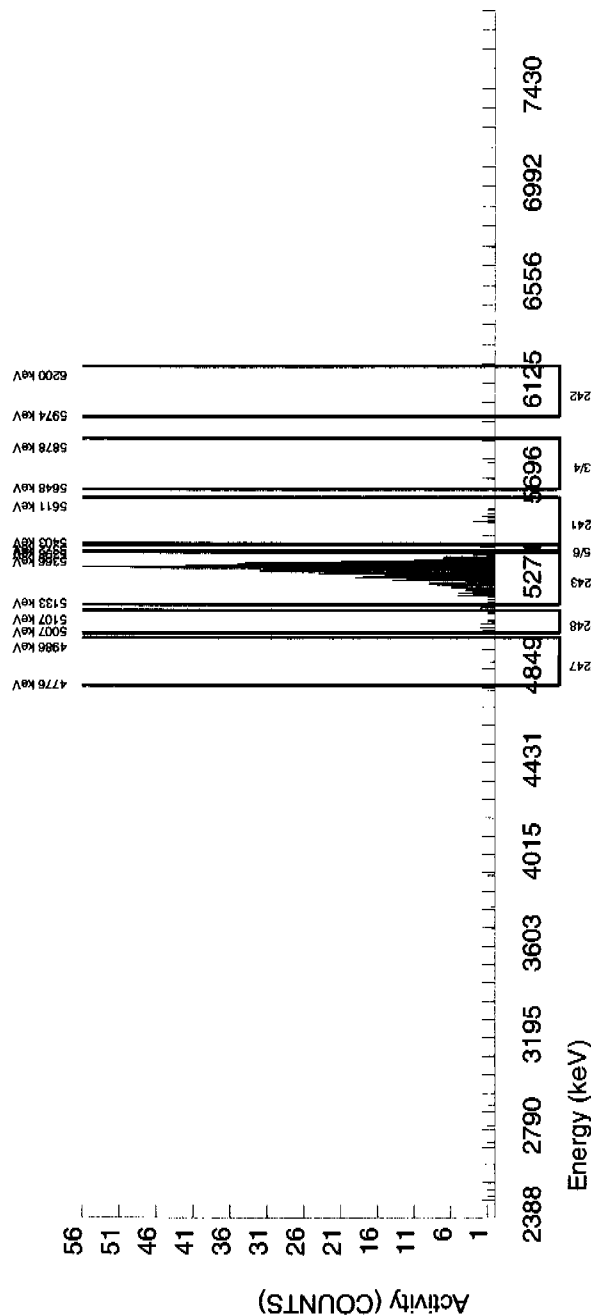
TRACER	MS/MSD	LCS/LCSD
ID : 445-96-2-SS	ID : 0244-B	ID : 0244-B
NUCLIDE : AM243	NUCLIDE : AM-241	NUCLIDE : AM-241
NOMINAL : 2.9166E+00 dpm	NOMINAL : 3.3152E+01 pCi/g	NOMINAL : 3.3152E+01 pCi/g
RESULTS : 2.2689E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
AM-241	5479.150	5519.356	7.503	11.000	9.191	0.720	2.7707	99.94000	1.52E-02	5.44E-03	9.91E-03	2.43E-02	5.35E-03
AM243	5270.000	5286.535	44.411	626.000	626.000	0.000	0.0000	99.78000	1.04E+00	7.92E-02	0.00E+00	4.50E-03	4.15E-02
CM-242	6102.000	6087.003	0.000	0.000	0.000	0.000	4.0092	100.0000	0.00E+00	1.89E-03	1.43E-02	3.31E-02	1.89E-03
CM-3/4	5795.020	5770.866	5.002	1.000	1.000	0.000	4.8510	100.0000	1.66E-03	1.67E-03	1.73E-02	3.92E-02	1.66E-03
CM-5/6	5386.000	5376.915	0.000	16.000	15.280	0.720	6.1294	86.09000	2.94E-02	8.05E-03	2.54E-02	5.61E-02	7.82E-03
CM-247	4946.000	4935.810	0.000	2.000	1.280	0.720	6.3427	79.30000	2.67E-03	3.32E-03	2.86E-02	6.28E-02	3.32E-03
CM-248	5078.600	5061.209	0.000	13.000	13.000	0.000	11.0244	91.00000	2.37E-02	6.74E-03	4.33E-02	9.15E-02	6.56E-03

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 962684 SAMPLE ID : S024812006_AM SAMPLE QTY : 1.255 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 78.423</p>	<p>CHAMBER : 225 DETECTOR S/N : 79418 AVERAGE %EFFICIENCY : 38.8004 COUNT DATE : 24-MAR-2010 16:12:26 ELAPSED LIVE TIME(SEC) : 43200.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B225.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W225.CNF:30 CAL DATE : 28-FEB-2010</p>
---	---	---

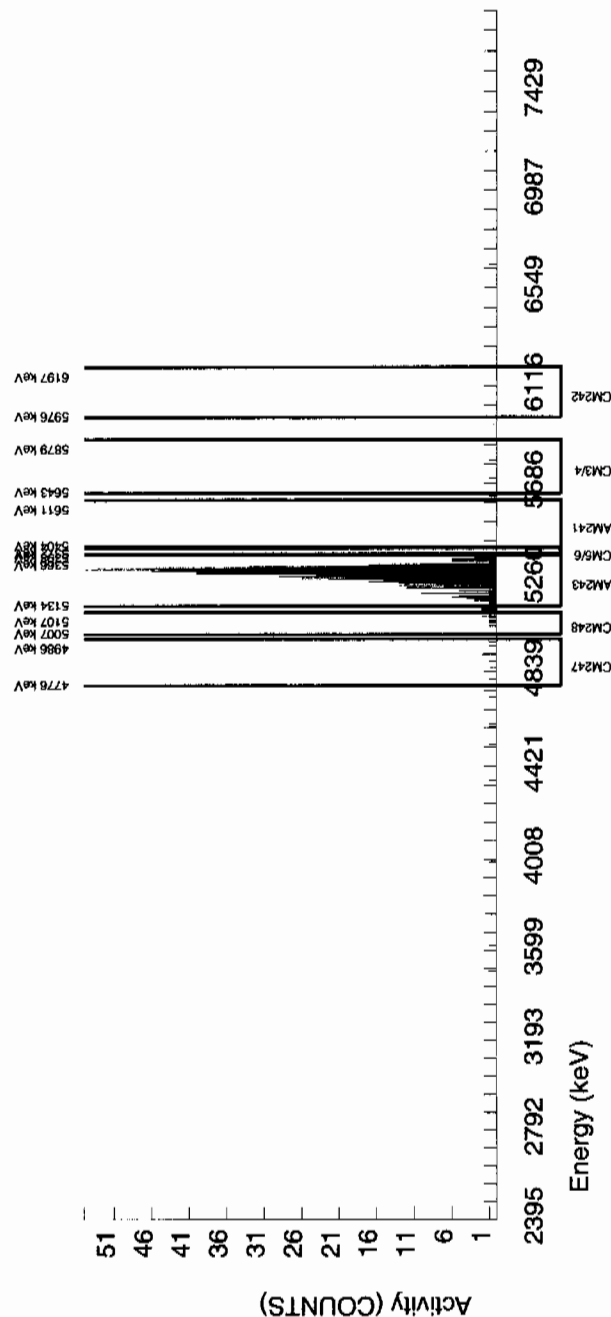
<p>TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.2872E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/g</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/g</p>
---	---	---

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/g	TPU 1-SIGMA	DLC pCi/g	MDC pCi/g	UNC pCi/g
AM-241	5479.150	5507.276	0.000	0.000	-1.829	0.720	2.7707	99.94000	-3.00E-03	2.02E-03	9.80E-03	2.40E-02	2.02E-03
AM243	5270.000	5282.208	42.023	639.000	637.560	1.440	1.2000	99.78000	1.05E+00	7.94E-02	4.25E-03	1.30E-02	4.15E-02
CM-242	6102.000	6085.963	0.000	0.000	0.000	0.000	4.0092	100.0000	0.00E+00	1.87E-03	1.42E-02	3.28E-02	1.87E-03
CM-3/4	5795.020	5752.851	79.027	2.000	1.280	0.720	4.8510	100.0000	2.10E-03	2.61E-03	1.71E-02	3.87E-02	2.61E-03
CM-5/6	5386.000	5378.090	0.000	10.000	10.000	0.000	6.1294	86.09000	1.90E-02	6.14E-03	2.52E-02	5.55E-02	6.02E-03
CM-247	4946.000	4906.332	4.939	7.000	7.000	0.000	6.3427	79.30000	1.45E-02	5.55E-03	2.83E-02	6.21E-02	5.47E-03
CM-248	5078.600	5067.858	4.939	9.000	9.000	0.000	11.0244	91.00000	1.62E-02	5.50E-03	4.28E-02	9.05E-02	5.40E-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

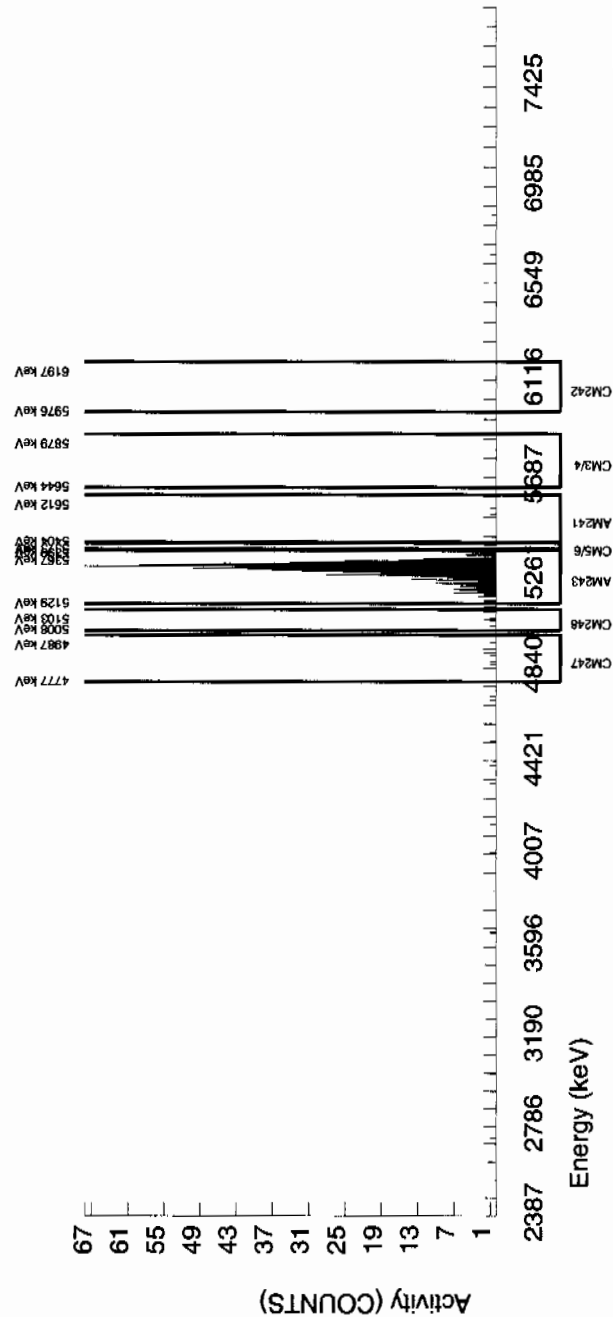


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962684 SAMPLE ID : S0248112007_AM SAMPLE QTY : 1.256 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 83.539				CHAMBER : 226 DETECTOR S/N : 79419 AVERAGE %EFFICIENCY : 38.9218 COUNT DATE : 24-MAR-2010 16:12:28 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B226.CNF;91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W226.CNF;30 CAL DATE : 28-FEB-2010					
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.4365E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5507.221	124.274	3.000	1.815	0.000	2.7707	99.94000	2.78E-03	2.07E-03	9.16E-03	2.25E-02	2.07E-03
AM243	5270.000	5285.177	37.099	682.000	681.280	0.720	0.8485	99.78000	1.05E+00	7.79E-02	2.81E-03	9.78E-03	4.01E-02
CM-242	6102.000	6086.214	0.000	0.000	0.000	0.000	4.0092	100.0000	0.00E+00	1.75E-03	1.33E-02	3.07E-02	1.75E-03
CM-3/4	5795.020	5761.538	0.000	0.000	0.000	0.000	4.8510	100.0000	0.00E+00	1.54E-03	1.60E-02	3.62E-02	1.54E-03
CM-5/6	5386.000	5381.334	10.014	17.000	17.000	0.000	6.1294	86.09000	3.03E-02	7.59E-03	2.35E-02	5.19E-02	7.34E-03
CM-247	4946.000	4880.887	4.971	8.000	8.000	0.000	6.3427	79.30000	1.55E-02	5.55E-03	2.64E-02	5.81E-02	5.46E-03
CM-248	5078.600	5062.832	9.942	9.000	9.000	0.000	11.0244	91.00000	1.52E-02	5.14E-03	4.00E-02	8.46E-02	5.05E-03

NOTES:

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

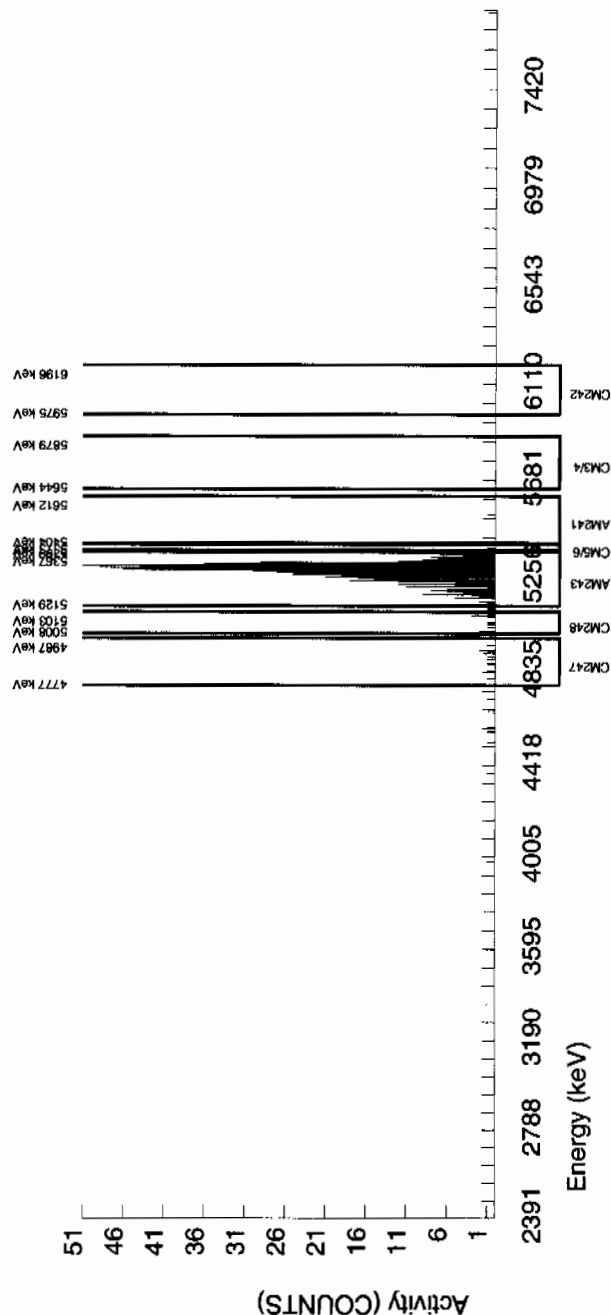


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962684 SAMPLE ID : S0248112008_AM SAMPLE QTY : 1.258 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 77.141				CHAMBER : 231 DETECTOR S/N : 79424 AVERAGE %EFFICIENCY : 40.4350 COUNT DATE : 24-MAR-2010 16:12:30 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_AM BKG FILE : B231.CNF:91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W231.CNF:30 CAL DATE : 28-FEB-2010					
TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.2499E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5529.159	19.778	2.000	0.863	0.000	2.7707	99.94000	1.38E-03	1.60E-03	9.54E-03	2.34E-02	1.60E-03
AM243	5270.000	5283.838	43.781	655.000	653.560	1.440	1.2000	99.78000	1.04E+00	7.87E-02	4.14E-03	1.26E-02	4.09E-02
CM-242	6102.000	6085.672	0.000	0.000	0.000	0.000	4.0092	100.0000	0.00E+00	1.82E-03	1.38E-02	3.19E-02	1.82E-03
CM-3/4	5795.020	5761.126	0.000	0.000	-2.160	2.160	4.8510	100.0000	-3.46E-03	2.56E-03	1.67E-02	3.77E-02	2.56E-03
CM-5/6	5386.000	5379.575	0.000	15.000	15.000	0.000	6.1294	86.09000	2.78E-02	7.39E-03	2.45E-02	5.40E-02	7.17E-03
CM-247	4946.000	4899.970	7.262	10.000	9.280	0.720	6.3427	79.30000	1.87E-02	6.63E-03	2.75E-02	6.05E-02	6.52E-03
CM-248	5078.600	5064.935	69.225	14.000	13.280	0.720	11.0244	91.00000	2.33E-02	6.84E-03	4.17E-02	8.81E-02	6.68E-03

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 962684 SAMPLE ID : S0248115001_AM SAMPLE QTY : 1.267 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 83.820</p>	<p>CHAMBER : 232 DETECTOR S/N : 79425 AVERAGE %EFFICIENCY : 38.7095 COUNT DATE : 24-MAR-2010 16:12:33 ELAPSED LIVE TIME(SEC) : 43200.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B232.CNF;93 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W232.CNF;30 CAL DATE : 28-FEB-2010</p>
---	---	--

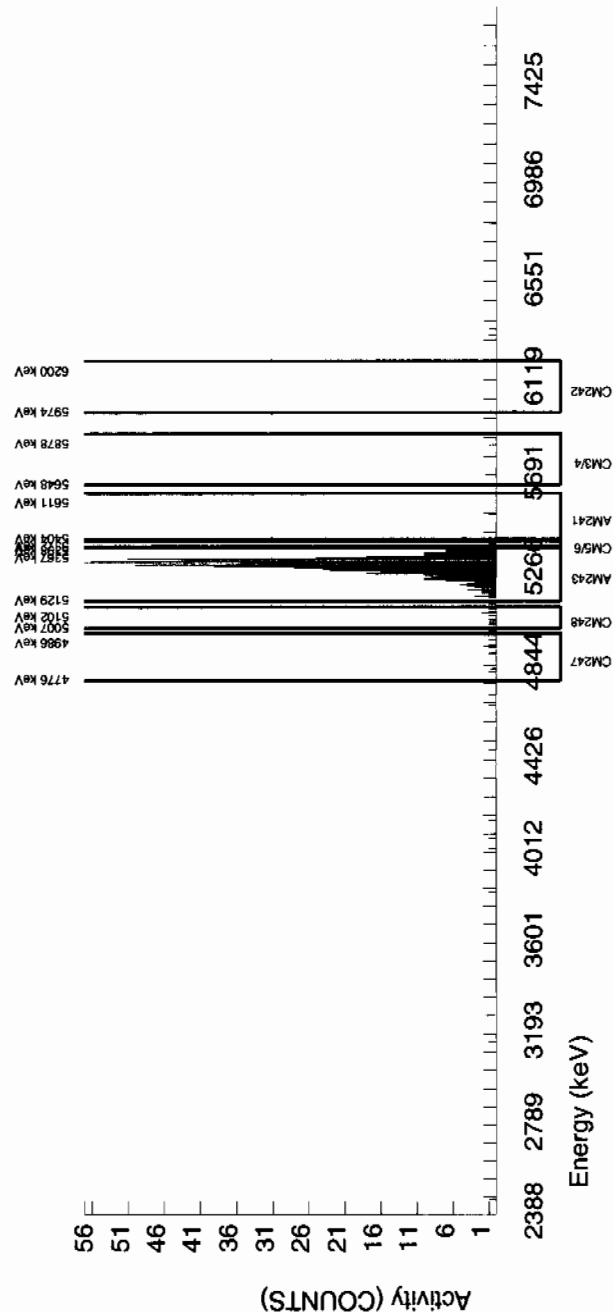
<p>TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.4446E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/g</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3152E+01 pCi/g</p>
--	---	---

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	5462.018	0.000	2.000	-2.063	2.880	2.7707	99.94000	-3.14E-03	2.67E-03	9.10E-03	2.23E-02	2.67E-03
AM243	5270.000	5292.780	43.222	682.000	679.840	2.160	1.4697	99.78000	1.04E+00	7.74E-02	4.84E-03	1.38E-02	3.99E-02
CM-242	6102.000	6086.992	0.000	0.000	0.000	0.000	4.0092	100.0000	0.00E+00	1.74E-03	1.32E-02	3.05E-02	1.74E-03
CM-3/4	5795.020	5835.048	4.988	1.000	1.000	0.000	4.8510	100.0000	1.53E-03	1.53E-03	1.59E-02	3.60E-02	1.53E-03
CM-5/6	5386.000	5380.867	6.414	17.000	16.280	0.720	6.1294	86.09000	2.88E-02	7.62E-03	2.34E-02	5.15E-02	7.40E-03
CM-247	4946.000	4907.945	4.988	10.000	9.280	0.720	6.3427	79.30000	1.78E-02	6.33E-03	2.63E-02	5.77E-02	6.22E-03
CM-248	5078.600	5067.905	7.326	10.000	8.560	1.440	11.0244	91.00000	1.43E-02	5.63E-03	3.98E-02	8.41E-02	5.56E-03

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 962684 SAMPLE ID : S1202065298_AM SAMPLE QTY : 1.000 G SAMPLE DATE : 17-MAR-2010 00:00:00 ANALYST : MXE1 % YIELD : 87.939</p>	<p>CHAMBER : 215 DETECTOR S/N : 79468 AVERAGE %EFFICIENCY : 38.2619 COUNT DATE : 24-MAR-2010 20:55:13 ELAPSED LIVE TIME(SEC) : 43200.00</p>	<p>LIB FILE : ENV_ALPHA_AM BKG FILE : B215.CNF;91 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W215.CNF;35 CAL DATE : 28-FEB-2010</p>
--	---	---

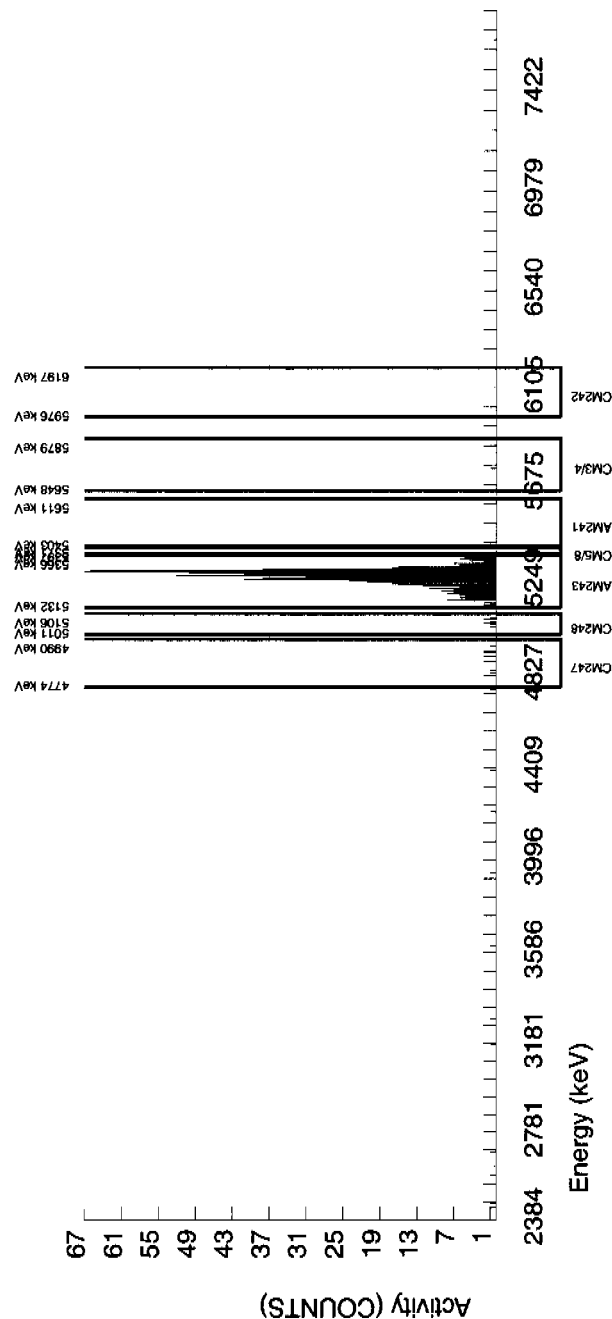
<p>TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9165E+00 dpm RESULTS : 2.5648E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3149E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3149E+01 pCi/G</p>
--	--	--

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5506.689	0.000	0.000	-1.227	0.000	2.7707	99.94000	-2.28E-03	1.86E-03	1.11E-02	2.73E-02	1.86E-03
AM243	5270.000	5274.015	42.198	705.000	705.000	0.000	0.0000	99.78000	1.31E+00	9.70E-02	0.00E+00	5.05E-03	4.95E-02
CM-242	6102.000	6086.557	0.000	0.000	0.000	0.000	4.0092	100.0000	0.00E+00	1.93E-03	1.61E-02	3.72E-02	1.92E-03
CM-3/4	5795.020	5750.042	4.929	1.000	1.000	0.000	4.8510	100.0000	1.86E-03	1.86E-03	1.95E-02	4.40E-02	1.86E-03
CM-5/6	5386.000	5372.234	0.000	4.000	4.000	0.000	6.1294	86.09000	8.64E-03	4.35E-03	2.86E-02	6.30E-02	4.32E-03
CM-247	4946.000	4919.826	49.291	10.000	9.280	0.720	6.3427	79.30000	2.18E-02	7.73E-03	3.21E-02	7.05E-02	7.60E-03
CM-248	5078.600	5061.748	0.000	11.000	11.000	0.000	11.0244	91.00000	2.25E-02	6.93E-03	4.86E-02	1.03E-01	6.78E-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	: 962684
SAMPLE ID	: S1202065299_AM
SAMPLE QTY	: 1.261 G
SAMPLE DATE	: 22-FEB-2010 00:00:00
ANALYST	: MXE1
% YIELD	: 85.146

CHAMBER : 216
DETECTOR S/N : 79195
AVERAGE %EFFICIENCY : 38.6826
COUNT DATE : 24-MAR-2010 20:55:16
ELAPSED LIVE TIME(SEC) : 43200.00

```
LIB FILE : ENV_ALPHA_AM
BKG FILE : B216.CNF;91
BKG DATE : 21-MAR-2010
BKG LIVE TIME(SEC) : 60000.00
EFF FILE : W216.CNF;30
CAL DATE : 28-FEB-2010
```

TRACER	:	445-96-2-SS
ID	:	AM243
NUCLIDE	:	2.9165E+00
NOMINAL	:	2.4833E+00
RESULTS	:	

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

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

NUCLIDE ACTIVITY SUMMARY

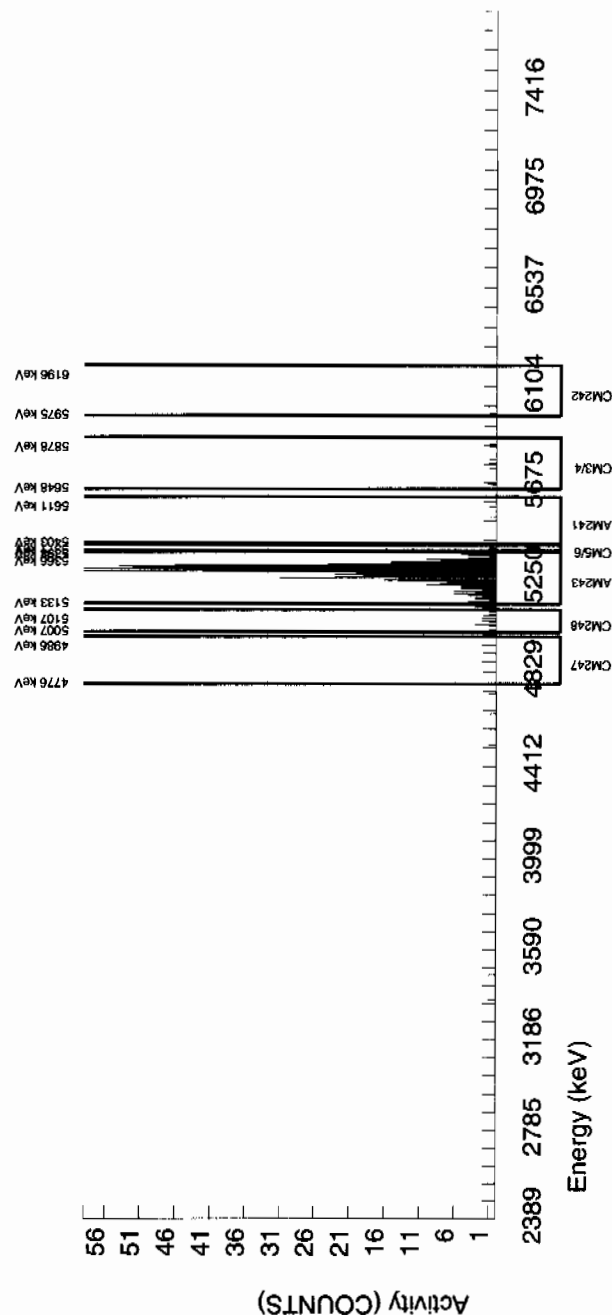
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5537.891	64.071	3.000	0.359	1.440	2.7707	99.94000	5.42E-04	2.54E-03	9.01E-03	2.21E-02	2.54E-03
AM243	5270.000	5279.370	58.341	693.000	690.120	2.880	1.6971	99.78000	1.04E+00	7.75E-02	5.53E-03	1.51E-02	3.98E-02
CM-242	6102.000	5990.912	4.929	1.000	0.280	0.720	4.0092	100.0000	4.81E-04	2.12E-03	1.30E-02	3.01E-02	2.12E-03
CM-3/4	5795.020	5799.881	172.499	6.000	6.000	0.000	4.8510	100.0000	9.07E-03	3.75E-03	1.58E-02	3.56E-02	3.70E-03
CM-5/6	5386.000	5376.266	0.000	12.000	12.000	0.000	6.1294	86.09000	2.10E-02	6.21E-03	2.31E-02	5.10E-02	6.06E-03
CM-247	4946.000	4889.358	73.928	5.000	5.000	0.000	6.3427	79.30000	9.50E-03	4.29E-03	2.60E-02	5.71E-02	4.25E-03
CM-248	5078.600	5067.677	0.000	17.000	15.560	1.440	11.0244	91.00000	2.58E-02	7.22E-03	3.94E-02	8.32E-02	7.03E-03

NOTES:

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

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

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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

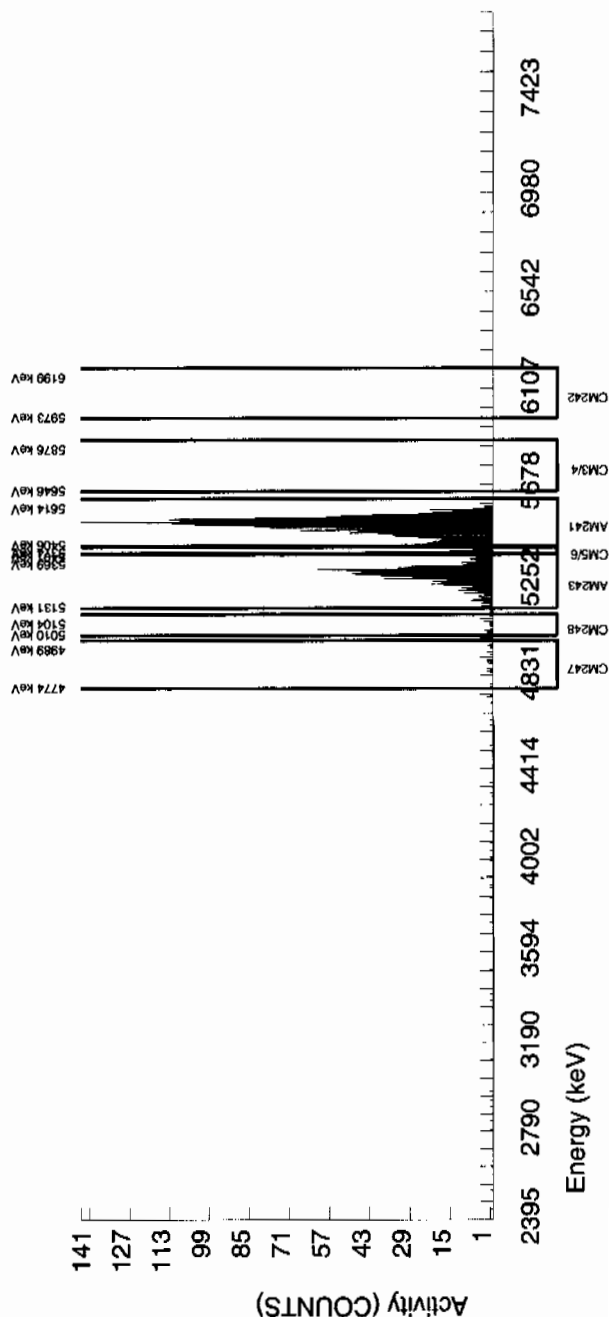
BATCH NUMBER : 962684				CHAMBER : 217				LIB FILE : ENV_ALPHA_AM					
SAMPLE ID : S1202065300_AM				DETECTOR S/N : 79410				BKG FILE : B217.CNF:93					
SAMPLE QTY : 0.102 G				AVERAGE %EFFICIENCY : 38.4865				BKG DATE : 21-MAR-2010					
SAMPLE DATE : 17-MAR-2010 00:00:00				COUNT DATE : 24-MAR-2010 20:55:19				BKG LIVE TIME(SEC) : 60000.00					
ANALYST : MXE1				ELAPSED LIVE TIME(SEC) : 43200.00				EFF FILE : W217.CNF:32					
% YIELD : 95.025								CAL DATE : 28-FEB-2010					
TRACER				MS/MSD				LCS/LCSD					
ID : 445-96-2-SS				ID : 0244-B				ID : 0244-B					
NUCLIDE : AM243				NUCLIDE : AM-241				NUCLIDE : AM-241					
NOMINAL : 2.9165E+00 dpm				NOMINAL : 3.3149E+01 pCi/G				NOMINAL : 3.3149E+01 pCi/G					
RESULTS : 2.7714E+00 dpm													
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
AM-241	5479.150	5502.780	42.664	1689.000	1686.227	1.440	2.7707	99.94000	2.83E+01	2.10E+00	1.00E-01	2.46E-01	6.90E-01
AM243	5270.000	5280.697	47.500	767.000	766.280	0.720	0.8485	99.78000	1.29E+01	1.02E+00	3.08E-02	1.07E-01	4.66E-01
CM-242	6102.000	6085.900	0.000	0.000	0.000	0.000	4.0092	100.0000	0.00E+00	1.74E-02	1.45E-01	3.36E-01	1.74E-02
CM-3/4	5795.020	5760.637	0.000	0.000	-0.720	0.720	4.8510	100.0000	-1.21E-02	2.07E-02	1.76E-01	3.96E-01	2.07E-02
CM-5/6	5386.000	5388.135	0.000	53.000	52.280	0.720	6.1294	86.09000	1.02E+00	1.59E-01	2.58E-01	5.68E-01	1.43E-01
CM-247	4946.000	4903.391	117.891	24.000	23.280	0.720	6.3427	79.30000	4.92E-01	1.10E-01	2.89E-01	6.36E-01	1.05E-01
CM-248	5078.600	5056.421	0.000	21.000	21.000	0.000	11.0244	91.00000	3.87E-01	8.87E-02	4.38E-01	9.27E-01	8.45E-02

NOTES:

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

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

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



Radiochemistry Batch Checklist, Rev10

Batch# 962685 Product: pu Date: 3/26/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			NA
Samples have been blank corrected (if required)	/		
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	/		
Instrument source check is within limits.	/		
Instrument bkg check is within limits.	/		
Method RDL/ LLD has been met.	/		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	/		
Or meets the client's required RER acceptance criteria.	/		
Tracer yield is 15-125% . Carrier yield 25-125%.	/		
Or meets the client's contract acceptance criteria.	/		
Method blank is less than the RDL/ LLD. (If rad samples, < 5% of lowest activity)	/		Case Narrative
Sample was run within hold time.	/		
Sample was correctly preserved if required.	/		
Smears Taken for Radioactive batches.	3/23/10		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	/		
Hlt notification complete (if necessary)	/		NA
Batch entered into Case Narrative.	/		
Batch Data Exception Reports (DER) completed, if applicable.	/		NA
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.	/		NA
Aliquot Correction completed if required.	/		NA
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	/		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: [Signature] 3/26/10Secondary Review Performed By: [Signature] 3/26/103/18-3/26
CAN

Plutonium Que Sheet

18-MAR-10

Batch #: 962685

Analyst: MXE1 First Client Due Date: 26-MAR-10

Internal Due Date: 15-MAR-10

Tracer Isotope(s): Pu-242/Pu-238 Tracer Code: 1430-6

Expiration Date: 3/4/11

Vol: 0.1

LCS Isotope(s): Pu-239/Pu-238 LCS Code: 1430-6

Expiration Date: 3/4/11

Vol: 1

Spike Isotope(s): Pu-239/Pu-238 Spike Code: 1430-6

Expiration Date: 3/4/11

Vol: 1

Prep Date: 3/18/10 Initials: *me*

Pipet ID: 2471058

Balance ID: 50409272

Witness: TXD 3/18/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Aliquot (g/1/1)	Pu Det #
248112001-1	RE15-10-8404	SAMPLE	.05 pCi/g		SOIL	LANL010	22-FEB-10	1	1	1.253	43 25
248112002-1	RE15-10-8396	SAMPLE	.05 pCi/g		SOIL	LANL010	22-FEB-10	2	2	1.257	44 26
248112003-1	RE15-10-8393	SAMPLE	.05 pCi/g		SOIL	LANL010	22-FEB-10	3	3	1.255	27
248112004-1	RE15-10-8395	SAMPLE	.05 pCi/g		SOIL	LANL010	22-FEB-10	4	4	1.266	28
248112005-1	RE15-10-8398	SAMPLE	.05 pCi/g		SOIL	LANL010	22-FEB-10	5	5	1.264	29
248112006-1	RE15-10-8394	SAMPLE	.05 pCi/g		SOIL	LANL010	22-FEB-10	6	6	1.266	30 45
248112007-1	RE15-10-8399	SAMPLE	.05 pCi/g		SOIL	LANL010	22-FEB-10	7	7	1.256	31 46
248112008-1	RE15-10-8397	SAMPLE	.05 pCi/g		SOIL	LANL010	22-FEB-10	8	8	1.258	32 47
248115001-1	RE36-10-8448	SAMPLE	.05 pCi/g		SOIL	LANL010	22-FEB-10	9	9	1.267	33 48
248115002-1	RE36-10-8456	SAMPLE	.05 pCi/g		SOIL	LANL010	22-FEB-10	10	10	1.263	34 49
248115003-1	RE36-10-8451	SAMPLE	.05 pCi/g		SOIL	LANL010	22-FEB-10	11	11	1.254	35 50
248115004-1	RE36-10-8450	SAMPLE	.05 pCi/g		SOIL	LANL010	22-FEB-10	12	12	1.267	36 51
248115005-1	RE36-10-8449	SAMPLE	.05 pCi/g		SOIL	LANL010	22-FEB-10	13	13	1.250	37 52
248115006-1	RE36-10-8453	SAMPLE	.05 pCi/g		SOIL	LANL010	22-FEB-10	14	14	1.256	38 53
248115007-1	RE36-10-8452	SAMPLE	.05 pCi/g		SOIL	LANL010	22-FEB-10	15	15	1.258	39 54
1202075072-1	MB for batch 962685	MB	.05 pCi/g		SOIL	QC ACCOUNT		16	16	1.00	41
1202075073-1	RE36-10-8448(248115001DUP)	DUP	.05 pCi/g		SOIL	QC ACCOUNT	22-FEB-10	17	17	1.261	42
1202075074-1	LCS for batch 962685	LCS	.05 pCi/g		SOIL	QC ACCOUNT		18	18	0.102	43

SRM 0244-B exp 4/30/20

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

Solid Sample Dissolution by: LEACH or DIGESTION Circle One

Data Reviewed By:

Blank Correction Report

Batch ID 962685

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202075073	DUP	Plutonium-238	1.26 g	0.0198	0.00748	0.0317	.018015873	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0109	0.00637	0.0268	-.00522222	pCi/g	NO
1202075074	LCS	Plutonium-238	0.102 g	6.07	0.589	0.368	.222549020	pCi/g	NO
		Plutonium-239/240	0.102 g	36.7	2.75	0.311	-.06450980	pCi/g	NO
1202075072	MB	Plutonium-238	1.00 g	0.0227	0.00814	0.0376	.0227	pCi/g	YES
		Plutonium-239/240	1.00 g	-0.00658	0.00641	0.0318	-.00658	pCi/g	NO
248112001	RE15-10-8404	Plutonium-238	1.25 g	-0.00169	0.00289	0.0311	.01816	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0271	0.00895	0.0263	-.005264	pCi/g	NO
248112002	RE15-10-8396	Plutonium-238	1.26 g	0.00439	0.00311	0.0291	.018015873	pCi/g	YES
		Plutonium-239/240	1.26 g	-0.00132	0.00519	0.0246	-.00522222	pCi/g	NO
248112003	RE15-10-8393	Plutonium-238	1.26 g	0.0155	0.00655	0.0271	.018015873	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00262	0.00325	0.0229	-.00522222	pCi/g	NO
248112004	RE15-10-8395	Plutonium-238	1.27 g	0.0211	0.00679	0.028	.017874016	pCi/g	YES
		Plutonium-239/240	1.27 g	-0.00185	0.00425	0.0237	-.00518110	pCi/g	NO
248112005	RE15-10-8398	Plutonium-238	1.26 g	0.0188	0.00995	0.0266	.018015873	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00281	0.00553	0.0225	-.00522222	pCi/g	NO
248112006	RE15-10-8394	Plutonium-238	1.26 g	0.0177	0.0103	0.0281	.018015873	pCi/g	YES
		Plutonium-239/240	1.26 g	-0.00246	0.00339	0.0238	-.00522222	pCi/g	NO
248112007	RE15-10-8399	Plutonium-238	1.26 g	0.0044	0.00312	0.0292	.018015873	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0286	0.00811	0.0247	-.00522222	pCi/g	NO
248112008	RE15-10-8397	Plutonium-238	1.26 g	0.0134	0.00513	0.0254	.018015873	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00383	0.00272	0.0215	-.00522222	pCi/g	NO
248115001	RE36-10-8448	Plutonium-238	1.27 g	0.012	0.00583	0.0301	.017874016	pCi/g	YES
		Plutonium-239/240	1.27 g	-0.00435	0.00775	0.0254	-.00518110	pCi/g	NO
248115002	RE36-10-8456	Plutonium-238	1.26 g	-0.00153	0.00261	0.0281	.018015873	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00212	0.00212	0.0238	-.00522222	pCi/g	NO
248115003	RE36-10-8451	Plutonium-238	1.25 g	0.00254	0.00903	0.0312	.01816	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00367	0.00473	0.0264	-.005264	pCi/g	NO
248115004	RE36-10-8450	Plutonium-238	1.27 g	0.00265	0.00919	0.0338	.017874016	pCi/g	YES
		Plutonium-239/240	1.27 g	0.0137	0.00724	0.0285	-.00518110	pCi/g	NO
248115005	RE36-10-8449	Plutonium-238	1.25 g	0.00634	0.00775	0.0351	.01816	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0101	0.00729	0.0296	-.005264	pCi/g	NO
248115006	RE36-10-8453	Plutonium-238	1.26 g	0.0265	0.00847	0.0311	.018015873	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00431	0.00553	0.0263	-.00522222	pCi/g	NO
248115007	RE36-10-8452	Plutonium-238	1.26 g	0.033	0.00982	0.0314	.018015873	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00534	0.00536	0.0265	-.00522222	pCi/g	NO

1/3/2010

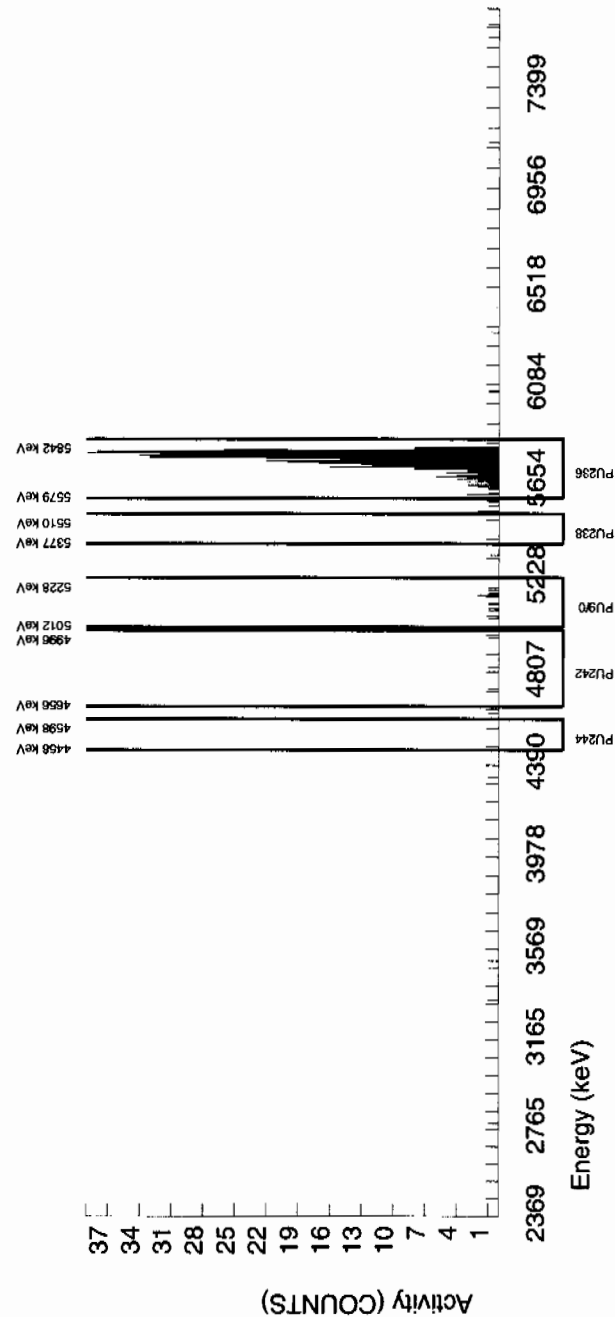
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962685 SAMPLE ID : S0248112001_PU SAMPLE QTY : 1.253 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 58.540				CHAMBER : 043 DETECTOR S/N : 76543 AVERAGE %EFFICIENCY : 36.4208 COUNT DATE : 25-MAR-2010 20:23:08 ELAPSED LIVE TIME(SEC) : 43200.00				LIB FILE : ENV_ALPHA_PU BKG FILE : B043.CNF;1117 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W043.CNF;288 CAL DATE : 5-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0220E+00 dpm RESULTS : 1.7691E+00 dpm				MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G				LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5755.482	51.243	457.000	454.120	2.880	1.6971	100.0000	1.09E+00	8.55E-02	8.57E-03	2.35E-02	5.13E-02
PU-238	5499.000	5443.385	0.000	0.000	-0.720	0.720	2.4495	99.900000	-1.69E-03	2.89E-03	1.24E-02	3.11E-02	2.89E-03
PU-9/0	5155.000	5144.720	11.374	13.000	11.560	1.440	1.9732	99.900000	2.71E-02	8.95E-03	9.98E-03	2.63E-02	8.78E-03
PU242	4890.000	4841.313	221.331	4.000	3.280	0.720	*****	100.0000	7.68E-03	5.00E-03	6.30E-01	1.27E+00	4.98E-03
PU-244	4589.000	4527.912	0.000	0.000	0.000	0.000	6.4609	99.900000	0.00E+00	2.35E-03	3.27E-02	7.17E-02	2.34E-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 : 962685 SAMPLE ID : S0248112002_PU SAMPLE QTY : 1.257 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 63.842		LIB FILE : ENV_ALPHA_PU BKG FILE : B044.CNF;1127 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W044.CNF;309 CAL DATE : 5-MAR-2010
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0220E+00 dpm RESULTS : 1.9293E+00 dpm		LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G

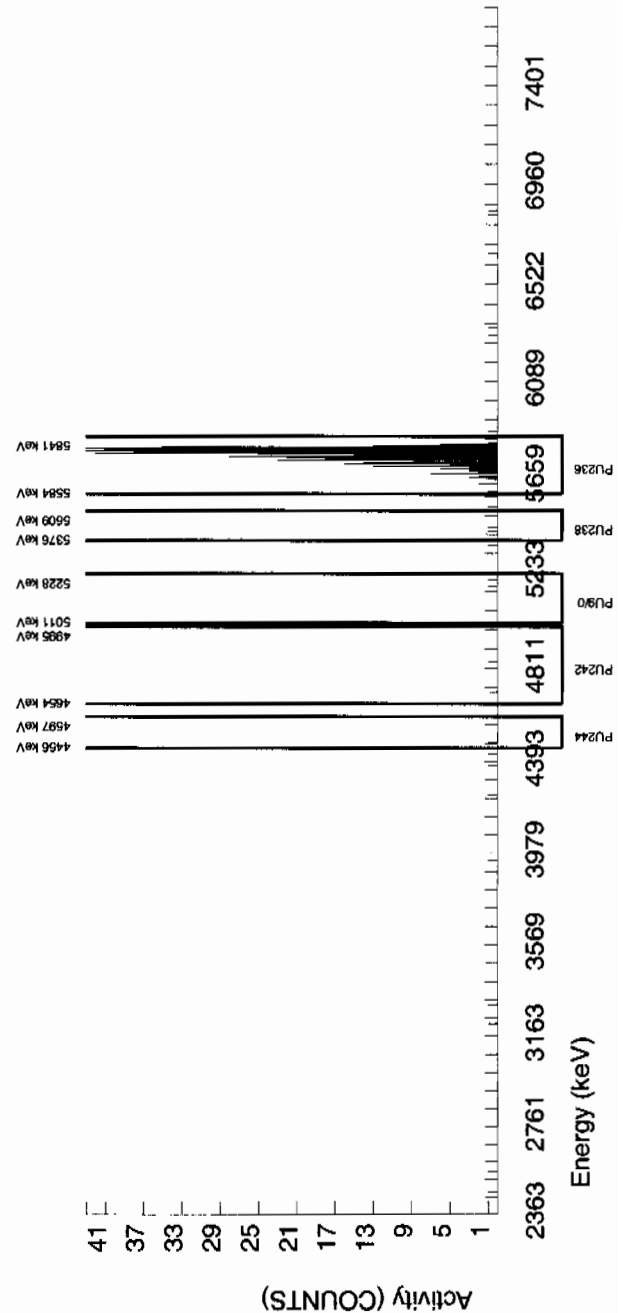
CHAMBER : 044 DETECTOR S/N : 79459 AVERAGE %EFFICIENCY : 35.5933 COUNT DATE : 25-MAR-2010 20:23:08 ELAPSED LIVE TIME(SEC) : 43200.00	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
---	---

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5762.234	58.013	484.000	484.000	0.000	0.0000	100.0000	1.08E+00	8.30E-02	0.00E+00	5.94E-03	4.92E-02
PU-238	5499.000	5432.246	19.814	2.000	2.000	0.000	2.4495	99.900000	4.39E-03	3.11E-03	1.16E-02	2.91E-02	3.10E-03
PU-9/0	5155.000	5132.596	183.283	3.000	-0.600	3.600	1.9732	99.900000	-1.32E-03	5.19E-03	9.33E-03	2.46E-02	5.18E-03
PU242	4890.000	4777.176	128.794	2.000	-0.880	2.880	*****	100.0000	-1.93E-03	4.42E-03	5.89E-01	1.18E+00	4.42E-03
PU-244	4589.000	4487.035	4.954	1.000	1.000	0.000	6.4609	99.900000	2.19E-03	2.20E-03	3.06E-02	6.71E-02	2.19E-03

NOTES:

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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962685
SAMPLE ID : S024812003_PU
SAMPLE QTY : 1.255 G
SAMPLE DATE : 22-FEB-2010 00:00:00
ANALYST : MXE1
% YIELD : 71.330

CHAMBER	:	027
DETECTOR S/N	:	42484
AVERAGE %EFFICIENCY	:	34.2191
COUNT DATE	:	24-MAR
ELAPSED LIVE TIME(SEC)	:	43199.9

LIB FILE	:	ENV_ALPHA_PU
BKG FILE	:	B027.CNF:1130
BKG DATE	:	21-MAR-2010
BKG LIVE TIME(SEC)	:	60000.00
EFF FILE	:	W027.CNF:331
CAL DATE	:	4-MAR-2010

TRACER	ID	: 1430-C
	NUCLIDE	: PU-236
	NOMINAL	: 3.0220E+00 dpm
	RESULTS	: 2.1556E+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

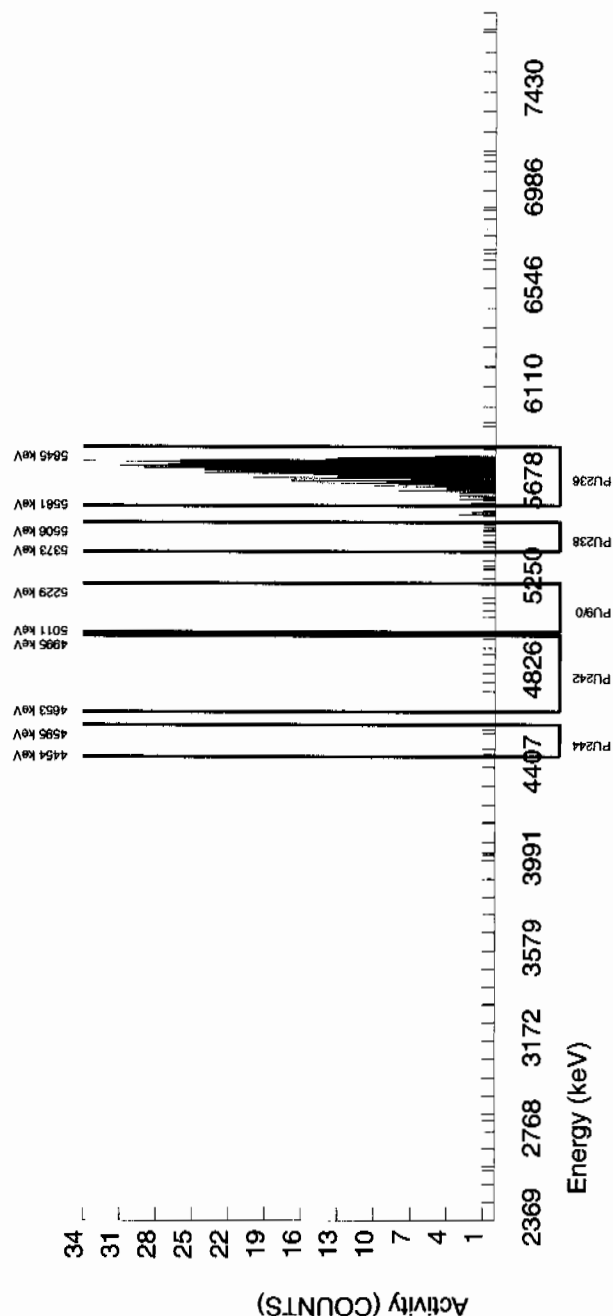
NUCLIDE ACTIVITY SUMMARY

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	5741.748	79.379	521.000	520.280	0.720	0.8485	100.0000	1.08E+00	8.12E-02	3.74E-03	1.30E-02	4.76E-02
PU-238	5499.000	5444.544	114.244	9.000	7.560	1.440	2.4495	99.900000	1.55E-02	6.55E-03	1.08E-02	2.71E-02	6.48E-03
PU-9/0	5155.000	5127.894	34.770	2.000	1.280	0.720	1.9732	99.900000	2.62E-03	3.25E-03	8.70E-03	2.29E-02	3.24E-03
PU242	4890.000	4860.649	228.488	6.000	3.840	2.160	*****	100.00000	7.84E-03	5.63E-03	5.49E-01	1.10E+00	5.61E-03
PU-244	4589.000	4542.612	0.000	3.000	3.000	0.000	6.4609	99.900000	6.13E-03	3.56E-03	2.85E-02	6.25E-02	3.54E-03

NOTES:

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

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



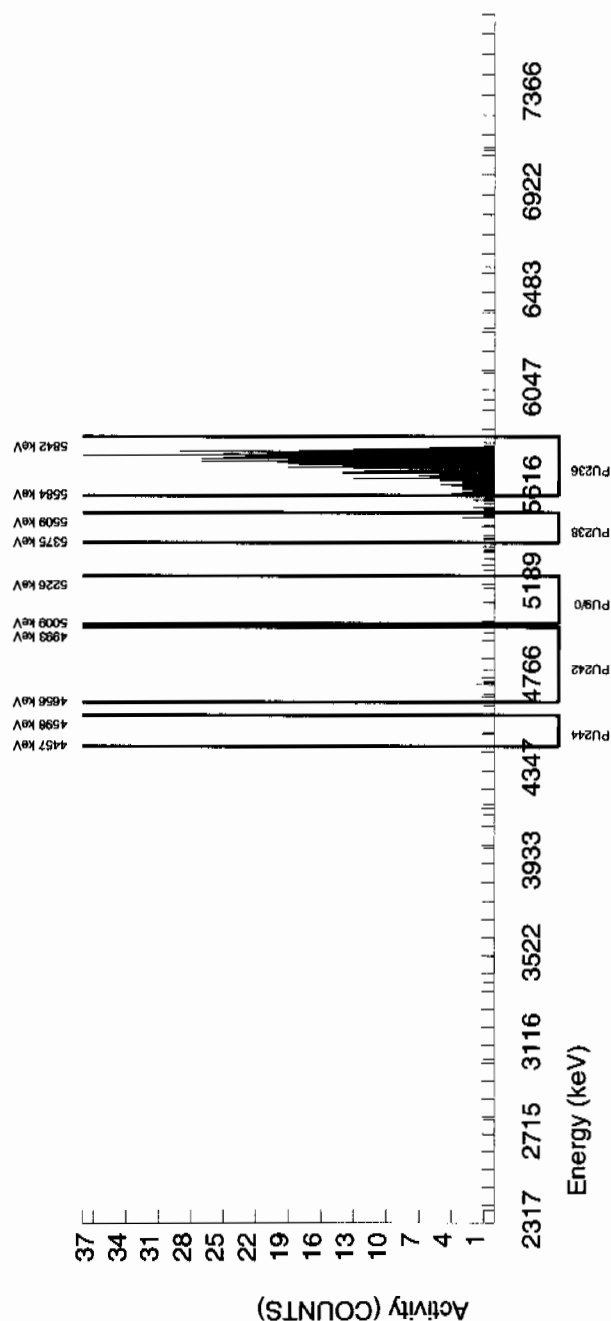
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962685 SAMPLE ID : S0248112004_PU SAMPLE QTY : 1.266 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 74.366				CHAMBER : 028 DETECTOR S/N : 78792 AVERAGE %EFFICIENCY : 31.5679 COUNT DATE : 24-MAR-2010 17:07:47 ELAPSED LIVE TIME(SEC) : 43199.99				LIB FILE : ENV_ALPHA_PU BKG FILE : B028.CNF;1134 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W028.CNF;323 CAL DATE : 4-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0220E+00 dpm RESULTS : 2.2473E+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	5730.947	53.884	504.000	500.400	3.600	1.8974	100.0000	1.08E+00	8.18E-02	8.62E-03	2.29E-02	4.84E-02
PU-238	5499.000	5459.512	6.128	10.000	10.000	0.000	2.4495	99.900000	2.11E-02	6.79E-03	1.11E-02	2.80E-02	6.67E-03
PU-9/0	5155.000	5143.667	59.325	2.000	-0.880	2.880	1.9732	99.900000	-1.85E-03	4.25E-03	8.97E-03	2.37E-02	4.25E-03
PU242	4890.000	4778.408	4.944	8.000	7.280	0.720	*****	100.0000	1.53E-02	6.22E-03	5.66E-01	1.14E+00	6.14E-03
PU-244	4589.000	4524.660	4.944	1.000	0.280	0.720	6.4609	99.900000	5.90E-04	2.60E-03	2.94E-02	6.45E-02	2.60E-03

NOTES:

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

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



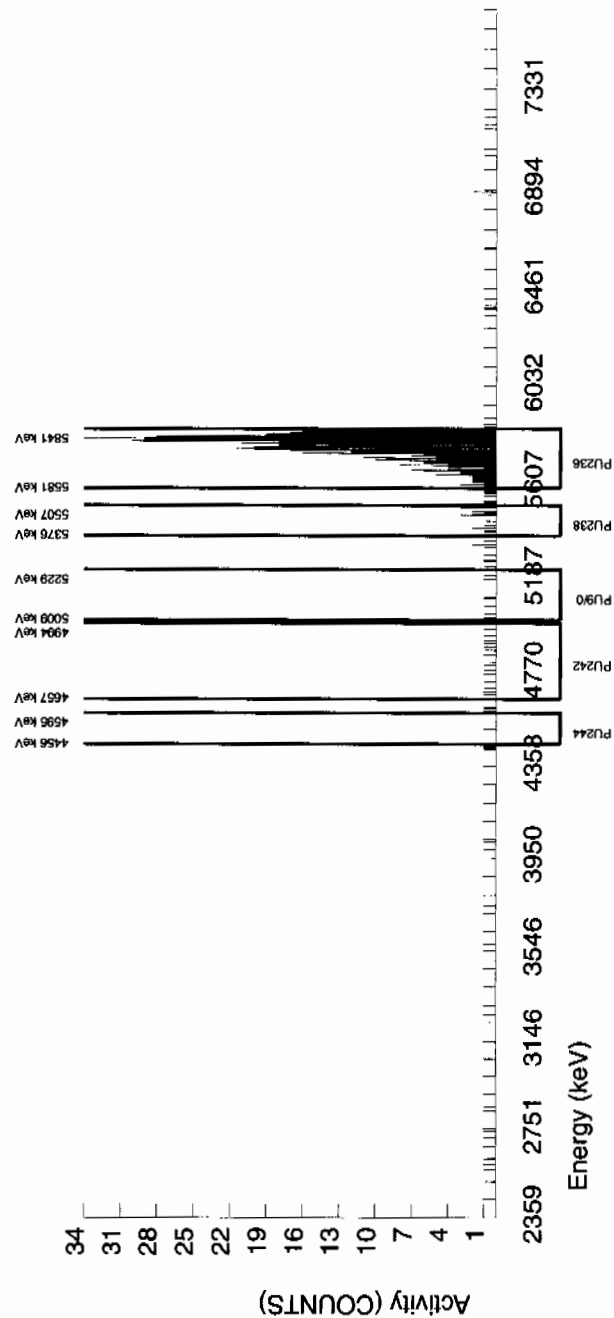
GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962685 SAMPLE ID : S0248112005_PU SAMPLE QTY : 1.264 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 75.904				CHAMBER : 029 DETECTOR S/N : 33454 AVERAGE %EFFICIENCY : 32.5354 COUNT DATE : 24-MAR-2010 17:07:47 ELAPSED LIVE TIME(SEC) : 43199.99				LIB FILE : ENV_ALPHA_PU BKG FILE : B029.CNF;1125 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W029.CNF;322 CAL DATE : 4-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0220E+00 dpm RESULTS : 2.2938E+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	5767.463	72.998	530.000	526.400	3.600	1.8974	100.0000	1.08E+00	8.05E-02	8.20E-03	2.18E-02	4.72E-02
PU-238	5499.000	5458.624	87.293	18.000	9.360	8.640	2.4495	99.900000	1.88E-02	9.95E-03	1.06E-02	2.66E-02	9.88E-03
PU-9/0	5155.000	5092.840	175.195	5.000	1.400	3.600	1.9732	99.900000	2.81E-03	5.53E-03	8.54E-03	2.25E-02	5.53E-03
PU242	4890.000	4816.259	0.000	12.000	9.120	2.880	*****	100.0000	1.83E-02	7.60E-03	5.39E-01	1.08E+00	7.52E-03
PU-244	4589.000	4525.208	0.000	0.000	-1.440	1.440	6.4609	99.900000	-2.89E-03	2.87E-03	2.80E-02	6.14E-02	2.86E-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 : 962685 SAMPLE ID : S024812006_PU SAMPLE QTY : 1.255 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 66.763		CHAMBER : 030 DETECTOR S/N : 33447 AVERAGE %EFFICIENCY : 35.2784 COUNT DATE : 24-MAR-2010 17:07:47 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B030.CNF;1122 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W030.CNF;307 CAL DATE : 4-MAR-2010
--	--	---	--

TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0220E+00 dpm RESULTS : 2.0176E+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
--	---	---

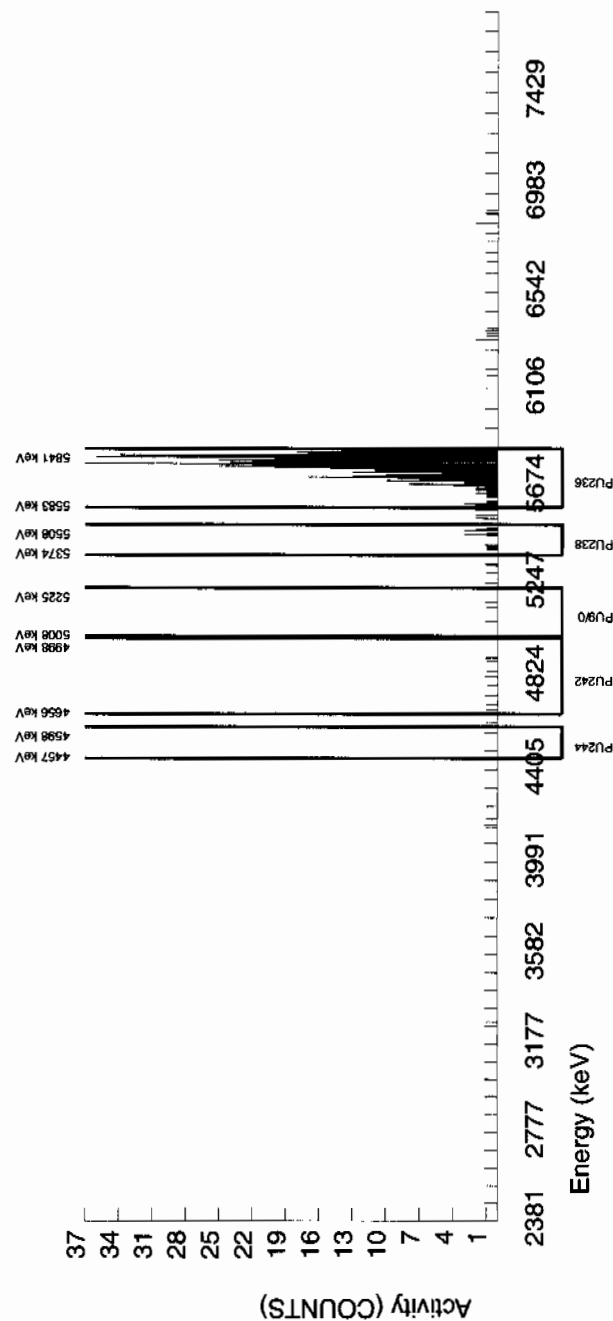
NUCLIDE ACTIVITY SUMMARY

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	5772.518	55.137	515.000	502.040	12.960	3.6000	100.0000	1.08E+00	8.33E-02	1.64E-02	3.86E-02	4.95E-02
PU-238	5499.000	5454.713	25.824	17.000	8.360	8.640	2.4495	99.900000	1.77E-02	1.03E-02	1.12E-02	2.81E-02	1.02E-02
PU-9/0	5155.000	5140.459	4.919	1.000	-1.160	2.160	1.9732	99.900000	-2.46E-03	3.39E-03	9.02E-03	2.38E-02	3.39E-03
PU242	4890.000	4807.945	231.182	6.000	5.280	0.720	*****	100.0000	1.12E-02	5.45E-03	5.69E-01	1.14E+00	5.40E-03
PU-244	4589.000	4527.768	0.000	0.000	-0.720	0.720	6.4609	99.900000	-1.53E-03	2.61E-03	2.95E-02	6.48E-02	2.61E-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 : 962685 SAMPLE ID : S0248112007_PU SAMPLE QTY : 1.256 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 66.835		CHAMBER : 045 DETECTOR S/N : 78783 AVERAGE %EFFICIENCY : 33.9687 COUNT DATE : 25-MAR-2010 20:23:08 ELAPSED LIVE TIME(SEC) : 43200.00	LIB FILE : ENV_ALPHA_PU BKG FILE : B045.CNF;1116 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W045.CNF;300 CAL DATE : 5-MAR-2010
---	--	--	--

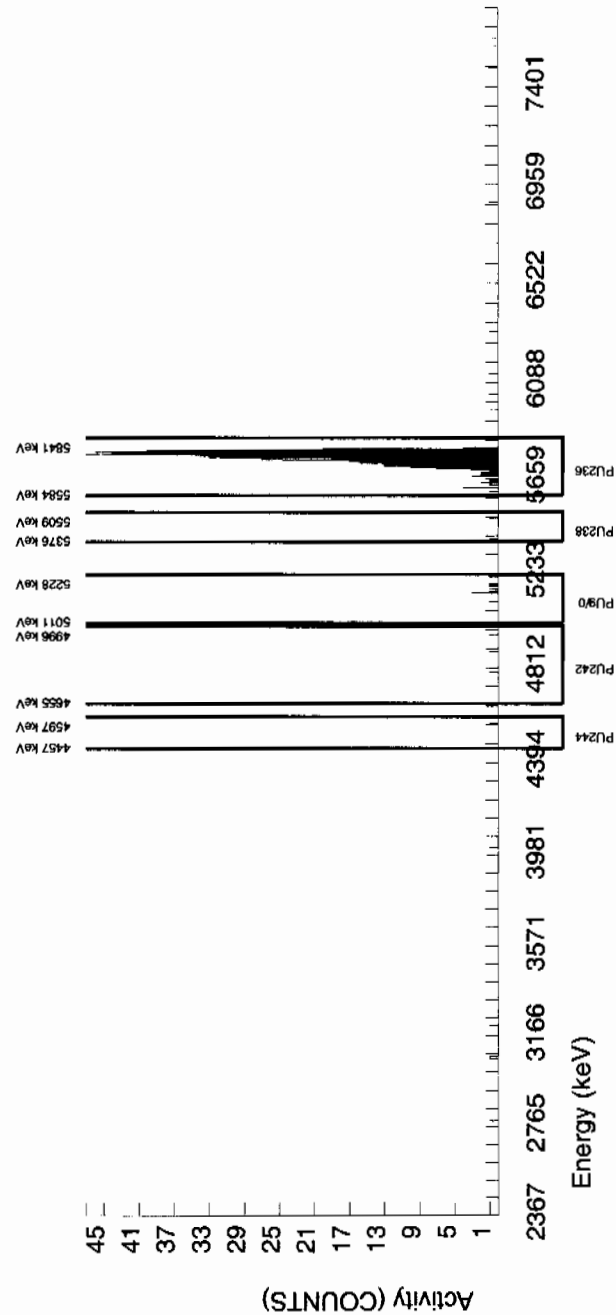
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0220E+00 dpm RESULTS : 2.0197E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
---	---	---

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	5758.821	45.339	485.000	483.560	1.440	1.2000	100.0000	1.08E+00	8.33E-02	5.68E-03	1.73E-02	4.94E-02
PU-238	5499.000	5439.998	93.890	2.000	2.000	0.000	2.4495	99.900000	4.40E-03	3.12E-03	1.16E-02	2.92E-02	3.11E-03
PU-9/0	5155.000	5163.510	10.346	13.000	13.000	0.000	1.9732	99.900000	2.86E-02	8.11E-03	9.35E-03	2.47E-02	7.92E-03
PU242	4890.000	4883.340	163.073	3.000	1.560	1.440	*****	100.0000	3.42E-03	4.41E-03	5.90E-01	1.19E+00	4.41E-03
PU-244	4589.000	4571.104	4.942	1.000	1.000	0.000	6.4609	99.900000	2.20E-03	2.20E-03	3.06E-02	6.72E-02	2.20E-03

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962685 SAMPLE ID : S0248112008_PU SAMPLE QTY : 1.258 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 82.038		CHAMBER : 033 DETECTOR S/N : 78785 AVERAGE %EFFICIENCY : 31.7007 COUNT DATE : 24-MAR-2010 21:09:16 ELAPSED LIVE TIME(SEC) : 43199.99	LIB FILE : ENV_ALPHA_PU BKG FILE : B033.CNF;1120 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W033.CNF;332 CAL DATE : 4-MAR-2010
---	--	---	--

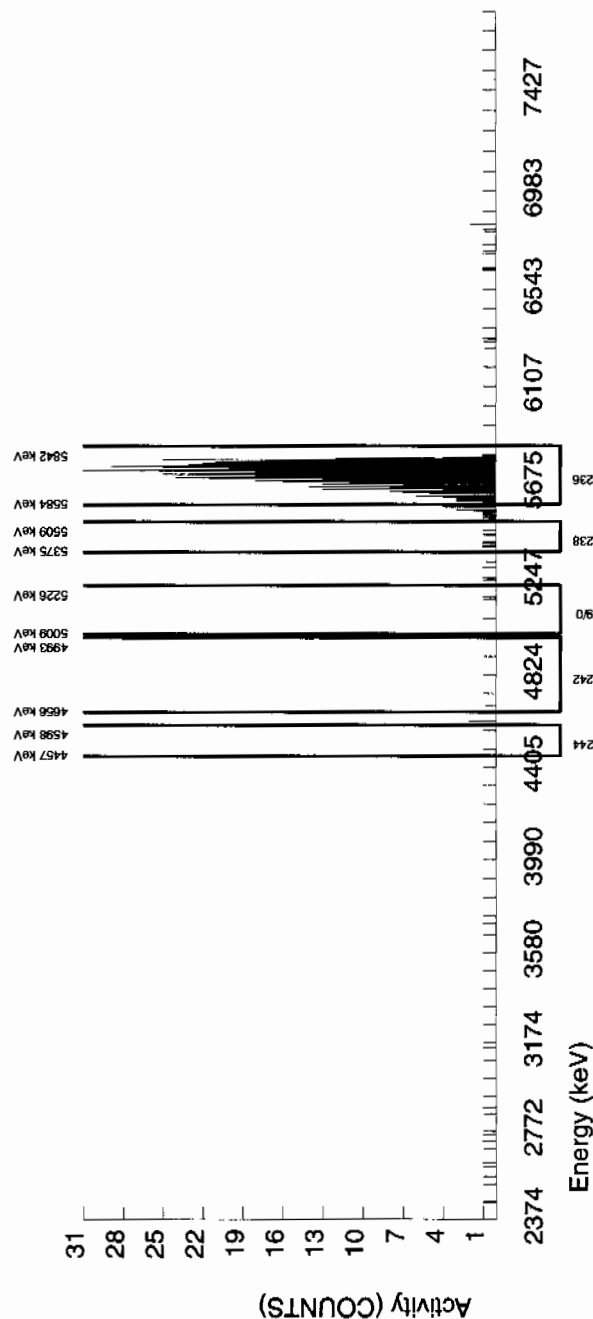
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0220E+00 dpm RESULTS : 2.4792E+00 dpm	MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G	LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G
--	---	---

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	5723.851	92.571	555.000	554.280	0.720	0.8485	100.0000	1.08E+00	7.93E-02	3.50E-03	1.22E-02	4.60E-02
PU-238	5499.000	5428.472	93.943	7.000	7.000	0.000	2.4495	99.900000	1.34E-02	5.13E-03	1.01E-02	2.54E-02	5.07E-03
PU-9/0	5155.000	5130.488	93.943	2.000	2.000	0.000	1.9732	99.900000	3.83E-03	2.72E-03	8.15E-03	2.15E-02	2.71E-03
PU242	4890.000	4780.214	0.000	3.000	2.280	0.720	*****	100.0000	4.36E-03	3.60E-03	5.14E-01	1.03E+00	3.59E-03
PU-244	4589.000	4527.703	0.000	0.000	-0.720	0.720	6.4609	99.900000	-1.38E-03	2.36E-03	2.67E-02	5.86E-02	2.36E-03

NOTES:

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



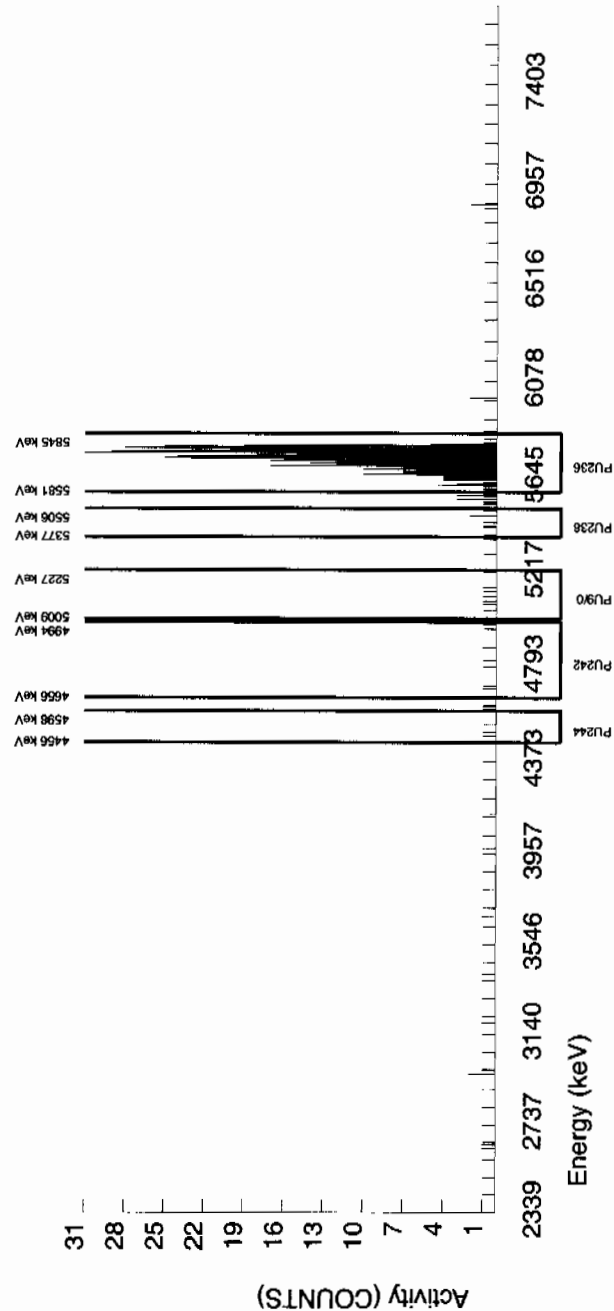
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962685 SAMPLE ID : S0248115001_PU SAMPLE QTY : 1.267 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 70.384				CHAMBER : 035 DETECTOR S/N : 78202 AVERAGE %EFFICIENCY : 31.0164 COUNT DATE : 24-MAR-2010 21:09:16 ELAPSED LIVE TIME(SEC) : 43199.99				LIB FILE : ENV_ALPHA_PU BKG FILE : B035.CNF;1118 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W035.CNF;321 CAL DATE : 4-MAR-2010					
TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 3.0220E+00 dpm RESULTS : 2.1270E+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	5737.984	85.581	466.000	465.280	0.720	0.8485	100.0000	1.07E+00	8.36E-02	4.14E-03	1.44E-02	4.99E-02
PU-238	5499.000	5460.021	4.946	6.000	5.280	0.720	2.4495	99.90000	1.20E-02	5.83E-03	1.20E-02	3.01E-02	5.78E-03
PU-9/0	5155.000	5126.304	0.000	6.000	-1.920	7.920	1.9732	99.90000	-4.35E-03	7.75E-03	9.64E-03	2.54E-02	7.75E-03
PU242	4890.000	4876.229	272.017	6.000	0.960	5.040	*****	100.0000	2.17E-03	7.02E-03	6.08E-01	1.22E+00	7.02E-03
PU-244	4589.000	4533.225	0.000	3.000	1.560	1.440	6.4609	99.90000	3.53E-03	4.55E-03	3.16E-02	6.93E-02	4.55E-03

NOTES:

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

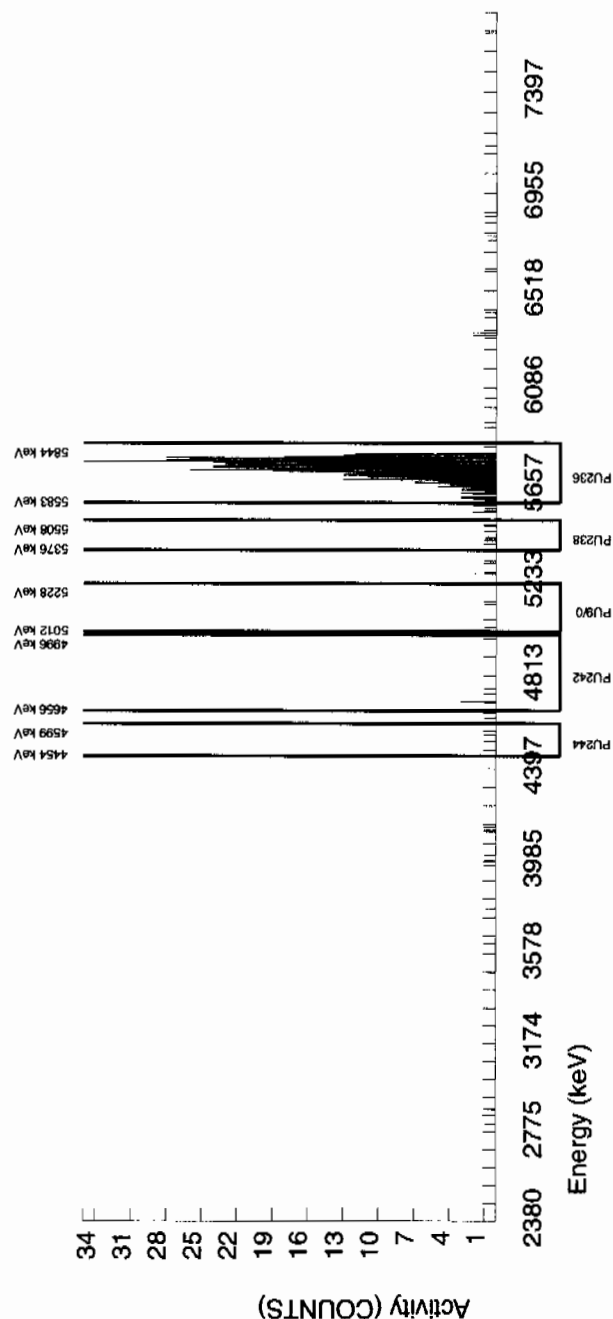
* BKG Sg of PU-236 calculated as sqrt(BKG AREA).



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	: 962685
SAMPLE ID	: S1202075073_PU
SAMPLE QTY	: 1.261 G
SAMPLE DATE	: 22-FEB-2010 00:00:00
ANALYST	: MXE1
% YIELD	: 57.085

CHAMBER	:	043
DETECTOR S/N	:	76543
AVERAGE %EFFICIENCY	:	36.4208
COUNT DATE	:	24-MAR-
ELAPSED LIVE TIME(SEC)	:	43199.9

```
LIB FILE      : ENV_ALPHA_PU
BKG FILE     : B043.CNF;1117
BKG DATE     : 21-MAR-2010
BKG LIVE TIME(SEC) : 59999.99
EFF FILE     : W043.CNF;288
CAL DATE     : 5-MAR-2010
```

TRACER	
ID	: 1430-C
NUCLIDE	: PU-236
NOMINAL	: 3.0220E
RESULTS	: 1.7251E

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

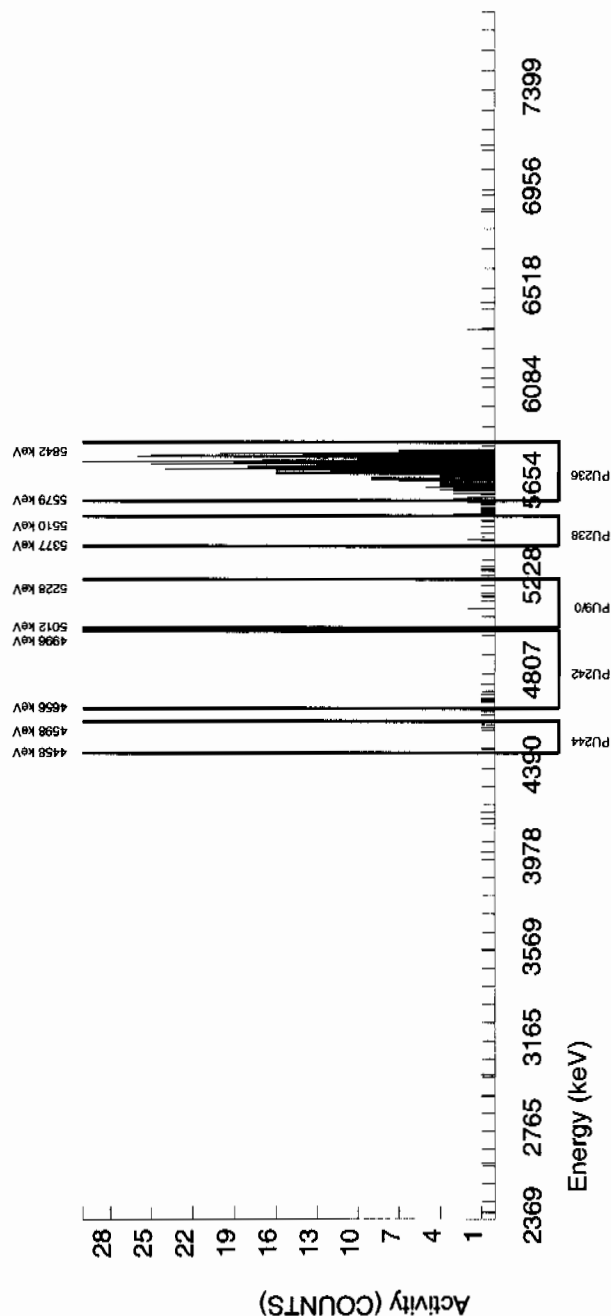
LCS/LCSD	
ID	: 0244-B
NUCLIDE	: PU-9/0
NOMINAL	: 4.1778E

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	5736.607	90.369	446.000	443.120	2.880	1.6971	100.0000	1.08E+00	8.57E-02	8.74E-03	2.39E-02	5.16E-02
PU-238	5499.000	5436.589	7.224	9.000	8.280	0.720	2.4495	99.900000	1.98E-02	7.48E-03	1.26E-02	3.17E-02	7.37E-03
PU-9/0	5155.000	5144.788	4.918	6.000	4.560	1.440	1.9732	99.900000	1.09E-02	6.37E-03	1.02E-02	2.68E-02	6.34E-03
PU242	4890.000	4717.625	4.918	8.000	7.280	0.720	*****	100.0000	1.74E-02	7.05E-03	6.42E-01	1.29E+00	6.96E-03
PU-244	4589.000	4547.863	103.288	3.000	3.000	0.000	6.4609	99.900000	7.17E-03	4.16E-03	3.33E-02	7.31E-02	4.14E-03

NOTES:

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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 962885 SAMPLE ID : S1202075074_PU SAMPLE QTY : 0.102 G SAMPLE DATE : 18-MAR-2010 00:00:00 ANALYST : MXE1 % YIELD : 62.219</p>	<p>CHAMBER : 044 DETECTOR S/N : 79459 AVERAGE %EFFICIENCY : 35.5933 COUNT DATE : 24-MAR-2010 21:09:18 ELAPSED LIVE TIME(SEC) : 43199.99</p>	<p>LIB FILE : ENV_ALPHA_PU BKG FILE : B044.CNF;1127 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W044.CNF;309 CAL DATE : 5-MAR-2010</p>
---	---	--

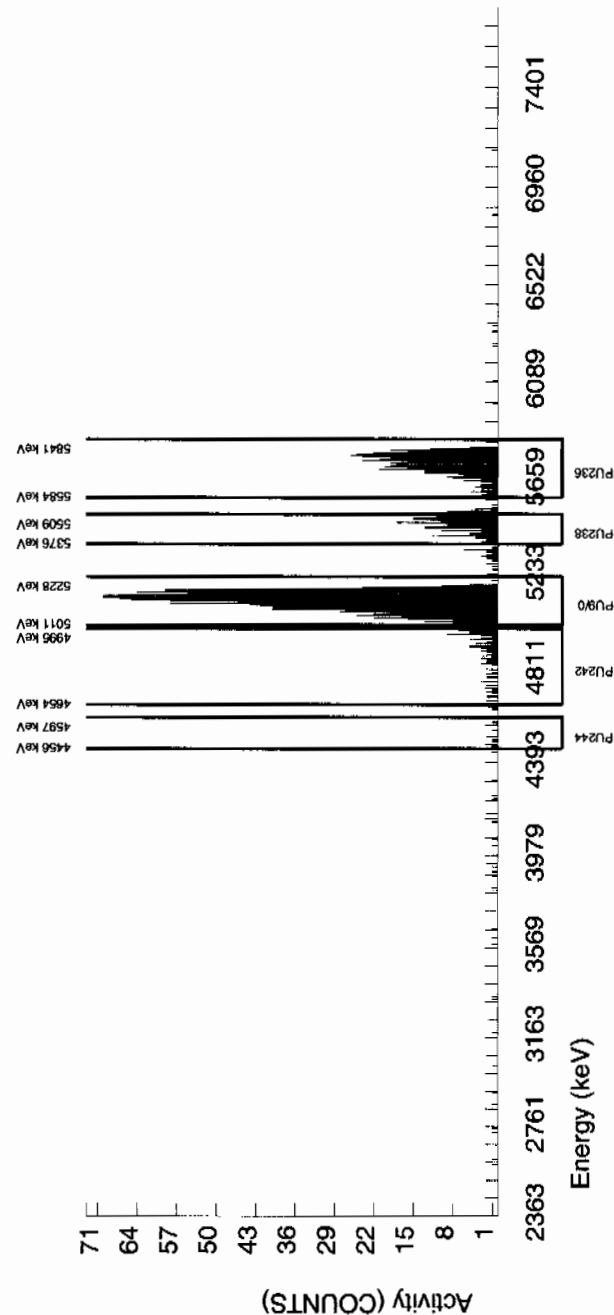
<p>TRACER ID : 1430-C NUCLIDE : PU-236 NOMINAL : 2.9742E+00 dpm RESULTS : 1.8505E+00 dpm</p>	<p>MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>	<p>LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G</p>
--	---	---

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-236	5749.000	5737.520	88.430	472.000	472.000	0.000	0.0000	100.0000	1.31E+01	1.10E+00	0.00E+00	7.51E-02	6.05E-01
PU-238	5499.000	5461.981	0.000	219.000	219.000	0.000	2.4495	99.90000	6.07E+00	5.89E-01	1.47E-01	3.68E-01	4.10E-01
PU-9/0	5155.000	5122.240	90.992	1328.000	1324.400	3.600	1.9732	99.90000	3.67E+01	2.75E+00	1.18E-01	3.11E-01	1.01E+00
PU242	4890.000	4886.560	74.614	121.000	118.120	2.880	*****	100.0000	3.27E+00	3.83E-01	7.45E+00	1.50E+01	3.07E-01
PU-244	4589.000	4519.916	4.954	13.000	13.000	0.000	6.4609	99.90000	3.60E-01	1.03E-01	3.86E-01	8.48E-01	1.00E-01

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# 962688 Product: U Date: 3/25/10

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

3/26

Uranium Que Sheet

08-MAR-10

Batch #: 962688 Analyst: MXE1 First Client Due Date: 26-MAR-10 Internal Due Date: 15-MAR-10
 Tracer Isotope: U-232/U-236 Tracer Code: 233-11 Expiration Date: 12/9/10 Vol: 0.1
 LCS Isotope: U-238 LCS Code: NA Expiration Date: NA Vol: NA
 Spike Isotope: U-238 Spike Code: NA Expiration Date: NA Vol: NA
 Prep Date: 7/1/10 Initials: ME Pipet ID: 2971058 Balance ID: 50410272
 Witness: JAC 03/18/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/1/1)	U Det #
248112001-1	RE15-10-8404	SAMPLE		.1 pCi/g	SOIL	LANL010	22-FEB-10	1	1	0.504	119
248112002-1	RE15-10-8396	SAMPLE		.1 pCi/g	SOIL	LANL010	22-FEB-10	2	2	0.500	120
248112003-1	RE15-10-8393	SAMPLE		.1 pCi/g	SOIL	LANL010	22-FEB-10	3	3	0.514	121
248112004-1	RE15-10-8395	SAMPLE		.1 pCi/g	SOIL	LANL010	22-FEB-10	4	4	0.551	122
248112005-1	RE15-10-8398	SAMPLE		.1 pCi/g	SOIL	LANL010	22-FEB-10	5	5	0.509	123
248112006-1	RE15-10-8394	SAMPLE		.1 pCi/g	SOIL	LANL010	22-FEB-10	6	6	0.501	124
248112007-1	RE15-10-8399	SAMPLE		.1 pCi/g	SOIL	LANL010	22-FEB-10	7	7	0.513	125
248112008-1	RE15-10-8397	SAMPLE		.1 pCi/g	SOIL	LANL010	22-FEB-10	8	8	0.570	126
248115001-1	RE36-10-8448	SAMPLE		.1 pCi/g	SOIL	LANL010	22-FEB-10	9	9	0.580	127
248115002-1	RE36-10-8456	SAMPLE		.1 pCi/g	SOIL	LANL010	22-FEB-10	10	10	0.528	128
248115003-1	RE36-10-8451	SAMPLE		.1 pCi/g	SOIL	LANL010	22-FEB-10	11	11	0.554	129
248115004-1	RE36-10-8450	SAMPLE		.1 pCi/g	SOIL	LANL010	22-FEB-10	12	12	0.511	130
248115005-1	RE36-10-8449	SAMPLE		.1 pCi/g	SOIL	LANL010	22-FEB-10	13	13	0.545	131
248115006-1	RE36-10-8453	SAMPLE		.1 pCi/g	SOIL	LANL010	22-FEB-10	14	14	0.524	132
248115007-1	RE36-10-8452	SAMPLE		.1 pCi/g	SOIL	LANL010	22-FEB-10	15	15	0.539	166
1202065307-1	MB for batch 962688	MB		.1 pCi/g	SOIL	QC ACCOUNT		16	16	1.0	171
1202065308-1	RE36-10-8448(248115001DUP)	DUP		.1 pCi/g	SOIL	QC ACCOUNT		17	17	0.531	172
1202065309-1	LCS for batch 962688	LCS		.1 pCi/g	SOIL	QC ACCOUNT		18	18	0.109	165

ASPM 0244-A EXP: 10/31/20
 3/15/10

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION
 Circle One

Data Reviewed By: J. d. M. L. - 3/25/10

Blank Correction Report

Batch ID 962688

GEL Sample ID	Client sample ID	Parameter	Alliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202065308	DUP	Uranium-233/234	0.531 g	1.31	0.109	0.0741	.022222222	pCi/g	NO
		Uranium-235/236	0.531 g	0.0812	0.0184	0.0453	.013465160	pCi/g	NO
		Uranium-238	0.531 g	1.24	0.104	0.0521	.010885122	pCi/g	NO
1202065309	LCS	Uranium-233/234	0.108 g	5.84	0.508	0.305	.109259259	pCi/g	NO
		Uranium-235/236	0.108 g	0.374	0.0762	0.186	.066203704	pCi/g	NO
		Uranium-238	0.108 g	5.75	0.501	0.214	.053518519	pCi/g	NO
1202065307	MB	Uranium-233/234	1.00 g	0.0118	0.00473	0.0326	.0118	pCi/g	YES
		Uranium-235/236	1.00 g	0.00715	0.00432	0.0199	.00715	pCi/g	YES
		Uranium-238	1.00 g	0.00578	0.0045	0.0229	.00578	pCi/g	YES
248112001	RE15-10-8404	Uranium-233/234	0.504 g	1.60	0.145	0.128	.023412698	pCi/g	NO
		Uranium-235/236	0.504 g	0.106	0.0256	0.0781	.014186508	pCi/g	NO
		Uranium-238	0.504 g	1.94	0.170	0.0899	.011468254	pCi/g	NO
248112002	RE15-10-8396	Uranium-233/234	0.500 g	1.62	0.147	0.128	.0236	pCi/g	NO
		Uranium-235/236	0.500 g	0.0951	0.0241	0.0779	.0143	pCi/g	NO
		Uranium-238	0.500 g	1.85	0.164	0.0897	.01156	pCi/g	NO
248112003	RE15-10-8393	Uranium-233/234	0.514 g	0.576	0.0619	0.102	.022957198	pCi/g	NO
		Uranium-235/236	0.514 g	0.0224	0.012	0.0624	.013910506	pCi/g	YES
		Uranium-238	0.514 g	0.576	0.0621	0.0718	.011245136	pCi/g	NO
248112004	RE15-10-8395	Uranium-233/234	0.551 g	0.419	0.0484	0.0946	.021415608	pCi/g	NO
		Uranium-235/236	0.551 g	0.0166	0.0102	0.0578	.012976407	pCi/g	YES
		Uranium-238	0.551 g	0.460	0.0514	0.0665	.010490018	pCi/g	NO
248112005	RE15-10-8398	Uranium-233/234	0.509 g	1.36	0.132	0.149	.023182711	pCi/g	NO
		Uranium-235/236	0.509 g	0.117	0.0305	0.091	.014047151	pCi/g	NO
		Uranium-238	0.509 g	1.94	0.177	0.105	.011355599	pCi/g	NO
248112006	RE15-10-8394	Uranium-233/234	0.501 g	0.732	0.0764	0.115	.023552894	pCi/g	NO
		Uranium-235/236	0.501 g	0.0603	0.0193	0.070	.014271457	pCi/g	YES
		Uranium-238	0.501 g	0.728	0.0765	0.0806	.011536926	pCi/g	NO
248112007	RE15-10-8399	Uranium-233/234	0.513 g	0.837	0.0834	0.109	.023001949	pCi/g	NO
		Uranium-235/236	0.513 g	0.0334	0.0128	0.0665	.013937622	pCi/g	YES
		Uranium-238	0.513 g	0.938	0.091	0.0765	.011267057	pCi/g	NO
248112008	RE15-10-8397	Uranium-233/234	0.536 g	1.79	0.164	0.142	.022014925	pCi/g	NO
		Uranium-235/236	0.536 g	0.118	0.0285	0.0867	.013339552	pCi/g	NO
		Uranium-238	0.536 g	2.68	0.232	0.0998	.010783582	pCi/g	NO
248115001	RE36-10-8448	Uranium-233/234	0.580 g	1.14	0.107	0.112	.020344828	pCi/g	NO
		Uranium-235/236	0.580 g	0.0541	0.0168	0.0686	.012327586	pCi/g	YES
		Uranium-238	0.580 g	1.22	0.114	0.0789	.009965517	pCi/g	NO
248115002	RE36-10-8456	Uranium-233/234	0.528 g	1.23	0.114	0.112	.022348485	pCi/g	NO
		Uranium-235/236	0.528 g	0.0783	0.0204	0.0682	.013541667	pCi/g	NO
		Uranium-238	0.528 g	1.14	0.107	0.0784	.010946970	pCi/g	NO
248115003	RE36-10-8451	Uranium-233/234	0.557 g	1.16	0.106	0.101	.021184919	pCi/g	NO
		Uranium-235/236	0.557 g	0.084	0.0202	0.0616	.012836625	pCi/g	NO

Blank Correction Report

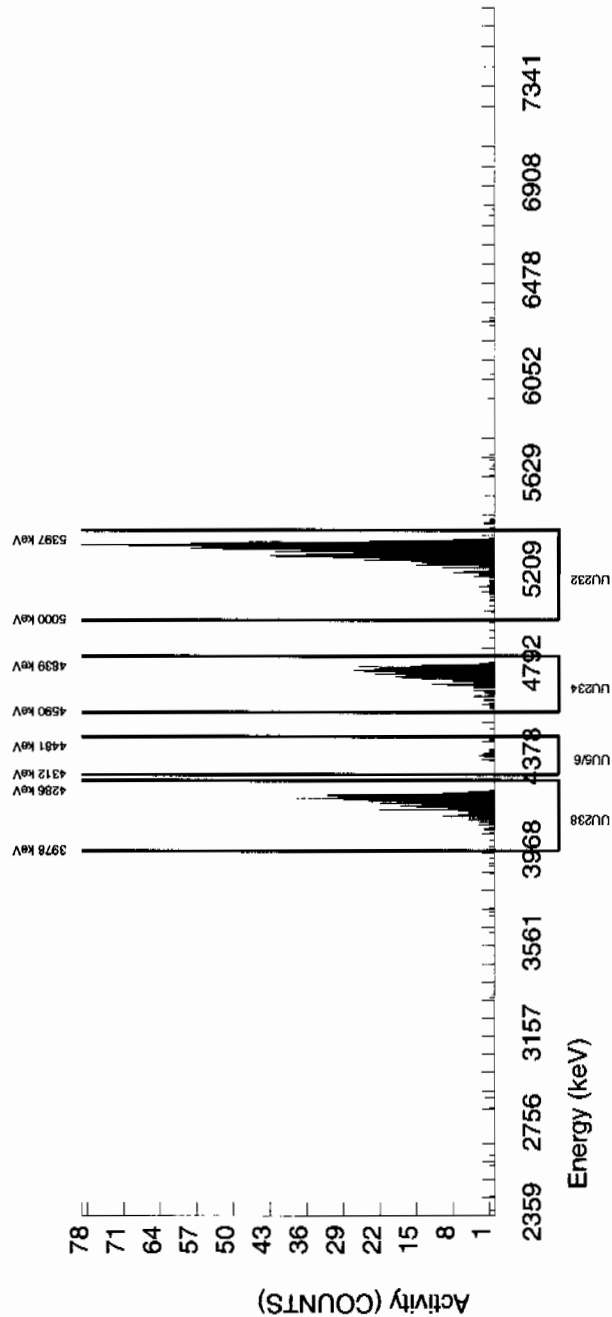
GEL Sample ID	Client sample ID	Parameter	Allquot	Result	TPU	MDA	Allquot Corrected Blank Result	Units	Activity <5X Corrected Blank
248115003	RE36-10-8451	Uranium-238	0.557 g	1.20	0.109	0.0709	.010377020	pCi/g	NO
248115004	RE36-10-8450	Uranium-233/234	0.511 g	1.30	0.138	0.191	.023081977	pCi/g	NO
		Uranium-235/236	0.511 g	0.0754	0.0258	0.117	.013992172	pCi/g	NO
		Uranium-238	0.511 g	1.25	0.134	0.134	.011311155	pCi/g	NO
248115005	RE36-10-8449	Uranium-233/234	0.545 g	1.19	0.110	0.109	.021651376	pCi/g	NO
		Uranium-235/236	0.545 g	0.0669	0.0185	0.0666	.013119266	pCi/g	NO
		Uranium-238	0.545 g	1.23	0.113	0.0766	.010605505	pCi/g	NO
248115006	RE36-10-8453	Uranium-233/234	0.524 g	1.09	0.109	0.137	.022519084	pCi/g	NO
		Uranium-235/236	0.524 g	0.0419	0.0161	0.0834	.013645038	pCi/g	YES
		Uranium-238	0.524 g	1.05	0.106	0.096	.011030534	pCi/g	NO
248115007	RE36-10-8452	Uranium-233/234	0.539 g	0.921	0.0823	0.0779	.021892393	pCi/g	NO
		Uranium-235/236	0.539 g	0.0819	0.019	0.0476	.013265306	pCi/g	NO
		Uranium-238	0.539 g	0.922	0.0827	0.0547	.010723562	pCi/g	NO

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962688 SAMPLE ID : S0248112001_UU SAMPLE QTY : 0.504 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 76.094				CHAMBER : 119 DETECTOR S/N : 79450 AVERAGE %EFFICIENCY : 25.9082 COUNT DATE : 24-MAR-2010 15:51:59 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B119.CNF:471 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W119.CNF:123 CAL DATE : 19-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5031E+00 dpm RESULTS : 3.4265E+00 dpm				MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G				LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5305.276	61.908	889.000	887.000	2.000	1.4142	100.0000	4.02E+00	3.25E-01	1.49E-02	4.21E-02	1.35E-01
U-3/4	4763.020	4759.429	64.901	354.000	353.101	0.000	5.4790	100.0000	1.60E+00	1.45E-01	5.78E-02	1.28E-01	8.52E-02
U-235	4391.000	4416.637	23.501	19.000	19.000	0.000	2.4127	80.90000	1.06E-01	2.56E-02	3.15E-02	7.81E-02	2.44E-02
U-238	4184.730	4189.738	68.228	427.000	427.000	0.000	3.6781	100.0000	1.94E+00	1.70E-01	3.88E-02	8.99E-02	9.37E-02

NOTES:

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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962688 SAMPLE ID : S0248112002_UU SAMPLE QTY : 0.500 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 76.106	CHAMBER : 120 DETECTOR S/N : 74430 AVERAGE %EFFICIENCY : 26.1668 COUNT DATE : 24-MAR-2010 15:52:01 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B120.CNF;475 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W120.CNF;130 CAL DATE : 19-MAR-2010
---	--	--

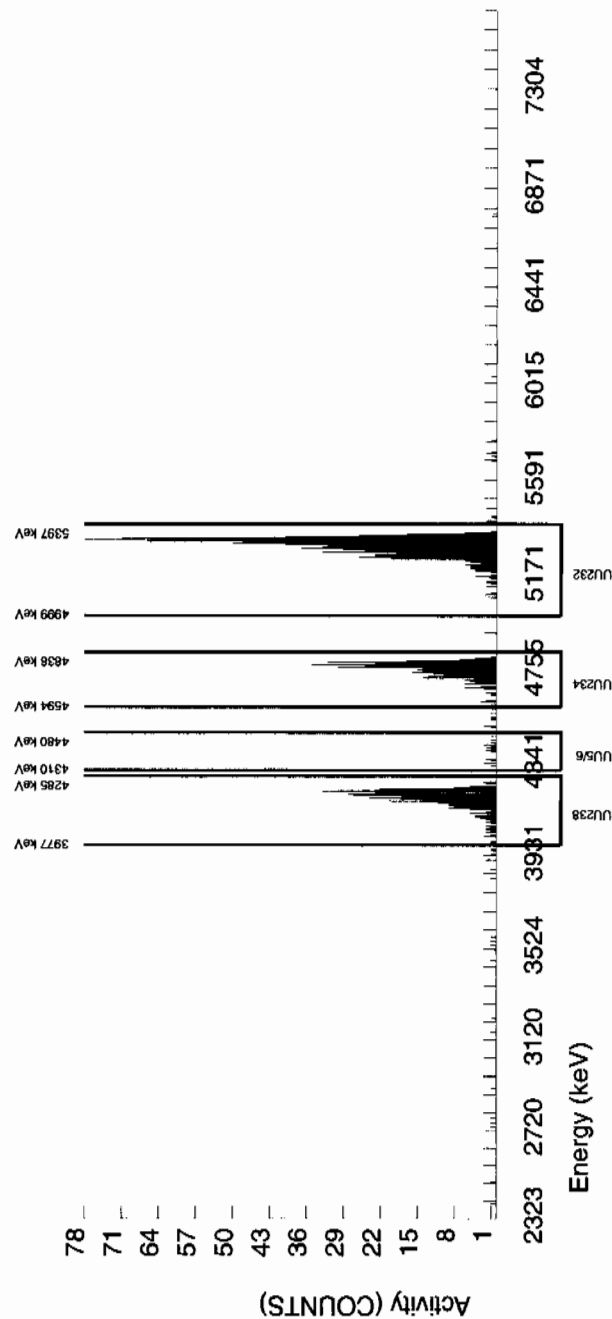
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5031E+00 dpm RESULTS : 3.4271E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
---	--	--

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5305.175	35.562	899.000	896.000	3.000	1.7321	100.0000	4.06E+00	3.27E-01	1.82E-02	4.87E-02	1.36E-01
U-3/4	4763.020	4763.206	32.246	361.000	359.092	1.000	5.4790	100.0000	1.62E+00	1.47E-01	5.77E-02	1.28E-01	8.60E-02
U-235	4391.000	4394.747	101.310	17.000	17.000	0.000	2.4127	80.90000	9.51E-02	2.41E-02	3.14E-02	7.79E-02	2.31E-02
U-238	4184.730	4187.079	62.954	411.000	409.000	2.000	3.6781	100.0000	1.85E+00	1.64E-01	3.87E-02	8.97E-02	9.19E-02

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 962688 SAMPLE ID : S0248112003_UU SAMPLE QTY : 0.514 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 93.754</p>		<p>CHAMBER : 121 DETECTOR S/N : 75545 AVERAGE %EFFICIENCY : 25.7929 COUNT DATE : 24-MAR-2010 15:52:04 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB FILE : ENV_ALPHA_UU BKG FILE : B121.CNF;457 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W121.CNF;121 CAL DATE : 19-MAR-2010</p>
--	--	---	---

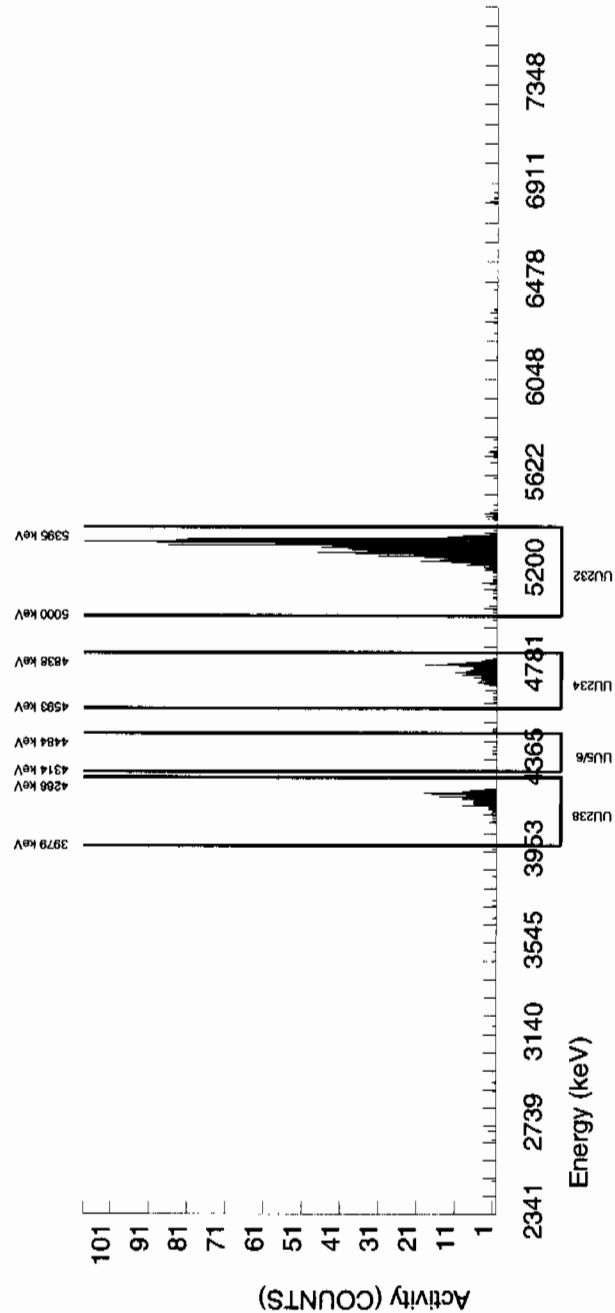
<p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5031E+00 dpm RESULTS : 4.2218E+00 dpm</p>	<p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>	<p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>
--	---	---

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	5308.419	33.037	1093.000	1088.000	5.000	2.2361	100.0000	3.95E+00	3.09E-01	1.89E-02	4.75E-02	1.20E-01
U-3/4	4763.020	4760.451	45.217	161.000	158.898	1.000	5.4790	100.0000	5.76E-01	6.19E-02	4.62E-02	1.02E-01	4.60E-02
U-235	4391.000	4379.904	108.297	6.000	5.000	1.000	2.4127	80.90000	2.24E-02	1.20E-02	2.51E-02	6.24E-02	1.19E-02
U-238	4184.730	4195.563	23.654	161.000	159.000	2.000	3.6781	100.0000	5.76E-01	6.21E-02	3.10E-02	7.18E-02	4.63E-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 : 962688 SAMPLE ID : S0248112004_UU SAMPLE QTY : 0.551 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 92.273	CHAMBER : 122 DETECTOR S/N : 75546 AVERAGE %EFFICIENCY : 26.3997 COUNT DATE : 24-MAR-2010 15:52:06 ELAPSED LIVE TIME(SEC) : 60000.00	LIB FILE : ENV_ALPHA_UU BKG FILE : B122.CNF:459 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W122.CNF:124 CAL DATE : 19-MAR-2010
---	--	--

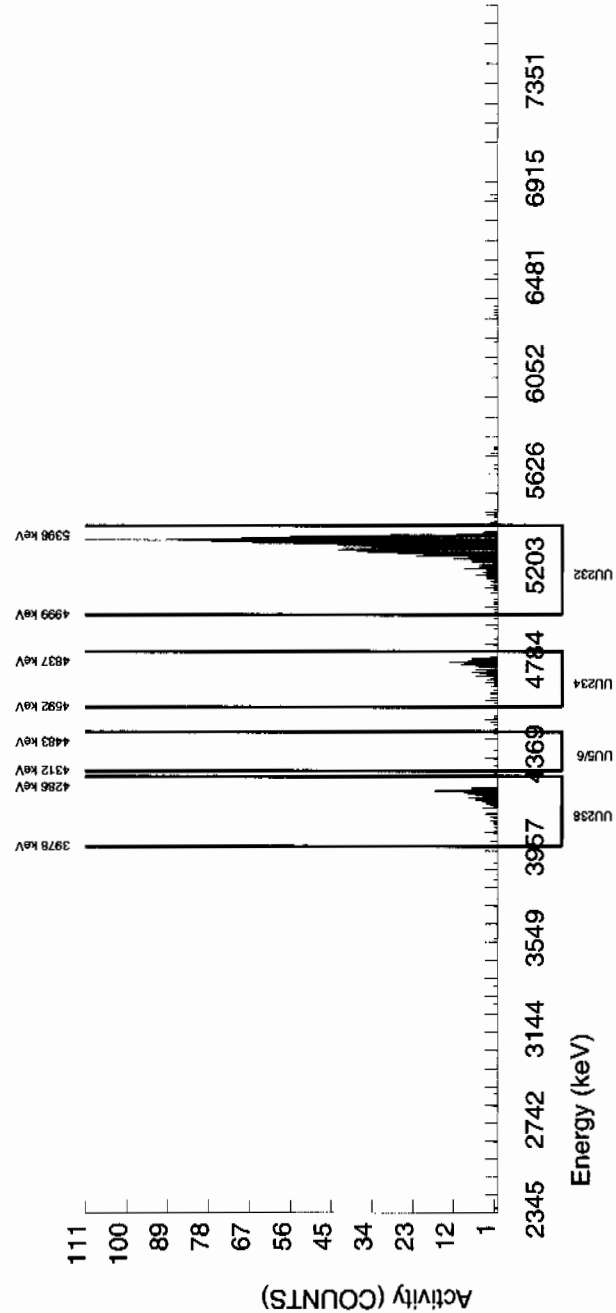
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5031E+00 dpm RESULTS : 4.1551E+00 dpm	MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G
---	--	--

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5310.539	32.839	1103.000	1096.000	7.000	2.6458	100.0000	3.68E+00	2.87E-01	2.07E-02	5.04E-02	1.12E-01
U-3/4	4763.020	4761.874	61.118	127.000	124.890	1.000	5.4790	100.0000	4.19E-01	4.84E-02	4.28E-02	9.46E-02	3.78E-02
U-235	4391.000	4381.452	158.425	5.000	4.000	1.000	2.4127	80.90000	1.66E-02	1.02E-02	2.33E-02	5.78E-02	1.02E-02
U-238	4184.730	4193.800	13.862	137.000	137.000	0.000	3.6781	100.0000	4.60E-01	5.13E-02	2.87E-02	6.65E-02	3.93E-02

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 962688 SAMPLE ID : S0248112005_UU SAMPLE QTY : 0.509 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 61.526</p>		<p>CHAMBER : 123 DETECTOR S/N : 45-142V3 AVERAGE %EFFICIENCY : 27.2378 COUNT DATE : 24-MAR-2010 15:52:09 ELAPSED LIVE TIME(SEC) : 60000.00</p>		<p>LIB FILE : ENV_ALPHA_UU BKG FILE : B123.CNF;457 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W123.CNF;120 CAL DATE : 19-MAR-2010</p>	
--	--	--	--	---	--

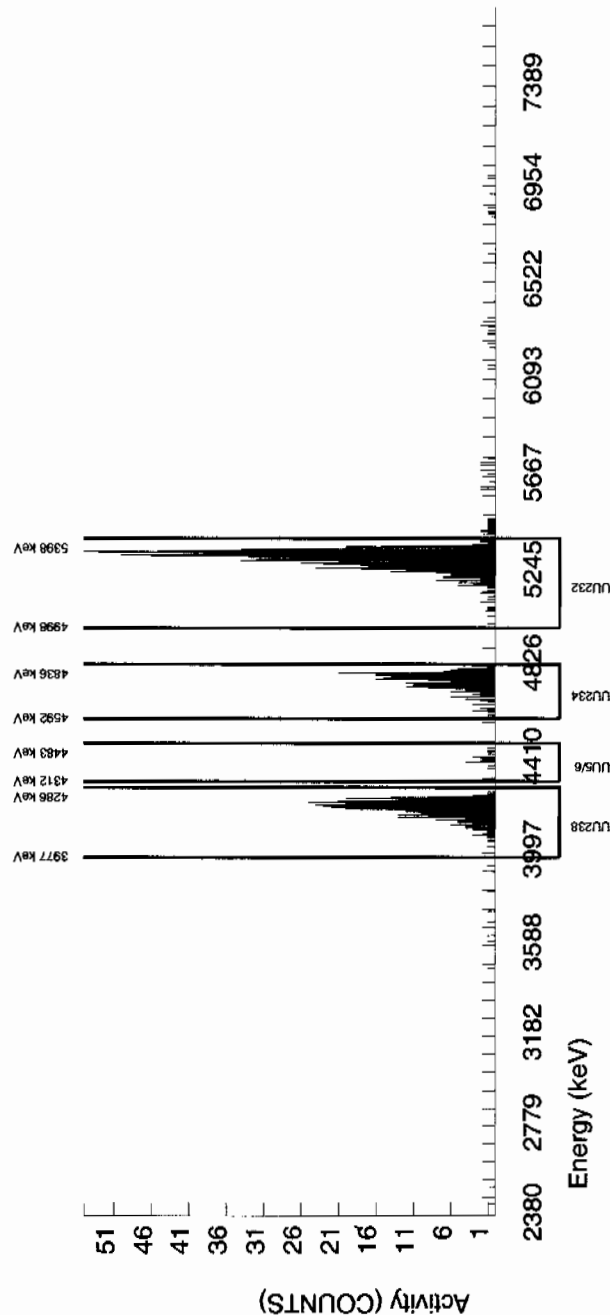
<p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5031E+00 dpm RESULTS : 2.7706E+00 dpm</p>		<p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>		<p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>	
---	--	--	--	--	--

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5309.380	54.297	759.000	754.000	5.000	2.2361	100.0000	3.99E+00	3.32E-01	2.75E-02	6.93E-02	1.46E-01
U-3/4	4763.020	4761.083	62.502	258.000	257.236	0.000	5.4790	100.0000	1.36E+00	1.32E-01	6.73E-02	1.49E-01	8.47E-02
U-235	4391.000	4414.461	23.923	19.000	18.000	1.000	2.4127	80.90000	1.17E-01	3.05E-02	3.66E-02	9.10E-02	2.92E-02
U-238	4184.730	4193.568	86.326	369.000	368.000	1.000	3.6781	100.0000	1.94E+00	1.77E-01	4.52E-02	1.05E-01	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 : 962688 SAMPLE ID : S0248112006_UU SAMPLE QTY : 0.501 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 82.929		CHAMBER : 124 DETECTOR S/N : 45-142V2 AVERAGE %EFFICIENCY : 26.6674 COUNT DATE : 24-MAR-2010 15:52:11 ELAPSED LIVE TIME(SEC) : 60000.00		LIB FILE : ENV_ALPHA_UU BKG FILE : B124.CNF;453 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W124.CNF;116 CAL DATE : 19-MAR-2010	
---	--	---	--	--	--

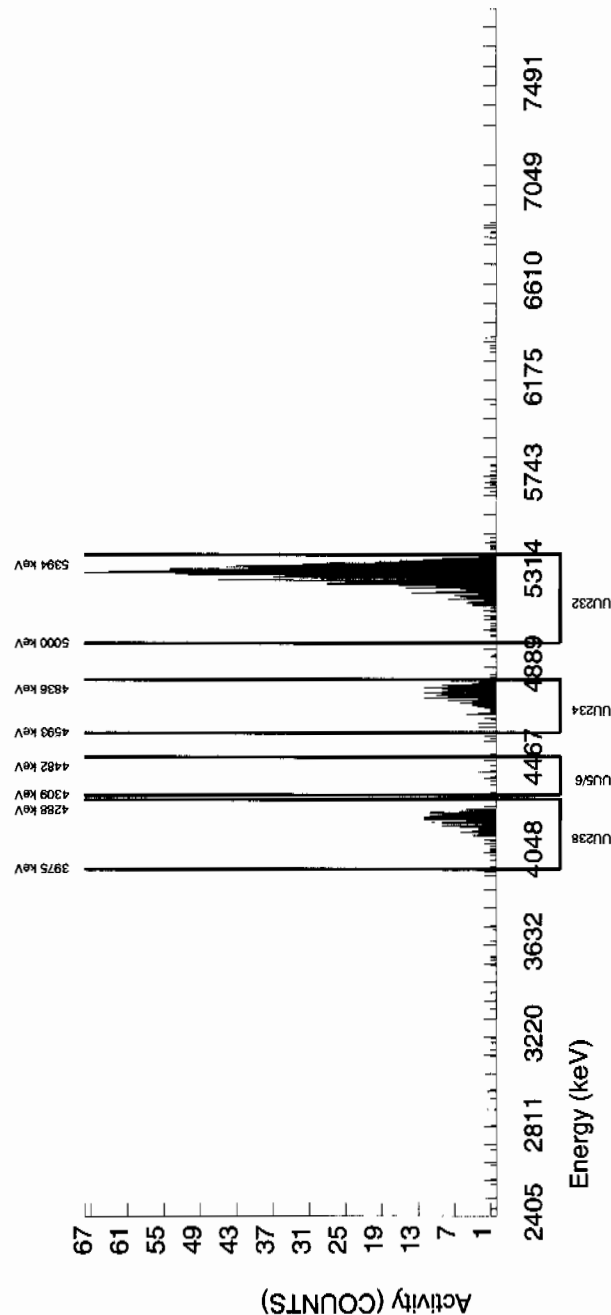
TRACER ID : 1283-H NUCLEIDE : U232 NOMINAL : 4.5031E+00 dpm RESULTS : 3.7343E+00 dpm		MS/MSD ID : 0244-A NUCLEIDE : U-238 NOMINAL : 5.7500E+00 pCi/G		LCS/LCSD ID : 0244-A NUCLEIDE : U-238 NOMINAL : 5.7500E+00 pCi/G	
--	--	---	--	---	--

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5305.210	69.070	1001.000	995.000	6.000	2.4495	100.0000	4.05E+00	3.21E-01	2.32E-02	5.74E-02	1.29E-01
U-3/4	4763.020	4760.527	70.946	182.000	179.992	1.000	5.4790	100.0000	7.32E-01	7.64E-02	5.18E-02	1.15E-01	5.48E-02
U-235	4391.000	4399.560	5.867	13.000	12.000	1.000	2.4127	80.90000	6.03E-02	1.93E-02	2.82E-02	7.00E-02	1.88E-02
U-238	4184.730	4191.667	69.536	182.000	179.000	3.000	3.6781	100.0000	7.28E-01	7.65E-02	3.48E-02	8.06E-02	5.53E-02

NOTES:

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

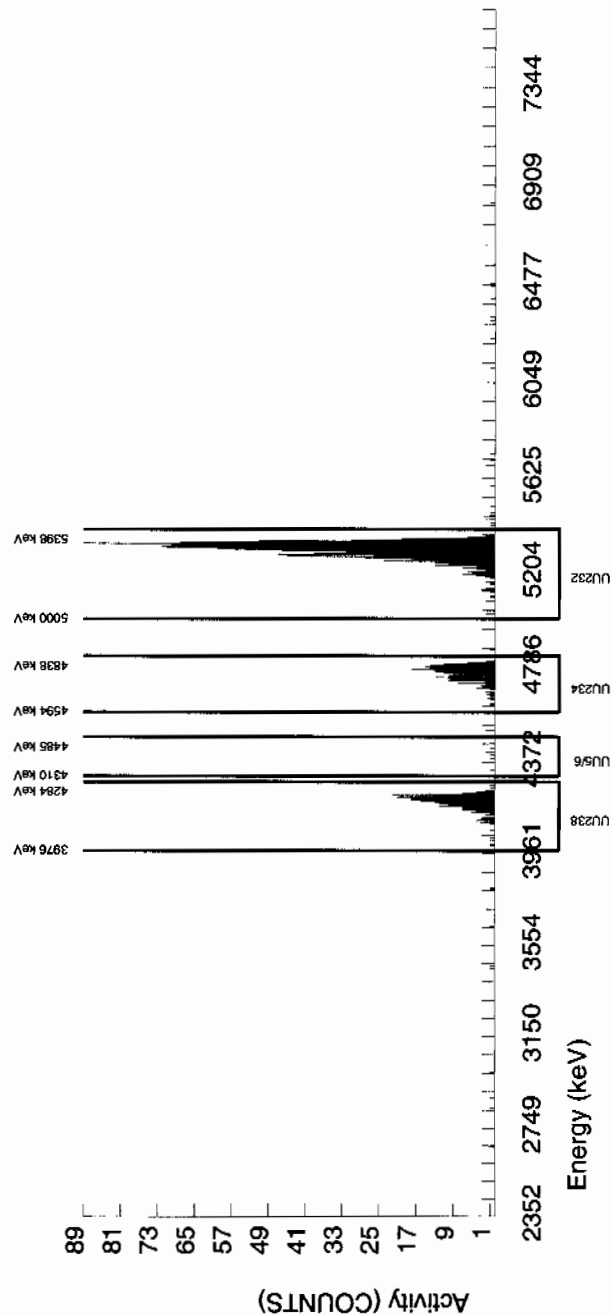


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962688 SAMPLE ID : S0248112007_UU SAMPLE QTY : 0.513 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 84.270				CHAMBER : 125 DETECTOR S/N : 75547 AVERAGE %EFFICIENCY : 27.0077 COUNT DATE : 24-MAR-2010 15:52:14 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B125.CNF;463 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W125.CNF;134 CAL DATE : 18-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5031E+00 dpm RESULTS : 3.7947E+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	5307.664	65.975	1028.000	1024.000	4.000	2.0000	100.0000	3.95E+00	3.12E-01	1.80E-02	4.64E-02	1.24E-01
U-3/4	4763.020	4763.195	71.761	220.000	216.963	2.000	5.4790	100.0000	8.37E-01	8.34E-02	4.92E-02	1.09E-01	5.73E-02
U-235	4391.000	4413.003	4.941	7.000	7.000	0.000	2.4127	80.90000	3.34E-02	1.28E-02	2.68E-02	6.65E-02	1.26E-02
U-238	4184.730	4194.608	52.839	245.000	243.000	2.000	3.6781	100.0000	9.38E-01	9.10E-02	3.30E-02	7.65E-02	6.06E-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

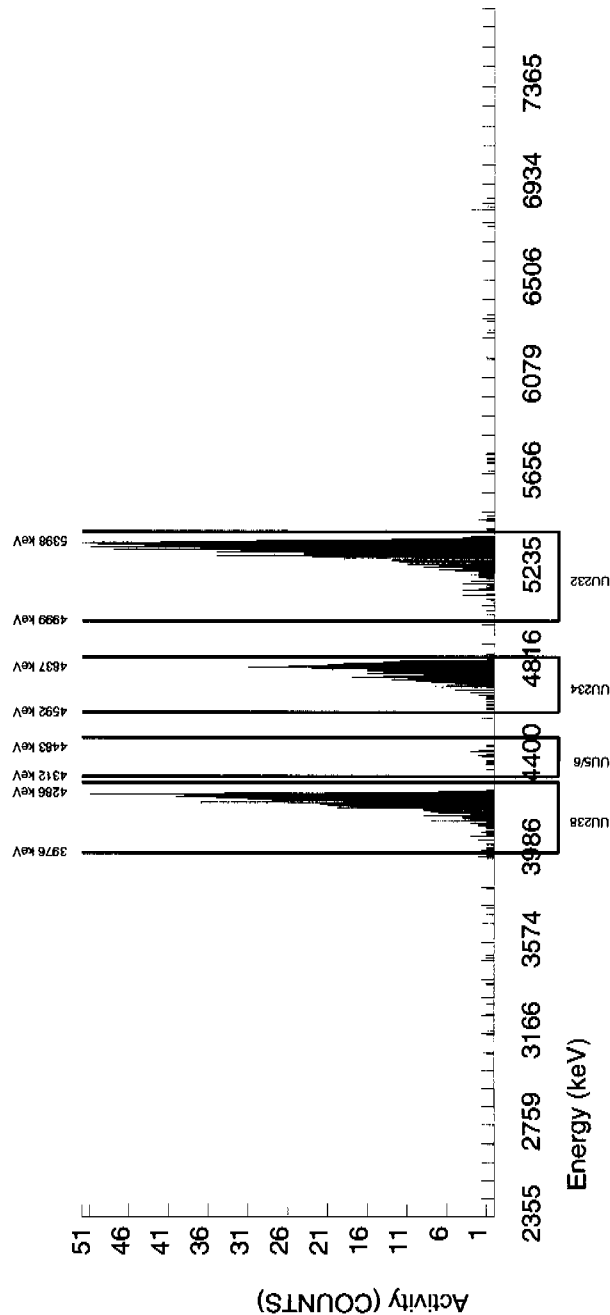


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962688 SAMPLE ID : S0248112008_UU SAMPLE QTY : 0.536 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 62.607				CHAMBER : 126 DETECTOR S/N : 75548 AVERAGE %EFFICIENCY : 26.6612 COUNT DATE : 24-MAR-2010 15:52:16 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B126.CNF;462 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W126.CNF;136 CAL DATE : 18-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5031E+00 dpm RESULTS : 2.8192E+00 dpm				MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G				LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5314.643	70.387	752.000	751.000	1.000	1.0000	100.0000	3.78E+00	3.15E-01	1.17E-02	3.71E-02	1.38E-01
U-3/4	4763.020	4773.883	65.730	358.000	355.239	2.000	5.4790	100.0000	1.79E+00	1.64E-01	6.42E-02	1.42E-01	9.54E-02
U-235	4391.000	4407.028	63.712	19.000	19.000	0.000	2.4127	80.90000	1.18E-01	2.85E-02	3.49E-02	8.67E-02	2.71E-02
U-238	4184.730	4202.729	47.384	535.000	533.000	2.000	3.6781	100.0000	2.68E+00	2.32E-01	4.31E-02	9.98E-02	1.17E-01

NOTES:

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

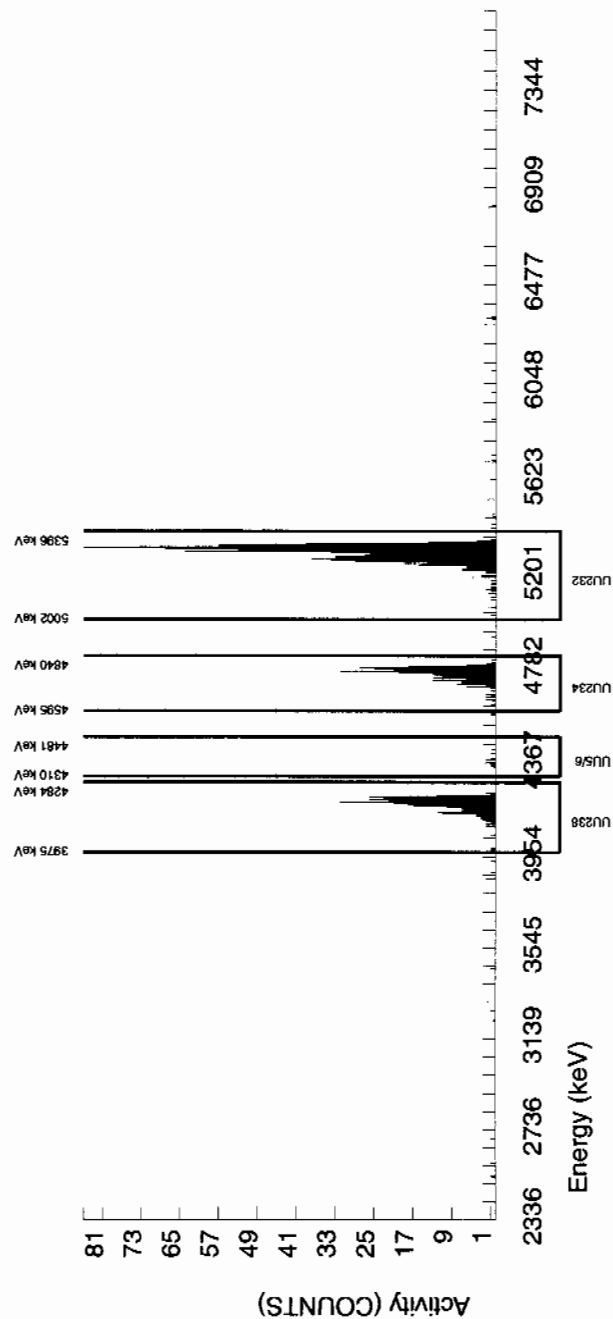


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962688 SAMPLE ID : S0248115001_UU SAMPLE QTY : 0.580 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 74.164				CHAMBER : 127 DETECTOR S/N : 78770 AVERAGE %EFFICIENCY : 26.3126 COUNT DATE : 24-MAR-2010 15:52:19 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B127.CNF:466 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W127.CNF:127 CAL DATE : 18-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5031E+00 dpm RESULTS : 3.3396E+00 dpm				MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G				LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5303.243	36.591	882.000	878.000	4.000	2.0000	100.0000	3.50E+00	2.83E-01	1.85E-02	4.78E-02	1.19E-01
U-3/4	4763.020	4763.344	33.484	287.000	286.111	0.000	5.4790	100.0000	1.14E+00	1.07E-01	5.07E-02	1.12E-01	6.73E-02
U-235	4391.000	4383.478	19.690	11.000	11.000	0.000	2.4127	80.90000	5.41E-02	1.68E-02	2.76E-02	6.86E-02	1.63E-02
U-238	4184.730	4190.640	42.159	307.000	307.000	0.000	3.6781	100.0000	1.22E+00	1.14E-01	3.41E-02	7.89E-02	6.97E-02

NOTES:

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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

<p>BATCH NUMBER : 962688 SAMPLE ID : S1202065307_UU SAMPLE QTY : 1.000 G SAMPLE DATE : 17-MAR-2010 00:00:00 ANALYST : MXE1 % YIELD : 96.365</p>	<p>CHAMBER : 171 DETECTOR S/N : 78260 AVERAGE %EFFICIENCY : 40.4087 COUNT DATE : 24-MAR-2010 08:14:40 ELAPSED LIVE TIME(SEC) : 60000.00</p>	<p>LIB FILE : ENV_ALPHA_UU BKG FILE : B171.CNF;188 BKG DATE : 22-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W171.CNF;77 CAL DATE : 22-MAR-2010</p>
--	---	--

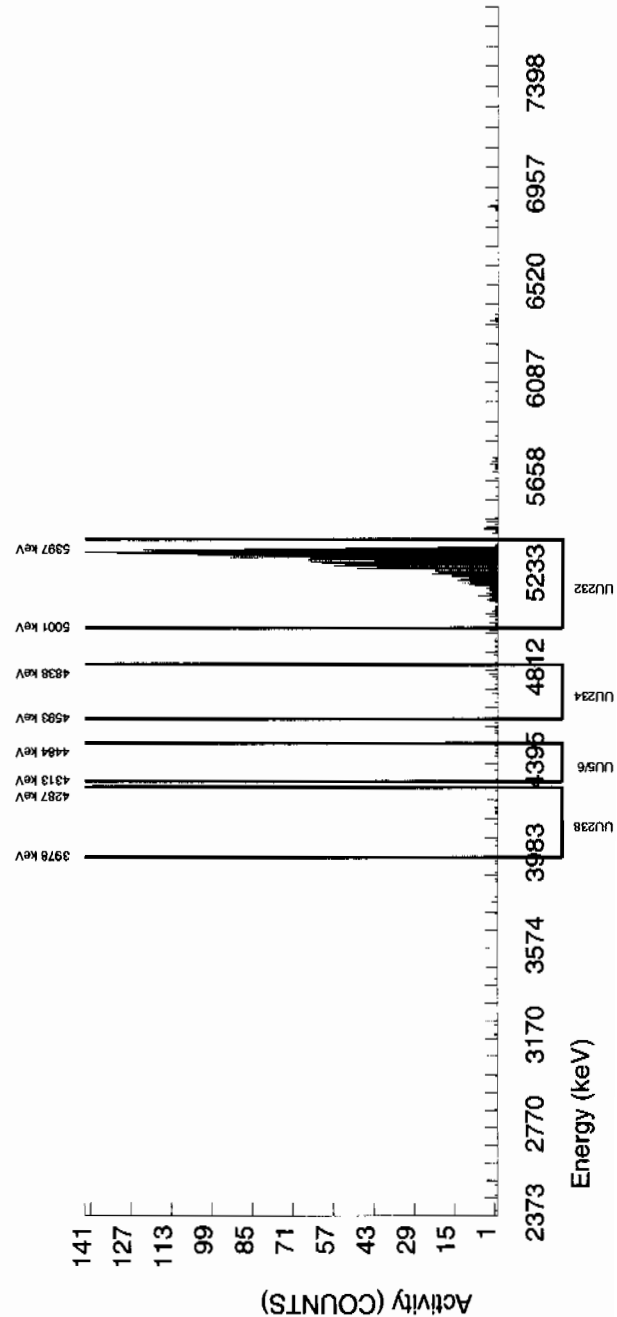
<p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5002E+00 dpm RESULTS : 4.3366E+00 dpm</p>	<p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>	<p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p>
---	--	--

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	5308.791	40.507	1767.000	1752.000	15.000	3.8730	100.0000	2.03E+00	1.49E-01	1.04E-02	2.40E-02	4.88E-02
U-3/4	4763.020	4762.271	87.446	15.000	10.225	3.000	5.4790	100.0000	1.18E-02	4.73E-03	1.47E-02	3.26E-02	4.66E-03
U-235	4391.000	4405.817	152.106	7.000	5.000	2.000	2.4127	80.90000	7.15E-03	4.32E-03	8.03E-03	1.99E-02	4.29E-03
U-238	4184.730	4168.015	236.473	10.000	5.000	5.000	3.6781	100.0000	5.78E-03	4.50E-03	9.90E-03	2.29E-02	4.48E-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

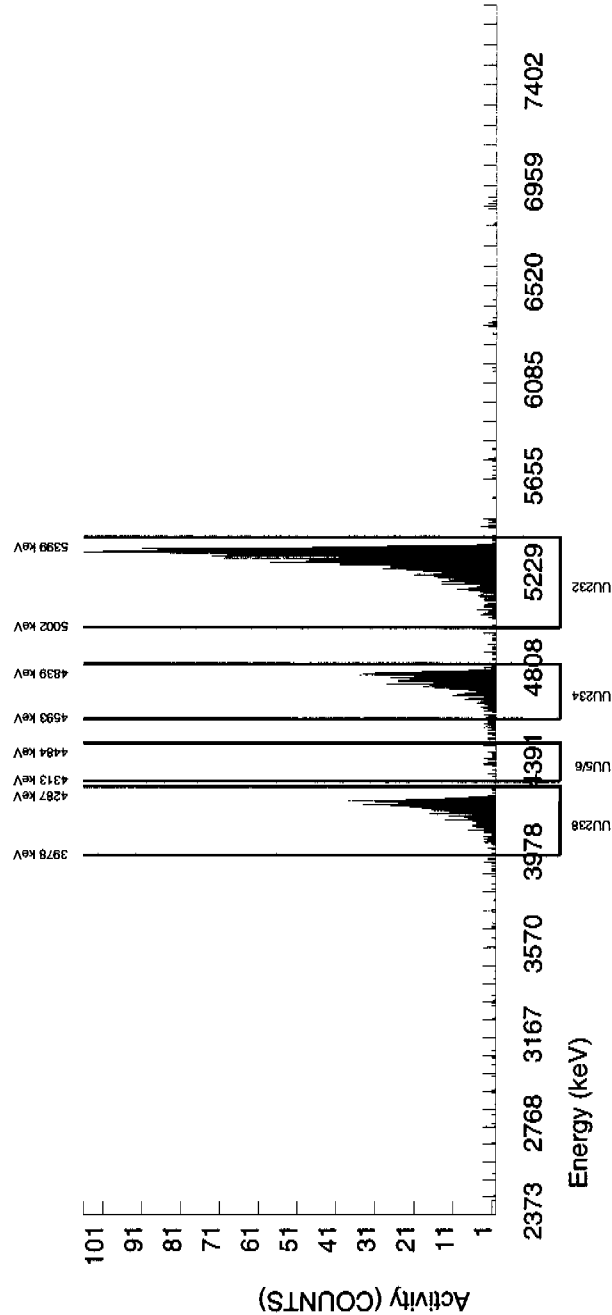


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962688 SAMPLE ID : S1202065308_UU SAMPLE QTY : 0.531 G SAMPLE DATE : 22-FEB-2010 00:00:00 ANALYST : MXE1 % YIELD : 81.880				CHAMBER : 172 DETECTOR S/N : 78772 AVERAGE %EFFICIENCY : 39.4139 COUNT DATE : 24-MAR-2010 08:14:43 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B172.CNF;186 BKG DATE : 22-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W172.CNF;70 CAL DATE : 22-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5031E+00 dpm RESULTS : 3.6871E+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	5298.638	64.189	1460.000	1452.000	8.000	2.8284	100.0000	3.82E+00	2.87E-01	1.73E-02	4.17E-02	1.01E-01
U-3/4	4763.020	4759.007	67.246	502.000	499.529	1.000	5.4790	100.0000	1.31E+00	1.09E-01	3.35E-02	7.41E-02	5.89E-02
U-235	4391.000	4397.008	95.628	27.000	25.000	2.000	2.4127	80.90000	8.12E-02	1.84E-02	1.82E-02	4.53E-02	1.75E-02
U-238	4184.730	4185.036	41.149	472.000	471.000	1.000	3.6781	100.0000	1.24E+00	1.04E-01	2.25E-02	5.21E-02	5.72E-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

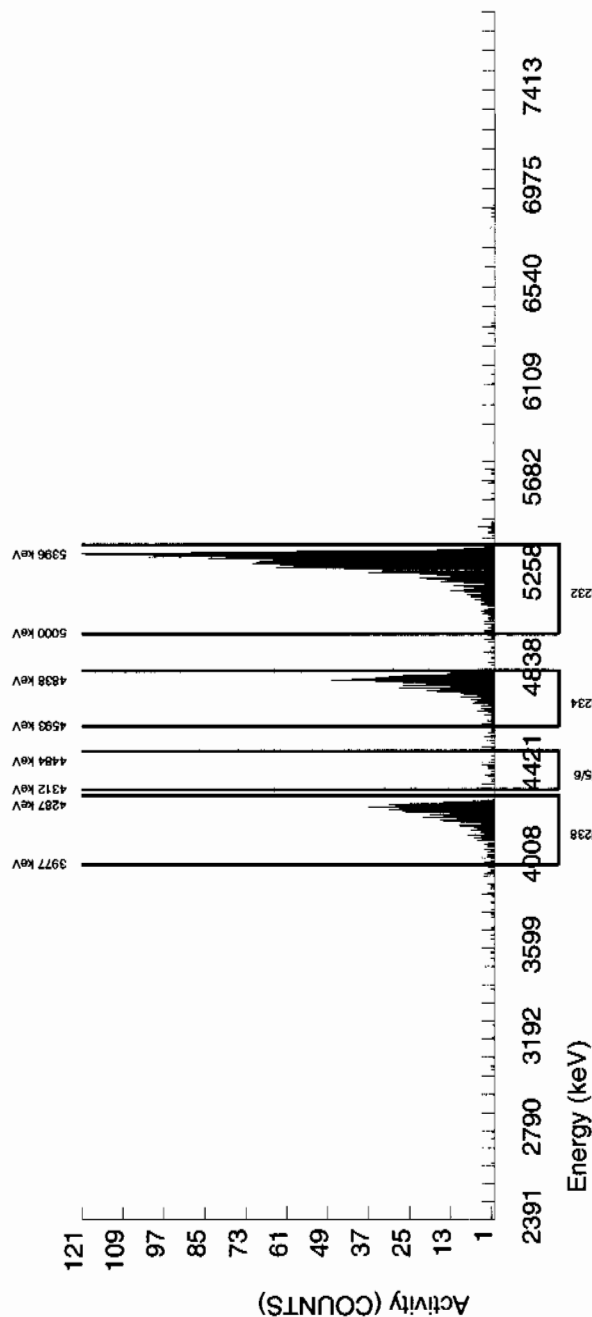


GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 962688 SAMPLE ID : S1202065309_UU SAMPLE QTY : 0.108 G SAMPLE DATE : 17-MAR-2010 00:00:00 ANALYST : MXE1 % YIELD : 98.153				CHAMBER : 165 DETECTOR S/N : 72544 AVERAGE %EFFICIENCY : 39.2873 COUNT DATE : 24-MAR-2010 08:14:24 ELAPSED LIVE TIME(SEC) : 60000.00				LIB FILE : ENV_ALPHA_UU BKG FILE : B165.CNF;180 BKG DATE : 21-MAR-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W165.CNF;60 CAL DATE : 22-MAR-2010					
TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5002E+00 dpm RESULTS : 4.4171E+00 dpm				MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G				LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G					
NUCLIDE ACTIVITY SUMMARY													
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U232	5302.100	5310.611	69.218	1742.000	1735.000	7.000	2.6458	100.0000	1.88E+01	1.49E+00	6.66E-02	1.62E-01	4.52E-01
U-3/4	4763.020	4774.298	57.274	544.000	540.242	2.000	5.4790	100.0000	5.84E+00	5.08E-01	1.38E-01	3.05E-01	2.52E-01
U-235	4391.000	4412.550	55.179	28.000	28.000	0.000	2.4127	80.90000	3.74E-01	7.62E-02	7.50E-02	1.86E-01	7.07E-02
U-238	4184.730	4196.415	64.029	535.000	532.000	3.000	3.6781	100.0000	5.75E+00	5.01E-01	9.25E-02	2.14E-01	2.51E-01

NOTES:

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



Radiochemistry Batch Checklist, Rev10

Batch# 9592720 Product: Gamma Solid Date: 03/12/10
4u/10 LANL

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)			N/A
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.		✓	DER 803280
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.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line outs initialed and dated.	✓		
No transcription errors are apparent.	✓		
Aux data is correct.	✓		
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hlt notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.	✓		DER 803280
Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed.	✓		
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: 85 3/12/10

Secondary Review Performed By: 3/13/10

3/19

03/01/2010

Gamma Spec Que Sheet I.G.- 3/10/10

Batch #: 959270 Analyst: MXR1 First Client Due Date: 03/19/2010 Internal Due Date: 03/09/2010
 Gamma Spike Isotope: Mixed Gamma Spike Code: 1032-A Expiration Date: 12/2/10 Vol: 1.0 mL Nominal Concentration: CS137-5.687
 Gamma LCS Isotope: Mixed Gamma LCS Code: 3/3/10 Expiration Date: 3/3/10 Vol: 1.0 mL Nominal Concentration: Co60-6.499
 Initials: ll Prep Date: 3/3/10 Library: Solid Witness: ll Am241-16.29

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry (1/F)	Detector	Sealing Date/Time (If Applicable)
24812001-1	RE15-10-8404	SAMPLE	LANL010	LANL010	SOIL	22-FEB-10 12:00:00	Can	124.05	3/3/10
24812002-1	RE15-10-8396	SAMPLE	LANL010	LANL010	SOIL	22-FEB-10 12:00:00	Can	129.514	
24812003-1	RE15-10-8393	SAMPLE	LANL010	LANL010	SOIL	22-FEB-10 12:00:00	Can	119.333	
24812004-1	RE15-10-8395	SAMPLE	LANL010	LANL010	SOIL	22-FEB-10 12:00:00	Can	115.33	
24812005-1	RE15-10-8398	SAMPLE	LANL010	LANL010	SOIL	22-FEB-10 12:00:00	Can	132.52	
24812006-1	RE15-10-8394	SAMPLE	LANL010	LANL010	SOIL	22-FEB-10 12:00:00	Can	134.06	
24812007-1	RE15-10-8399	SAMPLE	LANL010	LANL010	SOIL	22-FEB-10 12:00:00	Can	122.50	
24812008-1	RE15-10-8397	SAMPLE	LANL010	LANL010	SOIL	22-FEB-10 12:00:00	Can	114.55	
24815001-1	RE36-10-8448	SAMPLE	LANL010	LANL010	SOIL	22-FEB-10 12:00:00	Can	123.20	
24815002-1	RE36-10-8456	SAMPLE	LANL010	LANL010	SOIL	22-FEB-10 12:00:00	Can	133.16	
24815003-1	RE36-10-8451	SAMPLE	LANL010	LANL010	SOIL	22-FEB-10 12:00:00	Can	129.38	
24815004-1	RE36-10-8450	SAMPLE	LANL010	LANL010	SOIL	22-FEB-10 12:00:00	Can	124.04	
24815005-1	RE36-10-8449	SAMPLE	LANL010	LANL010	SOIL	22-FEB-10 12:00:00	Can	120.72	
24815006-1	RE36-10-8453	SAMPLE	LANL010	LANL010	SOIL	22-FEB-10 12:00:00	Can	127.63	
24815007-1	RE36-10-8452	SAMPLE	LANL010	LANL010	SOIL	22-FEB-10 12:00:00	Can	143.04	
24817001-1	WST16-10-13288	SAMPLE	LANL010	LANL010	SOIL	23-FEB-10 12:00:00	Can	124.20	
24817002-1	WST16-10-13286	SAMPLE	LANL010	LANL010	SOIL	23-FEB-10 12:00:00	Can	111.60	
24817003-1	WST16-10-13285	SAMPLE	LANL010	LANL010	SOIL	23-FEB-10 12:00:00	Can	117.86	
24817004-1	WST16-10-13287	SAMPLE	LANL010	LANL010	SOIL	23-FEB-10 12:00:00	Can	122.38	
1202657335-1	MB	MB	QC ACCOUNT	QC ACCOUNT	SOIL	3/3/10	Can	143.04	
1202657336-1	DUP WST16-10-13288(248137001)	DUP	QC ACCOUNT	QC ACCOUNT	SOIL	23-FEB-10 12:00:00	Can	124.20	
1202657337-1	LCS	LCS	QC ACCOUNT	QC ACCOUNT	SOIL	3/3/10	Can	131.73	

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: ll

Page 1 of 1

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
959270	248112001	SAMPLE	10-MAR-10		Americium-241	0.08369	0.2997	0.200
					Cerium-139	-0.01128	0.05661	0.050
					Sodium-22	-0.00536	0.08435	0.080
959270	248112002	SAMPLE	10-MAR-10		Americium-241	0.1402	0.3786	0.200
					Sodium-22	0.01426	0.08144	0.080
959270	248112003	SAMPLE	10-MAR-10		Americium-241	-0.00783	0.3096	0.200
					Cerium-139	0.00507	0.05461	0.050
					Cesium-134	0.08856	0.1019	0.100
					Sodium-22	0.02895	0.1068	0.080
959270	248112004	SAMPLE	10-MAR-10		Americium-241	-0.2817	0.506	0.200
					Cerium-139	-0.02468	0.06136	0.050
					Europium-152	0.0814	0.2159	0.200
					Sodium-22	0.04084	0.1004	0.080
					Thorium-234	0.103	4.204	2.00
959270	248112005	SAMPLE	10-MAR-10		Americium-241	-0.108	0.2531	0.200
					Cerium-139	-0.00405	0.05017	0.050
					Thorium-234	0.85	2.297	2.00
959270	248112006	SAMPLE	10-MAR-10		Americium-241	0.02524	0.2107	0.200
959270	248112007	SAMPLE	10-MAR-10		Sodium-22	0.00228	0.08871	0.080
959270	248112008	SAMPLE	10-MAR-10		Cerium-139	0.00472	0.05891	0.050
					Europium-152	-0.00578	0.2026	0.200
					Sodium-22	0.00131	0.09072	0.080
959270	248115001	SAMPLE	10-MAR-10		Americium-241	0.08922	0.2151	0.200
					Cerium-139	0.02157	0.05447	0.050
959270	248115002	SAMPLE	10-MAR-10		Sodium-22	-0.04505	0.1056	0.080
959270	248115003	SAMPLE	10-MAR-10					
959270	248115004	SAMPLE	10-MAR-10		Americium-241	0.06472	0.3037	0.200
					Cerium-139	-0.00716	0.05795	0.050
					Sodium-22	-0.01867	0.08525	0.080
959270	248115005	SAMPLE	10-MAR-10		Cerium-139	0.0013	0.06802	0.050
					Cesium-134	0.1407	0.1447	0.100
					Cobalt-60	0.00888	0.1016	0.100
					Europium-152	-0.1117	0.2185	0.200
					Ruthenium-106	-0.1953	0.8112	0.800
					Sodium-22	0.00285	0.1209	0.080
					Tin-113	0.05472	0.113	0.100
959270	248115006	SAMPLE	10-MAR-10		Americium-241	0.02762	0.2627	0.200
					Cerium-139	0.00222	0.05045	0.050
					Thorium-234	2.24	2.276	2.00
959270	248115007	SAMPLE	10-MAR-10		Americium-241	-0.2002	0.3336	0.200
					Cerium-139	0.00183	0.0539	0.050
					Thorium-234	2.113	2.957	2.00
959270	248137001	SAMPLE	10-MAR-10		Americium-241	0.06243	0.2903	0.200
					Cerium-139	-0.00869	0.05328	0.050

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
959270	248137001	SAMPLE	10-MAR-10		Sodium-22	-0.03353	0.0807	0.080
959270	248137002	SAMPLE	10-MAR-10		Americium-241	-0.02279	0.2926	0.200
					Thorium-234	0.3319	2.668	2.00
959270	248137003	SAMPLE	10-MAR-10		Americium-241	-0.05553	0.3028	0.200
					Cerium-139	0.01935	0.05828	0.050
					Cesium-134	0.0824	0.1051	0.100
					Sodium-22	-0.00139	0.09709	0.080
959270	248137004	SAMPLE	10-MAR-10		Americium-241	-0.1483	0.5044	0.200
					Cerium-139	0.00458	0.06291	0.050
					Cesium-134	0.03914	0.101	0.100
					Europium-152	-0.06326	0.2063	0.200
					Sodium-22	-0.01017	0.09974	0.080
					Thorium-234	-0.8018	4.038	2.00
959270	1202057335	MB	10-MAR-10					
959270	1202057336	DUP	10-MAR-10		Americium-241	0.1111	0.2221	0.200
959270	1202057337	LCS	10-MAR-10		Cerium-139	0.02261	0.07071	0.050
					Cesium-134	0.01874	0.1673	0.100
					Europium-152	-0.02392	0.2795	0.200
					Potassium-40	0.9454	1.225	1.00
					Ruthenium-106	0.04809	0.9828	0.800
					Sodium-22	0.01926	0.08958	0.080
					Tin-113	0.04345	0.1357	0.100
					Yttrium-88	0.04266	0.1052	0.100

GEL QUALS

Batch ID: 959270

Report run on: March 12, 2010 10:50 AM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
248112001-1 10-MAR-2010 12:37	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.767			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.295			
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.352			
248112002-1 10-MAR-2010 13:20	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.864			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.171			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.053			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.07281			
248112003-1 10-MAR-2010 13:20	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.249			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.485			
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.533			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.0843			
248112004-1 10-MAR-2010 13:21	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.254			
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.99			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1152			
248112005-1 10-MAR-2010 13:22	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.499			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1057		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.807			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.09665			
248112006-1 10-MAR-2010 13:23	Bismuth-211	UI	UI	UI	Data rejected due to interference.		2.982			

GEL QUALS

Batch ID: 959270

Report run on: March 12, 2010 10:50 AM

Samp Id	Parname	Cofa	Edd	Qual Comments	Auto	Result	MDA	Uncert	SQL
248112006-1 10-MAR-2010 13:23	Cadmium-109	UI	UI	Data rejected due to interference.		2.278			
	Radium-224	UI	UI	Data rejected due to interference.		4.344			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.0985			
248112007-1 10-MAR-2010 13:25	Bismuth-211	UI	UI	Data rejected due to interference.		3.564			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.126			
	Cesium-137	UI	UI	Data rejected due to high peak-width.		.1651		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		5.051			
248112008-1 10-MAR-2010 13:42	Bismuth-211	UI	UI	Data rejected due to interference.		3.81			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.313			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1891		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		4.74			
248115001-1 10-MAR-2010 13:42	Bismuth-211	UI	UI	Data rejected due to interference.		5.788			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.698			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1523		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		3.417			
248115002-1 10-MAR-2010 13:43	Bismuth-211	UI	UI	Data rejected due to interference.		5.327			
	Cadmium-109	UI	UI	Data rejected due to interference.		4.998			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1408		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		6.682			

GEL QUALS

Batch ID: 959270

Report run on: March 12, 2010 10:50 AM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
248115003-1 10-MAR-2010 14:03	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.408			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.008			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1395		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.469			
248115004-1 10-MAR-2010 14:52	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.376			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.176			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1799		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.847			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.08012			
248115005-1 10-MAR-2010 14:53	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.335			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.119			
	Radium-224	UI	UI	UI	Data rejected due to interference.		6.189			
248115006-1 10-MAR-2010 14:54	Bismuth-211	UI	UI	UI	Data rejected due to interference.		5.823			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		5.377			
	Radium-224	UI	UI	UI	Data rejected due to interference.		7.227			
248115007-1 10-MAR-2010 14:55	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.398			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.667			
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.908			
248137001-1 10-MAR-2010 14:58	Bismuth-211	UI	UI	UI	Data rejected due to interference.		2.76			

GEL QUALS

Batch ID: 959270

Report run on: March 12, 2010 10:50 AM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
248137001-1 10-MAR-2010 14:58	Radium-224	UI	UI	UI	Data rejected due to interference.		3.076			
	Thorium-234	UI	UI	UI	Data rejected due to low abundance.		2.91		2	2
248137002-1 10-MAR-2010 14:59	Bismuth-211	UI	UI	UI	Data rejected due to interference.		2.855			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.178			
	Radium-224	UI	UI	UI	Data rejected due to interference.		2.778			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.08589			
248137003-1 10-MAR-2010 15:38	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.028			
	Bismuth-214	UI	UI	UI	Data rejected due to low abundance.		.9498		.2	.2
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.336			
	Radium-224	UI	UI	UI	Data rejected due to interference.		2.729			
	Radium-226	UI	UI	UI	Data rejected due to low abundance.		.9498			
248137004-1 10-MAR-2010 15:39	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.141			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		1.964			
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.263			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.111			
1202057336-1 DUP 10-MAR-2010 15:42	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.787			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.863			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1146		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.182			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1359			

Gamma Review Report based on Result > MDA for Batch:959270

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248112001	22-FEB-10 12:00	10-MAR-10 12:37	16	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RCSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	*** FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.606	0.1886	pCi/g	0.2497	N	911.6	3 1.568	IDENTIFIED 10.12	□	
Annihilation Rad. HE	0.09245	0.03829	pCi/g	0.05159	N	511.2	1 1.439	IDENTIFIED 41.2	□	
Bismuth-211 int	3.767	0.2994	pCi/g	0.3992	Y	352.4	2 1.33	IDENTIFIED 6.525	□ ui	
Bismuth-212 HE	1.665	0.5034	pCi/g	1.012	N	727.7	1 1.598	IDENTIFIED 29.6	□	
Bismuth-214 ✓	1.055	0.1023	pCi/g	0.1283	0.200	609.7	2 1.803	IDENTIFIED 8.343	□	
Cadmium-109 int	2.295	0.507	pCi/g	1.469	Y	87.35	3 0.9308	IDENTIFIED 21.59	□ ui	
Cerium-143	588.2	135	pCi/g	0	N	0	1 0	SHORT_HLIF 0	□	
Europium-155 HE	0.1938	0.06565	pCi/g	0.1847	N	105.9	1 1.39	IDENTIFIED 33.6	□	
Gross Gamma	8.755	1.452	pCi/g	3.75	N	0			□	
Lead-212 ✓	1.738	0.1091	pCi/g	0.1006	0.100	239	2 1.272	IDENTIFIED 3.682	□	
Lead-214 ✓	1.367	0.115	pCi/g	0.1389	0.100	352.4	2 1.33	IDENTIFIED 6.525	□	
Neptunium-237 HE	0.6685	0.1635	pCi/g	0.4155	N	87.35	3 0.9308	IDENTIFIED 21.59	□	
Potassium-40 ✓	26.68	1.505	pCi/g	0.5682	1.00	1461	1 2.085	IDENTIFIED 3.474	□	
Radium-224 int	5.352	0.8202	pCi/g	1.079	Y	242.1	1 2.067	IDENTIFIED 14.64	□ ui	
Radium-226 ✓	1.055	0.1023	pCi/g	0.1283	Y	609.7	2 1.803	IDENTIFIED 8.343	□	
Radium-228 ✓	1.606	0.1886	pCi/g	0.2497	0.500	911.6	3 1.568	IDENTIFIED 10.12	□	
Thallium-208 ✓	0.5406	0.04993	pCi/g	0.06095	0.080	583.6	1 1.461	IDENTIFIED 8.047	□	
Thorium-228 nr	1.738	0.1091	pCi/g	0.1006	N	239	2 1.272	IDENTIFIED 3.682	□	
Thorium-232 nr	1.606	0.1886	pCi/g	0.2497	N	911.6	3 1.568	IDENTIFIED 10.12	□	
Thorium-234 ✓	2.556	1.29	pCi/g	2.537	2.00	63.24	2 1.624	IDENTIFIED 49.69	□	
Tin-126 HE	0.224	0.04949	pCi/g	0.1442	N	87.35	3 0.9308	IDENTIFIED 21.59	□	
Total Uranium	7.5941	3.84E-06	ug/g	3.7769	N	0			□	
Uranium-238 HE	2.556	1.29	pCi/g	2.537	N	63.24	2 1.624	IDENTIFIED 49.69	□	
*** = 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
248112002	22-FEB-10 12:00	10-MAR-10 13:20	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RCSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	*** FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.832	0.1759	pCi/g	0.2017	N	911.7	3 1.268	IDENTIFIED 7.782	□	
Annihilation Rad. HE	0.08373	0.03153	pCi/g	0.04406	N	511.2	1 2.099	IDENTIFIED 37.56	□	
Bismuth-211 int	3.864	0.2652	pCi/g	0.3142	Y	352.1	2 1.26	IDENTIFIED 5.978	□ ui	
Bismuth-212 la nr	2.204	0.3754	pCi/g	1.21	N	0	5 0	FAIL_ABUND 0	□	
Bismuth-214 ✓	1.176	0.09539	pCi/g	0.1142	0.200	609.6	2 1.491	IDENTIFIED 7.216	□	
Cadmium-109 int	2.171	0.5692	pCi/g	1.396	Y	87.38	3 0.9095	IDENTIFIED 25.52	□ ui	
Cerium-143	543.3	126.2	pCi/g	0	N	0	5 0	SHORT_HLIF 0	□	
Gross Gamma	8.29	1.299	pCi/g	2.786	N	0			□	
Iodine-133 HE	1988	6026	pCi/g	0	N	0	5 0	SHORT_HLIF 0	□	
Lead-212 ✓	1.581	0.08541	pCi/g	0.09162	0.100	238.7	2 1.111	IDENTIFIED 3.581	□	

Lead-214 ✓	1.402	0.1037	pCi/g	0.1143	0.100	352.1	2	1.26	IDENTIFIED	5.978	□
Neptunium-237 HE	0.6324	0.1785	pCi/g	0.422	N	87.38	3	0.9095	IDENTIFIED	25.52	□
Potassium-40 ✓	26.06	1.251	pCi/g	0.5693	1.00	1462	1	2.004	IDENTIFIED	3.226	□
Radium-224 int	4.053	0.6526	pCi/g	0.9821	Y	241.7	1	1.863	IDENTIFIED	15.75	□ ui
Radium-226 ✓	1.176	0.09539	pCi/g	0.1142	Y	609.6	2	1.491	IDENTIFIED	7.216	□
Radium-228 ✓	1.832	0.1759	pCi/g	0.2017	0.500	911.7	3	1.268	IDENTIFIED	7.782	□
Strontium-85 1a	0.07281	0.02021	pCi/g	0.06869	Y	0	5	0	NOT_IDENTI	0	☒ UI Data rejected due to low abundance.
Technetium-99m	7.16E+16	0	pCi/g	0	N	0	5	0	SHORT_HLIF	0	□
Thallium-208 ✓	0.4833	0.04153	pCi/g	0.0578	0.080	583.4	1	1.235	IDENTIFIED	8.001	□
Thorium-228 nr	1.581	0.08541	pCi/g	0.09162	N	238.7	2	1.111	IDENTIFIED	3.581	□
Thorium-232 nr	1.832	0.1759	pCi/g	0.2017	N	911.7	3	1.268	IDENTIFIED	7.782	□
Thorium-234 ✓	3.223	1.397	pCi/g	2.844	2.00	63.16	2	1.177	IDENTIFIED	42.17	□
Tin-126 HE	0.2119	0.05556	pCi/g	0.1373	N	87.38	3	0.9095	IDENTIFIED	25.52	□
Total Uranium	9.653	4.16E-06	ug/g	4.2332	N	0					□
Uranium-238 HE	3.223	1.397	pCi/g	2.844	N	63.16	2	1.177	IDENTIFIED	42.17	□

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248112003	22-FEB-10 12:00	10-MAR-10 13:20	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.791	0.2192	pCi/g	0.2989	N	911.2	3	1.896	IDENTIFIED	10.65 □
Annihilation Rad.	0.1134	0.04249	pCi/g	0.05249	N	510.9	1	1.787	IDENTIFIED	37.22 □
Antimony-127 HE	3.937	0.9832	pCi/g	3.693	N	0	7	0	NOT_IDENTI	0 □
Bismuth-211 int	3.249	0.3014	pCi/g	0.3654	Y	351.9	2	1.217	IDENTIFIED	8.004 □ ui
Bismuth-212 1a nr	2.517	0.4948	pCi/g	1.369	N	0	7	0	FAIL_ABUND	0 □
Bismuth-214 ✓	0.9711	0.1138	pCi/g	0.1299	0.200	609.5	2	1.585	IDENTIFIED	10.62 □
Cadmium-109 int	2.485	0.5517	pCi/g	1.467	Y	87.16	3	1.099	IDENTIFIED	21.51 □ ui
Cerium-143	844.5	175.6	pCi/g	0	N	0	7	0	SHORT_HLIF	0 □
Gross Gamma	8.647	1.388	pCi/g	2.876	N	0				□
Iodine-133 HE	14630	7530	pCi/g	0	N	0	7	0	SHORT_HLIF	0 □
Iodine-135	4.11E+15	0	pCi/g	0	N	0	7	0	SHORT_HLIF	0 □
Lead-212 ✓	1.506	0.09993	pCi/g	0.1031	0.100	238.7	2	1.149	IDENTIFIED	4.204 □
Lead-214 ✓	1.179	0.1141	pCi/g	0.1329	0.100	351.9	2	1.217	IDENTIFIED	8.004 □
Neptunium-237 HE	0.7237	0.1777	pCi/g	0.428	N	87.16	3	1.099	IDENTIFIED	21.51 □
Potassium-40 ✓	34.17	1.932	pCi/g	0.623	1.00	1461	1	1.994	IDENTIFIED	3.123 □
Radium-224 int	3.533	0.6415	pCi/g	1.106	Y	241.7	1	1.662	IDENTIFIED	17.57 □ ui
Radium-226 ✓	0.9711	0.1138	pCi/g	0.1299	Y	609.5	2	1.585	IDENTIFIED	10.62 □
Radium-228 ✓	1.791	0.2192	pCi/g	0.2989	0.500	911.2	3	1.896	IDENTIFIED	10.65 □
Sodium-24 HE	1.23E+06	1.16E+06	pCi/g	0	N	0	7	0	SHORT_HLIF	0 □
Strontium-85 1a	0.0843	0.02402	pCi/g	0.08224	Y	0	7	0	NOT_IDENTI	0 ☒ UI Data rejected due to low abundance.
Thallium-208 ✓	0.4572	0.05095	pCi/g	0.06472	0.080	583.2	1	1.452	IDENTIFIED	10.17 □
Thorium-228 nr	1.506	0.09993	pCi/g	0.1031	N	238.7	2	1.149	IDENTIFIED	4.204 □
Thorium-232 nr	1.791	0.2192	pCi/g	0.2989	N	911.2	3	1.896	IDENTIFIED	10.65 □
Thorium-234 ✓	2.469	1.045	pCi/g	2.405	2.00	63.37	2	1.123	IDENTIFIED	41.29 □
Tin-126 HE	0.2425	0.05386	pCi/g	0.144	N	87.16	3	1.099	IDENTIFIED	21.51 □
Total Uranium	7.3784	3.11E-06	ug/g	3.5801	N	0				□
Uranium-238 HE	2.469	1.045	pCi/g	2.405	N	63.37	2	1.123	IDENTIFIED	41.29 □

*** = 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	
248112004	22-FEB-10 12:00	10-MAR-10 13:21	16.1	SAMPLE	LOAD	1	LANL	LANL01004IGEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228 nr	1.511	0.2164	pCi/g	0.2921	N	910.9	3	1.396	IDENTIFIED 12.98	□	
Annihilation Rad.	HE	0.1275	0.04243	pCi/g	0.05976	N	511.2	1	2.247	IDENTIFIED 32.98	□
Bismuth-211 int	3.254	0.3172	pCi/g	0.4491	Y	351.8	2	1.324	IDENTIFIED 8.385	□ ui	
Bismuth-212 HE	2.401	0.57	pCi/g	1.488	N	0	6	0	FAIL_ABUND 0	□	
Bismuth-214 ✓	0.909	0.1007	pCi/g	0.1489	0.200	609.3	2	1.869	IDENTIFIED 9.895	□	
Cerium-143	1216	221.8	pCi/g	0	N	0	6	0	SHORT_HLIF 0	□	
Gross Gamma	8.44	1.453	pCi/g	2.659	N	0				□	
Iodine-133 HE	530.9	7928	pCi/g	0	N	0	6	0	SHORT_HLIF 0	□	
Lead-212 ✓	1.516	0.1146	pCi/g	0.1266	0.100	238.7	2	1.331	IDENTIFIED 4.625	□	
Lead-214 ✓	1.181	0.1196	pCi/g	0.1633	0.100	351.8	2	1.324	IDENTIFIED 8.385	□	
Niobium-95m HE	0.3245	0.09978	pCi/g	0.3173	N	0	6	0	NOT_IDENTI 0	□	
Potassium-40 ✓	36.79	2.171	pCi/g	0.7134	1.00	1460	1	2.107	IDENTIFIED 3.269	□	
Radium-224 int	3.99	0.6434	pCi/g	1.357	Y	241.7	1	1.854	IDENTIFIED 15.15	□ ui	
Radium-226 ✓	0.909	0.1007	pCi/g	0.1489	Y	609.3	2	1.869	IDENTIFIED 9.895	□	
Radium-228 ✓	1.511	0.2164	pCi/g	0.2921	0.500	910.9	3	1.396	IDENTIFIED 12.98	□	
Sodium-24 HE	7.84E+05	1.23E+06	pCi/g	0	N	0	6	0	SHORT_HLIF 0	□	
Strontium-85 la	0.1152	0.03003	pCi/g	0.09836	Y	0	6	0	NOT_IDENTI 0	☒ UI Data rejected due to low abundance.	
Thallium-208 ✓	0.4187	0.05136	pCi/g	0.06933	0.080	582.8	1	1.585	IDENTIFIED 11.38	□	
Thorium-228 nr	1.516	0.1146	pCi/g	0.1266	N	238.7	2	1.331	IDENTIFIED 4.625	□	
Thorium-232 nr	1.511	0.2164	pCi/g	0.2921	N	910.9	3	1.396	IDENTIFIED 12.98	□	

*** = 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
248112005	22-FEB-10 12:00	10-MAR-10 13:22	16.1	SAMPLE	LOAD	1	LANL	LANL01004IGEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.533	0.174	pCi/g	0.2358	N	911.5	3	1.863	IDENTIFIED 9.734	☐
Annihilation Rad.	0.1357	0.03423	pCi/g	0.04617	N	510.9	1	1.617	IDENTIFIED 25.06	☐
Bismuth-211 int	3.499	0.2334	pCi/g	0.3049	Y	351.7	2	1.575	IDENTIFIED 5.856	☐ ui
Bismuth-212 1a nr	2.129	0.4221	pCi/g	1.219	N	0	7	0	FAIL_ABUND 0	☐
Bismuth-214 ✓	1.153	0.08567	pCi/g	0.1033	0.200	609.3	2	1.463	IDENTIFIED 6.287	☐
Cerium-143	1233	188.8	pCi/g	0	N	0	7	0	SHORT_HLIF 0	☐
Cesium-134 1a	0.1057	0.0389	pCi/g	0.09001	0.100	0	7	0	FAIL_ABUND 0	☒ UI Data rejected due to low abundance.
Gross Gamma	8.224	1.11	pCi/g	3.61	N	0				☐
Iodine-133 HE	2476	6120	pCi/g	0	N	0	7	0	SHORT_HLIF 0	☐
Iodine-135	6.14E+14	0	pCi/g	0	N	0	7	0	SHORT_HLIF 0	☐
Lead-212 ✓	1.552	0.0803	pCi/g	0.09669	0.100	238.5	2	1.284	IDENTIFIED 3.676	☐
Lead-214 ✓	1.27	0.09165	pCi/g	0.1109	0.100	351.7	2	1.575	IDENTIFIED 5.856	☐
Niobium-95m HE	0.3863	0.08141	pCi/g	0.2622	N	0	7	0	NOT_IDENTI 0	☐
Potassium-40 ✓	25.09	1.224	pCi/g	0.5048	1.00	1461	1	2.036	IDENTIFIED 3.153	☐
Radium-224 int	3.807	0.6373	pCi/g	1.036	Y	241.4	1	1.798	IDENTIFIED 16.5	☐ ui
Radium-226 ✓	1.153	0.08567	pCi/g	0.1033	Y	609.3	2	1.463	IDENTIFIED 6.287	☐

Radium-228	✓	1.533	0.174	pCi/g	0.2358	0.500	911.5	3	1.863	IDENTIFIED	9.734	<input type="checkbox"/>	
Strontium-85	la	0.09665	0.02176	pCi/g	0.0751	Y	0	7	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208	✓	0.4765	0.04209	pCi/g	0.05666	0.080	583.1	1	1.542	IDENTIFIED	8.156	<input type="checkbox"/>	
Thorium-228	nr	1.552	0.0803	pCi/g	0.09669	N	238.5	2	1.284	IDENTIFIED	3.676	<input type="checkbox"/>	
Thorium-232	nr	1.533	0.174	pCi/g	0.2358	N	911.5	3	1.863	IDENTIFIED	9.734	<input type="checkbox"/>	

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248112006	22-FEB-10 12:00	10-MAR-10 13:23	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	nr	1.579	0.1745	pCi/g	0.1979	N	911.3	3	1.805	IDENTIFIED	8.736	<input type="checkbox"/>		
Annihilation Rad. HE		0.09842	0.03032	pCi/g	0.04354	N	511.2	1	2.368	IDENTIFIED	30.39	<input type="checkbox"/>		
Bismuth-211	int	2.982	0.2494	pCi/g	0.3189	Y	352.1	2	1.458	IDENTIFIED	6.014	<input type="checkbox"/>	ui	
Bismuth-212	HE	1.446	0.4318	pCi/g	0.9587	N	0	4	0	FAIL_ABUND	0	<input type="checkbox"/>		
Bismuth-214	✓	1.01	0.09708	pCi/g	0.1044	0.200	609.5	2	1.807	IDENTIFIED	7.633	<input type="checkbox"/>		
Cadmium-109	int	2.278	0.4668	pCi/g	1.06	Y	86.97	3	0.8401	IDENTIFIED	19.95	<input type="checkbox"/>	ui	
Cerium-143		1194	193	pCi/g	0	N	0	4	0	SHORT_HLIF	0	<input type="checkbox"/>		
Gross Gamma		8.536	1.102	pCi/g	2.04	N	0					<input type="checkbox"/>		
Iodine-133	HE	3381	5323	pCi/g	0	N	0	4	0	SHORT_HLIF	0	<input type="checkbox"/>		
Lead-212	✓	1.518	0.1124	pCi/g	0.08544	0.100	238.7	2	1.195	IDENTIFIED	3.308	<input type="checkbox"/>		
Lead-214	✓	1.082	0.09531	pCi/g	0.1118	0.100	352.1	2	1.458	IDENTIFIED	6.014	<input type="checkbox"/>		
Neptunium-237	HE	0.6636	0.1527	pCi/g	0.3653	N	86.97	3	0.8401	IDENTIFIED	19.95	<input type="checkbox"/>		
Potassium-40	✓	32.06	1.652	pCi/g	0.4699	1.00	1461	1	2.743	IDENTIFIED	2.357	<input type="checkbox"/>		
Radium-224	int	4.344	0.7001	pCi/g	0.9147	Y	241.7	1	2.074	IDENTIFIED	14.84	<input type="checkbox"/>	ui	
Radium-226	✓	1.01	0.09708	pCi/g	0.1044	Y	609.5	2	1.807	IDENTIFIED	7.633	<input type="checkbox"/>		
Radium-228	✓	1.579	0.1745	pCi/g	0.1979	0.500	911.3	3	1.805	IDENTIFIED	8.736	<input type="checkbox"/>		
Strontium-85	la	0.0995	0.02299	pCi/g	0.07209	Y	0	4	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.	
Thallium-208	✓	0.4567	0.03799	pCi/g	0.04902	0.080	583.3	1	1.588	IDENTIFIED	6.312	<input type="checkbox"/>		
Thorium-228	nr	1.518	0.1124	pCi/g	0.08544	N	238.7	2	1.195	IDENTIFIED	3.308	<input type="checkbox"/>		
Thorium-232	nr	1.579	0.1745	pCi/g	0.1979	N	911.3	3	1.805	IDENTIFIED	8.736	<input type="checkbox"/>		
Thorium-234	✓	2.847	0.937	pCi/g	1.757	2.00	62.86	2	0.9212	IDENTIFIED	31.69	<input type="checkbox"/>		
Tin-126	int nr	0.2224	0.04556	pCi/g	0.1183	N	86.97	3	0.8401	IDENTIFIED	19.95	<input type="checkbox"/>		
Total Uranium		8.4936	2.79E-06	ug/g	2.6159	N	0					<input type="checkbox"/>		
Uranium-238	HE	2.847	0.937	pCi/g	1.757	N	62.86	2	0.9212	IDENTIFIED	31.69	<input type="checkbox"/>		

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248112007	22-FEB-10 12:00	10-MAR-10 13:25	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	nr	1.604	0.1853	pCi/g	0.235	N	911	3	1.778	IDENTIFIED	9.798	<input type="checkbox"/>		
Barium-137m		0.1563	0.04826	pCi/g	0.05838	N	663	2	4.835	IDENTIFIED	30.38	<input type="checkbox"/>		
Bismuth-211	int	3.564	0.2729	pCi/g	0.3204	Y	351.9	2	1.191	IDENTIFIED	5.566	<input type="checkbox"/>	ui	
Bismuth-212	HE	1.927	0.4606	pCi/g	1.268	N	0	3	0	FAIL_ABUND	0	<input type="checkbox"/>		
Bismuth-214	✓	1.202	0.107	pCi/g	0.1209	0.200	609.2	2	1.292	IDENTIFIED	6.53	<input type="checkbox"/>		
Cadmium-109	int	4.126	0.4067	pCi/g	0.7179	Y	87.19	3	1.108	IDENTIFIED	8.279	<input type="checkbox"/>	ui	
Cerium-143		693.5	133.8	pCi/g	0	N	0	3	0	SHORT_HLIF	0	<input type="checkbox"/>		
Cesium-137	pw	0.1651	0.05098	pCi/g	0.06167	0.100	663	2	4.835	IDENTIFIED	30.38	<input checked="" type="checkbox"/>	UI Data rejected due to high peak-width.	

Europium-155 HE	0.1358	0.06201	pCi/g 0.12	N	106	1	2.252	IDENTIFIED	45.29	□
Gross Gamma	9.6	1.225	pCi/g 2.746	N		0				□
Iodine-135	8.54E+150		pCi/g 0	N	0	3	0	SHORT_HLIF	0	□
Lead-210 nr	1.313	0.3294	pCi/g 0.5589	N	46.54	1	0.9134	IDENTIFIED	24.56	□
Lead-212 ✓	1.672	0.1092	pCi/g 0.07637	0.100	238.6	2	0.9794	IDENTIFIED	3.16	□
Lead-214 ✓	1.294	0.1053	pCi/g 0.1094	0.100	351.9	2	1.191	IDENTIFIED	5.566	□
Neptunium-237 int nr	1.202	0.1729	pCi/g 0.2077	N	87.19	3	1.108	IDENTIFIED	8.279	□
Potassium-40 ✓	33.68	1.761	pCi/g 0.5934	1.00	1461	1	2.001	IDENTIFIED	3.036	□
Radium-224 int	5.051	0.6746	pCi/g 0.8195	Y	241.4	1	1.769	IDENTIFIED	12.28	□ ui
Radium-226 ✓	1.202	0.107	pCi/g 0.1209	Y	609.2	2	1.292	IDENTIFIED	6.53	□
Radium-228 ✓	1.604	0.1853	pCi/g 0.235	0.500	911	3	1.778	IDENTIFIED	9.798	□
Thallium-208 ✓	0.5006	0.04624	pCi/g 0.06715	0.080	582.9	1	1.367	IDENTIFIED	7.32	□
Thorium-228 nr	1.672	0.1092	pCi/g 0.07637	N	238.6	2	0.9794	IDENTIFIED	3.16	□
Thorium-232 nr	1.604	0.1853	pCi/g 0.235	N	911	3	1.778	IDENTIFIED	9.798	□
Thorium-234 ✓	1.958	0.492	pCi/g 0.7432	2.00	63.17	2	0.8675	IDENTIFIED	23.27	□
Tin-126 int nr	0.4027	0.0397	pCi/g 0.06994	N	87.19	3	1.108	IDENTIFIED	8.279	□
Total Uranium	5.8618	1.46E-06	ug/g 1.1081	N		0				□
Uranium-238 nr	1.958	0.492	pCi/g 0.7432	N	63.17	2	0.8675	IDENTIFIED	23.27	□

*** = 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
248112008	22-FEB-10 12:00	10-MAR-10 13:42	16.1	SAMPLE	LOAD	1	LANL	LANL01004 GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.897	0.236	pCi/g 0.3516	N	910.3	3	1.536	IDENTIFIED	10.69	□
Annihilation Rad.	0.1555	0.04318	pCi/g 0.05637	N	510.4	1	1.832	IDENTIFIED	27.59	□
Bismuth-211 int	3.81	0.2889	pCi/g 0.4302	Y	351.4	2	1.315	IDENTIFIED	6.47	□ ui
Bismuth-214 ✓	1.146	0.1067	pCi/g 0.1277	0.200	608.8	2	1.474	IDENTIFIED	8.303	□
Cadmium-109 int	3.313	0.5369	pCi/g 1.127	Y	86.85	3	1.419	IDENTIFIED	15.75	□ ui
Cerium-143	1882	275.2	pCi/g 0	N	0	6	0	SHORT_HLIF	0	□
Cesium-134 la	0.1891	0.04417	pCi/g 0.1156	0.100	0	6	0	FAIL_ABUND	0	□ ui Data rejected due to low abundance.
Cesium-135 int nr	0.7707	0.132	pCi/g 0.2865	N	269.6	1	1.329	IDENTIFIED	16.28	□
Gross Gamma	9.411	1.232	pCi/g 3.974	N		0				□
Iodine-133 HE	5775	8246	pCi/g 0	N	0	6	0	SHORT_HLIF	0	□
Iodine-135	7.20E+160		pCi/g 0	N	0	6	0	SHORT_HLIF	0	□
Lead-210 nr	2.127	0.5017	pCi/g 0.9461	N	45.75	1	1.328	IDENTIFIED	23.27	□
Lead-212 ✓	1.691	0.1107	pCi/g 0.1101	0.100	238.2	2	1.222	IDENTIFIED	3.683	□
Lead-214 ✓	1.383	0.1116	pCi/g 0.1517	0.100	351.4	2	1.315	IDENTIFIED	6.47	□
Neptunium-237 int nr	0.9648	0.1862	pCi/g 0.3267	N	86.85	3	1.419	IDENTIFIED	15.75	□
Niobium-95m la nr	1.16	0.1173	pCi/g 0.3692	N	0	6	0	NOT_IDENTI	0	□
Potassium-40 ✓	27.4	1.303	pCi/g 0.7797	1.00	1460	1	2	IDENTIFIED	3.598	□
Radium-224 int	4.74	0.8196	pCi/g 1.18	Y	241.2	1	2.01	IDENTIFIED	16.58	□ ui
Radium-226 ✓	1.146	0.1067	pCi/g 0.1277	Y	608.8	2	1.474	IDENTIFIED	8.303	□
Radium-228 ✓	1.897	0.236	pCi/g 0.3516	0.500	910.3	3	1.536	IDENTIFIED	10.69	□
Sodium-24 HE	5.79E+05	1.27E+06	pCi/g 0	N	0	6	0	SHORT_HLIF	0	□
Thallium-208 ✓	0.5699	0.05399	pCi/g 0.07234	0.080	582.7	1	1.535	IDENTIFIED	8.734	□
Thorium-228 nr	1.691	0.1107	pCi/g 0.1101	N	238.2	2	1.222	IDENTIFIED	3.683	□
Thorium-232 nr	1.897	0.236	pCi/g 0.3516	N	910.3	3	1.536	IDENTIFIED	10.69	□

Thorium-234 ✓	3.494	0.742	pCi/g	1.199	2.00	62.89	2	1.146	IDENTIFIED	19.2	□
Tin-126 int nr	0.3233	0.05241	pCi/g	0.1098	N	86.85	3	1.419	IDENTIFIED	15.75	□
Total Uranium	10.451	2.21E-06	ug/g	1.7868	N		0				□
Uranium-238 nr	3.494	0.742	pCi/g	1.199	N	62.89	2	1.146	IDENTIFIED	19.2	□

*** = 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
248115001	22-FEB-10 12:00	10-MAR-10 13:42	16.1	SAMPLE	LOAD	1	LANL	LANL01004 GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.533	0.238	pCi/g	0.2357	N	911.6	3	1.397	IDENTIFIED	6.985	□
Annihilation Rad.	0.1937	0.03654	pCi/g	0.04808	N	510.9	1	1.558	IDENTIFIED	18.27	□
Bismuth-211 int	5.788	0.3873	pCi/g	0.3748	Y	352.1	2	1.139	IDENTIFIED	4.681	□ ui
Bismuth-212 la nr	3.303	0.5105	pCi/g	1.434	N	0	4	0	FAIL_ABUND	0	□
Bismuth-214 ✓	1.975	0.1433	pCi/g	0.1169	0.200	609.6	2	1.313	IDENTIFIED	4.629	□
Cadmium-109 int	3.698	0.5123	pCi/g	1.334	Y	87.44	3	1.288	IDENTIFIED	13.03	□ ui
Cerium-143	1163	196.7	pCi/g	0	N	0	4	0	SHORT_HLIF	0	□
Cesium-134 la	0.1523	0.03559	pCi/g	0.1043	0.100	0	4	0	FAIL_ABUND	0	□ UI Data rejected due to low abundance.
Europium-155 HE	0.2012	0.07269	pCi/g	0.1759	N	105.2	1	0.9993	IDENTIFIED	35.86	□
Gross Gamma	13.77	1.734	pCi/g	5.363	N		0				□
Lead-212 ✓	2.489	0.1498	pCi/g	0.1058	0.100	238.7	2	1.089	IDENTIFIED	2.778	□
Lead-214 ✓	2.101	0.152	pCi/g	0.1337	0.100	352.1	2	1.139	IDENTIFIED	4.681	□
Neptunium-237 int nr	1.077	0.1871	pCi/g	0.4401	N	87.44	3	1.288	IDENTIFIED	13.03	□
Potassium-40 ✓	37.21	1.896	pCi/g	0.4586	1.00	1461	1	1.755	IDENTIFIED	2.637	□
Radium-224 int	3.417	0.7399	pCi/g	1.134	Y	241	1	1.363	IDENTIFIED	21.11	□ ui
Radium-226 ✓	1.975	0.1433	pCi/g	0.1169	Y	609.6	2	1.313	IDENTIFIED	4.629	□
Radium-228 ✓	2.533	0.238	pCi/g	0.2357	0.500	911.6	3	1.397	IDENTIFIED	6.985	□
Sodium-24 HE	3.37E+05	1.07E+06	pCi/g	0	N	0	4	0	SHORT_HLIF	0	□
Thallium-208 ✓	0.7177	0.05632	pCi/g	0.06086	0.080	583.5	1	1.12	IDENTIFIED	5.933	□
Thorium-228 nr	2.489	0.1498	pCi/g	0.1058	N	238.7	2	1.089	IDENTIFIED	2.778	□
Thorium-232 nr	2.533	0.238	pCi/g	0.2357	N	911.6	3	1.397	IDENTIFIED	6.985	□
Thorium-234 ✓	3.996	1.038	pCi/g	1.905	2.00	62.9	2	1.084	IDENTIFIED	24.41	□
Tin-126 int nr	0.361	0.05	pCi/g	0.1341	N	87.44	3	1.288	IDENTIFIED	13.03	□
Total Uranium	11.92	3.09E-06	ug/g	2.837	N		0				□
Uranium-238 nr	3.996	1.038	pCi/g	1.905	N	62.9	2	1.084	IDENTIFIED	24.41	□

*** = 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
248115002	22-FEB-10 12:00	10-MAR-10 13:43	16.1	SAMPLE	LOAD	1	LANL	LANL01004 GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.409	0.2617	pCi/g	0.3574	N	910.7	3	1.67	IDENTIFIED	9.158	□
Annihilation Rad.	0.2442	0.04267	pCi/g	0.05959	N	510.7	1	1.527	IDENTIFIED	16.8	□
Bismuth-211 int	5.327	0.3653	pCi/g	0.3693	Y	351.7	2	0.9671	IDENTIFIED	5.165	□ ui
Bismuth-212 la nr	2.744	0.5656	pCi/g	1.566	N	0	4	0	FAIL_ABUND	0	□
Bismuth-214 ✓	1.863	0.1534	pCi/g	0.1322	0.200	608.9	2	1.27	IDENTIFIED	5.716	□
Cadmium-109 int	4.998	0.4878	pCi/g	0.8164	Y	87.2	3	1.123	IDENTIFIED	8.568	□ ui
Cerium-143	877.6	166.9	pCi/g	0	N	0	4	0	SHORT_HLIF	0	□

Cesium-134	1a	0.1408	0.04713	pCi/g	0.1261	0.100	0	4	0	FAIL_ABUND	0	<input checked="" type="checkbox"/> UI	Data rejected due to low abundance.
Gross Gamma		12.46	1.557	pCi/g	3.931	N		0				<input type="checkbox"/>	
Lead-210	HE	1.303	0.3383	pCi/g	0.6676	N	46.72	1	0.5904	IDENTIFIED	25.54	<input type="checkbox"/>	
Lead-212	✓	2.414	0.1373	pCi/g	0.09278	0.100	238.4	2	0.9038	IDENTIFIED	2.718	<input type="checkbox"/>	
Lead-214	✓	1.933	0.1429	pCi/g	0.1344	0.100	351.7	2	0.9671	IDENTIFIED	5.165	<input type="checkbox"/>	
Neptunium-237	int nr	1.456	0.2085	pCi/g	0.2462	N	87.2	3	1.123	IDENTIFIED	8.568	<input type="checkbox"/>	
Potassium-40	✓	35.16	1.882	pCi/g	0.6927	1.00	1460	1	1.953	IDENTIFIED	3.231	<input type="checkbox"/>	
Radium-224	int	6.682	0.8303	pCi/g	0.9972	Y	241.3	1	1.71	IDENTIFIED	11.6	<input type="checkbox"/>	ui
Radium-226	✓	1.863	0.1534	pCi/g	0.1322	Y	608.9	2	1.27	IDENTIFIED	5.716	<input type="checkbox"/>	
Radium-228	✓	2.409	0.2617	pCi/g	0.3574	0.500	910.7	3	1.67	IDENTIFIED	9.158	<input type="checkbox"/>	
Technetium-99m		5.47E+17	0	pCi/g	0	N	0	4	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.7063	0.06146	pCi/g	0.07104	0.080	582.8	1	1.215	IDENTIFIED	6.791	<input type="checkbox"/>	
Thorium-228	nr	2.414	0.1373	pCi/g	0.09278	N	238.4	2	0.9038	IDENTIFIED	2.718	<input type="checkbox"/>	
Thorium-232	nr	2.409	0.2617	pCi/g	0.3574	N	910.7	3	1.67	IDENTIFIED	9.158	<input type="checkbox"/>	
Thorium-234	✓	1.359	0.4379	pCi/g	0.9364	2.00	63.39	2	0.815	IDENTIFIED	30.94	<input type="checkbox"/>	
Tin-126	int nr	0.4879	0.04761	pCi/g	0.08284	N	87.2	3	1.123	IDENTIFIED	8.568	<input type="checkbox"/>	
Total Uranium		4.1186	1.30E-06	ug/g	1.3958	N		0				<input type="checkbox"/>	
Uranium-238	HE	1.359	0.4379	pCi/g	0.9364	N	63.39	2	0.815	IDENTIFIED	30.94	<input type="checkbox"/>	

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248115003	22-FEB-10 12:00	10-MAR-10 14:03	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	nr	2.441	0.2278	pCi/g	0.2145	N	911.6	3	1.479	IDENTIFIED	6.931	<input type="checkbox"/>		
Annihilation Rad.		0.1296	0.03346	pCi/g	0.0482	N	510.9	1	1.586	IDENTIFIED	25.25	<input type="checkbox"/>		
Bismuth-211	int	5.408	0.4191	pCi/g	0.3419	Y	351.9	2	1.102	IDENTIFIED	4.101	<input type="checkbox"/>	ui	
Bismuth-212	1a nr	2.671	0.4362	pCi/g	1.297	N	0	4	0	FAIL_ABUND	0	<input type="checkbox"/>		
Bismuth-214	✓	1.651	0.1286	pCi/g	0.1101	0.200	609.3	2	1.189	IDENTIFIED	5.339	<input type="checkbox"/>		
Cadmium-109	int	4.008	0.4902	pCi/g	1.067	Y	87.19	3	1.043	IDENTIFIED	11.29	<input type="checkbox"/>	ui	
Cerium-143		629.8	141.2	pCi/g	0	N	0	4	0	SHORT_HLIF	0	<input type="checkbox"/>		
Cesium-134	1a	0.1395	0.03199	pCi/g	0.1008	0.100	0	4	0	FAIL_ABUND	0	<input checked="" type="checkbox"/> UI	Data rejected due to low abundance.	
Gross Gamma		12.72	1.605	pCi/g	4.21	N		0				<input type="checkbox"/>		
Iodine-135		6.22E+16	0	pCi/g	0	N	0	4	0	SHORT_HLIF	0	<input type="checkbox"/>		
Lead-212	✓	2.311	0.1738	pCi/g	0.09031	0.100	238.7	2	0.9685	IDENTIFIED	2.698	<input type="checkbox"/>		
Lead-214	✓	1.963	0.1615	pCi/g	0.1211	0.100	351.9	2	1.102	IDENTIFIED	4.101	<input type="checkbox"/>		
Neptunium-237	int nr	1.167	0.188	pCi/g	0.3143	N	87.19	3	1.043	IDENTIFIED	11.29	<input type="checkbox"/>		
Potassium-40	✓	38.57	1.921	pCi/g	0.5077	1.00	1461	1	1.787	IDENTIFIED	2.473	<input type="checkbox"/>		
Radium-224	int	5.469	0.7674	pCi/g	0.9682	Y	241.6	1	1.661	IDENTIFIED	12.32	<input type="checkbox"/>	ui	
Radium-226	✓	1.651	0.1286	pCi/g	0.1101	Y	609.3	2	1.189	IDENTIFIED	5.339	<input type="checkbox"/>		
Radium-228	✓	2.441	0.2278	pCi/g	0.2145	0.500	911.6	3	1.479	IDENTIFIED	6.931	<input type="checkbox"/>		
Thallium-208	✓	0.5902	0.0516	pCi/g	0.06267	0.080	583.2	1	1.317	IDENTIFIED	6.88	<input type="checkbox"/>		
Thorium-228	nr	2.311	0.1738	pCi/g	0.09031	N	238.7	2	0.9685	IDENTIFIED	2.698	<input type="checkbox"/>		
Thorium-232	nr	2.441	0.2278	pCi/g	0.2145	N	911.6	3	1.479	IDENTIFIED	6.931	<input type="checkbox"/>		
Tin-126	int nr	0.3912	0.04785	pCi/g	0.1045	N	87.19	3	1.043	IDENTIFIED	11.29	<input type="checkbox"/>		

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
-----------	--------------	----------	-----------	-------------	--------	----------	--------	---------------	-------	-------

248115004	22-FEB-10 12:00	10-MAR-10 14:52	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	*** FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	2.633	0.2673	pCi/g	0.2545	N	911.3	3 1.487	IDENTIFIED 7.866	□	
Annihilation Rad.	0.2274	0.04048	pCi/g	0.05265	N	510.5	1 1.799	IDENTIFIED 17.26	□	
Bismuth-211 int	5.376	0.3591	pCi/g	0.3954	Y	352	2 1.155	IDENTIFIED 4.978	□ ui	
Bismuth-212 la nr	3.198	0.5685	pCi/g	1.535	N	0	4 0	FAIL_ABUND 0	□	
Bismuth-214 ✓	1.832	0.1372	pCi/g	0.1235	0.200	609.2	2 1.467	IDENTIFIED 5.395	□	
Cadmium-109 int	5.176	0.6704	pCi/g	1.424	Y	87.29	3 1.257	IDENTIFIED 12.08	□ ui	
Cerium-143	1371	228.6	pCi/g	0	N	0	4 0	SHORT_HLIF 0	□	
Cesium-134 la	0.1799	0.04627	pCi/g	0.1223	0.100	0	4 0	FAIL_ABUND 0	□ UI	Data rejected due to low abundance.
Gross Gamma	13.25	1.761	pCi/g	5.057	N	0			□	
Lead-212 ✓	2.439	0.1467	pCi/g	0.1827	0.100	238.5	2 1.127	IDENTIFIED 3.572	□	
Lead-214 ✓	1.951	0.141	pCi/g	0.1358	0.100	352	2 1.155	IDENTIFIED 4.978	□	
Neptunium-237 int nr	1.507	0.2512	pCi/g	0.4213	N	87.29	3 1.257	IDENTIFIED 12.08	□	
Potassium-40 ✓	34.75	1.881	pCi/g	0.4339	1.00	1461	1 2.075	IDENTIFIED 2.958	□	
Radium-224 int	3.847	0.6142	pCi/g	1.737	Y	241.8	1 1.721	IDENTIFIED 15.39	□ ui	
Radium-226 ✓	1.832	0.1372	pCi/g	0.1235	Y	609.2	2 1.467	IDENTIFIED 5.395	□	
Radium-228 ✓	2.633	0.2673	pCi/g	0.2545	0.500	911.3	3 1.487	IDENTIFIED 7.866	□	
Strontium-85 la	0.08012	0.02308	pCi/g	0.07825	Y	0	4 0	NOT_IDENTI 0	□ UI	Data rejected due to low abundance.
Thallium-208 ✓	0.7468	0.06055	pCi/g	0.07012	0.080	583.1	1 1.418	IDENTIFIED 6.567	□	
Thorium-228 nr	2.439	0.1467	pCi/g	0.1827	N	238.5	2 1.127	IDENTIFIED 3.572	□	
Thorium-232 nr	2.633	0.2673	pCi/g	0.2545	N	911.3	3 1.487	IDENTIFIED 7.866	□	
Thorium-234 ✓	3.028	1.145	pCi/g	2.568	2.00	63.33	2 0.8059	IDENTIFIED 36.74	□	
Tin-126 int nr	0.5052	0.06543	pCi/g	0.1396	N	87.29	3 1.257	IDENTIFIED 12.08	□	
Total Uranium	9.0861	3.41E-06	ug/g	3.8228	N	0			□	
Uranium-238 HE	3.028	1.145	pCi/g	2.568	N	63.33	2 0.8059	IDENTIFIED 36.74	□	

*** = 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
248115005	22-FEB-10 12:00	10-MAR-10 14:53	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	*** FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	3.305	0.2886	pCi/g	0.3533	N	911	3 1.998	IDENTIFIED 6.58	□	
Annihilation Rad.	0.2369	0.04689	pCi/g	0.07381	N	510.9	1 1.758	IDENTIFIED 19.26	□	
Bismuth-211 int	5.335	0.4247	pCi/g	0.5073	Y	351.8	2 1.273	IDENTIFIED 6.381	□ ui	
Bismuth-212 la nr	4.057	0.6719	pCi/g	1.731	N	0	6 0	FAIL_ABUND 0	□	
Bismuth-214 ✓	1.749	0.1473	pCi/g	0.1661	0.200	609.2	2 1.696	IDENTIFIED 6.626	□	
Cadmium-109 int	5.119	0.5379	pCi/g	1.271	Y	87.27	3 1.327	IDENTIFIED 9.211	□ ui	
Cerium-143	2069	312.1	pCi/g	0	N	0	6 0	SHORT_HLIF 0	□	
Cesium-135 HE	0.4271	0.131	pCi/g	0.4091	N	0	6 0	NOT_IDENTI 0	□	
Gross Gamma	13.08	1.855	pCi/g	4.293	N	0			□	
Lead-210 HE	1.88	0.524	pCi/g	1.114	N	46.41	1 1.222	IDENTIFIED 27.33	□	
Lead-212 ✓	2.272	0.141	pCi/g	0.1322	0.100	238.6	2 1.256	IDENTIFIED 3.445	□	
Lead-214 ✓	1.936	0.1631	pCi/g	0.1845	0.100	351.8	2 1.273	IDENTIFIED 6.381	□	
Neptunium-237 int nr	1.491	0.2213	pCi/g	0.3492	N	87.27	3 1.327	IDENTIFIED 9.211	□	
Niobium-95 HE	0.1634	0.03769	pCi/g	0.1274	N	0	6 0	NOT_IDENTI 0	□	
Niobium-95m HE	0.3885	0.104	pCi/g	0.3269	N	0	6 0	NOT_IDENTI 0	□	
Potassium-40 ✓	40.35	2.152	pCi/g	0.7486	1.00	1460	1 2.272	IDENTIFIED 2.902	□	

Radium-224	int	6.189	0.9792	pCi/g	1.418	Y	241.6	1	1.993	IDENTIFIED	15.13	<input type="checkbox"/>	ui
Radium-226	✓	1.749	0.1473	pCi/g	0.1661	Y	609.2	2	1.696	IDENTIFIED	6.626	<input type="checkbox"/>	
Radium-228	✓	3.305	0.2886	pCi/g	0.3533	0.500	911	3	1.998	IDENTIFIED	6.58	<input type="checkbox"/>	
Sodium-24	IIE	2.25E+06	1.80E+06	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.7104	0.06975	pCi/g	0.09139	0.080	583	1	1.644	IDENTIFIED	8.554	<input type="checkbox"/>	
Thorium-228	nr	2.272	0.141	pCi/g	0.1322	N	238.6	2	1.256	IDENTIFIED	3.445	<input type="checkbox"/>	
Thorium-232	nr	3.305	0.2886	pCi/g	0.3533	N	911	3	1.998	IDENTIFIED	6.58	<input type="checkbox"/>	
Thorium-234	✓	1.757	0.7773	pCi/g	1.451	2.00	63.48	2	1.025	IDENTIFIED	43.18	<input type="checkbox"/>	
Tin-126	int nr	0.4997	0.0525	pCi/g	0.1239	N	87.27	3	1.327	IDENTIFIED	9.211	<input type="checkbox"/>	
Total Uranium		5.3095	2.31E-06	ug/g	2.1624	N		0				<input type="checkbox"/>	
Uranium-238	HE	1.757	0.7773	pCi/g	1.451	N	63.48	2	1.025	IDENTIFIED	43.18	<input type="checkbox"/>	

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248115006	22-FEB-10 12:00	10-MAR-10 14:54	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt	Err(%)	Qual	Qual Comment
Actinium-228	nr	2.742	0.2348	pCi/g	0.2166	N	911.3	3	1.673	IDENTIFIED	6.006 <input type="checkbox"/>
Annihilation Rad.		0.1829	0.03525	pCi/g	0.05063	N	510.9	1	1.623	IDENTIFIED	18.68 <input type="checkbox"/>
Bismuth-211	int	5.823	0.4054	pCi/g	0.3229	Y	351.9	2	1.046	IDENTIFIED	4.324 <input type="checkbox"/> ui
Bismuth-212	nr	2.367	0.5811	pCi/g	0.8638	N	727.4	1	1.592	IDENTIFIED	23.7 <input type="checkbox"/>
Bismuth-214	✓	1.707	0.1299	pCi/g	0.1087	0.200	609.2	2	1.337	IDENTIFIED	5.447 <input type="checkbox"/>
Cadmium-109	int	5.377	0.6378	pCi/g	1.162	Y	87.32	3	1.324	IDENTIFIED	10.86 <input type="checkbox"/> ui
Cerium-143		866.7	180.1	pCi/g	0	N	0	4	0	SHORT_HLIF	0 <input type="checkbox"/>
Gross Gamma		13.56	1.721	pCi/g	4.652	N		0			<input type="checkbox"/>
Iodine-133	HE	7449	6967	pCi/g	0	N	0	4	0	SHORT_HLIF	0 <input type="checkbox"/>
Iodine-135		1.03E+17	0	pCi/g	0	N	0	4	0	SHORT_HLIF	0 <input type="checkbox"/>
Lead-212	✓	2.511	0.1629	pCi/g	0.09514	0.100	238.6	2	0.9547	IDENTIFIED	2.61 <input type="checkbox"/>
Lead-214	✓	2.113	0.1582	pCi/g	0.1175	0.100	351.9	2	1.046	IDENTIFIED	4.324 <input type="checkbox"/>
Manganese-54	HE	0.06963	0.02205	pCi/g	0.05816	N	835.6	1	1.429	IDENTIFIED	31.31 <input type="checkbox"/>
Neptunium-237	int nr	1.566	0.2479	pCi/g	0.3437	N	87.32	3	1.324	IDENTIFIED	10.86 <input type="checkbox"/>
Potassium-40	✓	36.93	1.874	pCi/g	0.5101	1.00	1461	1	1.996	IDENTIFIED	2.539 <input type="checkbox"/>
Radium-224	int	7.227	0.8296	pCi/g	1.02	Y	241.5	1	1.836	IDENTIFIED	10.07 <input type="checkbox"/> ui
Radium-226	✓	1.707	0.1299	pCi/g	0.1087	Y	609.2	2	1.337	IDENTIFIED	5.447 <input type="checkbox"/>
Radium-228	✓	2.742	0.2348	pCi/g	0.2166	0.500	911.3	3	1.673	IDENTIFIED	6.006 <input type="checkbox"/>
Sodium-24	HE	1.40E+06	1.19E+06	pCi/g	0	N	0	4	0	SHORT_HLIF	0 <input type="checkbox"/>
Thallium-208	✓	0.7315	0.0593	pCi/g	0.06292	0.080	583.1	1	1.43	IDENTIFIED	6.42 <input type="checkbox"/>
Thorium-228	nr	2.511	0.1629	pCi/g	0.09514	N	238.6	2	0.9547	IDENTIFIED	2.61 <input type="checkbox"/>
Thorium-232	nr	2.742	0.2348	pCi/g	0.2166	N	911.3	3	1.673	IDENTIFIED	6.006 <input type="checkbox"/>
Tin-126	int nr	0.5248	0.06225	pCi/g	0.1139	N	87.32	3	1.324	IDENTIFIED	10.86 <input type="checkbox"/>
Total Uranium		6.6274	2.73E-06	ug/g	3.3884	N		0			<input type="checkbox"/>

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248115007	22-FEB-10 12:00	10-MAR-10 14:55	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt	Err(%)	Qual	Qual Comment
Actinium-228	nr	1.76	0.1978	pCi/g	0.2167	N	910	3	1.689	IDENTIFIED	9.541 <input type="checkbox"/>

Annihilation Rad.	0.1857	0.033	pCi/g	0.04564	N	510.1	1	1.743	IDENTIFIED	17.53	□
Bismuth-211 int	3.398	0.2496	pCi/g	0.3221	Y	351.4	2	1.255	IDENTIFIED	6.583	□ ui
Bismuth-212 la nr	2.065	0.414	pCi/g	1.225	N	0	4	0	FAIL_ABUND	0	□
Bismuth-214 ✓	1.114	0.09479	pCi/g	0.1242	0.200	608.5	2	1.327	IDENTIFIED	7.615	□
Cadmium-109 int	2.667	0.6825	pCi/g	1.211	Y	87.03	3	1.317	IDENTIFIED	25.12	□ ui
Cerium-143	1852	249.6	pCi/g	0	N	0	4	0	SHORT_HLIF	0	□
Cesium-135 HE	0.3912	0.1125	pCi/g	0.2733	N	269.8	1	1.217	IDENTIFIED	28.5	□
Gross Gamma	7.895	1.153	pCi/g	2.939	N	0					□
Lead-212 ✓	1.58	0.07876	pCi/g	0.09493	0.100	238.3	2	1.208	IDENTIFIED	3.419	□
Lead-214 ✓	1.233	0.09675	pCi/g	0.1171	0.100	351.4	2	1.255	IDENTIFIED	6.583	□
Neptunium-237 HE	0.7768	0.2148	pCi/g	0.4249	N	87.03	3	1.317	IDENTIFIED	25.12	□
Niobium-95m la nr	0.8743	0.08824	pCi/g	0.3055	N	0	4	0	NOT_IDENTI	0	□
Potassium-40 ✓	24.44	1.243	pCi/g	0.4696	1.00	1459	1	2.344	IDENTIFIED	3.444	□
Radium-224 int	3.908	0.5914	pCi/g	1.017	Y	241.2	1	1.74	IDENTIFIED	14.87	□ ui
Radium-226 ✓	1.114	0.09479	pCi/g	0.1242	Y	608.5	2	1.327	IDENTIFIED	7.615	□
Radium-228 ✓	1.76	0.1978	pCi/g	0.2167	0.500	910	3	1.689	IDENTIFIED	9.541	□
Thallium-208 ✓	0.4204	0.04225	pCi/g	0.06413	0.080	582.4	1	1.35	IDENTIFIED	9.513	□
Thorium-228 nr	1.58	0.07876	pCi/g	0.09493	N	238.3	2	1.208	IDENTIFIED	3.419	□
Thorium-232 nr	1.76	0.1978	pCi/g	0.2167	N	910	3	1.689	IDENTIFIED	9.541	□
Tin-126 int nr	0.2603	0.06661	pCi/g	0.1189	N	87.03	3	1.317	IDENTIFIED	25.12	□
Total Uranium	6.3112	2.42E-06	ug/g	4.4018	N	0					□
Zinc-65 HE	0.2448	0.06628	pCi/g	0.2234	N	0	4	0	NOT_IDENTI	0	□

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
248137001	23-FEB-10 12:00	10-MAR-10 14:58	15.1	SAMPLE	LOAD	1	LANL	LANL01004 GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.281	0.1934	pCi/g	0.2801	N	911.5	3	1.479	IDENTIFIED	13.88 □
Annihilation Rad.	0.09684	0.04283	pCi/g	0.05452	N	511.1	1	1.936	IDENTIFIED	44.03 □
Bismuth-211 int	2.76	0.2588	pCi/g	0.3988	Y	352.4	2	1.265	IDENTIFIED	8.203 □ ui
Bismuth-214 ✓	1.007	0.09843	pCi/g	0.1204	0.200	609.8	2	1.41	IDENTIFIED	8.43 □
Cerium-143	245.6	83.95	pCi/g	0	N	0	5	0	SHORT_HLIF	0 □
Gross Gamma	8.468	1.479	pCi/g	3.029	N	0				□
Iodine-133 HE	2793	3368	pCi/g	0	N	0	5	0	SHORT_HLIF	0 □
Iodine-135 HE	5.22E+15	4.26E+15	pCi/g	0	N	0	5	0	SHORT_HLIF	0 □
Lead-212 ✓	1.353	0.09219	pCi/g	0.1077	0.100	239.1	2	1.271	IDENTIFIED	4.536 □
Lead-214 ✓	1.002	0.09791	pCi/g	0.1438	0.100	352.4	2	1.265	IDENTIFIED	8.203 □
Potassium-40 ✓	37.44	1.991	pCi/g	0.4963	1.00	1461	1	1.86	IDENTIFIED	2.919 □
Radium-224 int	3.076	0.5564	pCi/g	1.154	Y	242	1	1.535	IDENTIFIED	17.51 □ ui
Radium-226 ✓	1.007	0.09843	pCi/g	0.1204	Y	609.8	2	1.41	IDENTIFIED	8.43 □
Radium-228 ✓	1.281	0.1934	pCi/g	0.2801	0.500	911.5	3	1.479	IDENTIFIED	13.88 □
Thallium-208 ✓	0.4273	0.04647	pCi/g	0.06786	0.080	583.5	1	1.441	IDENTIFIED	9.883 □
Thorium-228 nr	1.353	0.09219	pCi/g	0.1077	N	239.1	2	1.271	IDENTIFIED	4.536 □
Thorium-232 nr	1.281	0.1934	pCi/g	0.2801	N	911.5	3	1.479	IDENTIFIED	13.88 □
Thorium-234 la	2.91	1.074	pCi/g	2.727	2.00	0	5	0	FAIL_ABUND	0 □ UI Data rejected due to low abundance.
Total Uranium	8.6521	3.19E-06	ug/g	4.0601	N	0				□
Uranium-238 HE	2.91	1.074	pCi/g	2.727	N	0	5	0	FAIL_ABUND	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	
248137002	23-FEB-10 12:00	10-MAR-10 14:59	15.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228 nr	1.532	0.179	pCi/g	0.193	N	911	3	2.039	IDENTIFIED	9.524	<input type="checkbox"/>
Annihilation Rad.	0.0985	0.0295	pCi/g	0.03908	N	510.9	1	1.756	IDENTIFIED	29.76	<input type="checkbox"/>
Bismuth-211 int	2.855	0.2113	pCi/g	0.2583	Y	351.9	2	1.431	IDENTIFIED	6.668	<input type="checkbox"/> ui
Bismuth-212 HE	1.127	0.4066	pCi/g	0.6899	N	726.2	1	1.171	IDENTIFIED	35.54	<input type="checkbox"/>
Bismuth-214 ✓	0.8694	0.08066	pCi/g	0.09952	0.200	609.1	2	1.445	IDENTIFIED	8.116	<input type="checkbox"/>
Cadmium-109 int	2.178	0.5776	pCi/g	1.386	Y	87.28	3	0.853	IDENTIFIED	26.11	<input type="checkbox"/> ui
Cerium-143	558	91.16	pCi/g	0	N	0	3	0	SHORT_HLIF	0	<input type="checkbox"/>
Gross Gamma	8.379	1.284	pCi/g	2.314	N		0				<input type="checkbox"/>
Lead-212 ✓	1.272	0.06617	pCi/g	0.08256	0.100	238.7	2	1.157	IDENTIFIED	3.751	<input type="checkbox"/>
Lead-214 ✓	1.036	0.08182	pCi/g	0.0939	0.100	351.9	2	1.431	IDENTIFIED	6.668	<input type="checkbox"/>
Neptunium-237 HE	0.6354	0.1812	pCi/g	0.3982	N	87.28	3	0.853	IDENTIFIED	26.11	<input type="checkbox"/>
Potassium-40 ✓	37.43	1.661	pCi/g	0.3638	1.00	1460	1	2.438	IDENTIFIED	2.298	<input type="checkbox"/>
Radium-224 int	2.778	0.4268	pCi/g	0.8838	Y	241.6	1	1.511	IDENTIFIED	15.11	<input type="checkbox"/> ui
Radium-226 ✓	0.8694	0.08066	pCi/g	0.09952	Y	609.1	2	1.445	IDENTIFIED	8.116	<input type="checkbox"/>
Radium-228 ✓	1.532	0.179	pCi/g	0.193	0.500	911	3	2.039	IDENTIFIED	9.524	<input type="checkbox"/>
Strontium-85 la	0.08589	0.01858	pCi/g	0.06212	Y	0	3	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Technetium-99m	3.92E+16		pCi/g	0	N	0	3	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-208 ✓	0.3618	0.03731	pCi/g	0.04916	0.080	583.1	1	1.516	IDENTIFIED	9.542	<input type="checkbox"/>
Thorium-228 nr	1.272	0.06617	pCi/g	0.08256	N	238.7	2	1.157	IDENTIFIED	3.751	<input type="checkbox"/>
Thorium-232 nr	1.532	0.179	pCi/g	0.193	N	911	3	2.039	IDENTIFIED	9.524	<input type="checkbox"/>
Tin-126 HE	0.2129	0.05646	pCi/g	0.1358	N	87.28	3	0.853	IDENTIFIED	26.11	<input type="checkbox"/>

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue	
248137003	23-FEB-10 12:00	10-MAR-10 15:38	15.2	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228 nr	1.569	0.1872	pCi/g	0.2865	N	911.2	3	2.15	IDENTIFIED	10.29	<input type="checkbox"/>
Annihilation Rad.	0.1268	0.03692	pCi/g	0.05274	N	511	1	2.109	IDENTIFIED	28.78	<input type="checkbox"/>
Bismuth-211 int	3.028	0.2786	pCi/g	0.3736	Y	351.9	2	1.203	IDENTIFIED	7.914	<input type="checkbox"/> ui
Bismuth-212 HE	1.829	0.4974	pCi/g	1.395	N	0	6	0	FAIL_ABUND	0	<input type="checkbox"/>
Bismuth-214 la	0.9498	0.09801	pCi/g	0.2993	0.200	0	6	0	FAIL_ABUND	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Cadmium-109 int	2.336	0.6488	pCi/g	1.446	Y	87.11	3	1.399	IDENTIFIED	27.22	<input type="checkbox"/> ui
Cerium-143	474.1	105.9	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>
Gross Gamma	8.731	1.332	pCi/g	2.768	N						<input type="checkbox"/>
Iodine-133 HE	6026	3592	pCi/g	0	N	0	6	0	SHORT_HLIF	0	<input type="checkbox"/>
Lead-212 ✓	1.263	0.09882	pCi/g	0.1175	0.100	238.6	2	1.11	IDENTIFIED	5.909	<input type="checkbox"/>
Lead-214 ✓	1.099	0.1055	pCi/g	0.1301	0.100	351.9	2	1.203	IDENTIFIED	7.914	<input type="checkbox"/>
Neptunium-237 HE	0.6814	0.2023	pCi/g	0.4293	N	87.11	3	1.399	IDENTIFIED	27.22	<input type="checkbox"/>
Potassium-40 ✓	39.59	2.194	pCi/g	0.6116	1.00	1461	1	2.102	IDENTIFIED	2.915	<input type="checkbox"/>
Radium-224 int	2.729	0.4596	pCi/g	1.465	Y	241.8	1	1.801	IDENTIFIED	16.2	<input type="checkbox"/> ui
Radium-226 la	0.9498	0.09801	pCi/g	0.2993	Y	0	6	0	FAIL_ABUND	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Radium-228 ✓	1.569	0.1872	pCi/g	0.2865	0.500	911.2	3	2.15	IDENTIFIED	10.29	<input type="checkbox"/>

Sodium-24	HE	1.94E+05	4.63E+05	pCi/g	0	N	0	6	0	SHORT_HLIF	0	□
Thallium-208	nr	0.4272	0.05192	pCi/g	0.0734	0.080	583.2	1	1.427	IDENTIFIED	11.26	□
Thorium-228	nr	1.263	0.09882	pCi/g	0.1175	N	238.6	2	1.11	IDENTIFIED	5.909	□
Thorium-232	nr	1.569	0.1872	pCi/g	0.2865	N	911.2	3	2.15	IDENTIFIED	10.29	□
Thorium-234	✓	2.592	0.9722	pCi/g	2.438	2.00	63.28	2	1.162	IDENTIFIED	36.34	□
Tin-126	HE	0.2284	0.06341	pCi/g	0.1421	N	87.11	3	1.399	IDENTIFIED	27.22	□
Total Uranium		7.6406	2.89E-06	ug/g	3.6295	N	0					□
Uranium-238	HE	2.592	0.9722	pCi/g	2.438	N	63.28	2	1.162	IDENTIFIED	36.34	□

*** = 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
248137004	23-FEB-10 12:00	10-MAR-10 15:39	15.2	SAMPLE	LOAD	1	LANL	LANL01004IGEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	nr	1.437	0.2234	pCi/g	0.2585	N	911.1	3	2.244	IDENTIFIED	14.31	□		
Annihilation Rad.	HE	0.1017	0.03842	pCi/g	0.05218	N	511	1	1.727	IDENTIFIED	37.53	□		
Bismuth-211	int	3.141	0.2784	pCi/g	0.4367	Y	351.9	2	1.289	IDENTIFIED	7.342	□	ui	
Bismuth-212	HE	1.502	0.5358	pCi/g	1.382	N	0	5	0	FAIL_ABUND	0	□		
Bismuth-214	✓	0.9488	0.1051	pCi/g	0.1358	0.200	609.4	2	1.431	IDENTIFIED	9.899	□		
Cadmium-109	int	1.964	0.6874	pCi/g	1.893	Y	87.35	3	1.502	IDENTIFIED	34.44	□	ui	
Cerium-143		821.9	142.7	pCi/g	0	N	0	5	0	SHORT_HLIF	0	□		
Gross Gamma		8.183	1.36	pCi/g	2.608	N	0					□		
Iodine-133	HE	835.5	3720	pCi/g	0	N	0	5	0	SHORT_HLIF	0	□		
Lead-212	✓	1.39	0.1074	pCi/g	0.1108	0.100	238.7	2	1.433	IDENTIFIED	4.9	□		
Lead-214	✓	1.14	0.1058	pCi/g	0.1607	0.100	351.9	2	1.289	IDENTIFIED	7.342	□		
Neptunium-237	HE	0.5729	0.2093	pCi/g	0.5223	N	87.35	3	1.502	IDENTIFIED	34.44	□		
Niobium-95m	HE	0.3521	0.0934	pCi/g	0.3014	N	0	5	0	NOT_IDENTI	0	□		
Potassium-40	✓	39.54	2.24	pCi/g	0.5717	1.00	1460	1	2.145	IDENTIFIED	2.817	□		
Radium-224	int	5.263	0.9073	pCi/g	1.188	Y	241.6	1	2.243	IDENTIFIED	16.33	□	ui	
Radium-226	✓	0.9488	0.1051	pCi/g	0.1358	Y	609.4	2	1.431	IDENTIFIED	9.899	□		
Radium-228	✓	1.437	0.2234	pCi/g	0.2585	0.500	911.1	3	2.244	IDENTIFIED	14.31	□		
Strontium-85	la	0.111	0.02436	pCi/g	0.0839	Y	0	5	0	NOT_IDENTI	0	□	UI	Data rejected due to low abundance.
Thallium-208	✓	0.482	0.05158	pCi/g	0.07354	0.080	583.2	1	1.521	IDENTIFIED	9.676	□		
Thorium-228	nr	1.39	0.1074	pCi/g	0.1108	N	238.7	2	1.433	IDENTIFIED	4.9	□		
Thorium-232	nr	1.437	0.2234	pCi/g	0.2585	N	911.1	3	2.244	IDENTIFIED	14.31	□		
Tin-126	HE	0.192	0.06719	pCi/g	0.1765	N	87.35	3	1.502	IDENTIFIED	34.44	□		

*** = 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
1202057335		10-MAR-10 15:41	0	MB	LOAD	1		GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Iodine-133	HE	3.293	3.768	pCi/g	0	N	0	2	0	SHORT_HLIF	0	□		
Sodium-24	HE	20	50.36	pCi/g	0	N	0	2	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
1202057336	23-FEB-10 12:00	10-MAR-10 15:42	15.2	DUP	LOAD	1		LANL01004IGEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy	***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	nr	1.778	0.1825	pCi/g	0.221	N	911.4	3	1.979	IDENTIFIED	7.71	□		

Annihilation Rad.	0.1262	0.03143	pCi/g	0.04418	N	510.8	1	1.601	IDENTIFIED	24.4	<input type="checkbox"/>	
Bismuth-211 int	3.787	0.2916	pCi/g	0.31	Y	352	2	1.374	IDENTIFIED	5.047	<input type="checkbox"/>	ui
Bismuth-212 la nr	2.412	0.3974	pCi/g	1.039	N	0	5	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214 ✓	1.172	0.09717	pCi/g	0.1052	0.200	609.3	2	1.403	IDENTIFIED	5.889	<input type="checkbox"/>	
Cadmium-109 int	3.863	0.5271	pCi/g	1.143	Y	87.3	3	1.27	IDENTIFIED	12.81	<input type="checkbox"/>	ui
Cerium-143	774.2	124.8	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134 la	0.1146	0.031	pCi/g	0.07151	0.100	0	5	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Gross Gamma	9.137	1.243	pCi/g	2.744	N	0					<input type="checkbox"/>	
Iodine-133 HE	1274	2710	pCi/g	0	N	0	5	0	SHORT_HLIF	0	<input type="checkbox"/>	
Lead-212 ✓	1.714	0.1248	pCi/g	0.08728	0.100	238.7	2	1.242	IDENTIFIED	3.011	<input type="checkbox"/>	
Lead-214 ✓	1.375	0.1124	pCi/g	0.109	0.100	352	2	1.374	IDENTIFIED	5.047	<input type="checkbox"/>	
Neptunium-237 int nr	1.127	0.1939	pCi/g	0.3875	N	87.3	3	1.27	IDENTIFIED	12.81	<input type="checkbox"/>	
Potassium-40 ✓	28.65	1.496	pCi/g	0.448	1.00	1461	1	2.626	IDENTIFIED	2.508	<input type="checkbox"/>	
Radium-224 int	4.192	0.5154	pCi/g	0.9344	Y	241.7	1	1.557	IDENTIFIED	10.58	<input type="checkbox"/>	ui
Radium-226 ✓	1.172	0.09717	pCi/g	0.1052	Y	609.3	2	1.403	IDENTIFIED	5.889	<input type="checkbox"/>	
Radium-228 ✓	1.778	0.1825	pCi/g	0.221	0.500	911.4	3	1.979	IDENTIFIED	7.71	<input type="checkbox"/>	
Strontium-85 la	0.1359	0.02205	pCi/g	0.07167	Y	0	5	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-208 ✓	0.5227	0.04325	pCi/g	0.05105	0.080	583.2	1	1.489	IDENTIFIED	6.254	<input type="checkbox"/>	
Thorium-228 nr	1.714	0.1248	pCi/g	0.08728	N	238.7	2	1.242	IDENTIFIED	3.011	<input type="checkbox"/>	
Thorium-232 nr	1.778	0.1825	pCi/g	0.221	N	911.4	3	1.979	IDENTIFIED	7.71	<input type="checkbox"/>	
Tin-126 int nr	0.3775	0.05152	pCi/g	0.1122	N	87.3	3	1.27	IDENTIFIED	12.81	<input type="checkbox"/>	
Total Uranium	5.448	2.26E-06	ug/g	2.9333	N	0					<input type="checkbox"/>	

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

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
1202057337		10-MAR-10 15:44	0	LCS	LOAD	1		GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt	Err(%)	Qual	Qual Comment
Actinium-228	1.48	0.349	pCi/g	0.5616	N	910.7	3	1.841	IDENTIFIED	22.77	<input type="checkbox"/>
Americium-241 ✓	13.81	0.7365	pCi/g	0.1862	0.200	59.5	1	0.9669	IDENTIFIED	1.204	<input type="checkbox"/>
Barium-137m	6.078	0.3625	pCi/g	0.1174	N	661.5	2	1.507	IDENTIFIED	2.212	<input type="checkbox"/>
Bismuth-211	2.594	0.3406	pCi/g	0.5717	Y	351.8	2	1.257	IDENTIFIED	12.03	<input type="checkbox"/>
Bismuth-214	1.078	0.1549	pCi/g	0.2116	0.200	609.1	2	1.505	IDENTIFIED	13.04	<input type="checkbox"/>
Cadmium-109	38.76	2.245	pCi/g	1.258	Y	87.95	3	1.016	IDENTIFIED	2.167	<input type="checkbox"/>
Cesium-137 ✓	6.421	0.3833	pCi/g	0.124	0.100	661.5	2	1.507	IDENTIFIED	2.212	<input type="checkbox"/>
Cobalt-57	0.236	0.03078	pCi/g	0.05177	N	122	1	0.9203	IDENTIFIED	11.34	<input type="checkbox"/>
Cobalt-60 ✓	6.742	0.326	pCi/g	0.08756	0.100	1332	1	2.047	IDENTIFIED	2.626	<input type="checkbox"/>
Gross Gamma	29.92	2.344	pCi/g	3.342	N	0					<input type="checkbox"/>
Iodine-133 HE	2.78	14.59	pCi/g	0	N	0	3	0	SHORT_HLIF	0	<input type="checkbox"/>
Iodine-135 HE	1.53E+07	2.26E+07	pCi/g	0	N	0	3	0	SHORT_HLIF	0	<input type="checkbox"/>
Lead-212	1.423	0.1084	pCi/g	0.1484	0.100	238.6	2	1.047	IDENTIFIED	5.043	<input type="checkbox"/>
Lead-214	0.9413	0.1263	pCi/g	0.2143	0.100	351.8	2	1.257	IDENTIFIED	12.03	<input type="checkbox"/>
Neptunium-237	11.43	1.369	pCi/g	0.3687	N	87.95	3	1.016	IDENTIFIED	2.167	<input type="checkbox"/>
Radium-224	3.834	0.8475	pCi/g	1.593	Y	241.7	1	1.61	IDENTIFIED	21.47	<input type="checkbox"/>
Radium-226	1.078	0.1549	pCi/g	0.2116	Y	609.1	2	1.505	IDENTIFIED	13.04	<input type="checkbox"/>
Radium-228	1.48	0.349	pCi/g	0.5616	0.500	910.7	3	1.841	IDENTIFIED	22.77	<input type="checkbox"/>
Technetium-99m HE	6.47E+06	2.35E+07	pCi/g	0	N	0	3	0	SHORT_HLIF	0	<input type="checkbox"/>

Thallium-208	0.4417	0.06735	pCi/g	0.1162	0.080	583.1	1	1.7	IDENTIFIED	14.17	<input type="checkbox"/>
Thorium-228	1.423	0.1084	pCi/g	0.1484	N	238.6	2	1.047	IDENTIFIED	5.043	<input type="checkbox"/>
Thorium-232	1.48	0.349	pCi/g	0.5616	N	910.7	3	1.841	IDENTIFIED	22.77	<input type="checkbox"/>
Tin-126	3.831	0.2219	pCi/g	0.1241	N	87.95	3	1.016	IDENTIFIED	2.167	<input type="checkbox"/>

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

Result Greater Than DL

Batch Id	Sample Id	Sample Type	Run Date	Parmname	Result	Uncertainty	Units	DL	RDL
959270	248137003	SAMPLE	10-MAR-10	Lead-214	1.099	0.1055	pCi/g	0.06511	0.100
				Potassium-40	39.59	2.194	pCi/g	0.306	1.00
				Radium-224	2.729	0.4596	pCi/g	0.7329	Y
				Radium-226	0.9498	0.09801	pCi/g	0.1497	Y
				Radium-228	1.569	0.1872	pCi/g	0.1433	0.500
				Sodium-24	1.94E+05	4.63E+05	pCi/g	0	N
				Strontium-85	0.05008	0.02136	pCi/g	0.03891	Y
				Thallium-208	0.4272	0.05492	pCi/g	0.03672	0.080
				Thorium-234	2.592	0.9722	pCi/g	1.22	2.00
959270	248137004	SAMPLE	10-MAR-10	Bismuth-211	3.141	0.2784	pCi/g	0.2185	Y
				Bismuth-214	0.9488	0.1051	pCi/g	0.06793	0.200
				Cadmium-109	1.964	0.6874	pCi/g	0.9471	Y
				Cerium-143	821.9	142.7	pCi/g	0	N
				Gross Gamma	8.183	1.36	pCi/g	1.269	N
				Iodine-133	835.5	3720	pCi/g	0	N
				Lead-212	1.39	0.1074	pCi/g	0.05545	0.100
				Lead-214	1.14	0.1058	pCi/g	0.08038	0.100
				Mercury-203	0.09014	0.02495	pCi/g	0.04527	0.100
				Potassium-40	39.54	2.24	pCi/g	0.286	1.00
				Promethium-149	150.7	58.67	pCi/g	104	N
				Radium-224	5.263	0.9073	pCi/g	0.5841	Y
				Radium-226	0.9488	0.1051	pCi/g	0.06793	Y
				Radium-228	1.437	0.2234	pCi/g	0.1293	0.500
				Strontium-85	0.111	0.02436	pCi/g	0.04197	Y
				Thallium-208	0.482	0.05158	pCi/g	0.03679	0.080
				Cesium-137	0.01932	0.00885	pCi/g	0.0171	0.100
				Sodium-24	20	50.36	pCi/g	0	N
959270	1202057336	DUP	10-MAR-10	Americium-241	0.1111	0.06897	pCi/g	0.1111	0.200
				Bismuth-211	3.787	0.2916	pCi/g	0.1551	Y
				Bismuth-214	1.172	0.09717	pCi/g	0.05264	0.200
				Cadmium-109	3.863	0.5271	pCi/g	0.5718	Y
				Cerium-143	774.2	124.8	pCi/g	0	N
				Cesium-134	0.1146	0.031	pCi/g	0.03578	0.100
				Gross Gamma	9.137	1.243	pCi/g	1.338	N
				Iodine-133	1274	2710	pCi/g	0	N
				Lead-212	1.714	0.1248	pCi/g	0.04367	0.100
				Lead-214	1.375	0.1124	pCi/g	0.05455	0.100

USE
3/13/10

0.100

USE
3/13/10

VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 14:38:34.73

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112001.CNF;1
Sample date       : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 12:37:28
Sample ID        : G248112001 Sample quantity : 1.24050E+02 GRAM
Detector name    : GAM01 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.10 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 959270 Detector SN# :
Matrix Spike ID : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.24*	87	480	1.62	127.20	123	10	1.20E-02	49.7	
2	2	74.97*	350	448	1.31	150.65	143	18	4.86E-02	12.3	2.84E+00
3	2	77.21*	472	304	1.04	155.14	143	18	6.56E-02	7.9	
4	0	84.41*	57	304	0.98	169.53	167	6	7.91E-03	51.6	
5	0	87.35	142	323	0.93	175.40	173	6	1.98E-02	21.6	
6	0	92.50*	341	696	1.38	185.70	179	14	4.74E-02	17.9	
7	0	105.87	80	228	1.39	212.42	209	7	1.11E-02	33.6	
8	0	186.28*	196	371	1.30	373.16	368	12	2.73E-02	21.7	
9	0	210.14*	160	312	1.39	420.85	415	12	2.22E-02	23.8	
10	5	239.04*	1088	144	1.27	478.62	473	19	1.51E-01	3.7	1.65E+00
11	5	242.08	312	182	2.07	484.69	473	19	4.34E-02	14.6	
12	0	270.79	97	172	1.18	542.08	538	10	1.35E-02	27.2	
13	0	295.67*	332	169	1.39	591.82	587	12	4.61E-02	9.6	
14	0	300.52	69	126	1.22	601.51	598	8	9.63E-03	30.4	
15	0	338.76*	159	208	0.99	677.93	672	12	2.20E-02	20.2	
16	0	352.38*	519	161	1.33	705.17	699	11	7.20E-02	6.5	
17	0	463.30	86	73	2.00	926.88	922	10	1.19E-02	21.4	
18	0	511.23*	73	124	1.44	1022.66	1015	16	1.02E-02	41.2	
19	0	583.61*	325	72	1.46	1167.34	1161	14	4.52E-02	8.0	
20	0	609.73*	327	95	1.80	1219.55	1214	12	4.54E-02	8.3	
21	0	727.67*	65	68	1.60	1455.27	1447	13	9.02E-03	29.6	
22	0	769.18	48	64	0.91	1538.24	1532	12	6.61E-03	37.0	
23	0	786.38	28	19	0.67	1572.61	1569	8	3.89E-03	33.3	
24	0	861.06	29	63	1.07	1721.88	1717	11	4.04E-03	56.1	
25	0	911.59*	198	43	1.57	1822.86	1817	13	2.75E-02	10.1	
26	1	964.68	37	34	1.92	1928.98	1922	22	5.19E-03	35.4	1.51E+00
27	1	969.02	112	40	1.92	1937.65	1922	22	1.56E-02	14.9	
28	0	1120.92*	86	67	1.57	2241.24	2233	17	1.20E-02	24.8	
29	0	1461.13*	889	9	2.08	2921.15	2913	17	1.23E-01	3.5	
30	0	1730.40	14	6	1.08	3459.25	3451	12	1.94E-03	44.0	
31	0	1765.11*	57	4	1.75	3528.61	3521	13	7.92E-03	16.4	

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

VMS Nuclide Identification Report V3.1 Generated 10-MAR-2010 14:38:37

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112001.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 12:37:28
Sample ID         : G248112001 Sample quantity  : 124.05 GRAM
Sample type       : SOLID Sample geometry   :
Detector name     : GAMMA1 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.10 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	*	2.668E+01	3.011E+00	5.689E-01	5.057E-02	46.904
CD-109	+	88.03	*	2.295E+00	1.014E+00	1.416E+00	1.340E-01	1.620
SN-126	+	64.28		9.850E-01	9.895E-01	8.977E-01	1.321E-01	1.097
	+	86.94		9.313E-01	5.579E-01	5.632E-01	2.338E-01	1.654
	+	87.57	*	2.240E-01	9.898E-02	1.390E-01	1.309E-02	1.612
EU-155	+	86.55		2.717E-01	1.201E-01	1.627E-01	1.528E-02	1.671
	+	105.31	*	1.938E-01	1.313E-01	1.784E-01	1.569E-02	1.086
TL-208		277.37		6.798E-01	4.846E-01	8.180E-01	1.055E-01	0.831
	+	583.19	*	5.406E-01	9.987E-02	6.025E-02	5.465E-03	8.971
	+	860.56		4.628E-01	5.209E-01	5.440E-01	5.212E-02	0.851
BI-211		72.87		8.661E+00	3.766E+00	6.458E+00	5.296E-01	1.341
	+	351.06	*	3.767E+00	5.989E-01	3.919E-01	3.566E-02	9.611
BI-212	+	727.33	*	1.665E+00	1.007E+00	1.004E+00	1.243E-01	1.659
	+	785.37		4.660E+00	3.134E+00	5.659E+00	4.946E-01	0.823
		1620.50		4.465E+00	2.738E+00	5.587E+00	4.808E-01	0.799
PB-212	+	74.82		2.474E+00	6.858E-01	6.237E-01	7.986E-02	3.967
	+	77.11		1.904E+00	3.405E-01	3.560E-01	3.021E-02	5.347
	+	238.63	*	1.738E+00	2.182E-01	9.830E-02	9.997E-03	17.679
	+	300.09		1.740E+00	1.074E+00	1.392E+00	1.521E-01	1.250
BI-214	+	609.32	*	1.055E+00	2.047E-01	1.269E-01	1.257E-02	8.312
	+	1120.29		1.470E+00	7.460E-01	5.651E-01	6.074E-02	2.602
	+	1764.49		1.366E+00	4.616E-01	3.202E-01	2.685E-02	4.265
PB-214	+	74.82		4.386E+00	1.190E+00	1.105E+00	1.271E-01	3.967
	+	77.11		3.356E+00	6.609E-01	6.276E-01	7.427E-02	5.347
	+	242.00		3.027E+00	9.441E-01	5.980E-01	6.447E-02	5.061
	+	295.22		1.476E+00	3.287E-01	2.487E-01	2.784E-02	5.935
	+	351.93	*	1.367E+00	2.301E-01	1.363E-01	1.449E-02	10.027
RA-224	+	240.99	*	5.352E+00	1.640E+00	1.054E+00	9.577E-02	5.078
RA-226	+	609.32	*	1.055E+00	2.047E-01	1.269E-01	1.257E-02	8.312
	+	1120.29		1.470E+00	7.460E-01	5.651E-01	6.074E-02	2.602
	+	1764.49		1.366E+00	4.616E-01	3.202E-01	2.685E-02	4.265
AC-228	+	338.32		1.281E+00	7.448E-01	4.443E-01	1.855E-01	2.884
	+	911.20	*	1.606E+00	3.773E-01	2.483E-01	2.959E-02	6.467
	+	968.97		1.573E+00	6.054E-01	4.169E-01	1.021E-01	3.773

Sample ID : G248112001

Acquisition date : 10-MAR-2010 12:37:28

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		1.281E+00	7.448E-01	4.443E-01	1.855E-01	2.884
	+	911.20	*	1.606E+00	3.773E-01	2.483E-01	2.959E-02	6.467
	+	968.97		1.573E+00	6.054E-01	4.169E-01	1.021E-01	3.773
TH-228	+	74.82		2.474E+00	6.429E-01	6.237E-01	5.244E-02	3.967
	+	77.11		1.904E+00	3.405E-01	3.560E-01	3.021E-02	5.347
	+	238.63	*	1.738E+00	2.182E-01	9.830E-02	9.997E-03	17.679
	+	300.09		1.740E+00	1.501E+00	1.392E+00	8.533E-01	1.250
TH-229	+	85.43		2.345E-01	2.432E-01	3.423E-01	3.150E-02	0.685
	+	88.47		3.454E-01	1.526E-01	2.150E-01	2.026E-02	1.606
		193.51	*	8.785E-02	5.897E-01	9.943E-01	8.711E-02	0.088
	+	210.85		3.621E+00	1.754E+00	1.620E+00	1.443E-01	2.235
TH-232	+	338.32		1.281E+00	5.303E-01	4.443E-01	3.911E-02	2.884
	+	911.20	*	1.606E+00	3.773E-01	2.483E-01	2.959E-02	6.467
	+	968.97		1.573E+00	6.054E-01	4.169E-01	1.021E-01	3.773
TH-234	+	63.29	*	2.556E+00	2.581E+00	2.435E+00	4.374E-01	1.049
	+	92.59		4.450E+00	1.877E+00	1.073E+00	2.391E-01	4.147
NP-237	+	86.48	*	6.685E-01	3.269E-01	4.005E-01	9.188E-02	1.669
		95.86		1.817E-01	1.169E+00	1.677E+00	4.044E-01	0.108
U-238	+	63.29	*	2.556E+00	2.581E+00	2.435E+00	4.374E-01	1.049
	+	92.59		4.450E+00	1.645E+00	1.073E+00	9.786E-02	4.147
ANH-511	+	511.00	*	9.245E-02	7.659E-02	5.091E-02	4.314E-03	1.816

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-3.154E-01	3.913E-01	5.841E-01	5.313E-02	-0.540
NA-22		1274.54	*	-5.360E-03	5.106E-02	8.429E-02	7.078E-03	-0.064
NA-24		1368.63	*	-3.744E-01	5.106E-02	Half-Life too short		
SC-46		889.28	*	-5.377E-02	4.637E-02	6.563E-02	5.933E-03	-0.819
	+	1120.55		2.506E-01	1.260E-01	1.576E-01	1.324E-02	1.590
V-48		944.13		-9.065E-02	1.020E+00	1.644E+00	1.481E-01	-0.055
		983.53	*	7.895E-03	8.973E-02	1.470E-01	1.313E-02	0.054
		1312.11		-4.261E-02	9.356E-02	1.469E-01	1.246E-02	-0.290
CR-51		320.08	*	1.725E-01	4.137E-01	6.952E-01	6.535E-02	0.248
MN-54		834.85	*	-3.235E-02	4.236E-02	6.409E-02	5.705E-03	-0.505
CO-56		846.77	*	5.648E-03	4.340E-02	7.214E-02	6.446E-03	0.078
		1037.84		-2.972E-01	4.051E-01	6.030E-01	5.553E-02	-0.493
		1238.28		7.806E-02	1.040E-01	1.845E-01	1.578E-02	0.423
		1771.35		-8.398E-01	4.228E-01	4.567E-01	3.823E-02	-1.839
CO-57		122.06	*	1.198E-02	2.972E-02	4.723E-02	4.158E-03	0.254
		136.47		-8.207E-02	2.287E-01	3.828E-01	3.532E-02	-0.214
CO-58		810.76	*	-2.436E-02	4.137E-02	6.349E-02	5.617E-03	-0.384
FE-59		1099.45	*	1.241E-01	1.217E-01	2.145E-01	1.977E-02	0.579
		1291.59		6.736E-02	1.493E-01	2.606E-01	2.507E-02	0.258
CO-60		1173.23		-3.784E-03	5.441E-02	9.076E-02	7.346E-03	-0.042
		1332.49	*	6.879E-03	3.831E-02	6.543E-02	5.577E-03	0.105
ZN-65		1115.54	*	-5.665E-02	1.268E-01	1.635E-01	1.380E-02	-0.346
SE-75		121.12		1.137E-01	1.540E-01	2.479E-01	2.779E-02	0.459

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		136.00		-1.092E-02	4.401E-02	7.399E-02	6.405E-03	-0.148
		264.66	*	1.845E-02	4.868E-02	7.962E-02	7.314E-03	0.232
		279.54		1.466E-01	1.349E-01	2.333E-01	2.205E-02	0.629
		400.66		3.312E-01	3.203E-01	5.499E-01	5.877E-02	0.602
SR-85		514.00	*	6.083E-02	5.274E-02	8.162E-02	6.920E-03	0.745
Y-88		898.04		-5.889E-02	4.979E-02	7.029E-02	6.395E-03	-0.838
		1836.06	*	3.281E-02	3.407E-02	6.760E-02	5.559E-03	0.485
Y-91		1204.77	*	-7.032E+00	2.832E+01	4.648E+01	3.808E+00	-0.151
NB-94		702.65	*	-2.237E-03	3.832E-02	6.326E-02	5.310E-03	-0.035
		871.09		7.508E-04	3.564E-02	5.848E-02	5.262E-03	0.013
NB-95		765.81	*	4.174E-02	5.665E-02	8.797E-02	7.623E-03	0.475
NB-95M		235.69	*	1.363E-01	1.467E-01	2.267E-01	2.330E-02	0.601
ZR-95		724.19		7.225E-02	1.080E-01	1.685E-01	1.555E-02	0.429
		756.73	*	-1.615E-02	8.363E-02	1.356E-01	1.293E-02	-0.119
MO-99		140.51		-3.151E+01	3.029E+01	4.764E+01	1.130E+01	-0.661
		181.07		-6.362E+00	2.757E+01	4.023E+01	7.564E+00	-0.158
		366.42		2.548E+01	1.430E+02	2.355E+02	1.992E+01	0.108
		739.50	*	-7.728E+00	1.793E+01	2.841E+01	4.468E+00	-0.272
		777.92		-3.396E+01	5.016E+01	7.694E+01	6.703E+00	-0.441
TC-99M		140.51	*	-5.317E+11	5.016E+01	Half-Life too short		
RU-103		497.08	*	3.031E-02	4.616E-02	7.767E-02	1.077E-02	0.390
	+	610.33		1.106E+01	2.574E+00	3.211E+00	5.210E-01	3.444
RH-106		621.93	*	-3.794E-02	3.427E-01	5.672E-01	7.421E-02	-0.067
		1050.41		-2.628E+00	3.139E+00	4.580E+00	3.994E-01	-0.574
RU-106		621.93	*	-3.794E-02	3.427E-01	5.672E-01	4.738E-02	-0.067
		1050.41		-2.628E+00	3.139E+00	4.580E+00	3.994E-01	-0.574
AG-108M		433.94	*	3.187E-03	3.241E-02	5.267E-02	4.507E-03	0.061
		614.28		2.762E-03	4.166E-02	6.108E-02	5.295E-03	0.045
		722.91		3.349E-02	4.246E-02	6.740E-02	5.910E-03	0.497
AG-110M		657.76	*	-4.132E-02	4.023E-02	6.082E-02	5.157E-03	-0.679
		677.62		-6.367E-02	3.447E-01	5.636E-01	4.808E-02	-0.113
		706.68		1.915E-02	2.386E-01	3.985E-01	3.454E-02	0.048
		763.94		2.956E-03	2.201E-01	3.155E-01	2.806E-02	0.009
		884.68		4.533E-02	6.004E-02	1.051E-01	9.768E-03	0.431
		937.49		2.446E-02	1.428E-01	2.363E-01	2.201E-02	0.104
		1384.29		-1.599E-01	1.887E-01	2.754E-01	2.429E-02	-0.581
		1505.03		-1.458E-01	3.078E-01	4.671E-01	4.044E-02	-0.312
SN-113		391.69	*	-1.574E-02	5.123E-02	8.120E-02	6.763E-03	-0.194
CD-115		260.90		-2.170E+02	2.110E+02	3.281E+02	3.000E+01	-0.661
		492.35		-3.221E+01	5.969E+01	9.100E+01	7.687E+00	-0.354
		527.90	*	-1.194E+01	1.645E+01	2.610E+01	2.215E+00	-0.458
SN-117M		156.02		-1.931E+00	2.540E+00	4.148E+00	3.532E-01	-0.466
		158.56	*	5.367E-02	6.192E-02	1.079E-01	9.187E-03	0.497
TE-123M		159.00	*	2.061E-02	3.105E-02	5.374E-02	4.604E-03	0.383
SB-124		602.73		-1.535E-03	4.724E-02	7.450E-02	6.265E-03	-0.021
		645.85		-3.505E-01	5.565E-01	8.754E-01	7.685E-02	-0.400
		722.78		3.589E-01	4.328E-01	6.899E-01	5.993E-02	0.520
		1690.97	*	8.486E-03	8.767E-02	1.463E-01	1.300E-02	0.058
SB-125		427.87	*	1.155E-02	1.101E-01	1.791E-01	1.506E-02	0.064

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

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	463.37	9.616E-01	4.214E-01	6.448E-01	5.831E-02	1.491
		600.60	2.958E-02	1.996E-01	3.380E-01	3.064E-02	0.088
		635.95	-7.577E-03	2.983E-01	4.966E-01	4.483E-02	-0.015
TE-125M		109.28	* 9.865E+00	1.182E+01	1.756E+01	1.847E+00	0.562
I-126		388.63	1.097E-01	1.941E-01	3.273E-01	2.651E-02	0.335
		666.33	* 3.269E-02	2.588E-01	4.351E-01	3.574E-02	0.075
		753.82	5.405E-01	1.979E+00	3.356E+00	2.892E-01	0.161
SB-126		414.70	5.266E-02	8.849E-02	1.492E-01	1.220E-02	0.353
		666.50	-1.109E-02	8.898E-02	1.465E-01	1.204E-02	-0.076
		695.00	4.992E-02	9.703E-02	1.675E-01	1.400E-02	0.298
		697.00	1.070E-01	3.353E-01	5.704E-01	4.772E-02	0.188
		720.70	* -3.048E-03	1.914E-01	2.745E-01	2.327E-02	-0.011
		856.80	1.421E-02	6.591E-01	9.373E-01	8.400E-02	0.015
SB-127		252.40	6.255E+00	6.089E+00	9.660E+00	4.029E+00	0.648
		473.00	1.045E+00	2.416E+00	3.996E+00	5.142E-01	0.261
		685.70	* 9.785E-01	1.808E+00	3.133E+00	3.576E-01	0.312
		783.70	3.174E+00	5.127E+00	7.912E+00	1.003E+00	0.401
I-131		80.19	3.575E+00	6.329E+00	8.562E+00	7.525E-01	0.418
		284.31	-6.198E-01	1.874E+00	3.030E+00	2.896E-01	-0.205
		364.49	* -2.328E-03	1.418E-01	2.306E-01	2.067E-02	-0.010
		636.99	2.751E-01	1.866E+00	3.153E+00	2.780E-01	0.087
TE-132		49.72	-2.605E+01	2.812E+01	4.364E+01	4.869E+00	-0.597
		111.76	-3.178E+01	4.579E+01	7.023E+01	7.936E+00	-0.453
		116.30	2.470E+01	3.983E+01	6.498E+01	7.359E+00	0.380
		228.16	* -2.415E-01	9.908E-01	1.628E+00	2.641E-01	-0.148
BA-133		81.00	7.094E-02	1.349E-01	1.585E-01	2.475E-02	0.448
		276.40	1.468E-01	4.896E-01	7.232E-01	1.044E-01	0.203
		302.85	6.523E-03	1.821E-01	2.631E-01	3.517E-02	0.025
		356.01	* 8.055E-03	5.299E-02	7.666E-02	9.920E-03	0.105
		383.85	-7.846E-03	3.417E-01	5.538E-01	6.716E-02	-0.014
I-133		529.87	* -8.181E-03	3.417E-01	Half-Life too short		
		875.33	-1.267E-01	3.417E-01	Half-Life too short		
		1298.22	1.413E-01	3.417E-01	Half-Life too short		
CS-134		563.25	3.218E-01	4.152E-01	7.349E-01	6.293E-02	0.438
		569.33	-7.941E-02	2.155E-01	3.512E-01	3.017E-02	-0.226
		604.72	1.564E-02	4.198E-02	6.359E-02	5.358E-03	0.246
		795.86	* 7.478E-02	5.303E-02	9.733E-02	8.601E-03	0.768
		801.95	1.472E-01	4.275E-01	7.274E-01	6.434E-02	0.202
		1365.19	-2.606E-02	1.522E+00	2.523E+00	2.262E-01	-0.010
CS-135		268.22	* 2.806E-02	1.842E-01	2.704E-01	2.820E-02	0.104
I-135		546.56	8.418E+10	1.842E-01	Half-Life too short		
		836.80	-1.423E+11	1.842E-01	Half-Life too short		
		1038.76	-1.150E+11	1.842E-01	Half-Life too short		
		1131.51	-7.127E+09	1.842E-01	Half-Life too short		
		1260.41	* -1.077E+11	1.842E-01	Half-Life too short		
		1457.56	3.245E+12	1.842E-01	Half-Life too short		
		1678.03	-1.329E+11	1.842E-01	Half-Life too short		
		1791.20	-1.282E+11	1.842E-01	Half-Life too short		
CS-136		153.25	1.136E+00	9.796E-01	1.718E+00	1.750E-01	0.661

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		176.60		-2.323E-01	5.599E-01	9.239E-01	8.776E-02	-0.251
		273.65		-5.545E-01	7.057E-01	9.596E-01	9.444E-02	-0.578
		340.55		7.634E-01	2.281E-01	3.852E-01	3.506E-02	1.982
		818.51		6.083E-02	8.983E-02	1.570E-01	1.391E-02	0.388
		1048.07	*	-5.933E-02	1.389E-01	2.139E-01	1.944E-02	-0.277
		1235.36		6.534E-01	6.985E-01	1.253E+00	1.444E-01	0.521
BA-137M		661.66	*	2.419E-02	4.119E-02	7.168E-02	5.871E-03	0.338
CS-137		661.66	*	2.556E-02	4.351E-02	7.572E-02	6.215E-03	0.338
CE-139		165.86	*	-1.128E-02	3.312E-02	5.502E-02	4.686E-03	-0.205
BA-140		162.66		2.358E-01	9.555E-01	1.627E+00	1.481E-01	0.145
		304.85		-2.160E+00	2.044E+00	2.546E+00	7.486E-01	-0.848
		423.72		2.510E-01	2.556E+00	4.152E+00	1.362E+00	0.060
		537.26	*	1.677E-01	3.248E-01	5.590E-01	1.894E-01	0.300
LA-140		328.76		5.482E-02	3.679E-01	6.071E-01	5.690E-02	0.090
		487.02		-6.795E-02	1.699E-01	2.627E-01	2.359E-02	-0.259
		1596.21	*	1.585E-01	3.826E-01	6.544E-01	6.433E-02	0.242
CE-141		145.44	*	3.874E-02	1.070E-01	1.857E-01	1.602E-02	0.209
CE-143		57.36		7.611E-02	6.746E-02	1.187E-01	1.033E-02	0.641
		293.27	*	-9.929E-04	6.746E-02	Half-Life	too short	
		664.57		5.882E-04	6.746E-02	Half-Life	too short	
		721.93		1.651E-03	6.746E-02	Half-Life	too short	
CE-144		80.12		1.667E-03	6.746E-02	Half-Life	too short	
		133.52	*	1.666E+00	3.167E+00	4.275E+00	3.728E-01	0.390
PM-144		476.78		-1.005E-01	2.384E-01	3.652E-01	5.583E-02	-0.275
		618.01		-5.230E-02	8.042E-02	1.221E-01	1.120E-02	-0.428
		696.49	*	3.389E-02	3.448E-02	6.205E-02	5.345E-03	0.546
PR-144		696.51	*	4.729E-03	4.150E-02	6.949E-02	5.815E-03	0.068
		1489.16		3.592E-01	3.107E+00	5.205E+00	4.354E-01	0.069
PM-146		453.88	*	2.935E+00	1.478E+01	2.517E+01	2.179E+00	0.117
		633.25		3.445E-02	4.941E-02	8.350E-02	8.658E-03	0.413
		735.93		-1.416E+00	1.700E+00	2.489E+00	9.489E-01	-0.569
		747.24		-6.063E-02	1.747E-01	2.789E-01	7.809E-02	-0.217
ND-147	+	91.11		3.929E-02	1.069E-01	1.825E-01	2.659E-02	0.215
		319.41		1.861E+00	6.909E-01	6.315E-01	6.245E-02	2.946
		531.02	*	1.242E+00	3.925E+00	6.556E+00	5.882E-01	0.189
PM-149		285.90	*	2.092E-01	6.385E-01	1.102E+00	1.639E-01	0.190
EU-152		121.78		-9.547E+00	1.383E+02	2.270E+02	3.595E+01	-0.042
		244.70		3.047E-02	8.518E-02	1.351E-01	1.358E-02	0.226
		344.28	*	4.633E-01	3.822E-01	6.030E-01	5.488E-02	0.768
		778.90		-1.168E-02	1.265E-01	1.793E-01	1.657E-02	-0.065
		964.08	+	-1.242E-01	2.775E-01	4.361E-01	3.800E-02	-0.285
		1085.87		5.643E-01	4.022E-01	6.034E-01	5.413E-02	0.935
		1112.07		-1.316E-01	4.369E-01	6.785E-01	5.817E-02	-0.194
		1408.01		1.172E-01	3.790E-01	5.967E-01	5.040E-02	0.196
GD-153		69.67		2.478E-02	2.150E-01	3.619E-01	3.117E-02	0.068
		97.43	*	-5.842E-01	2.316E+00	3.284E+00	2.634E-01	-0.178
		103.18		5.594E-02	1.069E-01	1.566E-01	1.391E-02	0.357
EU-154		123.07		9.704E-03	1.277E-01	1.822E-01	1.589E-02	0.053
				-6.129E-02	6.208E-02	9.321E-02	1.069E-02	-0.658

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	+	723.31		1.381E-01	1.944E-01	3.056E-01	2.865E-02	0.452
		873.19		-6.503E-02	2.856E-01	4.544E-01	5.533E-02	-0.143
		996.26		-3.738E-01	4.471E-01	6.518E-01	1.148E-01	-0.573
		1004.73		-1.077E-01	2.685E-01	4.168E-01	4.929E-02	-0.258
		1274.44	*	1.972E-02	1.418E-01	2.403E-01	2.692E-02	0.082
		86.79		7.270E-01	3.212E-01	5.230E-01	4.884E-02	1.390
		197.04		1.483E-01	6.257E-01	1.058E+00	9.301E-02	0.140
		215.65		5.497E-01	9.442E-01	1.436E+00	1.284E-01	0.383
		298.57		4.208E-01	1.535E-01	2.230E-01	2.027E-02	1.887
		879.36	*	4.317E-02	1.554E-01	2.618E-01	2.361E-02	0.165
		962.29		9.099E-01	6.251E-01	1.056E+00	9.474E-02	0.862
		966.15	+	3.976E-01	2.834E-01	5.256E-01	4.712E-02	0.757
		1177.93		6.050E-02	4.336E-01	7.368E-01	5.975E-02	0.082
		1271.85		7.249E-02	8.660E-01	1.458E+00	1.222E-01	0.050
HO-166M		80.57		5.815E-02	4.073E-01	4.642E-01	4.066E-02	0.125
		184.41		1.026E-01	4.494E-02	7.292E-02	6.328E-03	1.407
		280.46		9.422E-03	1.025E-01	1.699E-01	1.553E-02	0.055
		410.95		1.742E-01	2.902E-01	4.880E-01	3.980E-02	0.357
		711.68	*	4.355E-02	7.528E-02	1.303E-01	1.099E-02	0.334
		752.31		-1.733E-01	2.868E-01	4.437E-01	3.822E-02	-0.391
TA-182		810.29		-3.513E-02	6.187E-02	9.524E-02	8.404E-03	-0.369
		67.75		-2.530E-02	1.487E-01	2.126E-01	1.685E-02	-0.119
		100.11		-5.524E-02	1.943E-01	3.061E-01	2.691E-02	-0.180
		152.43		2.571E-01	3.810E-01	6.601E-01	5.624E-02	0.389
		222.11		-2.487E-01	3.887E-01	6.266E-01	5.630E-02	-0.397
		1121.30	+	6.929E-01	3.484E-01	4.353E-01	3.655E-02	1.592
IR-192		1189.05		-1.872E-01	3.506E-01	5.566E-01	4.533E-02	-0.336
		1221.41	*	7.520E-02	2.317E-01	3.990E-01	3.289E-02	0.188
		1231.02		-1.326E-02	5.421E-01	9.050E-01	7.484E-02	-0.015
		295.96	+	1.101E+00	2.347E-01	3.305E-01	3.028E-02	3.331
		308.46		1.542E-01	1.127E-01	1.981E-01	1.799E-02	0.779
		316.51	*	2.440E-02	3.904E-02	6.636E-02	5.979E-03	0.368
HG-203		468.07		-8.335E-02	9.617E-02	1.214E-01	1.097E-02	-0.686
		70.83		-7.153E-02	1.799E+00	2.580E+00	4.070E-01	-0.028
		72.87		2.186E+00	9.916E-01	1.630E+00	2.495E-01	1.341
BI-207		279.20	*	6.261E-02	4.844E-02	8.431E-02	7.885E-03	0.743
		72.81		4.450E-01	2.144E-01	3.664E-01	3.004E-02	1.215
		74.97	+	7.132E-01	1.851E-01	2.724E-01	2.271E-02	2.618
		569.70		-9.522E-03	3.367E-02	5.527E-02	4.682E-03	-0.172
PB-210		1063.66	*	-3.252E-02	6.931E-02	1.079E-01	9.358E-03	-0.301
		1770.23		6.083E-02	5.426E-01	7.867E-01	6.588E-02	0.077
		46.54	*	3.875E+00	4.444E+00	7.353E+00	6.886E-01	0.527
		404.85	*	-7.764E-01	9.612E-01	1.346E+00	6.503E-01	-0.577
PB-211		427.09		8.544E-01	1.899E+00	3.095E+00	1.430E+00	0.276
		832.01		8.712E-02	1.121E+00	1.852E+00	9.613E-01	0.047
		271.23	+	6.866E-01	3.803E-01	5.078E-01	5.436E-02	1.352
RN-219		401.81	*	5.146E-01	5.081E-01	8.675E-01	1.265E-01	0.593
		81.07		1.618E-01	3.048E-01	3.590E-01	3.160E-02	0.451
RA-223		83.79	+	1.396E-01	1.447E-01	2.309E-01	2.088E-02	0.605

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		94.87		1.165E+00	5.893E-01	9.119E-01	8.201E-02	1.278
		144.24		2.844E-01	7.242E-01	1.210E+00	1.156E-01	0.235
		154.21		1.961E-02	4.195E-01	7.104E-01	6.643E-02	0.028
	+	269.46		5.335E-01	2.941E-01	3.749E-01	3.491E-02	1.423
		323.87	*	-3.340E-01	7.252E-01	1.149E+00	2.010E-01	-0.291
	+	338.28		5.085E+00	2.148E+00	2.624E+00	3.201E-01	1.938
		79.69		2.808E-01	1.474E+00	2.135E+00	3.686E-01	0.132
		235.96		2.651E-01	1.741E-01	2.768E-01	2.967E-02	0.958
		256.23	*	-5.075E-02	2.920E-01	4.791E-01	5.952E-02	-0.106
	+	299.98		1.914E+00	1.189E+00	1.789E+00	2.330E-01	1.070
TH-227		304.50		-2.954E+00	2.271E+00	2.841E+00	4.763E-01	-1.040
		334.37		2.261E+00	2.187E+00	3.365E+00	5.287E-01	0.672
		79.80		1.027E+00	2.090E+00	2.803E+00	6.113E-01	0.366
		235.96		2.651E-01	1.738E-01	2.768E-01	2.811E-02	0.958
		256.23	*	-5.075E-02	2.920E-01	4.791E-01	6.677E-02	-0.106
	+	299.98		1.914E+00	1.189E+00	1.789E+00	2.330E-01	1.070
PA-231		304.50		-2.954E+00	2.271E+00	2.841E+00	4.763E-01	-1.040
		334.37		2.261E+00	2.187E+00	3.365E+00	5.287E-01	0.672
	*	283.69		2.450E-01	1.649E+00	2.740E+00	4.082E-01	0.089
TH-231	+	301.36		1.230E+00	7.625E-01	1.178E+00	1.470E-01	1.044
		81.07		1.618E-01	3.048E-01	3.590E-01	3.160E-02	0.451
PA-233	+	83.79		1.396E-01	1.447E-01	2.309E-01	2.088E-02	0.605
		94.87		1.165E+00	5.893E-01	9.119E-01	8.201E-02	1.278
		144.24		2.844E-01	7.242E-01	1.210E+00	1.156E-01	0.235
		154.21		1.961E-02	4.195E-01	7.104E-01	6.643E-02	0.028
	+	269.46		5.335E-01	2.941E-01	3.749E-01	3.491E-02	1.423
		323.87	*	-3.340E-01	7.252E-01	1.149E+00	2.010E-01	-0.291
	+	338.28		5.085E+00	2.148E+00	2.624E+00	3.201E-01	1.938
	+	300.13		8.662E-01	5.421E-01	8.094E-01	1.223E-01	1.070
		311.90	*	-9.129E-02	7.526E-02	1.134E-01	1.050E-02	-0.805
		340.48		3.293E+00	1.189E+00	1.584E+00	3.821E-01	2.079
PA-234		94.67		5.795E-01	2.267E-01	3.469E-01	4.396E-02	1.670
		98.44		2.487E-01	1.748E-01	1.726E-01	9.632E-02	1.442
		111.00		2.269E-02	2.036E-01	3.258E-01	3.949E-02	0.070
		131.20		-9.546E-02	1.276E-01	1.928E-01	1.667E-02	-0.495
		569.50		-1.097E-01	2.968E-01	4.835E-01	4.096E-02	-0.227
		733.00		3.152E-01	5.139E-01	7.851E-01	1.740E-01	0.402
		880.51		-3.338E-02	3.267E-01	5.286E-01	4.768E-02	-0.063
		883.24		9.987E-02	3.541E-01	5.846E-01	3.933E-01	0.171
		926.50		-8.010E-02	1.829E-01	2.802E-01	7.122E-02	-0.286
		946.00	*	-1.348E-01	3.400E-01	5.271E-01	9.984E-02	-0.256
PA-234M		949.00		3.594E-01	5.006E-01	8.757E-01	7.879E-02	0.410
		766.42		2.093E+01	1.884E+01	2.556E+01	1.297E+01	0.819
		1001.03	*	3.077E-01	5.982E+00	9.426E+00	9.608E-01	0.033
		89.96		1.259E+00	1.375E+00	1.609E+00	4.000E-01	0.782
U-235	+	93.35		3.362E+00	1.436E+00	1.203E+00	2.800E-01	2.794
		143.76	*	-1.904E-02	2.196E-01	3.605E-01	6.097E-02	-0.053
		163.33		3.237E-01	4.850E-01	8.337E-01	1.492E-01	0.388
	+	185.72		2.014E-01	8.914E-02	1.057E-01	9.181E-03	1.906

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		205.31		-1.365E-02	5.996E-01	8.813E-01	1.609E-01	-0.015
		99.53		1.834E-01	1.780E-01	2.968E-01	2.615E-02	0.618
		103.37		2.561E-02	1.165E-01	1.677E-01	1.463E-02	0.153
	+	106.12		1.545E-01	1.046E-01	1.567E-01	1.360E-02	0.986
		117.23	*	-3.185E-01	4.647E-01	7.128E-01	6.210E-02	-0.447
		228.18		-5.995E-02	2.409E-01	3.960E-01	3.573E-02	-0.151
AM-241		277.60		2.670E-01	2.158E-01	3.749E-01	3.429E-02	0.712
		59.54	*	8.369E-02	1.936E-01	2.875E-01	2.369E-02	0.291
CM-247		278.00		9.759E-01	9.170E-01	1.583E+00	1.448E-01	0.616
		287.50		1.002E+00	1.325E+00	2.274E+00	2.075E-01	0.441
CF-249		402.40	*	3.008E-02	4.651E-02	7.836E-02	6.354E-03	0.384
		252.80		6.085E-01	1.066E+00	1.817E+00	1.658E-01	0.335
		333.37		1.653E-01	2.363E-01	3.574E-01	3.164E-02	0.462
CF-251		388.16	*	3.123E-02	4.396E-02	7.484E-02	6.068E-03	0.417
		177.52	*	-7.168E-03	1.398E-01	2.344E-01	2.020E-02	-0.031
		227.38		-4.955E-01	3.962E-01	6.145E-01	5.542E-02	-0.806
		285.41		-7.548E-01	2.455E+00	3.972E+00	3.628E-01	-0.190

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112001      *
* Acquisition date   : 10-MAR-2010 12:37:28 Detector SN#                   *
* Detector ID        : GAM01 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.10 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 22-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248112001 Analyst initials: MXR1                   *
* Batch Number      : 959270 Sample Quantity : 1.2405E+02 GRAM            *
* Recovery          : 1.00000 Carrier Weight : 0.00000                   *
*****
*
*                                     QC DATA                               *
*
* Standard Weight   : 0.00000                                              *
* CALIB. DATE/TIME  : 12-JAN-2010 15:15:52 MS Isotope :                   *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.668E+01	2.950E+00	5.682E-01	0.000E+00
CD-109	2.295E+00	9.937E-01	1.469E+00	0.000E+00
SN-126	2.240E-01	9.700E-02	1.442E-01	0.000E+00
EU-155	1.938E-01	1.287E-01	1.847E-01	0.000E+00
TL-208	5.406E-01	9.787E-02	6.095E-02	0.000E+00
BI-211	3.767E+00	5.869E-01	3.992E-01	0.000E+00
BI-212	1.665E+00	9.867E-01	1.012E+00	0.000E+00
PB-212	1.738E+00	2.139E-01	1.006E-01	0.000E+00
BI-214	1.055E+00	2.006E-01	1.283E-01	0.000E+00
PB-214	1.367E+00	2.254E-01	1.389E-01	0.000E+00
RA-224	5.352E+00	1.608E+00	1.079E+00	0.000E+00
RA-226	1.055E+00	2.006E-01	1.283E-01	0.000E+00
AC-228	1.606E+00	3.697E-01	2.497E-01	0.000E+00
RA-228	1.606E+00	3.697E-01	2.497E-01	0.000E+00
TH-228	1.738E+00	2.139E-01	1.006E-01	0.000E+00
TH-229	8.785E-02	5.779E-01	1.021E+00	0.000E+00
TH-232	1.606E+00	3.697E-01	2.497E-01	0.000E+00
TH-234	2.556E+00	2.529E+00	2.537E+00	0.000E+00
NP-237	6.685E-01	3.204E-01	4.155E-01	0.000E+00
U-238	2.556E+00	2.529E+00	2.537E+00	0.000E+00
ANH-511	9.245E-02	7.505E-02	5.159E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.154E-01	3.835E-01	5.925E-01	0.000E+00 NOT IDENT.
NA-22	-5.360E-03	5.004E-02	8.435E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.436E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-5.377E-02	4.545E-02	6.600E-02	0.000E+00 FAIL ABUN
V-48	7.895E-03	8.794E-02	1.477E-01	0.000E+00 NOT IDENT.
CR-51	1.725E-01	4.054E-01	7.090E-01	0.000E+00 NOT IDENT.

MN-54	-3.235E-02	4.151E-02	6.451E-02	0.000E+00	NOT IDENT.
CO-56	5.648E-03	4.254E-02	7.260E-02	0.000E+00	NOT IDENT.
CO-57	1.198E-02	2.913E-02	4.878E-02	0.000E+00	NOT IDENT.
CO-58	-2.436E-02	4.054E-02	6.394E-02	0.000E+00	NOT IDENT.
FE-59	1.241E-01	1.193E-01	2.151E-01	0.000E+00	NOT IDENT.
CO-60	6.879E-03	3.754E-02	6.543E-02	0.000E+00	NOT IDENT.
ZN-65	-5.665E-02	1.242E-01	1.639E-01	0.000E+00	NOT IDENT.
SE-75	1.845E-02	4.771E-02	8.140E-02	0.000E+00	NOT IDENT.
SR-85	6.083E-02	5.169E-02	8.271E-02	0.000E+00	NOT IDENT.
Y-88	3.281E-02	3.338E-02	6.730E-02	0.000E+00	NOT IDENT.
Y-91	-7.032E+00	2.776E+01	4.655E+01	0.000E+00	NOT IDENT.
NB-94	-2.237E-03	3.755E-02	6.383E-02	0.000E+00	NOT IDENT.
NB-95	4.174E-02	5.552E-02	8.865E-02	0.000E+00	NOT IDENT.
NB-95M	1.363E-01	1.437E-01	2.322E-01	0.000E+00	NOT IDENT.
ZR-95	-1.615E-02	8.195E-02	1.367E-01	0.000E+00	NOT IDENT.
MO-99	-7.728E+00	1.757E+01	2.865E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	5.111E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.031E-02	4.524E-02	7.874E-02	0.000E+00	FAIL ABUN
RH-106	-3.794E-02	3.359E-01	5.732E-01	0.000E+00	NOT IDENT.
RU-106	-3.794E-02	3.358E-01	5.732E-01	0.000E+00	NOT IDENT.
AG-108M	3.187E-03	3.176E-02	5.350E-02	0.000E+00	NOT IDENT.
AG-110M	-4.132E-02	3.942E-02	6.142E-02	0.000E+00	NOT IDENT.
SN-113	-1.574E-02	5.020E-02	8.258E-02	0.000E+00	NOT IDENT.
CD-115	-1.194E+01	1.612E+01	2.643E+01	0.000E+00	NOT IDENT.
SN-117M	5.367E-02	6.068E-02	1.111E-01	0.000E+00	NOT IDENT.
TE-123M	2.061E-02	3.043E-02	5.531E-02	0.000E+00	NOT IDENT.
SB-124	8.486E-03	8.591E-02	1.458E-01	0.000E+00	NOT IDENT.
SB-125	1.155E-02	1.079E-01	1.819E-01	0.000E+00	FAIL ABUN
TE-125M	9.865E+00	1.158E+01	1.816E+01	0.000E+00	NOT IDENT.
I-126	3.269E-02	2.536E-01	4.393E-01	0.000E+00	NOT IDENT.
SB-126	-3.048E-03	1.875E-01	2.768E-01	0.000E+00	NOT IDENT.
SB-127	9.785E-01	1.772E+00	3.162E+00	0.000E+00	NOT IDENT.
I-131	-2.328E-03	1.390E-01	2.348E-01	0.000E+00	NOT IDENT.
TE-132	-2.415E-01	9.710E-01	1.668E+00	0.000E+00	NOT IDENT.
BA-133	8.055E-03	5.193E-02	7.807E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.337E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	7.478E-02	5.197E-02	9.803E-02	0.000E+00	NOT IDENT.
CS-135	2.806E-02	1.805E-01	2.764E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.968E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-5.933E-02	1.361E-01	2.146E-01	0.000E+00	NOT IDENT.
BA-137M	2.419E-02	4.036E-02	7.238E-02	0.000E+00	NOT IDENT.
CS-137	2.556E-02	4.264E-02	7.646E-02	0.000E+00	NOT IDENT.
CE-139	-1.128E-02	3.245E-02	5.661E-02	0.000E+00	NOT IDENT.
BA-140	1.677E-01	3.183E-01	5.661E-01	0.000E+00	NOT IDENT.
LA-140	3.874E-02	1.049E-01	1.852E-01	0.000E+00	NOT IDENT.
CE-141	7.611E-02	6.611E-02	1.224E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.646E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.005E-01	2.336E-01	3.768E-01	0.000E+00	NOT IDENT.
PM-144	4.729E-03	4.067E-02	7.012E-02	0.000E+00	NOT IDENT.
PR-144	3.592E-01	3.045E+00	5.252E+00	0.000E+00	NOT IDENT.
PM-146	3.445E-02	4.842E-02	8.475E-02	0.000E+00	NOT IDENT.
ND-147	2.092E-01	6.258E-01	1.116E+00	0.000E+00	FAIL ABUN
PM-149	-9.547E+00	1.356E+02	2.318E+02	0.000E+00	NOT IDENT.
EU-152	-1.168E-02	1.240E-01	1.827E-01	0.000E+00	FAIL ABUN
GD-153	5.594E-02	1.048E-01	1.623E-01	0.000E+00	NOT IDENT.
EU-154	1.972E-02	1.390E-01	2.404E-01	0.000E+00	NOT IDENT.
TB-160	4.317E-02	1.523E-01	2.633E-01	0.000E+00	FAIL ABUN
HO-166M	4.355E-02	7.378E-02	1.314E-01	0.000E+00	NOT IDENT.
TA-182	7.520E-02	2.271E-01	3.995E-01	0.000E+00	FAIL ABUN
IR-192	2.440E-02	3.826E-02	6.768E-02	0.000E+00	FAIL ABUN
HG-203	6.261E-02	4.747E-02	8.614E-02	0.000E+00	NOT IDENT.
BI-207	-3.252E-02	6.792E-02	1.083E-01	0.000E+00	FAIL ABUN
PB-210	3.875E+00	4.355E+00	7.690E+00	0.000E+00	NOT IDENT.
PB-211	-7.764E-01	9.420E-01	1.369E+00	0.000E+00	NOT IDENT.
RN-219	5.146E-01	4.979E-01	8.820E-01	0.000E+00	FAIL ABUN
RA-223	-3.340E-01	7.107E-01	1.172E+00	0.000E+00	FAIL ABUN
AC-227	-5.075E-02	2.862E-01	4.900E-01	0.000E+00	FAIL ABUN
TH-227	-5.075E-02	2.862E-01	4.900E-01	0.000E+00	FAIL ABUN
PA-231	2.450E-01	1.616E+00	2.799E+00	0.000E+00	FAIL ABUN
TH-231	-3.340E-01	7.107E-01	1.172E+00	0.000E+00	FAIL ABUN
PA-233	-9.129E-02	7.376E-02	1.157E-01	0.000E+00	FAIL ABUN
PA-234	-1.348E-01	3.332E-01	5.296E-01	0.000E+00	NOT IDENT.
PA-234M	3.077E-01	5.863E+00	9.465E+00	0.000E+00	NOT IDENT.
U-235	-1.904E-02	2.152E-01	3.715E-01	0.000E+00	FAIL ABUN
NP-239	-3.185E-01	4.554E-01	7.366E-01	0.000E+00	FAIL ABUN
AM-241	8.369E-02	1.897E-01	2.997E-01	0.000E+00	NOT IDENT.
CM-247	3.008E-02	4.558E-02	7.966E-02	0.000E+00	NOT IDENT.
CF-249	3.123E-02	4.308E-02	7.612E-02	0.000E+00	NOT IDENT.

CF-251	-7.168E-03	1.370E-01	2.410E-01	0.000E+00 NOT IDENT.
--------	------------	-----------	-----------	----------------------

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112001.CNF;1
Sample date        : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 12:37:28
Sample ID          : G248112001 Sample quantity : 1.24050E+02 GRAM
Detector name      : GAM01 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.10 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959270 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
K-40	1460.82	889	10.66*	9.455E-01	2.668E+01	2.668E+01	11.28
CD-109	88.03	142	3.70*	5.197E+00	2.240E+00	2.295E+00	44.18
SN-126	64.28	87	9.60	2.770E+00	9.850E-01	9.850E-01	100.46
	86.94	142	8.90	5.197E+00	9.313E-01	9.313E-01	59.90
	87.57	142	37.00*	5.197E+00	2.240E-01	2.240E-01	44.18
EU-155	86.55	142	30.70	5.197E+00	2.700E-01	2.717E-01	44.20
	105.31	80	21.10*	5.930E+00	1.925E-01	1.938E-01	67.76
TL-208	277.37	-----	6.60	3.885E+00	-----	Line Not Found	-----
	583.19	325	85.00*	2.142E+00	5.406E-01	5.406E-01	18.47
	860.56	29	12.50	1.521E+00	4.628E-01	4.628E-01	112.56
BI-211	72.87	-----	1.23	3.944E+00	-----	Line Not Found	-----
	351.06	519	12.92*	3.225E+00	3.767E+00	3.767E+00	15.90
BI-212	727.33	65	6.67*	1.770E+00	1.665E+00	1.665E+00	60.48
	785.37	28	1.10	1.652E+00	4.660E+00	4.660E+00	67.25
	1620.50	-----	1.47	8.736E-01	-----	Line Not Found	-----
PB-212	74.82	350	10.28	4.167E+00	2.474E+00	2.474E+00	27.72
	77.11	472	17.10	4.390E+00	1.904E+00	1.904E+00	17.89
	238.63	1088	43.60*	4.345E+00	1.738E+00	1.738E+00	12.56
	300.09	69	3.30	3.652E+00	1.740E+00	1.740E+00	61.71
BI-214	609.32	327	45.49*	2.064E+00	1.055E+00	1.055E+00	19.41
	1120.29	86	14.92	1.193E+00	1.470E+00	1.470E+00	50.73
	1764.49	57	15.30	8.255E-01	1.365E+00	1.366E+00	33.80
PB-214	74.82	350	5.80	4.167E+00	4.386E+00	4.386E+00	27.14
	77.11	472	9.70	4.390E+00	3.356E+00	3.356E+00	19.70
	242.00	312	7.25	4.305E+00	3.027E+00	3.027E+00	31.19
	295.22	332	18.42	3.698E+00	1.476E+00	1.476E+00	22.27
	351.93	519	35.60*	3.225E+00	1.367E+00	1.367E+00	16.83
RA-224	240.99	312	4.10*	4.305E+00	5.352E+00	5.352E+00	30.65
RA-226	609.32	327	45.49*	2.064E+00	1.055E+00	1.055E+00	19.41
	1120.29	86	14.92	1.193E+00	1.470E+00	1.470E+00	50.73
	1764.49	57	15.30	8.255E-01	1.365E+00	1.366E+00	33.80
AC-228	338.32	159	11.27	3.326E+00	1.281E+00	1.281E+00	58.12

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	198	25.80*	1.444E+00	1.606E+00	1.606E+00	23.49
	968.97	112	15.80	1.364E+00	1.573E+00	1.573E+00	38.50
	338.32	159	11.27	3.326E+00	1.281E+00	1.281E+00	58.12
	911.20	198	25.80*	1.444E+00	1.606E+00	1.606E+00	23.49
TH-228	968.97	112	15.80	1.364E+00	1.573E+00	1.573E+00	38.50
	74.82	350	10.28	4.167E+00	2.474E+00	2.474E+00	25.98
	77.11	472	17.10	4.390E+00	1.904E+00	1.904E+00	17.89
	238.63	1088	43.60*	4.345E+00	1.738E+00	1.738E+00	12.56
TH-229	300.09	69	3.30	3.652E+00	1.740E+00	1.740E+00	86.28
	85.43	57	14.70	4.997E+00	2.345E-01	2.345E-01	103.68
	88.47	142	24.00	5.197E+00	3.454E-01	3.454E-01	44.18
	193.51	-----	4.41*	5.034E+00	-----	Line Not Found	-----
TH-232	210.85	160	2.80	4.764E+00	3.621E+00	3.621E+00	48.45
	338.32	159	11.27	3.326E+00	1.281E+00	1.281E+00	41.38
	911.20	198	25.80*	1.444E+00	1.606E+00	1.606E+00	23.49
	968.97	112	15.80	1.364E+00	1.573E+00	1.573E+00	38.50
TH-234	63.29	87	3.70*	2.770E+00	2.556E+00	2.556E+00	100.99
	92.59	341	4.23	5.486E+00	4.450E+00	4.450E+00	42.18
NP-237	86.48	142	12.40*	5.197E+00	6.685E-01	6.685E-01	48.91
	95.86	-----	2.68	5.636E+00	-----	Line Not Found	-----
U-238	63.29	87	3.70*	2.770E+00	2.556E+00	2.556E+00	100.99
	92.59	341	4.23	5.486E+00	4.450E+00	4.450E+00	36.96
ANH-511	511.00	73	100.00*	2.392E+00	9.245E-02	9.245E-02	82.84

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G248112001

Page : 3
Acquisition date : 10-MAR-2010 12:37:28

Total number of lines in spectrum 31
Number of unidentified lines 2
Number of lines tentatively identified by NID 29 93.55%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.668E+01	2.668E+01	0.301E+01	11.28	
CD-109	461.40D	1.02	2.240E+00	2.295E+00	1.014E+00	44.18	
SN-126	2.30E+05Y	1.00	2.240E-01	2.240E-01	0.990E-01	44.18	
EU-155	4.75Y	1.01	1.925E-01	1.938E-01	1.313E-01	67.76	
TL-208	1.41E+10Y	1.00	5.406E-01	5.406E-01	0.999E-01	18.47	
BI-211	7.04E+08Y	1.00	3.767E+00	3.767E+00	0.599E+00	15.90	
BI-212	1.41E+10Y	1.00	1.665E+00	1.665E+00	1.007E+00	60.48	
PB-212	1.41E+10Y	1.00	1.738E+00	1.738E+00	0.218E+00	12.56	
BI-214	1600.00Y	1.00	1.055E+00	1.055E+00	0.205E+00	19.41	
PB-214	1600.00Y	1.00	1.367E+00	1.367E+00	0.230E+00	16.83	
RA-224	1.41E+10Y	1.00	5.352E+00	5.352E+00	1.640E+00	30.65	
RA-226	1600.00Y	1.00	1.055E+00	1.055E+00	0.205E+00	19.41	
AC-228	1.41E+10Y	1.00	1.606E+00	1.606E+00	0.377E+00	23.49	
RA-228	1.41E+10Y	1.00	1.606E+00	1.606E+00	0.377E+00	23.49	
TH-228	1.41E+10Y	1.00	1.738E+00	1.738E+00	0.218E+00	12.56	
TH-229	7340.00Y	1.00	3.454E-01	3.454E-01	1.526E-01	44.18	K
TH-232	1.41E+10Y	1.00	1.606E+00	1.606E+00	0.377E+00	23.49	
TH-234	4.47E+09Y	1.00	2.556E+00	2.556E+00	2.581E+00	100.99	
NP-237	2.14E+06Y	1.00	6.685E-01	6.685E-01	3.269E-01	48.91	
U-238	4.47E+09Y	1.00	2.556E+00	2.556E+00	2.581E+00	100.99	
ANH-511	1.00E+09Y	1.00	9.245E-02	9.245E-02	7.659E-02	82.84	

Total Activity : 5.865E+01 5.870E+01

Grand Total Activity : 5.865E+01 5.870E+01

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

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

Unidentified Energy Lines
Sample ID : G248112001

Page : 4
Acquisition date : 10-MAR-2010 12:37:28

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	186.28	196	371	1.30	373.16	368	12	2.73E-02	43.4	5.16E+00	T
0	270.79	97	172	1.18	542.08	538	10	1.35E-02	54.3	3.96E+00	T
0	463.30	86	73	2.00	926.88	922	10	1.19E-02	42.9	2.59E+00	T
0	769.18	48	64	0.91	1538.24	1532	12	6.61E-03	73.9	1.68E+00	
1	964.68	37	34	1.92	1928.98	1922	22	5.19E-03	70.7	1.37E+00	T
0	1730.40	14	6	1.08	3459.25	3451	12	1.94E-03	88.1	8.36E-01	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112001.CNF;1
* Acquisition date   : 10-MAR-2010 12:37:28  Detector SN#      :
* Detector ID        : GAM01                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.10          Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 22-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248112001            Analyst initials: MXR1
* Batch Number       : 959270                Sample Quantity : 1.24050E+02 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52.7MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A                LCS Isotope      :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.668E+01	3.011E+00	5.689E-01	5.057E-02	46.904
CD-109	2.295E+00	1.014E+00	1.416E+00	1.340E-01	1.620
SN-126	2.240E-01	9.898E-02	1.390E-01	1.309E-02	1.612
EU-155	1.938E-01	1.313E-01	1.784E-01	1.569E-02	1.086
TL-208	5.406E-01	9.987E-02	6.025E-02	5.465E-03	8.971
BI-211	3.767E+00	5.989E-01	3.919E-01	3.566E-02	9.611
BI-212	1.665E+00	1.007E+00	1.004E+00	1.243E-01	1.659
PB-212	1.738E+00	2.182E-01	9.830E-02	9.997E-03	17.679
BI-214	1.055E+00	2.047E-01	1.269E-01	1.257E-02	8.312
PB-214	1.367E+00	2.301E-01	1.363E-01	1.449E-02	10.027
RA-224	5.352E+00	1.640E+00	1.054E+00	9.577E-02	5.078
RA-226	1.055E+00	2.047E-01	1.269E-01	1.257E-02	8.312
AC-228	1.606E+00	3.773E-01	2.483E-01	2.959E-02	6.467
RA-228	1.606E+00	3.773E-01	2.483E-01	2.959E-02	6.467
TH-228	1.738E+00	2.182E-01	9.830E-02	9.997E-03	17.679
TH-229	3.454E-01	1.526E-01	9.943E-01	8.711E-02	0.347
TH-232	1.606E+00	3.773E-01	2.483E-01	2.959E-02	6.467
TH-234	2.556E+00	2.581E+00	2.435E+00	4.374E-01	1.049

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	6.685E-01	3.269E-01	4.005E-01	9.188E-02	1.669
U-238	2.556E+00	2.581E+00	2.435E+00	4.374E-01	1.049
ANH-511	9.245E-02	7.659E-02	5.091E-02	4.314E-03	1.816

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.154E-01		3.913E-01	5.841E-01	5.313E-02	-0.540
NA-22	-5.360E-03		5.106E-02	8.429E-02	7.078E-03	-0.064
NA-24	-3.744E-01		1.243E+00	Half-Life too short		
SC-46	-5.377E-02		4.637E-02	6.563E-02	5.933E-03	-0.819
V-48	7.895E-03		8.973E-02	1.470E-01	1.313E-02	0.054
CR-51	1.725E-01		4.137E-01	6.952E-01	6.535E-02	0.248
MN-54	-3.235E-02		4.236E-02	6.409E-02	5.705E-03	-0.505
CO-56	5.648E-03		4.340E-02	7.214E-02	6.446E-03	0.078
CO-57	1.198E-02		2.972E-02	4.723E-02	4.158E-03	0.254
CO-58	-2.436E-02		4.137E-02	6.349E-02	5.617E-03	-0.384
FE-59	1.241E-01		1.217E-01	2.145E-01	1.977E-02	0.579
CO-60	6.879E-03		3.831E-02	6.543E-02	5.577E-03	0.105
ZN-65	-5.665E-02		1.268E-01	1.635E-01	1.380E-02	-0.346
SE-75	1.845E-02		4.868E-02	7.962E-02	7.314E-03	0.232
SR-85	6.083E-02		5.274E-02	8.162E-02	6.920E-03	0.745
Y-88	3.281E-02		3.407E-02	6.760E-02	5.559E-03	0.485
Y-91	-7.032E+00		2.832E+01	4.648E+01	3.808E+00	-0.151
NB-94	-2.237E-03		3.832E-02	6.326E-02	5.310E-03	-0.035
NB-95	4.174E-02		5.665E-02	8.797E-02	7.623E-03	0.475
NB-95M	1.363E-01		1.467E-01	2.267E-01	2.330E-02	0.601
ZR-95	-1.615E-02		8.363E-02	1.356E-01	1.293E-02	-0.119
MO-99	-7.728E+00		1.793E+01	2.841E+01	4.468E+00	-0.272
TC-99M	-5.317E+11		2.607E+11	Half-Life too short		
RU-103	3.031E-02		4.616E-02	7.767E-02	1.077E-02	0.390
RH-106	-3.794E-02		3.427E-01	5.672E-01	7.421E-02	-0.067
RU-106	-3.794E-02		3.427E-01	5.672E-01	4.738E-02	-0.067
AG-108M	3.187E-03		3.241E-02	5.267E-02	4.507E-03	0.061
AG-110M	-4.132E-02		4.023E-02	6.082E-02	5.157E-03	-0.679
SN-113	-1.574E-02		5.123E-02	8.120E-02	6.763E-03	-0.194
CD-115	-1.194E+01		1.645E+01	2.610E+01	2.215E+00	-0.458
SN-117M	5.367E-02		6.192E-02	1.079E-01	9.187E-03	0.497
TE-123M	2.061E-02		3.105E-02	5.374E-02	4.604E-03	0.383
SB-124	8.486E-03		8.767E-02	1.463E-01	1.300E-02	0.058
SB-125	1.155E-02		1.101E-01	1.791E-01	1.506E-02	0.064
TE-125M	9.865E+00		1.182E+01	1.756E+01	1.847E+00	0.562
I-126	3.269E-02		2.588E-01	4.351E-01	3.574E-02	0.075
SB-126	-3.048E-03		1.914E-01	2.745E-01	2.327E-02	-0.011
SB-127	9.785E-01		1.808E+00	3.133E+00	3.576E-01	0.312
I-131	-2.328E-03		1.418E-01	2.306E-01	2.067E-02	-0.010
TE-132	-2.415E-01		9.908E-01	1.628E+00	2.641E-01	-0.148

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	8.055E-03		5.299E-02	7.666E-02	9.920E-03	0.105
I-133	-8.181E-03		6.823E-03	Half-Life too short		
CS-134	7.478E-02		5.303E-02	9.733E-02	8.601E-03	0.768
CS-135	2.806E-02		1.842E-01	2.704E-01	2.820E-02	0.104
I-135	-1.077E+11		4.065E+10	Half-Life too short		
CS-136	-5.933E-02		1.389E-01	2.139E-01	1.944E-02	-0.277
BA-137M	2.419E-02		4.119E-02	7.168E-02	5.871E-03	0.338
CS-137	2.556E-02		4.351E-02	7.572E-02	6.215E-03	0.338
CE-139	-1.128E-02		3.312E-02	5.502E-02	4.686E-03	-0.205
BA-140	1.677E-01		3.248E-01	5.590E-01	1.894E-01	0.300
LA-140	3.874E-02		1.070E-01	1.857E-01	1.602E-02	0.209
CE-141	7.611E-02		6.746E-02	1.187E-01	1.033E-02	0.641
CE-143	5.882E-04		1.350E-04	Half-Life too short		
CE-144	-1.005E-01		2.384E-01	3.652E-01	5.583E-02	-0.275
PM-144	4.729E-03		4.150E-02	6.949E-02	5.815E-03	0.068
PR-144	3.592E-01		3.107E+00	5.205E+00	4.354E-01	0.069
PM-146	3.445E-02		4.941E-02	8.350E-02	8.658E-03	0.413
ND-147	2.092E-01		6.385E-01	1.102E+00	1.639E-01	0.190
PM-149	-9.547E+00		1.383E+02	2.270E+02	3.595E+01	-0.042
EU-152	-1.168E-02		1.265E-01	1.793E-01	1.657E-02	-0.065
GD-153	5.594E-02		1.069E-01	1.566E-01	1.391E-02	0.357
EU-154	1.972E-02		1.418E-01	2.403E-01	2.692E-02	0.082
TB-160	4.317E-02		1.554E-01	2.618E-01	2.361E-02	0.165
HO-166M	4.355E-02		7.528E-02	1.303E-01	1.099E-02	0.334
TA-182	7.520E-02		2.317E-01	3.990E-01	3.289E-02	0.188
IR-192	2.440E-02		3.904E-02	6.636E-02	5.979E-03	0.368
HG-203	6.261E-02		4.844E-02	8.431E-02	7.885E-03	0.743
BI-207	-3.252E-02		6.931E-02	1.079E-01	9.358E-03	-0.301
PB-210	3.875E+00		4.444E+00	7.353E+00	6.886E-01	0.527
PB-211	-7.764E-01		9.612E-01	1.346E+00	6.503E-01	-0.577
RN-219	5.146E-01		5.081E-01	8.675E-01	1.265E-01	0.593
RA-223	-3.340E-01		7.252E-01	1.149E+00	2.010E-01	-0.291
AC-227	-5.075E-02		2.920E-01	4.791E-01	5.952E-02	-0.106
TH-227	-5.075E-02		2.920E-01	4.791E-01	6.677E-02	-0.106
PA-231	2.450E-01		1.649E+00	2.740E+00	4.082E-01	0.089
TH-231	-3.340E-01		7.252E-01	1.149E+00	2.010E-01	-0.291
PA-233	-9.129E-02		7.526E-02	1.134E-01	1.050E-02	-0.805
PA-234	-1.348E-01		3.400E-01	5.271E-01	9.984E-02	-0.256
PA-234M	3.077E-01		5.982E+00	9.426E+00	9.608E-01	0.033
U-235	-1.904E-02		2.196E-01	3.605E-01	6.097E-02	-0.053
NP-239	-3.185E-01		4.647E-01	7.128E-01	6.210E-02	-0.447
AM-241	8.369E-02		1.936E-01	2.875E-01	2.369E-02	0.291
CM-247	3.008E-02		4.651E-02	7.836E-02	6.354E-03	0.384
CF-249	3.123E-02		4.396E-02	7.484E-02	6.068E-03	0.417
CF-251	-7.168E-03		1.398E-01	2.344E-01	2.020E-02	-0.031

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G248112001          *
* Acquisition date   : 10-MAR-2010 12:37:28 Detector SN#      :            *
* Detector ID        : GAM01                      Sensitivity   : 5.000      *
* Geometry           : CAN                      Energy tolerance: 1.500      *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000     *
* Elapsed real time  : 0 02:00:01.10             Half life ratio : 8.000     *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248112001             Analyst initials: MXR1         *
* Batch Number       : 959270                 Sample Quantity : 1.2405E+02 GRAM *
* Recovery           : 1.00000                Carrier Weight  : 0.00000      *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52 MS Isotope        :            *
* MSD DPM             : 0.000                      MSD Isotope   :            *
* LCS DPM             : 0.000                      LCS Isotope   :            *
* LCSD DPM            : 0.000                      LCSD Isotope  :            *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.668E+01	2.950E+00	2.843E-01	1.505E+00
CD-109	2.295E+00	9.937E-01	7.351E-01	5.070E-01
SN-126	2.240E-01	9.700E-02	7.213E-02	4.949E-02
EU-155	1.938E-01	1.287E-01	9.239E-02	6.565E-02
TL-208	5.406E-01	9.787E-02	3.049E-02	4.993E-02
BI-211	3.767E+00	5.869E-01	1.997E-01	2.994E-01
BI-212	1.665E+00	9.867E-01	5.064E-01	5.034E-01
PB-212	1.738E+00	2.139E-01	5.035E-02	1.091E-01
BI-214	1.055E+00	2.006E-01	6.417E-02	1.023E-01
PB-214	1.367E+00	2.254E-01	6.947E-02	1.150E-01
RA-224	5.352E+00	1.608E+00	5.397E-01	8.202E-01
RA-226	1.055E+00	2.006E-01	6.417E-02	1.023E-01
AC-228	1.606E+00	3.697E-01	1.249E-01	1.886E-01
RA-228	1.606E+00	3.697E-01	1.249E-01	1.886E-01
TH-228	1.738E+00	2.139E-01	5.035E-02	1.091E-01
TH-229	8.785E-02	5.779E-01	5.107E-01	2.949E-01
TH-232	1.606E+00	3.697E-01	1.249E-01	1.886E-01
TH-234	2.556E+00	2.529E+00	1.269E+00	1.290E+00
NP-237	6.685E-01	3.204E-01	2.079E-01	1.635E-01
U-238	2.556E+00	2.529E+00	1.269E+00	1.290E+00
ANH-511	9.245E-02	7.505E-02	2.581E-02	3.829E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-3.154E-01	3.835E-01	2.964E-01	1.957E-01	NOT IDENT.
NA-22	-5.360E-03	5.004E-02	4.220E-02	2.553E-02	NOT IDENT.
NA-24	-3.744E+05	2.436E+06	0.000E+00	1.243E+06	SHORT HLIF
SC-46	-5.377E-02	4.545E-02	3.302E-02	2.319E-02	FAIL ABUN
V-48	7.895E-03	8.794E-02	7.388E-02	4.487E-02	NOT IDENT.
CR-51	1.725E-01	4.054E-01	3.547E-01	2.068E-01	NOT IDENT.

MN-54	-3.235E-02	4.151E-02	3.228E-02	2.118E-02	NOT IDENT.
CO-56	5.648E-03	4.254E-02	3.632E-02	2.170E-02	NOT IDENT.
CO-57	1.198E-02	2.913E-02	2.441E-02	1.486E-02	NOT IDENT.
CO-58	-2.436E-02	4.054E-02	3.199E-02	2.068E-02	NOT IDENT.
FE-59	1.241E-01	1.193E-01	1.076E-01	6.085E-02	NOT IDENT.
CO-60	6.879E-03	3.754E-02	3.274E-02	1.916E-02	NOT IDENT.
ZN-65	-5.665E-02	1.242E-01	8.202E-02	6.339E-02	NOT IDENT.
SE-75	1.845E-02	4.771E-02	4.072E-02	2.434E-02	NOT IDENT.
SR-85	6.083E-02	5.169E-02	4.138E-02	2.637E-02	NOT IDENT.
Y-88	3.281E-02	3.338E-02	3.367E-02	1.703E-02	NOT IDENT.
Y-91	-7.032E+00	2.776E+01	2.329E+01	1.416E+01	NOT IDENT.
NB-94	-2.237E-03	3.755E-02	3.193E-02	1.916E-02	NOT IDENT.
NB-95	4.174E-02	5.552E-02	4.435E-02	2.833E-02	NOT IDENT.
NB-95M	1.363E-01	1.437E-01	1.162E-01	7.333E-02	NOT IDENT.
ZR-95	-1.615E-02	8.195E-02	6.840E-02	4.181E-02	NOT IDENT.
MO-99	-7.728E+00	1.757E+01	1.433E+01	8.965E+00	NOT IDENT.
TC-99M	-5.317E+17	5.111E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.031E-02	4.524E-02	3.939E-02	2.308E-02	FAIL ABUN
RH-106	-3.794E-02	3.359E-01	2.868E-01	1.714E-01	NOT IDENT.
RU-106	-3.794E-02	3.358E-01	2.868E-01	1.713E-01	NOT IDENT.
AG-108M	3.187E-03	3.176E-02	2.676E-02	1.620E-02	NOT IDENT.
AG-110M	-4.132E-02	3.942E-02	3.073E-02	2.011E-02	NOT IDENT.
SN-113	-1.574E-02	5.020E-02	4.131E-02	2.561E-02	NOT IDENT.
CD-115	-1.194E+01	1.612E+01	1.322E+01	8.227E+00	NOT IDENT.
SN-117M	5.367E-02	6.068E-02	5.557E-02	3.096E-02	NOT IDENT.
TE-123M	2.061E-02	3.043E-02	2.767E-02	1.553E-02	NOT IDENT.
SB-124	8.486E-03	8.591E-02	7.296E-02	4.383E-02	NOT IDENT.
SB-125	1.155E-02	1.079E-01	9.101E-02	5.507E-02	FAIL ABUN
TE-125M	9.865E+00	1.158E+01	9.085E+00	5.908E+00	NOT IDENT.
I-126	3.269E-02	2.536E-01	2.198E-01	1.294E-01	NOT IDENT.
SB-126	-3.048E-03	1.875E-01	1.385E-01	9.569E-02	NOT IDENT.
SB-127	9.785E-01	1.772E+00	1.582E+00	9.041E-01	NOT IDENT.
I-131	-2.328E-03	1.390E-01	1.175E-01	7.092E-02	NOT IDENT.
TE-132	-2.415E-01	9.710E-01	8.345E-01	4.954E-01	NOT IDENT.
BA-133	8.055E-03	5.193E-02	3.906E-02	2.650E-02	NOT IDENT.
I-133	-8.181E+03	1.337E+04	0.000E+00	6.823E+03	SHORT HLIF
CS-134	7.478E-02	5.197E-02	4.905E-02	2.651E-02	NOT IDENT.
CS-135	2.806E-02	1.805E-01	1.383E-01	9.208E-02	NOT IDENT.
I-135	-1.077E+17	7.968E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-5.933E-02	1.361E-01	1.074E-01	6.944E-02	NOT IDENT.
BA-137M	2.419E-02	4.036E-02	3.621E-02	2.059E-02	NOT IDENT.
CS-137	2.556E-02	4.264E-02	3.825E-02	2.176E-02	NOT IDENT.
CE-139	-1.128E-02	3.245E-02	2.832E-02	1.656E-02	NOT IDENT.
BA-140	1.677E-01	3.183E-01	2.832E-01	1.624E-01	NOT IDENT.
LA-140	3.874E-02	1.049E-01	9.268E-02	5.350E-02	NOT IDENT.
CE-141	7.611E-02	6.611E-02	6.121E-02	3.373E-02	NOT IDENT.
CE-143	5.882E+02	2.646E+02	0.000E+00	1.350E+02	SHORT HLIF
CE-144	-1.005E-01	2.336E-01	1.885E-01	1.192E-01	NOT IDENT.
PM-144	4.729E-03	4.067E-02	3.508E-02	2.075E-02	NOT IDENT.
PR-144	3.592E-01	3.045E+00	2.628E+00	1.554E+00	NOT IDENT.
PM-146	3.445E-02	4.842E-02	4.240E-02	2.470E-02	NOT IDENT.
ND-147	2.092E-01	6.258E-01	5.585E-01	3.193E-01	FAIL ABUN
PM-149	-9.547E+00	1.356E+02	1.160E+02	6.917E+01	NOT IDENT.
EU-152	-1.168E-02	1.240E-01	9.138E-02	6.324E-02	FAIL ABUN
GD-153	5.594E-02	1.048E-01	8.117E-02	5.345E-02	NOT IDENT.
EU-154	1.972E-02	1.390E-01	1.203E-01	7.091E-02	NOT IDENT.
TB-160	4.317E-02	1.523E-01	1.317E-01	7.772E-02	FAIL ABUN
HO-166M	4.355E-02	7.378E-02	6.575E-02	3.764E-02	NOT IDENT.
TA-182	7.520E-02	2.271E-01	1.999E-01	1.159E-01	FAIL ABUN
IR-192	2.440E-02	3.826E-02	3.386E-02	1.952E-02	FAIL ABUN
HG-203	6.261E-02	4.747E-02	4.309E-02	2.422E-02	NOT IDENT.
BI-207	-3.252E-02	6.792E-02	5.418E-02	3.465E-02	FAIL ABUN
PB-210	3.875E+00	4.355E+00	3.847E+00	2.222E+00	NOT IDENT.
PB-211	-7.764E-01	9.420E-01	6.847E-01	4.806E-01	NOT IDENT.
RN-219	5.146E-01	4.979E-01	4.413E-01	2.541E-01	FAIL ABUN
RA-223	-3.340E-01	7.107E-01	5.862E-01	3.626E-01	FAIL ABUN
AC-227	-5.075E-02	2.862E-01	2.451E-01	1.460E-01	FAIL ABUN
TH-227	-5.075E-02	2.862E-01	2.451E-01	1.460E-01	FAIL ABUN
PA-231	2.450E-01	1.616E+00	1.400E+00	8.247E-01	FAIL ABUN
TH-231	-3.340E-01	7.107E-01	5.862E-01	3.626E-01	FAIL ABUN
PA-233	-9.129E-02	7.376E-02	5.787E-02	3.763E-02	FAIL ABUN
PA-234	-1.348E-01	3.332E-01	2.650E-01	1.700E-01	NOT IDENT.
PA-234M	3.077E-01	5.863E+00	4.735E+00	2.991E+00	NOT IDENT.
U-235	-1.904E-02	2.152E-01	1.859E-01	1.098E-01	FAIL ABUN
NP-239	-3.185E-01	4.554E-01	3.685E-01	2.324E-01	FAIL ABUN
AM-241	8.369E-02	1.897E-01	1.499E-01	9.678E-02	NOT IDENT.
CM-247	3.008E-02	4.558E-02	3.986E-02	2.325E-02	NOT IDENT.
CF-249	3.123E-02	4.308E-02	3.808E-02	2.198E-02	NOT IDENT.

CF-251

-7.168E-03

1.370E-01

1.206E-01

6.988E-02 NOT IDENT.

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

ENERGY	MDA COUNTS
46.54	213.9564
49.72	267.9312
57.36	0.0000
59.54	256.7755
63.29	316.1310
63.29	316.1310
64.28	316.6804
67.75	367.5820
69.67	376.7849
70.83	382.3249
72.81	356.7014
72.87	356.7352
72.87	356.7352
74.82	357.8514
74.82	357.8514
74.82	357.8514
74.97	357.9358
77.11	359.1432
77.11	359.1432
77.11	359.1432
79.69	330.7098
79.80	308.4973
80.12	308.6475
80.19	308.6807
80.57	332.7840
81.00	290.5591
81.07	290.5904
81.07	290.5904
83.79	358.9811
83.79	358.9811
85.43	328.6301
86.48	329.1336
86.55	329.1656
86.79	339.1585
86.94	339.2324
87.57	362.6176
88.03	362.8577
88.47	372.9883
89.96	373.7814
91.11	313.0947
92.59	313.7421
92.59	313.7421
93.35	314.0738
94.67	299.6617
94.87	303.0746
94.87	303.0746
95.86	315.1567
97.43	279.0642
98.44	199.1247
99.53	241.3081
100.11	272.7985
103.18	230.6806
103.37	230.7381
105.31	247.6376
106.12	265.3603
109.28	232.4825
111.00	264.1598
111.76	292.7774
116.30	254.4649
117.23	293.5890
121.12	236.4157
121.78	251.5295
122.06	251.6114
123.07	312.8716
131.20	315.7783
133.52	290.9826
136.00	288.8557

136.47	292.5074
140.51	294.6611
140.51	0.0000
143.76	249.7798
144.24	227.8286
144.24	227.8286
145.44	235.1873
152.43	255.5809
153.25	244.2068
154.21	267.6384
154.21	267.6384
156.02	276.1650
158.56	232.9570
159.00	241.1256
162.66	268.0754
163.33	249.3469
165.86	268.0006
176.60	242.4527
177.52	236.2719
181.07	254.7894
184.41	248.2105
185.72	241.6987
193.51	239.6509
197.04	236.6637
205.31	231.7753
210.85	234.7107
215.65	203.5778
222.11	217.8886
227.38	229.2508
228.16	208.4487
228.18	208.4520
235.69	176.1457
235.96	160.8620
235.96	160.8620
238.63	175.5765
238.63	175.5765
240.99	175.8865
242.00	176.0191
244.70	143.4098
252.40	141.5032
252.80	159.9646
256.23	184.6547
256.23	184.6547
260.90	192.0942
264.66	136.3160
268.22	144.2711
269.46	147.5336
269.46	147.5336
271.23	151.2483
273.65	196.7529
276.40	190.8113
277.37	164.5632
277.60	173.6072
278.00	177.5995
279.20	169.8453
279.54	169.8846
280.46	182.8377
283.69	154.5099
284.31	169.4344
285.41	157.6608
285.90	154.7360
287.50	124.1188
293.27	0.0000
295.22	145.3045
295.96	145.3734
298.57	64.0088
299.98	64.0664
299.98	64.0664
300.09	142.5586
300.09	142.5586
300.13	142.5608
301.36	120.2307
302.85	152.4360
304.50	184.7216
304.50	184.7216
304.85	183.1570
308.46	118.7598
311.90	162.3856

316.51	118.3461
319.41	121.5967
320.08	116.5775
323.87	141.2334
323.87	141.2334
328.76	149.8038
333.37	129.1677
334.37	114.5190
334.37	114.5190
338.28	140.4074
338.28	140.4074
338.32	140.4095
338.32	140.4095
338.32	140.4095
340.48	114.9343
340.55	118.2217
344.28	126.7079
351.06	135.4662
351.93	123.9642
356.01	110.9982
364.49	110.2830
366.42	111.4426
383.85	112.5136
388.16	89.5862
388.63	92.7722
391.69	110.8736
400.66	108.2178
401.81	107.2200
402.40	114.6874
404.85	137.1629
410.95	104.5287
414.70	86.5631
423.72	113.7993
427.09	101.0870
427.87	104.3531
433.94	83.0873
453.88	82.8073
463.37	80.9928
468.07	112.3234
473.00	94.5520
476.78	105.7310
477.60	101.3634
487.02	88.5242
492.35	88.7378
497.08	68.9184
511.00	74.9380
514.00	86.0115
527.90	81.1230
529.87	0.0000
531.02	66.7897
537.26	73.3034
546.56	0.0000
563.25	70.4411
569.33	77.0355
569.50	77.0417
569.70	77.0479
583.19	60.8663
600.60	74.2871
602.73	81.3177
604.72	71.3060
609.32	71.7438
609.32	71.7438
610.33	71.7720
614.28	62.2347
618.01	51.4175
621.93	64.6016
621.93	64.6016
633.25	77.1012
635.95	62.1199
636.99	60.2609
645.85	70.8527
657.76	80.6525
661.66	63.6631
661.66	63.6631
664.57	0.0000
666.33	64.7229
666.50	67.5817
677.62	62.1182

685.70	59.4222
695.00	66.3485
696.49	74.0787
696.51	74.0805
697.00	69.2807
702.65	68.4536
706.68	62.7561
711.68	67.7014
720.70	58.2085
721.93	0.0000
722.78	42.0702
722.91	42.0712
723.31	43.6959
724.19	46.9468
727.33	70.9807
733.00	58.4531
735.93	68.2620
739.50	64.4386
747.24	49.9217
752.31	54.9090
753.82	46.1073
756.73	60.8799
763.94	67.2573
765.81	59.0918
766.42	59.1035
777.92	59.3247
778.90	53.4081
783.70	46.2269
785.37	53.5201
795.86	42.7596
801.95	44.8352
810.29	48.9486
810.76	48.9557
815.77	44.0290
818.51	44.0666
832.01	51.2901
834.85	63.4122
836.80	0.0000
846.77	44.4490
856.80	52.3516
860.56	54.1016
871.09	38.6680
873.19	38.6921
875.33	0.0000
879.36	40.8027
880.51	48.9797
883.24	49.0195
884.68	43.9312
889.28	59.3353
898.04	58.4612
911.20	43.2397
911.20	43.2397
911.20	43.2397
926.50	40.3263
937.49	56.0092
944.13	42.6046
946.00	46.7853
949.00	36.4193
962.29	31.3308
964.08	40.7500
966.15	40.7729
968.97	40.8043
968.97	40.8043
968.97	40.8043
983.53	47.2687
996.26	59.0242
1001.03	44.3246
1004.73	57.0454
1037.84	60.7378
1038.76	0.0000
1048.07	52.3520
1050.41	55.5902
1050.41	55.5902
1063.66	53.6328
1085.87	42.0697
1099.45	44.3773
1112.07	42.0725
1115.54	56.1446

1120.29	51.1309
1120.29	51.1309
1120.55	51.1354
1121.30	51.1446
1131.51	0.0000
1173.23	55.0903
1177.93	51.4746
1189.05	53.4522
1204.77	68.4446
1221.41	51.9941
1231.02	53.9691
1235.36	49.3662
1238.28	52.1947
1260.41	0.0000
1271.85	42.2571
1274.44	37.5846
1274.54	41.3431
1291.59	34.8968
1298.22	0.0000
1312.11	35.0518
1332.49	19.9814
1365.19	28.7427
1368.63	0.0000
1384.29	33.6670
1408.01	26.0991
1457.56	0.0000
1460.82	16.6085
1489.16	17.6836
1505.03	21.6804
1596.21	17.0443
1620.50	7.0496
1678.03	0.0000
1690.97	11.2189
1764.49	8.2640
1764.49	8.2640
1770.23	8.8630
1771.35	43.4373
1791.20	0.0000
1836.06	4.1820

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248112001

Total Uranium Activity	7.5941E+00	ug/g
Total Uranium Counting Unc.	7.5252E+00	ug/g
Total Uranium Tpu	3.8394E-06	ug/g
Total Uranium Mda	3.7769E+00	ug/g

```

*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON , SC 29417                          *
*                               GROSS GAMMA REPORT                            *
*                                                                           *
*****
*
*  BATCH ID      : 959270                      SAMPLE ID   : G248112001          *
*  ANALYST       : MXR1                        DETECTOR    : GAM01           *
*  SAMPLE DATE   : 22-FEB-2010 12:00:00.00    COUNT TIME   : 0 02:00:00.00    *
*  ANALYSIS DATE : 10-MAR-2010 12:37:28.93    SAMPLE ALQT : 124.050 GRAM      *
*
*****

```

```

GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.755E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.452E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.750E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.817E+00

```


VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 15:20:27.48

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112002.CNF;1
Sample date        : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:20:00
Sample ID          : G248112002 Sample quantity   : 1.29514E+02 GRAM
Detector name      : GAM04 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.21 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity        : 5.00000
Batch ID           : 959270 Detector SN#         :
Matrix Spike ID    : LCS ID                       : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.16*	84	353	1.18	126.35	122	9	1.17E-02	42.2	
2	2	74.80	263	313	1.04	149.63	145	15	3.66E-02	12.2	5.58E-01
3	2	77.16	380	300	0.97	154.35	145	15	5.28E-02	9.0	
4	0	87.38	136	390	0.91	174.80	171	7	1.89E-02	25.5	
5	3	89.94	97	222	0.94	179.92	178	13	1.34E-02	23.6	4.46E-01
6	3	92.93*	239	379	1.27	185.90	178	13	3.32E-02	16.3	
7	0	128.69	106	334	1.03	257.44	253	9	1.48E-02	32.4	
8	0	186.09*	180	299	0.97	372.25	368	9	2.50E-02	19.4	
9	0	209.29	94	232	1.25	418.65	415	8	1.31E-02	29.9	
10	5	238.74*	1147	178	1.11	477.54	473	17	1.59E-01	3.6	7.27E-01
11	5	241.67	274	235	1.86	483.41	473	17	3.81E-02	15.8	
12	0	270.38	87	222	1.31	540.84	535	12	1.20E-02	34.5	
13	0	277.78	45	119	1.12	555.64	552	7	6.21E-03	43.3	
14	0	295.33*	323	147	1.01	590.73	587	9	4.48E-02	8.9	
15	0	300.52	63	122	1.26	601.11	597	8	8.75E-03	33.2	
16	0	328.28	77	126	1.04	656.65	652	9	1.07E-02	28.7	
17	0	338.56	177	143	1.03	677.20	673	8	2.46E-02	13.9	
18	0	352.07*	624	172	1.26	704.22	698	13	8.67E-02	6.0	
19	0	463.32	64	100	0.92	926.73	922	11	8.94E-03	32.4	
20	0	511.23*	79	126	2.10	1022.55	1015	15	1.09E-02	37.6	
21	0	583.42*	348	101	1.23	1166.93	1161	12	4.83E-02	8.0	
22	0	609.58*	437	108	1.49	1219.26	1211	15	6.07E-02	7.2	
23	0	727.82*	103	43	1.53	1455.73	1451	11	1.43E-02	16.2	
24	0	770.21	79	64	4.65	1540.51	1533	16	1.10E-02	25.3	
25	0	795.68	31	45	1.94	1591.45	1587	10	4.34E-03	43.2	
26	0	860.47	45	57	1.02	1721.01	1715	12	6.24E-03	36.8	
27	0	911.72*	269	36	1.27	1823.50	1817	13	3.74E-02	7.8	
28	0	969.66*	145	24	1.65	1939.37	1935	10	2.01E-02	10.7	
29	0	1382.19	47	45	10.51	2764.29	2752	27	6.56E-03	45.2	
30	0	1461.59*	1029	11	2.00	2923.06	2916	15	1.43E-01	3.2	
31	0	1765.56*	65	11	1.76	3530.84	3522	13	9.09E-03	16.6	

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

VMS Nuclide Identification Report V3.1 Generated 10-MAR-2010 15:20:29

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112002.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title : MXR1
Sample date : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:20:00
Sample ID : G248112002 Sample quantity : 129.51 GRAM
Sample type : SOLID Sample geometry :
Detector name : GAMMA4 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.21 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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	*	2.606E+01	2.501E+00	5.690E-01	4.044E-02	45.795
CD-109	+	88.03	*	2.171E+00	1.138E+00	1.335E+00	1.604E-01	1.627
SN-126	+	64.28		1.242E+00	1.069E+00	1.021E+00	1.758E-01	1.217
	+	86.94		8.811E-01	5.834E-01	5.551E-01	2.341E-01	1.587
	+	87.57	*	2.119E-01	1.111E-01	1.313E-01	1.574E-02	1.615
HG-203		70.83		-4.804E-01	1.686E+00	2.508E+00	4.458E-01	-0.192
		72.87		6.198E-01	9.477E-01	1.469E+00	2.538E-01	0.422
	+	279.20	*	4.673E-02	4.061E-02	5.360E-02	3.715E-03	0.872
TL-208	+	277.37		4.545E-01	3.971E-01	5.899E-01	6.645E-02	0.770
	+	583.19	*	4.833E-01	8.307E-02	5.692E-02	3.572E-03	8.492
	+	860.56		5.977E-01	4.422E-01	3.878E-01	3.234E-02	1.541
BI-211		72.87		2.455E+00	3.740E+00	5.819E+00	6.671E-01	0.422
	+	351.06	*	3.864E+00	5.305E-01	3.069E-01	2.074E-02	12.591
PB-212	+	74.82		2.042E+00	5.861E-01	6.094E-01	9.157E-02	3.351
	+	77.11		1.639E+00	3.505E-01	3.403E-01	3.904E-02	4.817
	+	238.63	*	1.581E+00	1.708E-01	8.895E-02	7.195E-03	17.775
	+	300.09		1.357E+00	9.087E-01	1.103E+00	9.855E-02	1.231
BI-214	+	609.32	*	1.176E+00	1.908E-01	1.125E-01	8.343E-03	10.450
		1120.29		1.381E+00	4.169E-01	7.944E-01	7.446E-02	1.739
	+	1764.49		1.302E+00	4.381E-01	3.127E-01	1.907E-02	4.162
PB-214	+	74.82		3.620E+00	1.019E+00	1.080E+00	1.505E-01	3.351
	+	77.11		2.890E+00	6.623E-01	5.999E-01	8.477E-02	4.817
	+	242.00		2.292E+00	7.499E-01	5.412E-01	4.780E-02	4.236
	+	295.22		1.230E+00	2.468E-01	2.128E-01	1.972E-02	5.780
	+	351.93	*	1.402E+00	2.075E-01	1.116E-01	9.729E-03	12.564
RA-224	+	240.99	*	4.053E+00	1.305E+00	9.536E-01	6.358E-02	4.250
RA-226	+	609.32	*	1.176E+00	1.908E-01	1.125E-01	8.343E-03	10.450
		1120.29		1.381E+00	4.169E-01	7.944E-01	7.446E-02	1.739
	+	1764.49		1.302E+00	4.381E-01	3.127E-01	1.907E-02	4.162
AC-228	+	338.32		1.223E+00	6.086E-01	3.666E-01	1.514E-01	3.335
	+	911.20	*	1.832E+00	3.519E-01	2.001E-01	2.253E-02	9.156
	+	968.97		1.708E+00	5.504E-01	6.223E-01	1.500E-01	2.744
RA-228	+	338.32		1.223E+00	6.086E-01	3.666E-01	1.514E-01	3.335
	+	911.20	*	1.832E+00	3.519E-01	2.001E-01	2.253E-02	9.156

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	968.97		1.708E+00	5.504E-01	6.223E-01	1.500E-01	2.744
	+	74.82		2.042E+00	5.519E-01	6.094E-01	7.015E-02	3.351
	+	77.11		1.639E+00	3.505E-01	3.403E-01	3.904E-02	4.817
	+	238.63	*	1.581E+00	1.708E-01	8.895E-02	7.195E-03	17.775
	+	300.09		1.357E+00	1.223E+00	1.103E+00	6.723E-01	1.231
TH-232	+	338.32		1.223E+00	3.484E-01	3.666E-01	2.305E-02	3.335
	+	911.20	*	1.832E+00	3.519E-01	2.001E-01	2.253E-02	9.156
	+	968.97		1.708E+00	5.504E-01	6.223E-01	1.500E-01	2.744
TH-234	+	63.29	*	3.223E+00	2.795E+00	2.706E+00	5.445E-01	1.191
	+	92.59		2.993E+00	1.194E+00	9.387E-01	2.161E-01	3.189
U-235	+	89.96		1.536E+00	8.264E-01	1.377E+00	3.545E-01	1.116
	+	93.35		2.261E+00	9.145E-01	7.025E-01	1.681E-01	3.218
		143.76	*	1.411E-01	1.837E-01	3.077E-01	4.921E-02	0.458
		163.33		-3.790E-01	4.229E-01	6.470E-01	1.099E-01	-0.586
	+	185.72		1.603E-01	6.312E-02	6.462E-02	4.166E-03	2.480
		205.31		3.756E-02	5.148E-01	7.357E-01	1.270E-01	0.051
NP-237	+	86.48	*	6.324E-01	3.571E-01	4.034E-01	9.727E-02	1.568
		95.86		-1.747E-01	9.199E-01	1.353E+00	3.325E-01	-0.129
U-238	+	63.29	*	3.223E+00	2.795E+00	2.706E+00	5.445E-01	1.191
	+	92.59		2.993E+00	1.027E+00	9.387E-01	1.015E-01	3.189
ANH-511	+	511.00	*	8.373E-02	6.306E-02	4.329E-02	2.421E-03	1.934

---- 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	*	1.178E-01	2.754E-01	4.657E-01	3.083E-02	0.253
NA-22		1274.54	*	1.426E-02	4.719E-02	8.121E-02	5.310E-03	0.176
NA-24		1368.63	*	-2.884E+00	4.719E-02	Half-Life too short		
SC-46		889.28	*	-2.302E-02	4.020E-02	6.235E-02	5.043E-03	-0.369
		1120.55		2.286E-01	6.966E-02	1.348E-01	8.830E-03	1.695
V-48		944.13		-1.220E+00	8.641E-01	1.168E+00	9.340E-02	-1.044
		983.53	*	-2.707E-02	6.796E-02	1.058E-01	8.194E-03	-0.256
		1312.11		1.653E-02	7.572E-02	1.298E-01	8.747E-03	0.127
CR-51		320.08	*	8.451E-02	3.516E-01	5.967E-01	4.197E-02	0.142
MN-54		834.85	*	-1.402E-02	3.766E-02	6.024E-02	4.360E-03	-0.233
CO-56		846.77	*	-1.648E-02	3.708E-02	5.848E-02	4.338E-03	-0.282
		1037.84		-1.236E-01	3.456E-01	5.362E-01	4.215E-02	-0.230
		1238.28		1.446E-01	1.010E-01	1.858E-01	1.237E-02	0.778
		1771.35		-1.315E+00	4.265E-01	3.667E-01	2.226E-02	-3.587
CO-57		122.06	*	-1.161E-02	2.383E-02	3.826E-02	2.656E-03	-0.303
		136.47		4.797E-03	1.893E-01	3.098E-01	2.300E-02	0.015
CO-58		810.76	*	-3.635E-02	3.744E-02	5.588E-02	3.858E-03	-0.651
FE-59		1099.45	*	-9.127E-02	9.429E-02	1.353E-01	1.034E-02	-0.674
		1291.59		-1.011E-01	1.175E-01	1.754E-01	1.418E-02	-0.576
CO-60		1173.23		1.044E-02	4.688E-02	7.718E-02	4.590E-03	0.135
		1332.49	*	-5.607E-03	3.595E-02	5.868E-02	4.021E-03	-0.096
ZN-65		1115.54	*	-2.029E-01	1.015E-01	1.283E-01	8.489E-03	-1.581
SE-75		121.12		3.640E-02	1.228E-01	2.046E-01	2.023E-02	0.178

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		136.00		1.474E-02	3.617E-02	6.026E-02	4.040E-03	0.245
		264.66	*	3.105E-02	4.398E-02	6.918E-02	4.654E-03	0.449
		279.54		1.015E-01	1.082E-01	1.722E-01	1.217E-02	0.589
		400.66		-1.887E-01	2.347E-01	3.635E-01	3.261E-02	-0.519
SR-85		514.00	*	7.281E-02	4.042E-02	6.750E-02	3.771E-03	1.079
Y-88		898.04		2.993E-02	4.070E-02	7.163E-02	5.926E-03	0.418
		1836.06	*	5.201E-03	3.174E-02	5.338E-02	3.115E-03	0.097
Y-91		1204.77	*	-7.168E+00	2.392E+01	3.728E+01	2.284E+00	-0.192
NB-94		702.65	*	4.519E-03	3.483E-02	5.893E-02	3.175E-03	0.077
		871.09		-2.523E-03	3.308E-02	5.414E-02	4.222E-03	-0.047
NB-95		765.81	*	3.007E-03	4.517E-02	6.591E-02	4.108E-03	0.046
NB-95M		235.69	*	-5.008E-03	1.368E-01	1.921E-01	1.581E-02	-0.026
ZR-95		724.19		-1.146E-02	9.775E-02	1.401E-01	9.421E-03	-0.082
		756.73	*	5.661E-03	6.733E-02	1.131E-01	8.284E-03	0.050
MO-99		140.51		3.938E+00	2.453E+01	3.980E+01	9.185E+00	0.099
		181.07		-3.024E+01	2.356E+01	3.249E+01	5.812E+00	-0.931
		366.42		-4.058E+01	1.141E+02	1.846E+02	1.104E+01	-0.220
		739.50	*	5.515E+00	1.392E+01	2.405E+01	3.473E+00	0.229
		777.92		-4.168E+01	4.787E+01	6.447E+01	4.128E+00	-0.647
TC-99M		140.51	*	7.156E+10	4.787E+01	Half-Life too short		
RU-103		497.08	*	9.580E-03	3.867E-02	6.411E-02	7.914E-03	0.149
	+	610.33		1.234E+01	2.554E+00	2.976E+00	4.414E-01	4.147
RH-106		621.93	*	2.606E-01	3.322E-01	5.642E-01	6.378E-02	0.462
		1050.41		3.119E-02	2.639E+00	4.293E+00	3.103E-01	0.007
RU-106		621.93	*	2.606E-01	3.312E-01	5.642E-01	2.898E-02	0.462
		1050.41		3.119E-02	2.639E+00	4.293E+00	3.103E-01	0.007
AG-108M		433.94	*	-2.156E-03	2.677E-02	4.366E-02	2.658E-03	-0.049
		614.28		-1.524E-02	4.169E-02	5.562E-02	3.137E-03	-0.274
		722.91		-1.074E-02	3.997E-02	5.622E-02	3.410E-03	-0.191
AG-110M		657.76	*	-1.313E-02	3.443E-02	5.625E-02	3.006E-03	-0.233
		677.62		2.310E-02	3.060E-01	5.173E-01	2.837E-02	0.045
		706.68		-9.708E-02	2.203E-01	3.567E-01	2.077E-02	-0.272
		763.94		3.801E-02	1.788E-01	2.655E-01	1.734E-02	0.143
		884.68		4.808E-03	4.877E-02	8.113E-02	6.743E-03	0.059
		937.49		4.640E-02	1.124E-01	1.915E-01	1.602E-02	0.242
		1384.29		-1.888E-02	1.601E-01	2.619E-01	1.870E-02	-0.072
		1505.03		-1.138E-01	2.735E-01	4.215E-01	2.845E-02	-0.270
SN-113		391.69	*	2.387E-03	4.209E-02	6.983E-02	4.207E-03	0.034
CD-115		260.90		-6.602E+01	1.641E+02	2.717E+02	1.814E+01	-0.243
		492.35		1.227E+01	4.628E+01	7.700E+01	4.335E+00	0.159
		527.90	*	1.821E+00	1.474E+01	2.412E+01	1.338E+00	0.076
SN-117M		156.02		-2.574E-03	2.227E+00	3.615E+00	2.319E-01	-0.001
		158.56	*	-3.306E-02	5.513E-02	8.679E-02	5.551E-03	-0.381
TE-123M		159.00	*	1.976E-03	2.671E-02	4.347E-02	2.810E-03	0.045
SB-124		602.73		-2.061E-02	4.536E-02	5.994E-02	3.145E-03	-0.344
		645.85		-2.983E-01	4.658E-01	7.431E-01	4.311E-02	-0.401
		722.78		-1.739E-01	4.156E-01	5.736E-01	3.411E-02	-0.303
		1690.97	*	-3.457E-02	6.794E-02	9.724E-02	6.634E-03	-0.356
SB-125		427.87	*	-3.661E-02	8.269E-02	1.311E-01	7.752E-03	-0.279

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	463.37		6.063E-01	3.955E-01	5.196E-01	3.436E-02	1.167
		600.60		-5.648E-02	1.760E-01	2.742E-01	1.713E-02	-0.206
		635.95		-8.148E-03	2.569E-01	4.089E-01	2.523E-02	-0.020
TE-125M		109.28	*	-3.739E+00	9.551E+00	1.550E+01	1.563E+00	-0.241
I-126		388.63		-1.226E-02	1.685E-01	2.726E-01	1.546E-02	-0.045
		666.33	*	6.892E-02	2.355E-01	4.046E-01	1.996E-02	0.170
		753.82		-6.022E-01	1.676E+00	2.697E+00	1.636E-01	-0.223
SB-126		414.70		-3.091E-04	7.543E-02	1.241E-01	7.024E-03	-0.002
		666.50		4.656E-02	7.874E-02	1.382E-01	6.821E-03	0.337
		695.00		-3.816E-02	7.753E-02	1.247E-01	6.598E-03	-0.306
		697.00		1.837E-02	2.693E-01	4.540E-01	2.413E-02	0.040
		720.70	*	1.962E-02	1.511E-01	2.492E-01	1.401E-02	0.079
		856.80		2.259E-02	4.940E-01	7.122E-01	5.394E-02	0.032
SB-127		252.40		9.353E-01	4.486E+00	7.667E+00	3.162E+00	0.122
		473.00		8.070E-01	1.769E+00	2.989E+00	3.370E-01	0.270
		685.70	*	5.216E-01	1.366E+00	2.369E+00	2.224E-01	0.220
		783.70		3.347E+00	4.078E+00	7.216E+00	8.125E-01	0.464
I-131		80.19		-2.590E-01	5.367E+00	8.047E+00	9.337E-01	-0.032
		284.31		-4.362E-01	1.438E+00	2.382E+00	1.716E-01	-0.183
		364.49	*	-6.032E-02	1.170E-01	1.873E-01	1.248E-02	-0.322
		636.99		-4.937E-01	1.587E+00	2.451E+00	1.436E-01	-0.201
TE-132		49.72		3.838E-01	4.541E+01	7.741E+01	1.108E+01	0.005
		111.76		2.305E+01	3.914E+01	6.609E+01	7.075E+00	0.349
		116.30		-1.964E+01	3.211E+01	5.127E+01	5.324E+00	-0.383
		228.16	*	1.089E-01	8.845E-01	1.414E+00	2.126E-01	0.077
BA-133		81.00		-5.632E-02	1.066E-01	1.552E-01	2.691E-02	-0.363
	+	276.40		4.201E-01	3.681E-01	5.696E-01	7.407E-02	0.738
		302.85		2.586E-02	1.305E-01	1.964E-01	2.319E-02	0.132
		356.01	*	-2.550E-02	4.295E-02	5.908E-02	6.755E-03	-0.432
		383.85		-6.961E-02	2.723E-01	4.425E-01	4.705E-02	-0.157
I-133		529.87	*	1.988E-03	2.723E-01	Half-Life	too short	
		875.33		-4.081E-02	2.723E-01	Half-Life	too short	
		1298.22		-7.005E-02	2.723E-01	Half-Life	too short	
CS-134		563.25		2.913E-01	3.690E-01	6.312E-01	3.509E-02	0.462
		569.33		-3.471E-02	2.006E-01	3.183E-01	1.779E-02	-0.109
		604.72		4.092E-02	3.299E-02	5.321E-02	2.804E-03	0.769
	+	795.86	*	6.374E-02	5.525E-02	8.233E-02	5.549E-03	0.774
		801.95		-2.075E-01	4.531E-01	6.478E-01	4.412E-02	-0.320
		1365.19		-3.281E-02	1.117E+00	1.851E+00	1.360E-01	-0.018
CS-135		268.22	*	4.036E-02	1.592E-01	2.420E-01	2.017E-02	0.167
I-135		546.56		1.261E+10	1.592E-01	Half-Life	too short	
		836.80		-1.188E+11	1.592E-01	Half-Life	too short	
		1038.76		-1.645E+11	1.592E-01	Half-Life	too short	
		1131.51		2.373E+10	1.592E-01	Half-Life	too short	
		1260.41	*	-3.037E+10	1.592E-01	Half-Life	too short	
		1457.56		1.435E+12	1.592E-01	Half-Life	too short	
		1678.03		1.294E+10	1.592E-01	Half-Life	too short	
		1791.20		2.690E+10	1.592E-01	Half-Life	too short	
CS-136		153.25		1.343E-01	8.290E-01	1.357E+00	1.156E-01	0.099

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		176.60		9.387E-02	5.039E-01	8.199E-01	6.196E-02	0.114
		273.65		3.348E-01	6.917E-01	8.020E-01	6.081E-02	0.418
		340.55		3.016E-01	1.611E-01	2.682E-01	1.800E-02	1.125
		818.51		-5.575E-02	7.127E-02	1.082E-01	7.576E-03	-0.515
		1048.07	*	1.055E-02	1.134E-01	1.861E-01	1.429E-02	0.057
		1235.36		-5.480E-01	6.663E-01	1.042E+00	1.062E-01	-0.526
BA-137M		661.66	*	-2.232E-02	3.830E-02	6.316E-02	3.080E-03	-0.353
CS-137		661.66	*	-2.358E-02	4.046E-02	6.672E-02	3.273E-03	-0.353
CE-139		165.86	*	2.648E-02	2.708E-02	4.587E-02	2.914E-03	0.577
BA-140		162.66		-1.590E-01	8.017E-01	1.286E+00	9.176E-02	-0.124
		304.85		7.914E-01	1.340E+00	2.056E+00	5.906E-01	0.385
		423.72		1.339E+00	1.953E+00	3.289E+00	1.061E+00	0.407
		537.26	*	3.923E-02	2.640E-01	4.319E-01	1.437E-01	0.091
LA-140	+	328.76		6.932E-01	4.007E-01	5.556E-01	3.903E-02	1.248
		487.02		3.348E-03	1.167E-01	1.906E-01	1.224E-02	0.018
		815.77		1.119E-01	3.072E-01	5.276E-01	4.311E-02	0.212
		1596.21	*	2.236E-02	8.345E-02	1.433E-01	9.437E-03	0.156
CE-141		145.44	*	3.600E-02	5.822E-02	9.750E-02	6.546E-03	0.369
CE-143		57.36		-1.964E-03	5.822E-02	Half-Life	too short	
		293.27	*	5.433E-04	5.822E-02	Half-Life	too short	
		664.57		7.384E-04	5.822E-02	Half-Life	too short	
		721.93		4.609E-04	5.822E-02	Half-Life	too short	
CE-144		80.12		-2.459E-01	2.680E+00	4.008E+00	4.631E-01	-0.061
		133.52	*	-9.124E-02	1.952E-01	2.962E-01	4.228E-02	-0.308
PM-144		476.78		1.723E-02	5.596E-02	9.366E-02	6.307E-03	0.184
		618.01		7.518E-03	3.402E-02	5.543E-02	3.079E-03	0.136
		696.49	*	4.967E-03	3.300E-02	5.601E-02	2.976E-03	0.089
PR-144		696.51	*	3.758E-01	2.472E+00	4.195E+00	2.227E-01	0.090
		1489.16		7.255E+00	1.010E+01	1.889E+01	1.279E+00	0.384
PM-146		453.88	*	4.302E-02	4.024E-02	7.073E-02	5.919E-03	0.608
		633.25		6.791E-01	1.374E+00	2.259E+00	8.484E-01	0.301
		735.93		-6.420E-02	1.327E-01	2.097E-01	5.725E-02	-0.306
		747.24		9.814E-02	8.714E-02	1.585E-01	2.091E-02	0.619
ND-147	+	91.11		5.276E-01	2.573E-01	5.282E-01	6.196E-02	0.999
		319.41		2.496E-01	3.306E+00	5.559E+00	3.585E-01	0.045
		531.02	*	-2.219E-01	5.760E-01	8.995E-01	1.207E-01	-0.247
PM-149		285.90	*	5.570E-02	1.132E+02	1.907E+02	2.772E+01	0.000
EU-152		121.78		-3.684E-02	6.831E-02	1.094E-01	9.290E-03	-0.337
		244.70		1.127E-01	3.339E-01	4.819E-01	3.215E-02	0.234
		344.28	*	-7.313E-02	8.852E-02	1.393E-01	9.634E-03	-0.525
		778.90		-2.033E-01	2.430E-01	3.577E-01	2.295E-02	-0.568
		964.08		7.098E-01	3.590E-01	6.112E-01	4.813E-02	1.161
		1085.87		-3.935E-02	4.069E-01	6.525E-01	4.504E-02	-0.060
		1112.07		1.059E-01	2.921E-01	4.912E-01	3.261E-02	0.216
		1408.01		-1.286E-01	1.698E-01	2.495E-01	1.707E-02	-0.515
GD-153		69.67		-3.230E-01	2.089E+00	3.338E+00	3.855E-01	-0.097
		97.43	*	-1.055E-01	9.216E-02	1.270E-01	1.247E-02	-0.830
		103.18		1.951E-02	1.067E-01	1.781E-01	1.585E-02	0.110
EU-154		123.07		-2.289E-02	4.846E-02	7.779E-02	7.864E-03	-0.294

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	723.31		-2.669E-02	1.785E-01	2.549E-01	1.762E-02	-0.105
		873.19		-2.295E-01	2.775E-01	4.163E-01	4.720E-02	-0.551
		996.26		-8.962E-02	3.480E-01	5.513E-01	9.381E-02	-0.163
		1004.73		1.198E-01	2.131E-01	3.667E-01	3.997E-02	0.327
		1274.44	*	3.658E-02	1.345E-01	2.308E-01	2.282E-02	0.158
		86.55		2.571E-01	1.348E-01	1.883E-01	2.255E-02	1.365
		105.31	*	1.073E-02	9.988E-02	1.661E-01	1.447E-02	0.065
		86.79		6.880E-01	3.607E-01	5.058E-01	6.036E-02	1.360
		197.04		-4.865E-02	5.467E-01	8.450E-01	5.499E-02	-0.058
		215.65		5.436E-01	7.262E-01	1.202E+00	7.929E-02	0.452
TB-160	+	298.57		4.950E-02	1.608E-01	1.805E-01	1.187E-02	0.274
		879.36	*	2.373E-02	1.416E-01	2.371E-01	1.880E-02	0.100
		962.29		-5.438E-01	6.041E-01	8.782E-01	6.925E-02	-0.619
		966.15		4.048E-01	2.614E-01	4.290E-01	3.372E-02	0.944
		1177.93		-1.803E-02	3.886E-01	6.224E-01	3.718E-02	-0.029
		1271.85		1.309E-02	7.518E-01	1.260E+00	8.206E-02	0.010
		80.57		-1.336E-02	2.943E-01	4.412E-01	5.106E-02	-0.030
		184.41		9.409E-02	3.842E-02	6.199E-02	3.992E-03	1.518
		280.46		5.468E-02	7.948E-02	1.248E-01	8.291E-03	0.438
		410.95		2.598E-01	2.383E-01	4.195E-01	2.372E-02	0.619
HO-166M	+	711.68	*	1.550E-02	5.923E-02	1.012E-01	5.573E-03	0.153
		752.31		-1.090E-01	2.442E-01	3.898E-01	2.356E-02	-0.280
		810.29		-3.145E-02	5.544E-02	8.672E-02	5.957E-03	-0.363
		67.75		1.102E-01	1.384E-01	2.298E-01	2.674E-02	0.480
		100.11		1.628E-01	1.728E-01	2.968E-01	2.778E-02	0.549
		152.43		-2.430E-01	3.251E-01	5.088E-01	3.277E-02	-0.478
		222.11		3.848E-01	3.451E-01	5.806E-01	3.842E-02	0.663
		1121.30		6.140E-01	1.943E-01	3.736E-01	2.444E-02	1.643
		1189.05		1.208E-01	3.362E-01	5.594E-01	3.378E-02	0.216
		1221.41	*	-5.902E-02	2.177E-01	3.575E-01	2.225E-02	-0.165
IR-192	+	1231.02		3.117E-01	4.885E-01	8.621E-01	5.413E-02	0.362
		295.96		9.174E-01	1.744E-01	2.822E-01	1.882E-02	3.251
		308.46		-2.244E-02	8.297E-02	1.368E-01	8.996E-03	-0.164
		316.51	*	-4.586E-03	3.124E-02	5.184E-02	3.366E-03	-0.088
		468.07		-7.532E-02	7.397E-02	9.323E-02	6.132E-03	-0.808
		72.81		1.301E-01	2.151E-01	3.340E-01	3.830E-02	0.389
		74.97		5.887E-01	1.589E-01	2.441E-01	2.795E-02	2.412
		569.70		-4.433E-03	3.161E-02	5.029E-02	2.716E-03	-0.088
		1063.66	*	4.165E-02	5.267E-02	9.244E-02	6.574E-03	0.451
		1770.23		1.363E-01	4.693E-01	7.149E-01	4.343E-02	0.191
PB-210	+	46.54	*	6.407E-01	8.147E+00	1.396E+01	1.218E+00	0.046
		404.85	*	3.088E-01	6.897E-01	1.145E+00	5.492E-01	0.270
		427.09		-1.131E+00	1.506E+00	2.181E+00	9.988E-01	-0.519
		832.01		9.712E-01	1.089E+00	1.741E+00	8.992E-01	0.558
		727.33	*	2.204E+00	7.507E-01	1.195E+00	1.273E-01	1.844
		785.37		2.817E+00	3.157E+00	5.620E+00	3.658E-01	0.501
		1620.50		1.426E+00	2.360E+00	4.244E+00	2.771E-01	0.336
		271.23		5.275E-01	3.669E-01	4.185E-01	3.631E-02	1.260
		401.81	*	1.337E-02	3.678E-01	6.083E-01	8.133E-02	0.022

---- 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		-1.300E-01	2.407E-01	3.507E-01	4.066E-02	-0.371
		83.79		2.702E-02	1.365E-01	2.068E-01	2.426E-02	0.131
		94.87		6.016E-01	4.538E-01	7.201E-01	7.425E-02	0.835
		144.24		1.791E-01	6.091E-01	1.006E+00	7.847E-02	0.178
		154.21		3.021E-01	3.585E-01	6.041E-01	4.529E-02	0.500
	+	269.46		4.098E-01	2.843E-01	3.206E-01	2.208E-02	1.278
		323.87	*	7.669E-02	6.701E-01	9.961E-01	1.628E-01	0.077
AC-227	+	338.28		4.852E+00	1.442E+00	2.251E+00	2.371E-01	2.156
		79.69		-7.904E-01	1.361E+00	1.970E+00	3.716E-01	-0.401
		235.96		6.326E-02	1.613E-01	2.333E-01	2.047E-02	0.271
		256.23	*	6.243E-02	2.277E-01	3.914E-01	4.207E-02	0.160
	+	299.98		1.493E+00	1.005E+00	1.464E+00	1.670E-01	1.020
		304.50		8.741E-01	1.536E+00	2.376E+00	3.693E-01	0.368
		334.37		1.233E+00	1.884E+00	2.897E+00	4.185E-01	0.425
TH-227		79.80		-1.018E+00	1.797E+00	2.596E+00	5.994E-01	-0.392
		235.96		6.326E-02	1.613E-01	2.333E-01	1.884E-02	0.271
		256.23	*	6.243E-02	2.278E-01	3.914E-01	4.879E-02	0.160
	+	299.98		1.493E+00	1.005E+00	1.464E+00	1.670E-01	1.020
		304.50		8.741E-01	1.536E+00	2.376E+00	3.693E-01	0.368
		334.37		1.233E+00	1.884E+00	2.897E+00	4.185E-01	0.425
		85.43		7.421E-02	2.235E-01	3.403E-01	4.027E-02	0.218
TH-229	+	88.47		3.267E-01	1.713E-01	2.368E-01	2.814E-02	1.380
		193.51	*	-2.572E-01	4.862E-01	7.569E-01	4.912E-02	-0.340
		210.85		8.527E-01	9.723E-01	1.458E+00	9.584E-02	0.585
		283.69	*	-7.742E-01	1.315E+00	2.136E+00	2.884E-01	-0.363
	+	301.36		9.591E-01	6.447E-01	9.223E-01	9.950E-02	1.040
		81.07		-1.300E-01	2.407E-01	3.507E-01	4.066E-02	-0.371
		83.79		2.702E-02	1.365E-01	2.068E-01	2.426E-02	0.131
TH-231		94.87		6.016E-01	4.538E-01	7.201E-01	7.425E-02	0.835
		144.24		1.791E-01	6.091E-01	1.006E+00	7.847E-02	0.178
		154.21		3.021E-01	3.585E-01	6.041E-01	4.529E-02	0.500
	+	269.46		4.098E-01	2.843E-01	3.206E-01	2.208E-02	1.278
		323.87	*	7.669E-02	6.701E-01	9.961E-01	1.628E-01	0.077
	+	338.28		4.852E+00	1.442E+00	2.251E+00	2.371E-01	2.156
	+	300.13		6.756E-01	4.577E-01	6.590E-01	9.053E-02	1.025
PA-233		311.90	*	-1.654E-02	5.477E-02	8.999E-02	6.139E-03	-0.184
		340.48		1.445E+00	7.421E-01	1.127E+00	2.629E-01	1.283
		94.67		2.733E-01	1.727E-01	2.733E-01	3.734E-02	1.000
		98.44		4.705E-02	9.056E-02	1.472E-01	8.236E-02	0.320
		111.00		3.346E-02	1.765E-01	2.937E-01	3.412E-02	0.114
		131.20		-4.608E-02	1.096E-01	1.563E-01	1.048E-02	-0.295
		569.50		-6.529E-02	2.804E-01	4.427E-01	2.391E-02	-0.148
PA-234		733.00		3.197E-01	3.688E-01	5.884E-01	1.251E-01	0.543
		880.51		-1.407E-02	2.741E-01	4.494E-01	3.571E-02	-0.031
		883.24		-1.398E-01	3.026E-01	4.508E-01	3.027E-01	-0.310
		926.50		-8.815E-02	1.679E-01	2.572E-01	6.457E-02	-0.343
		946.00	*	3.259E-02	2.669E-01	4.434E-01	8.194E-02	0.073
		949.00		3.488E-01	4.081E-01	7.278E-01	5.797E-02	0.479
		766.42		4.987E+00	1.285E+01	1.906E+01	9.606E+00	0.262
PA-234M								

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03		*	2.265E+00	4.782E+00	8.161E+00	7.440E-01	0.278
	99.53			5.375E-02	1.602E-01	2.694E-01	2.547E-02	0.199
	103.37			6.571E-02	9.498E-02	1.617E-01	1.435E-02	0.406
	106.12			3.959E-02	7.846E-02	1.326E-01	1.128E-02	0.299
	117.23		*	-1.458E-01	3.617E-01	5.840E-01	4.285E-02	-0.250
AM-241	228.18			2.571E-02	2.138E-01	3.418E-01	2.269E-02	0.075
	277.60		+	2.077E-01	1.805E-01	2.780E-01	1.849E-02	0.747
	59.54		*	1.402E-01	2.286E-01	3.599E-01	4.544E-02	0.389
CM-247	278.00		+	8.822E-01	7.666E-01	1.177E+00	7.825E-02	0.750
	287.50			9.304E-01	1.147E+00	2.012E+00	1.332E-01	0.462
	402.40		*	-5.906E-03	3.429E-02	5.587E-02	3.153E-03	-0.106
CF-249	252.80			6.126E-02	8.470E-01	1.442E+00	9.633E-02	0.042
	333.37			9.523E-02	2.355E-01	3.053E-01	1.933E-02	0.312
	388.16		*	1.078E-02	3.821E-02	6.332E-02	3.596E-03	0.170
CF-251	177.52		*	8.476E-02	1.240E-01	2.064E-01	1.322E-02	0.411
	227.38			-2.616E-01	3.531E-01	5.368E-01	3.561E-02	-0.487
	285.41			-2.482E-01	1.975E+00	3.305E+00	2.191E-01	-0.075

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*                                     *                                       *
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112002      *
* Acquisition date   : 10-MAR-2010 13:20:00 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 02:00:01.21 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date       : 22-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248112002 Analyst initials: MXR1                   *
* Batch Number      : 959270 Sample Quantity : 1.2951E+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 :                                *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.606E+01	2.451E+00	5.693E-01	0.000E+00
CD-109	2.171E+00	1.116E+00	1.396E+00	0.000E+00
SN-126	2.119E-01	1.089E-01	1.373E-01	0.000E+00
HG-203	4.673E-02	3.980E-02	5.508E-02	0.000E+00
TL-208	4.833E-01	8.141E-02	5.780E-02	0.000E+00
BI-211	3.864E+00	5.199E-01	3.142E-01	0.000E+00
PB-212	1.581E+00	1.674E-01	9.162E-02	0.000E+00
BI-214	1.176E+00	1.870E-01	1.142E-01	0.000E+00
PB-214	1.402E+00	2.033E-01	1.143E-01	0.000E+00
RA-224	4.053E+00	1.279E+00	9.821E-01	0.000E+00
RA-226	1.176E+00	1.870E-01	1.142E-01	0.000E+00
AC-228	1.832E+00	3.448E-01	2.017E-01	0.000E+00
RA-228	1.832E+00	3.448E-01	2.017E-01	0.000E+00
TH-228	1.581E+00	1.674E-01	9.162E-02	0.000E+00
TH-232	1.832E+00	3.448E-01	2.017E-01	0.000E+00
TH-234	3.223E+00	2.739E+00	2.844E+00	0.000E+00
U-235	1.411E-01	1.800E-01	3.195E-01	0.000E+00
NP-237	6.324E-01	3.499E-01	4.220E-01	0.000E+00
U-238	3.223E+00	2.739E+00	2.844E+00	0.000E+00
ANH-511	8.373E-02	6.180E-02	4.406E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.178E-01	2.699E-01	4.745E-01	0.000E+00 NOT IDENT.
NA-22	1.426E-02	4.625E-02	8.144E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.900E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.302E-02	3.940E-02	6.289E-02	0.000E+00 NOT IDENT.
V-48	-2.707E-02	6.660E-02	1.065E-01	0.000E+00 NOT IDENT.
CR-51	8.451E-02	3.446E-01	6.118E-01	0.000E+00 NOT IDENT.
MN-54	-1.402E-02	3.690E-02	6.083E-02	0.000E+00 NOT IDENT.

CO-56	-1.648E-02	3.634E-02	5.903E-02	0.000E+00	NOT IDENT.
CO-57	-1.161E-02	2.335E-02	3.982E-02	0.000E+00	NOT IDENT.
CO-58	-3.635E-02	3.669E-02	5.645E-02	0.000E+00	NOT IDENT.
FE-59	-9.127E-02	9.240E-02	1.360E-01	0.000E+00	NOT IDENT.
CO-60	-5.607E-03	3.523E-02	5.880E-02	0.000E+00	NOT IDENT.
ZN-65	-2.029E-01	9.944E-02	1.290E-01	0.000E+00	NOT IDENT.
SE-75	3.105E-02	4.310E-02	7.114E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.961E-02	6.869E-02	0.000E+00	NOT IDENT.
Y-88	5.201E-03	3.111E-02	5.321E-02	0.000E+00	NOT IDENT.
Y-91	-7.168E+00	2.345E+01	3.741E+01	0.000E+00	NOT IDENT.
NB-94	4.519E-03	3.414E-02	5.967E-02	0.000E+00	NOT IDENT.
NB-95	3.007E-03	4.426E-02	6.664E-02	0.000E+00	NOT IDENT.
NB-95M	-5.008E-03	1.340E-01	1.979E-01	0.000E+00	NOT IDENT.
ZR-95	5.661E-03	6.598E-02	1.144E-01	0.000E+00	NOT IDENT.
MO-99	5.515E+00	1.364E+01	2.434E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.371E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	9.580E-03	3.790E-02	6.528E-02	0.000E+00	FAIL ABUN
RH-106	2.606E-01	3.256E-01	5.724E-01	0.000E+00	NOT IDENT.
RU-106	2.606E-01	3.245E-01	5.724E-01	0.000E+00	NOT IDENT.
AG-108M	-2.156E-03	2.624E-02	4.455E-02	0.000E+00	NOT IDENT.
AG-110M	-1.313E-02	3.374E-02	5.702E-02	0.000E+00	NOT IDENT.
SN-113	2.387E-03	4.125E-02	7.137E-02	0.000E+00	NOT IDENT.
CD-115	1.821E+00	1.445E+01	2.453E+01	0.000E+00	NOT IDENT.
SN-117M	-3.306E-02	5.403E-02	8.996E-02	0.000E+00	NOT IDENT.
TE-123M	1.976E-03	2.617E-02	4.505E-02	0.000E+00	NOT IDENT.
SB-124	-3.457E-02	6.658E-02	9.706E-02	0.000E+00	NOT IDENT.
SB-125	-3.661E-02	8.103E-02	1.338E-01	0.000E+00	FAIL ABUN
TE-125M	-3.739E+00	9.360E+00	1.616E+01	0.000E+00	NOT IDENT.
I-126	6.892E-02	2.308E-01	4.100E-01	0.000E+00	NOT IDENT.
SB-126	1.962E-02	1.481E-01	2.522E-01	0.000E+00	NOT IDENT.
SB-127	5.216E-01	1.338E+00	2.399E+00	0.000E+00	NOT IDENT.
I-131	-6.032E-02	1.147E-01	1.917E-01	0.000E+00	NOT IDENT.
TE-132	1.089E-01	8.669E-01	1.458E+00	0.000E+00	NOT IDENT.
BA-133	-2.550E-02	4.209E-02	6.047E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.181E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.374E-02	5.414E-02	8.319E-02	0.000E+00	FAIL ABUN
CS-135	4.036E-02	1.560E-01	2.488E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.164E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.055E-02	1.111E-01	1.872E-01	0.000E+00	NOT IDENT.
BA-137M	-2.232E-02	3.754E-02	6.401E-02	0.000E+00	NOT IDENT.
CS-137	-2.358E-02	3.965E-02	6.762E-02	0.000E+00	NOT IDENT.
CE-139	2.648E-02	2.654E-02	4.751E-02	0.000E+00	NOT IDENT.
BA-140	3.923E-02	2.588E-01	4.392E-01	0.000E+00	NOT IDENT.
LA-140	2.236E-02	8.178E-02	1.431E-01	0.000E+00	FAIL ABUN
CE-141	3.600E-02	5.705E-02	1.012E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.473E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-9.124E-02	1.913E-01	3.078E-01	0.000E+00	NOT IDENT.
PM-144	4.967E-03	3.234E-02	5.672E-02	0.000E+00	NOT IDENT.
PR-144	3.758E-01	2.422E+00	4.248E+00	0.000E+00	NOT IDENT.
PM-146	4.302E-02	3.943E-02	7.212E-02	0.000E+00	NOT IDENT.
ND-147	-2.219E-01	5.645E-01	9.149E-01	0.000E+00	FAIL ABUN
PM-149	5.570E-02	1.109E+02	1.958E+02	0.000E+00	NOT IDENT.
EU-152	-7.313E-02	8.675E-02	1.427E-01	0.000E+00	NOT IDENT.
GD-153	-1.055E-01	9.032E-02	1.327E-01	0.000E+00	NOT IDENT.
EU-154	3.658E-02	1.319E-01	2.315E-01	0.000E+00	NOT IDENT.
EU-155	1.073E-02	9.788E-02	1.732E-01	0.000E+00	FAIL ABUN
TB-160	2.373E-02	1.388E-01	2.392E-01	0.000E+00	FAIL ABUN
HO-166M	1.550E-02	5.804E-02	1.025E-01	0.000E+00	NOT IDENT.
TA-182	-5.902E-02	2.134E-01	3.588E-01	0.000E+00	NOT IDENT.
IR-192	-4.586E-03	3.062E-02	5.316E-02	0.000E+00	FAIL ABUN
BI-207	4.165E-02	5.162E-02	9.297E-02	0.000E+00	FAIL ABUN
PB-210	6.407E-01	7.984E+00	1.474E+01	0.000E+00	NOT IDENT.
PB-211	3.088E-01	6.759E-01	1.170E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	7.357E-01	1.210E+00	0.000E+00	FAIL ABUN
RN-219	1.337E-02	3.604E-01	6.215E-01	0.000E+00	FAIL ABUN
RA-223	7.669E-02	6.567E-01	1.021E+00	0.000E+00	FAIL ABUN
AC-227	6.243E-02	2.232E-01	4.027E-01	0.000E+00	FAIL ABUN
TH-227	6.243E-02	2.232E-01	4.027E-01	0.000E+00	FAIL ABUN
TH-229	-2.572E-01	4.764E-01	7.822E-01	0.000E+00	FAIL ABUN
PA-231	-7.742E-01	1.288E+00	2.194E+00	0.000E+00	FAIL ABUN
TH-231	7.669E-02	6.567E-01	1.021E+00	0.000E+00	FAIL ABUN
PA-233	-1.654E-02	5.367E-02	9.230E-02	0.000E+00	FAIL ABUN
PA-234	3.259E-02	2.616E-01	4.468E-01	0.000E+00	NOT IDENT.
PA-234M	2.265E+00	4.686E+00	8.216E+00	0.000E+00	NOT IDENT.
NP-239	-1.458E-01	3.545E-01	6.082E-01	0.000E+00	FAIL ABUN
AM-241	1.402E-01	2.240E-01	3.786E-01	0.000E+00	NOT IDENT.
CM-247	-5.906E-03	3.360E-02	5.707E-02	0.000E+00	FAIL ABUN
CF-249	1.078E-02	3.745E-02	6.473E-02	0.000E+00	NOT IDENT.

CF-251	8.476E-02	1.215E-01	2.136E-01	0.000E+00 NOT IDENT.
--------	-----------	-----------	-----------	----------------------

```

*****
*                                     GEL Laboratories LLC                               *
*                                     2040 Savage Road                               *
*                                     Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112002.CNF;1
Sample date        : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:20:00
Sample ID          : G248112002 Sample quantity : 1.29514E+02 GRAM
Detector name      : GAM04 Detector geometry: CAN
Elapsed live time   : 0 02:00:00.00 Elapsed real time: 0 02:00:01.21 0.0%
Energy tolerance    : 1.50000 keV Analyst Initials : MXR1
Abundance limit     : 75.00000 Sensitivity : 5.00000
Batch ID           : 959270 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
K-40	1460.82	1029	10.66*	1.074E+00	2.606E+01	2.606E+01	9.60
CD-109	88.03	136	3.70*	5.029E+00	2.119E+00	2.171E+00	52.43
SN-126	64.28	84	9.60	2.049E+00	1.242E+00	1.242E+00	86.10
	86.94	136	8.90	5.029E+00	8.811E-01	8.811E-01	66.22
	87.57	136	37.00*	5.029E+00	2.119E-01	2.119E-01	52.43
HG-203	70.83	-----	3.69	3.109E+00	-----	Line Not Found	-----
	72.87	-----	6.19	3.384E+00	-----	Line Not Found	-----
	279.20	45	81.56*	4.321E+00	3.678E-02	4.673E-02	86.91
TL-208	277.37	45	6.60	4.321E+00	4.545E-01	4.545E-01	87.37
	583.19	348	85.00*	2.454E+00	4.833E-01	4.833E-01	17.19
	860.56	45	12.50	1.744E+00	5.977E-01	5.977E-01	73.99
BI-211	72.87	-----	1.23	3.384E+00	-----	Line Not Found	-----
	351.06	624	12.92*	3.625E+00	3.864E+00	3.864E+00	13.73
PB-212	74.82	263	10.28	3.636E+00	2.042E+00	2.042E+00	28.70
	77.11	380	17.10	3.934E+00	1.639E+00	1.639E+00	21.38
	238.63	1147	43.60*	4.824E+00	1.581E+00	1.581E+00	10.80
	300.09	63	3.30	4.078E+00	1.357E+00	1.357E+00	66.95
BI-214	609.32	437	45.49*	2.367E+00	1.176E+00	1.176E+00	16.22
	1120.29	-----	14.92	1.358E+00	-----	Line Not Found	-----
	1764.49	65	15.30	9.527E-01	1.302E+00	1.302E+00	33.66
PB-214	74.82	263	5.80	3.636E+00	3.620E+00	3.620E+00	28.14
	77.11	380	9.70	3.934E+00	2.890E+00	2.890E+00	22.92
	242.00	274	7.25	4.782E+00	2.292E+00	2.292E+00	32.72
	295.22	323	18.42	4.131E+00	1.230E+00	1.230E+00	20.07
	351.93	624	35.60*	3.625E+00	1.402E+00	1.402E+00	14.79
RA-224	240.99	274	4.10*	4.782E+00	4.053E+00	4.053E+00	32.20
RA-226	609.32	437	45.49*	2.367E+00	1.176E+00	1.176E+00	16.22
	1120.29	-----	14.92	1.358E+00	-----	Line Not Found	-----
	1764.49	65	15.30	9.527E-01	1.302E+00	1.302E+00	33.66
AC-228	338.32	177	11.27	3.732E+00	1.223E+00	1.223E+00	49.78
	911.20	269	25.80*	1.652E+00	1.832E+00	1.832E+00	19.21
	968.97	145	15.80	1.558E+00	1.708E+00	1.708E+00	32.23

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	338.32	177	11.27	3.732E+00	1.223E+00	1.223E+00	49.78
	911.20	269	25.80*	1.652E+00	1.832E+00	1.832E+00	19.21
	968.97	145	15.80	1.558E+00	1.708E+00	1.708E+00	32.23
TH-228	74.82	263	10.28	3.636E+00	2.042E+00	2.042E+00	27.03
	77.11	380	17.10	3.934E+00	1.639E+00	1.639E+00	21.38
	238.63	1147	43.60*	4.824E+00	1.581E+00	1.581E+00	10.80
	300.09	63	3.30	4.078E+00	1.357E+00	1.357E+00	90.10
TH-232	338.32	177	11.27	3.732E+00	1.223E+00	1.223E+00	28.49
	911.20	269	25.80*	1.652E+00	1.832E+00	1.832E+00	19.21
	968.97	145	15.80	1.558E+00	1.708E+00	1.708E+00	32.23
TH-234	63.29	84	3.70*	2.049E+00	3.223E+00	3.223E+00	86.71
	92.59	239	4.23	5.480E+00	2.993E+00	2.993E+00	39.88
U-235	89.96	97	3.47	5.249E+00	1.536E+00	1.536E+00	53.82
	93.35	239	5.60	5.480E+00	2.261E+00	2.261E+00	40.45
	143.76	-----	10.96*	6.399E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.104E+00	-----	Line Not Found	-----
	185.72	180	57.20	5.694E+00	1.603E-01	1.603E-01	39.39
	205.31	-----	5.01	5.352E+00	-----	Line Not Found	-----
NP-237	86.48	136	12.40*	5.029E+00	6.324E-01	6.324E-01	56.47
	95.86	-----	2.68	5.677E+00	-----	Line Not Found	-----
U-238	63.29	84	3.70*	2.049E+00	3.223E+00	3.223E+00	86.71
	92.59	239	4.23	5.480E+00	2.993E+00	2.993E+00	34.31
ANH-511	511.00	79	100.00*	2.729E+00	8.373E-02	8.373E-02	75.32

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G248112002

Page : 3
Acquisition date : 10-MAR-2010 13:20:00

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	2.606E+01	2.606E+01	0.250E+01	9.60	
CD-109	461.40D	1.02	2.119E+00	2.171E+00	1.138E+00	52.43	
SN-126	2.30E+05Y	1.00	2.119E-01	2.119E-01	1.111E-01	52.43	
HG-203	46.59D	1.27	3.678E-02	4.673E-02	4.061E-02	86.91	
TL-208	1.41E+10Y	1.00	4.833E-01	4.833E-01	0.831E-01	17.19	
BI-211	7.04E+08Y	1.00	3.864E+00	3.864E+00	0.530E+00	13.73	
PB-212	1.41E+10Y	1.00	1.581E+00	1.581E+00	0.171E+00	10.80	
BI-214	1600.00Y	1.00	1.176E+00	1.176E+00	0.191E+00	16.22	
PB-214	1600.00Y	1.00	1.402E+00	1.402E+00	0.207E+00	14.79	
RA-224	1.41E+10Y	1.00	4.053E+00	4.053E+00	1.305E+00	32.20	
RA-226	1600.00Y	1.00	1.176E+00	1.176E+00	0.191E+00	16.22	
AC-228	1.41E+10Y	1.00	1.832E+00	1.832E+00	0.352E+00	19.21	
RA-228	1.41E+10Y	1.00	1.832E+00	1.832E+00	0.352E+00	19.21	
TH-228	1.41E+10Y	1.00	1.581E+00	1.581E+00	0.171E+00	10.80	
TH-232	1.41E+10Y	1.00	1.832E+00	1.832E+00	0.352E+00	19.21	
TH-234	4.47E+09Y	1.00	3.223E+00	3.223E+00	2.795E+00	86.71	
U-235	7.04E+08Y	1.00	1.603E-01	1.603E-01	0.631E-01	39.39	K
NP-237	2.14E+06Y	1.00	6.324E-01	6.324E-01	3.571E-01	56.47	
U-238	4.47E+09Y	1.00	3.223E+00	3.223E+00	2.795E+00	86.71	
ANH-511	1.00E+09Y	1.00	8.373E-02	8.373E-02	6.306E-02	75.32	

Total Activity : 5.656E+01 5.662E+01

Grand Total Activity : 5.656E+01 5.662E+01

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

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

Unidentified Energy Lines
Sample ID : G248112002

Page : 4
Acquisition date : 10-MAR-2010 13:20:00

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.69	106	334	1.03	257.44	253	9	1.48E-02	64.9	6.50E+00	
0	209.29	94	232	1.25	418.65	415	8	1.31E-02	59.8	5.28E+00	
0	270.38	87	222	1.31	540.84	535	12	1.20E-02	69.0	4.41E+00	T
0	328.28	77	126	1.04	656.65	652	9	1.07E-02	57.4	3.82E+00	T
0	463.32	64	100	0.92	926.73	922	11	8.94E-03	64.9	2.95E+00	T
0	727.82	103	43	1.53	1455.73	1451	11	1.43E-02	32.3	2.03E+00	T
0	770.21	79	64	4.65	1540.51	1533	16	1.10E-02	50.6	1.93E+00	
0	795.68	31	45	1.94	1591.45	1587	10	4.34E-03	86.4	1.87E+00	T
0	1382.19	47	45	10.51	2764.29	2752	27	6.56E-03	90.4	1.12E+00	

Flags: "T" = Tentatively associated


```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112002.CNF;1
* Acquisition date   : 10-MAR-2010 13:20:00   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 02:00:01.21           Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 22-FEB-2010 12:00:00   Nuclide Library : SOLID
* Sample ID          : G248112002             Analyst initials: MXR1
* Batch Number       : 959270                 Sample Quantity : 1.29514E+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        :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.606E+01	2.501E+00	5.690E-01	4.044E-02	45.795
CD-109	2.171E+00	1.138E+00	1.335E+00	1.604E-01	1.627
SN-126	2.119E-01	1.111E-01	1.313E-01	1.574E-02	1.615
HG-203	4.673E-02	4.061E-02	5.360E-02	3.715E-03	0.872
TL-208	4.833E-01	8.307E-02	5.692E-02	3.572E-03	8.492
BI-211	3.864E+00	5.305E-01	3.069E-01	2.074E-02	12.591
PB-212	1.581E+00	1.708E-01	8.895E-02	7.195E-03	17.775
BI-214	1.176E+00	1.908E-01	1.125E-01	8.343E-03	10.450
PB-214	1.402E+00	2.075E-01	1.116E-01	9.729E-03	12.564
RA-224	4.053E+00	1.305E+00	9.536E-01	6.358E-02	4.250
RA-226	1.176E+00	1.908E-01	1.125E-01	8.343E-03	10.450
AC-228	1.832E+00	3.519E-01	2.001E-01	2.253E-02	9.156
RA-228	1.832E+00	3.519E-01	2.001E-01	2.253E-02	9.156
TH-228	1.581E+00	1.708E-01	8.895E-02	7.195E-03	17.775
TH-232	1.832E+00	3.519E-01	2.001E-01	2.253E-02	9.156
TH-234	3.223E+00	2.795E+00	2.706E+00	5.445E-01	1.191
U-235	1.603E-01	6.312E-02	3.077E-01	4.921E-02	0.521
NP-237	6.324E-01	3.571E-01	4.034E-01	9.727E-02	1.568

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-238	3.223E+00	2.795E+00	2.706E+00	5.445E-01	1.191
ANH-511	8.373E-02	6.306E-02	4.329E-02	2.421E-03	1.934

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.178E-01		2.754E-01	4.657E-01	3.083E-02	0.253
NA-22	1.426E-02		4.719E-02	8.121E-02	5.310E-03	0.176
NA-24	-2.884E+00		9.693E-01	Half-Life too short		
SC-46	-2.302E-02		4.020E-02	6.235E-02	5.043E-03	-0.369
V-48	-2.707E-02		6.796E-02	1.058E-01	8.194E-03	-0.256
CR-51	8.451E-02		3.516E-01	5.967E-01	4.197E-02	0.142
MN-54	-1.402E-02		3.766E-02	6.024E-02	4.360E-03	-0.233
CO-56	-1.648E-02		3.708E-02	5.848E-02	4.338E-03	-0.282
CO-57	-1.161E-02		2.383E-02	3.826E-02	2.656E-03	-0.303
CO-58	-3.635E-02		3.744E-02	5.588E-02	3.858E-03	-0.651
FE-59	-9.127E-02		9.429E-02	1.353E-01	1.034E-02	-0.674
CO-60	-5.607E-03		3.595E-02	5.868E-02	4.021E-03	-0.096
ZN-65	-2.029E-01		1.015E-01	1.283E-01	8.489E-03	-1.581
SE-75	3.105E-02		4.398E-02	6.918E-02	4.654E-03	0.449
SR-85	7.281E-02		4.042E-02	6.750E-02	3.771E-03	1.079
Y-88	5.201E-03		3.174E-02	5.338E-02	3.115E-03	0.097
Y-91	-7.168E+00		2.392E+01	3.728E+01	2.284E+00	-0.192
NB-94	4.519E-03		3.483E-02	5.893E-02	3.175E-03	0.077
NB-95	3.007E-03		4.517E-02	6.591E-02	4.108E-03	0.046
NB-95M	-5.008E-03		1.368E-01	1.921E-01	1.581E-02	-0.026
ZR-95	5.661E-03		6.733E-02	1.131E-01	8.284E-03	0.050
MO-99	5.515E+00		1.392E+01	2.405E+01	3.473E+00	0.229
TC-99M	7.156E+10		2.230E+11	Half-Life too short		
RU-103	9.580E-03		3.867E-02	6.411E-02	7.914E-03	0.149
RH-106	2.606E-01		3.322E-01	5.642E-01	6.378E-02	0.462
RU-106	2.606E-01		3.312E-01	5.642E-01	2.898E-02	0.462
AG-108M	-2.156E-03		2.677E-02	4.366E-02	2.658E-03	-0.049
AG-110M	-1.313E-02		3.443E-02	5.625E-02	3.006E-03	-0.233
SN-113	2.387E-03		4.209E-02	6.983E-02	4.207E-03	0.034
CD-115	1.821E+00		1.474E+01	2.412E+01	1.338E+00	0.076
SN-117M	-3.306E-02		5.513E-02	8.679E-02	5.551E-03	-0.381
TE-123M	1.976E-03		2.671E-02	4.347E-02	2.810E-03	0.045
SB-124	-3.457E-02		6.794E-02	9.724E-02	6.634E-03	-0.356
SB-125	-3.661E-02		8.269E-02	1.311E-01	7.752E-03	-0.279
TE-125M	-3.739E+00		9.551E+00	1.550E+01	1.563E+00	-0.241
I-126	6.892E-02		2.355E-01	4.046E-01	1.996E-02	0.170
SB-126	1.962E-02		1.511E-01	2.492E-01	1.401E-02	0.079
SB-127	5.216E-01		1.366E+00	2.369E+00	2.224E-01	0.220
I-131	-6.032E-02		1.170E-01	1.873E-01	1.248E-02	-0.322
TE-132	1.089E-01		8.845E-01	1.414E+00	2.126E-01	0.077
BA-133	-2.550E-02		4.295E-02	5.908E-02	6.755E-03	-0.432

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	1.988E-03		6.026E-03	Half-Life too short		
CS-134	6.374E-02	+	5.525E-02	8.233E-02	5.549E-03	0.774
CS-135	4.036E-02		1.592E-01	2.420E-01	2.017E-02	0.167
I-135	-3.037E+10		3.655E+10	Half-Life too short		
CS-136	1.055E-02		1.134E-01	1.861E-01	1.429E-02	0.057
BA-137M	-2.232E-02		3.830E-02	6.316E-02	3.080E-03	-0.353
CS-137	-2.358E-02		4.046E-02	6.672E-02	3.273E-03	-0.353
CE-139	2.648E-02		2.708E-02	4.587E-02	2.914E-03	0.577
BA-140	3.923E-02		2.640E-01	4.319E-01	1.437E-01	0.091
LA-140	2.236E-02		8.345E-02	1.433E-01	9.437E-03	0.156
CE-141	3.600E-02		5.822E-02	9.750E-02	6.546E-03	0.369
CE-143	5.433E-04		1.262E-04	Half-Life too short		
CE-144	-9.124E-02		1.952E-01	2.962E-01	4.228E-02	-0.308
PM-144	4.967E-03		3.300E-02	5.601E-02	2.976E-03	0.089
PR-144	3.758E-01		2.472E+00	4.195E+00	2.227E-01	0.090
PM-146	4.302E-02		4.024E-02	7.073E-02	5.919E-03	0.608
ND-147	-2.219E-01		5.760E-01	8.995E-01	1.207E-01	-0.247
PM-149	5.570E-02		1.132E+02	1.907E+02	2.772E+01	0.000
EU-152	-7.313E-02		8.852E-02	1.393E-01	9.634E-03	-0.525
GD-153	-1.055E-01		9.216E-02	1.270E-01	1.247E-02	-0.830
EU-154	3.658E-02		1.345E-01	2.308E-01	2.282E-02	0.158
EU-155	1.073E-02		9.988E-02	1.661E-01	1.447E-02	0.065
TB-160	2.373E-02		1.416E-01	2.371E-01	1.880E-02	0.100
HO-166M	1.550E-02		5.923E-02	1.012E-01	5.573E-03	0.153
TA-182	-5.902E-02		2.177E-01	3.575E-01	2.225E-02	-0.165
IR-192	-4.586E-03		3.124E-02	5.184E-02	3.366E-03	-0.088
BI-207	4.165E-02		5.267E-02	9.244E-02	6.574E-03	0.451
PB-210	6.407E-01		8.147E+00	1.396E+01	1.218E+00	0.046
PB-211	3.088E-01		6.897E-01	1.145E+00	5.492E-01	0.270
BI-212	2.204E+00	+	7.507E-01	1.195E+00	1.273E-01	1.844
RN-219	1.337E-02		3.678E-01	6.083E-01	8.133E-02	0.022
RA-223	7.669E-02		6.701E-01	9.961E-01	1.628E-01	0.077
AC-227	6.243E-02		2.277E-01	3.914E-01	4.207E-02	0.160
TH-227	6.243E-02		2.278E-01	3.914E-01	4.879E-02	0.160
TH-229	-2.572E-01		4.862E-01	7.569E-01	4.912E-02	-0.340
PA-231	-7.742E-01		1.315E+00	2.136E+00	2.884E-01	-0.363
TH-231	7.669E-02		6.701E-01	9.961E-01	1.628E-01	0.077
PA-233	-1.654E-02		5.477E-02	8.999E-02	6.139E-03	-0.184
PA-234	3.259E-02		2.669E-01	4.434E-01	8.194E-02	0.073
PA-234M	2.265E+00		4.782E+00	8.161E+00	7.440E-01	0.278
NP-239	-1.458E-01		3.617E-01	5.840E-01	4.285E-02	-0.250
AM-241	1.402E-01		2.286E-01	3.599E-01	4.544E-02	0.389
CM-247	-5.906E-03		3.429E-02	5.587E-02	3.153E-03	-0.106
CF-249	1.078E-02		3.821E-02	6.332E-02	3.596E-03	0.170
CF-251	8.476E-02		1.240E-01	2.064E-01	1.322E-02	0.411

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248112002          *
* Acquisition date   : 10-MAR-2010 13:20:00 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 02:00:01.21              Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248112002              Analyst initials: MXR1          *
* Batch Number       : 959270                  Sample Quantity : 1.2951E+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	2.606E+01	2.451E+00	2.848E-01	1.251E+00
CD-109	2.171E+00	1.116E+00	6.983E-01	5.692E-01
SN-126	2.119E-01	1.089E-01	6.869E-02	5.556E-02
HG-203	4.673E-02	3.980E-02	2.755E-02	2.031E-02
TL-208	4.833E-01	8.141E-02	2.892E-02	4.153E-02
BI-211	3.864E+00	5.199E-01	1.572E-01	2.652E-01
PB-212	1.581E+00	1.674E-01	4.584E-02	8.541E-02
BI-214	1.176E+00	1.870E-01	5.714E-02	9.539E-02
PB-214	1.402E+00	2.033E-01	5.717E-02	1.037E-01
RA-224	4.053E+00	1.279E+00	4.913E-01	6.526E-01
RA-226	1.176E+00	1.870E-01	5.714E-02	9.539E-02
AC-228	1.832E+00	3.448E-01	1.009E-01	1.759E-01
RA-228	1.832E+00	3.448E-01	1.009E-01	1.759E-01
TH-228	1.581E+00	1.674E-01	4.584E-02	8.541E-02
TH-232	1.832E+00	3.448E-01	1.009E-01	1.759E-01
TH-234	3.223E+00	2.739E+00	1.423E+00	1.397E+00
U-235	1.411E-01	1.800E-01	1.598E-01	9.183E-02
NP-237	6.324E-01	3.499E-01	2.111E-01	1.785E-01
U-238	3.223E+00	2.739E+00	1.423E+00	1.397E+00
ANH-511	8.373E-02	6.180E-02	2.204E-02	3.153E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.178E-01	2.699E-01	2.374E-01	1.377E-01 NOT IDENT.
NA-22	1.426E-02	4.625E-02	4.074E-02	2.360E-02 NOT IDENT.
NA-24	-2.884E+06	1.900E+06	0.000E+00	9.693E+05 SHORT HLIF
SC-46	-2.302E-02	3.940E-02	3.146E-02	2.010E-02 NOT IDENT.
V-48	-2.707E-02	6.660E-02	5.329E-02	3.398E-02 NOT IDENT.
CR-51	8.451E-02	3.446E-01	3.061E-01	1.758E-01 NOT IDENT.
MN-54	-1.402E-02	3.690E-02	3.043E-02	1.883E-02 NOT IDENT.

CO-56	-1.648E-02	3.634E-02	2.953E-02	1.854E-02	NOT IDENT.
CO-57	-1.161E-02	2.335E-02	1.992E-02	1.191E-02	NOT IDENT.
CO-58	-3.635E-02	3.669E-02	2.824E-02	1.872E-02	NOT IDENT.
FE-59	-9.127E-02	9.240E-02	6.805E-02	4.715E-02	NOT IDENT.
CO-60	-5.607E-03	3.523E-02	2.942E-02	1.797E-02	NOT IDENT.
ZN-65	-2.029E-01	9.944E-02	6.452E-02	5.073E-02	NOT IDENT.
SE-75	3.105E-02	4.310E-02	3.559E-02	2.199E-02	NOT IDENT.
SR-85	7.281E-02	3.961E-02	3.437E-02	2.021E-02	NOT IDENT.
Y-88	5.201E-03	3.111E-02	2.662E-02	1.587E-02	NOT IDENT.
Y-91	-7.168E+00	2.345E+01	1.872E+01	1.196E+01	NOT IDENT.
NB-94	4.519E-03	3.414E-02	2.985E-02	1.742E-02	NOT IDENT.
NB-95	3.007E-03	4.426E-02	3.334E-02	2.258E-02	NOT IDENT.
NB-95M	-5.008E-03	1.340E-01	9.899E-02	6.839E-02	NOT IDENT.
ZR-95	5.661E-03	6.598E-02	5.722E-02	3.366E-02	NOT IDENT.
MO-99	5.515E+00	1.364E+01	1.217E+01	6.961E+00	NOT IDENT.
TC-99M	7.156E+16	4.371E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	9.580E-03	3.790E-02	3.266E-02	1.934E-02	FAIL ABUN
RH-106	2.606E-01	3.256E-01	2.864E-01	1.661E-01	NOT IDENT.
RU-106	2.606E-01	3.245E-01	2.864E-01	1.656E-01	NOT IDENT.
AG-108M	-2.156E-03	2.624E-02	2.229E-02	1.339E-02	NOT IDENT.
AG-110M	-1.313E-02	3.374E-02	2.853E-02	1.721E-02	NOT IDENT.
SN-113	2.387E-03	4.125E-02	3.571E-02	2.105E-02	NOT IDENT.
CD-115	1.821E+00	1.445E+01	1.227E+01	7.371E+00	NOT IDENT.
SN-117M	-3.306E-02	5.403E-02	4.501E-02	2.757E-02	NOT IDENT.
TE-123M	1.976E-03	2.617E-02	2.254E-02	1.335E-02	NOT IDENT.
SB-124	-3.457E-02	6.658E-02	4.856E-02	3.397E-02	NOT IDENT.
SB-125	-3.661E-02	8.103E-02	6.696E-02	4.134E-02	FAIL ABUN
TE-125M	-3.739E+00	9.360E+00	8.085E+00	4.775E+00	NOT IDENT.
I-126	6.892E-02	2.308E-01	2.051E-01	1.178E-01	NOT IDENT.
SB-126	1.962E-02	1.481E-01	1.262E-01	7.557E-02	NOT IDENT.
SB-127	5.216E-01	1.338E+00	1.200E+00	6.829E-01	NOT IDENT.
I-131	-6.032E-02	1.147E-01	9.590E-02	5.850E-02	NOT IDENT.
TE-132	1.089E-01	8.669E-01	7.294E-01	4.423E-01	NOT IDENT.
BA-133	-2.550E-02	4.209E-02	3.026E-02	2.147E-02	FAIL ABUN
I-133	1.988E+03	1.181E+04	0.000E+00	6.026E+03	SHORT HLIF
CS-134	6.374E-02	5.414E-02	4.162E-02	2.762E-02	FAIL ABUN
CS-135	4.036E-02	1.560E-01	1.245E-01	7.959E-02	NOT IDENT.
I-135	-3.037E+16	7.164E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.055E-02	1.111E-01	9.365E-02	5.669E-02	NOT IDENT.
BA-137M	-2.232E-02	3.754E-02	3.202E-02	1.915E-02	NOT IDENT.
CS-137	-2.358E-02	3.965E-02	3.383E-02	2.023E-02	NOT IDENT.
CE-139	2.648E-02	2.654E-02	2.377E-02	1.354E-02	NOT IDENT.
BA-140	3.923E-02	2.588E-01	2.197E-01	1.320E-01	NOT IDENT.
LA-140	2.236E-02	8.178E-02	7.161E-02	4.173E-02	FAIL ABUN
CE-141	3.600E-02	5.705E-02	5.063E-02	2.911E-02	NOT IDENT.
CE-143	5.433E+02	2.473E+02	0.000E+00	1.262E+02	SHORT HLIF
CE-144	-9.124E-02	1.913E-01	1.540E-01	9.761E-02	NOT IDENT.
PM-144	4.967E-03	3.234E-02	2.838E-02	1.650E-02	NOT IDENT.
PR-144	3.758E-01	2.422E+00	2.125E+00	1.236E+00	NOT IDENT.
PM-146	4.302E-02	3.943E-02	3.608E-02	2.012E-02	NOT IDENT.
ND-147	-2.219E-01	5.645E-01	4.577E-01	2.880E-01	FAIL ABUN
PM-149	5.570E-02	1.109E+02	9.798E+01	5.658E+01	NOT IDENT.
EU-152	-7.313E-02	8.675E-02	7.137E-02	4.426E-02	NOT IDENT.
GD-153	-1.055E-01	9.032E-02	6.637E-02	4.608E-02	NOT IDENT.
EU-154	3.658E-02	1.319E-01	1.158E-01	6.727E-02	NOT IDENT.
EU-155	1.073E-02	9.788E-02	8.666E-02	4.994E-02	FAIL ABUN
TB-160	2.373E-02	1.388E-01	1.197E-01	7.080E-02	FAIL ABUN
HO-166M	1.550E-02	5.804E-02	5.128E-02	2.961E-02	NOT IDENT.
TA-182	-5.902E-02	2.134E-01	1.795E-01	1.089E-01	NOT IDENT.
IR-192	-4.586E-03	3.062E-02	2.660E-02	1.562E-02	FAIL ABUN
BI-207	4.165E-02	5.162E-02	4.651E-02	2.634E-02	FAIL ABUN
PB-210	6.407E-01	7.984E+00	7.375E+00	4.073E+00	NOT IDENT.
PB-211	3.088E-01	6.759E-01	5.853E-01	3.449E-01	NOT IDENT.
BI-212	2.204E+00	7.357E-01	6.051E-01	3.754E-01	FAIL ABUN
RN-219	1.337E-02	3.604E-01	3.109E-01	1.839E-01	FAIL ABUN
RA-223	7.669E-02	6.567E-01	5.109E-01	3.350E-01	FAIL ABUN
AC-227	6.243E-02	2.232E-01	2.015E-01	1.139E-01	FAIL ABUN
TH-227	6.243E-02	2.232E-01	2.015E-01	1.139E-01	FAIL ABUN
TH-229	-2.572E-01	4.764E-01	3.913E-01	2.431E-01	FAIL ABUN
PA-231	-7.742E-01	1.288E+00	1.098E+00	6.573E-01	FAIL ABUN
TH-231	7.669E-02	6.567E-01	5.109E-01	3.350E-01	FAIL ABUN
PA-233	-1.654E-02	5.367E-02	4.618E-02	2.738E-02	FAIL ABUN
PA-234	3.259E-02	2.616E-01	2.235E-01	1.335E-01	NOT IDENT.
PA-234M	2.265E+00	4.686E+00	4.110E+00	2.391E+00	NOT IDENT.
NP-239	-1.458E-01	3.545E-01	3.043E-01	1.809E-01	FAIL ABUN
AM-241	1.402E-01	2.240E-01	1.894E-01	1.143E-01	NOT IDENT.
CM-247	-5.906E-03	3.360E-02	2.855E-02	1.714E-02	FAIL ABUN
CF-249	1.078E-02	3.745E-02	3.238E-02	1.911E-02	NOT IDENT.

CF-251	8.476E-02	1.215E-01	1.069E-01	6.201E-02 NOT IDENT.
--------	-----------	-----------	-----------	----------------------

```

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

```

ENERGY	MDA COUNTS
46.54	194.6143
49.72	197.2995
57.36	0.0000
59.54	199.0728
63.29	235.7830
63.29	235.7830
64.28	256.4974
67.75	254.5699
69.67	292.7083
70.83	297.3034
72.81	287.6782
72.87	287.7166
72.87	287.7166
74.82	286.2111
74.82	286.2111
74.82	286.2111
74.97	286.3047
77.11	287.6409
77.11	287.6409
77.11	287.6409
79.69	297.5709
79.80	297.6395
80.12	282.5300
80.19	282.5710
80.57	291.1557
81.00	323.4870
81.07	323.5330
81.07	323.5330
83.79	304.3169
83.79	304.3169
85.43	305.3284
86.48	336.9927
86.55	337.0401
86.79	334.3770
86.94	334.4783
87.57	330.6585
88.03	330.9585
88.47	331.2459
89.96	346.4088
91.11	257.5389
92.59	258.2708
92.59	258.2708
93.35	258.6436
94.67	234.9355
94.87	224.9928
94.87	224.9928
95.86	242.6371
97.43	285.1009
98.44	237.5438
99.53	256.3251
100.11	235.3722
103.18	252.1871
103.37	230.9257
105.31	247.2924
106.12	233.0167
109.28	275.4574
111.00	255.6161
111.76	247.0820
116.30	241.0101
117.23	232.4349
121.12	224.8936
121.78	250.1424
122.06	250.2531
123.07	250.6510
131.20	257.3501
133.52	253.0469
136.00	218.8001

136.47	231.2279
140.51	207.8830
140.51	0.0000
143.76	222.2830
144.24	230.7106
144.24	230.7106
145.44	222.8079
152.43	255.2985
153.25	234.6322
154.21	218.1520
154.21	218.1520
156.02	240.7594
158.56	256.3360
159.00	229.0416
162.66	237.5579
163.33	262.1762
165.86	190.6136
176.60	225.5535
177.52	210.6787
181.07	269.5220
184.41	225.4945
185.72	244.3893
193.51	211.3711
197.04	196.7426
205.31	210.8235
210.85	210.4073
215.65	184.9755
222.11	174.8698
227.38	213.4890
228.16	193.0923
228.18	193.0957
235.69	210.6667
235.96	198.6319
235.96	198.6319
238.63	192.8033
238.63	192.8033
240.99	193.2466
242.00	193.4369
244.70	151.5531
252.40	145.6451
252.80	150.9659
256.23	150.5695
256.23	150.5695
260.90	152.9879
264.66	126.3600
268.22	152.4045
269.46	159.5257
269.46	159.5257
271.23	159.7769
273.65	128.8125
276.40	157.8188
277.37	156.1582
277.60	157.9854
278.00	147.2637
279.20	120.8115
279.54	122.2850
280.46	112.3059
283.69	150.7016
284.31	140.8489
285.41	141.8860
285.90	142.8500
287.50	131.2757
293.27	0.0000
295.22	144.3452
295.96	142.2462
298.57	146.2085
299.98	112.7121
299.98	112.7121
300.09	121.5071
300.09	121.5071
300.13	121.5111
301.36	118.7018
302.85	110.0446
304.50	104.3159
304.50	104.3159
304.85	101.4061
308.46	115.1543
311.90	112.7033

316.51	119.6088
319.41	126.3877
320.08	122.7349
323.87	125.3376
323.87	125.3376
328.76	127.3112
333.37	137.7842
334.37	130.8696
334.37	130.8696
338.28	131.0676
338.28	131.0676
338.32	131.0718
338.32	131.0718
338.32	131.0718
340.48	108.8068
340.55	108.8121
344.28	126.9234
351.06	114.2340
351.93	114.3054
356.01	114.6460
364.49	114.3861
366.42	107.8062
383.85	106.2025
388.16	92.8343
388.63	98.7284
391.69	102.8515
400.66	108.3971
401.81	94.6743
402.40	100.6304
404.85	96.8396
410.95	94.2506
414.70	99.4537
423.72	83.0241
427.09	101.2466
427.87	92.2695
433.94	84.5678
453.88	74.3968
463.37	65.5957
468.07	100.3119
473.00	72.1533
476.78	65.0803
477.60	60.9779
487.02	57.1518
492.35	67.7483
497.08	76.2893
511.00	76.8819
514.00	65.8263
527.90	73.3378
529.87	0.0000
531.02	79.8477
537.26	69.4315
546.56	0.0000
563.25	73.6217
569.33	84.7103
569.50	87.9758
569.70	86.8970
583.19	77.6432
600.60	81.6172
602.73	88.3252
604.72	49.5100
609.32	80.8529
609.32	80.8529
610.33	80.8930
614.28	87.0396
618.01	77.8528
621.93	67.9679
621.93	67.9679
633.25	56.0074
635.95	60.5638
636.99	61.7139
645.85	73.0068
657.76	78.8395
661.66	80.7931
661.66	80.7931
664.57	0.0000
666.33	76.4142
666.50	68.2324
677.62	68.5693

685.70	50.4628
695.00	73.6953
696.49	68.2124
696.51	68.2133
697.00	68.2278
702.65	80.4070
706.68	85.1741
711.68	64.9448
720.70	65.1909
721.93	0.0000
722.78	71.4632
722.91	66.8061
723.31	63.7088
724.19	65.2866
727.33	60.7026
733.00	40.5636
735.93	59.0440
739.50	47.8685
747.24	39.5452
752.31	56.6104
753.82	54.7559
756.73	54.8210
763.94	63.1950
765.81	61.6611
766.42	66.4197
777.92	65.3622
778.90	60.3924
783.70	53.4994
785.37	55.4469
795.86	44.1548
801.95	70.0983
810.29	56.9474
810.76	61.7844
815.77	41.5912
818.51	54.2213
832.01	45.7378
834.85	68.1919
836.80	0.0000
846.77	52.8385
856.80	42.5568
860.56	39.3369
871.09	49.3579
873.19	58.2870
875.33	0.0000
879.36	50.4945
880.51	49.5251
883.24	56.5129
884.68	48.6064
889.28	58.6212
898.04	41.8595
911.20	40.0488
911.20	40.0488
911.20	40.0488
926.50	49.3194
937.49	47.4831
944.13	55.6902
946.00	37.4878
949.00	33.4689
962.29	84.8918
964.08	49.2667
966.15	61.1997
968.97	129.3200
968.97	129.3200
968.97	129.3200
983.53	43.0849
996.26	47.3836
1001.03	43.3289
1004.73	42.3473
1037.84	57.4036
1038.76	0.0000
1048.07	45.0219
1050.41	48.1989
1050.41	48.1989
1063.66	37.8738
1085.87	49.7791
1099.45	56.3617
1112.07	39.4950
1115.54	85.4805

1120.29	46.0087
1120.29	46.0087
1120.55	42.8027
1121.30	46.0234
1131.51	0.0000
1173.23	49.9733
1177.93	55.4774
1189.05	53.4669
1204.77	63.5649
1221.41	72.4777
1231.02	54.2706
1235.36	87.4854
1238.28	61.7493
1260.41	0.0000
1271.85	45.5647
1274.44	46.5271
1274.54	45.5966
1291.59	41.1265
1298.22	0.0000
1312.11	27.2500
1332.49	27.3922
1365.19	21.9032
1368.63	0.0000
1384.29	28.7048
1408.01	28.8708
1457.56	0.0000
1460.82	23.3887
1489.16	8.8286
1505.03	23.6289
1596.21	15.0708
1620.50	14.1401
1678.03	0.0000
1690.97	12.3013
1764.49	11.4462
1764.49	11.4462
1770.23	8.9293
1771.35	69.8108
1791.20	0.0000
1836.06	9.4973

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248112002

Total Uranium Activity	9.6530E+00	ug/g
Total Uranium Counting Unc.	8.1480E+00	ug/g
Total Uranium Tpu	4.1572E-06	ug/g
Total Uranium Mda	4.2332E+00	ug/g

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 959270                          SAMPLE ID   : G248112002
*  ANALYST       : MXR1                             DETECTOR    : GAM04
*  SAMPLE DATE   : 22-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 10-MAR-2010 13:20:00.43          SAMPLE ALQT  : 129.514 GRAM
*
*****

```

```

GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.290E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.299E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 2.786E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.347E+00

```

VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 15:21:10.82

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112003.CNF;1
Sample date        : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:20:43
Sample ID          : G248112003      Sample quantity   : 1.19330E+02 GRAM
Detector name      : GAM06           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.14  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID           : 959270          Detector SN#     :
Matrix Spike ID    :                 LCS ID           : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.37*	79	317	1.12	126.32	123	8	1.10E-02	41.3	
2	2	74.79*	260	346	1.21	149.14	145	12	3.61E-02	13.8	1.01E+00
3	2	77.06	413	279	1.00	153.68	145	12	5.74E-02	8.2	
4	1	87.16	148	319	1.10	173.88	171	11	2.05E-02	21.5	2.07E+00
5	1	89.65	99	267	1.00	178.86	171	11	1.38E-02	27.9	
6	0	92.73*	151	377	1.71	185.01	182	9	2.09E-02	26.0	
7	0	129.01	61	239	1.41	257.54	255	7	8.53E-03	43.6	
8	0	185.47*	168	267	1.56	370.39	364	12	2.34E-02	21.7	
9	0	209.43	110	202	1.00	418.29	415	9	1.53E-02	25.1	
10	4	238.69*	875	156	1.15	476.79	469	21	1.22E-01	4.2	1.06E+00
11	4	241.69	191	201	1.66	482.78	469	21	2.66E-02	17.6	
12	0	295.23*	235	183	0.79	589.82	585	10	3.27E-02	12.8	
13	0	338.39*	147	150	0.85	676.12	671	10	2.04E-02	18.2	
14	0	351.91*	420	160	1.22	703.14	697	13	5.83E-02	8.0	
15	0	463.38	62	65	1.11	926.03	921	11	8.57E-03	28.8	
16	0	510.88*	85	131	1.79	1021.01	1013	18	1.18E-02	37.2	
17	0	583.24*	263	85	1.45	1165.70	1158	16	3.65E-02	10.2	
18	0	609.48*	288	129	1.59	1218.17	1209	15	4.00E-02	10.6	
19	0	727.07	94	45	1.94	1453.32	1446	15	1.31E-02	18.7	
20	0	795.36	35	55	0.84	1589.90	1580	14	4.81E-03	48.8	
21	0	861.26	36	53	1.35	1721.69	1717	12	5.05E-03	43.6	
22	0	911.23*	210	55	1.90	1821.64	1813	17	2.92E-02	10.6	
23	0	969.02	100	37	1.51	1937.24	1933	12	1.38E-02	15.7	
24	0	1120.98*	58	63	1.75	2241.21	2233	17	8.10E-03	34.6	
25	0	1460.57*	1081	10	1.99	2920.65	2911	18	1.50E-01	3.1	
26	0	1764.54*	57	11	2.36	3528.94	3521	14	7.92E-03	18.6	

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

VMS Nuclide Identification Report V3.1 Generated 10-MAR-2010 15:21:12

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112003.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:20:43
Sample ID         : G248112003 Sample quantity : 119.33 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA6 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.14 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.417E+01	3.864E+00	6.246E-01	5.888E-02	54.700
CD-109	+	88.03	*	2.485E+00	1.103E+00	1.425E+00	1.586E-01	1.744
SN-126	+	64.28		9.514E-01	7.993E-01	9.087E-01	1.407E-01	1.047
	+	86.94		1.008E+00	6.057E-01	6.023E-01	2.525E-01	1.674
	+	87.57	*	2.425E-01	1.077E-01	1.398E-01	1.548E-02	1.735
TL-208		277.37		5.321E-01	4.527E-01	7.870E-01	1.024E-01	0.676
	+	583.19	*	4.572E-01	1.019E-01	6.420E-02	5.862E-03	7.121
	+	860.56		6.055E-01	5.313E-01	5.762E-01	5.602E-02	1.051
BI-211		72.87		1.532E+00	3.812E+00	5.728E+00	5.505E-01	0.268
	+	351.06	*	3.249E+00	6.028E-01	3.604E-01	3.382E-02	9.017
PB-212	+	74.82		1.931E+00	5.939E-01	6.011E-01	8.281E-02	3.212
	+	77.11		1.745E+00	3.360E-01	3.296E-01	3.278E-02	5.293
	+	238.63	*	1.506E+00	1.999E-01	1.013E-01	1.039E-02	14.873
		300.09		1.135E+00	1.075E+00	1.668E+00	1.850E-01	0.680
BI-214	+	609.32	*	9.711E-01	2.276E-01	1.289E-01	1.279E-02	7.532
	+	1120.29		1.043E+00	7.311E-01	5.620E-01	6.070E-02	1.856
	+	1764.49		1.422E+00	5.429E-01	3.707E-01	3.195E-02	3.836
PB-214	+	74.82		3.422E+00	1.035E+00	1.065E+00	1.339E-01	3.212
	+	77.11		3.076E+00	6.444E-01	5.811E-01	7.508E-02	5.293
	+	242.00		1.998E+00	7.348E-01	6.163E-01	6.702E-02	3.242
	+	295.22		1.121E+00	3.144E-01	2.497E-01	2.835E-02	4.492
	+	351.93	*	1.179E+00	2.282E-01	1.311E-01	1.426E-02	8.997
RA-224	+	240.99	*	3.533E+00	1.283E+00	1.086E+00	9.986E-02	3.253
RA-226	+	609.32	*	9.711E-01	2.276E-01	1.289E-01	1.279E-02	7.532
	+	1120.29		1.043E+00	7.311E-01	5.620E-01	6.070E-02	1.856
	+	1764.49		1.422E+00	5.429E-01	3.707E-01	3.195E-02	3.836
AC-228	+	338.32		1.267E+00	7.028E-01	4.161E-01	1.740E-01	3.044
	+	911.20	*	1.791E+00	4.383E-01	2.981E-01	3.599E-02	6.008
	+	968.97		1.466E+00	5.848E-01	6.517E-01	1.600E-01	2.249
RA-228	+	338.32		1.267E+00	7.028E-01	4.161E-01	1.740E-01	3.044
	+	911.20	*	1.791E+00	4.383E-01	2.981E-01	3.599E-02	6.008
	+	968.97		1.466E+00	5.848E-01	6.517E-01	1.600E-01	2.249
TH-228	+	74.82		1.931E+00	5.639E-01	6.011E-01	5.905E-02	3.212
	+	77.11		1.745E+00	3.360E-01	3.296E-01	3.278E-02	5.293

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	+	238.63	*	1.506E+00	1.999E-01	1.013E-01	1.039E-02	14.873
		300.09		1.135E+00	1.275E+00	1.668E+00	1.023E+00	0.680
	+	338.32		1.267E+00	4.761E-01	4.161E-01	3.777E-02	3.044
	+	911.20	*	1.791E+00	4.383E-01	2.981E-01	3.599E-02	6.008
TH-234	+	968.97		1.466E+00	5.848E-01	6.517E-01	1.600E-01	2.249
	+	63.29	*	2.469E+00	2.089E+00	2.327E+00	4.325E-01	1.061
	+	92.59		2.043E+00	1.162E+00	1.017E+00	2.324E-01	2.009
U-235	+	89.96		1.692E+00	1.039E+00	1.301E+00	3.313E-01	1.300
	+	93.35		1.543E+00	8.838E-01	7.639E-01	1.817E-01	2.020
		143.76	*	7.425E-02	2.282E-01	3.636E-01	6.112E-02	0.204
NP-237		163.33		1.314E-01	4.969E-01	7.806E-01	1.395E-01	0.168
	+	185.72		1.853E-01	8.188E-02	7.401E-02	6.429E-03	2.504
		205.31		5.219E-02	5.830E-01	8.700E-01	1.591E-01	0.060
	+	86.48	*	7.237E-01	3.554E-01	4.155E-01	9.828E-02	1.742
		95.86		-5.918E-02	1.055E+00	1.528E+00	3.749E-01	-0.039
U-238	+	63.29	*	2.469E+00	2.089E+00	2.327E+00	4.325E-01	1.061
	+	92.59		2.043E+00	1.085E+00	1.017E+00	1.061E-01	2.009
ANH-511	+	511.00	*	1.134E-01	8.498E-02	5.199E-02	4.512E-03	2.181

---- 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	*	1.290E-01	3.619E-01	6.259E-01	5.846E-02	0.206
NA-22		1274.54	*	2.895E-02	6.253E-02	1.069E-01	9.395E-03	0.271
NA-24		1368.63	*	1.228E+00	6.253E-02	Half-Life too short		
SC-46		889.28	*	7.701E-03	4.739E-02	7.771E-02	7.182E-03	0.099
V-48	+	1120.55		1.778E-01	1.241E-01	1.453E-01	1.230E-02	1.224
		944.13		1.287E-01	1.114E+00	1.890E+00	1.739E-01	0.068
		983.53	*	5.666E-03	9.241E-02	1.555E-01	1.415E-02	0.036
		1312.11		-3.097E-02	9.558E-02	1.491E-01	1.345E-02	-0.208
CR-51		320.08	*	1.327E-01	4.207E-01	7.038E-01	6.776E-02	0.189
MN-54		834.85	*	-5.367E-02	4.724E-02	6.735E-02	6.070E-03	-0.797
CO-56		846.77	*	-5.095E-03	4.775E-02	7.635E-02	6.921E-03	-0.067
		1037.84		3.709E-02	3.812E-01	6.411E-01	5.987E-02	0.058
		1238.28		1.799E-01	1.258E-01	2.277E-01	2.002E-02	0.790
		1771.35		-1.078E+00	4.319E-01	3.983E-01	3.424E-02	-2.707
CO-57		122.06	*	2.819E-03	2.794E-02	4.518E-02	3.804E-03	0.062
		136.47		-1.320E-02	2.279E-01	3.635E-01	3.264E-02	-0.036
CO-58		810.76	*	-4.387E-02	5.080E-02	7.502E-02	6.693E-03	-0.585
FE-59		1099.45	*	9.096E-02	1.177E-01	2.089E-01	1.942E-02	0.435
		1291.59		4.889E-02	1.591E-01	2.694E-01	2.699E-02	0.181
CO-60		1173.23		-3.792E-02	6.633E-02	1.039E-01	8.426E-03	-0.365
		1332.49	*	-1.614E-02	4.503E-02	6.955E-02	6.361E-03	-0.232
ZN-65		1115.54	*	-1.230E-01	1.411E-01	1.762E-01	1.499E-02	-0.698
SE-75		121.12		5.296E-03	1.465E-01	2.362E-01	2.587E-02	0.022
		136.00		-2.629E-02	4.484E-02	6.951E-02	5.829E-03	-0.378
		264.66	*	-4.632E-03	4.890E-02	8.063E-02	7.525E-03	-0.057
		279.54		-3.298E-02	1.309E-01	2.133E-01	2.052E-02	-0.155

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	400.66			6.301E-02	2.965E-01	4.864E-01	5.345E-02	0.130
SR-85	514.00	*		8.430E-02	4.804E-02	8.146E-02	7.068E-03	1.035
Y-88	898.04			7.805E-03	5.203E-02	8.508E-02	7.925E-03	0.092
	1836.06	*		1.994E-02	3.521E-02	6.556E-02	5.480E-03	0.304
Y-91	1204.77	*		-7.069E+00	2.909E+01	4.680E+01	3.893E+00	-0.151
NB-94	702.65	*		3.297E-02	4.175E-02	7.246E-02	6.038E-03	0.455
	871.09			1.139E-02	4.152E-02	6.895E-02	6.322E-03	0.165
NB-95	765.81	*		-5.878E-03	5.001E-02	8.064E-02	6.998E-03	-0.073
NB-95M	235.69	*		1.284E-01	1.570E-01	2.424E-01	2.512E-02	0.530
ZR-95	724.19			8.426E-02	1.210E-01	1.863E-01	1.713E-02	0.452
	756.73	*		9.993E-03	8.048E-02	1.330E-01	1.268E-02	0.075
MO-99	140.51			-1.088E+01	3.244E+01	4.997E+01	1.181E+01	-0.218
	181.07			-2.556E+01	2.817E+01	3.910E+01	7.349E+00	-0.654
	366.42			-2.405E+01	1.501E+02	2.411E+02	2.121E+01	-0.100
	739.50	*		1.520E+01	1.874E+01	3.267E+01	5.134E+00	0.465
	777.92			-1.414E+01	5.291E+01	8.375E+01	7.320E+00	-0.169
TC-99M	140.51	*		-1.979E+11	5.291E+01	Half-Life too short		
RU-103	497.08	*		-3.427E-02	4.471E-02	7.015E-02	9.825E-03	-0.488
	610.33	+		1.019E+01	2.724E+00	3.228E+00	5.239E-01	3.157
RH-106	621.93	*		-1.505E-01	3.334E-01	5.271E-01	6.892E-02	-0.285
	1050.41			-1.131E+00	3.303E+00	5.311E+00	4.699E-01	-0.213
RU-106	621.93	*		-1.505E-01	3.331E-01	5.271E-01	4.396E-02	-0.285
	1050.41			-1.131E+00	3.303E+00	5.311E+00	4.699E-01	-0.213
AG-108M	433.94	*		-2.260E-02	3.548E-02	5.389E-02	4.789E-03	-0.419
	614.28			-1.697E-02	4.394E-02	6.000E-02	5.202E-03	-0.283
	722.91			7.094E-03	4.713E-02	6.817E-02	5.951E-03	0.104
AG-110M	657.76	*		-2.039E-02	3.919E-02	6.141E-02	5.154E-03	-0.332
	677.62			-2.471E-01	3.684E-01	5.675E-01	4.795E-02	-0.435
	706.68			-2.005E-01	2.627E-01	4.007E-01	3.451E-02	-0.500
	763.94			-1.772E-01	1.963E-01	2.916E-01	2.596E-02	-0.608
	884.68			-2.604E-02	6.064E-02	9.294E-02	8.813E-03	-0.280
	937.49			-1.279E-01	1.392E-01	2.123E-01	2.018E-02	-0.603
	1384.29			6.301E-02	1.864E-01	3.182E-01	2.992E-02	0.198
	1505.03			-1.308E-01	3.044E-01	4.498E-01	4.127E-02	-0.291
SN-113	391.69	*		-2.539E-02	5.292E-02	8.242E-02	7.189E-03	-0.308
CD-115	260.90			-8.922E+01	1.965E+02	3.167E+02	2.940E+01	-0.282
	492.35			5.005E+01	6.000E+01	1.067E+02	9.268E+00	0.469
	527.90	*		7.932E+00	1.821E+01	3.148E+01	2.726E+00	0.252
SN-117M	156.02			-1.190E+00	2.681E+00	4.155E+00	3.485E-01	-0.286
	158.56	*		1.399E-02	6.485E-02	1.017E-01	8.549E-03	0.138
TE-123M	159.00	*		4.697E-03	3.245E-02	5.071E-02	4.291E-03	0.093
SB-124	602.73			-3.387E-02	5.453E-02	7.264E-02	6.128E-03	-0.466
	645.85			1.717E-01	5.622E-01	9.537E-01	8.315E-02	0.180
	722.78			6.169E-02	4.777E-01	6.890E-01	5.959E-02	0.090
	1690.97	*		-3.460E-02	7.339E-02	1.067E-01	9.816E-03	-0.324
SB-125	427.87	*		-7.922E-02	1.080E-01	1.628E-01	1.425E-02	-0.487
	463.37	+		7.278E-01	4.250E-01	5.967E-01	5.556E-02	1.220
	600.60			-1.246E-01	2.282E-01	3.332E-01	3.030E-02	-0.374
	635.95			-1.024E-01	3.202E-01	5.142E-01	4.621E-02	-0.199

---- 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	*	-8.297E-01	1.060E+01	1.662E+01	1.790E+00	-0.050
I-126		388.63		-8.571E-03	2.067E-01	3.335E-01	2.834E-02	-0.026
		666.33	*	2.022E-01	2.779E-01	4.847E-01	3.936E-02	0.417
		753.82		-4.570E-01	2.214E+00	3.540E+00	3.050E-01	-0.129
SB-126		414.70		-5.273E-02	9.301E-02	1.429E-01	1.221E-02	-0.369
		666.50		8.624E-02	9.714E-02	1.712E-01	1.390E-02	0.504
		695.00		1.193E-01	9.773E-02	1.761E-01	1.459E-02	0.677
		697.00		-4.707E-02	3.513E-01	5.703E-01	4.734E-02	-0.083
		720.70	*	-6.315E-02	2.002E-01	2.711E-01	2.287E-02	-0.233
		856.80		-1.921E-02	7.081E-01	9.827E-01	8.951E-02	-0.020
SB-127		252.40		-1.440E+00	6.050E+00	9.883E+00	4.125E+00	-0.146
		473.00		1.218E-01	2.251E+00	3.609E+00	4.711E-01	0.034
		685.70	*	3.937E+00	1.966E+00	3.670E+00	4.172E-01	1.073
		783.70		2.140E+00	4.896E+00	8.289E+00	1.054E+00	0.258
I-131		80.19		3.617E+00	5.363E+00	8.152E+00	8.385E-01	0.444
		284.31		-8.838E-01	1.741E+00	2.778E+00	2.702E-01	-0.318
		364.49	*	2.957E-02	1.456E-01	2.401E-01	2.228E-02	0.123
		636.99		-3.899E-01	1.936E+00	3.141E+00	2.756E-01	-0.124
TE-132		49.72		-2.571E+01	3.121E+01	5.000E+01	5.975E+00	-0.514
		111.76		-4.721E+00	4.335E+01	6.967E+01	7.968E+00	-0.068
		116.30		-1.196E+01	3.852E+01	6.112E+01	6.893E+00	-0.196
		228.16	*	6.584E-02	9.835E-01	1.650E+00	2.686E-01	0.040
BA-133		81.00		-8.974E-02	1.014E-01	1.500E-01	2.478E-02	-0.598
		276.40		2.091E-01	4.278E-01	7.242E-01	1.053E-01	0.289
		302.85		-1.295E-01	1.717E-01	2.685E-01	3.628E-02	-0.482
		356.01	*	-1.038E-02	5.521E-02	7.715E-02	1.015E-02	-0.135
		383.85		1.867E-01	3.444E-01	5.785E-01	7.167E-02	0.323
I-133		529.87	*	1.463E-02	3.444E-01	Half-Life	too short	
		875.33		3.293E-02	3.444E-01	Half-Life	too short	
		1298.22		3.300E-01	3.444E-01	Half-Life	too short	
CS-134		563.25		-1.017E-01	4.443E-01	7.281E-01	6.309E-02	-0.140
		569.33		1.097E-01	2.518E-01	4.308E-01	3.740E-02	0.255
		604.72		1.804E-02	4.434E-02	6.675E-02	5.639E-03	0.270
	+	795.86	*	8.856E-02	8.676E-02	1.014E-01	9.015E-03	0.873
		801.95		-3.774E-01	5.445E-01	8.040E-01	7.160E-02	-0.469
		1365.19		-6.319E-01	1.403E+00	2.113E+00	2.018E-01	-0.299
CS-135		268.22	*	8.299E-02	1.898E-01	3.213E-01	3.393E-02	0.258
I-135		546.56		1.606E+10	1.898E-01	Half-Life	too short	
		836.80		1.720E+11	1.898E-01	Half-Life	too short	
		1038.76		-3.307E+10	1.898E-01	Half-Life	too short	
		1131.51		-1.716E+10	1.898E-01	Half-Life	too short	
		1260.41	*	4.107E+09	1.898E-01	Half-Life	too short	
		1457.56		1.097E+13	1.898E-01	Half-Life	too short	
		1678.03		7.059E+10	1.898E-01	Half-Life	too short	
		1791.20		-8.788E+10	1.898E-01	Half-Life	too short	
CS-136		153.25		1.091E+00	1.026E+00	1.709E+00	1.719E-01	0.639
		176.60		-2.802E-01	5.709E-01	9.457E-01	8.960E-02	-0.296
		273.65		-8.101E-01	6.767E-01	1.042E+00	1.041E-01	-0.778
		340.55		3.493E-01	2.053E-01	3.306E-01	3.098E-02	1.057

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		818.51		3.596E-03	9.332E-02	1.520E-01	1.359E-02	0.024
		1048.07	*	-7.071E-03	1.457E-01	2.414E-01	2.223E-02	-0.029
		1235.36		2.742E-01	8.816E-01	1.481E+00	1.732E-01	0.185
BA-137M		661.66	*	-4.852E-02	4.115E-02	6.003E-02	4.858E-03	-0.808
CS-137		661.66	*	-5.125E-02	4.347E-02	6.342E-02	5.143E-03	-0.808
CE-139		165.86	*	5.073E-03	3.347E-02	5.340E-02	4.516E-03	0.095
BA-140		162.66		1.865E-01	9.770E-01	1.531E+00	1.382E-01	0.122
		304.85		-1.011E-01	1.577E+00	2.582E+00	7.608E-01	-0.039
		423.72		2.447E-02	2.381E+00	3.834E+00	1.261E+00	0.006
		537.26	*	3.233E-01	3.430E-01	5.844E-01	1.982E-01	0.553
LA-140		328.76		2.536E-01	3.808E-01	6.464E-01	6.215E-02	0.392
		487.02		-1.397E-01	1.716E-01	2.709E-01	2.495E-02	-0.516
		815.77		-2.207E-02	4.141E-01	6.681E-01	6.617E-02	-0.033
		1596.21	*	-7.130E-02	9.046E-02	1.263E-01	1.144E-02	-0.565
CE-141		145.44	*	-2.076E-02	7.200E-02	1.131E-01	9.611E-03	-0.184
CE-143		57.36		5.083E-04	7.200E-02	Half-Life	too short	
		293.27	*	8.445E-04	7.200E-02	Half-Life	too short	
		664.57		4.521E-04	7.200E-02	Half-Life	too short	
		721.93		-5.522E-04	7.200E-02	Half-Life	too short	
CE-144		80.12		1.859E+00	2.683E+00	4.082E+00	4.174E-01	0.455
		133.52	*	-4.469E-03	2.476E-01	3.524E-01	5.330E-02	-0.013
PM-144		476.78		-1.725E-02	7.221E-02	1.196E-01	1.126E-02	-0.144
		618.01		2.951E-02	3.432E-02	6.106E-02	5.256E-03	0.483
		696.49	*	4.667E-03	4.211E-02	6.980E-02	5.795E-03	0.067
PR-144		696.51	*	3.228E-01	3.151E+00	5.219E+00	4.331E-01	0.062
		1489.16		4.708E-01	1.205E+01	1.965E+01	1.805E+00	0.024
PM-146		453.88	*	-1.076E-02	4.926E-02	7.735E-02	8.211E-03	-0.139
		633.25		1.073E+00	1.753E+00	2.965E+00	1.130E+00	0.362
		735.93		-1.243E-01	1.762E-01	2.624E-01	7.347E-02	-0.474
		747.24		8.017E-02	1.133E-01	1.965E-01	2.862E-02	0.408
ND-147	+	91.11		5.815E-01	3.315E-01	5.516E-01	6.192E-02	1.054
		319.41		-1.916E+00	4.088E+00	6.486E+00	5.973E-01	-0.295
		531.02	*	2.718E-01	6.985E-01	1.202E+00	1.800E-01	0.226
PM-149		285.90	*	-1.157E+02	1.339E+02	2.063E+02	3.289E+01	-0.561
EU-152		121.78		5.116E-03	8.006E-02	1.292E-01	1.258E-02	0.040
		244.70		-8.784E-02	4.063E-01	5.856E-01	5.397E-02	-0.150
		344.28	*	-4.349E-02	1.106E-01	1.685E-01	1.603E-02	-0.258
		778.90		-2.182E-01	3.030E-01	4.550E-01	3.979E-02	-0.480
		964.08		4.629E-01	3.986E-01	6.522E-01	5.970E-02	0.710
		1085.87		-4.789E-01	4.641E-01	6.781E-01	5.879E-02	-0.706
		1112.07		4.087E-01	4.029E-01	6.902E-01	5.881E-02	0.592
		1408.01		6.179E-02	2.576E-01	4.308E-01	3.962E-02	0.143
GD-153		69.67		8.355E-01	1.985E+00	3.182E+00	2.993E-01	0.263
		97.43	*	-5.870E-02	1.039E-01	1.453E-01	1.434E-02	-0.404
		103.18		-4.675E-02	1.165E-01	1.852E-01	1.734E-02	-0.252
EU-154		123.07		1.527E-02	5.731E-02	9.335E-02	1.044E-02	0.164
		723.31		5.802E-02	2.125E-01	3.124E-01	2.918E-02	0.186
		873.19		2.346E-01	3.378E-01	5.835E-01	7.179E-02	0.402
		996.26		-6.617E-01	4.729E-01	6.549E-01	1.159E-01	-1.010

----- 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		-2.835E-02	2.620E-01	4.329E-01	5.170E-02	-0.066
		1274.44	*	7.843E-02	1.768E-01	3.017E-01	3.469E-02	0.260
		86.55		2.942E-01	1.307E-01	1.902E-01	2.095E-02	1.547
		105.31	*	-7.772E-02	1.114E-01	1.739E-01	1.618E-02	-0.447
TB-160	+	86.79		7.873E-01	3.497E-01	5.049E-01	5.542E-02	1.559
		197.04		1.605E-01	6.096E-01	1.040E+00	9.167E-02	0.154
		215.65		4.969E-01	8.865E-01	1.479E+00	1.331E-01	0.336
		298.57		1.034E-01	1.548E-01	2.345E-01	2.179E-02	0.441
HO-166M	+	879.36	*	3.677E-02	1.726E-01	2.846E-01	2.619E-02	0.129
		962.29		4.208E-01	7.122E-01	1.172E+00	1.074E-01	0.359
		966.15		7.165E-01	3.229E-01	5.613E-01	5.135E-02	1.276
		1177.93		1.913E-01	4.767E-01	8.147E-01	6.632E-02	0.235
		1271.85		-3.735E-02	9.855E-01	1.608E+00	1.409E-01	-0.023
		80.57		8.726E-03	2.975E-01	4.370E-01	4.488E-02	0.020
		184.41		1.472E-01	6.505E-02	7.202E-02	6.245E-03	2.044
		280.46		3.408E-04	9.882E-02	1.633E-01	1.521E-02	0.002
		410.95		2.992E-01	3.069E-01	5.261E-01	4.489E-02	0.569
		711.68	*	1.330E-02	7.564E-02	1.259E-01	1.055E-02	0.106
		752.31		-1.764E-01	3.276E-01	5.059E-01	4.354E-02	-0.349
		810.29		-5.756E-02	7.441E-02	1.109E-01	9.872E-03	-0.519
TA-182		67.75		-1.059E-01	1.420E-01	1.995E-01	1.855E-02	-0.531
		100.11		2.095E-01	1.959E-01	3.319E-01	3.191E-02	0.631
		152.43		3.969E-01	3.895E-01	6.495E-01	5.435E-02	0.611
		222.11		5.446E-02	3.842E-01	6.481E-01	5.873E-02	0.084
		1121.30		4.916E-01	3.430E-01	4.013E-01	3.396E-02	1.225
		1189.05		-9.134E-02	4.128E-01	6.660E-01	5.470E-02	-0.137
IR-192	+	1221.41	*	-1.566E-01	2.702E-01	4.206E-01	3.545E-02	-0.372
		1231.02		-4.785E-02	6.659E-01	1.087E+00	9.234E-02	-0.044
		295.96		8.365E-01	2.283E-01	3.273E-01	3.062E-02	2.556
		308.46		-5.732E-03	1.100E-01	1.801E-01	1.675E-02	-0.032
		316.51	*	2.773E-02	4.205E-02	7.163E-02	6.619E-03	0.387
		468.07		-4.346E-02	9.184E-02	1.203E-01	1.119E-02	-0.361
HG-203		70.83		1.927E+00	1.604E+00	2.474E+00	4.090E-01	0.779
		72.87		3.869E-01	9.637E-01	1.446E+00	2.329E-01	0.268
		279.20	*	6.395E-03	4.711E-02	7.844E-02	7.465E-03	0.082
BI-207	+	72.81		7.152E-02	2.190E-01	3.280E-01	3.151E-02	0.218
		74.97		5.565E-01	1.624E-01	2.425E-01	2.368E-02	2.295
		569.70		1.285E-02	3.937E-02	6.685E-02	5.724E-03	0.192
		1063.66	*	7.276E-02	6.906E-02	1.253E-01	1.100E-02	0.581
PB-210		1770.23		-1.240E-01	5.617E-01	7.324E-01	6.298E-02	-0.169
		46.54	*	1.738E-01	5.146E+00	8.478E+00	8.156E-01	0.020
PB-211		404.85	*	1.720E-01	8.724E-01	1.421E+00	6.876E-01	0.121
		427.09		-5.956E-01	1.799E+00	2.780E+00	1.286E+00	-0.214
BI-212	+	832.01		-8.520E-02	1.250E+00	2.009E+00	1.043E+00	-0.042
		727.33	*	2.517E+00	9.896E-01	1.361E+00	1.682E-01	1.849
		785.37		4.734E+00	3.789E+00	6.715E+00	5.893E-01	0.705
		1620.50		2.378E+00	3.039E+00	5.678E+00	5.118E-01	0.419
RN-219		271.23		4.956E-01	2.990E-01	5.268E-01	5.710E-02	0.941
		401.81	*	2.420E-01	4.820E-01	8.047E-01	1.191E-01	0.301

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

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07	-2.032E-01	2.281E-01	3.397E-01	3.506E-02	-0.598
		83.79	5.600E-02	1.424E-01	2.128E-01	2.260E-02	0.263
		94.87	7.165E-01	5.201E-01	8.089E-01	8.207E-02	0.886
		144.24	4.419E-01	7.676E-01	1.238E+00	1.160E-01	0.357
		154.21	3.848E-01	4.367E-01	7.229E-01	6.668E-02	0.532
		269.46	2.718E-01	2.287E-01	3.985E-01	3.771E-02	0.682
		323.87	* -6.231E-01	7.499E-01	1.147E+00	2.021E-01	-0.543
	+	338.28	5.027E+00	1.936E+00	2.653E+00	3.290E-01	1.895
		79.69	8.909E-01	1.344E+00	2.033E+00	3.673E-01	0.438
		235.96	3.000E-01	1.936E-01	3.086E-01	3.332E-02	0.972
AC-227		256.23	* 1.529E-01	2.897E-01	4.941E-01	6.187E-02	0.310
		299.98	9.891E-01	1.205E+00	1.839E+00	2.421E-01	0.538
		304.50	-9.051E-01	1.863E+00	2.960E+00	4.995E-01	-0.306
		334.37	2.805E-01	2.267E+00	3.281E+00	5.204E-01	0.086
		79.80	1.226E+00	1.781E+00	2.685E+00	6.028E-01	0.457
		235.96	3.000E-01	1.933E-01	3.086E-01	3.160E-02	0.972
		256.23	* 1.529E-01	2.898E-01	4.941E-01	6.929E-02	0.310
TH-227		299.98	9.891E-01	1.205E+00	1.839E+00	2.421E-01	0.538
		304.50	-9.051E-01	1.863E+00	2.960E+00	4.995E-01	-0.306
		334.37	2.805E-01	2.267E+00	3.281E+00	5.204E-01	0.086
		85.43	3.009E-01	2.373E-01	3.673E-01	3.971E-02	0.819
	+	88.47	2.447E-01	1.392E-01	2.473E-01	2.733E-02	0.989
		193.51	* 1.930E-01	5.754E-01	9.854E-01	8.648E-02	0.196
	+	210.85	2.687E+00	1.370E+00	1.821E+00	1.631E-01	1.476
PA-231		283.69	* -7.747E-01	1.581E+00	2.523E+00	3.785E-01	-0.307
		301.36	1.037E+00	6.978E-01	1.189E+00	1.502E-01	0.872
		81.07	-2.032E-01	2.281E-01	3.397E-01	3.506E-02	-0.598
TH-231		83.79	5.600E-02	1.424E-01	2.128E-01	2.260E-02	0.263
		94.87	7.165E-01	5.201E-01	8.089E-01	8.207E-02	0.886
		144.24	4.419E-01	7.676E-01	1.238E+00	1.160E-01	0.357
		154.21	3.848E-01	4.367E-01	7.229E-01	6.668E-02	0.532
		269.46	2.718E-01	2.287E-01	3.985E-01	3.771E-02	0.682
		323.87	* -6.231E-01	7.499E-01	1.147E+00	2.021E-01	-0.543
	+	338.28	5.027E+00	1.936E+00	2.653E+00	3.290E-01	1.895
		300.13	5.681E-01	5.388E-01	8.310E-01	1.265E-01	0.684
		311.90	* -2.057E-02	7.831E-02	1.264E-01	1.198E-02	-0.163
		340.48	1.810E+00	9.330E-01	1.386E+00	3.357E-01	1.307
PA-234		94.67	3.533E-01	1.963E-01	3.057E-01	4.134E-02	1.156
		98.44	4.160E-02	1.063E-01	1.640E-01	9.182E-02	0.254
		111.00	-2.576E-01	2.083E-01	3.040E-01	3.730E-02	-0.848
		131.20	7.721E-02	1.323E-01	1.956E-01	1.631E-02	0.395
		569.50	1.466E-01	3.465E-01	5.922E-01	5.071E-02	0.248
		733.00	-2.012E-01	4.807E-01	6.345E-01	1.406E-01	-0.317
		880.51	9.818E-02	3.474E-01	5.768E-01	5.310E-02	0.170
		883.24	1.513E-01	3.670E-01	5.943E-01	4.000E-01	0.255
		926.50	-6.859E-02	2.334E-01	3.620E-01	9.229E-02	-0.189
		946.00	* 6.461E-02	3.527E-01	6.020E-01	1.146E-01	0.107
PA-234M		949.00	2.186E-01	4.961E-01	8.687E-01	7.983E-02	0.252
		766.42	4.030E+00	1.344E+01	2.224E+01	1.129E+01	0.181

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		5.666E+00	5.916E+00	1.061E+01	1.096E+00	0.534
	99.53			2.108E-01	1.804E-01	3.066E-01	2.963E-02	0.688
	103.37			-3.406E-02	1.060E-01	1.692E-01	1.582E-02	-0.201
	106.12			-2.539E-02	8.817E-02	1.408E-01	1.289E-02	-0.180
	117.23	*		-6.667E-02	4.343E-01	6.947E-01	5.966E-02	-0.096
	228.18			1.026E-01	2.336E-01	3.992E-01	3.636E-02	0.257
AM-241	277.60			1.791E-01	2.080E-01	3.586E-01	3.340E-02	0.499
	59.54	*		-7.826E-03	2.016E-01	2.994E-01	2.842E-02	-0.026
	278.00			4.504E-01	8.758E-01	1.487E+00	1.385E-01	0.303
CM-247	287.50			-2.568E-01	1.346E+00	2.193E+00	2.042E-01	-0.117
	402.40	*		1.038E-02	4.402E-02	7.230E-02	6.144E-03	0.144
CF-249	252.80			-2.790E-01	1.126E+00	1.848E+00	1.710E-01	-0.151
	333.37			1.451E-02	2.391E-01	3.443E-01	3.139E-02	0.042
	388.16	*		3.179E-02	4.541E-02	7.720E-02	6.565E-03	0.412
CF-251	177.52	*		2.073E-02	1.451E-01	2.474E-01	2.125E-02	0.084
	227.38			-1.082E-01	3.894E-01	6.419E-01	5.843E-02	-0.169
	285.41			-2.858E-01	2.290E+00	3.749E+00	3.491E-01	-0.076

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112003      *
* Acquisition date   : 10-MAR-2010 13:20:43 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 02:00:01.14 Half life ratio : 8.000             *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 22-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248112003 Analyst initials: MXR1                  *
* Batch Number      : 959270 Sample Quantity : 1.1933E+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 :                               *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.417E+01	3.786E+00	6.230E-01	0.000E+00
CD-109	2.485E+00	1.081E+00	1.467E+00	0.000E+00
SN-126	2.425E-01	1.056E-01	1.440E-01	0.000E+00
TL-208	4.572E-01	9.986E-02	6.472E-02	0.000E+00
BI-211	3.249E+00	5.908E-01	3.654E-01	0.000E+00
PB-212	1.506E+00	1.959E-01	1.031E-01	0.000E+00
BI-214	9.711E-01	2.231E-01	1.299E-01	0.000E+00
PB-214	1.179E+00	2.237E-01	1.329E-01	0.000E+00
RA-224	3.533E+00	1.257E+00	1.106E+00	0.000E+00
RA-226	9.711E-01	2.231E-01	1.299E-01	0.000E+00
AC-228	1.791E+00	4.296E-01	2.989E-01	0.000E+00
RA-228	1.791E+00	4.296E-01	2.989E-01	0.000E+00
TH-228	1.506E+00	1.959E-01	1.031E-01	0.000E+00
TH-232	1.791E+00	4.296E-01	2.989E-01	0.000E+00
TH-234	2.469E+00	2.048E+00	2.405E+00	0.000E+00
U-235	7.425E-02	2.237E-01	3.724E-01	0.000E+00
NP-237	7.237E-01	3.483E-01	4.280E-01	0.000E+00
U-238	2.469E+00	2.048E+00	2.405E+00	0.000E+00
ANH-511	1.134E-01	8.328E-02	5.249E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.290E-01	3.547E-01	6.324E-01	0.000E+00 NOT IDENT.
NA-22	2.895E-02	6.128E-02	1.068E-01	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.269E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	7.701E-03	4.644E-02	7.796E-02	0.000E+00 FAIL ABUN
V-48	5.666E-03	9.057E-02	1.558E-01	0.000E+00 NOT IDENT.
CR-51	1.327E-01	4.123E-01	7.144E-01	0.000E+00 NOT IDENT.
MN-54	-5.367E-02	4.630E-02	6.762E-02	0.000E+00 NOT IDENT.
CO-56	-5.095E-03	4.679E-02	7.663E-02	0.000E+00 NOT IDENT.

CO-57	2.819E-03	2.738E-02	4.636E-02	0.000E+00	NOT IDENT.
CO-58	-4.387E-02	4.978E-02	7.534E-02	0.000E+00	NOT IDENT.
FE-59	9.096E-02	1.153E-01	2.091E-01	0.000E+00	NOT IDENT.
CO-60	-1.614E-02	4.413E-02	6.944E-02	0.000E+00	NOT IDENT.
ZN-65	-1.230E-01	1.383E-01	1.763E-01	0.000E+00	NOT IDENT.
SE-75	-4.632E-03	4.792E-02	8.202E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.708E-02	8.224E-02	0.000E+00	NOT IDENT.
Y-88	1.994E-02	3.451E-02	6.521E-02	0.000E+00	NOT IDENT.
Y-91	-7.069E+00	2.851E+01	4.678E+01	0.000E+00	NOT IDENT.
NB-94	3.297E-02	4.091E-02	7.289E-02	0.000E+00	NOT IDENT.
NB-95	-5.878E-03	4.901E-02	8.104E-02	0.000E+00	NOT IDENT.
NB-95M	1.284E-01	1.538E-01	2.469E-01	0.000E+00	NOT IDENT.
ZR-95	9.993E-03	7.887E-02	1.337E-01	0.000E+00	NOT IDENT.
MO-99	1.520E+01	1.837E+01	3.285E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	5.796E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.427E-02	4.382E-02	7.084E-02	0.000E+00	FAIL ABUN
RH-106	-1.505E-01	3.268E-01	5.310E-01	0.000E+00	NOT IDENT.
RU-106	-1.505E-01	3.264E-01	5.310E-01	0.000E+00	NOT IDENT.
AG-108M	-2.260E-02	3.477E-02	5.451E-02	0.000E+00	NOT IDENT.
AG-110M	-2.039E-02	3.840E-02	6.182E-02	0.000E+00	NOT IDENT.
SN-113	-2.539E-02	5.187E-02	8.346E-02	0.000E+00	NOT IDENT.
CD-115	7.932E+00	1.785E+01	3.177E+01	0.000E+00	NOT IDENT.
SN-117M	1.399E-02	6.355E-02	1.041E-01	0.000E+00	NOT IDENT.
TE-123M	4.697E-03	3.181E-02	5.188E-02	0.000E+00	NOT IDENT.
SB-124	-3.460E-02	7.192E-02	1.062E-01	0.000E+00	NOT IDENT.
SB-125	-7.922E-02	1.059E-01	1.647E-01	0.000E+00	FAIL ABUN
TE-125M	-8.297E-01	1.038E+01	1.707E+01	0.000E+00	NOT IDENT.
I-126	2.022E-01	2.724E-01	4.879E-01	0.000E+00	NOT IDENT.
SB-126	-6.315E-02	1.962E-01	2.726E-01	0.000E+00	NOT IDENT.
SB-127	0.000E+00	1.927E+00	3.693E+00	0.000E+00	NOT IDENT.
I-131	2.957E-02	1.427E-01	2.433E-01	0.000E+00	NOT IDENT.
TE-132	6.584E-02	9.638E-01	1.682E+00	0.000E+00	NOT IDENT.
BA-133	-1.038E-02	5.411E-02	7.822E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.476E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.856E-02	8.502E-02	1.019E-01	0.000E+00	FAIL ABUN
CS-135	8.299E-02	1.860E-01	3.268E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.363E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-7.071E-03	1.428E-01	2.417E-01	0.000E+00	NOT IDENT.
BA-137M	-4.852E-02	4.033E-02	6.043E-02	0.000E+00	NOT IDENT.
CS-137	-5.125E-02	4.260E-02	6.384E-02	0.000E+00	NOT IDENT.
CE-139	5.073E-03	3.280E-02	5.461E-02	0.000E+00	NOT IDENT.
BA-140	3.233E-01	3.361E-01	5.897E-01	0.000E+00	NOT IDENT.
LA-140	-7.130E-02	8.865E-02	1.258E-01	0.000E+00	NOT IDENT.
CE-141	-2.076E-02	7.056E-02	1.158E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.442E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-4.469E-03	2.426E-01	3.613E-01	0.000E+00	NOT IDENT.
PM-144	4.667E-03	4.127E-02	7.022E-02	0.000E+00	NOT IDENT.
PR-144	3.228E-01	3.088E+00	5.251E+00	0.000E+00	NOT IDENT.
PM-146	-1.076E-02	4.827E-02	7.820E-02	0.000E+00	NOT IDENT.
ND-147	2.718E-01	6.845E-01	1.213E+00	0.000E+00	FAIL ABUN
PM-149	-1.157E+02	1.312E+02	2.097E+02	0.000E+00	NOT IDENT.
EU-152	-4.349E-02	1.083E-01	1.709E-01	0.000E+00	NOT IDENT.
GD-153	-5.870E-02	1.018E-01	1.495E-01	0.000E+00	NOT IDENT.
EU-154	7.843E-02	1.733E-01	3.014E-01	0.000E+00	NOT IDENT.
EU-155	-7.772E-02	1.092E-01	1.787E-01	0.000E+00	FAIL ABUN
TB-160	3.677E-02	1.691E-01	2.855E-01	0.000E+00	FAIL ABUN
HO-166M	1.330E-02	7.413E-02	1.266E-01	0.000E+00	FAIL ABUN
TA-182	-1.566E-01	2.648E-01	4.203E-01	0.000E+00	FAIL ABUN
IR-192	2.773E-02	4.121E-02	7.272E-02	0.000E+00	FAIL ABUN
HG-203	6.395E-03	4.617E-02	7.974E-02	0.000E+00	NOT IDENT.
BI-207	7.276E-02	6.767E-02	1.254E-01	0.000E+00	FAIL ABUN
PB-210	1.738E-01	5.043E+00	8.792E+00	0.000E+00	NOT IDENT.
PB-211	1.720E-01	8.550E-01	1.439E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.698E-01	1.369E+00	0.000E+00	FAIL ABUN
RN-219	2.420E-01	4.723E-01	8.147E-01	0.000E+00	NOT IDENT.
RA-223	-6.231E-01	7.349E-01	1.164E+00	0.000E+00	FAIL ABUN
AC-227	1.529E-01	2.839E-01	5.027E-01	0.000E+00	NOT IDENT.
TH-227	1.529E-01	2.840E-01	5.027E-01	0.000E+00	NOT IDENT.
TH-229	1.930E-01	5.639E-01	1.006E+00	0.000E+00	FAIL ABUN
PA-231	-7.747E-01	1.549E+00	2.564E+00	0.000E+00	NOT IDENT.
TH-231	-6.231E-01	7.349E-01	1.164E+00	0.000E+00	FAIL ABUN
PA-233	-2.057E-02	7.674E-02	1.284E-01	0.000E+00	NOT IDENT.
PA-234	6.461E-02	3.456E-01	6.034E-01	0.000E+00	NOT IDENT.
PA-234M	5.666E+00	5.798E+00	1.063E+01	0.000E+00	NOT IDENT.
NP-239	-6.667E-02	4.256E-01	7.131E-01	0.000E+00	NOT IDENT.
AM-241	-7.826E-03	1.976E-01	3.096E-01	0.000E+00	NOT IDENT.
CM-247	1.038E-02	4.314E-02	7.319E-02	0.000E+00	NOT IDENT.
CF-249	3.179E-02	4.450E-02	7.819E-02	0.000E+00	NOT IDENT.

CF-251	2.073E-02	1.422E-01	2.528E-01	0.000E+00 NOT IDENT.
--------	-----------	-----------	-----------	----------------------

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112003.CNF;1
Sample date        : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:20:43
Sample ID          : G248112003          Sample quantity   : 1.19330E+02 GRAM
Detector name      : GAM06              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.14 0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID           : 959270             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
K-40	1460.82	1081	10.66*	9.339E-01	3.417E+01	3.417E+01	11.31
CD-109	88.03	148	3.70*	5.172E+00	2.425E+00	2.485E+00	44.41
SN-126	64.28	79	9.60	2.720E+00	9.514E-01	9.514E-01	84.01
	86.94	148	8.90	5.172E+00	1.008E+00	1.008E+00	60.07
	87.57	148	37.00*	5.172E+00	2.425E-01	2.425E-01	44.41
TL-208	277.37	-----	6.60	3.754E+00	-----	Line Not Found	-----
	583.19	263	85.00*	2.126E+00	4.572E-01	4.572E-01	22.29
	860.56	36	12.50	1.510E+00	6.055E-01	6.055E-01	87.74
BI-211	72.87	-----	1.23	3.914E+00	-----	Line Not Found	-----
	351.06	420	12.92*	3.144E+00	3.249E+00	3.249E+00	18.55
PB-212	74.82	260	10.28	4.124E+00	1.931E+00	1.931E+00	30.76
	77.11	413	17.10	4.356E+00	1.745E+00	1.745E+00	19.26
	238.63	875	43.60*	4.191E+00	1.506E+00	1.506E+00	13.27
	300.09	-----	3.30	3.541E+00	-----	Line Not Found	-----
BI-214	609.32	288	45.49*	2.050E+00	9.711E-01	9.711E-01	23.44
	1120.29	58	14.92	1.179E+00	1.043E+00	1.043E+00	70.09
	1764.49	57	15.30	8.244E-01	1.422E+00	1.422E+00	38.19
PB-214	74.82	260	5.80	4.124E+00	3.422E+00	3.422E+00	30.24
	77.11	413	9.70	4.356E+00	3.076E+00	3.076E+00	20.95
	242.00	191	7.25	4.154E+00	1.998E+00	1.998E+00	36.78
	295.22	235	18.42	3.584E+00	1.121E+00	1.121E+00	28.04
	351.93	420	35.60*	3.144E+00	1.179E+00	1.179E+00	19.35
RA-224	240.99	191	4.10*	4.154E+00	3.533E+00	3.533E+00	36.32
RA-226	609.32	288	45.49*	2.050E+00	9.711E-01	9.711E-01	23.44
	1120.29	58	14.92	1.179E+00	1.043E+00	1.043E+00	70.09
	1764.49	57	15.30	8.244E-01	1.422E+00	1.422E+00	38.19
AC-228	338.32	147	11.27	3.238E+00	1.267E+00	1.267E+00	55.48
	911.20	210	25.80*	1.433E+00	1.791E+00	1.791E+00	24.48
	968.97	100	15.80	1.352E+00	1.466E+00	1.466E+00	39.89
RA-228	338.32	147	11.27	3.238E+00	1.267E+00	1.267E+00	55.48
	911.20	210	25.80*	1.433E+00	1.791E+00	1.791E+00	24.48
	968.97	100	15.80	1.352E+00	1.466E+00	1.466E+00	39.89

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	260	10.28	4.124E+00	1.931E+00	1.931E+00	29.21
	77.11	413	17.10	4.356E+00	1.745E+00	1.745E+00	19.26
	238.63	875	43.60*	4.191E+00	1.506E+00	1.506E+00	13.27
	300.09	-----	3.30	3.541E+00	-----	Line Not Found	-----
TH-232	338.32	147	11.27	3.238E+00	1.267E+00	1.267E+00	37.58
	911.20	210	25.80*	1.433E+00	1.791E+00	1.791E+00	24.48
	968.97	100	15.80	1.352E+00	1.466E+00	1.466E+00	39.89
TH-234	63.29	79	3.70*	2.720E+00	2.469E+00	2.469E+00	84.64
	92.59	151	4.23	5.478E+00	2.043E+00	2.043E+00	56.87
U-235	89.96	99	3.47	5.321E+00	1.692E+00	1.692E+00	61.39
	93.35	151	5.60	5.478E+00	1.543E+00	1.543E+00	57.27
	143.76	-----	10.96*	5.718E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.383E+00	-----	Line Not Found	-----
	185.72	168	57.20	4.991E+00	1.853E-01	1.853E-01	44.19
	205.31	-----	5.01	4.664E+00	-----	Line Not Found	-----
NP-237	86.48	148	12.40*	5.172E+00	7.237E-01	7.237E-01	49.11
	95.86	-----	2.68	5.611E+00	-----	Line Not Found	-----
U-238	63.29	79	3.70*	2.720E+00	2.469E+00	2.469E+00	84.64
	92.59	151	4.23	5.478E+00	2.043E+00	2.043E+00	53.11
ANH-511	511.00	85	100.00*	2.365E+00	1.134E-01	1.134E-01	74.95

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G248112003

Page : 3
Acquisition date : 10-MAR-2010 13:20:43

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

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.417E+01	3.417E+01	0.386E+01	11.31	
CD-109	461.40D	1.02	2.425E+00	2.485E+00	1.103E+00	44.41	
SN-126	2.30E+05Y	1.00	2.425E-01	2.425E-01	1.077E-01	44.41	
TL-208	1.41E+10Y	1.00	4.572E-01	4.572E-01	1.019E-01	22.29	
BI-211	7.04E+08Y	1.00	3.249E+00	3.249E+00	0.603E+00	18.55	
PB-212	1.41E+10Y	1.00	1.506E+00	1.506E+00	0.200E+00	13.27	
BI-214	1600.00Y	1.00	9.711E-01	9.711E-01	2.276E-01	23.44	
PB-214	1600.00Y	1.00	1.179E+00	1.179E+00	0.228E+00	19.35	
RA-224	1.41E+10Y	1.00	3.533E+00	3.533E+00	1.283E+00	36.32	
RA-226	1600.00Y	1.00	9.711E-01	9.711E-01	2.276E-01	23.44	
AC-228	1.41E+10Y	1.00	1.791E+00	1.791E+00	0.438E+00	24.48	
RA-228	1.41E+10Y	1.00	1.791E+00	1.791E+00	0.438E+00	24.48	
TH-228	1.41E+10Y	1.00	1.506E+00	1.506E+00	0.200E+00	13.27	
TH-232	1.41E+10Y	1.00	1.791E+00	1.791E+00	0.438E+00	24.48	
TH-234	4.47E+09Y	1.00	2.469E+00	2.469E+00	2.089E+00	84.64	
U-235	7.04E+08Y	1.00	1.853E-01	1.853E-01	0.819E-01	44.19	K
NP-237	2.14E+06Y	1.00	7.237E-01	7.237E-01	3.554E-01	49.11	
U-238	4.47E+09Y	1.00	2.469E+00	2.469E+00	2.089E+00	84.64	
ANH-511	1.00E+09Y	1.00	1.134E-01	1.134E-01	0.850E-01	74.95	

Total Activity : 6.154E+01 6.160E+01

Grand Total Activity : 6.154E+01 6.160E+01

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

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

Unidentified Energy Lines
Sample ID : G248112003

Page : 4
Acquisition date : 10-MAR-2010 13:20:43

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.01	61	239	1.41	257.54	255	7	8.53E-03	87.2	5.91E+00	
0	209.43	110	202	1.00	418.29	415	9	1.53E-02	50.2	4.60E+00	T
0	463.38	62	65	1.11	926.03	921	11	8.57E-03	57.6	2.55E+00	T
0	727.07	94	45	1.94	1453.32	1446	15	1.31E-02	37.3	1.76E+00	T
0	795.36	35	55	0.84	1589.90	1580	14	4.81E-03	97.6	1.62E+00	T

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*                               *                                              *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112003.CNF;1    *
* Acquisition date   : 10-MAR-2010 13:20:43  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 02:00:01.14          Half life ratio   : 8.00000       *
*****
*                               SAMPLE DATA                               *
*                               *                                              *
* Sample date        : 22-FEB-2010 12:00:00  Nuclide Library   : SOLID          *
* Sample ID          : G248112003            Analyst initials  : MXR1           *
* Batch Number       : 959270                Sample Quantity   : 1.19330E+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       :              *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.417E+01	3.864E+00	6.246E-01	5.888E-02	54.700
CD-109	2.485E+00	1.103E+00	1.425E+00	1.586E-01	1.744
SN-126	2.425E-01	1.077E-01	1.398E-01	1.548E-02	1.735
TL-208	4.572E-01	1.019E-01	6.420E-02	5.862E-03	7.121
BI-211	3.249E+00	6.028E-01	3.604E-01	3.382E-02	9.017
PB-212	1.506E+00	1.999E-01	1.013E-01	1.039E-02	14.873
BI-214	9.711E-01	2.276E-01	1.289E-01	1.279E-02	7.532
PB-214	1.179E+00	2.282E-01	1.311E-01	1.426E-02	8.997
RA-224	3.533E+00	1.283E+00	1.086E+00	9.986E-02	3.253
RA-226	9.711E-01	2.276E-01	1.289E-01	1.279E-02	7.532
AC-228	1.791E+00	4.383E-01	2.981E-01	3.599E-02	6.008
RA-228	1.791E+00	4.383E-01	2.981E-01	3.599E-02	6.008
TH-228	1.506E+00	1.999E-01	1.013E-01	1.039E-02	14.873
TH-232	1.791E+00	4.383E-01	2.981E-01	3.599E-02	6.008
TH-234	2.469E+00	2.089E+00	2.327E+00	4.325E-01	1.061
U-235	1.853E-01	8.188E-02	3.636E-01	6.112E-02	0.510
NP-237	7.237E-01	3.554E-01	4.155E-01	9.828E-02	1.742
U-238	2.469E+00	2.089E+00	2.327E+00	4.325E-01	1.061

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	1.134E-01	8.498E-02	5.199E-02	4.512E-03	2.181

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.290E-01		3.619E-01	6.259E-01	5.846E-02	0.206
NA-22	2.895E-02		6.253E-02	1.069E-01	9.395E-03	0.271
NA-24	1.228E+00		1.158E+00	Half-Life too short		
SC-46	7.701E-03		4.739E-02	7.771E-02	7.182E-03	0.099
V-48	5.666E-03		9.241E-02	1.555E-01	1.415E-02	0.036
CR-51	1.327E-01		4.207E-01	7.038E-01	6.776E-02	0.189
MN-54	-5.367E-02		4.724E-02	6.735E-02	6.070E-03	-0.797
CO-56	-5.095E-03		4.775E-02	7.635E-02	6.921E-03	-0.067
CO-57	2.819E-03		2.794E-02	4.518E-02	3.804E-03	0.062
CO-58	-4.387E-02		5.080E-02	7.502E-02	6.693E-03	-0.585
FE-59	9.096E-02		1.177E-01	2.089E-01	1.942E-02	0.435
CO-60	-1.614E-02		4.503E-02	6.955E-02	6.361E-03	-0.232
ZN-65	-1.230E-01		1.411E-01	1.762E-01	1.499E-02	-0.698
SE-75	-4.632E-03		4.890E-02	8.063E-02	7.525E-03	-0.057
SR-85	8.430E-02		4.804E-02	8.146E-02	7.068E-03	1.035
Y-88	1.994E-02		3.521E-02	6.556E-02	5.480E-03	0.304
Y-91	-7.069E+00		2.909E+01	4.680E+01	3.893E+00	-0.151
NB-94	3.297E-02		4.175E-02	7.246E-02	6.038E-03	0.455
NB-95	-5.878E-03		5.001E-02	8.064E-02	6.998E-03	-0.073
NB-95M	1.284E-01		1.570E-01	2.424E-01	2.512E-02	0.530
ZR-95	9.993E-03		8.048E-02	1.330E-01	1.268E-02	0.075
MO-99	1.520E+01		1.874E+01	3.267E+01	5.134E+00	0.465
TC-99M	-1.979E+11		2.957E+11	Half-Life too short		
RU-103	-3.427E-02		4.471E-02	7.015E-02	9.825E-03	-0.488
RH-106	-1.505E-01		3.334E-01	5.271E-01	6.892E-02	-0.285
RU-106	-1.505E-01		3.331E-01	5.271E-01	4.396E-02	-0.285
AG-108M	-2.260E-02		3.548E-02	5.389E-02	4.789E-03	-0.419
AG-110M	-2.039E-02		3.919E-02	6.141E-02	5.154E-03	-0.332
SN-113	-2.539E-02		5.292E-02	8.242E-02	7.189E-03	-0.308
CD-115	7.932E+00		1.821E+01	3.148E+01	2.726E+00	0.252
SN-117M	1.399E-02		6.485E-02	1.017E-01	8.549E-03	0.138
TE-123M	4.697E-03		3.245E-02	5.071E-02	4.291E-03	0.093
SB-124	-3.460E-02		7.339E-02	1.067E-01	9.816E-03	-0.324
SB-125	-7.922E-02		1.080E-01	1.628E-01	1.425E-02	-0.487
TE-125M	-8.297E-01		1.060E+01	1.662E+01	1.790E+00	-0.050
I-126	2.022E-01		2.779E-01	4.847E-01	3.936E-02	0.417
SB-126	-6.315E-02		2.002E-01	2.711E-01	2.287E-02	-0.233
SB-127	3.937E+00		1.966E+00	3.670E+00	4.172E-01	1.073
I-131	2.957E-02		1.456E-01	2.401E-01	2.228E-02	0.123
TE-132	6.584E-02		9.835E-01	1.650E+00	2.686E-01	0.040
BA-133	-1.038E-02		5.521E-02	7.715E-02	1.015E-02	-0.135
I-133	1.463E-02		7.530E-03	Half-Life too short		

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	8.856E-02	+	8.676E-02	1.014E-01	9.015E-03	0.873
CS-135	8.299E-02		1.898E-01	3.213E-01	3.393E-02	0.258
I-135	4.107E+09		4.267E+10	Half-Life too short		
CS-136	-7.071E-03		1.457E-01	2.414E-01	2.223E-02	-0.029
BA-137M	-4.852E-02		4.115E-02	6.003E-02	4.858E-03	-0.808
CS-137	-5.125E-02		4.347E-02	6.342E-02	5.143E-03	-0.808
CE-139	5.073E-03		3.347E-02	5.340E-02	4.516E-03	0.095
BA-140	3.233E-01		3.430E-01	5.844E-01	1.982E-01	0.553
LA-140	-7.130E-02		9.046E-02	1.263E-01	1.144E-02	-0.565
CE-141	-2.076E-02		7.200E-02	1.131E-01	9.611E-03	-0.184
CE-143	8.445E-04		1.756E-04	Half-Life too short		
CE-144	-4.469E-03		2.476E-01	3.524E-01	5.330E-02	-0.013
PM-144	4.667E-03		4.211E-02	6.980E-02	5.795E-03	0.067
PR-144	3.228E-01		3.151E+00	5.219E+00	4.331E-01	0.062
PM-146	-1.076E-02		4.926E-02	7.735E-02	8.211E-03	-0.139
ND-147	2.718E-01		6.985E-01	1.202E+00	1.800E-01	0.226
PM-149	-1.157E+02		1.339E+02	2.063E+02	3.289E+01	-0.561
EU-152	-4.349E-02		1.106E-01	1.685E-01	1.603E-02	-0.258
GD-153	-5.870E-02		1.039E-01	1.453E-01	1.434E-02	-0.404
EU-154	7.843E-02		1.768E-01	3.017E-01	3.469E-02	0.260
EU-155	-7.772E-02		1.114E-01	1.739E-01	1.618E-02	-0.447
TB-160	3.677E-02		1.726E-01	2.846E-01	2.619E-02	0.129
HO-166M	1.330E-02		7.564E-02	1.259E-01	1.055E-02	0.106
TA-182	-1.566E-01		2.702E-01	4.206E-01	3.545E-02	-0.372
IR-192	2.773E-02		4.205E-02	7.163E-02	6.619E-03	0.387
HG-203	6.395E-03		4.711E-02	7.844E-02	7.465E-03	0.082
BI-207	7.276E-02		6.906E-02	1.253E-01	1.100E-02	0.581
PB-210	1.738E-01		5.146E+00	8.478E+00	8.156E-01	0.020
PB-211	1.720E-01		8.724E-01	1.421E+00	6.876E-01	0.121
BI-212	2.517E+00	+	9.896E-01	1.361E+00	1.682E-01	1.849
RN-219	2.420E-01		4.820E-01	8.047E-01	1.191E-01	0.301
RA-223	-6.231E-01		7.499E-01	1.147E+00	2.021E-01	-0.543
AC-227	1.529E-01		2.897E-01	4.941E-01	6.187E-02	0.310
TH-227	1.529E-01		2.898E-01	4.941E-01	6.929E-02	0.310
TH-229	1.930E-01		5.754E-01	9.854E-01	8.648E-02	0.196
PA-231	-7.747E-01		1.581E+00	2.523E+00	3.785E-01	-0.307
TH-231	-6.231E-01		7.499E-01	1.147E+00	2.021E-01	-0.543
PA-233	-2.057E-02		7.831E-02	1.264E-01	1.198E-02	-0.163
PA-234	6.461E-02		3.527E-01	6.020E-01	1.146E-01	0.107
PA-234M	5.666E+00		5.916E+00	1.061E+01	1.096E+00	0.534
NP-239	-6.667E-02		4.343E-01	6.947E-01	5.966E-02	-0.096
AM-241	-7.826E-03		2.016E-01	2.994E-01	2.842E-02	-0.026
CM-247	1.038E-02		4.402E-02	7.230E-02	6.144E-03	0.144
CF-249	3.179E-02		4.541E-02	7.720E-02	6.565E-03	0.412
CF-251	2.073E-02		1.451E-01	2.474E-01	2.125E-02	0.084

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248112003          *
* Acquisition date   : 10-MAR-2010 13:20:43 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 02:00:01.14 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248112003 Analyst initials: MXR1                 *
* Batch Number       : 959270 Sample Quantity : 1.1933E+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 :                               *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.417E+01	3.786E+00	3.117E-01	1.932E+00
CD-109	2.485E+00	1.081E+00	7.342E-01	5.517E-01
SN-126	2.425E-01	1.056E-01	7.202E-02	5.386E-02
TL-208	4.572E-01	9.986E-02	3.238E-02	5.095E-02
BI-211	3.249E+00	5.908E-01	1.828E-01	3.014E-01
PB-212	1.506E+00	1.959E-01	5.160E-02	9.993E-02
BI-214	9.711E-01	2.231E-01	6.499E-02	1.138E-01
PB-214	1.179E+00	2.237E-01	6.649E-02	1.141E-01
RA-224	3.533E+00	1.257E+00	5.533E-01	6.415E-01
RA-226	9.711E-01	2.231E-01	6.499E-02	1.138E-01
AC-228	1.791E+00	4.296E-01	1.496E-01	2.192E-01
RA-228	1.791E+00	4.296E-01	1.496E-01	2.192E-01
TH-228	1.506E+00	1.959E-01	5.160E-02	9.993E-02
TH-232	1.791E+00	4.296E-01	1.496E-01	2.192E-01
TH-234	2.469E+00	2.048E+00	1.203E+00	1.045E+00
U-235	7.425E-02	2.237E-01	1.863E-01	1.141E-01
NP-237	7.237E-01	3.483E-01	2.141E-01	1.777E-01
U-238	2.469E+00	2.048E+00	1.203E+00	1.045E+00
ANH-511	1.134E-01	8.328E-02	2.626E-02	4.249E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.290E-01	3.547E-01	3.164E-01	1.809E-01 NOT IDENT.
NA-22	2.895E-02	6.128E-02	5.344E-02	3.127E-02 NOT IDENT.
NA-24	1.228E+06	2.269E+06	0.000E+00	1.158E+06 SHORT HLIF
SC-46	7.701E-03	4.644E-02	3.900E-02	2.370E-02 FAIL ABUN
V-48	5.666E-03	9.057E-02	7.795E-02	4.621E-02 NOT IDENT.
CR-51	1.327E-01	4.123E-01	3.574E-01	2.104E-01 NOT IDENT.
MN-54	-5.367E-02	4.630E-02	3.383E-02	2.362E-02 NOT IDENT.
CO-56	-5.095E-03	4.679E-02	3.834E-02	2.387E-02 NOT IDENT.

CO-57	2.819E-03	2.738E-02	2.319E-02	1.397E-02	NOT IDENT.
CO-58	-4.387E-02	4.978E-02	3.769E-02	2.540E-02	NOT IDENT.
FE-59	9.096E-02	1.153E-01	1.046E-01	5.884E-02	NOT IDENT.
CO-60	-1.614E-02	4.413E-02	3.474E-02	2.251E-02	NOT IDENT.
ZN-65	-1.230E-01	1.383E-01	8.819E-02	7.055E-02	NOT IDENT.
SE-75	-4.632E-03	4.792E-02	4.103E-02	2.445E-02	NOT IDENT.
SR-85	8.430E-02	4.708E-02	4.114E-02	2.402E-02	NOT IDENT.
Y-88	1.994E-02	3.451E-02	3.262E-02	1.761E-02	NOT IDENT.
Y-91	-7.069E+00	2.851E+01	2.340E+01	1.455E+01	NOT IDENT.
NB-94	3.297E-02	4.091E-02	3.646E-02	2.087E-02	NOT IDENT.
NB-95	-5.878E-03	4.901E-02	4.054E-02	2.501E-02	NOT IDENT.
NB-95M	1.284E-01	1.538E-01	1.235E-01	7.848E-02	NOT IDENT.
ZR-95	9.993E-03	7.887E-02	6.688E-02	4.024E-02	NOT IDENT.
MO-99	1.520E+01	1.837E+01	1.643E+01	9.370E+00	NOT IDENT.
TC-99M	-1.979E+17	5.796E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.427E-02	4.382E-02	3.544E-02	2.236E-02	FAIL ABUN
RH-106	-1.505E-01	3.268E-01	2.657E-01	1.667E-01	NOT IDENT.
RU-106	-1.505E-01	3.264E-01	2.657E-01	1.665E-01	NOT IDENT.
AG-108M	-2.260E-02	3.477E-02	2.727E-02	1.774E-02	NOT IDENT.
AG-110M	-2.039E-02	3.840E-02	3.093E-02	1.959E-02	NOT IDENT.
SN-113	-2.539E-02	5.187E-02	4.176E-02	2.646E-02	NOT IDENT.
CD-115	7.932E+00	1.785E+01	1.589E+01	9.107E+00	NOT IDENT.
SN-117M	1.399E-02	6.355E-02	5.206E-02	3.242E-02	NOT IDENT.
TE-123M	4.697E-03	3.181E-02	2.596E-02	1.623E-02	NOT IDENT.
SB-124	-3.460E-02	7.192E-02	5.314E-02	3.669E-02	NOT IDENT.
SB-125	-7.922E-02	1.059E-01	8.240E-02	5.401E-02	FAIL ABUN
TE-125M	-8.297E-01	1.038E+01	8.542E+00	5.298E+00	NOT IDENT.
I-126	2.022E-01	2.724E-01	2.441E-01	1.390E-01	NOT IDENT.
SB-126	-6.315E-02	1.962E-01	1.364E-01	1.001E-01	NOT IDENT.
SB-127	3.937E+00	1.927E+00	1.848E+00	9.832E-01	NOT IDENT.
I-131	2.957E-02	1.427E-01	1.217E-01	7.280E-02	NOT IDENT.
TE-132	6.584E-02	9.638E-01	8.413E-01	4.917E-01	NOT IDENT.
BA-133	-1.038E-02	5.411E-02	3.913E-02	2.760E-02	NOT IDENT.
I-133	1.463E+04	1.476E+04	0.000E+00	7.530E+03	SHORT HLIF
CS-134	8.856E-02	8.502E-02	5.096E-02	4.338E-02	FAIL ABUN
CS-135	8.299E-02	1.860E-01	1.635E-01	9.491E-02	NOT IDENT.
I-135	4.107E+15	8.363E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-7.071E-03	1.428E-01	1.209E-01	7.284E-02	NOT IDENT.
BA-137M	-4.852E-02	4.033E-02	3.023E-02	2.057E-02	NOT IDENT.
CS-137	-5.125E-02	4.260E-02	3.194E-02	2.174E-02	NOT IDENT.
CE-139	5.073E-03	3.280E-02	2.732E-02	1.673E-02	NOT IDENT.
BA-140	3.233E-01	3.361E-01	2.950E-01	1.715E-01	NOT IDENT.
LA-140	-7.130E-02	8.865E-02	6.294E-02	4.523E-02	NOT IDENT.
CE-141	-2.076E-02	7.056E-02	5.793E-02	3.600E-02	NOT IDENT.
CE-143	8.445E+02	3.442E+02	0.000E+00	1.756E+02	SHORT HLIF
CE-144	-4.469E-03	2.426E-01	1.807E-01	1.238E-01	NOT IDENT.
PM-144	4.667E-03	4.127E-02	3.513E-02	2.106E-02	NOT IDENT.
PR-144	3.228E-01	3.088E+00	2.627E+00	1.575E+00	NOT IDENT.
PM-146	-1.076E-02	4.827E-02	3.912E-02	2.463E-02	NOT IDENT.
ND-147	2.718E-01	6.845E-01	6.070E-01	3.493E-01	FAIL ABUN
PM-149	-1.157E+02	1.312E+02	1.049E+02	6.693E+01	NOT IDENT.
EU-152	-4.349E-02	1.083E-01	8.551E-02	5.528E-02	NOT IDENT.
GD-153	-5.870E-02	1.018E-01	7.478E-02	5.193E-02	NOT IDENT.
EU-154	7.843E-02	1.733E-01	1.508E-01	8.841E-02	NOT IDENT.
EU-155	-7.772E-02	1.092E-01	8.942E-02	5.570E-02	FAIL ABUN
TB-160	3.677E-02	1.691E-01	1.429E-01	8.629E-02	FAIL ABUN
HO-166M	1.330E-02	7.413E-02	6.334E-02	3.782E-02	FAIL ABUN
TA-182	-1.566E-01	2.648E-01	2.103E-01	1.351E-01	FAIL ABUN
IR-192	2.773E-02	4.121E-02	3.638E-02	2.102E-02	FAIL ABUN
HG-203	6.395E-03	4.617E-02	3.989E-02	2.355E-02	NOT IDENT.
BI-207	7.276E-02	6.767E-02	6.273E-02	3.453E-02	FAIL ABUN
PB-210	1.738E-01	5.043E+00	4.398E+00	2.573E+00	NOT IDENT.
PB-211	1.720E-01	8.550E-01	7.199E-01	4.362E-01	NOT IDENT.
BI-212	2.517E+00	9.698E-01	6.848E-01	4.948E-01	FAIL ABUN
RN-219	2.420E-01	4.723E-01	4.076E-01	2.410E-01	NOT IDENT.
RA-223	-6.231E-01	7.349E-01	5.825E-01	3.749E-01	FAIL ABUN
AC-227	1.529E-01	2.839E-01	2.515E-01	1.448E-01	NOT IDENT.
TH-227	1.529E-01	2.840E-01	2.515E-01	1.449E-01	NOT IDENT.
TH-229	1.930E-01	5.639E-01	5.033E-01	2.877E-01	FAIL ABUN
PA-231	-7.747E-01	1.549E+00	1.283E+00	7.905E-01	NOT IDENT.
TH-231	-6.231E-01	7.349E-01	5.825E-01	3.749E-01	FAIL ABUN
PA-233	-2.057E-02	7.674E-02	6.423E-02	3.915E-02	NOT IDENT.
PA-234	6.461E-02	3.456E-01	3.019E-01	1.763E-01	NOT IDENT.
PA-234M	5.666E+00	5.798E+00	5.318E+00	2.958E+00	NOT IDENT.
NP-239	-6.667E-02	4.256E-01	3.568E-01	2.171E-01	NOT IDENT.
AM-241	-7.826E-03	1.976E-01	1.549E-01	1.008E-01	NOT IDENT.
CM-247	1.038E-02	4.314E-02	3.662E-02	2.201E-02	NOT IDENT.
CF-249	3.179E-02	4.450E-02	3.912E-02	2.271E-02	NOT IDENT.

CF-251	2.073E-02	1.422E-01	1.265E-01	7.254E-02 NOT IDENT.
--------	-----------	-----------	-----------	----------------------

```

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

```

ENERGY	MDA COUNTS
46.54	235.4159
49.72	259.1570
57.36	0.0000
59.54	262.3457
63.29	254.1686
63.29	254.1686
64.28	287.3662
67.75	313.3102
69.67	294.3349
70.83	260.7505
72.81	331.8748
72.87	331.9207
72.87	331.9207
74.82	303.9684
74.82	303.9684
74.82	303.9684
74.97	304.0692
77.11	282.4604
77.11	282.4604
77.11	282.4604
79.69	250.7921
79.80	250.8503
80.12	251.0213
80.19	251.0580
80.57	278.5044
81.00	316.3287
81.07	316.3749
81.07	316.3749
83.79	275.8043
83.79	275.8043
85.43	259.9104
86.48	326.3431
86.55	357.0372
86.79	357.2079
86.94	357.3163
87.57	337.8049
88.03	338.1137
88.47	338.4091
89.96	271.5222
91.11	272.1318
92.59	258.9537
92.59	258.9537
93.35	259.3308
94.67	235.0735
94.87	235.1622
94.87	235.1622
95.86	249.6436
97.43	272.2826
98.44	244.5712
99.53	229.3514
100.11	229.5942
103.18	238.2467
103.37	238.3272
105.31	244.4376
106.12	234.1886
109.28	215.2291
111.00	257.5371
111.76	232.1883
116.30	237.1842
117.23	228.9075
121.12	226.0030
121.78	224.0656
122.06	224.1652
123.07	224.5246
131.20	228.4635
133.52	227.6003
136.00	242.3316

136.47	222.4772
140.51	239.4526
140.51	0.0000
143.76	219.2084
144.24	214.8575
144.24	214.8575
145.44	240.0107
152.43	197.9678
153.25	208.4384
154.21	205.2887
154.21	205.2887
156.02	230.9385
158.56	192.7188
159.00	196.2732
162.66	201.8293
163.33	197.3865
165.86	200.3463
176.60	222.7184
177.52	219.4423
181.07	237.9132
184.41	207.9403
185.72	208.2616
193.51	194.8898
197.04	194.7728
205.31	189.2950
210.85	194.8340
215.65	187.2113
222.11	171.4079
227.38	177.9288
228.16	170.6117
228.18	157.5620
235.69	177.3558
235.96	172.8931
235.96	172.8931
238.63	160.1597
238.63	160.1597
240.99	160.5306
242.00	160.6889
244.70	165.2803
252.40	170.8907
252.80	170.0012
256.23	144.6788
256.23	144.6788
260.90	135.6837
264.66	135.1871
268.22	166.6224
269.46	164.8691
269.46	164.8691
271.23	155.4175
273.65	211.2419
276.40	159.0603
277.37	135.7570
277.60	145.5533
278.00	149.5145
279.20	160.4315
279.54	162.4361
280.46	148.8573
283.69	132.5796
284.31	129.7039
285.41	117.0408
285.90	133.8169
287.50	126.1191
293.27	0.0000
295.22	126.9473
295.96	179.4261
298.57	147.9917
299.98	144.9779
299.98	144.9779
300.09	135.4314
300.09	135.4314
300.13	135.4355
301.36	125.3210
302.85	165.6834
304.50	137.9242
304.50	137.9242
304.85	123.9678
308.46	120.3223
311.90	139.7635

316.51	119.0875
319.41	126.4420
320.08	106.2673
323.87	136.0242
323.87	136.0242
328.76	130.4297
333.37	124.3479
334.37	122.8070
334.37	122.8070
338.28	107.7766
338.28	107.7766
338.32	107.7798
338.32	107.7798
338.32	107.7798
340.48	101.9927
340.55	108.5777
344.28	107.2325
351.06	100.5212
351.93	100.5848
356.01	109.8313
364.49	98.3675
366.42	111.0787
383.85	92.2888
388.16	84.0508
388.63	101.1057
391.69	106.6498
400.66	92.2726
401.81	92.3434
402.40	95.6028
404.85	102.2131
410.95	97.2235
414.70	99.6269
423.72	88.2254
427.09	91.6904
427.87	99.3799
433.94	97.5678
453.88	84.3461
463.37	81.4801
468.07	87.7526
473.00	76.3329
476.78	81.0022
477.60	72.9366
487.02	95.0627
492.35	69.9251
497.08	81.0398
511.00	70.6601
514.00	61.2781
527.90	72.2395
529.87	0.0000
531.02	70.5060
537.26	61.4319
546.56	0.0000
563.25	85.8568
569.33	74.7665
569.50	74.7742
569.70	77.6197
583.19	62.8998
600.60	76.8984
602.73	81.7897
604.72	70.6317
609.32	67.5698
609.32	67.5698
610.33	46.6778
614.28	66.1178
618.01	46.5270
621.93	58.2671
621.93	58.2671
633.25	59.5539
635.95	67.4485
636.99	61.6126
645.85	54.9910
657.76	64.1764
661.66	76.1578
661.66	76.1578
664.57	0.0000
666.33	59.4683
666.50	59.4741
677.62	68.7338

685.70	41.9867
695.00	51.1905
696.49	68.2980
696.51	68.2988
697.00	73.3368
702.65	57.4022
706.68	77.6768
711.68	65.7109
720.70	59.1964
721.93	0.0000
722.78	52.4777
722.91	52.4803
723.31	50.7959
724.19	52.5080
727.33	48.8461
733.00	54.4010
735.93	64.3397
739.50	48.0706
747.24	46.1711
752.31	62.7171
753.82	56.5818
756.73	47.3791
763.94	73.3418
765.81	63.0596
766.42	59.9725
777.92	54.0147
778.90	59.2321
783.70	51.0146
785.37	41.6719
795.86	29.6386
801.95	66.4072
810.29	64.1662
810.76	67.3344
815.77	50.5969
818.51	48.5392
832.01	58.3328
834.85	73.2586
836.80	0.0000
846.77	50.1222
856.80	53.5181
860.56	55.3777
871.09	44.1130
873.19	38.7624
875.33	0.0000
879.36	45.3233
880.51	45.3417
883.24	43.2246
884.68	50.8153
889.28	43.3184
898.04	47.7974
911.20	56.7480
911.20	56.7480
911.20	56.7480
926.50	55.9518
937.49	62.4025
944.13	46.9077
946.00	43.2555
949.00	36.8506
962.29	56.7563
964.08	49.2062
966.15	52.4165
968.97	90.6211
968.97	90.6211
968.97	90.6211
983.53	48.4570
996.26	67.3726
1001.03	41.2357
1004.73	49.7285
1037.84	44.5636
1038.76	0.0000
1048.07	51.3655
1050.41	54.2585
1050.41	54.2585
1063.66	41.0981
1085.87	51.9609
1099.45	41.5443
1112.07	37.4977
1115.54	69.8965

1120.29	45.6900
1120.29	45.6900
1120.55	45.6938
1121.30	45.7034
1131.51	0.0000
1173.23	76.9907
1177.93	51.3949
1189.05	60.4788
1204.77	62.7334
1221.41	72.0264
1231.02	71.2109
1235.36	79.3279
1238.28	58.2856
1260.41	0.0000
1271.85	48.6719
1274.44	47.6904
1274.54	47.6904
1291.59	35.6736
1298.22	0.0000
1312.11	30.7397
1332.49	27.8108
1365.19	23.8863
1368.63	0.0000
1384.29	20.8691
1408.01	31.4844
1457.56	0.0000
1460.82	18.0680
1489.16	10.6986
1505.03	18.2541
1596.21	16.9076
1620.50	10.3869
1678.03	0.0000
1690.97	9.5843
1764.49	10.2155
1764.49	10.2155
1770.23	10.2272
1771.35	46.7645
1791.20	0.0000
1836.06	5.9203

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248112003

Total Uranium Activity	7.3784E+00	ug/g
Total Uranium Counting Unc.	6.0925E+00	ug/g
Total Uranium Tpu	3.1084E-06	ug/g
Total Uranium Mda	3.5801E+00	ug/g

```

*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON , SC 29417                          *
*                               GROSS GAMMA REPORT                            *
*
*****
*
*  BATCH ID      : 959270                SAMPLE ID   : G248112003                *
*  ANALYST       : MXR1                  DETECTOR    : GAM06                  *
*  SAMPLE DATE   : 22-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00        *
*  ANALYSIS DATE : 10-MAR-2010 13:20:43.84  SAMPLE ALQT: 119.330 GRAM        *
*
*****

```

```

GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.647E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.388E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.876E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.389E+00

```

VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 15:22:15.31

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112004.CNF;1
Sample date        : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:21:46
Sample ID          : G248112004 Sample quantity : 1.15330E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.11 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959270 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	74.97*	261	287	1.46	148.86	142	18	3.62E-02	14.1	2.64E+00
2	1	77.40*	383	285	1.46	153.73	142	18	5.32E-02	10.3	
3	0	86.85	78	484	0.69	172.63	169	9	1.08E-02	52.2	
4	0	93.20*	93	473	1.32	185.33	180	12	1.29E-02	51.5	
5	0	185.79*	99	281	1.46	370.49	366	10	1.38E-02	34.9	
6	0	209.38	70	229	1.17	417.67	412	10	9.78E-03	42.0	
7	2	238.75*	836	176	1.33	476.40	471	16	1.16E-01	4.6	1.90E+00
8	2	241.73*	205	161	1.85	482.36	471	16	2.85E-02	15.2	
9	0	295.45*	246	158	1.43	589.80	583	12	3.42E-02	12.4	
10	0	338.38*	178	184	1.18	675.66	669	14	2.47E-02	18.1	
11	0	351.82*	406	159	1.32	702.55	696	14	5.64E-02	8.4	
12	0	511.17*	95	129	2.25	1021.24	1013	19	1.32E-02	33.0	
13	0	582.80*	240	91	1.58	1164.51	1156	16	3.33E-02	11.4	
14	0	609.30*	269	90	1.87	1217.52	1212	13	3.74E-02	9.9	
15	0	727.51*	90	65	1.40	1453.95	1446	15	1.25E-02	22.9	
16	0	861.88	44	64	1.12	1722.73	1715	16	6.05E-03	45.7	
17	0	910.85*	179	66	1.40	1820.69	1813	16	2.49E-02	13.0	
18	0	969.34*	65	83	1.66	1937.68	1932	15	9.05E-03	33.3	
19	0	1120.58*	64	88	1.64	2240.22	2233	15	8.95E-03	34.3	
20	0	1460.19	1164	43	2.11	2919.63	2910	22	1.62E-01	3.3	
21	0	1763.78*	41	17	2.58	3527.05	3518	18	5.71E-03	30.3	

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

VMS Nuclide Identification Report V3.1 Generated 10-MAR-2010 15:22:17

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112004.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:21:46
Sample ID        : G248112004 Sample quantity : 115.33 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA15 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.11 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00
    
```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.679E+01	4.342E+00	7.162E-01	7.037E-02	51.367
CD-109	+	88.03	*	1.587E+00	1.670E+00	2.141E+00	2.658E-01	0.741
SN-126		64.28		-4.824E-01	9.106E-01	1.473E+00	2.493E-01	-0.328
	+	86.94		6.442E-01	7.260E-01	8.073E-01	3.413E-01	0.798
	+	87.57	*	1.550E-01	1.630E-01	2.049E-01	2.536E-02	0.756
TL-208		277.37		7.729E-02	5.122E-01	8.613E-01	1.218E-01	0.090
	+	583.19	*	4.187E-01	1.027E-01	6.898E-02	6.309E-03	6.070
	+	860.56		7.206E-01	6.623E-01	6.121E-01	5.984E-02	1.177
BI-211		72.87		1.051E+01	5.499E+00	8.515E+00	9.753E-01	1.234
	+	351.06	*	3.254E+00	6.345E-01	4.446E-01	4.428E-02	7.319
PB-212	+	74.82		2.544E+00	8.148E-01	8.216E-01	1.238E-01	3.097
	+	77.11		2.072E+00	4.887E-01	4.583E-01	5.312E-02	4.522
	+	238.63	*	1.516E+00	2.291E-01	1.249E-01	1.492E-02	12.141
		300.09		1.451E+00	1.198E+00	1.839E+00	2.239E-01	0.789
BI-214	+	609.32	*	9.090E-01	2.014E-01	1.482E-01	1.477E-02	6.134
	+	1120.29		1.147E+00	7.961E-01	6.014E-01	6.513E-02	1.907
	+	1764.49		1.022E+00	6.249E-01	3.655E-01	3.205E-02	2.795
PB-214	+	74.82		4.510E+00	1.422E+00	1.456E+00	2.035E-01	3.097
	+	77.11		3.654E+00	9.128E-01	8.079E-01	1.149E-01	4.522
	+	242.00		2.256E+00	7.394E-01	7.173E-01	8.935E-02	3.146
	+	295.22		1.228E+00	3.416E-01	3.077E-01	3.835E-02	3.991
	+	351.93	*	1.181E+00	2.393E-01	1.617E-01	1.838E-02	7.305
RA-224	+	240.99	*	3.990E+00	1.287E+00	1.338E+00	1.476E-01	2.981
RA-226	+	609.32	*	9.090E-01	2.014E-01	1.482E-01	1.477E-02	6.134
	+	1120.29		1.147E+00	7.961E-01	6.014E-01	6.513E-02	1.907
	+	1764.49		1.022E+00	6.249E-01	3.655E-01	3.205E-02	2.795
AC-228	+	338.32		1.593E+00	8.841E-01	5.218E-01	2.191E-01	3.053
	+	911.20	*	1.511E+00	4.328E-01	2.919E-01	3.536E-02	5.177
	+	968.97		9.529E-01	6.765E-01	6.358E-01	1.562E-01	1.499
RA-228	+	338.32		1.593E+00	8.841E-01	5.218E-01	2.191E-01	3.053
	+	911.20	*	1.511E+00	4.328E-01	2.919E-01	3.536E-02	5.177
	+	968.97		9.529E-01	6.765E-01	6.358E-01	1.562E-01	1.499
TH-228	+	74.82		2.544E+00	7.769E-01	8.216E-01	9.500E-02	3.097
	+	77.11		2.072E+00	4.887E-01	4.583E-01	5.312E-02	4.522

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	1.516E+00	2.291E-01	1.249E-01	1.492E-02	12.141
		300.09		1.451E+00	1.484E+00	1.839E+00	1.131E+00	0.789
TH-232	+	338.32		1.593E+00	5.990E-01	5.218E-01	5.144E-02	3.053
	+	911.20	*	1.511E+00	4.328E-01	2.919E-01	3.536E-02	5.177
	+	968.97		9.529E-01	6.765E-01	6.358E-01	1.562E-01	1.499
NP-237	+	86.48	*	4.624E-01	4.959E-01	5.528E-01	1.343E-01	0.836
		95.86		-1.118E+00	1.382E+00	1.844E+00	4.615E-01	-0.606
ANH-511	+	511.00	*	1.275E-01	8.485E-02	5.938E-02	5.131E-03	2.148

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-2.135E-01	4.011E-01	6.254E-01	5.812E-02	-0.341
NA-22		1274.54	*	4.084E-02	5.799E-02	1.006E-01	9.143E-03	0.406
NA-24		1368.63	*	7.842E-01	5.799E-02	Half-Life too short		
SC-46		889.28	*	-1.823E-02	5.042E-02	8.033E-02	7.465E-03	-0.227
	+	1120.55		1.955E-01	1.351E-01	1.712E-01	1.456E-02	1.141
V-48		944.13		6.843E-01	1.137E+00	1.979E+00	1.830E-01	0.346
		983.53	*	-6.183E-02	9.424E-02	1.439E-01	1.315E-02	-0.430
		1312.11		5.052E-03	1.105E-01	1.793E-01	1.689E-02	0.028
CR-51		320.08	*	-2.046E-01	5.025E-01	8.141E-01	8.639E-02	-0.251
MN-54		834.85	*	2.371E-02	5.049E-02	8.640E-02	7.841E-03	0.274
CO-56		846.77	*	6.863E-04	4.744E-02	7.869E-02	7.180E-03	0.009
		1037.84		3.169E-01	3.776E-01	6.702E-01	6.284E-02	0.473
		1238.28		2.182E-01	1.395E-01	2.495E-01	2.242E-02	0.874
		1771.35		-1.593E-02	3.277E-01	4.527E-01	3.955E-02	-0.035
CO-57		122.06	*	-6.003E-03	3.243E-02	5.224E-02	5.262E-03	-0.115
		136.47		3.902E-02	2.677E-01	4.363E-01	4.636E-02	0.089
CO-58		810.76	*	-3.946E-02	4.782E-02	7.285E-02	6.549E-03	-0.542
FE-59		1099.45	*	-3.129E-02	1.183E-01	1.876E-01	1.750E-02	-0.167
		1291.59		-1.645E-01	1.664E-01	2.341E-01	2.419E-02	-0.702
CO-60		1173.23		-3.241E-02	6.056E-02	9.304E-02	7.573E-03	-0.348
		1332.49	*	-2.256E-02	4.882E-02	7.334E-02	7.050E-03	-0.308
ZN-65		1115.54	*	5.450E-02	1.396E-01	2.050E-01	1.752E-02	0.266
SE-75		121.12		-1.860E-02	1.722E-01	2.785E-01	3.411E-02	-0.067
		136.00		7.795E-03	5.152E-02	8.400E-02	8.504E-03	0.093
		264.66	*	-6.129E-02	5.642E-02	8.812E-02	9.663E-03	-0.696
		279.54		-8.488E-02	1.493E-01	2.416E-01	2.675E-02	-0.351
		400.66		7.729E-02	3.138E-01	5.244E-01	5.745E-02	0.147
SR-85		514.00	*	1.152E-01	6.006E-02	9.774E-02	8.444E-03	1.179
Y-88		898.04		3.937E-02	5.473E-02	9.592E-02	8.982E-03	0.410
		1836.06	*	-2.304E-02	3.978E-02	5.623E-02	4.736E-03	-0.410
Y-91		1204.77	*	3.711E+00	3.002E+01	4.924E+01	4.151E+00	0.075
NB-94		702.65	*	-2.299E-02	4.421E-02	7.103E-02	5.997E-03	-0.324
		871.09		-2.374E-03	4.650E-02	7.296E-02	6.729E-03	-0.033
NB-95		765.81	*	8.202E-03	5.549E-02	9.291E-02	8.140E-03	0.088
NB-95M		235.69	*	3.245E-01	1.996E-01	3.129E-01	3.770E-02	1.037
ZR-95		724.19		1.161E-01	1.435E-01	2.232E-01	2.072E-02	0.520

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA	
MO-99		756.73	*	-4.124E-02	8.580E-02	1.366E-01	1.313E-02	-0.302	
		140.51		-2.562E+01	3.881E+01	5.938E+01	1.445E+01	-0.432	
		181.07		6.798E+00	3.133E+01	4.446E+01	8.838E+00	0.153	
		366.42		1.015E+02	1.703E+02	2.906E+02	2.662E+01	0.349	
		739.50	*	-1.288E+01	1.933E+01	3.021E+01	4.762E+00	-0.426	
TC-99M		777.92		-8.688E+00	5.390E+01	8.836E+01	7.793E+00	-0.098	
RU-103		140.51	*	-4.671E+11	5.390E+01	Half-Life	too short		
+ RH-106		497.08	*	4.848E-02	5.277E-02	9.101E-02	1.272E-02	0.533	
		610.33		9.539E+00	2.443E+00	3.140E+00	5.105E-01	3.038	
RU-106		621.93	*	3.485E-01	4.102E-01	7.026E-01	9.216E-02	0.496	
		1050.41		5.983E-01	3.237E+00	5.394E+00	4.793E-01	0.111	
		621.93	*	3.485E-01	4.087E-01	7.026E-01	5.905E-02	0.496	
AG-108M		1050.41		5.983E-01	3.237E+00	5.394E+00	4.793E-01	0.111	
		433.94	*	-2.865E-02	3.706E-02	5.705E-02	5.042E-03	-0.502	
		614.28		-1.324E-02	4.887E-02	6.537E-02	5.701E-03	-0.203	
AG-110M		722.91		5.908E-03	5.332E-02	7.778E-02	6.865E-03	0.076	
		657.76	*	-1.031E-03	4.130E-02	6.919E-02	5.888E-03	-0.015	
		677.62		-6.033E-02	3.956E-01	6.551E-01	5.611E-02	-0.092	
		706.68		3.705E-01	2.745E-01	5.007E-01	4.365E-02	0.740	
		763.94		-9.163E-02	2.072E-01	3.305E-01	2.969E-02	-0.277	
		884.68		2.777E-02	6.287E-02	1.081E-01	1.030E-02	0.257	
		937.49		-8.891E-02	1.475E-01	2.285E-01	2.182E-02	-0.389	
		1384.29		-1.912E-01	1.980E-01	2.852E-01	2.807E-02	-0.670	
SN-113		1505.03		4.180E-02	3.544E-01	5.988E-01	5.723E-02	0.070	
CD-115		391.69	*	-3.281E-02	6.028E-02	9.566E-02	8.308E-03	-0.343	
		260.90		8.583E+01	2.282E+02	3.891E+02	4.263E+01	0.221	
SN-117M		492.35		8.097E+00	6.698E+01	1.100E+02	9.507E+00	0.074	
		527.90	*	1.774E+01	1.956E+01	3.389E+01	2.925E+00	0.523	
		156.02		-6.453E-01	3.059E+00	4.882E+00	5.088E-01	-0.132	
		158.56	*	1.238E-02	7.502E-02	1.218E-01	1.277E-02	0.102	
TE-123M		159.00	*	-6.165E-04	3.714E-02	5.979E-02	6.301E-03	-0.010	
SB-124		602.73		-1.137E-03	5.715E-02	7.917E-02	6.710E-03	-0.014	
		645.85		2.058E-01	5.689E-01	9.455E-01	8.333E-02	0.218	
		722.78		5.998E-02	5.414E-01	7.898E-01	6.908E-02	0.076	
		1690.97	*	-4.501E-02	8.989E-02	1.318E-01	1.241E-02	-0.342	
		427.87	*	-3.937E-02	1.150E-01	1.838E-01	1.600E-02	-0.214	
SB-125		463.37		4.751E-01	3.546E-01	6.266E-01	5.805E-02	0.758	
		600.60		-1.265E-01	2.302E-01	3.536E-01	3.228E-02	-0.358	
		635.95		2.284E-01	3.234E-01	5.528E-01	5.012E-02	0.413	
	TE-125M		109.28	*	-8.478E+00	1.316E+01	2.081E+01	2.472E+00	-0.407
	I-126		388.63		1.765E-01	2.478E-01	4.076E-01	3.468E-02	0.433
SB-126		666.33	*	1.444E-01	2.832E-01	4.930E-01	4.066E-02	0.293	
		753.82		2.072E+00	2.222E+00	3.988E+00	3.471E-01	0.519	
		414.70		1.987E-02	1.015E-01	1.688E-01	1.435E-02	0.118	
		666.50		3.724E-02	9.634E-02	1.663E-01	1.372E-02	0.224	
		695.00		-9.292E-03	1.039E-01	1.728E-01	1.451E-02	-0.054	
SB-126		697.00		9.848E-02	3.622E-01	6.183E-01	5.201E-02	0.159	
		720.70	*	-2.529E-02	2.300E-01	3.271E-01	2.792E-02	-0.077	
		856.80		-1.897E-01	7.846E-01	1.083E+00	9.926E-02	-0.175	

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127		252.40		2.234E+00	6.679E+00	1.126E+01	4.749E+00	0.198
		473.00		2.384E+00	2.320E+00	4.051E+00	5.275E-01	0.589
		685.70	*	9.218E-01	2.048E+00	3.540E+00	4.054E-01	0.260
		783.70		1.817E+00	4.879E+00	8.372E+00	1.069E+00	0.217
I-131		80.19		-6.012E+00	7.968E+00	1.098E+01	1.296E+00	-0.548
		284.31		-3.283E-02	2.109E+00	3.515E+00	3.909E-01	-0.009
		364.49	*	-7.149E-02	1.691E-01	2.717E-01	2.625E-02	-0.263
		636.99		1.243E+00	1.954E+00	3.328E+00	2.948E-01	0.374
TE-132		49.72		7.062E-02	6.951E+01	1.156E+02	1.781E+01	0.001
		111.76		3.493E+01	5.338E+01	8.910E+01	1.116E+01	0.392
		116.30		-2.510E+01	4.663E+01	7.391E+01	9.199E+00	-0.340
		228.16	*	-5.900E-02	1.193E+00	2.001E+00	3.487E-01	-0.029
BA-133		81.00		-1.485E-01	1.631E-01	2.035E-01	3.559E-02	-0.730
		276.40		5.153E-01	4.821E-01	8.345E-01	1.299E-01	0.617
		302.85		9.505E-03	1.834E-01	3.059E-01	4.402E-02	0.031
		356.01	*	-1.027E-03	6.135E-02	8.779E-02	1.186E-02	-0.012
		383.85		-7.247E-02	3.772E-01	6.133E-01	7.636E-02	-0.118
I-133		529.87	*	5.309E-04	3.772E-01	Half-Life	too short	
		875.33		-1.586E-01	3.772E-01	Half-Life	too short	
		1298.22		1.302E-01	3.772E-01	Half-Life	too short	
CS-134		563.25		-4.290E-02	4.763E-01	7.646E-01	6.623E-02	-0.056
		569.33		9.541E-02	2.589E-01	4.302E-01	3.736E-02	0.222
		604.72		-2.067E-04	5.105E-02	7.083E-02	6.013E-03	-0.003
		795.86	*	3.818E-02	5.528E-02	9.712E-02	8.705E-03	0.393
		801.95		3.831E-03	5.211E-01	8.377E-01	7.521E-02	0.005
		1365.19		1.120E+00	1.465E+00	2.686E+00	2.683E-01	0.417
CS-135		268.22	*	1.333E-01	2.013E-01	3.465E-01	4.157E-02	0.385
I-135		546.56		-1.915E+11	2.013E-01	Half-Life	too short	
		836.80		2.159E+11	2.013E-01	Half-Life	too short	
		1038.76		1.436E+11	2.013E-01	Half-Life	too short	
		1131.51		2.098E+10	2.013E-01	Half-Life	too short	
		1260.41	*	-4.202E+08	2.013E-01	Half-Life	too short	
		1457.56		1.658E+13	2.013E-01	Half-Life	too short	
		1678.03		-5.249E+10	2.013E-01	Half-Life	too short	
		1791.20		-9.491E+10	2.013E-01	Half-Life	too short	
CS-136		153.25		-2.333E-01	1.138E+00	1.818E+00	2.140E-01	-0.128
		176.60		8.485E-02	6.664E-01	1.076E+00	1.236E-01	0.079
		273.65		-7.084E-01	7.551E-01	1.199E+00	1.373E-01	-0.591
		340.55		5.692E-01	2.536E-01	4.045E-01	4.085E-02	1.407
		818.51		-5.995E-02	9.536E-02	1.484E-01	1.337E-02	-0.404
		1048.07	*	9.413E-02	1.422E-01	2.477E-01	2.291E-02	0.380
		1235.36		7.697E-01	9.655E-01	1.647E+00	1.949E-01	0.467
BA-137M		661.66	*	4.872E-02	4.340E-02	7.863E-02	6.464E-03	0.620
CS-137		661.66	*	5.147E-02	4.585E-02	8.306E-02	6.843E-03	0.620
CE-139		165.86	*	-2.468E-02	3.878E-02	6.032E-02	6.439E-03	-0.409
BA-140		162.66		6.450E-02	1.109E+00	1.791E+00	1.982E-01	0.036
		304.85		-2.054E+00	1.924E+00	2.839E+00	8.482E-01	-0.723
		423.72		6.090E-01	2.608E+00	4.333E+00	1.424E+00	0.141
		537.26	*	-1.424E-01	3.430E-01	5.303E-01	1.799E-01	-0.269

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LA-140		328.76		4.979E-01	4.212E-01	7.363E-01	7.721E-02	0.676
		487.02		1.507E-03	1.795E-01	2.925E-01	2.682E-02	0.005
		815.77		-1.501E-01	4.101E-01	6.560E-01	6.537E-02	-0.229
CE-141	1596.21	*		-4.546E-03	1.055E-01	1.733E-01	1.625E-02	-0.026
	145.44	*		-5.648E-02	8.352E-02	1.305E-01	1.349E-02	-0.433
CE-143	57.36			-1.692E-03	8.352E-02	Half-Life	too short	
	293.27	*		1.216E-03	8.352E-02	Half-Life	too short	
	664.57			3.918E-04	8.352E-02	Half-Life	too short	
CE-144	721.93			-1.275E-03	8.352E-02	Half-Life	too short	
	80.12			-2.522E+00	3.996E+00	5.553E+00	6.526E-01	-0.454
	133.52	*		-2.119E-01	2.659E-01	4.120E-01	6.648E-02	-0.514
PM-144	476.78			-3.090E-02	7.824E-02	1.234E-01	1.157E-02	-0.250
	618.01			-3.133E-03	4.185E-02	6.500E-02	5.633E-03	-0.048
	696.49	*		-4.185E-03	4.379E-02	7.276E-02	6.121E-03	-0.058
PR-144	696.51	*		1.839E-01	3.241E+00	5.449E+00	4.582E-01	0.034
	1489.16			7.971E+00	1.362E+01	2.487E+01	2.382E+00	0.320
PM-146	453.88	*		-3.447E-02	5.066E-02	7.811E-02	8.260E-03	-0.441
	633.25			-4.410E-01	1.808E+00	2.828E+00	1.079E+00	-0.156
	735.93			1.255E-01	1.904E-01	3.169E-01	8.880E-02	0.396
ND-147	747.24			-4.027E-02	1.194E-01	1.931E-01	2.822E-02	-0.209
	91.11			2.089E-01	6.926E-01	7.330E-01	9.077E-02	0.285
	319.41			1.299E-02	4.725E+00	7.846E+00	8.037E-01	0.002
PM-149	531.02	*		-2.665E-01	7.495E-01	1.178E+00	1.761E-01	-0.226
	285.90	*		3.524E+01	1.571E+02	2.650E+02	4.456E+01	0.133
EU-152	121.78			1.179E-02	9.212E-02	1.506E-01	1.684E-02	0.078
	244.70			3.823E-01	4.772E-01	7.314E-01	8.062E-02	0.523
	344.28	*		8.140E-02	1.614E-01	2.137E-01	2.175E-02	0.381
GD-153	778.90			-1.715E-01	3.001E-01	4.715E-01	4.160E-02	-0.364
	964.08			3.825E-01	3.925E-01	6.217E-01	5.718E-02	0.615
	1085.87			1.070E-01	5.453E-01	9.065E-01	7.893E-02	0.118
EU-154	1112.07			4.903E-02	4.409E-01	6.734E-01	5.762E-02	0.073
	1408.01			8.532E-02	2.342E-01	4.080E-01	3.931E-02	0.209
	69.67			-4.405E-01	3.029E+00	4.350E+00	4.965E-01	-0.101
EU-155	97.43	*		2.498E-04	1.247E-01	1.787E-01	1.972E-02	0.001
	103.18			-1.826E-01	1.503E-01	2.305E-01	2.437E-02	-0.792
	123.07			-2.720E-02	6.583E-02	1.048E-01	1.307E-02	-0.260
TB-160	723.31			6.011E-03	2.534E-01	3.659E-01	3.451E-02	0.016
	873.19			-1.118E-01	3.731E-01	5.995E-01	7.402E-02	-0.186
	996.26			-2.761E-01	5.084E-01	7.885E-01	1.397E-01	-0.350
EU-155	1004.73			-1.862E-01	2.738E-01	4.163E-01	4.985E-02	-0.447
	1274.44	*		1.361E-01	1.628E-01	2.857E-01	3.350E-02	0.476
	86.55			1.880E-01	1.977E-01	2.581E-01	3.184E-02	0.728
TB-160	105.31	*		1.216E-02	1.366E-01	2.238E-01	2.357E-02	0.054
	86.79			5.030E-01	5.291E-01	6.869E-01	8.446E-02	0.732
	197.04			1.556E-01	7.674E-01	1.239E+00	1.350E-01	0.126
TB-160	215.65			5.554E-01	9.954E-01	1.674E+00	1.842E-01	0.332
	298.57			1.844E-01	1.694E-01	2.589E-01	2.739E-02	0.712
	879.36	*		-1.446E-02	1.783E-01	2.925E-01	2.707E-02	-0.049
	962.29			6.670E-01	7.147E-01	1.132E+00	1.041E-01	0.589

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		966.15		1.034E+00	3.317E-01	5.983E-01	5.499E-02	1.728
		1177.93		4.149E-01	5.031E-01	8.765E-01	7.172E-02	0.473
		1271.85		-7.484E-01	1.022E+00	1.515E+00	1.372E-01	-0.494
		80.57		-5.152E-01	4.355E-01	5.815E-01	6.851E-02	-0.886
	+	184.41		9.223E-02	6.523E-02	8.584E-02	9.282E-03	1.074
		280.46		-8.099E-02	1.136E-01	1.822E-01	1.968E-02	-0.445
		410.95		2.358E-01	3.186E-01	5.468E-01	4.641E-02	0.431
TA-182		711.68	*	-4.556E-02	7.918E-02	1.263E-01	1.072E-02	-0.361
		752.31		2.381E-01	3.303E-01	5.830E-01	5.070E-02	0.408
		810.29		-8.212E-02	7.364E-02	1.087E-01	9.745E-03	-0.756
		67.75		3.315E-02	1.946E-01	3.094E-01	3.531E-02	0.107
		100.11		3.187E-01	2.504E-01	4.031E-01	4.351E-02	0.791
		152.43		8.762E-03	4.462E-01	7.206E-01	7.452E-02	0.012
		222.11		-2.032E-01	4.581E-01	7.551E-01	8.321E-02	-0.269
IR-192	+	1121.30		5.404E-01	3.734E-01	4.745E-01	4.033E-02	1.139
		1189.05		-1.672E-01	4.277E-01	6.679E-01	5.533E-02	-0.250
		1221.41	*	-1.270E-01	3.050E-01	4.769E-01	4.093E-02	-0.266
	+	1231.02		-6.500E-01	7.526E-01	1.129E+00	9.792E-02	-0.576
		295.96		9.162E-01	2.479E-01	3.348E-01	3.571E-02	2.736
		308.46		-4.931E-02	1.217E-01	1.973E-01	2.065E-02	-0.250
		316.51	*	-1.666E-02	4.650E-02	7.561E-02	7.796E-03	-0.220
HG-203		468.07		-9.597E-02	8.753E-02	1.302E-01	1.205E-02	-0.737
		70.83		8.386E-01	2.275E+00	3.355E+00	5.945E-01	0.250
		72.87		2.653E+00	1.430E+00	2.150E+00	3.713E-01	1.234
BI-207		279.20	*	-3.585E-02	5.392E-02	8.684E-02	9.543E-03	-0.413
		72.81		5.491E-01	3.139E-01	4.846E-01	5.550E-02	1.133
	+	74.97		7.334E-01	2.237E-01	3.338E-01	3.841E-02	2.197
		569.70		2.373E-02	3.962E-02	6.697E-02	5.737E-03	0.354
		1063.66	*	-1.087E-02	7.262E-02	1.170E-01	1.032E-02	-0.093
		1770.23		-2.637E-01	6.898E-01	8.562E-01	7.484E-02	-0.308
		46.54	*	1.296E+00	1.349E+01	2.205E+01	2.715E+00	0.059
PB-210		404.85	*	-1.425E+00	1.152E+00	1.355E+00	6.551E-01	-1.052
PB-211		427.09		-1.741E-01	1.967E+00	3.202E+00	1.481E+00	-0.054
BI-212		832.01		4.805E-01	1.293E+00	2.172E+00	1.128E+00	0.221
	+	727.33	*	2.401E+00	1.140E+00	1.484E+00	1.844E-01	1.618
		785.37		3.780E+00	3.633E+00	6.565E+00	5.813E-01	0.576
		1620.50		2.043E+00	2.859E+00	5.258E+00	4.894E-01	0.389
		271.23		3.328E-01	3.215E-01	5.585E-01	6.825E-02	0.596
		401.81	*	2.049E-01	4.996E-01	8.427E-01	1.245E-01	0.243
		81.07		-3.275E-01	3.666E-01	4.616E-01	5.454E-02	-0.710
RA-223		83.79		1.673E-02	2.372E-01	2.904E-01	3.491E-02	0.058
		94.87		8.016E-01	6.924E-01	1.046E+00	1.184E-01	0.767
		144.24		4.374E-02	9.013E-01	1.440E+00	1.591E-01	0.030
		154.21		7.451E-02	4.855E-01	7.886E-01	8.734E-02	0.094
		269.46		4.110E-01	2.415E-01	4.287E-01	4.730E-02	0.959
		323.87	*	-1.464E+00	9.248E-01	1.334E+00	2.421E-01	-1.098
	+	338.28		6.321E+00	2.436E+00	2.878E+00	3.737E-01	2.197
AC-227		79.69		1.248E+00	2.038E+00	3.012E+00	5.717E-01	0.414
		235.96		7.673E-01	2.651E-01	4.194E-01	5.212E-02	1.829

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-227		256.23	*	-1.281E-01	3.287E-01	5.389E-01	7.457E-02	-0.238
		299.98		1.541E+00	1.319E+00	2.013E+00	2.838E-01	0.766
		304.50		-2.433E+00	2.146E+00	3.269E+00	5.747E-01	-0.744
		334.37		8.981E-01	2.540E+00	3.752E+00	6.137E-01	0.239
		79.80		-2.019E-01	2.675E+00	3.843E+00	8.911E-01	-0.053
		235.96		7.673E-01	2.638E-01	4.194E-01	5.009E-02	1.829
		256.23	*	-1.281E-01	3.288E-01	5.389E-01	8.197E-02	-0.238
TH-229	+	299.98		1.541E+00	1.319E+00	2.013E+00	2.838E-01	0.766
		304.50		-2.433E+00	2.146E+00	3.269E+00	5.747E-01	-0.744
		334.37		8.981E-01	2.540E+00	3.752E+00	6.137E-01	0.239
		85.43		3.900E-01	4.102E-01	5.308E-01	6.457E-02	0.735
PA-231		88.47		1.090E-01	3.030E-01	3.224E-01	3.974E-02	0.338
	+	193.51	*	-3.109E-01	7.160E-01	1.120E+00	1.218E-01	-0.278
		210.85		1.818E+00	1.540E+00	1.999E+00	2.195E-01	0.909
TH-231		283.69	*	-1.238E-01	1.899E+00	3.157E+00	5.035E-01	-0.039
		301.36		8.547E-01	8.016E-01	1.286E+00	1.746E-01	0.665
PA-233		81.07		-3.275E-01	3.666E-01	4.616E-01	5.454E-02	-0.710
		83.79		1.673E-02	2.372E-01	2.904E-01	3.491E-02	0.058
		94.87		8.016E-01	6.924E-01	1.046E+00	1.184E-01	0.767
		144.24		4.374E-02	9.013E-01	1.440E+00	1.591E-01	0.030
		154.21		7.451E-02	4.855E-01	7.886E-01	8.734E-02	0.094
		269.46		4.110E-01	2.415E-01	4.287E-01	4.730E-02	0.959
	+	323.87	*	-1.464E+00	9.248E-01	1.334E+00	2.421E-01	-1.098
		338.28		6.321E+00	2.436E+00	2.878E+00	3.737E-01	2.197
		300.13		7.312E-01	6.018E-01	9.169E-01	1.470E-01	0.797
		311.90	*	-2.465E-04	8.591E-02	1.419E-01	1.501E-02	-0.002
PA-234	+	340.48		2.493E+00	1.182E+00	1.670E+00	4.094E-01	1.493
		94.67		3.981E-01	4.140E-01	3.948E-01	5.697E-02	1.008
		98.44		1.154E-01	1.505E-01	1.996E-01	1.121E-01	0.578
		111.00		1.247E-01	2.436E-01	4.046E-01	5.370E-02	0.308
PA-234M		131.20		9.454E-02	1.366E-01	2.276E-01	2.285E-02	0.415
		569.50		1.748E-01	3.533E-01	5.927E-01	5.077E-02	0.295
		733.00		8.842E-02	5.349E-01	7.845E-01	1.741E-01	0.113
		880.51		-2.542E-01	3.707E-01	5.625E-01	5.209E-02	-0.452
		883.24		2.561E-01	3.923E-01	6.225E-01	4.190E-01	0.411
		926.50		1.741E-01	2.179E-01	3.796E-01	9.683E-02	0.459
		946.00	*	-8.476E-02	3.780E-01	6.075E-01	1.158E-01	-0.140
		949.00		-1.659E-01	5.479E-01	8.733E-01	8.064E-02	-0.190
		766.42		1.063E+01	1.554E+01	2.557E+01	1.298E+01	0.416
		1001.03	*	4.248E+00	6.427E+00	1.080E+01	1.120E+00	0.393
TH-234		63.29	*	1.030E-01	2.467E+00	4.096E+00	8.121E-01	0.025
	+	92.59		1.478E+00	1.560E+00	1.717E+00	4.021E-01	0.861
U-235		89.96		-1.217E+00	2.034E+00	1.974E+00	5.136E-01	-0.616
	+	93.35		1.116E+00	1.181E+00	1.251E+00	3.043E-01	0.892
		143.76	*	6.398E-02	2.675E-01	4.307E-01	7.664E-02	0.149
U-238	+	163.33		1.515E-01	5.649E-01	9.196E-01	1.746E-01	0.165
		185.72		1.161E-01	8.210E-02	1.116E-01	1.208E-02	1.040
		205.31		-1.007E-01	7.237E-01	9.963E-01	1.929E-01	-0.101
		63.29	*	1.030E-01	2.467E+00	4.096E+00	8.121E-01	0.025

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.59		1.478E+00	1.531E+00	1.717E+00	1.996E-01	0.861
		99.53		1.832E-01	2.403E-01	3.669E-01	3.978E-02	0.499
		103.37		-4.274E-02	1.312E-01	2.111E-01	2.229E-02	-0.202
		106.12		-1.672E-02	1.106E-01	1.793E-01	1.866E-02	-0.093
		117.23	*	-3.711E-01	5.266E-01	8.278E-01	8.355E-02	-0.448
		228.18		-1.481E-02	2.882E-01	4.836E-01	5.335E-02	-0.031
		277.60		5.583E-02	2.325E-01	3.925E-01	4.250E-02	0.142
AM-241		59.54	*	-2.817E-01	3.112E-01	4.926E-01	5.782E-02	-0.572
CM-247		278.00		2.645E-01	9.800E-01	1.657E+00	1.794E-01	0.160
		287.50		-1.375E+00	1.772E+00	2.562E+00	2.747E-01	-0.537
CF-249		402.40	*	1.579E-02	4.514E-02	7.596E-02	6.424E-03	0.208
		252.80		4.247E-01	1.242E+00	2.114E+00	2.325E-01	0.201
		333.37		-2.248E-02	2.769E-01	3.957E-01	3.943E-02	-0.057
CF-251		388.16	*	1.906E-02	5.679E-02	9.148E-02	7.798E-03	0.208
		177.52	*	-1.268E-01	1.740E-01	2.602E-01	2.800E-02	-0.487
		227.38		3.539E-01	4.652E-01	8.056E-01	8.886E-02	0.439
		285.41		-5.542E-01	2.844E+00	4.693E+00	5.043E-01	-0.118

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112004      *
* Acquisition date   : 10-MAR-2010 13:21:46 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 02:00:01.11 Half life ratio : 8.000                *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248112004 Analyst initials: MXR1                  *
* Batch Number       : 959270 Sample Quantity : 1.1533E+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                                 *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.679E+01	4.255E+00	7.134E-01	0.000E+00
CD-109	1.587E+00	1.636E+00	2.191E+00	0.000E+00
SN-126	1.550E-01	1.597E-01	2.097E-01	0.000E+00
TL-208	4.187E-01	1.007E-01	6.933E-02	0.000E+00
BI-211	3.254E+00	6.218E-01	4.491E-01	0.000E+00
PB-212	1.516E+00	2.245E-01	1.266E-01	0.000E+00
BI-214	9.090E-01	1.974E-01	1.489E-01	0.000E+00
PB-214	1.181E+00	2.345E-01	1.633E-01	0.000E+00
RA-224	3.990E+00	1.261E+00	1.357E+00	0.000E+00
RA-226	9.090E-01	1.974E-01	1.489E-01	0.000E+00
AC-228	1.511E+00	4.242E-01	2.921E-01	0.000E+00
RA-228	1.511E+00	4.242E-01	2.921E-01	0.000E+00
TH-228	1.516E+00	2.245E-01	1.266E-01	0.000E+00
TH-232	1.511E+00	4.242E-01	2.921E-01	0.000E+00
NP-237	4.624E-01	4.860E-01	5.658E-01	0.000E+00
ANH-511	1.275E-01	8.315E-02	5.976E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-2.135E-01	3.931E-01	6.298E-01	0.000E+00 NOT IDENT.
NA-22	4.084E-02	5.683E-02	1.004E-01	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.405E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.823E-02	4.941E-02	8.041E-02	0.000E+00 FAIL ABUN
V-48	-6.183E-02	9.235E-02	1.439E-01	0.000E+00 NOT IDENT.
CR-51	-2.046E-01	4.924E-01	8.230E-01	0.000E+00 NOT IDENT.
MN-54	2.371E-02	4.948E-02	8.654E-02	0.000E+00 NOT IDENT.
CO-56	6.863E-04	4.649E-02	7.880E-02	0.000E+00 NOT IDENT.
CO-57	-6.003E-03	3.178E-02	5.330E-02	0.000E+00 NOT IDENT.
CO-58	-3.946E-02	4.687E-02	7.299E-02	0.000E+00 NOT IDENT.
FE-59	-3.129E-02	1.160E-01	1.874E-01	0.000E+00 NOT IDENT.

CO-60	-2.256E-02	4.784E-02	7.312E-02	0.000E+00	NOT IDENT.
ZN-65	5.450E-02	1.368E-01	2.047E-01	0.000E+00	NOT IDENT.
SE-75	-6.129E-02	5.529E-02	8.925E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.886E-02	9.836E-02	0.000E+00	NOT IDENT.
Y-88	-2.304E-02	3.898E-02	5.589E-02	0.000E+00	NOT IDENT.
Y-91	3.711E+00	2.942E+01	4.914E+01	0.000E+00	NOT IDENT.
NB-94	-2.299E-02	4.333E-02	7.127E-02	0.000E+00	NOT IDENT.
NB-95	8.202E-03	5.438E-02	9.314E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.956E-01	3.173E-01	0.000E+00	NOT IDENT.
ZR-95	-4.124E-02	8.409E-02	1.369E-01	0.000E+00	NOT IDENT.
MO-99	-1.288E+01	1.895E+01	3.029E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.990E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	4.848E-02	5.172E-02	9.162E-02	0.000E+00	FAIL ABUN
RH-106	3.485E-01	4.020E-01	7.058E-01	0.000E+00	NOT IDENT.
RU-106	3.485E-01	4.005E-01	7.058E-01	0.000E+00	NOT IDENT.
AG-108M	-2.865E-02	3.632E-02	5.751E-02	0.000E+00	NOT IDENT.
AG-110M	-1.031E-03	4.048E-02	6.946E-02	0.000E+00	NOT IDENT.
SN-113	-3.281E-02	5.908E-02	9.652E-02	0.000E+00	NOT IDENT.
CD-115	1.774E+01	1.917E+01	3.410E+01	0.000E+00	NOT IDENT.
SN-117M	1.238E-02	7.352E-02	1.239E-01	0.000E+00	NOT IDENT.
TE-123M	-6.165E-04	3.640E-02	6.085E-02	0.000E+00	NOT IDENT.
SB-124	-4.501E-02	8.809E-02	1.311E-01	0.000E+00	NOT IDENT.
SB-125	-3.937E-02	1.127E-01	1.853E-01	0.000E+00	NOT IDENT.
TE-125M	-8.478E+00	1.290E+01	2.125E+01	0.000E+00	NOT IDENT.
I-126	1.444E-01	2.775E-01	4.949E-01	0.000E+00	NOT IDENT.
SB-126	-2.529E-02	2.254E-01	3.281E-01	0.000E+00	NOT IDENT.
SB-127	9.218E-01	2.007E+00	3.553E+00	0.000E+00	NOT IDENT.
I-131	-7.149E-02	1.658E-01	2.744E-01	0.000E+00	NOT IDENT.
TE-132	-5.900E-02	1.169E+00	2.030E+00	0.000E+00	NOT IDENT.
BA-133	-1.027E-03	6.013E-02	8.866E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.554E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	3.818E-02	5.417E-02	9.732E-02	0.000E+00	NOT IDENT.
CS-135	1.333E-01	1.973E-01	3.508E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	9.857E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	9.413E-02	1.393E-01	2.475E-01	0.000E+00	NOT IDENT.
BA-137M	4.872E-02	4.253E-02	7.893E-02	0.000E+00	NOT IDENT.
CS-137	5.147E-02	4.493E-02	8.339E-02	0.000E+00	NOT IDENT.
CE-139	-2.468E-02	3.801E-02	6.136E-02	0.000E+00	NOT IDENT.
BA-140	-1.424E-01	3.361E-01	5.335E-01	0.000E+00	NOT IDENT.
LA-140	-4.546E-03	1.034E-01	1.725E-01	0.000E+00	NOT IDENT.
CE-141	-5.648E-02	8.185E-02	1.329E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.347E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.119E-01	2.606E-01	4.200E-01	0.000E+00	NOT IDENT.
PM-144	-4.185E-03	4.291E-02	7.301E-02	0.000E+00	NOT IDENT.
PR-144	1.839E-01	3.177E+00	5.467E+00	0.000E+00	NOT IDENT.
PM-146	-3.447E-02	4.965E-02	7.870E-02	0.000E+00	NOT IDENT.
ND-147	-2.665E-01	7.345E-01	1.185E+00	0.000E+00	NOT IDENT.
PM-149	3.524E+01	1.540E+02	2.682E+02	0.000E+00	NOT IDENT.
EU-152	8.140E-02	1.582E-01	2.159E-01	0.000E+00	NOT IDENT.
GD-153	2.498E-04	1.222E-01	1.827E-01	0.000E+00	NOT IDENT.
EU-154	1.361E-01	1.596E-01	2.850E-01	0.000E+00	NOT IDENT.
EU-155	1.216E-02	1.339E-01	2.287E-01	0.000E+00	FAIL ABUN
TB-160	-1.446E-02	1.748E-01	2.928E-01	0.000E+00	FAIL ABUN
HO-166M	-4.556E-02	7.760E-02	1.267E-01	0.000E+00	FAIL ABUN
TA-182	-1.270E-01	2.989E-01	4.758E-01	0.000E+00	FAIL ABUN
IR-192	-1.666E-02	4.557E-02	7.644E-02	0.000E+00	FAIL ABUN
HG-203	-3.585E-02	5.284E-02	8.791E-02	0.000E+00	NOT IDENT.
BI-207	-1.087E-02	7.117E-02	1.169E-01	0.000E+00	FAIL ABUN
PB-210	1.296E+00	1.322E+01	2.270E+01	0.000E+00	NOT IDENT.
PB-211	-1.425E+00	1.129E+00	1.366E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.117E+00	1.488E+00	0.000E+00	FAIL ABUN
RN-219	2.049E-01	4.896E-01	8.501E-01	0.000E+00	NOT IDENT.
RA-223	-1.464E+00	9.063E-01	1.348E+00	0.000E+00	FAIL ABUN
AC-227	-1.281E-01	3.221E-01	5.460E-01	0.000E+00	NOT IDENT.
TH-227	-1.281E-01	3.222E-01	5.460E-01	0.000E+00	NOT IDENT.
TH-229	-3.109E-01	7.017E-01	1.138E+00	0.000E+00	FAIL ABUN
PA-231	-1.238E-01	1.861E+00	3.196E+00	0.000E+00	NOT IDENT.
TH-231	-1.464E+00	9.063E-01	1.348E+00	0.000E+00	FAIL ABUN
PA-233	-2.465E-04	8.419E-02	1.434E-01	0.000E+00	NOT IDENT.
PA-234	-8.476E-02	3.704E-01	6.078E-01	0.000E+00	FAIL ABUN
PA-234M	4.248E+00	6.299E+00	1.080E+01	0.000E+00	NOT IDENT.
TH-234	1.030E-01	2.417E+00	4.204E+00	0.000E+00	FAIL ABUN
U-235	6.398E-02	2.621E-01	4.387E-01	0.000E+00	FAIL ABUN
U-238	1.030E-01	2.417E+00	4.204E+00	0.000E+00	FAIL ABUN
NP-239	-3.711E-01	5.161E-01	8.449E-01	0.000E+00	NOT IDENT.
AM-241	-2.817E-01	3.050E-01	5.060E-01	0.000E+00	NOT IDENT.
CM-247	1.579E-02	4.424E-02	7.662E-02	0.000E+00	NOT IDENT.
CF-249	1.906E-02	5.566E-02	9.231E-02	0.000E+00	NOT IDENT.

CF-251	-1.268E-01	1.705E-01	2.646E-01	0.000E+00 NOT IDENT.
--------	------------	-----------	-----------	----------------------

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112004.CNF;1
Sample date       : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:21:46
Sample ID        : G248112004 Sample quantity : 1.15330E+02 GRAM
Detector name    : GAM15 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.11 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 959270 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
K-40	1460.82	1164	10.66*	9.664E-01	3.679E+01	3.679E+01	11.80
CD-109	88.03	78	3.70*	4.409E+00	1.550E+00	1.587E+00	105.19
SN-126	64.28	-----	9.60	1.941E+00	-----	Line Not Found	-----
	86.94	78	8.90	4.409E+00	6.442E-01	6.442E-01	112.69
	87.57	78	37.00*	4.409E+00	1.550E-01	1.550E-01	105.19
TL-208	277.37	-----	6.60	3.705E+00	-----	Line Not Found	-----
	583.19	240	85.00*	2.192E+00	4.187E-01	4.187E-01	24.53
	860.56	44	12.50	1.574E+00	7.206E-01	7.206E-01	91.92
BI-211	72.87	-----	1.23	3.001E+00	-----	Line Not Found	-----
	351.06	406	12.92*	3.142E+00	3.254E+00	3.254E+00	19.50
PB-212	74.82	261	10.28	3.245E+00	2.544E+00	2.544E+00	32.02
	77.11	383	17.10	3.517E+00	2.072E+00	2.072E+00	23.58
	238.63	836	43.60*	4.114E+00	1.516E+00	1.516E+00	15.11
	300.09	-----	3.30	3.507E+00	-----	Line Not Found	-----
BI-214	609.32	269	45.49*	2.117E+00	9.090E-01	9.090E-01	22.16
	1120.29	64	14.92	1.226E+00	1.147E+00	1.147E+00	69.43
	1764.49	41	15.30	8.555E-01	1.022E+00	1.022E+00	61.17
PB-214	74.82	261	5.80	3.245E+00	4.510E+00	4.510E+00	31.52
	77.11	383	9.70	3.517E+00	3.653E+00	3.654E+00	24.98
	242.00	205	7.25	4.079E+00	2.256E+00	2.256E+00	32.77
	295.22	246	18.42	3.545E+00	1.228E+00	1.228E+00	27.81
	351.93	406	35.60*	3.142E+00	1.181E+00	1.181E+00	20.26
RA-224	240.99	205	4.10*	4.079E+00	3.990E+00	3.990E+00	32.25
RA-226	609.32	269	45.49*	2.117E+00	9.090E-01	9.090E-01	22.16
	1120.29	64	14.92	1.226E+00	1.147E+00	1.147E+00	69.43
	1764.49	41	15.30	8.555E-01	1.022E+00	1.022E+00	61.17
AC-228	338.32	178	11.27	3.227E+00	1.593E+00	1.593E+00	55.50
	911.20	179	25.80*	1.495E+00	1.511E+00	1.511E+00	28.64
	968.97	65	15.80	1.409E+00	9.529E-01	9.529E-01	70.99
RA-228	338.32	178	11.27	3.227E+00	1.593E+00	1.593E+00	55.50
	911.20	179	25.80*	1.495E+00	1.511E+00	1.511E+00	28.64
	968.97	65	15.80	1.409E+00	9.529E-01	9.529E-01	70.99

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	261	10.28	3.245E+00	2.544E+00	2.544E+00	30.53
	77.11	383	17.10	3.517E+00	2.072E+00	2.072E+00	23.58
	238.63	836	43.60*	4.114E+00	1.516E+00	1.516E+00	15.11
	300.09	-----	3.30	3.507E+00	-----	Line Not Found	-----
TH-232	338.32	178	11.27	3.227E+00	1.593E+00	1.593E+00	37.60
	911.20	179	25.80*	1.495E+00	1.511E+00	1.511E+00	28.64
	968.97	65	15.80	1.409E+00	9.529E-01	9.529E-01	70.99
NP-237	86.48	78	12.40*	4.409E+00	4.624E-01	4.624E-01	107.25
	95.86	-----	2.68	5.004E+00	-----	Line Not Found	-----
ANH-511	511.00	95	100.00*	2.418E+00	1.275E-01	1.275E-01	66.53

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G248112004

Page : 3
Acquisition date : 10-MAR-2010 13:21:46

Total number of lines in spectrum 21
Number of unidentified lines 0
Number of lines tentatively identified by NID 21 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.679E+01	3.679E+01	0.434E+01	11.80	
CD-109	461.40D	1.02	1.550E+00	1.587E+00	1.670E+00	105.19	
SN-126	2.30E+05Y	1.00	1.550E-01	1.550E-01	1.630E-01	105.19	
TL-208	1.41E+10Y	1.00	4.187E-01	4.187E-01	1.027E-01	24.53	
BI-211	7.04E+08Y	1.00	3.254E+00	3.254E+00	0.634E+00	19.50	
PB-212	1.41E+10Y	1.00	1.516E+00	1.516E+00	0.229E+00	15.11	
BI-214	1600.00Y	1.00	9.090E-01	9.090E-01	2.014E-01	22.16	
PB-214	1600.00Y	1.00	1.181E+00	1.181E+00	0.239E+00	20.26	
RA-224	1.41E+10Y	1.00	3.990E+00	3.990E+00	1.287E+00	32.25	
RA-226	1600.00Y	1.00	9.090E-01	9.090E-01	2.014E-01	22.16	
AC-228	1.41E+10Y	1.00	1.511E+00	1.511E+00	0.433E+00	28.64	
RA-228	1.41E+10Y	1.00	1.511E+00	1.511E+00	0.433E+00	28.64	
TH-228	1.41E+10Y	1.00	1.516E+00	1.516E+00	0.229E+00	15.11	
TH-232	1.41E+10Y	1.00	1.511E+00	1.511E+00	0.433E+00	28.64	
NP-237	2.14E+06Y	1.00	4.624E-01	4.624E-01	4.959E-01	107.25	
ANH-511	1.00E+09Y	1.00	1.275E-01	1.275E-01	0.849E-01	66.53	
Total Activity :			5.731E+01	5.735E+01			

Grand Total Activity : 5.731E+01 5.735E+01

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

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

Unidentified Energy Lines
Sample ID : G248112004

Page : 4
Acquisition date : 10-MAR-2010 13:21:46

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	93.20	93	473	1.32	185.33	180	12	1.29E-02	****	4.85E+00	T
0	185.79	99	281	1.46	370.49	366	10	1.38E-02	69.9	4.86E+00	T
0	209.38	70	229	1.17	417.67	412	10	9.78E-03	84.0	4.50E+00	T
0	727.51	90	65	1.40	1453.95	1446	15	1.25E-02	45.8	1.83E+00	T

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                          *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112004.CNF;1
* Acquisition date   : 10-MAR-2010 13:21:46   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 02:00:01.11           Half life ratio      : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 22-FEB-2010 12:00:00   Nuclide Library   : SOLID
* Sample ID          : G248112004             Analyst initials  : MXR1
* Batch Number       : 959270                 Sample Quantity   : 1.15330E+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       :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.679E+01	4.342E+00	7.162E-01	7.037E-02	51.367
CD-109	1.587E+00	1.670E+00	2.141E+00	2.658E-01	0.741
SN-126	1.550E-01	1.630E-01	2.049E-01	2.536E-02	0.756
TL-208	4.187E-01	1.027E-01	6.898E-02	6.309E-03	6.070
BI-211	3.254E+00	6.345E-01	4.446E-01	4.428E-02	7.319
PB-212	1.516E+00	2.291E-01	1.249E-01	1.492E-02	12.141
BI-214	9.090E-01	2.014E-01	1.482E-01	1.477E-02	6.134
PB-214	1.181E+00	2.393E-01	1.617E-01	1.838E-02	7.305
RA-224	3.990E+00	1.287E+00	1.338E+00	1.476E-01	2.981
RA-226	9.090E-01	2.014E-01	1.482E-01	1.477E-02	6.134
AC-228	1.511E+00	4.328E-01	2.919E-01	3.536E-02	5.177
RA-228	1.511E+00	4.328E-01	2.919E-01	3.536E-02	5.177
TH-228	1.516E+00	2.291E-01	1.249E-01	1.492E-02	12.141
TH-232	1.511E+00	4.328E-01	2.919E-01	3.536E-02	5.177
NP-237	4.624E-01	4.959E-01	5.528E-01	1.343E-01	0.836
ANH-511	1.275E-01	8.485E-02	5.938E-02	5.131E-03	2.148

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.135E-01		4.011E-01	6.254E-01	5.812E-02	-0.341

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	4.084E-02		5.799E-02	1.006E-01	9.143E-03	0.406
NA-24	7.842E-01		1.227E+00	Half-Life too short		
SC-46	-1.823E-02		5.042E-02	8.033E-02	7.465E-03	-0.227
V-48	-6.183E-02		9.424E-02	1.439E-01	1.315E-02	-0.430
CR-51	-2.046E-01		5.025E-01	8.141E-01	8.639E-02	-0.251
MN-54	2.371E-02		5.049E-02	8.640E-02	7.841E-03	0.274
CO-56	6.863E-04		4.744E-02	7.869E-02	7.180E-03	0.009
CO-57	-6.003E-03		3.243E-02	5.224E-02	5.262E-03	-0.115
CO-58	-3.946E-02		4.782E-02	7.285E-02	6.549E-03	-0.542
FE-59	-3.129E-02		1.183E-01	1.876E-01	1.750E-02	-0.167
CO-60	-2.256E-02		4.882E-02	7.334E-02	7.050E-03	-0.308
ZN-65	5.450E-02		1.396E-01	2.050E-01	1.752E-02	0.266
SE-75	-6.129E-02		5.642E-02	8.812E-02	9.663E-03	-0.696
SR-85	1.152E-01		6.006E-02	9.774E-02	8.444E-03	1.179
Y-88	-2.304E-02		3.978E-02	5.623E-02	4.736E-03	-0.410
Y-91	3.711E+00		3.002E+01	4.924E+01	4.151E+00	0.075
NB-94	-2.299E-02		4.421E-02	7.103E-02	5.997E-03	-0.324
NB-95	8.202E-03		5.549E-02	9.291E-02	8.140E-03	0.088
NB-95M	3.245E-01		1.996E-01	3.129E-01	3.770E-02	1.037
ZR-95	-4.124E-02		8.580E-02	1.366E-01	1.313E-02	-0.302
MO-99	-1.288E+01		1.933E+01	3.021E+01	4.762E+00	-0.426
TC-99M	-4.671E+11		3.566E+11	Half-Life too short		
RU-103	4.848E-02		5.277E-02	9.101E-02	1.272E-02	0.533
RH-106	3.485E-01		4.102E-01	7.026E-01	9.216E-02	0.496
RU-106	3.485E-01		4.087E-01	7.026E-01	5.905E-02	0.496
AG-108M	-2.865E-02		3.706E-02	5.705E-02	5.042E-03	-0.502
AG-110M	-1.031E-03		4.130E-02	6.919E-02	5.888E-03	-0.015
SN-113	-3.281E-02		6.028E-02	9.566E-02	8.308E-03	-0.343
CD-115	1.774E+01		1.956E+01	3.389E+01	2.925E+00	0.523
SN-117M	1.238E-02		7.502E-02	1.218E-01	1.277E-02	0.102
TE-123M	-6.165E-04		3.714E-02	5.979E-02	6.301E-03	-0.010
SB-124	-4.501E-02		8.989E-02	1.318E-01	1.241E-02	-0.342
SB-125	-3.937E-02		1.150E-01	1.838E-01	1.600E-02	-0.214
TE-125M	-8.478E+00		1.316E+01	2.081E+01	2.472E+00	-0.407
I-126	1.444E-01		2.832E-01	4.930E-01	4.066E-02	0.293
SB-126	-2.529E-02		2.300E-01	3.271E-01	2.792E-02	-0.077
SB-127	9.218E-01		2.048E+00	3.540E+00	4.054E-01	0.260
I-131	-7.149E-02		1.691E-01	2.717E-01	2.625E-02	-0.263
TE-132	-5.900E-02		1.193E+00	2.001E+00	3.487E-01	-0.029
BA-133	-1.027E-03		6.135E-02	8.779E-02	1.186E-02	-0.012
I-133	5.309E-04		7.928E-03	Half-Life too short		
CS-134	3.818E-02		5.528E-02	9.712E-02	8.705E-03	0.393
CS-135	1.333E-01		2.013E-01	3.465E-01	4.157E-02	0.385
I-135	-4.202E+08		5.029E+10	Half-Life too short		
CS-136	9.413E-02		1.422E-01	2.477E-01	2.291E-02	0.380
BA-137M	4.872E-02		4.340E-02	7.863E-02	6.464E-03	0.620
CS-137	5.147E-02		4.585E-02	8.306E-02	6.843E-03	0.620
CE-139	-2.468E-02		3.878E-02	6.032E-02	6.439E-03	-0.409

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-140	-1.424E-01		3.430E-01	5.303E-01	1.799E-01	-0.269
LA-140	-4.546E-03		1.055E-01	1.733E-01	1.625E-02	-0.026
CE-141	-5.648E-02		8.352E-02	1.305E-01	1.349E-02	-0.433
CE-143	1.216E-03		2.218E-04	Half-Life too short		
CE-144	-2.119E-01		2.659E-01	4.120E-01	6.648E-02	-0.514
PM-144	-4.185E-03		4.379E-02	7.276E-02	6.121E-03	-0.058
PR-144	1.839E-01		3.241E+00	5.449E+00	4.582E-01	0.034
PM-146	-3.447E-02		5.066E-02	7.811E-02	8.260E-03	-0.441
ND-147	-2.665E-01		7.495E-01	1.178E+00	1.761E-01	-0.226
PM-149	3.524E+01		1.571E+02	2.650E+02	4.456E+01	0.133
EU-152	8.140E-02		1.614E-01	2.137E-01	2.175E-02	0.381
GD-153	2.498E-04		1.247E-01	1.787E-01	1.972E-02	0.001
EU-154	1.361E-01		1.628E-01	2.857E-01	3.350E-02	0.476
EU-155	1.216E-02		1.366E-01	2.238E-01	2.357E-02	0.054
TB-160	-1.446E-02		1.783E-01	2.925E-01	2.707E-02	-0.049
HO-166M	-4.556E-02		7.918E-02	1.263E-01	1.072E-02	-0.361
TA-182	-1.270E-01		3.050E-01	4.769E-01	4.093E-02	-0.266
IR-192	-1.666E-02		4.650E-02	7.561E-02	7.796E-03	-0.220
HG-203	-3.585E-02		5.392E-02	8.684E-02	9.543E-03	-0.413
BI-207	-1.087E-02		7.262E-02	1.170E-01	1.032E-02	-0.093
PB-210	1.296E+00		1.349E+01	2.205E+01	2.715E+00	0.059
PB-211	-1.425E+00		1.152E+00	1.355E+00	6.551E-01	-1.052
BI-212	2.401E+00	+	1.140E+00	1.484E+00	1.844E-01	1.618
RN-219	2.049E-01		4.996E-01	8.427E-01	1.245E-01	0.243
RA-223	-1.464E+00		9.248E-01	1.334E+00	2.421E-01	-1.098
AC-227	-1.281E-01		3.287E-01	5.389E-01	7.457E-02	-0.238
TH-227	-1.281E-01		3.288E-01	5.389E-01	8.197E-02	-0.238
TH-229	-3.109E-01		7.160E-01	1.120E+00	1.218E-01	-0.278
PA-231	-1.238E-01		1.899E+00	3.157E+00	5.035E-01	-0.039
TH-231	-1.464E+00		9.248E-01	1.334E+00	2.421E-01	-1.098
PA-233	-2.465E-04		8.591E-02	1.419E-01	1.501E-02	-0.002
PA-234	-8.476E-02		3.780E-01	6.075E-01	1.158E-01	-0.140
PA-234M	4.248E+00		6.427E+00	1.080E+01	1.120E+00	0.393
TH-234	1.030E-01		2.467E+00	4.096E+00	8.121E-01	0.025
U-235	6.398E-02		2.675E-01	4.307E-01	7.664E-02	0.149
U-238	1.030E-01		2.467E+00	4.096E+00	8.121E-01	0.025
NP-239	-3.711E-01		5.266E-01	8.278E-01	8.355E-02	-0.448
AM-241	-2.817E-01		3.112E-01	4.926E-01	5.782E-02	-0.572
CM-247	1.579E-02		4.514E-02	7.596E-02	6.424E-03	0.208
CF-249	1.906E-02		5.679E-02	9.148E-02	7.798E-03	0.208
CF-251	-1.268E-01		1.740E-01	2.602E-01	2.800E-02	-0.487

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248112004          *
* Acquisition date   : 10-MAR-2010 13:21:46 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 02:00:01.11 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248112004 Analyst initials: MXR1                  *
* Batch Number       : 959270 Sample Quantity : 1.1533E+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 :                              *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.679E+01	4.255E+00	3.569E-01	2.171E+00
CD-109	1.587E+00	1.636E+00	1.096E+00	8.349E-01
SN-126	1.550E-01	1.597E-01	1.049E-01	8.149E-02
TL-208	4.187E-01	1.007E-01	3.469E-02	5.136E-02
BI-211	3.254E+00	6.218E-01	2.247E-01	3.172E-01
PB-212	1.516E+00	2.245E-01	6.334E-02	1.146E-01
BI-214	9.090E-01	1.974E-01	7.450E-02	1.007E-01
PB-214	1.181E+00	2.345E-01	8.170E-02	1.196E-01
RA-224	3.990E+00	1.261E+00	6.787E-01	6.434E-01
RA-226	9.090E-01	1.974E-01	7.450E-02	1.007E-01
AC-228	1.511E+00	4.242E-01	1.461E-01	2.164E-01
RA-228	1.511E+00	4.242E-01	1.461E-01	2.164E-01
TH-228	1.516E+00	2.245E-01	6.334E-02	1.146E-01
TH-232	1.511E+00	4.242E-01	1.461E-01	2.164E-01
NP-237	4.624E-01	4.860E-01	2.831E-01	2.480E-01
ANH-511	1.275E-01	8.315E-02	2.990E-02	4.243E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-2.135E-01	3.931E-01	3.151E-01	2.005E-01 NOT IDENT.
NA-22	4.084E-02	5.683E-02	5.023E-02	2.900E-02 NOT IDENT.
NA-24	7.842E+05	2.405E+06	0.000E+00	1.227E+06 SHORT HLIF
SC-46	-1.823E-02	4.941E-02	4.023E-02	2.521E-02 FAIL ABUN
V-48	-6.183E-02	9.235E-02	7.199E-02	4.712E-02 NOT IDENT.
CR-51	-2.046E-01	4.924E-01	4.117E-01	2.512E-01 NOT IDENT.
MN-54	2.371E-02	4.948E-02	4.330E-02	2.524E-02 NOT IDENT.
CO-56	6.863E-04	4.649E-02	3.942E-02	2.372E-02 NOT IDENT.
CO-57	-6.003E-03	3.178E-02	2.666E-02	1.621E-02 NOT IDENT.
CO-58	-3.946E-02	4.687E-02	3.651E-02	2.391E-02 NOT IDENT.
FE-59	-3.129E-02	1.160E-01	9.375E-02	5.916E-02 NOT IDENT.

CO-60	-2.256E-02	4.784E-02	3.658E-02	2.441E-02	NOT IDENT.
ZN-65	5.450E-02	1.368E-01	1.024E-01	6.978E-02	NOT IDENT.
SE-75	-6.129E-02	5.529E-02	4.465E-02	2.821E-02	NOT IDENT.
SR-85	1.152E-01	5.886E-02	4.921E-02	3.003E-02	NOT IDENT.
Y-88	-2.304E-02	3.898E-02	2.796E-02	1.989E-02	NOT IDENT.
Y-91	3.711E+00	2.942E+01	2.458E+01	1.501E+01	NOT IDENT.
NB-94	-2.299E-02	4.333E-02	3.565E-02	2.211E-02	NOT IDENT.
NB-95	8.202E-03	5.438E-02	4.660E-02	2.775E-02	NOT IDENT.
NB-95M	3.245E-01	1.956E-01	1.587E-01	9.978E-02	NOT IDENT.
ZR-95	-4.124E-02	8.409E-02	6.851E-02	4.290E-02	NOT IDENT.
MO-99	-1.288E+01	1.895E+01	1.516E+01	9.667E+00	NOT IDENT.
TC-99M	-4.671E+17	6.990E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	4.848E-02	5.172E-02	4.584E-02	2.639E-02	FAIL ABUN
RH-106	3.485E-01	4.020E-01	3.531E-01	2.051E-01	NOT IDENT.
RU-106	3.485E-01	4.005E-01	3.531E-01	2.044E-01	NOT IDENT.
AG-108M	-2.865E-02	3.632E-02	2.877E-02	1.853E-02	NOT IDENT.
AG-110M	-1.031E-03	4.048E-02	3.475E-02	2.065E-02	NOT IDENT.
SN-113	-3.281E-02	5.908E-02	4.829E-02	3.014E-02	NOT IDENT.
CD-115	1.774E+01	1.917E+01	1.706E+01	9.781E+00	NOT IDENT.
SN-117M	1.238E-02	7.352E-02	6.201E-02	3.751E-02	NOT IDENT.
TE-123M	-6.165E-04	3.640E-02	3.044E-02	1.857E-02	NOT IDENT.
SB-124	-4.501E-02	8.809E-02	6.558E-02	4.494E-02	NOT IDENT.
SB-125	-3.937E-02	1.127E-01	9.272E-02	5.752E-02	NOT IDENT.
TE-125M	-8.478E+00	1.290E+01	1.063E+01	6.581E+00	NOT IDENT.
I-126	1.444E-01	2.775E-01	2.476E-01	1.416E-01	NOT IDENT.
SB-126	-2.529E-02	2.254E-01	1.641E-01	1.150E-01	NOT IDENT.
SB-127	9.218E-01	2.007E+00	1.777E+00	1.024E+00	NOT IDENT.
I-131	-7.149E-02	1.658E-01	1.373E-01	8.457E-02	NOT IDENT.
TE-132	-5.900E-02	1.169E+00	1.016E+00	5.963E-01	NOT IDENT.
BA-133	-1.027E-03	6.013E-02	4.436E-02	3.068E-02	NOT IDENT.
I-133	5.309E+02	1.554E+04	0.000E+00	7.928E+03	SHORT HLIF
CS-134	3.818E-02	5.417E-02	4.869E-02	2.764E-02	NOT IDENT.
CS-135	1.333E-01	1.973E-01	1.755E-01	1.007E-01	NOT IDENT.
I-135	-4.202E+14	9.857E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	9.413E-02	1.393E-01	1.238E-01	7.108E-02	NOT IDENT.
BA-137M	4.872E-02	4.253E-02	3.949E-02	2.170E-02	NOT IDENT.
CS-137	5.147E-02	4.493E-02	4.172E-02	2.293E-02	NOT IDENT.
CE-139	-2.468E-02	3.801E-02	3.070E-02	1.939E-02	NOT IDENT.
BA-140	-1.424E-01	3.361E-01	2.669E-01	1.715E-01	NOT IDENT.
LA-140	-4.546E-03	1.034E-01	8.631E-02	5.274E-02	NOT IDENT.
CE-141	-5.648E-02	8.185E-02	6.651E-02	4.176E-02	NOT IDENT.
CE-143	1.216E+03	4.347E+02	0.000E+00	2.218E+02	SHORT HLIF
CE-144	-2.119E-01	2.606E-01	2.101E-01	1.329E-01	NOT IDENT.
PM-144	-4.185E-03	4.291E-02	3.652E-02	2.189E-02	NOT IDENT.
PR-144	1.839E-01	3.177E+00	2.735E+00	1.621E+00	NOT IDENT.
PM-146	-3.447E-02	4.965E-02	3.937E-02	2.533E-02	NOT IDENT.
ND-147	-2.665E-01	7.345E-01	5.928E-01	3.748E-01	NOT IDENT.
PM-149	3.524E+01	1.540E+02	1.342E+02	7.856E+01	NOT IDENT.
EU-152	8.140E-02	1.582E-01	1.080E-01	8.069E-02	NOT IDENT.
GD-153	2.498E-04	1.222E-01	9.140E-02	6.234E-02	NOT IDENT.
EU-154	1.361E-01	1.596E-01	1.426E-01	8.141E-02	NOT IDENT.
EU-155	1.216E-02	1.339E-01	1.144E-01	6.830E-02	FAIL ABUN
TB-160	-1.446E-02	1.748E-01	1.465E-01	8.917E-02	FAIL ABUN
HO-166M	-4.556E-02	7.760E-02	6.338E-02	3.959E-02	FAIL ABUN
TA-182	-1.270E-01	2.989E-01	2.381E-01	1.525E-01	FAIL ABUN
IR-192	-1.666E-02	4.557E-02	3.824E-02	2.325E-02	FAIL ABUN
HG-203	-3.585E-02	5.284E-02	4.398E-02	2.696E-02	NOT IDENT.
BI-207	-1.087E-02	7.117E-02	5.848E-02	3.631E-02	FAIL ABUN
PB-210	1.296E+00	1.322E+01	1.136E+01	6.743E+00	NOT IDENT.
PB-211	-1.425E+00	1.129E+00	6.836E-01	5.760E-01	NOT IDENT.
BI-212	2.401E+00	1.117E+00	7.447E-01	5.700E-01	FAIL ABUN
RN-219	2.049E-01	4.896E-01	4.253E-01	2.498E-01	NOT IDENT.
RA-223	-1.464E+00	9.063E-01	6.746E-01	4.624E-01	FAIL ABUN
AC-227	-1.281E-01	3.221E-01	2.731E-01	1.643E-01	NOT IDENT.
TH-227	-1.281E-01	3.222E-01	2.731E-01	1.644E-01	NOT IDENT.
TH-229	-3.109E-01	7.017E-01	5.691E-01	3.580E-01	FAIL ABUN
PA-231	-1.238E-01	1.861E+00	1.599E+00	9.496E-01	NOT IDENT.
TH-231	-1.464E+00	9.063E-01	6.746E-01	4.624E-01	FAIL ABUN
PA-233	-2.465E-04	8.419E-02	7.176E-02	4.296E-02	NOT IDENT.
PA-234	-8.476E-02	3.704E-01	3.041E-01	1.890E-01	FAIL ABUN
PA-234M	4.248E+00	6.299E+00	5.401E+00	3.214E+00	NOT IDENT.
TH-234	1.030E-01	2.417E+00	2.103E+00	1.233E+00	FAIL ABUN
U-235	6.398E-02	2.621E-01	2.195E-01	1.337E-01	FAIL ABUN
U-238	1.030E-01	2.417E+00	2.103E+00	1.233E+00	FAIL ABUN
NP-239	-3.711E-01	5.161E-01	4.227E-01	2.633E-01	NOT IDENT.
AM-241	-2.817E-01	3.050E-01	2.532E-01	1.556E-01	NOT IDENT.
CM-247	1.579E-02	4.424E-02	3.834E-02	2.257E-02	NOT IDENT.
CF-249	1.906E-02	5.566E-02	4.618E-02	2.840E-02	NOT IDENT.

CF-251	-1.268E-01	1.705E-01	1.324E-01	8.698E-02 NOT IDENT.
--------	------------	-----------	-----------	----------------------


```

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

```

ENERGY	MDA COUNTS
46.54	245.4196
49.72	246.7590
57.36	0.0000
59.54	299.2192
63.29	292.0963
63.29	292.0963
64.28	318.9305
67.75	298.8777
69.67	309.1402
70.83	293.8332
72.81	312.0449
72.87	312.0696
72.87	312.0696
74.82	324.5925
74.82	324.5925
74.82	324.5925
74.97	324.6574
77.11	325.5655
77.11	325.5655
77.11	325.5655
79.69	351.6173
79.80	370.8488
80.12	370.9989
80.19	371.0315
80.57	385.6103
81.00	376.2137
81.07	376.2467
81.07	376.2467
83.79	361.4584
83.79	361.4584
85.43	370.2335
86.48	393.2698
86.55	393.3040
86.79	427.2753
86.94	439.4495
87.57	500.3026
88.03	528.8373
88.47	500.8419
89.96	501.7274
91.11	502.4066
92.59	330.1039
92.59	330.1039
93.35	330.3943
94.67	263.6327
94.87	309.2695
94.87	309.2695
95.86	312.8777
97.43	275.8865
98.44	246.7814
99.53	265.8984
100.11	246.7716
103.18	326.5194
103.37	287.5612
105.31	274.7846
106.12	291.5031
109.28	313.1495
111.00	278.5094
111.76	269.4035
116.30	294.5977
117.23	293.8321
121.12	268.8194
121.78	251.2006
122.06	263.8336
123.07	268.2852
131.20	264.0400
133.52	303.7726
136.00	264.1541

136.47	265.3294
140.51	311.0386
140.51	0.0000
143.76	260.6629
144.24	268.2540
144.24	268.2540
145.44	295.2841
152.43	259.4034
153.25	262.8149
154.21	246.8592
154.21	246.8592
156.02	265.5904
158.56	255.3360
159.00	256.5101
162.66	255.1146
163.33	247.6512
165.86	261.2201
176.60	227.2275
177.52	246.0630
181.07	213.2507
184.41	233.2285
185.72	246.5025
193.51	259.0479
197.04	249.6826
205.31	233.2224
210.85	243.1318
215.65	216.8320
222.11	233.2074
227.38	205.7974
228.16	230.5027
228.18	230.5058
235.69	233.4673
235.96	233.5077
235.96	233.5077
238.63	219.2312
238.63	219.2312
240.99	219.5608
242.00	196.1081
244.70	184.1650
252.40	177.6481
252.80	177.6914
256.23	190.1224
256.23	190.1224
260.90	152.5288
264.66	181.7699
268.22	168.1436
269.46	155.1792
269.46	155.1792
271.23	183.4150
273.65	237.0918
276.40	171.7680
277.37	187.8296
277.60	183.1600
278.00	179.4426
279.20	210.5934
279.54	201.2310
280.46	195.6932
283.69	169.6619
284.31	166.8947
285.41	168.8854
285.90	152.8895
287.50	173.5733
293.27	0.0000
295.22	176.4593
295.96	210.3831
298.57	142.5714
299.98	139.5106
299.98	139.5106
300.09	139.5195
300.09	139.5195
300.13	139.5231
301.36	149.5888
302.85	163.8661
304.50	177.3630
304.50	177.3630
304.85	174.5358
308.46	144.2979
311.90	143.6078

316.51	156.4378
319.41	150.9113
320.08	156.7323
323.87	196.5467
323.87	196.5467
328.76	141.0240
333.37	158.1414
334.37	140.4634
334.37	140.4634
338.28	157.2440
338.28	157.2440
338.32	157.2480
338.32	157.2480
338.32	157.2480
340.48	134.4224
340.55	134.4267
344.28	121.6980
351.06	142.6245
351.93	142.6851
356.01	125.6717
364.49	138.6471
366.42	124.9970
383.85	120.0783
388.16	122.3078
388.63	113.3821
391.69	135.4538
400.66	101.0074
401.81	99.0580
402.40	97.0829
404.85	140.2751
410.95	107.5029
414.70	105.6691
423.72	101.0364
427.09	107.2551
427.87	106.2792
433.94	107.5722
453.88	95.1774
463.37	86.3040
468.07	114.2628
473.00	68.0762
476.78	87.8077
477.60	93.0026
487.02	84.0177
492.35	90.4314
497.08	78.1018
511.00	90.0402
514.00	89.0949
527.90	70.5970
529.87	0.0000
531.02	84.3945
537.26	79.3030
546.56	0.0000
563.25	89.6622
569.33	82.3689
569.50	79.1652
569.70	77.0309
583.19	72.0217
600.60	91.9229
602.73	82.9707
604.72	92.0515
609.32	88.9408
609.32	88.9408
610.33	68.7188
614.28	74.2424
618.01	74.9402
621.93	65.3555
621.93	65.3555
633.25	73.2551
635.95	53.6213
636.99	50.3563
645.85	52.6980
657.76	67.9628
661.66	58.8516
661.66	58.8516
664.57	0.0000
666.33	67.2271
666.50	67.2315
677.62	75.7856

685.70	72.2712
695.00	78.9837
696.49	79.9496
696.51	76.2310
697.00	76.2427
702.65	91.2769
706.68	60.6161
711.68	84.9904
720.70	78.6680
721.93	0.0000
722.78	70.6836
722.91	70.6867
723.31	78.7295
724.19	77.1429
727.33	72.2549
733.00	64.4545
735.93	56.4465
739.50	71.5747
747.24	67.0175
752.31	52.9375
753.82	47.2860
756.73	63.4177
763.94	75.8805
765.81	74.0232
766.42	71.1884
777.92	58.0897
778.90	60.0110
783.70	54.3699
785.37	44.8523
795.86	52.6423
801.95	57.5256
810.29	70.1514
810.76	63.4326
815.77	55.8205
818.51	60.6788
832.01	58.9684
834.85	63.8502
836.80	0.0000
846.77	51.4386
856.80	71.7346
860.56	63.4557
871.09	57.4362
873.19	62.5495
875.33	0.0000
879.36	54.8197
880.51	61.6901
883.24	43.1156
884.68	49.0133
889.28	57.9053
898.04	50.1658
911.20	55.2697
911.20	55.2697
911.20	55.2697
926.50	39.6305
937.49	64.5768
944.13	42.7900
946.00	52.7649
949.00	51.8085
962.29	44.5515
964.08	48.0000
966.15	41.1629
968.97	87.5317
968.97	87.5317
968.97	87.5317
983.53	56.2632
996.26	68.5271
1001.03	45.4001
1004.73	58.5664
1037.84	35.6152
1038.76	0.0000
1048.07	40.7992
1050.41	45.9247
1050.41	45.9247
1063.66	58.3452
1085.87	55.5513
1099.45	51.5910
1112.07	53.8049
1115.54	55.0285

1120.29	52.8635
1120.29	52.8635
1120.55	52.8677
1121.30	42.6563
1131.51	0.0000
1173.23	62.9004
1177.93	51.4205
1189.05	65.2140
1204.77	61.2049
1221.41	86.8280
1231.02	98.6687
1235.36	86.0131
1238.28	70.1250
1260.41	0.0000
1271.85	57.7617
1274.44	35.3163
1274.54	37.4581
1291.59	49.3953
1298.22	0.0000
1312.11	36.6563
1332.49	32.4707
1365.19	18.6698
1368.63	0.0000
1384.29	34.6617
1408.01	26.3457
1457.56	0.0000
1460.82	23.7488
1489.16	11.4568
1505.03	22.0197
1596.21	17.5028
1620.50	12.6917
1678.03	0.0000
1690.97	13.8247
1764.49	9.9895
1764.49	9.9895
1770.23	15.7473
1771.35	12.2500
1791.20	0.0000
1836.06	13.1283

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248112004

Total Uranium Activity	3.3588E-01	ug/g
Total Uranium Counting Unc.	7.1926E+00	ug/g
Total Uranium Tpu	3.6697E-06	ug/g
Total Uranium Mda	6.2586E+00	ug/g

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 959270                          SAMPLE ID   : G248112004
*  ANALYST       : MXR1                             DETECTOR    : GAM15
*  SAMPLE DATE   : 22-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 10-MAR-2010 13:21:46.88          SAMPLE ALQT  : 115.330 GRAM
*
*****

```

```

GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.440E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.453E+00
GROSS GAMMA MDA (pCi/GRAM )     : 2.659E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.287E+00

```

VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 15:22:58.45

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112005.CNF;1
Sample date        : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:22:32
Sample ID          : G248112005      Sample quantity   : 1.32520E+02 GRAM
Detector name      : GAM19           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.48 0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials  : MXR1
Abundance limit    : 75.00000         Sensitivity       : 5.00000
Batch ID           : 959270           Detector SN#      :
Matrix Spike ID    :                  LCS ID           : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	5	75.01*	339	562	1.36	149.87	145	16	4.70E-02	13.8	7.45E-01
2	5	77.23	616	410	1.23	154.29	145	16	8.55E-02	7.1	
3	0	86.89	108	598	1.40	173.61	171	8	1.51E-02	40.0	
4	4	90.07	101	194	0.89	179.96	178	14	1.41E-02	19.7	1.55E+00
5	4	92.86*	324	424	1.33	185.53	178	14	4.50E-02	13.0	
6	0	185.65*	229	301	1.50	370.98	365	12	3.18E-02	17.2	
7	0	208.55	105	371	1.54	416.75	409	14	1.46E-02	40.0	
8	2	238.52*	1199	232	1.28	476.65	472	19	1.66E-01	3.7	2.19E+00
9	2	241.41	274	280	1.80	482.42	472	19	3.81E-02	16.5	
10	0	270.17*	109	143	1.88	539.90	536	9	1.52E-02	22.4	
11	0	294.94*	319	183	1.70	589.41	585	10	4.43E-02	9.8	
12	0	338.27*	206	175	1.56	676.02	670	13	2.86E-02	15.1	
13	0	351.73	605	152	1.57	702.92	697	13	8.40E-02	5.9	
14	0	463.09	63	69	0.98	925.52	922	8	8.76E-03	26.0	
15	0	510.91*	136	149	1.62	1021.12	1013	17	1.89E-02	25.1	
16	0	583.09*	365	101	1.54	1165.43	1156	16	5.07E-02	8.2	
17	0	609.31*	456	76	1.46	1217.86	1211	14	6.34E-02	6.3	
18	0	727.41	107	72	1.28	1454.00	1448	13	1.48E-02	19.0	
19	0	768.91	50	34	1.69	1536.97	1533	9	6.93E-03	26.1	
20	0	796.13	56	70	3.32	1591.40	1583	16	7.72E-03	36.6	
21	0	861.05*	73	45	2.29	1721.22	1715	14	1.02E-02	23.1	
22	0	911.51	244	66	1.86	1822.14	1815	15	3.39E-02	9.7	
23	1	964.76	66	43	1.96	1928.65	1924	23	9.19E-03	22.0	8.20E-01
24	1	969.04*	132	47	2.01	1937.19	1924	23	1.84E-02	14.5	
25	0	1120.53	124	55	1.84	2240.20	2232	17	1.72E-02	16.5	
26	0	1461.05*	1103	15	2.04	2921.46	2912	17	1.53E-01	3.2	
27	0	1510.03	23	10	1.22	3019.47	3012	13	3.22E-03	34.6	
28	0	1588.58	27	12	2.13	3176.65	3170	12	3.77E-03	31.9	
29	0	1764.77*	103	4	1.89	3529.26	3522	16	1.44E-02	11.1	

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112005.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:22:32
 Sample ID : G248112005 Sample quantity : 132.52 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA19 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.48 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	*	2.509E+01	2.449E+00	5.041E-01	3.754E-02	49.774
CD-109	+	88.03	*	1.401E+00	1.129E+00	1.384E+00	1.240E-01	1.012
SN-126		64.28		2.651E-01	4.923E-01	8.197E-01	1.197E-01	0.323
	+	86.94		5.686E-01	5.125E-01	5.641E-01	2.336E-01	1.008
	+	87.57	*	1.368E-01	1.102E-01	1.379E-01	1.230E-02	0.992
TL-208		277.37		3.650E-01	3.746E-01	6.553E-01	7.062E-02	0.557
	+	583.19	*	4.765E-01	8.419E-02	5.567E-02	3.777E-03	8.560
	+	860.56		9.052E-01	4.255E-01	4.026E-01	3.605E-02	2.248
BI-211		72.87		1.043E+01	3.798E+00	5.931E+00	4.648E-01	1.758
	+	351.06	*	3.499E+00	4.667E-01	2.970E-01	1.897E-02	11.780
PB-212	+	74.82		1.834E+00	5.553E-01	5.730E-01	7.195E-02	3.201
	+	77.11		1.921E+00	3.135E-01	3.298E-01	2.664E-02	5.825
	+	238.63	*	1.552E+00	1.606E-01	9.357E-02	6.813E-03	16.587
		300.09		1.503E+00	8.866E-01	1.430E+00	1.201E-01	1.051
BI-214	+	609.32	*	1.153E+00	1.713E-01	1.016E-01	8.047E-03	11.351
	+	1120.29		1.612E+00	5.511E-01	4.659E-01	4.289E-02	3.460
	+	1764.49		1.860E+00	4.290E-01	2.938E-01	1.781E-02	6.331
PB-214	+	74.82		3.250E+00	9.671E-01	1.016E+00	1.140E-01	3.201
	+	77.11		3.387E+00	6.192E-01	5.814E-01	6.713E-02	5.825
	+	242.00		2.153E+00	7.316E-01	5.686E-01	4.610E-02	3.786
	+	295.22		1.137E+00	2.434E-01	2.418E-01	2.111E-02	4.704
	+	351.93	*	1.270E+00	1.833E-01	1.080E-01	9.113E-03	11.756
RA-224	+	240.99	*	3.807E+00	1.275E+00	1.002E+00	5.679E-02	3.798
RA-226	+	609.32	*	1.153E+00	1.713E-01	1.016E-01	8.047E-03	11.351
	+	1120.29		1.612E+00	5.511E-01	4.659E-01	4.289E-02	3.460
	+	1764.49		1.860E+00	4.290E-01	2.938E-01	1.781E-02	6.331
AC-228	+	338.32		1.326E+00	6.782E-01	3.488E-01	1.438E-01	3.801
	+	911.20	*	1.533E+00	3.479E-01	2.335E-01	2.722E-02	6.566
	+	968.97		1.436E+00	5.427E-01	4.014E-01	9.719E-02	3.576
RA-228	+	338.32		1.326E+00	6.782E-01	3.488E-01	1.438E-01	3.801
	+	911.20	*	1.533E+00	3.479E-01	2.335E-01	2.722E-02	6.566
	+	968.97		1.436E+00	5.427E-01	4.014E-01	9.719E-02	3.576
TH-228	+	74.82		1.834E+00	5.263E-01	5.730E-01	4.598E-02	3.201
	+	77.11		1.921E+00	3.135E-01	3.298E-01	2.664E-02	5.825

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	+	238.63	*	1.552E+00	1.606E-01	9.357E-02	6.813E-03	16.587
		300.09		1.503E+00	1.268E+00	1.430E+00	8.706E-01	1.051
	+	338.32		1.326E+00	4.089E-01	3.488E-01	2.017E-02	3.801
	+	911.20	*	1.533E+00	3.479E-01	2.335E-01	2.722E-02	6.566
U-235	+	968.97		1.436E+00	5.427E-01	4.014E-01	9.719E-02	3.576
	+	89.96		1.322E+00	6.139E-01	1.417E+00	3.490E-01	0.933
	+	93.35		2.565E+00	8.890E-01	7.099E-01	1.630E-01	3.614
		143.76	*	1.686E-01	2.043E-01	3.352E-01	5.234E-02	0.503
NP-237		163.33		-3.074E-01	4.529E-01	6.991E-01	1.161E-01	-0.440
	+	185.72		1.928E-01	6.705E-02	6.370E-02	3.404E-03	3.026
		205.31		-5.727E-02	5.470E-01	7.606E-01	1.284E-01	-0.075
	+	86.48	*	4.081E-01	3.397E-01	3.943E-01	8.968E-02	1.035
ANH-511		95.86		-7.425E-01	1.089E+00	1.487E+00	3.532E-01	-0.499
	+	511.00	*	1.357E-01	6.845E-02	4.526E-02	2.671E-03	2.997

---- 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	*	1.258E-01	3.077E-01	5.237E-01	3.553E-02	0.240
NA-22		1274.54	*	-1.188E-02	4.235E-02	6.830E-02	4.556E-03	-0.174
NA-24		1368.63	*	-1.544E+00	4.235E-02	Half-Life too short		
SC-46		889.28	*	5.396E-03	3.315E-02	5.450E-02	4.736E-03	0.099
V-48	+	1120.55		2.749E-01	9.213E-02	1.295E-01	8.165E-03	2.123
		944.13		-2.190E-01	8.435E-01	1.317E+00	1.110E-01	-0.166
		983.53	*	2.309E-02	7.251E-02	1.202E-01	9.667E-03	0.192
		1312.11		-3.516E-02	7.748E-02	1.216E-01	8.652E-03	-0.289
CR-51		320.08	*	2.719E-01	3.767E-01	6.543E-01	4.228E-02	0.416
MN-54		834.85	*	3.493E-02	3.681E-02	6.430E-02	5.115E-03	0.543
CO-56		846.77	*	-2.287E-02	4.020E-02	6.139E-02	4.980E-03	-0.373
		1037.84		-9.370E-02	3.050E-01	4.968E-01	3.947E-02	-0.189
		1238.28		1.407E-01	9.091E-02	1.675E-01	1.100E-02	0.840
		1771.35		-7.224E-02	2.282E-01	2.849E-01	1.717E-02	-0.254
		122.06	*	-1.196E-02	2.527E-02	4.030E-02	2.405E-03	-0.297
CO-57		136.47		1.118E-01	2.004E-01	3.329E-01	2.193E-02	0.336
CO-58		810.76	*	1.413E-02	3.803E-02	6.375E-02	4.885E-03	0.222
FE-59		1099.45	*	-3.261E-02	8.507E-02	1.369E-01	1.027E-02	-0.238
CO-60		1291.59		-3.435E-03	1.236E-01	2.015E-01	1.669E-02	-0.017
		1173.23		-7.317E-04	4.243E-02	7.062E-02	3.870E-03	-0.010
		1332.49	*	2.522E-02	3.808E-02	6.768E-02	4.987E-03	0.373
		1115.54	*	8.247E-02	9.134E-02	1.472E-01	9.410E-03	0.560
ZN-65		121.12		-6.826E-02	1.322E-01	2.104E-01	1.937E-02	-0.324
SE-75		136.00		2.445E-02	3.882E-02	6.467E-02	3.726E-03	0.378
		264.66	*	1.551E-02	4.487E-02	7.052E-02	4.102E-03	0.220
		279.54		-3.619E-02	1.030E-01	1.704E-01	1.068E-02	-0.212
		400.66		4.452E-02	2.402E-01	4.046E-01	3.619E-02	0.110
		514.00	*	9.665E-02	4.352E-02	7.362E-02	4.347E-03	1.313
SR-85		898.04		-1.387E-02	3.969E-02	6.163E-02	5.455E-03	-0.225
Y-88		1836.06	*	8.474E-03	2.787E-02	4.851E-02	2.769E-03	0.175

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-91	1204.77	*		7.490E+00	2.137E+01	3.662E+01	2.138E+00	0.205
NB-94	702.65	*		6.029E-03	3.037E-02	5.038E-02	3.173E-03	0.120
	871.09			-1.483E-02	3.569E-02	5.531E-02	4.669E-03	-0.268
NB-95	765.81	*		5.614E-02	4.626E-02	7.391E-02	5.223E-03	0.759
NB-95M	235.69	*		3.863E-01	1.628E-01	2.537E-01	1.886E-02	1.523
ZR-95	724.19			1.404E-01	1.016E-01	1.646E-01	1.232E-02	0.853
	756.73	*		-2.582E-03	6.956E-02	1.126E-01	9.063E-03	-0.023
MO-99	140.51			-2.114E+01	2.714E+01	4.183E+01	9.546E+00	-0.505
	181.07			1.081E+01	2.555E+01	3.681E+01	6.449E+00	0.294
	366.42			-7.750E+01	1.124E+02	1.793E+02	1.021E+01	-0.432
	739.50	*		7.412E+00	1.520E+01	2.571E+01	3.809E+00	0.288
	777.92			-2.760E-01	4.451E+01	7.221E+01	5.213E+00	-0.004
TC-99M	140.51	*		-3.858E+11	4.451E+01	Half-Life too short		
RU-103	497.08	*		-4.873E-03	3.551E-02	5.805E-02	7.235E-03	-0.084
	610.33			1.210E+01	2.377E+00	2.752E+00	4.153E-01	4.396
RH-106	621.93	*		-4.034E-02	2.968E-01	4.808E-01	5.611E-02	-0.084
	1050.41			1.443E+00	2.823E+00	4.916E+00	3.574E-01	0.294
RU-106	621.93	*		-4.034E-02	2.968E-01	4.808E-01	2.835E-02	-0.084
	1050.41			1.443E+00	2.823E+00	4.916E+00	3.574E-01	0.294
AG-108M	433.94	*		-2.730E-02	2.831E-02	4.386E-02	2.691E-03	-0.622
	614.28			5.641E-03	3.635E-02	5.252E-02	3.315E-03	0.107
	722.91			4.086E-02	3.870E-02	6.137E-02	4.236E-03	0.666
AG-110M	657.76	*		-1.473E-02	3.332E-02	5.242E-02	3.253E-03	-0.281
	677.62			8.158E-02	2.985E-01	4.986E-01	3.169E-02	0.164
	706.68			6.704E-02	2.035E-01	3.407E-01	2.276E-02	0.197
	763.94			1.600E-01	1.651E-01	2.599E-01	1.905E-02	0.616
	884.68			-9.056E-03	4.255E-02	6.696E-02	5.961E-03	-0.135
	937.49			-3.761E-02	1.155E-01	1.798E-01	1.583E-02	-0.209
	1384.29			6.106E-02	1.443E-01	2.515E-01	1.904E-02	0.243
	1505.03			7.426E-03	2.327E-01	3.319E-01	2.339E-02	0.022
SN-113	391.69	*		2.024E-02	4.160E-02	7.138E-02	4.259E-03	0.284
CD-115	260.90			-8.109E+01	1.824E+02	2.835E+02	1.628E+01	-0.286
	492.35			1.628E+01	4.757E+01	8.061E+01	4.733E+00	0.202
	527.90	*		-1.071E+01	1.565E+01	2.451E+01	1.451E+00	-0.437
SN-117M	156.02			1.715E+00	2.466E+00	4.100E+00	2.197E-01	0.418
	158.56	*		1.288E-02	5.832E-02	9.522E-02	5.068E-03	0.135
TE-123M	159.00	*		-1.775E-02	2.931E-02	4.616E-02	2.493E-03	-0.384
SB-124	602.73			-7.083E-03	4.487E-02	5.951E-02	3.523E-03	-0.119
	645.85			-1.352E-01	4.785E-01	7.642E-01	5.017E-02	-0.177
	722.78			4.188E-01	3.932E-01	6.242E-01	4.243E-02	0.671
	1690.97	*		-2.129E-02	7.414E-02	1.146E-01	7.878E-03	-0.186
SB-125	427.87	*		1.667E-02	8.797E-02	1.479E-01	8.797E-03	0.113
	463.37			5.569E-01	2.917E-01	5.011E-01	3.376E-02	1.111
	600.60			1.404E-01	1.790E-01	2.892E-01	1.971E-02	0.486
	635.95			2.152E-02	2.481E-01	4.092E-01	2.808E-02	0.053
TE-125M	109.28	*		-7.346E+00	1.019E+01	1.613E+01	1.455E+00	-0.455
I-126	388.63			-1.136E-01	1.645E-01	2.620E-01	1.462E-02	-0.433
	666.33	*		2.386E-01	2.357E-01	4.137E-01	2.431E-02	0.577
	753.82			1.096E+00	1.847E+00	3.154E+00	2.182E-01	0.347

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	414.70			1.665E-02	7.648E-02	1.289E-01	7.294E-03	0.129
	666.50			7.898E-02	8.086E-02	1.416E-01	8.324E-03	0.558
	695.00			3.711E-02	7.845E-02	1.329E-01	8.249E-03	0.279
	697.00			-8.432E-02	2.659E-01	4.218E-01	2.628E-02	-0.200
	720.70	*		-2.242E-02	1.734E-01	2.402E-01	1.564E-02	-0.093
SB-127	856.80			1.214E-01	5.182E-01	7.469E-01	6.160E-02	0.163
	252.40			-1.444E+00	5.173E+00	8.080E+00	3.321E+00	-0.179
	473.00			-1.008E+00	1.848E+00	2.936E+00	3.336E-01	-0.343
	685.70	*		7.013E-01	1.598E+00	2.644E+00	2.626E-01	0.265
	783.70			3.973E+00	4.161E+00	7.250E+00	8.514E-01	0.548
I-131	80.19			-6.833E-01	5.487E+00	7.850E+00	6.560E-01	-0.087
	284.31			1.594E-02	1.498E+00	2.522E+00	1.626E-01	0.006
	364.49	*		8.987E-02	1.164E-01	2.031E-01	1.298E-02	0.442
TE-132	636.99			-4.757E-01	1.562E+00	2.488E+00	1.638E-01	-0.191
	49.72			-3.463E+01	2.024E+01	3.074E+01	3.133E+00	-1.127
	111.76			-3.029E+01	4.160E+01	6.573E+01	6.448E+00	-0.461
	116.30			9.174E-01	3.522E+01	5.744E+01	5.523E+00	0.016
BA-133	228.16	*		-1.263E+00	9.690E-01	1.425E+00	2.081E-01	-0.886
	81.00			-1.477E-01	1.087E-01	1.431E-01	2.199E-02	-1.032
	276.40			5.602E-01	3.657E-01	6.189E-01	7.786E-02	0.905
	302.85			-8.504E-02	1.384E-01	2.249E-01	2.567E-02	-0.378
	356.01	*		-5.260E-03	4.485E-02	6.456E-02	7.256E-03	-0.081
I-133	383.85			7.690E-02	2.722E-01	4.616E-01	4.874E-02	0.167
	529.87	*		2.476E-03	2.722E-01	Half-Life	too short	
	875.33			-4.628E-02	2.722E-01	Half-Life	too short	
	1298.22			-8.868E-02	2.722E-01	Half-Life	too short	
CS-134	563.25			-1.311E+00	4.372E-01	5.608E-01	3.396E-02	-2.338
	569.33			7.497E-01	2.570E-01	4.807E-01	2.935E-02	1.560
	604.72			-3.037E-02	3.686E-02	4.737E-02	2.818E-03	-0.641
	795.86	*		1.057E-01	7.780E-02	8.892E-02	6.686E-02	1.189
	801.95			2.061E-01	4.263E-01	6.352E-01	4.815E-02	0.325
CS-135	1365.19			9.013E-01	1.216E+00	2.185E+00	1.703E-01	0.412
	268.22	*		2.614E-01	1.720E-01	2.757E-01	2.104E-02	0.948
I-135	546.56			5.440E+10	1.720E-01	Half-Life	too short	
	836.80			1.620E+11	1.720E-01	Half-Life	too short	
	1038.76			-1.508E+11	1.720E-01	Half-Life	too short	
	1131.51			-4.356E+10	1.720E-01	Half-Life	too short	
	1260.41	*		6.144E+08	1.720E-01	Half-Life	too short	
	1457.56			3.727E+12	1.720E-01	Half-Life	too short	
	1678.03			-2.989E+10	1.720E-01	Half-Life	too short	
	1791.20			7.985E+09	1.720E-01	Half-Life	too short	
	153.25			9.907E-01	9.064E-01	1.528E+00	1.186E-01	0.648
CS-136	176.60			-1.414E-01	5.292E-01	8.434E-01	5.598E-02	-0.168
	273.65			-3.503E-01	6.039E-01	8.519E-01	5.811E-02	-0.411
	340.55			3.886E-01	1.695E-01	2.834E-01	1.773E-02	1.371
	818.51			1.673E-02	7.460E-02	1.234E-01	9.566E-03	0.136
	1048.07	*		-2.363E-03	1.261E-01	2.109E-01	1.630E-02	-0.011
BA-137M	1235.36			2.521E-01	6.025E-01	1.033E+00	1.046E-01	0.244
	661.66	*		-5.394E-03	3.595E-02	5.807E-02	3.382E-03	-0.093

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-137		661.66	*	-5.699E-03	3.798E-02	6.135E-02	3.587E-03	-0.093
CE-139		165.86	*	-4.045E-03	3.004E-02	4.825E-02	2.519E-03	-0.084
BA-140		162.66		-5.590E-01	8.702E-01	1.353E+00	8.343E-02	-0.413
		304.85		-1.208E+00	1.390E+00	2.156E+00	6.160E-01	-0.560
		423.72		-8.533E-01	1.994E+00	3.191E+00	1.029E+00	-0.267
		537.26	*	-5.814E-02	2.572E-01	4.151E-01	1.384E-01	-0.140
LA-140		328.76		4.448E-01	3.182E-01	5.664E-01	3.687E-02	0.785
		487.02		-3.698E-02	1.386E-01	2.248E-01	1.488E-02	-0.164
		815.77		-1.672E-01	3.417E-01	5.269E-01	4.648E-02	-0.317
		1596.21	*	-6.854E-02	9.032E-02	1.210E-01	8.189E-03	-0.566
CE-141		145.44	*	7.624E-02	6.319E-02	1.073E-01	6.178E-03	0.711
CE-143		57.36		-8.484E-05	6.319E-02	Half-Life	too short	
		293.27	*	1.233E-03	6.319E-02	Half-Life	too short	
		664.57		1.944E-03	6.319E-02	Half-Life	too short	
		721.93		1.349E-03	6.319E-02	Half-Life	too short	
CE-144		80.12		3.870E-02	2.752E+00	3.963E+00	3.284E-01	0.010
		133.52	*	-9.596E-02	1.971E-01	3.128E-01	4.335E-02	-0.307
PM-144		476.78		1.723E-02	6.097E-02	1.029E-01	7.094E-03	0.167
		618.01		1.089E-02	3.053E-02	5.145E-02	3.215E-03	0.212
		696.49	*	7.287E-03	3.219E-02	5.350E-02	3.333E-03	0.136
PR-144		696.51	*	5.137E-01	2.408E+00	3.997E+00	2.489E-01	0.129
		1489.16		-2.654E+00	8.336E+00	1.274E+01	9.031E-01	-0.208
PM-146		453.88	*	-5.413E-03	3.967E-02	6.517E-02	5.504E-03	-0.083
		633.25		4.409E-01	1.319E+00	2.204E+00	8.304E-01	0.200
		735.93		1.970E-02	1.411E-01	2.323E-01	6.387E-02	0.085
		747.24		5.196E-02	9.681E-02	1.642E-01	2.234E-02	0.316
ND-147	+	91.11		4.542E-01	1.838E-01	6.048E-01	5.589E-02	0.751
		319.41		2.870E+00	3.528E+00	6.155E+00	3.579E-01	0.466
		531.02	*	-1.028E-01	5.691E-01	9.252E-01	1.256E-01	-0.111
PM-149		285.90	*	1.445E+02	1.197E+02	2.102E+02	2.980E+01	0.687
EU-152		121.78		-2.532E-02	7.194E-02	1.153E-01	8.894E-03	-0.220
		244.70		1.064E-01	3.616E-01	5.147E-01	2.925E-02	0.207
		344.28	*	3.944E-02	1.121E-01	1.486E-01	9.663E-03	0.265
		778.90		-1.695E-03	2.549E-01	4.135E-01	2.990E-02	-0.004
	+	964.08		7.725E-01	3.458E-01	5.812E-01	4.787E-02	1.329
		1085.87		1.411E-01	3.762E-01	6.504E-01	4.425E-02	0.217
		1112.07		2.981E-01	3.048E-01	5.113E-01	3.289E-02	0.583
		1408.01		1.528E-01	1.743E-01	3.177E-01	2.308E-02	0.481
GD-153		69.67		-1.154E-01	1.951E+00	2.808E+00	2.161E-01	-0.041
		97.43	*	2.156E-02	9.678E-02	1.402E-01	1.091E-02	0.154
		103.18		-1.441E-01	1.167E-01	1.810E-01	1.310E-02	-0.796
EU-154		123.07		1.579E-02	5.134E-02	8.456E-02	8.011E-03	0.187
		723.31		1.947E-01	1.786E-01	2.836E-01	2.172E-02	0.687
		873.19		-7.374E-04	2.764E-01	4.462E-01	5.259E-02	-0.002
		996.26		-9.648E-02	3.756E-01	5.867E-01	1.005E-01	-0.164
		1004.73		-1.147E-01	1.961E-01	3.102E-01	3.427E-02	-0.370
		1274.44	*	-2.642E-02	1.195E-01	1.939E-01	1.934E-02	-0.136
EU-155	+	86.55		1.659E-01	1.337E-01	1.903E-01	1.695E-02	0.872
		105.31	*	6.946E-02	1.091E-01	1.822E-01	1.310E-02	0.381

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	+	86.79		4.440E-01	3.577E-01	5.085E-01	4.498E-02	0.873
		197.04		9.245E-02	5.482E-01	8.888E-01	4.816E-02	0.104
		215.65		4.336E-01	7.774E-01	1.279E+00	7.078E-02	0.339
		298.57		1.481E-01	1.314E-01	2.057E-01	1.196E-02	0.720
		879.36	*	-6.089E-02	1.301E-01	1.991E-01	1.703E-02	-0.306
	+	962.29		8.105E-01	6.133E-01	9.808E-01	8.095E-02	0.826
		966.15		5.445E-01	2.437E-01	5.128E-01	4.213E-02	1.062
		1177.93		1.178E-02	3.326E-01	5.562E-01	3.077E-02	0.021
		1271.85		-1.062E-01	6.466E-01	1.055E+00	6.988E-02	-0.101
		80.57		-2.805E-01	3.011E-01	4.133E-01	3.439E-02	-0.679
HO-166M	+	184.41		1.532E-01	5.327E-02	6.725E-02	3.587E-03	2.278
		280.46		-1.240E-01	8.162E-02	1.265E-01	7.326E-03	-0.980
		410.95		1.529E-01	2.416E-01	4.166E-01	2.351E-02	0.367
		711.68	*	1.789E-02	6.305E-02	1.050E-01	6.727E-03	0.170
		752.31		-6.314E-02	2.784E-01	4.437E-01	3.061E-02	-0.142
		810.29		2.856E-02	5.642E-02	9.573E-02	7.307E-03	0.298
		67.75		-9.194E-02	1.122E-01	1.794E-01	1.369E-02	-0.512
		100.11		2.574E-01	1.814E-01	3.103E-01	2.332E-02	0.829
TA-182		152.43		1.872E-02	3.540E-01	5.744E-01	3.108E-02	0.033
		222.11		-1.412E-01	3.646E-01	5.735E-01	3.195E-02	-0.246
		1121.30		7.599E-01	2.547E-01	3.539E-01	2.228E-02	2.147
	+	1189.05		1.049E-02	2.871E-01	4.799E-01	2.715E-02	0.022
		1221.41	*	-1.994E-01	1.805E-01	2.679E-01	1.615E-02	-0.744
		1231.02		-3.338E-01	4.659E-01	7.263E-01	4.461E-02	-0.460
		295.96		8.484E-01	1.732E-01	2.784E-01	1.645E-02	3.047
IR-192	+	308.46		-1.245E-02	8.787E-02	1.464E-01	8.611E-03	-0.085
		316.51	*	-2.663E-03	3.404E-02	5.688E-02	3.323E-03	-0.047
		468.07		3.263E-02	7.359E-02	1.103E-01	7.406E-03	0.296
		70.83		-4.789E-01	1.574E+00	2.239E+00	3.494E-01	-0.214
HG-203		72.87		2.632E+00	1.017E+00	1.498E+00	2.263E-01	1.758
		279.20	*	6.574E-03	3.689E-02	6.265E-02	3.830E-03	0.105
BI-207	+	72.81		5.919E-01	2.161E-01	3.379E-01	2.647E-02	1.752
		74.97		5.286E-01	1.516E-01	2.418E-01	1.922E-02	2.186
		569.70		8.252E-02	4.001E-02	7.251E-02	4.304E-03	1.138
		1063.66	*	-3.694E-02	5.205E-02	8.137E-02	5.778E-03	-0.454
		1770.23		1.571E-01	3.890E-01	6.186E-01	3.731E-02	0.254
PB-210		46.54	*	1.521E+00	2.921E+00	4.898E+00	3.692E-01	0.310
PB-211		404.85	*	-6.427E-01	7.452E-01	1.062E+00	5.090E-01	-0.605
		427.09		-8.983E-02	1.465E+00	2.424E+00	1.111E+00	-0.037
BI-212	+	832.01		-8.496E-01	1.078E+00	1.461E+00	7.558E-01	-0.582
		727.33	*	2.129E+00	8.441E-01	1.202E+00	1.341E-01	1.771
		785.37		5.976E-01	3.190E+00	5.257E+00	3.845E-01	0.114
		1620.50		8.822E-01	2.287E+00	3.899E+00	2.604E-01	0.226
RN-219	+	271.23		6.245E-01	2.846E-01	4.344E-01	3.480E-02	1.438
		401.81	*	2.565E-01	3.782E-01	6.536E-01	8.729E-02	0.392
RA-223		81.07		-3.390E-01	2.422E-01	3.235E-01	2.704E-02	-1.048
		83.79		-4.663E-02	1.695E-01	2.014E-01	1.728E-02	-0.231
		94.87		1.551E+00	5.501E-01	8.658E-01	6.973E-02	1.792
		144.24		1.008E+00	6.787E-01	1.146E+00	8.016E-02	0.880

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		154.21		3.962E-01	3.942E-01	6.629E-01	4.392E-02	0.598
	+	269.46		4.853E-01	2.196E-01	3.326E-01	2.002E-02	1.459
		323.87	*	-9.678E-01	6.821E-01	1.031E+00	1.662E-01	-0.939
	+	338.28		5.261E+00	1.682E+00	2.210E+00	2.263E-01	2.381
		79.69		2.907E+00	1.466E+00	2.167E+00	3.696E-01	1.342
		235.96		1.097E+00	2.289E-01	3.681E-01	2.956E-02	2.981
		256.23	*	8.279E-02	2.596E-01	4.174E-01	4.251E-02	0.198
		299.98		1.682E+00	9.839E-01	1.577E+00	1.734E-01	1.066
		304.50		-1.911E+00	1.615E+00	2.503E+00	3.818E-01	-0.764
		334.37		-6.552E-01	1.832E+00	2.590E+00	3.683E-01	-0.253
TH-227		79.80		2.766E+00	1.886E+00	2.751E+00	5.953E-01	1.006
		235.96		1.097E+00	2.258E-01	3.681E-01	2.673E-02	2.981
		256.23	*	8.279E-02	2.596E-01	4.174E-01	5.002E-02	0.198
		299.98		1.682E+00	9.839E-01	1.577E+00	1.734E-01	1.066
		304.50		-1.911E+00	1.615E+00	2.503E+00	3.818E-01	-0.764
TH-229	+	334.37		-6.552E-01	1.832E+00	2.590E+00	3.683E-01	-0.253
		85.43		3.443E-01	2.773E-01	3.833E-01	3.343E-02	0.898
		88.47		4.676E-01	2.134E-01	2.498E-01	2.220E-02	1.872
		193.51	*	4.544E-03	4.963E-01	7.990E-01	4.311E-02	0.006
PA-231		210.85		6.548E-01	1.035E+00	1.505E+00	8.287E-02	0.435
		283.69	*	-1.103E+00	1.373E+00	2.204E+00	2.891E-01	-0.500
TH-231		301.36		6.548E-01	5.897E-01	9.866E-01	1.021E-01	0.664
		81.07		-3.390E-01	2.422E-01	3.235E-01	2.704E-02	-1.048
PA-233		83.79		-4.663E-02	1.695E-01	2.014E-01	1.728E-02	-0.231
		94.87		1.551E+00	5.501E-01	8.658E-01	6.973E-02	1.792
		144.24		1.008E+00	6.787E-01	1.146E+00	8.016E-02	0.880
	+	154.21		3.962E-01	3.942E-01	6.629E-01	4.392E-02	0.598
		269.46		4.853E-01	2.196E-01	3.326E-01	2.002E-02	1.459
		323.87	*	-9.678E-01	6.821E-01	1.031E+00	1.662E-01	-0.939
	+	338.28		5.261E+00	1.682E+00	2.210E+00	2.263E-01	2.381
		300.13		7.431E-01	4.478E-01	7.111E-01	9.525E-02	1.045
		311.90	*	-1.549E-04	5.851E-02	9.820E-02	6.065E-03	-0.002
		340.48		1.709E+00	7.937E-01	1.171E+00	2.717E-01	1.459
PA-234		94.67		8.403E-01	2.192E-01	3.303E-01	3.974E-02	2.544
		98.44		8.706E-02	1.143E-01	1.548E-01	8.615E-02	0.562
		111.00		-4.125E-02	1.851E-01	2.991E-01	3.221E-02	-0.138
		131.20		-4.778E-02	1.067E-01	1.702E-01	9.796E-03	-0.281
		569.50		9.889E-01	3.507E-01	6.549E-01	3.887E-02	1.510
		733.00		8.115E-02	4.106E-01	5.913E-01	1.272E-01	0.137
		880.51		1.397E-01	2.458E-01	4.209E-01	3.607E-02	0.332
		883.24		4.778E-02	2.525E-01	4.128E-01	2.775E-01	0.116
		926.50		-1.230E-02	1.632E-01	2.606E-01	6.584E-02	-0.047
		946.00	*	-3.141E-01	2.952E-01	4.088E-01	7.630E-02	-0.769
PA-234M		949.00		5.347E-01	4.349E-01	7.800E-01	6.535E-02	0.686
		766.42		1.443E+01	1.473E+01	2.022E+01	1.021E+01	0.714
		1001.03	*	5.437E+00	4.471E+00	8.212E+00	7.645E-01	0.662
		63.29	*	8.500E-01	1.306E+00	2.175E+00	3.889E-01	0.391
TH-234		92.59		3.396E+00	1.154E+00	1.423E+00	3.127E-01	2.386
U-238	+	63.29	*	8.500E-01	1.306E+00	2.175E+00	3.889E-01	0.391

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

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	92.59	3.396E+00	9.250E-01	1.423E+00	1.185E-01	2.386
NP-239		99.53	2.323E-01	1.722E-01	2.853E-01	2.159E-02	0.814
		103.37	-1.117E-01	1.051E-01	1.643E-01	1.187E-02	-0.680
		106.12	7.133E-02	8.713E-02	1.463E-01	1.024E-02	0.488
	*	117.23	5.291E-02	3.987E-01	6.529E-01	4.074E-02	0.081
		228.18	-3.051E-01	2.305E-01	3.443E-01	1.930E-02	-0.886
		277.60	1.569E-01	1.701E-01	2.981E-01	1.725E-02	0.526
AM-241	*	59.54	-1.080E-01	1.491E-01	2.394E-01	1.971E-02	-0.451
CM-247		278.00	4.981E-01	7.158E-01	1.243E+00	7.196E-02	0.401
		287.50	1.771E-01	1.183E+00	2.005E+00	1.164E-01	0.088
	*	402.40	2.557E-02	3.501E-02	6.085E-02	3.413E-03	0.420
CF-249		252.80	-1.381E-02	9.603E-01	1.533E+00	8.758E-02	-0.009
		333.37	-8.622E-02	1.976E-01	2.781E-01	1.610E-02	-0.310
	*	388.16	-1.816E-02	3.744E-02	6.050E-02	3.378E-03	-0.300
CF-251	*	177.52	-3.995E-02	1.354E-01	2.156E-01	1.141E-02	-0.185
		227.38	-1.026E-01	3.709E-01	5.862E-01	3.283E-02	-0.175
		285.41	1.699E+00	2.074E+00	3.626E+00	2.103E-01	0.469

VAX/VMS Nuclide Identification Report Generated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*                               *                                               *
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112005          *
* Acquisition date   : 10-MAR-2010 13:22:32 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 02:00:01.48                      Half life ratio  : 8.000    *
*****
*                               SAMPLE DATA                               *
*                               *                                               *
* Sample date       : 22-FEB-2010 12:00:00 Nuclide Library : SOLID              *
* Sample ID         : G248112005                      Analyst initials: MXR1        *
* Batch Number      : 959270                          Sample Quantity : 1.3252E+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     :                *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.509E+01	2.400E+00	5.048E-01	0.000E+00
CD-109	1.401E+00	1.106E+00	1.454E+00	0.000E+00
SN-126	1.368E-01	1.080E-01	1.449E-01	0.000E+00
TL-208	4.765E-01	8.250E-02	5.666E-02	0.000E+00
BI-211	3.499E+00	4.574E-01	3.049E-01	0.000E+00
PB-212	1.552E+00	1.574E-01	9.669E-02	0.000E+00
BI-214	1.153E+00	1.679E-01	1.033E-01	0.000E+00
PB-214	1.270E+00	1.796E-01	1.109E-01	0.000E+00
RA-224	3.807E+00	1.249E+00	1.036E+00	0.000E+00
RA-226	1.153E+00	1.679E-01	1.033E-01	0.000E+00
AC-228	1.533E+00	3.410E-01	2.358E-01	0.000E+00
RA-228	1.533E+00	3.410E-01	2.358E-01	0.000E+00
TH-228	1.552E+00	1.574E-01	9.669E-02	0.000E+00
TH-232	1.533E+00	3.410E-01	2.358E-01	0.000E+00
U-235	1.686E-01	2.002E-01	3.493E-01	0.000E+00
NP-237	4.081E-01	3.329E-01	4.143E-01	0.000E+00
ANH-511	1.357E-01	6.709E-02	4.617E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.258E-01	3.016E-01	5.349E-01	0.000E+00 NOT IDENT.
NA-22	-1.188E-02	4.150E-02	6.857E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.143E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	5.396E-03	3.249E-02	5.506E-02	0.000E+00 FAIL ABUN
V-48	2.309E-02	7.106E-02	1.213E-01	0.000E+00 NOT IDENT.
CR-51	2.719E-01	3.692E-01	6.728E-01	0.000E+00 NOT IDENT.
MN-54	3.493E-02	3.607E-02	6.503E-02	0.000E+00 NOT IDENT.
CO-56	-2.287E-02	3.940E-02	6.207E-02	0.000E+00 NOT IDENT.
CO-57	-1.196E-02	2.477E-02	4.212E-02	0.000E+00 NOT IDENT.
CO-58	1.413E-02	3.726E-02	6.451E-02	0.000E+00 NOT IDENT.

FE-59	-3.261E-02	8.337E-02	1.378E-01	0.000E+00	NOT IDENT.
CO-60	2.522E-02	3.732E-02	6.789E-02	0.000E+00	NOT IDENT.
ZN-65	8.247E-02	8.951E-02	1.481E-01	0.000E+00	NOT IDENT.
SE-75	1.551E-02	4.397E-02	7.274E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.265E-02	7.510E-02	0.000E+00	NOT IDENT.
Y-88	8.474E-03	2.731E-02	4.838E-02	0.000E+00	NOT IDENT.
Y-91	7.490E+00	2.094E+01	3.680E+01	0.000E+00	NOT IDENT.
NB-94	6.029E-03	2.977E-02	5.111E-02	0.000E+00	NOT IDENT.
NB-95	5.614E-02	4.534E-02	7.487E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.596E-01	2.622E-01	0.000E+00	NOT IDENT.
ZR-95	-2.582E-03	6.817E-02	1.141E-01	0.000E+00	NOT IDENT.
MO-99	7.412E+00	1.489E+01	2.606E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.911E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.873E-03	3.480E-02	5.924E-02	0.000E+00	FAIL ABUN
RH-106	-4.034E-02	2.909E-01	4.888E-01	0.000E+00	NOT IDENT.
RU-106	-4.034E-02	2.908E-01	4.888E-01	0.000E+00	NOT IDENT.
AG-108M	-2.730E-02	2.775E-02	4.487E-02	0.000E+00	NOT IDENT.
AG-110M	-1.473E-02	3.266E-02	5.324E-02	0.000E+00	NOT IDENT.
SN-113	2.024E-02	4.077E-02	7.315E-02	0.000E+00	NOT IDENT.
CD-115	-1.071E+01	1.534E+01	2.499E+01	0.000E+00	NOT IDENT.
SN-117M	1.288E-02	5.715E-02	9.907E-02	0.000E+00	NOT IDENT.
TE-123M	-1.775E-02	2.873E-02	4.803E-02	0.000E+00	NOT IDENT.
SB-124	-2.129E-02	7.265E-02	1.144E-01	0.000E+00	NOT IDENT.
SB-125	1.667E-02	8.621E-02	1.514E-01	0.000E+00	FAIL ABUN
TE-125M	-7.346E+00	9.987E+00	1.689E+01	0.000E+00	NOT IDENT.
I-126	2.386E-01	2.310E-01	4.201E-01	0.000E+00	NOT IDENT.
SB-126	-2.242E-02	1.700E-01	2.436E-01	0.000E+00	NOT IDENT.
SB-127	7.013E-01	1.566E+00	2.684E+00	0.000E+00	NOT IDENT.
I-131	8.987E-02	1.140E-01	2.084E-01	0.000E+00	NOT IDENT.
TE-132	-1.263E+00	9.496E-01	1.474E+00	0.000E+00	NOT IDENT.
BA-133	-5.260E-03	4.395E-02	6.626E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.200E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.625E-02	9.001E-02	0.000E+00	FAIL ABUN
CS-135	2.614E-01	1.685E-01	2.844E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.824E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.363E-03	1.235E-01	2.125E-01	0.000E+00	NOT IDENT.
BA-137M	-5.394E-03	3.523E-02	5.897E-02	0.000E+00	NOT IDENT.
CS-137	-5.699E-03	3.722E-02	6.230E-02	0.000E+00	NOT IDENT.
CE-139	-4.045E-03	2.944E-02	5.017E-02	0.000E+00	NOT IDENT.
BA-140	-5.814E-02	2.521E-01	4.231E-01	0.000E+00	NOT IDENT.
LA-140	-6.854E-02	8.851E-02	1.210E-01	0.000E+00	NOT IDENT.
CE-141	7.624E-02	6.193E-02	1.118E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.701E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-9.596E-02	1.932E-01	3.264E-01	0.000E+00	NOT IDENT.
PM-144	7.287E-03	3.155E-02	5.429E-02	0.000E+00	NOT IDENT.
PR-144	5.137E-01	2.359E+00	4.056E+00	0.000E+00	NOT IDENT.
PM-146	-5.413E-03	3.888E-02	6.662E-02	0.000E+00	NOT IDENT.
ND-147	-1.028E-01	5.577E-01	9.431E-01	0.000E+00	FAIL ABUN
PM-149	1.445E+02	1.173E+02	2.165E+02	0.000E+00	NOT IDENT.
EU-152	3.944E-02	1.099E-01	1.526E-01	0.000E+00	FAIL ABUN
GD-153	2.156E-02	9.485E-02	1.471E-01	0.000E+00	NOT IDENT.
EU-154	-2.642E-02	1.171E-01	1.946E-01	0.000E+00	NOT IDENT.
EU-155	6.946E-02	1.069E-01	1.909E-01	0.000E+00	FAIL ABUN
TB-160	-6.089E-02	1.275E-01	2.012E-01	0.000E+00	FAIL ABUN
HO-166M	1.789E-02	6.179E-02	1.065E-01	0.000E+00	FAIL ABUN
TA-182	-1.994E-01	1.769E-01	2.692E-01	0.000E+00	FAIL ABUN
IR-192	-2.663E-03	3.336E-02	5.850E-02	0.000E+00	FAIL ABUN
HG-203	6.574E-03	3.615E-02	6.457E-02	0.000E+00	NOT IDENT.
BI-207	-3.694E-02	5.101E-02	8.195E-02	0.000E+00	FAIL ABUN
PB-210	1.521E+00	2.862E+00	5.199E+00	0.000E+00	NOT IDENT.
PB-211	-6.427E-01	7.303E-01	1.087E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.272E-01	1.219E+00	0.000E+00	FAIL ABUN
RN-219	2.565E-01	3.706E-01	6.695E-01	0.000E+00	FAIL ABUN
RA-223	-9.678E-01	6.685E-01	1.060E+00	0.000E+00	FAIL ABUN
AC-227	8.279E-02	2.544E-01	4.308E-01	0.000E+00	NOT IDENT.
TH-227	8.279E-02	2.544E-01	4.308E-01	0.000E+00	NOT IDENT.
TH-229	4.544E-03	4.863E-01	8.286E-01	0.000E+00	FAIL ABUN
PA-231	-1.103E+00	1.346E+00	2.271E+00	0.000E+00	NOT IDENT.
TH-231	-9.678E-01	6.685E-01	1.060E+00	0.000E+00	FAIL ABUN
PA-233	-1.549E-04	5.734E-02	1.010E-01	0.000E+00	NOT IDENT.
PA-234	-3.141E-01	2.893E-01	4.125E-01	0.000E+00	NOT IDENT.
PA-234M	5.437E+00	4.381E+00	8.280E+00	0.000E+00	NOT IDENT.
TH-234	8.500E-01	1.279E+00	2.297E+00	0.000E+00	FAIL ABUN
U-238	8.500E-01	1.279E+00	2.297E+00	0.000E+00	FAIL ABUN
NP-239	5.291E-02	3.907E-01	6.828E-01	0.000E+00	NOT IDENT.
AM-241	-1.080E-01	1.461E-01	2.531E-01	0.000E+00	NOT IDENT.
CM-247	2.557E-02	3.431E-02	6.233E-02	0.000E+00	NOT IDENT.
CF-249	-1.816E-02	3.669E-02	6.201E-02	0.000E+00	NOT IDENT.

CF-251	-3.995E-02	1.327E-01	2.239E-01	0.000E+00 NOT IDENT.
--------	------------	-----------	-----------	----------------------

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112005.CNF;1
Sample date        : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:22:32
Sample ID          : G248112005          Sample quantity  : 1.32520E+02 GRAM
Detector name      : GAM19              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.48  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity      : 5.00000
Batch ID           : 959270              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
K-40	1460.82	1103	10.66*	1.168E+00	2.509E+01	2.509E+01	9.76
CD-109	88.03	108	3.70*	6.072E+00	1.368E+00	1.401E+00	80.55
SN-126	64.28	-----	9.60	3.765E+00	-----	Line Not Found	-----
	86.94	108	8.90	6.072E+00	5.686E-01	5.686E-01	90.14
	87.57	108	37.00*	6.072E+00	1.368E-01	1.368E-01	80.55
TL-208	277.37	-----	6.60	4.511E+00	-----	Line Not Found	-----
	583.19	365	85.00*	2.555E+00	4.765E-01	4.765E-01	17.67
	860.56	73	12.50	1.835E+00	9.052E-01	9.052E-01	47.01
BI-211	72.87	-----	1.23	4.857E+00	-----	Line Not Found	-----
	351.06	605	12.92*	3.788E+00	3.499E+00	3.499E+00	13.34
PB-212	74.82	339	10.28	5.089E+00	1.834E+00	1.834E+00	30.28
	77.11	616	17.10	5.310E+00	1.921E+00	1.921E+00	16.32
	238.63	1199	43.60*	5.017E+00	1.552E+00	1.552E+00	10.35
	300.09	-----	3.30	4.261E+00	-----	Line Not Found	-----
BI-214	609.32	456	45.49*	2.465E+00	1.153E+00	1.153E+00	14.86
	1120.29	124	14.92	1.455E+00	1.612E+00	1.612E+00	34.18
	1764.49	103	15.30	1.030E+00	1.860E+00	1.860E+00	23.06
PB-214	74.82	339	5.80	5.089E+00	3.250E+00	3.250E+00	29.75
	77.11	616	9.70	5.310E+00	3.387E+00	3.387E+00	18.28
	242.00	274	7.25	4.976E+00	2.153E+00	2.153E+00	33.98
	295.22	319	18.42	4.315E+00	1.137E+00	1.137E+00	21.40
	351.93	605	35.60*	3.788E+00	1.270E+00	1.270E+00	14.44
RA-224	240.99	274	4.10*	4.976E+00	3.807E+00	3.807E+00	33.48
RA-226	609.32	456	45.49*	2.465E+00	1.153E+00	1.153E+00	14.86
	1120.29	124	14.92	1.455E+00	1.612E+00	1.612E+00	34.18
	1764.49	103	15.30	1.030E+00	1.860E+00	1.860E+00	23.06
AC-228	338.32	206	11.27	3.900E+00	1.326E+00	1.326E+00	51.16
	911.20	244	25.80*	1.746E+00	1.533E+00	1.533E+00	22.69
	968.97	132	15.80	1.654E+00	1.436E+00	1.436E+00	37.80
RA-228	338.32	206	11.27	3.900E+00	1.326E+00	1.326E+00	51.16
	911.20	244	25.80*	1.746E+00	1.533E+00	1.533E+00	22.69
	968.97	132	15.80	1.654E+00	1.436E+00	1.436E+00	37.80

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	339	10.28	5.089E+00	1.834E+00	1.834E+00	28.70
	77.11	616	17.10	5.310E+00	1.921E+00	1.921E+00	16.32
	238.63	1199	43.60*	5.017E+00	1.552E+00	1.552E+00	10.35
	300.09	-----	3.30	4.261E+00	-----	Line Not Found	-----
TH-232	338.32	206	11.27	3.900E+00	1.326E+00	1.326E+00	30.84
	911.20	244	25.80*	1.746E+00	1.533E+00	1.533E+00	22.69
	968.97	132	15.80	1.654E+00	1.436E+00	1.436E+00	37.80
	89.96	101	3.47	6.255E+00	1.322E+00	1.322E+00	46.44
U-235	93.35	324	5.60	6.391E+00	2.565E+00	2.565E+00	34.66
	143.76	-----	10.96*	6.636E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.300E+00	-----	Line Not Found	-----
	185.72	229	57.20	5.888E+00	1.928E-01	1.928E-01	34.78
NP-237	205.31	-----	5.01	5.540E+00	-----	Line Not Found	-----
	86.48	108	12.40*	6.072E+00	4.081E-01	4.081E-01	83.24
	95.86	-----	2.68	6.514E+00	-----	Line Not Found	-----
ANH-511	511.00	136	100.00*	2.842E+00	1.357E-01	1.357E-01	50.46

Flag: "*" = Keyline

Total number of lines in spectrum 29
Number of unidentified lines 4
Number of lines tentatively identified by NID 25 86.21%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.509E+01	2.509E+01	0.245E+01	9.76	
CD-109	461.40D	1.02	1.368E+00	1.401E+00	1.129E+00	80.55	
SN-126	2.30E+05Y	1.00	1.368E-01	1.368E-01	1.102E-01	80.55	
TL-208	1.41E+10Y	1.00	4.765E-01	4.765E-01	0.842E-01	17.67	
BI-211	7.04E+08Y	1.00	3.499E+00	3.499E+00	0.467E+00	13.34	
PB-212	1.41E+10Y	1.00	1.552E+00	1.552E+00	0.161E+00	10.35	
BI-214	1600.00Y	1.00	1.153E+00	1.153E+00	0.171E+00	14.86	
PB-214	1600.00Y	1.00	1.270E+00	1.270E+00	0.183E+00	14.44	
RA-224	1.41E+10Y	1.00	3.807E+00	3.807E+00	1.275E+00	33.48	
RA-226	1600.00Y	1.00	1.153E+00	1.153E+00	0.171E+00	14.86	
AC-228	1.41E+10Y	1.00	1.533E+00	1.533E+00	0.348E+00	22.69	
RA-228	1.41E+10Y	1.00	1.533E+00	1.533E+00	0.348E+00	22.69	
TH-228	1.41E+10Y	1.00	1.552E+00	1.552E+00	0.161E+00	10.35	
TH-232	1.41E+10Y	1.00	1.533E+00	1.533E+00	0.348E+00	22.69	
U-235	7.04E+08Y	1.00	1.928E-01	1.928E-01	0.670E-01	34.78	K
NP-237	2.14E+06Y	1.00	4.081E-01	4.081E-01	3.397E-01	83.24	
ANH-511	1.00E+09Y	1.00	1.357E-01	1.357E-01	0.685E-01	50.46	

Total Activity : 4.639E+01 4.643E+01

Grand Total Activity : 4.639E+01 4.643E+01

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

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

Unidentified Energy Lines
Sample ID : G248112005

Page : 4
Acquisition date : 10-MAR-2010 13:22:32

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	208.55	105	371	1.54	416.75	409	14	1.46E-02	80.0	5.49E+00	
0	270.17	109	143	1.88	539.90	536	9	1.52E-02	44.9	4.60E+00	T
0	463.09	63	69	0.98	925.52	922	8	8.76E-03	51.9	3.07E+00	T
0	727.41	107	72	1.28	1454.00	1448	13	1.48E-02	38.0	2.12E+00	T
0	768.91	50	34	1.69	1536.97	1533	9	6.93E-03	52.2	2.03E+00	
0	796.13	56	70	3.32	1591.40	1583	16	7.72E-03	73.2	1.97E+00	T
1	964.76	66	43	1.96	1928.65	1924	23	9.19E-03	44.0	1.66E+00	T
0	1510.03	23	10	1.22	3019.47	3012	13	3.22E-03	69.3	1.14E+00	
0	1588.58	27	12	2.13	3176.65	3170	12	3.77E-03	63.8	1.10E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112005.CNF;1
* Acquisition date   : 10-MAR-2010 13:22:32  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 02:00:01.48          Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 22-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G248112005            Analyst initials: MXR1
* Batch Number       : 959270                Sample Quantity  : 1.32520E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54.1MS Isotope      :
* MSD ID             :                      MSD Isotope      :
* LCS ID             : 1032-A                LCS Isotope     :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.509E+01	2.449E+00	5.041E-01	3.754E-02	49.774
CD-109	1.401E+00	1.129E+00	1.384E+00	1.240E-01	1.012
SN-126	1.368E-01	1.102E-01	1.379E-01	1.230E-02	0.992
TL-208	4.765E-01	8.419E-02	5.567E-02	3.777E-03	8.560
BI-211	3.499E+00	4.667E-01	2.970E-01	1.897E-02	11.780
PB-212	1.552E+00	1.606E-01	9.357E-02	6.813E-03	16.587
BI-214	1.153E+00	1.713E-01	1.016E-01	8.047E-03	11.351
PB-214	1.270E+00	1.833E-01	1.080E-01	9.113E-03	11.756
RA-224	3.807E+00	1.275E+00	1.002E+00	5.679E-02	3.798
RA-226	1.153E+00	1.713E-01	1.016E-01	8.047E-03	11.351
AC-228	1.533E+00	3.479E-01	2.335E-01	2.722E-02	6.566
RA-228	1.533E+00	3.479E-01	2.335E-01	2.722E-02	6.566
TH-228	1.552E+00	1.606E-01	9.357E-02	6.813E-03	16.587
TH-232	1.533E+00	3.479E-01	2.335E-01	2.722E-02	6.566
U-235	1.928E-01	6.705E-02	3.352E-01	5.234E-02	0.575
NP-237	4.081E-01	3.397E-01	3.943E-01	8.968E-02	1.035
ANH-511	1.357E-01	6.845E-02	4.526E-02	2.671E-03	2.997

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.258E-01		3.077E-01	5.237E-01	3.553E-02	0.240

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-1.188E-02		4.235E-02	6.830E-02	4.556E-03	-0.174
NA-24	-1.544E+00		1.093E+00	Half-Life too short		
SC-46	5.396E-03		3.315E-02	5.450E-02	4.736E-03	0.099
V-48	2.309E-02		7.251E-02	1.202E-01	9.667E-03	0.192
CR-51	2.719E-01		3.767E-01	6.543E-01	4.228E-02	0.416
MN-54	3.493E-02		3.681E-02	6.430E-02	5.115E-03	0.543
CO-56	-2.287E-02		4.020E-02	6.139E-02	4.980E-03	-0.373
CO-57	-1.196E-02		2.527E-02	4.030E-02	2.405E-03	-0.297
CO-58	1.413E-02		3.803E-02	6.375E-02	4.885E-03	0.222
FE-59	-3.261E-02		8.507E-02	1.369E-01	1.027E-02	-0.238
CO-60	2.522E-02		3.808E-02	6.768E-02	4.987E-03	0.373
ZN-65	8.247E-02		9.134E-02	1.472E-01	9.410E-03	0.560
SE-75	1.551E-02		4.487E-02	7.052E-02	4.102E-03	0.220
SR-85	9.665E-02		4.352E-02	7.362E-02	4.347E-03	1.313
Y-88	8.474E-03		2.787E-02	4.851E-02	2.769E-03	0.175
Y-91	7.490E+00		2.137E+01	3.662E+01	2.138E+00	0.205
NB-94	6.029E-03		3.037E-02	5.038E-02	3.173E-03	0.120
NB-95	5.614E-02		4.626E-02	7.391E-02	5.223E-03	0.759
NB-95M	3.863E-01		1.628E-01	2.537E-01	1.886E-02	1.523
ZR-95	-2.582E-03		6.956E-02	1.126E-01	9.063E-03	-0.023
MO-99	7.412E+00		1.520E+01	2.571E+01	3.809E+00	0.288
TC-99M	-3.858E+11		2.506E+11	Half-Life too short		
RU-103	-4.873E-03		3.551E-02	5.805E-02	7.235E-03	-0.084
RH-106	-4.034E-02		2.968E-01	4.808E-01	5.611E-02	-0.084
RU-106	-4.034E-02		2.968E-01	4.808E-01	2.835E-02	-0.084
AG-108M	-2.730E-02		2.831E-02	4.386E-02	2.691E-03	-0.622
AG-110M	-1.473E-02		3.332E-02	5.242E-02	3.253E-03	-0.281
SN-113	2.024E-02		4.160E-02	7.138E-02	4.259E-03	0.284
CD-115	-1.071E+01		1.565E+01	2.451E+01	1.451E+00	-0.437
SN-117M	1.288E-02		5.832E-02	9.522E-02	5.068E-03	0.135
TE-123M	-1.775E-02		2.931E-02	4.616E-02	2.493E-03	-0.384
SB-124	-2.129E-02		7.414E-02	1.146E-01	7.878E-03	-0.186
SB-125	1.667E-02		8.797E-02	1.479E-01	8.797E-03	0.113
TE-125M	-7.346E+00		1.019E+01	1.613E+01	1.455E+00	-0.455
I-126	2.386E-01		2.357E-01	4.137E-01	2.431E-02	0.577
SB-126	-2.242E-02		1.734E-01	2.402E-01	1.564E-02	-0.093
SB-127	7.013E-01		1.598E+00	2.644E+00	2.626E-01	0.265
I-131	8.987E-02		1.164E-01	2.031E-01	1.298E-02	0.442
TE-132	-1.263E+00		9.690E-01	1.425E+00	2.081E-01	-0.886
BA-133	-5.260E-03		4.485E-02	6.456E-02	7.256E-03	-0.081
I-133	2.476E-03		6.120E-03	Half-Life too short		
CS-134	1.057E-01	+	7.780E-02	8.892E-02	6.686E-03	1.189
CS-135	2.614E-01		1.720E-01	2.757E-01	2.104E-02	0.948
I-135	6.144E+08		3.482E+10	Half-Life too short		
CS-136	-2.363E-03		1.261E-01	2.109E-01	1.630E-02	-0.011
BA-137M	-5.394E-03		3.595E-02	5.807E-02	3.382E-03	-0.093
CS-137	-5.699E-03		3.798E-02	6.135E-02	3.587E-03	-0.093
CD-139	-4.045E-03		3.004E-02	4.825E-02	2.519E-03	-0.084

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-140	-5.814E-02		2.572E-01	4.151E-01	1.384E-01	-0.140
LA-140	-6.854E-02		9.032E-02	1.210E-01	8.189E-03	-0.566
CE-141	7.624E-02		6.319E-02	1.073E-01	6.178E-03	0.711
CE-143	1.233E-03		1.888E-04	Half-Life too short		
CE-144	-9.596E-02		1.971E-01	3.128E-01	4.335E-02	-0.307
PM-144	7.287E-03		3.219E-02	5.350E-02	3.333E-03	0.136
PR-144	5.137E-01		2.408E+00	3.997E+00	2.489E-01	0.129
PM-146	-5.413E-03		3.967E-02	6.517E-02	5.504E-03	-0.083
ND-147	-1.028E-01		5.691E-01	9.252E-01	1.256E-01	-0.111
PM-149	1.445E+02		1.197E+02	2.102E+02	2.980E+01	0.687
EU-152	3.944E-02		1.121E-01	1.486E-01	9.663E-03	0.265
GD-153	2.156E-02		9.678E-02	1.402E-01	1.091E-02	0.154
EU-154	-2.642E-02		1.195E-01	1.939E-01	1.934E-02	-0.136
EU-155	6.946E-02		1.091E-01	1.822E-01	1.310E-02	0.381
TB-160	-6.089E-02		1.301E-01	1.991E-01	1.703E-02	-0.306
HO-166M	1.789E-02		6.305E-02	1.050E-01	6.727E-03	0.170
TA-182	-1.994E-01		1.805E-01	2.679E-01	1.615E-02	-0.744
IR-192	-2.663E-03		3.404E-02	5.688E-02	3.323E-03	-0.047
HG-203	6.574E-03		3.689E-02	6.265E-02	3.830E-03	0.105
BI-207	-3.694E-02		5.205E-02	8.137E-02	5.778E-03	-0.454
PB-210	1.521E+00		2.921E+00	4.898E+00	3.692E-01	0.310
PB-211	-6.427E-01		7.452E-01	1.062E+00	5.090E-01	-0.605
BI-212	2.129E+00	+	8.441E-01	1.202E+00	1.341E-01	1.771
RN-219	2.565E-01		3.782E-01	6.536E-01	8.729E-02	0.392
RA-223	-9.678E-01		6.821E-01	1.031E+00	1.662E-01	-0.939
AC-227	8.279E-02		2.596E-01	4.174E-01	4.251E-02	0.198
TH-227	8.279E-02		2.596E-01	4.174E-01	5.002E-02	0.198
TH-229	4.544E-03		4.963E-01	7.990E-01	4.311E-02	0.006
PA-231	-1.103E+00		1.373E+00	2.204E+00	2.891E-01	-0.500
TH-231	-9.678E-01		6.821E-01	1.031E+00	1.662E-01	-0.939
PA-233	-1.549E-04		5.851E-02	9.820E-02	6.065E-03	-0.002
PA-234	-3.141E-01		2.952E-01	4.088E-01	7.630E-02	-0.769
PA-234M	5.437E+00		4.471E+00	8.212E+00	7.645E-01	0.662
TH-234	8.500E-01		1.306E+00	2.175E+00	3.889E-01	0.391
U-238	8.500E-01		1.306E+00	2.175E+00	3.889E-01	0.391
NP-239	5.291E-02		3.987E-01	6.529E-01	4.074E-02	0.081
AM-241	-1.080E-01		1.491E-01	2.394E-01	1.971E-02	-0.451
CM-247	2.557E-02		3.501E-02	6.085E-02	3.413E-03	0.420
CF-249	-1.816E-02		3.744E-02	6.050E-02	3.378E-03	-0.300
CF-251	-3.995E-02		1.354E-01	2.156E-01	1.141E-02	-0.185

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*                                     *                                       *
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248112005          *
* Acquisition date   : 10-MAR-2010 13:22:32 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 02:00:01.48 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 22-FEB-2010 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G248112005 Analyst initials: MXR1                 *
* Batch Number       : 959270 Sample Quantity : 1.3252E+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 :                               *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.509E+01	2.400E+00	2.526E-01	1.224E+00
CD-109	1.401E+00	1.106E+00	7.275E-01	5.644E-01
SN-126	1.368E-01	1.080E-01	7.248E-02	5.509E-02
TL-208	4.765E-01	8.250E-02	2.835E-02	4.209E-02
BI-211	3.499E+00	4.574E-01	1.526E-01	2.334E-01
PB-212	1.552E+00	1.574E-01	4.837E-02	8.030E-02
BI-214	1.153E+00	1.679E-01	5.167E-02	8.567E-02
PB-214	1.270E+00	1.796E-01	5.548E-02	9.165E-02
RA-224	3.807E+00	1.249E+00	5.181E-01	6.373E-01
RA-226	1.153E+00	1.679E-01	5.167E-02	8.567E-02
AC-228	1.533E+00	3.410E-01	1.180E-01	1.740E-01
RA-228	1.533E+00	3.410E-01	1.180E-01	1.740E-01
TH-228	1.552E+00	1.574E-01	4.837E-02	8.030E-02
TH-232	1.533E+00	3.410E-01	1.180E-01	1.740E-01
U-235	1.686E-01	2.002E-01	1.748E-01	1.021E-01
NP-237	4.081E-01	3.329E-01	2.073E-01	1.699E-01
ANH-511	1.357E-01	6.709E-02	2.310E-02	3.423E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.258E-01	3.016E-01	2.676E-01	1.539E-01 NOT IDENT.
NA-22	-1.188E-02	4.150E-02	3.430E-02	2.117E-02 NOT IDENT.
NA-24	-1.544E+06	2.143E+06	0.000E+00	1.093E+06 SHORT HLIF
SC-46	5.396E-03	3.249E-02	2.755E-02	1.658E-02 FAIL ABUN
V-48	2.309E-02	7.106E-02	6.067E-02	3.625E-02 NOT IDENT.
CR-51	2.719E-01	3.692E-01	3.366E-01	1.884E-01 NOT IDENT.
MN-54	3.493E-02	3.607E-02	3.254E-02	1.841E-02 NOT IDENT.
CO-56	-2.287E-02	3.940E-02	3.105E-02	2.010E-02 NOT IDENT.
CO-57	-1.196E-02	2.477E-02	2.107E-02	1.264E-02 NOT IDENT.
CO-58	1.413E-02	3.726E-02	3.227E-02	1.901E-02 NOT IDENT.

FE-59	-3.261E-02	8.337E-02	6.893E-02	4.253E-02	NOT IDENT.
CO-60	2.522E-02	3.732E-02	3.396E-02	1.904E-02	NOT IDENT.
ZN-65	8.247E-02	8.951E-02	7.410E-02	4.567E-02	NOT IDENT.
SE-75	1.551E-02	4.397E-02	3.639E-02	2.244E-02	NOT IDENT.
SR-85	9.665E-02	4.265E-02	3.757E-02	2.176E-02	NOT IDENT.
Y-88	8.474E-03	2.731E-02	2.420E-02	1.394E-02	NOT IDENT.
Y-91	7.490E+00	2.094E+01	1.841E+01	1.068E+01	NOT IDENT.
NB-94	6.029E-03	2.977E-02	2.557E-02	1.519E-02	NOT IDENT.
NB-95	5.614E-02	4.534E-02	3.746E-02	2.313E-02	NOT IDENT.
NB-95M	3.863E-01	1.596E-01	1.312E-01	8.141E-02	NOT IDENT.
ZR-95	-2.582E-03	6.817E-02	5.710E-02	3.478E-02	NOT IDENT.
MO-99	7.412E+00	1.489E+01	1.304E+01	7.598E+00	NOT IDENT.
TC-99M	-3.858E+17	4.911E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-4.873E-03	3.480E-02	2.964E-02	1.775E-02	FAIL ABUN
RH-106	-4.034E-02	2.909E-01	2.445E-01	1.484E-01	NOT IDENT.
RU-106	-4.034E-02	2.908E-01	2.445E-01	1.484E-01	NOT IDENT.
AG-108M	-2.730E-02	2.775E-02	2.245E-02	1.416E-02	NOT IDENT.
AG-110M	-1.473E-02	3.266E-02	2.663E-02	1.666E-02	NOT IDENT.
SN-113	2.024E-02	4.077E-02	3.660E-02	2.080E-02	NOT IDENT.
CD-115	-1.071E+01	1.534E+01	1.250E+01	7.825E+00	NOT IDENT.
SN-117M	1.288E-02	5.715E-02	4.957E-02	2.916E-02	NOT IDENT.
TE-123M	-1.775E-02	2.873E-02	2.403E-02	1.466E-02	NOT IDENT.
SB-124	-2.129E-02	7.265E-02	5.726E-02	3.707E-02	NOT IDENT.
SB-125	1.667E-02	8.621E-02	7.573E-02	4.399E-02	FAIL ABUN
TE-125M	-7.346E+00	9.987E+00	8.448E+00	5.095E+00	NOT IDENT.
I-126	2.386E-01	2.310E-01	2.102E-01	1.179E-01	NOT IDENT.
SB-126	-2.242E-02	1.700E-01	1.219E-01	8.671E-02	NOT IDENT.
SB-127	7.013E-01	1.566E+00	1.343E+00	7.990E-01	NOT IDENT.
I-131	8.987E-02	1.140E-01	1.043E-01	5.819E-02	NOT IDENT.
TE-132	-1.263E+00	9.496E-01	7.373E-01	4.845E-01	NOT IDENT.
BA-133	-5.260E-03	4.395E-02	3.315E-02	2.242E-02	NOT IDENT.
I-133	2.476E+03	1.200E+04	0.000E+00	6.120E+03	SHORT HLIF
CS-134	1.057E-01	7.625E-02	4.503E-02	3.890E-02	FAIL ABUN
CS-135	2.614E-01	1.685E-01	1.423E-01	8.599E-02	NOT IDENT.
I-135	6.144E+14	6.824E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.363E-03	1.235E-01	1.063E-01	6.303E-02	NOT IDENT.
BA-137M	-5.394E-03	3.523E-02	2.950E-02	1.798E-02	NOT IDENT.
CS-137	-5.699E-03	3.722E-02	3.117E-02	1.899E-02	NOT IDENT.
CE-139	-4.045E-03	2.944E-02	2.510E-02	1.502E-02	NOT IDENT.
BA-140	-5.814E-02	2.521E-01	2.117E-01	1.286E-01	NOT IDENT.
LA-140	-6.854E-02	8.851E-02	6.054E-02	4.516E-02	NOT IDENT.
CE-141	7.624E-02	6.193E-02	5.591E-02	3.160E-02	NOT IDENT.
CE-143	1.233E+03	3.701E+02	0.000E+00	1.888E+02	SHORT HLIF
CE-144	-9.596E-02	1.932E-01	1.633E-01	9.855E-02	NOT IDENT.
PM-144	7.287E-03	3.155E-02	2.716E-02	1.609E-02	NOT IDENT.
PR-144	5.137E-01	2.359E+00	2.029E+00	1.204E+00	NOT IDENT.
PM-146	-5.413E-03	3.888E-02	3.333E-02	1.984E-02	NOT IDENT.
ND-147	-1.028E-01	5.577E-01	4.718E-01	2.845E-01	FAIL ABUN
PM-149	1.445E+02	1.173E+02	1.083E+02	5.985E+01	NOT IDENT.
EU-152	3.944E-02	1.099E-01	7.634E-02	5.606E-02	FAIL ABUN
GD-153	2.156E-02	9.485E-02	7.359E-02	4.839E-02	NOT IDENT.
EU-154	-2.642E-02	1.171E-01	9.736E-02	5.973E-02	NOT IDENT.
EU-155	6.946E-02	1.069E-01	9.549E-02	5.456E-02	FAIL ABUN
TB-160	-6.089E-02	1.275E-01	1.007E-01	6.506E-02	FAIL ABUN
HO-166M	1.789E-02	6.179E-02	5.329E-02	3.153E-02	FAIL ABUN
TA-182	-1.994E-01	1.769E-01	1.347E-01	9.025E-02	FAIL ABUN
IR-192	-2.663E-03	3.336E-02	2.927E-02	1.702E-02	FAIL ABUN
HG-203	6.574E-03	3.615E-02	3.230E-02	1.844E-02	NOT IDENT.
BI-207	-3.694E-02	5.101E-02	4.100E-02	2.603E-02	FAIL ABUN
PB-210	1.521E+00	2.862E+00	2.601E+00	1.460E+00	NOT IDENT.
PB-211	-6.427E-01	7.303E-01	5.439E-01	3.726E-01	NOT IDENT.
BI-212	2.129E+00	8.272E-01	6.099E-01	4.221E-01	FAIL ABUN
RN-219	2.565E-01	3.706E-01	3.350E-01	1.891E-01	FAIL ABUN
RA-223	-9.678E-01	6.685E-01	5.302E-01	3.411E-01	FAIL ABUN
AC-227	8.279E-02	2.544E-01	2.155E-01	1.298E-01	NOT IDENT.
TH-227	8.279E-02	2.544E-01	2.155E-01	1.298E-01	NOT IDENT.
TH-229	4.544E-03	4.863E-01	4.145E-01	2.481E-01	FAIL ABUN
PA-231	-1.103E+00	1.346E+00	1.136E+00	6.866E-01	NOT IDENT.
TH-231	-9.678E-01	6.685E-01	5.302E-01	3.411E-01	FAIL ABUN
PA-233	-1.549E-04	5.734E-02	5.054E-02	2.926E-02	NOT IDENT.
PA-234	-3.141E-01	2.893E-01	2.064E-01	1.476E-01	NOT IDENT.
PA-234M	5.437E+00	4.381E+00	4.142E+00	2.235E+00	NOT IDENT.
TH-234	8.500E-01	1.279E+00	1.149E+00	6.528E-01	FAIL ABUN
U-238	8.500E-01	1.279E+00	1.149E+00	6.528E-01	FAIL ABUN
NP-239	5.291E-02	3.907E-01	3.416E-01	1.993E-01	NOT IDENT.
AM-241	-1.080E-01	1.461E-01	1.266E-01	7.456E-02	NOT IDENT.
CM-247	2.557E-02	3.431E-02	3.118E-02	1.751E-02	NOT IDENT.
CF-249	-1.816E-02	3.669E-02	3.102E-02	1.872E-02	NOT IDENT.

CF-251	-3.995E-02	1.327E-01	1.120E-01	6.771E-02 NOT IDENT.
--------	------------	-----------	-----------	----------------------

```

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

```

ENERGY	MDA COUNTS
46.54	304.1942
49.72	384.3831
57.36	0.0000
59.54	443.8794
63.29	417.9015
63.29	417.9015
64.28	440.1349
67.75	516.2817
69.67	491.1494
70.83	542.7881
72.81	491.0389
72.87	503.8635
72.87	503.8635
74.82	513.8063
74.82	513.8063
74.82	513.8063
74.97	513.8787
77.11	514.9022
77.11	514.9022
77.11	514.9022
79.69	428.1847
79.80	428.2285
80.12	479.8829
80.19	479.9138
80.57	510.6866
81.00	535.0582
81.07	535.0906
81.07	535.0906
83.79	514.3054
83.79	514.3054
85.43	425.5161
86.48	503.6363
86.55	503.6666
86.79	503.7691
86.94	536.2365
87.57	560.8414
88.03	543.2239
88.47	543.4283
89.96	544.1154
91.11	373.9325
92.59	374.3943
92.59	374.3943
93.35	374.6302
94.67	347.3171
94.87	384.8842
94.87	384.8842
95.86	434.1609
97.43	361.1713
98.44	336.9315
99.53	328.5716
100.11	324.4829
103.18	415.5613
103.37	406.3870
105.31	350.4712
106.12	347.6032
109.28	384.5211
111.00	347.8578
111.76	369.7447
116.30	321.2402
117.23	314.1991
121.12	321.3155
121.78	313.1425
122.06	321.5288
123.07	301.9742
131.20	344.5122
133.52	318.8322
136.00	278.3883

136.47	277.4244
140.51	311.8781
140.51	0.0000
143.76	291.4159
144.24	270.3828
144.24	270.3828
145.44	279.0458
152.43	314.2471
153.25	286.7906
154.21	292.2735
154.21	292.2735
156.02	309.6227
158.56	297.3145
159.00	322.9755
162.66	304.4563
163.33	313.1277
165.86	292.1912
176.60	288.6267
177.52	307.0960
181.07	272.9435
184.41	295.9519
185.72	265.2061
193.51	235.8951
197.04	251.5882
205.31	252.0264
210.85	268.5419
215.65	248.5221
222.11	260.3559
227.38	258.8189
228.16	288.7922
228.18	288.7942
235.69	268.2960
235.96	268.3310
235.96	268.3310
238.63	241.3155
238.63	241.3155
240.99	241.5837
242.00	241.6979
244.70	199.8473
252.40	203.6933
252.80	197.0137
256.23	184.9886
256.23	184.9886
260.90	189.8723
264.66	165.9134
268.22	171.3293
269.46	186.4591
269.46	186.4591
271.23	204.6613
273.65	222.9545
276.40	166.2857
277.37	181.0669
277.60	181.0840
278.00	182.0213
279.20	181.2085
279.54	187.5786
280.46	216.6608
283.69	188.8199
284.31	167.0757
285.41	158.9783
285.90	152.6499
287.50	173.6673
293.27	0.0000
295.22	212.5400
295.96	263.0936
298.57	188.7801
299.98	158.4227
299.98	158.4227
300.09	158.4312
300.09	158.4312
300.13	158.4333
301.36	174.8985
302.85	197.6511
304.50	200.5326
304.50	200.5326
304.85	184.0774
308.46	144.9079
311.90	141.4349

316.51	161.0184
319.41	151.0704
320.08	152.9522
323.87	213.1618
323.87	213.1618
328.76	157.1711
333.37	165.1695
334.37	155.9673
334.37	155.9673
338.28	135.4777
338.28	135.4777
338.32	135.4795
338.32	135.4795
338.32	135.4795
340.48	131.5657
340.55	131.5691
344.28	118.5803
351.06	122.1441
351.93	122.1841
356.01	133.8903
364.49	109.6304
366.42	125.6479
383.85	114.1672
388.16	128.5127
388.63	131.3696
391.69	109.7497
400.66	115.7838
401.81	105.3850
402.40	107.3059
404.85	136.8580
410.95	121.9031
414.70	115.3813
423.72	122.4219
427.09	113.9405
427.87	111.0978
433.94	122.8328
453.88	103.3389
463.37	118.1771
468.07	95.3913
473.00	106.8713
476.78	91.4331
477.60	90.4831
487.02	98.5477
492.35	83.0690
497.08	80.2513
511.00	95.3222
514.00	85.2421
527.90	108.6277
529.87	0.0000
531.02	88.9563
537.26	82.1834
546.56	0.0000
563.25	184.5122
569.33	102.8994
569.50	102.9044
569.70	121.8928
583.19	84.2338
600.60	66.4898
602.73	83.9986
604.72	99.1712
609.32	74.7208
609.32	74.7208
610.33	79.1174
614.28	72.4575
618.01	72.8648
621.93	75.9778
621.93	75.9778
633.25	65.0219
635.95	66.0839
636.99	71.1860
645.85	77.4603
657.76	79.7348
661.66	86.9756
661.66	86.9756
664.57	0.0000
666.33	72.7334
666.50	72.7369
677.62	67.7982

685.70	67.9304
695.00	69.1142
696.49	69.1395
696.51	69.1395
697.00	76.3721
702.65	65.1072
706.68	69.3064
711.68	79.7446
720.70	76.1084
721.93	0.0000
722.78	53.6471
722.91	53.6496
723.31	55.3854
724.19	58.8581
727.33	84.1937
733.00	64.1824
735.93	65.6147
739.50	61.4991
747.24	63.6970
752.31	76.3149
753.82	60.6550
756.73	60.6947
763.94	50.6603
765.81	57.6721
766.42	66.4196
777.92	65.1878
778.90	66.2546
783.70	60.0086
785.37	71.6142
795.86	57.0019
801.95	52.8491
810.29	52.9443
810.76	55.0685
815.77	66.7883
818.51	54.0991
832.01	74.4673
834.85	56.4160
836.80	0.0000
846.77	69.3640
856.80	49.9035
860.56	49.2288
871.09	67.5697
873.19	55.7959
875.33	0.0000
879.36	53.7170
880.51	38.6859
883.24	41.9326
884.68	44.0960
889.28	38.7545
898.04	56.0777
911.20	63.7952
911.20	63.7952
911.20	63.7952
926.50	48.8046
937.49	65.2134
944.13	48.9727
946.00	62.0557
949.00	40.3052
962.29	54.6057
964.08	63.7280
966.15	63.3894
968.97	63.4233
968.97	63.4233
968.97	63.4233
983.53	48.2475
996.26	62.6527
1001.03	44.9226
1004.73	56.8800
1037.84	58.1525
1038.76	0.0000
1048.07	72.1316
1050.41	63.8340
1050.41	63.8340
1063.66	63.9884
1085.87	49.3446
1099.45	53.1963
1112.07	39.2827
1115.54	41.7132

1120.29	59.0087
1120.29	59.0087
1120.55	59.0112
1121.30	59.0189
1131.51	0.0000
1173.23	55.7614
1177.93	52.0213
1189.05	54.0127
1204.77	58.9045
1221.41	68.5898
1231.02	75.3772
1235.36	70.6547
1238.28	58.2697
1260.41	0.0000
1271.85	42.2580
1274.44	48.9995
1274.54	49.9624
1291.59	42.3887
1298.22	0.0000
1312.11	40.5918
1332.49	30.0540
1365.19	25.3324
1368.63	0.0000
1384.29	24.4283
1408.01	23.5332
1457.56	0.0000
1460.82	22.7267
1489.16	11.9053
1505.03	13.6367
1596.21	26.5815
1620.50	15.1520
1678.03	0.0000
1690.97	16.3125
1764.49	12.3496
1764.49	12.3496
1770.23	7.0619
1771.35	12.3599
1791.20	0.0000
1836.06	8.3060

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248112005

Total Uranium Activity	2.6069E+00	ug/g
Total Uranium Counting Unc.	3.8075E+00	ug/g
Total Uranium Tpu	1.9426E-06	ug/g
Total Uranium Mda	3.4194E+00	ug/g

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 959270                          SAMPLE ID   : G248112005
*  ANALYST       : MXR1                             DETECTOR    : GAM19
*  SAMPLE DATE   : 22-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 10-MAR-2010 13:22:32.43          SAMPLE ALQT  : 132.520 GRAM
*
*****

```

```

GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.224E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.110E+00
GROSS GAMMA MDA (pCi/GRAM )     : 3.610E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.759E+00

```

VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 15:24:21.00

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112006.CNF;1
Sample date        : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:23:48
Sample ID          : G248112006 Sample quantity : 1.24060E+02 GRAM
Detector name      : GAM22 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.04 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959270 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.86*	148	555	0.92	125.98	121	10	2.06E-02	31.7	
2	0	76.37*	1030	817	1.06	152.97	147	11	1.43E-01	6.3	
3	0	86.97*	203	515	0.84	174.15	172	7	2.82E-02	19.9	
4	0	89.84	135	328	0.91	179.89	178	5	1.87E-02	21.9	
5	0	93.07*	293	648	1.66	186.32	183	12	4.07E-02	19.4	
6	0	186.05*	231	463	1.22	372.12	367	10	3.21E-02	19.7	
7	0	209.12	170	399	1.51	418.22	414	10	2.36E-02	23.2	
8	4	238.74*	1467	268	1.20	477.40	472	20	2.04E-01	3.3	5.96E-01
9	4	241.71	392	402	2.07	483.33	472	20	5.45E-02	14.8	
10	0	270.58	121	259	1.56	541.02	537	9	1.68E-02	25.6	
11	0	295.21*	495	344	1.35	590.23	582	14	6.88E-02	9.2	
12	0	300.47	109	259	1.59	600.75	596	11	1.51E-02	30.1	
13	0	327.81	134	221	1.94	655.38	650	11	1.87E-02	23.1	
14	0	338.44*	282	317	1.42	676.63	669	14	3.92E-02	14.9	
15	0	352.06*	688	236	1.46	703.85	698	12	9.55E-02	6.0	
16	0	463.06*	68	160	1.78	925.69	921	12	9.40E-03	40.2	
17	0	511.18*	140	227	2.37	1021.86	1015	17	1.94E-02	30.4	
18	0	583.31*	504	100	1.59	1166.03	1160	13	7.00E-02	6.3	
19	0	609.50*	579	248	1.81	1218.39	1209	17	8.04E-02	7.6	
20	0	727.67*	107	154	2.00	1454.61	1445	17	1.48E-02	29.0	
21	0	860.49*	76	53	1.79	1720.14	1715	12	1.06E-02	23.7	
22	0	911.31*	375	119	1.80	1821.74	1813	17	5.21E-02	8.7	
23	0	969.33	198	165	1.66	1937.74	1930	15	2.75E-02	16.2	
24	0	1120.54*	131	135	2.89	2240.11	2233	17	1.82E-02	22.5	
25	0	1460.94*	2156	53	2.74	2920.91	2909	24	2.99E-01	2.4	
26	0	1729.03	55	15	2.75	3457.22	3447	21	7.62E-03	22.5	
27	0	1764.65*	131	6	2.97	3528.50	3516	20	1.81E-02	11.2	

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

VMS Nuclide Identification Report V3.1 Generated 10-MAR-2010 15:24:23

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112006.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:23:48
Sample ID         : G248112006 Sample quantity : 124.06 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA22 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:02.04 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.206E+01	3.303E+00	4.704E-01	4.310E-02	68.156
CD-109	+	88.03	*	2.278E+00	9.336E-01	1.022E+00	9.702E-02	2.228
SN-126	+	64.28		1.097E+00	7.133E-01	6.545E-01	9.505E-02	1.676
	+	86.94		9.245E-01	5.323E-01	4.781E-01	1.985E-01	1.934
	+	87.57	*	2.224E-01	9.113E-02	1.140E-01	1.076E-02	1.951
TL-208		277.37		3.289E-01	3.769E-01	6.197E-01	1.031E-01	0.531
	+	583.19	*	4.567E-01	7.597E-02	4.846E-02	5.250E-03	9.424
	+	860.56		6.315E-01	3.078E-01	4.048E-01	4.716E-02	1.560
BI-211		72.87		3.860E+00	2.993E+00	4.606E+00	3.687E-01	0.838
	+	351.06	*	2.982E+00	4.988E-01	3.131E-01	3.653E-02	9.524
PB-212		74.82		1.979E+00	4.301E-01	6.559E-01	8.329E-02	3.018
	+	77.11		2.862E+00	4.302E-01	2.738E-01	2.289E-02	10.454
	+	238.63	*	1.518E+00	2.248E-01	8.346E-02	1.106E-02	18.189
	+	300.09		1.690E+00	1.049E+00	1.043E+00	1.530E-01	1.620
BI-214	+	609.32	*	1.010E+00	1.942E-01	1.033E-01	1.205E-02	9.786
	+	1120.29		1.130E+00	5.233E-01	4.269E-01	4.738E-02	2.648
	+	1764.49		1.504E+00	3.606E-01	2.674E-01	2.228E-02	5.626
PB-214		74.82		3.508E+00	7.363E-01	1.163E+00	1.323E-01	3.018
	+	77.11		5.046E+00	8.651E-01	4.826E-01	5.669E-02	10.454
	+	242.00		2.457E+00	8.045E-01	5.068E-01	7.009E-02	4.848
	+	295.22		1.363E+00	3.241E-01	2.080E-01	3.120E-02	6.551
	+	351.93	*	1.082E+00	1.906E-01	1.098E-01	1.413E-02	9.859
RA-224	+	240.99	*	4.344E+00	1.400E+00	8.936E-01	1.119E-01	4.862
RA-226	+	609.32	*	1.010E+00	1.942E-01	1.033E-01	1.205E-02	9.786
	+	1120.29		1.130E+00	5.233E-01	4.269E-01	4.738E-02	2.648
	+	1764.49		1.504E+00	3.606E-01	2.674E-01	2.228E-02	5.626
AC-228	+	338.32		1.372E+00	7.118E-01	3.459E-01	1.470E-01	3.966
	+	911.20	*	1.579E+00	3.491E-01	1.968E-01	2.666E-02	8.022
	+	968.97		1.431E+00	5.862E-01	3.959E-01	9.952E-02	3.615
RA-228	+	338.32		1.372E+00	7.118E-01	3.459E-01	1.470E-01	3.966
	+	911.20	*	1.579E+00	3.491E-01	1.968E-01	2.666E-02	8.022
	+	968.97		1.431E+00	5.862E-01	3.959E-01	9.952E-02	3.615
TH-228		74.82		1.979E+00	3.853E-01	6.559E-01	5.409E-02	3.018
	+	77.11		2.862E+00	4.302E-01	2.738E-01	2.289E-02	10.454

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	1.518E+00	2.248E-01	8.346E-02	1.106E-02	18.189
	+	300.09		1.690E+00	1.462E+00	1.043E+00	6.475E-01	1.620
TH-232	+	338.32		1.372E+00	4.395E-01	3.459E-01	4.113E-02	3.966
	+	911.20	*	1.579E+00	3.491E-01	1.968E-01	2.666E-02	8.022
	+	968.97		1.431E+00	5.862E-01	3.959E-01	9.952E-02	3.615
TH-234	+	63.29	*	2.847E+00	1.874E+00	1.686E+00	3.001E-01	1.688
	+	92.59		2.661E+00	1.191E+00	8.708E-01	1.940E-01	3.056
U-235	+	89.96		1.533E+00	7.718E-01	1.219E+00	3.032E-01	1.257
	+	93.35		2.010E+00	9.102E-01	6.004E-01	1.396E-01	3.348
		143.76	*	5.272E-02	1.903E-01	3.148E-01	5.381E-02	0.167
		163.33		1.532E-01	4.234E-01	6.915E-01	1.279E-01	0.222
	+	185.72		1.606E-01	6.534E-02	6.413E-02	6.715E-03	2.505
		205.31		-2.080E-01	5.119E-01	7.182E-01	1.400E-01	-0.290
NP-237	+	86.48	*	6.636E-01	3.054E-01	3.520E-01	8.077E-02	1.885
		95.86		-2.375E-01	8.766E-01	1.240E+00	2.985E-01	-0.192
U-238	+	63.29	*	2.847E+00	1.874E+00	1.686E+00	3.001E-01	1.688
	+	92.59		2.661E+00	1.062E+00	8.708E-01	7.921E-02	3.056
ANH-511	+	511.00	*	9.842E-02	6.064E-02	4.296E-02	4.305E-03	2.291

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-2.255E-02	2.977E-01	4.789E-01	4.998E-02	-0.047
NA-22		1274.54	*	-4.325E-02	4.261E-02	6.532E-02	5.629E-03	-0.662
NA-24		1368.63	*	-6.460E-01	4.261E-02	Half-Life too short		
SC-46		889.28	*	-1.721E-03	3.545E-02	5.862E-02	6.561E-03	-0.029
	+	1120.55		1.927E-01	8.827E-02	1.136E-01	1.005E-02	1.696
V-48		944.13		-9.631E-01	7.740E-01	1.142E+00	1.239E-01	-0.843
		983.53	*	7.193E-05	6.225E-02	1.023E-01	1.072E-02	0.001
		1312.11		5.278E-02	7.751E-02	1.342E-01	1.182E-02	0.393
CR-51		320.08	*	-2.950E-01	3.377E-01	5.227E-01	6.765E-02	-0.564
MN-54		834.85	*	2.624E-02	3.370E-02	5.854E-02	6.503E-03	0.448
CO-56		846.77	*	1.246E-02	3.526E-02	6.001E-02	6.681E-03	0.208
		1037.84		-6.113E-02	2.858E-01	4.597E-01	4.737E-02	-0.133
		1238.28		1.031E-01	8.972E-02	1.571E-01	1.361E-02	0.656
		1771.35		1.337E-01	1.955E-01	3.138E-01	2.607E-02	0.426
CO-57		122.06	*	-2.406E-03	2.403E-02	3.793E-02	3.128E-03	-0.063
		136.47		7.966E-02	1.861E-01	3.189E-01	2.956E-02	0.250
CO-58		810.76	*	-3.326E-02	3.431E-02	5.343E-02	5.916E-03	-0.622
FE-59		1099.45	*	-1.255E-02	8.717E-02	1.402E-01	1.373E-02	-0.090
		1291.59		2.077E-03	1.212E-01	2.005E-01	1.977E-02	0.010
CO-60		1173.23		1.211E-02	4.081E-02	6.932E-02	5.575E-03	0.175
		1332.49	*	-1.395E-02	3.937E-02	6.069E-02	5.412E-03	-0.230
ZN-65		1115.54	*	8.746E-02	9.877E-02	1.472E-01	1.313E-02	0.594
SE-75		121.12		3.997E-02	1.261E-01	2.025E-01	2.186E-02	0.197
		136.00		4.574E-03	3.587E-02	6.091E-02	5.286E-03	0.075
		264.66	*	-1.738E-02	4.562E-02	6.610E-02	8.898E-03	-0.263
		279.54		9.018E-02	1.060E-01	1.748E-01	2.482E-02	0.516

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		400.66		3.506E-03	2.274E-01	3.736E-01	4.363E-02	0.009
SR-85		514.00	*	9.950E-02	4.598E-02	7.115E-02	7.139E-03	1.398
Y-88		898.04		-6.371E-03	3.653E-02	5.981E-02	6.719E-03	-0.107
		1836.06	*	8.361E-03	2.548E-02	4.394E-02	3.553E-03	0.190
Y-91		1204.77	*	-8.944E+00	2.045E+01	3.313E+01	2.723E+00	-0.270
NB-94		702.65	*	1.315E-02	2.903E-02	4.867E-02	5.215E-03	0.270
		871.09		-3.161E-03	3.051E-02	5.036E-02	5.625E-03	-0.063
NB-95		765.81	*	1.628E-02	4.061E-02	6.722E-02	7.350E-03	0.242
NB-95M		235.69	*	1.064E-01	1.319E-01	1.943E-01	2.572E-02	0.547
ZR-95		724.19		3.878E-02	1.061E-01	1.521E-01	1.732E-02	0.255
		756.73	*	4.878E-02	6.739E-02	1.138E-01	1.324E-02	0.429
MO-99		140.51		-1.613E+01	2.652E+01	4.258E+01	1.013E+01	-0.379
		181.07		1.877E+01	2.345E+01	3.508E+01	6.884E+00	0.535
		366.42		-6.978E+01	1.118E+02	1.787E+02	1.896E+01	-0.390
		739.50	*	8.948E+00	1.397E+01	2.351E+01	4.015E+00	0.381
		777.92		-6.994E+01	4.249E+01	5.956E+01	6.535E+00	-1.174
TC-99M		140.51	*	-2.952E+11	4.249E+01	Half-Life too short		
RU-103		497.08	*	-1.512E-02	3.478E-02	5.431E-02	8.052E-03	-0.278
	+	610.33		1.060E+01	2.451E+00	2.364E+00	4.103E-01	4.485
RH-106		621.93	*	3.074E-02	2.848E-01	4.731E-01	6.865E-02	0.065
		1050.41		1.656E-01	2.323E+00	3.810E+00	3.719E-01	0.043
RU-106		621.93	*	3.074E-02	2.848E-01	4.731E-01	4.942E-02	0.065
		1050.41		1.656E-01	2.323E+00	3.810E+00	3.719E-01	0.043
AG-108M		433.94	*	-4.169E-03	2.740E-02	4.429E-02	4.359E-03	-0.094
		614.28		1.090E-02	3.650E-02	5.309E-02	5.659E-03	0.205
		722.91		-2.353E-02	4.112E-02	5.431E-02	5.982E-03	-0.433
AG-110M		657.76	*	1.274E-02	3.032E-02	5.104E-02	5.485E-03	0.250
		677.62		4.175E-02	2.939E-01	4.855E-01	5.251E-02	0.086
		706.68		-4.206E-02	1.910E-01	3.073E-01	3.360E-02	-0.137
		763.94		-2.175E-01	1.569E-01	2.291E-01	2.547E-02	-0.950
		884.68		1.181E-02	4.254E-02	7.191E-02	8.199E-03	0.164
		937.49		3.929E-02	9.314E-02	1.581E-01	1.763E-02	0.248
		1384.29		-2.191E-01	1.632E-01	2.354E-01	2.157E-02	-0.931
		1505.03		-1.376E-01	2.612E-01	4.018E-01	3.572E-02	-0.342
SN-113		391.69	*	4.768E-02	4.144E-02	7.149E-02	6.827E-03	0.667
CD-115		260.90		-6.057E+01	1.781E+02	2.819E+02	3.746E+01	-0.215
		492.35		1.360E+01	4.522E+01	7.415E+01	7.361E+00	0.183
		527.90	*	-4.648E+00	1.318E+01	2.163E+01	2.184E+00	-0.215
SN-117M		156.02		5.491E-02	2.231E+00	3.741E+00	3.507E-01	0.015
		158.56	*	7.434E-03	5.375E-02	9.035E-02	8.568E-03	0.082
TE-123M		159.00	*	-1.078E-03	2.688E-02	4.490E-02	4.288E-03	-0.024
SB-124		602.73		-1.330E-02	4.245E-02	5.897E-02	6.126E-03	-0.226
		645.85		1.196E-01	4.195E-01	7.024E-01	7.670E-02	0.170
		722.78		-2.494E-01	4.171E-01	5.494E-01	6.016E-02	-0.454
		1690.97	*	5.623E-03	6.483E-02	1.086E-01	9.680E-03	0.052
SB-125		427.87	*	-1.951E-02	7.945E-02	1.279E-01	1.240E-02	-0.153
	+	463.37		4.284E-01	3.476E-01	4.289E-01	4.438E-02	0.999
		600.60		1.135E-01	1.778E-01	2.752E-01	3.004E-02	0.412
		635.95		-1.462E-01	2.344E-01	3.700E-01	4.095E-02	-0.395

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M	109.28	*		1.007E+01	9.274E+00	1.534E+01	1.578E+00	0.656
I-126	388.63			-5.288E-02	1.643E-01	2.661E-01	2.520E-02	-0.199
	666.33	*		1.541E-01	2.021E-01	3.456E-01	3.652E-02	0.446
	753.82			1.044E+00	1.777E+00	2.981E+00	3.248E-01	0.350
SB-126	414.70			-8.430E-02	7.378E-02	1.128E-01	1.068E-02	-0.747
	666.50			5.870E-02	6.993E-02	1.200E-01	1.268E-02	0.489
	695.00			3.381E-03	7.342E-02	1.165E-01	1.244E-02	0.029
	697.00			1.103E-02	2.505E-01	4.103E-01	4.387E-02	0.027
	720.70	*		1.563E-01	1.541E-01	2.335E-01	2.519E-02	0.669
	856.80			4.083E-01	4.432E-01	6.886E-01	7.677E-02	0.593
SB-127	252.40			2.816E+00	4.848E+00	7.782E+00	3.324E+00	0.362
	473.00			1.984E-01	1.736E+00	2.826E+00	3.912E-01	0.070
	685.70	*		9.432E-01	1.379E+00	2.343E+00	3.097E-01	0.403
	783.70			3.594E+00	3.849E+00	6.526E+00	9.355E-01	0.551
I-131	80.19			-1.791E+00	4.470E+00	6.390E+00	5.568E-01	-0.280
	284.31			-6.030E-01	1.568E+00	2.456E+00	3.472E-01	-0.246
	364.49	*		3.063E-02	1.090E-01	1.828E-01	2.026E-02	0.168
	636.99			-4.498E-01	1.439E+00	2.322E+00	2.531E-01	-0.194
TE-132	49.72			1.296E+00	1.656E+01	2.790E+01	3.017E+00	0.046
	111.76			-1.524E+01	3.855E+01	6.049E+01	6.687E+00	-0.252
	116.30			-2.673E+00	3.374E+01	5.351E+01	5.891E+00	-0.050
	228.16	*		-1.810E-01	8.459E-01	1.364E+00	2.464E-01	-0.133
BA-133	81.00			-1.164E-01	9.057E-02	1.214E-01	1.892E-02	-0.959
	276.40			2.208E-01	3.787E-01	5.735E-01	1.022E-01	0.385
	302.85			1.497E-01	1.395E-01	2.141E-01	3.533E-02	0.699
	356.01	*		5.913E-03	4.051E-02	5.891E-02	8.673E-03	0.100
	383.85			4.083E-03	2.629E-01	4.335E-01	5.729E-02	0.009
I-133	529.87	*		3.381E-03	2.629E-01	Half-Life	too short	
	875.33			2.830E-02	2.629E-01	Half-Life	too short	
	1298.22			3.734E-01	2.629E-01	Half-Life	too short	
CS-134	563.25			4.241E-01	3.174E-01	5.613E-01	5.791E-02	0.756
	569.33			-1.736E-01	1.712E-01	2.668E-01	2.766E-02	-0.651
	604.72			-4.475E-04	3.694E-02	5.255E-02	5.471E-03	-0.009
	795.86	*		3.443E-02	4.292E-02	7.244E-02	8.019E-03	0.475
	801.95			-2.635E-01	3.698E-01	5.648E-01	6.255E-02	-0.467
	1365.19			3.160E-01	1.027E+00	1.738E+00	1.620E-01	0.182
CS-135	268.22	*		1.780E-01	1.758E-01	2.582E-01	3.735E-02	0.689
I-135	546.56			2.704E+08	1.758E-01	Half-Life	too short	
	836.80			2.650E+11	1.758E-01	Half-Life	too short	
	1038.76			3.904E+10	1.758E-01	Half-Life	too short	
	1131.51			-7.340E+09	1.758E-01	Half-Life	too short	
	1260.41	*		-2.452E+10	1.758E-01	Half-Life	too short	
	1457.56			1.359E+13	1.758E-01	Half-Life	too short	
	1678.03			4.270E+10	1.758E-01	Half-Life	too short	
	1791.20			1.182E+11	1.758E-01	Half-Life	too short	
CS-136	153.25			1.000E+00	8.431E-01	1.457E+00	1.575E-01	0.687
	176.60			9.169E-02	4.742E-01	7.926E-01	8.659E-02	0.116
	273.65			-6.692E-01	6.216E-01	8.015E-01	1.142E-01	-0.835
	340.55			4.730E-01	1.773E-01	2.793E-01	3.363E-02	1.694

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		818.51		1.678E-02	6.655E-02	1.130E-01	1.252E-02	0.148
		1048.07	*	-5.332E-02	1.019E-01	1.597E-01	1.615E-02	-0.334
		1235.36		6.822E-01	5.949E-01	1.037E+00	1.204E-01	0.658
BA-137M		661.66	*	-2.981E-02	3.104E-02	4.762E-02	5.022E-03	-0.626
CS-137		661.66	*	-3.149E-02	3.279E-02	5.031E-02	5.312E-03	-0.626
CE-139		165.86	*	-8.095E-03	2.758E-02	4.549E-02	4.462E-03	-0.178
BA-140		162.66		2.876E-01	8.260E-01	1.351E+00	1.376E-01	0.213
		304.85		-7.323E-01	1.436E+00	2.006E+00	6.205E-01	-0.365
		423.72		-4.654E-01	1.799E+00	2.887E+00	9.568E-01	-0.161
		537.26	*	5.266E-04	2.375E-01	3.975E-01	1.365E-01	0.001
LA-140	+	328.76		8.544E-01	4.085E-01	5.289E-01	6.685E-02	1.615
		487.02		-3.013E-02	1.285E-01	2.043E-01	2.118E-02	-0.147
		815.77		-4.969E-02	2.973E-01	4.916E-01	5.837E-02	-0.101
		1596.21	*	-9.759E-02	8.190E-02	1.186E-01	1.040E-02	-0.823
CE-141		145.44	*	1.121E-02	5.701E-02	9.658E-02	8.793E-03	0.116
CE-143		57.36		7.171E-04	5.701E-02	Half-Life	too short	
		293.27	*	1.194E-03	5.701E-02	Half-Life	too short	
		664.57		6.972E-05	5.701E-02	Half-Life	too short	
		721.93		-5.363E-04	5.701E-02	Half-Life	too short	
CE-144		80.12		-1.607E+00	2.267E+00	3.189E+00	2.757E-01	-0.504
		133.52	*	-8.026E-02	1.777E-01	2.956E-01	4.505E-02	-0.272
PM-144		476.78		-3.739E-02	6.042E-02	9.397E-02	9.869E-03	-0.398
		618.01		6.970E-03	3.047E-02	4.872E-02	5.181E-03	0.143
		696.49	*	-1.233E-03	3.021E-02	4.923E-02	5.265E-03	-0.025
PR-144		696.51	*	-6.782E-02	2.263E+00	3.691E+00	3.946E-01	-0.018
		1489.16		-8.170E+00	1.159E+01	1.736E+01	1.546E+00	-0.471
PM-146		453.88	*	-2.298E-02	3.536E-02	5.495E-02	6.319E-03	-0.418
		633.25		7.681E-01	1.253E+00	2.084E+00	8.056E-01	0.369
		735.93		-7.650E-02	1.452E-01	2.063E-01	5.937E-02	-0.371
		747.24		-9.409E-02	9.186E-02	1.370E-01	2.195E-02	-0.687
ND-147	+	91.11		5.269E-01	2.365E-01	4.729E-01	4.675E-02	1.114
		319.41		-2.080E+00	3.054E+00	4.929E+00	6.240E-01	-0.422
		531.02	*	2.715E-01	5.054E-01	8.686E-01	1.377E-01	0.313
PM-149		285.90	*	-3.186E+00	1.185E+02	1.890E+02	3.576E+01	-0.017
EU-152		121.78		5.304E-03	6.886E-02	1.095E-01	1.049E-02	0.048
		244.70		5.257E-01	3.385E-01	5.132E-01	6.498E-02	1.024
		344.28	*	-4.101E-03	1.083E-01	1.473E-01	1.770E-02	-0.028
		778.90		-2.574E-01	2.397E-01	3.560E-01	3.906E-02	-0.723
		964.08		6.891E-01	2.950E-01	4.843E-01	5.168E-02	1.423
		1085.87		-2.115E-01	3.597E-01	5.590E-01	5.207E-02	-0.378
		1112.07		-5.835E-02	3.324E-01	4.498E-01	4.031E-02	-0.130
		1408.01		3.095E-02	1.706E-01	2.839E-01	2.539E-02	0.109
GD-153		69.67		-9.568E-01	1.449E+00	2.331E+00	1.809E-01	-0.410
		97.43	*	-1.271E-02	8.400E-02	1.181E-01	1.039E-02	-0.108
		103.18		2.443E-02	1.024E-01	1.659E-01	1.418E-02	0.147
EU-154		123.07		-3.582E-02	4.926E-02	7.542E-02	8.357E-03	-0.475
		723.31		-1.170E-01	1.914E-01	2.520E-01	2.899E-02	-0.464
		873.19		1.921E-01	2.443E-01	4.247E-01	5.886E-02	0.452
		996.26		-1.971E-01	3.395E-01	5.318E-01	9.781E-02	-0.371

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	+	1004.73		1.154E-01	1.968E-01	3.342E-01	4.315E-02	0.345
		1274.44	*	-1.217E-01	1.211E-01	1.852E-01	2.105E-02	-0.657
		86.55		2.697E-01	1.106E-01	1.613E-01	1.517E-02	1.673
		105.31	*	-1.469E-02	9.779E-02	1.558E-01	1.337E-02	-0.094
TB-160	+	86.79		7.219E-01	2.958E-01	4.322E-01	4.042E-02	1.671
		197.04		1.986E-02	5.575E-01	8.832E-01	9.604E-02	0.022
		215.65		2.421E-01	7.124E-01	1.140E+00	1.318E-01	0.212
		298.57		2.412E-01	1.599E-01	1.824E-01	2.445E-02	1.322
HO-166M		879.36	*	-5.592E-02	1.221E-01	1.961E-01	2.193E-02	-0.285
		962.29		7.131E-01	5.288E-01	8.271E-01	8.839E-02	0.862
		966.15		1.323E+00	2.891E-01	4.748E-01	5.058E-02	2.786
		1177.93		-1.085E-01	3.280E-01	5.355E-01	4.321E-02	-0.203
		1271.85		1.310E-02	6.680E-01	1.107E+00	9.516E-02	0.012
		80.57		-1.112E-01	2.421E-01	3.449E-01	2.997E-02	-0.322
		184.41		6.868E-02	4.085E-02	6.398E-02	6.671E-03	1.073
		280.46		-8.386E-02	8.441E-02	1.276E-01	1.781E-02	-0.657
		410.95		3.039E-01	2.307E-01	3.984E-01	3.760E-02	0.763
		711.68	*	1.974E-02	5.480E-02	9.126E-02	9.811E-03	0.216
		752.31		3.836E-02	2.573E-01	4.212E-01	4.588E-02	0.091
		810.29		-8.091E-02	5.270E-02	7.804E-02	8.628E-03	-1.037
TA-182		67.75		-5.388E-02	9.777E-02	1.492E-01	1.138E-02	-0.361
		100.11		9.141E-02	1.704E-01	2.667E-01	2.310E-02	0.343
		152.43		2.877E-01	3.218E-01	5.540E-01	5.111E-02	0.519
		222.11		1.669E-01	3.357E-01	5.571E-01	6.574E-02	0.300
	+	1121.30		5.328E-01	2.440E-01	3.146E-01	2.777E-02	1.694
		1189.05		-1.442E-01	2.762E-01	4.444E-01	3.614E-02	-0.325
		1221.41	*	1.413E-01	1.797E-01	3.119E-01	2.594E-02	0.453
		1231.02		-4.998E-01	4.768E-01	7.423E-01	6.213E-02	-0.673
IR-192	+	295.96		1.017E+00	2.328E-01	2.530E-01	3.423E-02	4.019
		308.46		-1.879E-03	8.748E-02	1.467E-01	1.920E-02	-0.013
		316.51	*	1.328E-02	3.070E-02	5.232E-02	6.686E-03	0.254
		468.07		9.531E-03	6.699E-02	9.468E-02	9.801E-03	0.101
HG-203		70.83		1.021E+00	1.247E+00	1.887E+00	2.954E-01	0.541
		72.87		9.746E-01	7.662E-01	1.163E+00	1.768E-01	0.838
BI-207		279.20	*	4.443E-02	3.832E-02	6.360E-02	8.992E-03	0.699
		72.81		1.937E-01	1.714E-01	2.625E-01	2.100E-02	0.738
		74.97		1.372E+00	2.063E-01	1.891E-01	1.546E-02	7.255
		569.70		-3.119E-02	2.678E-02	4.127E-02	4.239E-03	-0.756
	+	1063.66	*	3.997E-03	4.741E-02	7.774E-02	7.463E-03	0.051
		1770.23		1.138E+00	4.805E-01	9.146E-01	7.603E-02	1.244
PB-210		46.54	*	-1.799E+00	2.652E+00	4.126E+00	3.800E-01	-0.436
PB-211		404.85	*	-7.366E-01	7.594E-01	1.039E+00	5.041E-01	-0.709
BI-212	+	427.09		-4.775E-01	1.334E+00	2.104E+00	9.771E-01	-0.227
		832.01		-1.984E-01	8.913E-01	1.457E+00	7.626E-01	-0.136
		727.33	*	1.446E+00	8.636E-01	9.506E-01	1.337E-01	1.521
		785.37		2.210E+00	2.952E+00	4.973E+00	5.467E-01	0.444
RN-219	+	1620.50		1.382E+00	2.050E+00	3.642E+00	3.175E-01	0.379
		271.23		5.422E-01	2.893E-01	4.038E-01	5.966E-02	1.343
		401.81	*	-1.427E-02	3.665E-01	6.002E-01	9.198E-02	-0.024

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

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-223		81.07		-2.613E-01	2.023E-01	2.753E-01	2.405E-02	-0.949
		83.79		1.365E-01	1.184E-01	1.777E-01	1.603E-02	0.768
		94.87		8.608E-01	4.413E-01	6.837E-01	6.113E-02	1.259
		144.24		1.523E-01	6.332E-01	1.047E+00	1.035E-01	0.145
		154.21		4.008E-01	3.664E-01	6.322E-01	6.365E-02	0.634
	+	269.46		4.213E-01	2.237E-01	3.157E-01	4.334E-02	1.335
AC-227		323.87	*	5.267E-01	6.013E-01	9.135E-01	1.785E-01	0.577
	+	338.28		5.443E+00	1.804E+00	2.017E+00	2.942E-01	2.699
		79.69		-7.035E-01	1.109E+00	1.558E+00	2.685E-01	-0.451
		235.96		5.036E-01	1.786E-01	2.689E-01	3.654E-02	1.872
		256.23	*	-1.480E-01	2.418E-01	3.773E-01	5.877E-02	-0.392
	+	299.98		1.859E+00	1.161E+00	1.402E+00	2.284E-01	1.326
TH-227		304.50		1.147E-01	1.595E+00	2.343E+00	4.527E-01	0.049
		334.37		8.733E-01	1.988E+00	2.605E+00	4.616E-01	0.335
		79.80		-8.340E-01	1.467E+00	2.065E+00	4.496E-01	-0.404
		235.96		5.036E-01	1.778E-01	2.689E-01	3.536E-02	1.872
		256.23	*	-1.480E-01	2.420E-01	3.773E-01	6.342E-02	-0.392
	+	299.98		1.859E+00	1.161E+00	1.402E+00	2.284E-01	1.326
TH-229		304.50		1.147E-01	1.595E+00	2.343E+00	4.527E-01	0.049
		334.37		8.733E-01	1.988E+00	2.605E+00	4.616E-01	0.335
		85.43		2.086E-01	2.007E-01	3.016E-01	2.775E-02	0.692
	+	88.47		2.217E-01	9.920E-02	2.076E-01	1.961E-02	1.068
		193.51	*	-2.623E-01	4.793E-01	7.723E-01	8.300E-02	-0.340
		210.85		1.518E+00	9.788E-01	1.489E+00	1.695E-01	1.019
PA-231		283.69	*	-5.423E-01	1.379E+00	2.157E+00	3.923E-01	-0.251
	+	301.36		1.194E+00	7.445E-01	9.126E-01	1.444E-01	1.309
TH-231		81.07		-2.613E-01	2.023E-01	2.753E-01	2.405E-02	-0.949
		83.79		1.365E-01	1.184E-01	1.777E-01	1.603E-02	0.768
		94.87		8.608E-01	4.413E-01	6.837E-01	6.113E-02	1.259
		144.24		1.523E-01	6.332E-01	1.047E+00	1.035E-01	0.145
		154.21		4.008E-01	3.664E-01	6.322E-01	6.365E-02	0.634
	+	269.46		4.213E-01	2.237E-01	3.157E-01	4.334E-02	1.335
PA-233		323.87	*	5.267E-01	6.013E-01	9.135E-01	1.785E-01	0.577
	+	338.28		5.443E+00	1.804E+00	2.017E+00	2.942E-01	2.699
	+	300.13		8.412E-01	5.292E-01	6.357E-01	1.144E-01	1.323
		311.90	*	3.379E-02	5.907E-02	1.011E-01	1.325E-02	0.334
		340.48		2.017E+00	8.583E-01	1.150E+00	2.919E-01	1.754
		94.67		4.129E-01	1.689E-01	2.584E-01	3.266E-02	1.598
PA-234		98.44		5.976E-03	9.273E-02	1.318E-01	7.356E-02	0.045
		111.00		1.731E-02	1.751E-01	2.806E-01	3.337E-02	0.062
		131.20		-4.736E-02	9.593E-02	1.599E-01	1.354E-02	-0.296
		569.50		-2.103E-01	2.334E-01	3.666E-01	3.765E-02	-0.574
		733.00		-5.149E-02	3.647E-01	4.999E-01	1.157E-01	-0.103
		880.51		-1.452E-01	2.510E-01	3.996E-01	4.469E-02	-0.363
PA-234M		883.24		5.863E-02	2.531E-01	4.214E-01	2.849E-01	0.139
		926.50		-3.994E-02	1.508E-01	2.438E-01	6.383E-02	-0.164
		946.00	*	-1.393E-03	2.494E-01	4.111E-01	8.171E-02	-0.003
		949.00		1.482E-01	3.775E-01	6.391E-01	6.906E-02	0.232
		766.42		1.105E+01	1.203E+01	1.822E+01	9.325E+00	0.607

---- 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	*		2.623E+00	4.445E+00	7.531E+00	8.631E-01	0.348
	99.53			4.867E-02	1.703E-01	2.447E-01	2.127E-02	0.199
	103.37			5.112E-02	9.270E-02	1.517E-01	1.296E-02	0.337
	106.12			-3.438E-02	7.782E-02	1.224E-01	1.035E-02	-0.281
	117.23	*		-2.087E-02	3.835E-01	6.085E-01	5.028E-02	-0.034
	228.18			-4.421E-02	2.043E-01	3.294E-01	3.962E-02	-0.134
AM-241	277.60			1.553E-01	1.718E-01	2.835E-01	3.952E-02	0.548
	59.54	*		2.524E-02	1.343E-01	2.021E-01	1.579E-02	0.125
CM-247	278.00			7.902E-01	7.301E-01	1.210E+00	1.688E-01	0.653
	287.50			1.472E-01	1.298E+00	1.921E+00	2.643E-01	0.077
CF-249	402.40	*		-4.872E-03	3.337E-02	5.435E-02	5.098E-03	-0.090
	252.80			-1.650E-01	9.061E-01	1.450E+00	1.881E-01	-0.114
	333.37			9.729E-02	2.652E-01	2.698E-01	3.264E-02	0.361
CF-251	388.16	*		-1.103E-02	3.680E-02	5.966E-02	5.663E-03	-0.185
	177.52	*		-3.004E-02	1.195E-01	1.965E-01	2.002E-02	-0.153
	227.38			-1.460E-01	3.371E-01	5.383E-01	6.460E-02	-0.271
	285.41			5.614E-01	2.083E+00	3.365E+00	4.651E-01	0.167

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*                                     *                                       *
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112006        *
* Acquisition date   : 10-MAR-2010 13:23:48 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 02:00:02.04              Half life ratio : 8.000       *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 22-FEB-2010 12:00:00 Nuclide Library : SOLID            *
* Sample ID          : G248112006                      Analyst initials: MXR1     *
* Batch Number       : 959270                          Sample Quantity : 1.2406E+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     :                  *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.206E+01	3.237E+00	4.699E-01	0.000E+00
CD-109	2.278E+00	9.149E-01	1.060E+00	0.000E+00
SN-126	2.224E-01	8.931E-02	1.183E-01	0.000E+00
TL-208	4.567E-01	7.445E-02	4.902E-02	0.000E+00
BI-211	2.982E+00	4.888E-01	3.189E-01	0.000E+00
PB-212	1.518E+00	2.203E-01	8.544E-02	0.000E+00
BI-214	1.010E+00	1.903E-01	1.044E-01	0.000E+00
PB-214	1.082E+00	1.868E-01	1.118E-01	0.000E+00
RA-224	4.344E+00	1.372E+00	9.147E-01	0.000E+00
RA-226	1.010E+00	1.903E-01	1.044E-01	0.000E+00
AC-228	1.579E+00	3.421E-01	1.979E-01	0.000E+00
RA-228	1.579E+00	3.421E-01	1.979E-01	0.000E+00
TH-228	1.518E+00	2.203E-01	8.544E-02	0.000E+00
TH-232	1.579E+00	3.421E-01	1.979E-01	0.000E+00
TH-234	2.847E+00	1.836E+00	1.757E+00	0.000E+00
U-235	5.272E-02	1.864E-01	3.245E-01	0.000E+00
NP-237	6.636E-01	2.993E-01	3.653E-01	0.000E+00
U-238	2.847E+00	1.836E+00	1.757E+00	0.000E+00
ANH-511	9.842E-02	5.942E-02	4.354E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-2.255E-02	2.918E-01	4.858E-01	0.000E+00 NOT IDENT.
NA-22	-4.325E-02	4.176E-02	6.537E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.807E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.721E-03	3.474E-02	5.895E-02	0.000E+00 FAIL ABUN
V-48	7.193E-05	6.101E-02	1.027E-01	0.000E+00 NOT IDENT.
CR-51	-2.950E-01	3.310E-01	5.330E-01	0.000E+00 NOT IDENT.
MN-54	2.624E-02	3.303E-02	5.893E-02	0.000E+00 NOT IDENT.
CO-56	1.246E-02	3.455E-02	6.040E-02	0.000E+00 NOT IDENT.

CO-57	-2.406E-03	2.355E-02	3.918E-02	0.000E+00	NOT IDENT.
CO-58	-3.326E-02	3.362E-02	5.380E-02	0.000E+00	NOT IDENT.
FE-59	-1.255E-02	8.542E-02	1.405E-01	0.000E+00	NOT IDENT.
CO-60	-1.395E-02	3.858E-02	6.070E-02	0.000E+00	NOT IDENT.
ZN-65	8.746E-02	9.680E-02	1.476E-01	0.000E+00	NOT IDENT.
SE-75	-1.738E-02	4.471E-02	6.758E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.506E-02	7.209E-02	0.000E+00	NOT IDENT.
Y-88	8.361E-03	2.497E-02	4.375E-02	0.000E+00	NOT IDENT.
Y-91	-8.944E+00	2.005E+01	3.318E+01	0.000E+00	NOT IDENT.
NB-94	1.315E-02	2.845E-02	4.910E-02	0.000E+00	NOT IDENT.
NB-95	1.628E-02	3.980E-02	6.774E-02	0.000E+00	NOT IDENT.
NB-95M	1.064E-01	1.293E-01	1.990E-01	0.000E+00	NOT IDENT.
ZR-95	4.878E-02	6.604E-02	1.147E-01	0.000E+00	NOT IDENT.
MO-99	8.948E+00	1.369E+01	2.370E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.788E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.512E-02	3.408E-02	5.506E-02	0.000E+00	FAIL ABUN
RH-106	3.074E-02	2.791E-01	4.782E-01	0.000E+00	NOT IDENT.
RU-106	3.074E-02	2.791E-01	4.782E-01	0.000E+00	NOT IDENT.
AG-108M	-4.169E-03	2.685E-02	4.498E-02	0.000E+00	NOT IDENT.
AG-110M	1.274E-02	2.972E-02	5.154E-02	0.000E+00	NOT IDENT.
SN-113	4.768E-02	4.061E-02	7.271E-02	0.000E+00	NOT IDENT.
CD-115	-4.648E+00	1.291E+01	2.191E+01	0.000E+00	NOT IDENT.
SN-117M	7.434E-03	5.268E-02	9.300E-02	0.000E+00	NOT IDENT.
TE-123M	-1.078E-03	2.634E-02	4.622E-02	0.000E+00	NOT IDENT.
SB-124	5.623E-03	6.353E-02	1.082E-01	0.000E+00	NOT IDENT.
SB-125	-1.951E-02	7.786E-02	1.299E-01	0.000E+00	FAIL ABUN
TE-125M	1.007E+01	9.089E+00	1.587E+01	0.000E+00	NOT IDENT.
I-126	1.541E-01	1.981E-01	3.490E-01	0.000E+00	NOT IDENT.
SB-126	1.563E-01	1.510E-01	2.356E-01	0.000E+00	NOT IDENT.
SB-127	9.432E-01	1.351E+00	2.365E+00	0.000E+00	NOT IDENT.
I-131	3.063E-02	1.068E-01	1.861E-01	0.000E+00	NOT IDENT.
TE-132	-1.810E-01	8.290E-01	1.397E+00	0.000E+00	NOT IDENT.
BA-133	5.913E-03	3.970E-02	5.999E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.043E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	3.443E-02	4.206E-02	7.297E-02	0.000E+00	NOT IDENT.
CS-135	1.780E-01	1.723E-01	2.640E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.788E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-5.332E-02	9.988E-02	1.603E-01	0.000E+00	NOT IDENT.
BA-137M	-2.981E-02	3.042E-02	4.809E-02	0.000E+00	NOT IDENT.
CS-137	-3.149E-02	3.214E-02	5.080E-02	0.000E+00	NOT IDENT.
CE-139	-8.095E-03	2.703E-02	4.680E-02	0.000E+00	NOT IDENT.
BA-140	5.266E-04	2.328E-01	4.025E-01	0.000E+00	NOT IDENT.
LA-140	-9.759E-02	8.026E-02	1.183E-01	0.000E+00	FAIL ABUN
CE-141	1.121E-02	5.587E-02	9.953E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.782E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-8.026E-02	1.742E-01	3.050E-01	0.000E+00	NOT IDENT.
PM-144	-1.233E-03	2.960E-02	4.968E-02	0.000E+00	NOT IDENT.
PR-144	-6.782E-02	2.218E+00	3.725E+00	0.000E+00	NOT IDENT.
PM-146	-2.298E-02	3.465E-02	5.578E-02	0.000E+00	NOT IDENT.
ND-147	2.715E-01	4.953E-01	8.798E-01	0.000E+00	FAIL ABUN
PM-149	-3.186E+00	1.162E+02	1.930E+02	0.000E+00	NOT IDENT.
EU-152	-4.101E-03	1.062E-01	1.500E-01	0.000E+00	NOT IDENT.
GD-153	-1.271E-02	8.232E-02	1.224E-01	0.000E+00	NOT IDENT.
EU-154	-1.217E-01	1.186E-01	1.853E-01	0.000E+00	NOT IDENT.
EU-155	-1.469E-02	9.583E-02	1.612E-01	0.000E+00	FAIL ABUN
TB-160	-5.592E-02	1.197E-01	1.973E-01	0.000E+00	FAIL ABUN
HO-166M	1.974E-02	5.371E-02	9.207E-02	0.000E+00	NOT IDENT.
TA-182	1.413E-01	1.761E-01	3.124E-01	0.000E+00	FAIL ABUN
IR-192	1.328E-02	3.008E-02	5.336E-02	0.000E+00	FAIL ABUN
HG-203	4.443E-02	3.756E-02	6.498E-02	0.000E+00	NOT IDENT.
BI-207	3.997E-03	4.646E-02	7.800E-02	0.000E+00	FAIL ABUN
PB-210	-1.799E+00	2.599E+00	4.315E+00	0.000E+00	NOT IDENT.
PB-211	-7.366E-01	7.442E-01	1.056E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.463E-01	9.587E-01	0.000E+00	FAIL ABUN
RN-219	-1.427E-02	3.591E-01	6.102E-01	0.000E+00	FAIL ABUN
RA-223	5.267E-01	5.893E-01	9.314E-01	0.000E+00	FAIL ABUN
AC-227	-1.480E-01	2.370E-01	3.859E-01	0.000E+00	FAIL ABUN
TH-227	-1.480E-01	2.372E-01	3.859E-01	0.000E+00	FAIL ABUN
TH-229	-2.623E-01	4.698E-01	7.928E-01	0.000E+00	FAIL ABUN
PA-231	-5.423E-01	1.352E+00	2.203E+00	0.000E+00	FAIL ABUN
TH-231	5.267E-01	5.893E-01	9.314E-01	0.000E+00	FAIL ABUN
PA-233	3.379E-02	5.789E-02	1.032E-01	0.000E+00	FAIL ABUN
PA-234	-1.393E-03	2.444E-01	4.131E-01	0.000E+00	NOT IDENT.
PA-234M	2.623E+00	4.356E+00	7.562E+00	0.000E+00	NOT IDENT.
NP-239	-2.087E-02	3.758E-01	6.288E-01	0.000E+00	NOT IDENT.
AM-241	2.524E-02	1.317E-01	2.107E-01	0.000E+00	NOT IDENT.
CM-247	-4.872E-03	3.270E-02	5.525E-02	0.000E+00	NOT IDENT.
CF-249	-1.103E-02	3.606E-02	6.068E-02	0.000E+00	NOT IDENT.

CF-251	-3.004E-02	1.171E-01	2.019E-01	0.000E+00 NOT IDENT.
--------	------------	-----------	-----------	----------------------

VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 15:24:21.78

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112006.CNF;1
Sample date        : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:23:48
Sample ID          : G248112006 Sample quantity : 1.24060E+02 GRAM
Detector name      : GAM22 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.04 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959270 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
K-40	1460.82	2156	10.66*	1.909E+00	3.206E+01	3.206E+01	10.30
CD-109	88.03	203	3.70*	7.460E+00	2.224E+00	2.278E+00	40.98
SN-126	64.28	148	9.60	4.257E+00	1.097E+00	1.097E+00	65.01
	86.94	203	8.90	7.460E+00	9.245E-01	9.245E-01	57.58
	87.57	203	37.00*	7.460E+00	2.224E-01	2.224E-01	40.98
TL-208	277.37	-----	6.60	6.182E+00	-----	Line Not Found	-----
	583.19	504	85.00*	3.930E+00	4.567E-01	4.567E-01	16.64
	860.56	76	12.50	2.923E+00	6.315E-01	6.315E-01	48.75
BI-211	72.87	-----	1.23	5.897E+00	-----	Line Not Found	-----
	351.06	688	12.92*	5.400E+00	2.982E+00	2.982E+00	16.73
PB-212	74.82	-----	10.28	6.167E+00	-----	Line Not Found	-----
	77.11	1030	17.10	6.369E+00	2.862E+00	2.862E+00	15.03
	238.63	1467	43.60*	6.708E+00	1.518E+00	1.518E+00	14.81
	300.09	109	3.30	5.912E+00	1.690E+00	1.690E+00	62.05
BI-214	609.32	579	45.49*	3.810E+00	1.010E+00	1.010E+00	19.22
	1120.29	131	14.92	2.345E+00	1.130E+00	1.130E+00	46.29
	1764.49	131	15.30	1.716E+00	1.504E+00	1.504E+00	23.97
PB-214	74.82	-----	5.80	6.167E+00	-----	Line Not Found	-----
	77.11	1030	9.70	6.369E+00	5.046E+00	5.046E+00	17.15
	242.00	392	7.25	6.664E+00	2.457E+00	2.457E+00	32.75
	295.22	495	18.42	5.970E+00	1.363E+00	1.363E+00	23.79
	351.93	688	35.60*	5.400E+00	1.082E+00	1.082E+00	17.61
RA-224	240.99	392	4.10*	6.664E+00	4.344E+00	4.344E+00	32.23
RA-226	609.32	579	45.49*	3.810E+00	1.010E+00	1.010E+00	19.22
	1120.29	131	14.92	2.345E+00	1.130E+00	1.130E+00	46.29
	1764.49	131	15.30	1.716E+00	1.504E+00	1.504E+00	23.97
AC-228	338.32	282	11.27	5.525E+00	1.372E+00	1.372E+00	51.89
	911.20	375	25.80*	2.788E+00	1.579E+00	1.579E+00	22.11
	968.97	198	15.80	2.648E+00	1.431E+00	1.431E+00	40.96
RA-228	338.32	282	11.27	5.525E+00	1.372E+00	1.372E+00	51.89
	911.20	375	25.80*	2.788E+00	1.579E+00	1.579E+00	22.11
	968.97	198	15.80	2.648E+00	1.431E+00	1.431E+00	40.96

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	-----	10.28	6.167E+00	-----	Line Not Found	-----
	77.11	1030	17.10	6.369E+00	2.862E+00	2.862E+00	15.03
	238.63	1467	43.60*	6.708E+00	1.518E+00	1.518E+00	14.81
	300.09	109	3.30	5.912E+00	1.690E+00	1.690E+00	86.52
TH-232	338.32	282	11.27	5.525E+00	1.372E+00	1.372E+00	32.04
	911.20	375	25.80*	2.788E+00	1.579E+00	1.579E+00	22.11
	968.97	198	15.80	2.648E+00	1.431E+00	1.431E+00	40.96
TH-234	63.29	148	3.70*	4.257E+00	2.847E+00	2.847E+00	65.83
	92.59	293	4.23	7.881E+00	2.661E+00	2.661E+00	44.77
U-235	89.96	135	3.47	7.676E+00	1.533E+00	1.533E+00	50.34
	93.35	293	5.60	7.881E+00	2.010E+00	2.010E+00	45.28
	143.76	-----	10.96*	8.364E+00	-----	Line Not Found	-----
	163.33	-----	5.08	8.031E+00	-----	Line Not Found	-----
	185.72	231	57.20	7.604E+00	1.606E-01	1.606E-01	40.68
	205.31	-----	5.01	7.253E+00	-----	Line Not Found	-----
NP-237	86.48	203	12.40*	7.460E+00	6.636E-01	6.636E-01	46.03
	95.86	-----	2.68	8.032E+00	-----	Line Not Found	-----
U-238	63.29	148	3.70*	4.257E+00	2.847E+00	2.847E+00	65.83
	92.59	293	4.23	7.881E+00	2.661E+00	2.661E+00	39.89
ANH-511	511.00	140	100.00*	4.297E+00	9.842E-02	9.842E-02	61.61

Flag: "*" = Keyline

Total number of lines in spectrum 27
Number of unidentified lines 2
Number of lines tentatively identified by NID 25 92.59%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.206E+01	3.206E+01	0.330E+01	10.30	
CD-109	461.40D	1.02	2.224E+00	2.278E+00	0.934E+00	40.98	
SN-126	2.30E+05Y	1.00	2.224E-01	2.224E-01	0.911E-01	40.98	
TL-208	1.41E+10Y	1.00	4.567E-01	4.567E-01	0.760E-01	16.64	
BI-211	7.04E+08Y	1.00	2.982E+00	2.982E+00	0.499E+00	16.73	
PB-212	1.41E+10Y	1.00	1.518E+00	1.518E+00	0.225E+00	14.81	
BI-214	1600.00Y	1.00	1.010E+00	1.010E+00	0.194E+00	19.22	
PB-214	1600.00Y	1.00	1.082E+00	1.082E+00	0.191E+00	17.61	
RA-224	1.41E+10Y	1.00	4.344E+00	4.344E+00	1.400E+00	32.23	
RA-226	1600.00Y	1.00	1.010E+00	1.010E+00	0.194E+00	19.22	
AC-228	1.41E+10Y	1.00	1.579E+00	1.579E+00	0.349E+00	22.11	
RA-228	1.41E+10Y	1.00	1.579E+00	1.579E+00	0.349E+00	22.11	
TH-228	1.41E+10Y	1.00	1.518E+00	1.518E+00	0.225E+00	14.81	
TH-232	1.41E+10Y	1.00	1.579E+00	1.579E+00	0.349E+00	22.11	
TH-234	4.47E+09Y	1.00	2.847E+00	2.847E+00	1.874E+00	65.83	
U-235	7.04E+08Y	1.00	1.606E-01	1.606E-01	0.653E-01	40.68	K
NP-237	2.14E+06Y	1.00	6.636E-01	6.636E-01	3.054E-01	46.03	
U-238	4.47E+09Y	1.00	2.847E+00	2.847E+00	1.874E+00	65.83	
ANH-511	1.00E+09Y	1.00	9.842E-02	9.842E-02	6.064E-02	61.61	
Total Activity :			5.978E+01	5.984E+01			

Grand Total Activity : 5.978E+01 5.984E+01

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

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

Unidentified Energy Lines
Sample ID : G248112006

Page : 4
Acquisition date : 10-MAR-2010 13:23:48

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.12	170	399	1.51	418.22	414	10	2.36E-02	46.5	7.19E+00	
0	270.58	121	259	1.56	541.02	537	9	1.68E-02	51.3	6.27E+00	T
0	327.81	134	221	1.94	655.38	650	11	1.87E-02	46.1	5.63E+00	T
0	463.06	68	160	1.78	925.69	921	12	9.40E-03	80.5	4.58E+00	T
0	727.67	107	154	2.00	1454.61	1445	17	1.48E-02	58.0	3.34E+00	T
0	1729.03	55	15	2.75	3457.22	3447	21	7.62E-03	45.1	1.73E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112006.CNF;1  *
* Acquisition date   : 10-MAR-2010 13:23:48  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 02:00:02.04          Half life ratio  : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-FEB-2010 12:00:00  Nuclide Library   : SOLID        *
* Sample ID          : G248112006            Analyst initials : MXR1          *
* Batch Number       : 959270                Sample Quantity  : 1.24060E+02 GRAM  *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 2-DEC-2009 16:47:28.08MS Isotope       :              *
* MSD ID             :                      MSD Isotope       :              *
* LCS ID             : 1032-A                LCS Isotope      :              *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.206E+01	3.303E+00	4.704E-01	4.310E-02	68.156
CD-109	2.278E+00	9.336E-01	1.022E+00	9.702E-02	2.228
SN-126	2.224E-01	9.113E-02	1.140E-01	1.076E-02	1.951
TL-208	4.567E-01	7.597E-02	4.846E-02	5.250E-03	9.424
BI-211	2.982E+00	4.988E-01	3.131E-01	3.653E-02	9.524
PB-212	1.518E+00	2.248E-01	8.346E-02	1.106E-02	18.189
BI-214	1.010E+00	1.942E-01	1.033E-01	1.205E-02	9.786
PB-214	1.082E+00	1.906E-01	1.098E-01	1.413E-02	9.859
RA-224	4.344E+00	1.400E+00	8.936E-01	1.119E-01	4.862
RA-226	1.010E+00	1.942E-01	1.033E-01	1.205E-02	9.786
AC-228	1.579E+00	3.491E-01	1.968E-01	2.666E-02	8.022
RA-228	1.579E+00	3.491E-01	1.968E-01	2.666E-02	8.022
TH-228	1.518E+00	2.248E-01	8.346E-02	1.106E-02	18.189
TH-232	1.579E+00	3.491E-01	1.968E-01	2.666E-02	8.022
TH-234	2.847E+00	1.874E+00	1.686E+00	3.001E-01	1.688
U-235	1.606E-01	6.534E-02	3.148E-01	5.381E-02	0.510
NP-237	6.636E-01	3.054E-01	3.520E-01	8.077E-02	1.885
U-238	2.847E+00	1.874E+00	1.686E+00	3.001E-01	1.688

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	9.842E-02	6.064E-02	4.296E-02	4.305E-03	2.291

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.255E-02		2.977E-01	4.789E-01	4.998E-02	-0.047
NA-22	-4.325E-02		4.261E-02	6.532E-02	5.629E-03	-0.662
NA-24	-6.460E-01		9.217E-01	Half-Life too short		
SC-46	-1.721E-03		3.545E-02	5.862E-02	6.561E-03	-0.029
V-48	7.193E-05		6.225E-02	1.023E-01	1.072E-02	0.001
CR-51	-2.950E-01		3.377E-01	5.227E-01	6.765E-02	-0.564
MN-54	2.624E-02		3.370E-02	5.854E-02	6.503E-03	0.448
CO-56	1.246E-02		3.526E-02	6.001E-02	6.681E-03	0.208
CO-57	-2.406E-03		2.403E-02	3.793E-02	3.128E-03	-0.063
CO-58	-3.326E-02		3.431E-02	5.343E-02	5.916E-03	-0.622
FE-59	-1.255E-02		8.717E-02	1.402E-01	1.373E-02	-0.090
CO-60	-1.395E-02		3.937E-02	6.069E-02	5.412E-03	-0.230
ZN-65	8.746E-02		9.877E-02	1.472E-01	1.313E-02	0.594
SE-75	-1.738E-02		4.562E-02	6.610E-02	8.898E-03	-0.263
SR-85	9.950E-02		4.598E-02	7.115E-02	7.139E-03	1.398
Y-88	8.361E-03		2.548E-02	4.394E-02	3.553E-03	0.190
Y-91	-8.944E+00		2.045E+01	3.313E+01	2.723E+00	-0.270
NB-94	1.315E-02		2.903E-02	4.867E-02	5.215E-03	0.270
NB-95	1.628E-02		4.061E-02	6.722E-02	7.350E-03	0.242
NB-95M	1.064E-01		1.319E-01	1.943E-01	2.572E-02	0.547
ZR-95	4.878E-02		6.739E-02	1.138E-01	1.324E-02	0.429
MO-99	8.948E+00		1.397E+01	2.351E+01	4.015E+00	0.381
TC-99M	-2.952E+11		2.443E+11	Half-Life too short		
RU-103	-1.512E-02		3.478E-02	5.431E-02	8.052E-03	-0.278
RH-106	3.074E-02		2.848E-01	4.731E-01	6.865E-02	0.065
RU-106	3.074E-02		2.848E-01	4.731E-01	4.942E-02	0.065
AG-108M	-4.169E-03		2.740E-02	4.429E-02	4.359E-03	-0.094
AG-110M	1.274E-02		3.032E-02	5.104E-02	5.485E-03	0.250
SN-113	4.768E-02		4.144E-02	7.149E-02	6.827E-03	0.667
CD-115	-4.648E+00		1.318E+01	2.163E+01	2.184E+00	-0.215
SN-117M	7.434E-03		5.375E-02	9.035E-02	8.568E-03	0.082
TE-123M	-1.078E-03		2.688E-02	4.490E-02	4.288E-03	-0.024
SB-124	5.623E-03		6.483E-02	1.086E-01	9.680E-03	0.052
SB-125	-1.951E-02		7.945E-02	1.279E-01	1.240E-02	-0.153
TE-125M	1.007E+01		9.274E+00	1.534E+01	1.578E+00	0.656
I-126	1.541E-01		2.021E-01	3.456E-01	3.652E-02	0.446
SB-126	1.563E-01		1.541E-01	2.335E-01	2.519E-02	0.669
SB-127	9.432E-01		1.379E+00	2.343E+00	3.097E-01	0.403
I-131	3.063E-02		1.090E-01	1.828E-01	2.026E-02	0.168
TE-132	-1.810E-01		8.459E-01	1.364E+00	2.464E-01	-0.133
BA-133	5.913E-03		4.051E-02	5.891E-02	8.673E-03	0.100
I-133	3.381E-03		5.323E-03	Half-Life too short		

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	3.443E-02		4.292E-02	7.244E-02	8.019E-03	0.475
CS-135	1.780E-01		1.758E-01	2.582E-01	3.735E-02	0.689
I-135	-2.452E+10		3.463E+10	Half-Life too short		
CS-136	-5.332E-02		1.019E-01	1.597E-01	1.615E-02	-0.334
BA-137M	-2.981E-02		3.104E-02	4.762E-02	5.022E-03	-0.626
CS-137	-3.149E-02		3.279E-02	5.031E-02	5.312E-03	-0.626
CE-139	-8.095E-03		2.758E-02	4.549E-02	4.462E-03	-0.178
BA-140	5.266E-04		2.375E-01	3.975E-01	1.365E-01	0.001
LA-140	-9.759E-02		8.190E-02	1.186E-01	1.040E-02	-0.823
CE-141	1.121E-02		5.701E-02	9.658E-02	8.793E-03	0.116
CE-143	1.194E-03		1.930E-04	Half-Life too short		
CE-144	-8.026E-02		1.777E-01	2.956E-01	4.505E-02	-0.272
PM-144	-1.233E-03		3.021E-02	4.923E-02	5.265E-03	-0.025
PR-144	-6.782E-02		2.263E+00	3.691E+00	3.946E-01	-0.018
PM-146	-2.298E-02		3.536E-02	5.495E-02	6.319E-03	-0.418
ND-147	2.715E-01		5.054E-01	8.686E-01	1.377E-01	0.313
PM-149	-3.186E+00		1.185E+02	1.890E+02	3.576E+01	-0.017
EU-152	-4.101E-03		1.083E-01	1.473E-01	1.770E-02	-0.028
GD-153	-1.271E-02		8.400E-02	1.181E-01	1.039E-02	-0.108
EU-154	-1.217E-01		1.211E-01	1.852E-01	2.105E-02	-0.657
EU-155	-1.469E-02		9.779E-02	1.558E-01	1.337E-02	-0.094
TB-160	-5.592E-02		1.221E-01	1.961E-01	2.193E-02	-0.285
HO-166M	1.974E-02		5.480E-02	9.126E-02	9.811E-03	0.216
TA-182	1.413E-01		1.797E-01	3.119E-01	2.594E-02	0.453
IR-192	1.328E-02		3.070E-02	5.232E-02	6.686E-03	0.254
HG-203	4.443E-02		3.832E-02	6.360E-02	8.992E-03	0.699
BI-207	3.997E-03		4.741E-02	7.774E-02	7.463E-03	0.051
PB-210	-1.799E+00		2.652E+00	4.126E+00	3.800E-01	-0.436
PB-211	-7.366E-01		7.594E-01	1.039E+00	5.041E-01	-0.709
BI-212	1.446E+00	+	8.636E-01	9.506E-01	1.337E-01	1.521
RN-219	-1.427E-02		3.665E-01	6.002E-01	9.198E-02	-0.024
RA-223	5.267E-01		6.013E-01	9.135E-01	1.785E-01	0.577
AC-227	-1.480E-01		2.418E-01	3.773E-01	5.877E-02	-0.392
TH-227	-1.480E-01		2.420E-01	3.773E-01	6.342E-02	-0.392
TH-229	-2.623E-01		4.793E-01	7.723E-01	8.300E-02	-0.340
PA-231	-5.423E-01		1.379E+00	2.157E+00	3.923E-01	-0.251
TH-231	5.267E-01		6.013E-01	9.135E-01	1.785E-01	0.577
PA-233	3.379E-02		5.907E-02	1.011E-01	1.325E-02	0.334
PA-234	-1.393E-03		2.494E-01	4.111E-01	8.171E-02	-0.003
PA-234M	2.623E+00		4.445E+00	7.531E+00	8.631E-01	0.348
NP-239	-2.087E-02		3.835E-01	6.085E-01	5.028E-02	-0.034
AM-241	2.524E-02		1.343E-01	2.021E-01	1.579E-02	0.125
CM-247	-4.872E-03		3.337E-02	5.435E-02	5.098E-03	-0.090
CF-249	-1.103E-02		3.680E-02	5.966E-02	5.663E-03	-0.185
CF-251	-3.004E-02		1.195E-01	1.965E-01	2.002E-02	-0.153

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*                                     *                                       *
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248112006           *
* Acquisition date   : 10-MAR-2010 13:23:48 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 02:00:02.04 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 22-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248112006 Analyst initials: MXR1                   *
* Batch Number       : 959270 Sample Quantity : 1.2406E+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 :                               *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.206E+01	3.237E+00	2.351E-01	1.652E+00
CD-109	2.278E+00	9.149E-01	5.305E-01	4.668E-01
SN-126	2.224E-01	8.931E-02	5.916E-02	4.556E-02
TL-208	4.567E-01	7.445E-02	2.452E-02	3.799E-02
BI-211	2.982E+00	4.888E-01	1.595E-01	2.494E-01
PB-212	1.518E+00	2.203E-01	4.275E-02	1.124E-01
BI-214	1.010E+00	1.903E-01	5.222E-02	9.708E-02
PB-214	1.082E+00	1.868E-01	5.593E-02	9.531E-02
RA-224	4.344E+00	1.372E+00	4.576E-01	7.001E-01
RA-226	1.010E+00	1.903E-01	5.222E-02	9.708E-02
AC-228	1.579E+00	3.421E-01	9.901E-02	1.745E-01
RA-228	1.579E+00	3.421E-01	9.901E-02	1.745E-01
TH-228	1.518E+00	2.203E-01	4.275E-02	1.124E-01
TH-232	1.579E+00	3.421E-01	9.901E-02	1.745E-01
TH-234	2.847E+00	1.836E+00	8.789E-01	9.370E-01
U-235	5.272E-02	1.864E-01	1.623E-01	9.513E-02
NP-237	6.636E-01	2.993E-01	1.827E-01	1.527E-01
U-238	2.847E+00	1.836E+00	8.789E-01	9.370E-01
ANH-511	9.842E-02	5.942E-02	2.178E-02	3.032E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-2.255E-02	2.918E-01	2.430E-01	1.489E-01 NOT IDENT.
NA-22	-4.325E-02	4.176E-02	3.270E-02	2.131E-02 NOT IDENT.
NA-24	-6.460E+05	1.807E+06	0.000E+00	9.217E+05 SHORT HLIF
SC-46	-1.721E-03	3.474E-02	2.949E-02	1.773E-02 FAIL ABUN
V-48	7.193E-05	6.101E-02	5.139E-02	3.113E-02 NOT IDENT.
CR-51	-2.950E-01	3.310E-01	2.667E-01	1.689E-01 NOT IDENT.
MN-54	2.624E-02	3.303E-02	2.948E-02	1.685E-02 NOT IDENT.
CO-56	1.246E-02	3.455E-02	3.022E-02	1.763E-02 NOT IDENT.

CO-57	-2.406E-03	2.355E-02	1.960E-02	1.201E-02	NOT IDENT.
CO-58	-3.326E-02	3.362E-02	2.692E-02	1.715E-02	NOT IDENT.
FE-59	-1.255E-02	8.542E-02	7.032E-02	4.358E-02	NOT IDENT.
CO-60	-1.395E-02	3.858E-02	3.037E-02	1.968E-02	NOT IDENT.
ZN-65	8.746E-02	9.680E-02	7.385E-02	4.939E-02	NOT IDENT.
SE-75	-1.738E-02	4.471E-02	3.381E-02	2.281E-02	NOT IDENT.
SR-85	9.950E-02	4.506E-02	3.607E-02	2.299E-02	NOT IDENT.
Y-88	8.361E-03	2.497E-02	2.189E-02	1.274E-02	NOT IDENT.
Y-91	-8.944E+00	2.005E+01	1.660E+01	1.023E+01	NOT IDENT.
NB-94	1.315E-02	2.845E-02	2.457E-02	1.452E-02	NOT IDENT.
NB-95	1.628E-02	3.980E-02	3.389E-02	2.031E-02	NOT IDENT.
NB-95M	1.064E-01	1.293E-01	9.956E-02	6.597E-02	NOT IDENT.
ZR-95	4.878E-02	6.604E-02	5.739E-02	3.369E-02	NOT IDENT.
MO-99	8.948E+00	1.369E+01	1.186E+01	6.987E+00	NOT IDENT.
TC-99M	-2.952E+17	4.788E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.512E-02	3.408E-02	2.755E-02	1.739E-02	FAIL ABUN
RH-106	3.074E-02	2.791E-01	2.392E-01	1.424E-01	NOT IDENT.
RU-106	3.074E-02	2.791E-01	2.392E-01	1.424E-01	NOT IDENT.
AG-108M	-4.169E-03	2.685E-02	2.250E-02	1.370E-02	NOT IDENT.
AG-110M	1.274E-02	2.972E-02	2.579E-02	1.516E-02	NOT IDENT.
SN-113	4.768E-02	4.061E-02	3.638E-02	2.072E-02	NOT IDENT.
CD-115	-4.648E+00	1.291E+01	1.096E+01	6.588E+00	NOT IDENT.
SN-117M	7.434E-03	5.268E-02	4.653E-02	2.688E-02	NOT IDENT.
TE-123M	-1.078E-03	2.634E-02	2.312E-02	1.344E-02	NOT IDENT.
SB-124	5.623E-03	6.353E-02	5.414E-02	3.242E-02	NOT IDENT.
SB-125	-1.951E-02	7.786E-02	6.498E-02	3.973E-02	FAIL ABUN
TE-125M	1.007E+01	9.089E+00	7.941E+00	4.637E+00	NOT IDENT.
I-126	1.541E-01	1.981E-01	1.746E-01	1.010E-01	NOT IDENT.
SB-126	1.563E-01	1.510E-01	1.178E-01	7.704E-02	NOT IDENT.
SB-127	9.432E-01	1.351E+00	1.183E+00	6.894E-01	NOT IDENT.
I-131	3.063E-02	1.068E-01	9.309E-02	5.448E-02	NOT IDENT.
TE-132	-1.810E-01	8.290E-01	6.988E-01	4.230E-01	NOT IDENT.
BA-133	5.913E-03	3.970E-02	3.001E-02	2.026E-02	NOT IDENT.
I-133	3.381E+03	1.043E+04	0.000E+00	5.323E+03	SHORT HLIF
CS-134	3.443E-02	4.206E-02	3.651E-02	2.146E-02	NOT IDENT.
CS-135	1.780E-01	1.723E-01	1.321E-01	8.790E-02	NOT IDENT.
I-135	-2.452E+16	6.788E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-5.332E-02	9.988E-02	8.019E-02	5.096E-02	NOT IDENT.
BA-137M	-2.981E-02	3.042E-02	2.406E-02	1.552E-02	NOT IDENT.
CS-137	-3.149E-02	3.214E-02	2.541E-02	1.640E-02	NOT IDENT.
CE-139	-8.095E-03	2.703E-02	2.341E-02	1.379E-02	NOT IDENT.
BA-140	5.266E-04	2.328E-01	2.014E-01	1.188E-01	NOT IDENT.
LA-140	-9.759E-02	8.026E-02	5.921E-02	4.095E-02	FAIL ABUN
CE-141	1.121E-02	5.587E-02	4.979E-02	2.850E-02	NOT IDENT.
CE-143	1.194E+03	3.782E+02	0.000E+00	1.930E+02	SHORT HLIF
CE-144	-8.026E-02	1.742E-01	1.526E-01	8.886E-02	NOT IDENT.
PM-144	-1.233E-03	2.960E-02	2.485E-02	1.510E-02	NOT IDENT.
PR-144	-6.782E-02	2.218E+00	1.863E+00	1.132E+00	NOT IDENT.
PM-146	-2.298E-02	3.465E-02	2.790E-02	1.768E-02	NOT IDENT.
ND-147	2.715E-01	4.953E-01	4.401E-01	2.527E-01	FAIL ABUN
PM-149	-3.186E+00	1.162E+02	9.658E+01	5.927E+01	NOT IDENT.
EU-152	-4.101E-03	1.062E-01	7.506E-02	5.417E-02	NOT IDENT.
GD-153	-1.271E-02	8.232E-02	6.123E-02	4.200E-02	NOT IDENT.
EU-154	-1.217E-01	1.186E-01	9.271E-02	6.053E-02	NOT IDENT.
EU-155	-1.469E-02	9.583E-02	8.065E-02	4.889E-02	FAIL ABUN
TB-160	-5.592E-02	1.197E-01	9.870E-02	6.107E-02	FAIL ABUN
HO-166M	1.974E-02	5.371E-02	4.606E-02	2.740E-02	NOT IDENT.
TA-182	1.413E-01	1.761E-01	1.563E-01	8.987E-02	FAIL ABUN
IR-192	1.328E-02	3.008E-02	2.670E-02	1.535E-02	FAIL ABUN
HG-203	4.443E-02	3.756E-02	3.251E-02	1.916E-02	NOT IDENT.
BI-207	3.997E-03	4.646E-02	3.902E-02	2.371E-02	FAIL ABUN
PB-210	-1.799E+00	2.599E+00	2.159E+00	1.326E+00	NOT IDENT.
PB-211	-7.366E-01	7.442E-01	5.282E-01	3.797E-01	NOT IDENT.
BI-212	1.446E+00	8.463E-01	4.796E-01	4.318E-01	FAIL ABUN
RN-219	-1.427E-02	3.591E-01	3.053E-01	1.832E-01	FAIL ABUN
RA-223	5.267E-01	5.893E-01	4.660E-01	3.007E-01	FAIL ABUN
AC-227	-1.480E-01	2.370E-01	1.931E-01	1.209E-01	FAIL ABUN
TH-227	-1.480E-01	2.372E-01	1.931E-01	1.210E-01	FAIL ABUN
TH-229	-2.623E-01	4.698E-01	3.967E-01	2.397E-01	FAIL ABUN
PA-231	-5.423E-01	1.352E+00	1.102E+00	6.897E-01	FAIL ABUN
TH-231	5.267E-01	5.893E-01	4.660E-01	3.007E-01	FAIL ABUN
PA-233	3.379E-02	5.789E-02	5.162E-02	2.953E-02	FAIL ABUN
PA-234	-1.393E-03	2.444E-01	2.067E-01	1.247E-01	NOT IDENT.
PA-234M	2.623E+00	4.356E+00	3.783E+00	2.223E+00	NOT IDENT.
NP-239	-2.087E-02	3.758E-01	3.146E-01	1.918E-01	NOT IDENT.
AM-241	2.524E-02	1.317E-01	1.054E-01	6.717E-02	NOT IDENT.
CM-247	-4.872E-03	3.270E-02	2.764E-02	1.669E-02	NOT IDENT.
CF-249	-1.103E-02	3.606E-02	3.036E-02	1.840E-02	NOT IDENT.

CF-251	-3.004E-02	1.171E-01	1.010E-01	5.977E-02 NOT IDENT.
--------	------------	-----------	-----------	----------------------

```

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

```

ENERGY	MDA COUNTS
46.54	286.3606
49.72	270.4497
57.36	0.0000
59.54	341.2008
63.29	369.4818
63.29	369.4818
64.28	405.9073
67.75	419.9981
69.67	469.5501
70.83	420.1322
72.81	471.1907
72.87	471.2886
72.87	471.2886
74.82	458.7476
74.82	458.7476
74.82	458.7476
74.97	458.9785
77.11	462.2414
77.11	462.2414
77.11	462.2414
79.69	432.7510
79.80	432.9032
80.12	454.9350
80.19	434.9838
80.57	435.5088
81.00	501.0540
81.07	501.1653
81.07	501.1653
83.79	416.5132
83.79	416.5132
85.43	448.3937
86.48	530.0284
86.55	530.1389
86.79	508.4800
86.94	508.7117
87.57	506.5120
88.03	391.8594
88.47	392.3702
89.96	533.9273
91.11	420.9172
92.59	422.7078
92.59	422.7078
93.35	356.2278
94.67	357.5573
94.87	357.7572
94.87	357.7572
95.86	376.5220
97.43	350.5666
98.44	358.0455
99.53	365.6338
100.11	364.8967
103.18	376.8939
103.37	366.0886
105.31	386.7253
106.12	394.1770
109.28	358.2874
111.00	393.4575
111.76	400.9368
116.30	383.8104
117.23	381.2472
121.12	354.8845
121.78	358.8774
122.06	364.8641
123.07	385.3245
131.20	416.7584
133.52	386.0905
136.00	372.1122

136.47	363.5711
140.51	415.1768
140.51	0.0000
143.76	369.0932
144.24	364.0181
144.24	364.0181
145.44	373.9785
152.43	365.3574
153.25	371.4664
154.21	378.6163
154.21	378.6163
156.02	404.9465
158.56	385.4781
159.00	394.1808
162.66	371.5310
163.33	371.9872
165.86	378.4217
176.60	342.3789
177.52	365.0743
181.07	342.6660
184.41	396.0409
185.72	393.5824
193.51	355.0724
197.04	329.2171
205.31	369.1199
210.85	349.4564
215.65	314.5260
222.11	325.2956
227.38	343.3337
228.16	332.2519
228.18	332.2617
235.69	328.3508
235.96	313.3119
235.96	313.3119
238.63	301.1317
238.63	301.1317
240.99	302.0863
242.00	302.4929
244.70	248.8273
252.40	256.0690
252.80	289.5703
256.23	300.5724
256.23	300.5724
260.90	291.4729
264.66	275.3558
268.22	282.7091
269.46	279.6203
269.46	279.6203
271.23	273.1724
273.65	349.9756
276.40	292.6091
277.37	278.5221
277.60	277.4849
278.00	270.9556
279.20	261.3342
279.54	261.4382
280.46	317.4069
283.69	271.6583
284.31	281.9235
285.41	257.6410
285.90	266.7549
287.50	267.9974
293.27	0.0000
295.22	264.3265
295.96	208.6144
298.57	209.2264
299.98	209.5549
299.98	209.5549
300.09	209.5830
300.09	209.5830
300.13	232.3731
301.36	220.5238
302.85	214.7932
304.50	228.9215
304.50	228.9215
304.85	248.8575
308.46	240.9524
311.90	231.6970

316.51	212.4344
319.41	227.0493
320.08	233.8288
323.87	176.0728
323.87	176.0728
328.76	241.1796
333.37	217.1467
334.37	226.8164
334.37	226.8164
338.28	234.3575
338.28	234.3575
338.32	234.3696
338.32	234.3696
338.32	234.3696
340.48	237.7289
340.55	234.5772
344.28	232.9050
351.06	241.8329
351.93	225.0479
356.01	186.6733
364.49	183.9728
366.42	213.5651
383.85	198.2007
388.16	215.8848
388.63	222.9418
391.69	183.6316
400.66	192.1308
401.81	199.3728
402.40	198.4669
404.85	238.2644
410.95	188.7723
414.70	221.9571
423.72	179.5309
427.09	173.8625
427.87	175.0033
433.94	190.3609
453.88	159.7837
463.37	159.9085
468.07	152.3389
473.00	162.1568
476.78	186.1579
477.60	170.2146
487.02	157.3991
492.35	143.9475
497.08	148.7885
511.00	172.2209
514.00	192.3729
527.90	152.6230
529.87	0.0000
531.02	132.5584
537.26	142.4321
546.56	0.0000
563.25	127.8671
569.33	166.4088
569.50	161.6716
569.70	171.2036
583.19	132.3932
600.60	149.8416
602.73	184.7884
604.72	190.0172
609.32	161.8561
609.32	161.8561
610.33	157.2185
614.28	152.5659
618.01	145.8514
621.93	144.4250
621.93	144.4250
633.25	117.7023
635.95	137.7048
636.99	127.8741
645.85	117.5751
657.76	125.4044
661.66	150.8209
661.66	150.8209
664.57	0.0000
666.33	122.9904
666.50	123.0028
677.62	146.0889

685.70	117.1876
695.00	120.8568
696.49	137.3560
696.51	137.3587
697.00	138.4195
702.65	125.4725
706.68	143.2646
711.68	130.2118
720.70	110.3640
721.93	0.0000
722.78	162.1636
722.91	162.1731
723.31	171.1205
724.19	165.8476
727.33	130.2465
733.00	112.8647
735.93	136.7598
739.50	112.1963
747.24	150.5381
752.31	134.0409
753.82	125.6918
756.73	119.5314
763.94	178.3530
765.81	150.8923
766.42	139.2435
777.92	150.7276
778.90	142.2460
783.70	116.8503
785.37	124.4560
795.86	120.7773
801.95	136.2719
810.29	140.5382
810.76	126.6059
815.77	111.9747
818.51	101.8416
832.01	126.9298
834.85	119.5652
836.80	0.0000
846.77	108.8614
856.80	76.5511
860.56	110.4957
871.09	110.0606
873.19	90.0462
875.33	0.0000
879.36	108.5426
880.51	116.2861
883.24	99.1059
884.68	95.3175
889.28	109.0155
898.04	107.4945
911.20	101.2868
911.20	101.2868
911.20	101.2868
926.50	99.9865
937.49	88.6298
944.13	107.6371
946.00	89.9320
949.00	89.0536
962.29	97.4993
964.08	90.6001
966.15	104.6265
968.97	138.6631
968.97	138.6631
968.97	138.6631
983.53	89.3058
996.26	123.0382
1001.03	99.0203
1004.73	101.1876
1037.84	106.5898
1038.76	0.0000
1048.07	108.0322
1050.41	100.9189
1050.41	100.9189
1063.66	99.3482
1085.87	112.6858
1099.45	113.2433
1112.07	112.4427
1115.54	108.8893

1120.29	112.7703
1120.29	112.7703
1120.55	123.6106
1121.30	123.6433
1131.51	0.0000
1173.23	112.9834
1177.93	121.6540
1189.05	123.0573
1204.77	138.9335
1221.41	115.7786
1231.02	178.5300
1235.36	145.1430
1238.28	135.6600
1260.41	0.0000
1271.85	99.1985
1274.44	123.6126
1274.54	123.6165
1291.59	99.8179
1298.22	0.0000
1312.11	74.8473
1332.49	78.2888
1365.19	48.0381
1368.63	0.0000
1384.29	96.6182
1408.01	64.8594
1457.56	0.0000
1460.82	46.2936
1489.16	52.8786
1505.03	59.3570
1596.21	59.7410
1620.50	34.3506
1678.03	0.0000
1690.97	27.1903
1764.49	24.9067
1764.49	24.9067
1770.23	14.2516
1771.35	16.0374
1791.20	0.0000
1836.06	18.0874

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248112006

Total Uranium Activity	8.4936E+00	ug/g
Total Uranium Counting Unc.	5.4642E+00	ug/g
Total Uranium Tpu	2.7879E-06	ug/g
Total Uranium Mda	2.6159E+00	ug/g


```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 959270                          SAMPLE ID   : G248112006
*  ANALYST       : MXR1                             DETECTOR    : GAM22
*  SAMPLE DATE   : 22-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 10-MAR-2010 13:23:48.40          SAMPLE ALQT  : 124.060 GRAM
*
*****

```

```

GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.536E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.102E+00
GROSS GAMMA MDA (pCi/GRAM )     : 2.040E+00
GROSS GAMMA DLC (pCi/GRAM )     : 9.923E-01

```

VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 15:25:27.84

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112007.CNF;1
Sample date       : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:25:01
Sample ID        : G248112007 Sample quantity : 1.22500E+02 GRAM
Detector name    : GAM25 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.93 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 959270 Detector SN# :
Matrix Spike ID  : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.54*	167	419	0.91	92.64	89	9	2.32E-02	24.6	
2	0	63.17*	231	718	0.87	125.90	121	10	3.21E-02	23.3	
3	3	74.79*	709	468	0.94	149.13	143	16	9.85E-02	6.2	2.19E+00
4	3	77.08*	1015	390	0.85	153.73	143	16	1.41E-01	4.4	
5	6	87.19*	457	343	1.11	173.93	164	28	6.35E-02	8.3	2.32E+00
6	6	89.97	328	279	1.08	179.49	164	28	4.55E-02	9.9	
7	6	92.78*	400	346	1.29	185.12	164	28	5.56E-02	10.6	
8	0	106.00	82	395	2.25	211.56	206	9	1.14E-02	45.3	
9	0	185.91*	309	384	1.32	371.36	365	14	4.29E-02	15.0	
10	0	209.57*	127	274	1.11	418.68	414	10	1.76E-02	26.5	
11	5	238.62*	1270	103	0.98	476.78	470	23	1.76E-01	3.2	2.10E+00
12	5	241.41*	358	180	1.77	482.34	470	23	4.97E-02	12.3	
13	0	270.65	121	167	1.49	540.82	536	10	1.68E-02	22.2	
14	1	295.18*	354	110	1.11	589.87	584	22	4.92E-02	7.3	2.05E+00
15	1	299.69	102	119	1.30	598.90	584	22	1.41E-02	21.3	
16	0	327.69	85	121	1.30	654.90	651	9	1.18E-02	25.7	
17	0	338.09	289	115	0.90	675.69	671	9	4.02E-02	8.9	
18	0	351.94*	584	133	1.19	703.40	699	9	8.11E-02	5.6	
19	0	408.95	47	152	1.55	817.41	810	12	6.59E-03	54.1	
20	0	463.14	83	98	1.20	925.79	920	12	1.15E-02	26.4	
21	0	582.90*	347	78	1.37	1165.29	1158	12	4.82E-02	7.3	
22	0	609.22*	428	86	1.29	1217.92	1213	11	5.95E-02	6.5	
23	0	663.00	102	132	4.83	1325.48	1314	22	1.42E-02	30.4	
24	0	727.00	86	75	1.28	1453.48	1447	12	1.19E-02	22.8	
25	0	910.97*	227	57	1.78	1821.42	1815	14	3.15E-02	9.8	
26	0	933.75	41	62	5.19	1866.99	1857	19	5.67E-03	48.8	
27	2	964.46	66	58	2.06	1928.40	1919	24	9.18E-03	25.8	1.76E+00
28	2	968.80	161	40	1.75	1937.08	1919	24	2.24E-02	11.2	
29	0	1238.63	39	50	1.63	2476.76	2472	9	5.46E-03	36.5	
30	0	1460.52*	1299	35	2.00	2920.56	2912	20	1.80E-01	3.0	
31	0	1764.15*	76	0	1.25	3527.88	3519	17	1.06E-02	12.3	

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

VMS Nuclide Identification Report V3.1 Generated 10-MAR-2010 15:25:30

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112007.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:25:01
Sample ID         : G248112007 Sample quantity : 122.50 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA25 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.93 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.368E+01	3.522E+00	5.944E-01	5.062E-02	56.657
CD-109	+	88.03	*	4.126E+00	8.134E-01	6.938E-01	7.455E-02	5.947
SN-126	+	64.28		7.545E-01	3.712E-01	2.761E-01	4.399E-02	2.733
	+	86.94		1.674E+00	7.533E-01	2.802E-01	1.172E-01	5.976
	+	87.57	*	4.027E-01	7.940E-02	6.758E-02	7.246E-03	5.959
BA-137M	+	661.66	*	1.563E-01	9.652E-02	5.787E-02	6.411E-03	2.701
CS-137	+	661.66	*	1.651E-01	1.020E-01	6.114E-02	6.781E-03	2.701
EU-155	+	86.55		4.885E-01	9.650E-02	8.160E-02	8.766E-03	5.986
	+	105.31	*	1.358E-01	1.240E-01	1.162E-01	1.373E-02	1.168
TL-208		277.37		4.224E-01	3.752E-01	6.266E-01	9.005E-02	0.674
	+	583.19	*	5.006E-01	9.248E-02	6.646E-02	7.486E-03	7.533
		860.56		7.624E-01	3.482E-01	6.497E-01	6.789E-02	1.173
PB-210	+	46.54	*	1.313E+00	6.588E-01	5.359E-01	5.489E-02	2.450
BI-211		72.87		1.630E+00	1.542E+00	2.513E+00	2.536E-01	0.649
	+	351.06	*	3.564E+00	5.459E-01	3.151E-01	3.320E-02	11.312
PB-212	+	74.82		2.180E+00	4.084E-01	2.801E-01	3.940E-02	7.782
	+	77.11		1.884E+00	2.533E-01	1.697E-01	1.739E-02	11.099
	+	238.63	*	1.672E+00	2.183E-01	7.472E-02	8.537E-03	22.381
	+	300.09		2.127E+00	9.430E-01	1.070E+00	1.343E-01	1.988
BI-214	+	609.32	*	1.202E+00	2.140E-01	1.197E-01	1.449E-02	10.040
		1120.29		1.278E+00	4.447E-01	8.294E-01	9.042E-02	1.540
	+	1764.49		1.617E+00	4.182E-01	2.935E-01	2.418E-02	5.509
PB-214	+	74.82		3.864E+00	6.903E-01	4.964E-01	6.399E-02	7.782
	+	77.11		3.321E+00	5.239E-01	2.992E-01	3.936E-02	11.099
	+	242.00		2.857E+00	7.808E-01	4.553E-01	5.471E-02	6.275
	+	295.22		1.308E+00	2.540E-01	1.886E-01	2.417E-02	6.933
	+	351.93	*	1.294E+00	2.106E-01	1.076E-01	1.278E-02	12.022
RA-224	+	240.99	*	5.051E+00	1.349E+00	8.019E-01	8.427E-02	6.299
RA-226	+	609.32	*	1.202E+00	2.140E-01	1.197E-01	1.449E-02	10.040
		1120.29		1.278E+00	4.447E-01	8.294E-01	9.042E-02	1.540
	+	1764.49		1.617E+00	4.182E-01	2.935E-01	2.418E-02	5.509
AC-228	+	338.32		1.958E+00	8.952E-01	3.479E-01	1.465E-01	5.628
	+	911.20	*	1.604E+00	3.705E-01	2.339E-01	2.860E-02	6.858
	+	968.97		1.965E+00	6.528E-01	4.627E-01	1.139E-01	4.248

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	+	338.32		1.958E+00	8.952E-01	3.479E-01	1.465E-01	5.628
	+	911.20	*	1.604E+00	3.705E-01	2.339E-01	2.860E-02	6.858
	+	968.97		1.965E+00	6.528E-01	4.627E-01	1.139E-01	4.248
TH-228	+	74.82		2.180E+00	3.499E-01	2.801E-01	2.865E-02	7.782
	+	77.11		1.884E+00	2.533E-01	1.697E-01	1.739E-02	11.099
	+	238.63	*	1.672E+00	2.183E-01	7.472E-02	8.537E-03	22.381
	+	300.09		2.127E+00	1.592E+00	1.070E+00	6.590E-01	1.988
TH-232	+	338.32		1.958E+00	4.035E-01	3.479E-01	3.626E-02	5.628
	+	911.20	*	1.604E+00	3.705E-01	2.339E-01	2.860E-02	6.858
	+	968.97		1.965E+00	6.528E-01	4.627E-01	1.139E-01	4.248
TH-234	+	63.29	*	1.958E+00	9.840E-01	7.153E-01	1.358E-01	2.737
	+	92.59		3.139E+00	9.845E-01	5.966E-01	1.379E-01	5.261
U-235	+	89.96		3.103E+00	1.001E+00	7.284E-01	1.856E-01	4.259
	+	93.35		2.371E+00	7.607E-01	4.523E-01	1.090E-01	5.242
		143.76	*	8.148E-02	1.605E-01	2.676E-01	4.916E-02	0.304
		163.33		3.004E-01	3.649E-01	6.045E-01	1.102E-01	0.497
	+	185.72		2.581E-01	8.128E-02	5.525E-02	5.173E-03	4.671
		205.31		-1.468E-01	4.459E-01	6.269E-01	1.174E-01	-0.234
NP-237	+	86.48	*	1.202E+00	3.458E-01	2.007E-01	4.721E-02	5.988
		95.86		-3.117E-01	6.157E-01	9.184E-01	2.298E-01	-0.339
U-238	+	63.29	*	1.958E+00	9.840E-01	7.153E-01	1.358E-01	2.737
	+	92.59		3.139E+00	7.496E-01	5.966E-01	6.555E-02	5.261

---- 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	*	-3.951E-01	3.439E-01	5.065E-01	5.362E-02	-0.780
NA-22		1274.54	*	2.275E-03	5.374E-02	8.869E-02	7.273E-03	0.026
NA-24		1368.63	*	-2.362E-01	5.374E-02	Half-Life too short		
SC-46		889.28	*	-6.992E-03	4.555E-02	7.302E-02	6.992E-03	-0.096
		1120.55		2.262E-01	7.453E-02	1.421E-01	1.222E-02	1.592
V-48		944.13		-5.342E-01	1.052E+00	1.613E+00	1.513E-01	-0.331
		983.53	*	-1.349E-02	8.312E-02	1.316E-01	1.220E-02	-0.103
		1312.11		6.858E-03	9.147E-02	1.512E-01	1.232E-02	0.045
CR-51		320.08	*	-1.801E-01	3.409E-01	5.556E-01	6.166E-02	-0.324
MN-54		834.85	*	3.692E-04	4.081E-02	6.686E-02	6.784E-03	0.006
CO-56		846.77	*	-1.196E-02	4.302E-02	6.844E-02	6.867E-03	-0.175
		1037.84		-5.045E-02	3.512E-01	5.815E-01	5.512E-02	-0.087
	+	1238.28		1.626E-01	1.193E-01	2.012E-01	1.706E-02	0.808
		1771.35		8.666E-02	2.386E-01	3.810E-01	3.136E-02	0.227
CO-57		122.06	*	-6.896E-03	1.821E-02	3.017E-02	3.890E-03	-0.229
		136.47		-3.262E-02	1.593E-01	2.643E-01	3.238E-02	-0.123
CO-58		810.76	*	-2.633E-02	4.319E-02	6.673E-02	6.924E-03	-0.395
FE-59		1099.45	*	1.828E-02	1.095E-01	1.852E-01	1.744E-02	0.099
		1291.59		4.072E-02	1.372E-01	2.323E-01	2.182E-02	0.175
CO-60		1173.23		6.273E-03	5.326E-02	8.914E-02	7.337E-03	0.070
		1332.49	*	-8.013E-04	4.638E-02	7.587E-02	6.162E-03	-0.011
ZN-65		1115.54	*	-3.647E-01	1.276E-01	1.584E-01	1.368E-02	-2.303

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SE-75		121.12		-6.485E-02	9.529E-02	1.551E-01	2.264E-02	-0.418
		136.00		1.123E-02	3.083E-02	5.242E-02	6.220E-03	0.214
		264.66	*	1.830E-02	3.865E-02	6.340E-02	6.949E-03	0.289
		279.54		-1.013E-01	1.044E-01	1.538E-01	1.756E-02	-0.659
		400.66		-4.262E-02	2.426E-01	3.966E-01	4.577E-02	-0.107
SR-85		514.00	*	-2.094E-01	5.725E-02	6.477E-02	6.682E-03	-3.233
Y-88		898.04		-9.655E-03	4.591E-02	7.306E-02	6.948E-03	-0.132
		1836.06	*	2.312E-02	3.378E-02	6.344E-02	5.184E-03	0.365
Y-91		1204.77	*	6.766E+00	2.553E+01	4.312E+01	3.548E+00	0.157
NB-94		702.65	*	-2.574E-02	3.455E-02	5.373E-02	5.900E-03	-0.479
		871.09		3.232E-03	3.775E-02	6.204E-02	6.069E-03	0.052
NB-95		765.81	*	3.799E-02	5.060E-02	8.769E-02	9.367E-03	0.433
NB-95M		235.69	*	7.468E-02	1.093E-01	1.645E-01	1.889E-02	0.454
ZR-95		724.19		1.279E-02	1.133E-01	1.652E-01	1.897E-02	0.077
		756.73	*	-4.973E-02	8.004E-02	1.249E-01	1.433E-02	-0.398
MO-99		140.51		-2.293E+00	2.125E+01	3.534E+01	8.801E+00	-0.065
		181.07		2.057E+01	2.002E+01	3.085E+01	5.888E+00	0.667
		366.42		6.029E+01	1.172E+02	2.014E+02	1.974E+01	0.299
		739.50	*	-1.904E+01	1.645E+01	2.379E+01	4.060E+00	-0.801
		777.92		6.458E+00	4.767E+01	7.949E+01	8.430E+00	0.081
TC-99M		140.51	*	-4.204E+10	4.767E+01	Half-Life	too short	
RU-103		497.08	*	-1.232E-02	3.862E-02	6.090E-02	9.123E-03	-0.202
	+	610.33		1.261E+01	2.769E+00	3.049E+00	5.384E-01	4.135
RH-106		621.93	*	-3.008E-01	3.121E-01	4.774E-01	7.102E-02	-0.630
		1050.41		-1.443E+00	2.883E+00	4.607E+00	4.143E-01	-0.313
RU-106		621.93	*	-3.008E-01	3.106E-01	4.774E-01	5.227E-02	-0.630
		1050.41		-1.443E+00	2.883E+00	4.607E+00	4.143E-01	-0.313
AG-108M		433.94	*	-1.918E-02	2.842E-02	4.420E-02	4.343E-03	-0.434
		614.28		-1.519E-02	3.879E-02	5.430E-02	6.051E-03	-0.280
		722.91		-6.998E-03	4.393E-02	6.204E-02	6.902E-03	-0.113
AG-110M		657.76	*	1.415E-02	4.018E-02	6.081E-02	6.852E-03	0.233
		677.62		1.225E-02	3.307E-01	5.445E-01	6.122E-02	0.023
		706.68		2.069E-02	2.137E-01	3.581E-01	3.998E-02	0.058
		763.94		-1.352E-01	1.996E-01	3.123E-01	3.399E-02	-0.433
		884.68		3.507E-02	5.564E-02	9.570E-02	9.453E-03	0.366
		937.49		6.682E-02	1.203E-01	1.828E-01	1.770E-02	0.366
		1384.29		1.075E-01	1.426E-01	2.587E-01	2.181E-02	0.416
		1505.03		-2.652E-02	2.862E-01	4.555E-01	3.776E-02	-0.058
SN-113		391.69	*	-4.347E-02	4.155E-02	6.341E-02	5.923E-03	-0.685
CD-115		260.90		-1.079E+02	1.595E+02	2.417E+02	2.626E+01	-0.446
		492.35		-1.530E+01	4.779E+01	7.543E+01	7.647E+00	-0.203
		527.90	*	1.076E+01	1.628E+01	2.759E+01	2.875E+00	0.390
SN-117M		156.02		-6.105E-01	1.924E+00	3.144E+00	3.135E-01	-0.194
		158.56	*	2.190E-02	4.706E-02	7.958E-02	7.727E-03	0.275
TE-123M		159.00	*	7.625E-03	2.302E-02	3.872E-02	3.759E-03	0.197
SB-124		602.73		-3.390E-02	4.014E-02	5.881E-02	6.392E-03	-0.576
		645.85		-1.026E-01	5.216E-01	8.606E-01	9.832E-02	-0.119
		722.78		-6.247E-02	4.467E-01	6.324E-01	6.996E-02	-0.099
		1690.97	*	1.209E-02	6.827E-02	1.177E-01	1.020E-02	0.103

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125	+	427.87	*	1.992E-02	8.860E-02	1.480E-01	1.429E-02	0.135
		463.37		7.949E-01	4.272E-01	5.355E-01	5.593E-02	1.484
		600.60		-9.811E-02	1.773E-01	2.861E-01	3.253E-02	-0.343
		635.95		-1.387E-02	3.096E-01	5.180E-01	5.987E-02	-0.027
TE-125M		109.28	*	2.616E-01	7.520E+00	1.139E+01	1.527E+00	0.023
I-126		388.63		1.259E-01	1.630E-01	2.835E-01	2.602E-02	0.444
		666.33	*	3.767E-01	2.656E-01	4.413E-01	4.886E-02	0.853
		753.82		1.557E+00	2.032E+00	3.560E+00	3.827E-01	0.438
SB-126		414.70		2.693E-03	7.885E-02	1.260E-01	1.179E-02	0.021
		666.50		1.328E-01	9.168E-02	1.526E-01	1.690E-02	0.870
		695.00		4.007E-02	8.993E-02	1.545E-01	1.700E-02	0.259
		697.00		2.745E-01	3.092E-01	5.457E-01	6.003E-02	0.503
		720.70	*	5.961E-02	1.762E-01	2.641E-01	2.883E-02	0.226
SB-127		856.80		-6.620E-01	5.974E-01	8.740E-01	8.682E-02	-0.757
		252.40		-6.376E-01	4.508E+00	7.129E+00	3.001E+00	-0.089
		473.00		-2.814E-01	1.918E+00	3.092E+00	4.311E-01	-0.091
		685.70	*	-2.060E-01	1.580E+00	2.605E+00	3.525E-01	-0.079
		783.70		7.315E+00	4.644E+00	8.412E+00	1.179E+00	0.870
I-131		80.19		-2.929E-01	3.322E+00	4.152E+00	4.329E-01	-0.071
		284.31		1.177E+00	1.486E+00	2.465E+00	2.829E-01	0.478
		364.49	*	6.845E-03	1.182E-01	1.979E-01	2.031E-02	0.035
TE-132		636.99		4.014E-01	1.909E+00	3.250E+00	3.706E-01	0.124
		49.72		1.440E+00	3.405E+00	5.188E+00	6.216E-01	0.278
		111.76		-4.122E+00	2.941E+01	4.790E+01	6.788E+00	-0.086
		116.30		3.006E+01	2.567E+01	4.493E+01	6.487E+00	0.669
BA-133		228.16	*	2.002E-01	7.951E-01	1.299E+00	2.201E-01	0.154
		81.00		3.020E-03	6.003E-02	7.572E-02	1.255E-02	0.040
		276.40		6.424E-01	3.516E-01	5.936E-01	9.356E-02	1.082
		302.85		-4.539E-02	1.335E-01	1.938E-01	2.851E-02	-0.234
		356.01	*	-3.852E-02	4.346E-02	5.816E-02	8.112E-03	-0.662
I-133		383.85		-6.813E-02	2.659E-01	4.334E-01	5.601E-02	-0.157
		529.87	*	-1.974E-03	2.659E-01	Half-Life	too short	
		875.33		8.731E-02	2.659E-01	Half-Life	too short	
CS-134		1298.22		3.957E-01	2.659E-01	Half-Life	too short	
		563.25		3.144E-01	3.759E-01	6.422E-01	6.888E-02	0.489
		569.33		-4.642E-02	2.109E-01	3.290E-01	3.549E-02	-0.141
		604.72		1.137E-02	3.593E-02	5.458E-02	5.946E-03	0.208
		795.86	*	5.709E-02	5.103E-02	9.089E-02	9.568E-03	0.628
CS-135		801.95		8.301E-03	4.488E-01	7.386E-01	7.732E-02	0.011
		1365.19		-5.037E-01	1.246E+00	1.910E+00	1.640E-01	-0.264
		268.22	*	6.936E-02	1.595E-01	2.333E-01	2.816E-02	0.297
		546.56		-1.609E+11	1.595E-01	Half-Life	too short	
		836.80		-9.103E+09	1.595E-01	Half-Life	too short	
I-135		1038.76		-1.389E+09	1.595E-01	Half-Life	too short	
		1131.51		-2.613E+10	1.595E-01	Half-Life	too short	
		1260.41	*	8.540E+09	1.595E-01	Half-Life	too short	
		1457.56		1.195E+13	1.595E-01	Half-Life	too short	
		1678.03		-1.158E+11	1.595E-01	Half-Life	too short	
		1791.20		-9.107E+10	1.595E-01	Half-Life	too short	

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	153.25			3.294E-01	7.160E-01	1.213E+00	1.415E-01	0.272
	176.60			1.440E-01	4.204E-01	7.029E-01	7.029E-02	0.205
	273.65			9.660E-02	5.119E-01	7.341E-01	8.554E-02	0.132
	340.55			2.289E-01	1.531E-01	2.497E-01	2.661E-02	0.917
	818.51			2.974E-02	8.854E-02	1.494E-01	1.539E-02	0.199
	1048.07	*		8.683E-02	1.220E-01	2.169E-01	2.028E-02	0.400
CE-139	1235.36			2.399E-01	8.986E-01	1.308E+00	1.501E-01	0.183
	165.86	*		6.807E-03	2.410E-02	4.035E-02	3.597E-03	0.169
	162.66			3.575E-02	7.155E-01	1.157E+00	1.135E-01	0.031
BA-140	304.85			7.109E-01	1.394E+00	2.116E+00	6.354E-01	0.336
	423.72			-2.215E+00	2.023E+00	2.819E+00	9.339E-01	-0.786
	537.26	*		2.966E-01	3.103E-01	5.104E-01	1.758E-01	0.581
LA-140	328.76	+		7.466E-01	3.930E-01	5.321E-01	5.853E-02	1.403
	487.02			1.099E-01	1.440E-01	2.474E-01	2.610E-02	0.444
	815.77			7.156E-02	3.889E-01	6.482E-01	7.243E-02	0.110
CE-141	1596.21	*		-3.062E-03	9.233E-02	1.534E-01	1.275E-02	-0.020
	145.44	*		-1.963E-02	5.062E-02	8.287E-02	9.216E-03	-0.237
	57.36			-2.984E-05	5.062E-02	Half-Life	too short	
CE-143	293.27	*		6.935E-04	5.062E-02	Half-Life	too short	
	664.57			2.773E-03	5.062E-02	Half-Life	too short	
	721.93			-6.172E-04	5.062E-02	Half-Life	too short	
CE-144	80.12			-1.555E-01	1.657E+00	2.070E+00	2.147E-01	-0.075
	133.52	*		-1.226E-01	1.557E-01	2.495E-01	4.349E-02	-0.492
PM-144	476.78			-5.011E-02	6.760E-02	1.036E-01	1.103E-02	-0.484
	618.01			-9.625E-04	3.096E-02	5.196E-02	5.782E-03	-0.019
	696.49	*		4.560E-02	3.786E-02	6.797E-02	7.479E-03	0.671
PR-144	696.51	*		3.397E+00	2.834E+00	5.085E+00	5.594E-01	0.668
	1489.16			-1.447E+00	1.290E+01	2.047E+01	1.695E+00	-0.071
PM-146	453.88	*		2.004E-02	4.265E-02	7.204E-02	8.325E-03	0.278
	633.25			4.780E-01	1.586E+00	2.702E+00	1.048E+00	0.177
	735.93			-1.071E-01	1.544E-01	2.347E-01	6.758E-02	-0.456
	747.24			-5.313E-02	1.092E-01	1.727E-01	2.757E-02	-0.308
ND-147	91.11	+		1.066E+00	2.436E-01	3.538E-01	4.062E-02	3.014
	319.41			-2.616E+00	3.231E+00	5.164E+00	5.548E-01	-0.507
	531.02	*		-1.357E-01	6.431E-01	1.019E+00	1.638E-01	-0.133
PM-149	285.90	*		-2.631E+01	1.163E+02	1.810E+02	3.087E+01	-0.145
EU-152	121.78			-3.459E-02	5.263E-02	8.581E-02	1.181E-02	-0.403
	244.70			-1.052E-01	2.683E-01	4.188E-01	4.430E-02	-0.251
	344.28	*		-6.947E-02	8.479E-02	1.339E-01	1.437E-02	-0.519
	778.90			-1.314E-01	2.756E-01	4.339E-01	4.598E-02	-0.303
	964.08	+		8.687E-01	4.563E-01	6.997E-01	6.527E-02	1.242
	1085.87			1.624E-01	3.995E-01	6.928E-01	6.101E-02	0.234
	1112.07			1.544E-01	3.474E-01	6.004E-01	5.194E-02	0.257
	1408.01			-1.554E-01	1.794E-01	2.511E-01	2.063E-02	-0.619
GD-153	69.67			-4.913E-01	8.343E-01	1.174E+00	1.174E-01	-0.418
	97.43	*		-3.330E-03	6.056E-02	9.178E-02	1.034E-02	-0.036
EU-154	103.18			-3.398E-02	7.758E-02	1.161E-01	1.347E-02	-0.293
	123.07			2.904E-02	3.850E-02	6.661E-02	9.857E-03	0.436
	723.31			-9.416E-02	2.017E-01	2.735E-01	3.175E-02	-0.344

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	+	873.19	*	2.622E-02	3.082E-01	5.064E-01	6.454E-02	0.052
		996.26		-5.677E-02	4.354E-01	6.916E-01	1.229E-01	-0.082
		1004.73		-4.338E-01	2.940E-01	3.667E-01	4.424E-02	-1.183
		1274.44		8.525E-02	1.453E-01	2.516E-01	2.782E-02	0.339
		86.79		1.307E+00	2.577E-01	3.558E-01	3.801E-02	3.674
		197.04		5.767E-02	4.773E-01	7.832E-01	7.530E-02	0.074
		215.65		-5.806E-01	6.362E-01	9.718E-01	9.728E-02	-0.597
		298.57		3.022E-01	1.327E-01	1.904E-01	2.095E-02	1.587
		879.36		-1.338E-01	1.600E-01	2.383E-01	2.309E-02	-0.561
		962.29		1.105E+00	6.957E-01	1.241E+00	1.159E-01	0.890
HO-166M	+	966.15	*	1.139E+00	3.230E-01	6.005E-01	5.598E-02	1.897
		1177.93		-1.577E-01	4.430E-01	7.122E-01	5.862E-02	-0.221
		1271.85		1.066E+00	8.215E-01	1.508E+00	1.235E-01	0.707
		80.57		-4.839E-02	1.813E-01	2.234E-01	2.321E-02	-0.217
		184.41		7.029E-02	3.353E-02	5.932E-02	5.537E-03	1.185
		280.46		-1.722E-01	8.505E-02	1.131E-01	1.262E-02	-1.523
		410.95		3.035E-01	2.632E-01	4.198E-01	3.911E-02	0.723
		711.68		3.210E-02	6.009E-02	1.042E-01	1.141E-02	0.308
		752.31		1.822E-02	2.915E-01	4.844E-01	5.213E-02	0.038
		810.29		-6.949E-02	6.669E-02	9.831E-02	1.019E-02	-0.707
TA-182	+	67.75	*	-8.035E-03	4.714E-02	7.346E-02	7.309E-03	-0.109
		100.11		4.443E-03	1.181E-01	1.972E-01	2.253E-02	0.023
		152.43		8.650E-03	2.785E-01	4.635E-01	4.790E-02	0.019
		222.11		-1.695E-02	3.179E-01	5.121E-01	5.193E-02	-0.033
		1121.30		5.822E-01	2.058E-01	3.898E-01	3.349E-02	1.493
		1189.05		1.499E-01	3.592E-01	6.151E-01	5.063E-02	0.244
		1221.41		1.709E-02	2.528E-01	4.195E-01	3.450E-02	0.041
		1231.02		-2.125E-01	6.149E-01	9.371E-01	7.703E-02	-0.227
		295.96		9.755E-01	1.788E-01	2.726E-01	3.021E-02	3.578
		308.46		-1.340E-02	8.926E-02	1.496E-01	1.635E-02	-0.090
IR-192	+	316.51	*	1.009E-02	3.127E-02	5.369E-02	5.799E-03	0.188
		468.07		3.964E-02	7.244E-02	1.095E-01	1.147E-02	0.362
		70.83		1.006E-01	6.606E-01	9.664E-01	1.629E-01	0.104
		72.87		4.115E-01	3.929E-01	6.344E-01	1.040E-01	0.649
		279.20		2.283E-02	3.461E-02	5.710E-02	6.470E-03	0.400
		72.81		6.821E-02	8.757E-02	1.417E-01	1.430E-02	0.481
		74.97		6.283E-01	1.006E-01	1.362E-01	1.384E-02	4.614
		569.70		-6.291E-03	3.279E-02	5.128E-02	5.485E-03	-0.123
		1063.66		-2.257E-02	5.914E-02	9.549E-02	8.522E-03	-0.236
		1770.23		-2.686E-01	5.493E-01	6.609E-01	5.442E-02	-0.406
PB-211	+	404.85	*	4.281E-01	8.350E-01	1.229E+00	5.964E-01	0.348
		427.09		4.040E-02	1.444E+00	2.380E+00	1.105E+00	0.017
		832.01		-4.778E-01	1.125E+00	1.726E+00	8.998E-01	-0.277
		727.33		1.927E+00	9.212E-01	1.259E+00	1.778E-01	1.530
		785.37		4.340E+00	3.484E+00	6.256E+00	6.601E-01	0.694
		1620.50		5.948E-01	2.590E+00	4.465E+00	3.711E-01	0.133
		271.23		7.105E-01	3.269E-01	4.130E-01	5.102E-02	1.720
		401.81		-1.401E-01	4.265E-01	6.351E-01	9.668E-02	-0.221
		81.07		-2.997E-03	1.358E-01	1.704E-01	1.774E-02	-0.018

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		83.79		1.503E-01	7.432E-02	1.227E-01	1.292E-02	1.225
		94.87		3.880E-01	2.973E-01	4.841E-01	5.380E-02	0.802
		144.24		3.316E-01	5.433E-01	9.111E-01	1.085E-01	0.364
		154.21		2.164E-01	3.129E-01	5.342E-01	5.804E-02	0.405
	+	269.46		5.520E-01	2.523E-01	3.184E-01	3.547E-02	1.734
		323.87	*	5.529E-02	6.551E-01	9.794E-01	1.806E-01	0.056
	+	338.28		7.769E+00	1.731E+00	2.425E+00	3.255E-01	3.203
		79.69		-9.156E-02	7.152E-01	1.022E+00	1.856E-01	-0.090
		235.96		1.134E-01	1.318E-01	2.004E-01	2.381E-02	0.566
		256.23	*	3.136E-03	2.282E-01	3.646E-01	4.988E-02	0.009
TH-227	+	299.98		2.339E+00	1.050E+00	1.525E+00	2.199E-01	1.534
		304.50		1.048E-01	1.606E+00	2.382E+00	4.251E-01	0.044
		334.37		-1.912E-01	1.649E+00	2.407E+00	4.019E-01	-0.079
		79.80		-1.321E-01	1.081E+00	1.348E+00	3.037E-01	-0.098
		235.96		1.134E-01	1.317E-01	2.004E-01	2.279E-02	0.566
		256.23	*	3.136E-03	2.282E-01	3.646E-01	5.494E-02	0.009
	+	299.98		2.339E+00	1.050E+00	1.525E+00	2.199E-01	1.534
		304.50		1.048E-01	1.606E+00	2.382E+00	4.251E-01	0.044
		334.37		-1.912E-01	1.649E+00	2.407E+00	4.019E-01	-0.079
		85.43		2.963E-01	1.284E-01	2.122E-01	2.253E-02	1.396
TH-229	+	88.47		6.208E-01	1.224E-01	1.488E-01	1.603E-02	4.171
		193.51	*	8.215E-02	4.330E-01	7.141E-01	6.811E-02	0.115
	+	210.85		2.352E+00	1.269E+00	1.320E+00	1.308E-01	1.782
		283.69	*	7.211E-01	1.304E+00	2.133E+00	3.455E-01	0.338
		301.36		6.310E-01	5.780E-01	9.212E-01	1.282E-01	0.685
	TH-231	81.07		-2.997E-03	1.358E-01	1.704E-01	1.774E-02	-0.018
		83.79		1.503E-01	7.432E-02	1.227E-01	1.292E-02	1.225
		94.87		3.880E-01	2.973E-01	4.841E-01	5.380E-02	0.802
		144.24		3.316E-01	5.433E-01	9.111E-01	1.085E-01	0.364
		154.21		2.164E-01	3.129E-01	5.342E-01	5.804E-02	0.405
PA-231	+	269.46		5.520E-01	2.523E-01	3.184E-01	3.547E-02	1.734
		323.87	*	5.529E-02	6.551E-01	9.794E-01	1.806E-01	0.056
	+	338.28		7.769E+00	1.731E+00	2.425E+00	3.255E-01	3.203
	+	300.13		1.059E+00	4.822E-01	6.894E-01	1.125E-01	1.535
		311.90	*	1.858E-02	5.888E-02	1.011E-01	1.117E-02	0.184
		340.48		1.074E+00	6.761E-01	1.040E+00	2.575E-01	1.032
	PA-234	94.67		1.767E-01	1.054E-01	1.857E-01	2.644E-02	0.952
		98.44		5.226E-02	6.904E-02	1.040E-01	5.849E-02	0.503
		111.00		-3.847E-02	1.263E-01	2.115E-01	3.127E-02	-0.182
		131.20		-6.588E-02	8.664E-02	1.366E-01	1.668E-02	-0.482
PA-233		569.50		-6.022E-02	2.907E-01	4.540E-01	4.856E-02	-0.133
		733.00		2.939E-01	4.278E-01	6.838E-01	1.583E-01	0.430
		880.51		-1.564E-01	3.153E-01	4.879E-01	4.721E-02	-0.321
		883.24		1.643E-01	3.363E-01	5.422E-01	3.653E-01	0.303
		926.50		-6.370E-02	2.096E-01	2.781E-01	7.108E-02	-0.229
		946.00	*	2.616E-01	3.328E-01	5.736E-01	1.097E-01	0.456
		949.00		1.755E-01	4.903E-01	8.203E-01	7.685E-02	0.214
	PA-234M	766.42		1.591E+01	1.572E+01	2.401E+01	1.227E+01	0.663
		1001.03	*	2.405E+00	5.602E+00	9.348E+00	9.791E-01	0.257

---- 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		9.862E-02	1.089E-01	1.873E-01	2.133E-02	0.527
		103.37		6.840E-03	7.003E-02	1.082E-01	1.257E-02	0.063
	+	106.12		1.082E-01	9.885E-02	1.073E-01	1.265E-02	1.009
		117.23	*	-3.987E-02	2.802E-01	4.709E-01	5.907E-02	-0.085
		228.18		4.756E-02	1.919E-01	3.135E-01	3.218E-02	0.152
		277.60		1.994E-01	1.711E-01	2.876E-01	3.203E-02	0.693
AM-241		59.54	*	-5.161E-03	4.855E-02	7.096E-02	7.373E-03	-0.073
CM-247		278.00		1.005E+00	7.213E-01	1.224E+00	1.364E-01	0.821
		287.50		-7.732E-02	1.143E+00	1.798E+00	1.997E-01	-0.043
		402.40	*	7.784E-03	4.043E-02	5.979E-02	5.510E-03	0.130
CF-249		252.80		-1.993E-01	8.466E-01	1.333E+00	1.429E-01	-0.150
		333.37		2.326E-02	1.848E-01	2.586E-01	2.720E-02	0.090
		388.16	*	2.433E-02	3.757E-02	6.486E-02	5.964E-03	0.375
CF-251		177.52	*	-4.202E-02	1.050E-01	1.689E-01	1.550E-02	-0.249
		227.38		1.492E-01	3.116E-01	5.153E-01	5.280E-02	0.290
		285.41		-3.665E-01	2.045E+00	3.195E+00	3.553E-01	-0.115
ANH-511		511.00	*	6.070E-02	4.693E-02	8.809E-02	9.067E-03	0.689

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                               *
*                                     2040 Savage Road                               *
*                                     Charleston, SC 29414                           *
*****
*
*                                     DETECTOR DATA                                *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112007             *
* Acquisition date   : 10-MAR-2010 13:25:01 Detector SN#      :                   *
* Detector ID        : GAM25                      Sensitivity   : 5.000             *
* Geometry           : CAN                          Energy tolerance: 1.500         *
* Elapsed live time   : 0 02:00:00.00              Abundance limit : 75.000         *
* Elapsed real time   : 0 02:00:01.93              Half life ratio : 8.000         *
*****
*
*                                     SAMPLE DATA                                *
*
* Sample date        : 22-FEB-2010 12:00:00 Nuclide Library : SOLID                *
* Sample ID          : G248112007              Analyst initials: MXR1              *
* Batch Number       : 959270                  Sample Quantity : 1.2250E+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 :                   *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.368E+01	3.452E+00	5.934E-01	0.000E+00
CD-109	4.126E+00	7.971E-01	7.179E-01	0.000E+00
SN-126	4.027E-01	7.781E-02	6.994E-02	0.000E+00
BA-137M	1.563E-01	9.459E-02	5.838E-02	0.000E+00
CS-137	1.651E-01	9.993E-02	6.167E-02	0.000E+00
EU-155	1.358E-01	1.215E-01	1.200E-01	0.000E+00
TL-208	5.006E-01	9.063E-02	6.715E-02	0.000E+00
PB-210	1.313E+00	6.456E-01	5.589E-01	0.000E+00
BI-211	3.564E+00	5.350E-01	3.204E-01	0.000E+00
PB-212	1.672E+00	2.140E-01	7.637E-02	0.000E+00
BI-214	1.202E+00	2.097E-01	1.209E-01	0.000E+00
PB-214	1.294E+00	2.064E-01	1.094E-01	0.000E+00
RA-224	5.051E+00	1.322E+00	8.195E-01	0.000E+00
RA-226	1.202E+00	2.097E-01	1.209E-01	0.000E+00
AC-228	1.604E+00	3.631E-01	2.350E-01	0.000E+00
RA-228	1.604E+00	3.631E-01	2.350E-01	0.000E+00
TH-228	1.672E+00	2.140E-01	7.637E-02	0.000E+00
TH-232	1.604E+00	3.631E-01	2.350E-01	0.000E+00
TH-234	1.958E+00	9.643E-01	7.432E-01	0.000E+00
U-235	8.148E-02	1.573E-01	2.752E-01	0.000E+00
NP-237	1.202E+00	3.389E-01	2.077E-01	0.000E+00
U-238	1.958E+00	9.643E-01	7.432E-01	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.951E-01	3.371E-01	5.131E-01	0.000E+00 NOT IDENT.
NA-22	2.275E-03	5.266E-02	8.871E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.059E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-6.992E-03	4.464E-02	7.338E-02	0.000E+00 NOT IDENT.
V-48	-1.349E-02	8.146E-02	1.321E-01	0.000E+00 NOT IDENT.

CR-51	-1.801E-01	3.341E-01	5.657E-01	0.000E+00	NOT IDENT.
MN-54	3.692E-04	4.000E-02	6.724E-02	0.000E+00	NOT IDENT.
CO-56	-1.196E-02	4.216E-02	6.882E-02	0.000E+00	FAIL ABUN
CO-57	-6.896E-03	1.785E-02	3.109E-02	0.000E+00	NOT IDENT.
CO-58	-2.633E-02	4.233E-02	6.714E-02	0.000E+00	NOT IDENT.
FE-59	1.828E-02	1.073E-01	1.856E-01	0.000E+00	NOT IDENT.
CO-60	-8.013E-04	4.545E-02	7.584E-02	0.000E+00	NOT IDENT.
ZN-65	-3.647E-01	1.251E-01	1.587E-01	0.000E+00	NOT IDENT.
SE-75	1.830E-02	3.787E-02	6.472E-02	0.000E+00	NOT IDENT.
SR-85	-2.094E-01	5.611E-02	6.555E-02	0.000E+00	NOT IDENT.
Y-88	2.312E-02	3.311E-02	6.314E-02	0.000E+00	NOT IDENT.
Y-91	6.766E+00	2.502E+01	4.316E+01	0.000E+00	NOT IDENT.
NB-94	-2.574E-02	3.386E-02	5.416E-02	0.000E+00	NOT IDENT.
NB-95	3.799E-02	4.959E-02	8.829E-02	0.000E+00	NOT IDENT.
NB-95M	7.468E-02	1.071E-01	1.682E-01	0.000E+00	NOT IDENT.
ZR-95	-4.973E-02	7.844E-02	1.258E-01	0.000E+00	NOT IDENT.
MO-99	-1.904E+01	1.613E+01	2.396E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.819E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.232E-02	3.784E-02	6.166E-02	0.000E+00	FAIL ABUN
RH-106	-3.008E-01	3.058E-01	4.819E-01	0.000E+00	NOT IDENT.
RU-106	-3.008E-01	3.044E-01	4.819E-01	0.000E+00	NOT IDENT.
AG-108M	-1.918E-02	2.785E-02	4.484E-02	0.000E+00	NOT IDENT.
AG-110M	1.415E-02	3.938E-02	6.135E-02	0.000E+00	NOT IDENT.
SN-113	-4.347E-02	4.072E-02	6.440E-02	0.000E+00	NOT IDENT.
CD-115	1.076E+01	1.595E+01	2.791E+01	0.000E+00	NOT IDENT.
SN-117M	2.190E-02	4.612E-02	8.175E-02	0.000E+00	NOT IDENT.
TE-123M	7.625E-03	2.256E-02	3.977E-02	0.000E+00	NOT IDENT.
SB-124	1.209E-02	6.691E-02	1.173E-01	0.000E+00	NOT IDENT.
SB-125	1.992E-02	8.682E-02	1.502E-01	0.000E+00	FAIL ABUN
TE-125M	2.616E-01	7.370E+00	1.176E+01	0.000E+00	NOT IDENT.
I-126	3.767E-01	2.603E-01	4.451E-01	0.000E+00	NOT IDENT.
SB-126	5.961E-02	1.727E-01	2.662E-01	0.000E+00	NOT IDENT.
SB-127	-2.060E-01	1.549E+00	2.627E+00	0.000E+00	NOT IDENT.
I-131	6.845E-03	1.159E-01	2.012E-01	0.000E+00	NOT IDENT.
TE-132	2.002E-01	7.792E-01	1.328E+00	0.000E+00	NOT IDENT.
BA-133	-3.852E-02	4.259E-02	5.914E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.346E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	5.709E-02	5.001E-02	9.147E-02	0.000E+00	NOT IDENT.
CS-135	6.936E-02	1.563E-01	2.381E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.558E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.683E-02	1.195E-01	2.175E-01	0.000E+00	NOT IDENT.
CE-139	6.807E-03	2.362E-02	4.142E-02	0.000E+00	NOT IDENT.
BA-140	2.966E-01	3.041E-01	5.163E-01	0.000E+00	NOT IDENT.
LA-140	-3.062E-03	9.048E-02	1.530E-01	0.000E+00	FAIL ABUN
CE-141	-1.963E-02	4.961E-02	8.522E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.622E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.226E-01	1.525E-01	2.568E-01	0.000E+00	NOT IDENT.
PM-144	4.560E-02	3.711E-02	6.852E-02	0.000E+00	NOT IDENT.
PR-144	3.397E+00	2.777E+00	5.126E+00	0.000E+00	NOT IDENT.
PM-146	2.004E-02	4.179E-02	7.303E-02	0.000E+00	NOT IDENT.
ND-147	-1.357E-01	6.302E-01	1.031E+00	0.000E+00	FAIL ABUN
PM-149	-2.631E+01	1.139E+02	1.845E+02	0.000E+00	NOT IDENT.
EU-152	-6.947E-02	8.310E-02	1.362E-01	0.000E+00	FAIL ABUN
GD-153	-3.330E-03	5.935E-02	9.486E-02	0.000E+00	NOT IDENT.
EU-154	8.525E-02	1.424E-01	2.516E-01	0.000E+00	NOT IDENT.
TB-160	-1.338E-01	1.568E-01	2.395E-01	0.000E+00	FAIL ABUN
HO-166M	3.210E-02	5.889E-02	1.050E-01	0.000E+00	NOT IDENT.
TA-182	1.709E-02	2.478E-01	4.198E-01	0.000E+00	NOT IDENT.
IR-192	1.009E-02	3.064E-02	5.468E-02	0.000E+00	FAIL ABUN
HG-203	2.283E-02	3.392E-02	5.824E-02	0.000E+00	NOT IDENT.
BI-207	-2.257E-02	5.796E-02	9.573E-02	0.000E+00	FAIL ABUN
PB-211	4.281E-01	8.183E-01	1.248E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	9.028E-01	1.268E+00	0.000E+00	FAIL ABUN
RN-219	-1.401E-01	4.180E-01	6.448E-01	0.000E+00	FAIL ABUN
RA-223	5.529E-02	6.420E-01	9.971E-01	0.000E+00	FAIL ABUN
AC-227	3.136E-03	2.236E-01	3.723E-01	0.000E+00	FAIL ABUN
TH-227	3.136E-03	2.236E-01	3.723E-01	0.000E+00	FAIL ABUN
TH-229	8.215E-02	4.244E-01	7.318E-01	0.000E+00	FAIL ABUN
PA-231	7.211E-01	1.278E+00	2.175E+00	0.000E+00	NOT IDENT.
TH-231	5.529E-02	6.420E-01	9.971E-01	0.000E+00	FAIL ABUN
PA-233	1.858E-02	5.770E-02	1.030E-01	0.000E+00	FAIL ABUN
PA-234	2.616E-01	3.261E-01	5.759E-01	0.000E+00	NOT IDENT.
PA-234M	2.405E+00	5.490E+00	9.379E+00	0.000E+00	NOT IDENT.
NP-239	-3.987E-02	2.746E-01	4.856E-01	0.000E+00	FAIL ABUN
AM-241	-5.161E-03	4.757E-02	7.378E-02	0.000E+00	NOT IDENT.
CM-247	7.784E-03	3.962E-02	6.070E-02	0.000E+00	NOT IDENT.
CF-249	2.433E-02	3.682E-02	6.587E-02	0.000E+00	NOT IDENT.
CF-251	-4.202E-02	1.029E-01	1.732E-01	0.000E+00	NOT IDENT.

ANH-511	6.070E-02	4.599E-02	8.916E-02	0.000E+00 NOT IDENT.
---------	-----------	-----------	-----------	----------------------

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112007.CNF;1
Sample date        : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:25:01
Sample ID          : G248112007      Sample quantity      : 1.22500E+02 GRAM
Detector name      : GAM25            Detector geometry   : CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time  : 0 02:00:01.93  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials   : MXR1
Abundance limit    : 75.00000         Sensitivity         : 5.00000
Batch ID           : 959270           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
K-40	1460.82	1299	10.66*	1.109E+00	3.368E+01	3.368E+01	10.46
CD-109	88.03	457	3.70*	9.405E+00	4.027E+00	4.126E+00	19.72
SN-126	64.28	231	9.60	9.778E+00	7.545E-01	7.545E-01	49.19
	86.94	457	8.90	9.405E+00	1.674E+00	1.674E+00	45.00
	87.57	457	37.00*	9.405E+00	4.027E-01	4.027E-01	19.72
BA-137M	661.66	102	89.90*	2.227E+00	1.561E-01	1.563E-01	61.75
CS-137	661.66	102	85.10*	2.227E+00	1.649E-01	1.651E-01	61.76
EU-155	86.55	457	30.70	9.405E+00	4.853E-01	4.885E-01	19.75
	105.31	82	21.10*	8.809E+00	1.349E-01	1.358E-01	91.35
TL-208	277.37	-----	6.60	4.738E+00	-----	Line Not Found	-----
	583.19	347	85.00*	2.497E+00	5.006E-01	5.006E-01	18.47
	860.56	-----	12.50	1.765E+00	-----	Line Not Found	-----
PB-210	46.54	167	4.25*	9.191E+00	1.311E+00	1.313E+00	50.17
BI-211	72.87	-----	1.23	9.724E+00	-----	Line Not Found	-----
	351.06	584	12.92*	3.885E+00	3.564E+00	3.564E+00	15.32
PB-212	74.82	709	10.28	9.694E+00	2.180E+00	2.180E+00	18.73
	77.11	1015	17.10	9.652E+00	1.884E+00	1.884E+00	13.45
	238.63	1270	43.60*	5.339E+00	1.672E+00	1.672E+00	13.06
	300.09	102	3.30	4.447E+00	2.127E+00	2.127E+00	44.34
BI-214	609.32	428	45.49*	2.401E+00	1.202E+00	1.202E+00	17.81
	1120.29	-----	14.92	1.398E+00	-----	Line Not Found	-----
	1764.49	76	15.30	9.414E-01	1.617E+00	1.617E+00	25.86
PB-214	74.82	709	5.80	9.694E+00	3.863E+00	3.864E+00	17.87
	77.11	1015	9.70	9.652E+00	3.321E+00	3.321E+00	15.78
	242.00	358	7.25	5.291E+00	2.857E+00	2.857E+00	27.33
	295.22	354	18.42	4.503E+00	1.308E+00	1.308E+00	19.42
	351.93	584	35.60*	3.885E+00	1.294E+00	1.294E+00	16.28
RA-224	240.99	358	4.10*	5.291E+00	5.051E+00	5.051E+00	26.71
RA-226	609.32	428	45.49*	2.401E+00	1.202E+00	1.202E+00	17.81
	1120.29	-----	14.92	1.398E+00	-----	Line Not Found	-----
	1764.49	76	15.30	9.414E-01	1.617E+00	1.617E+00	25.86
AC-228	338.32	289	11.27	4.020E+00	1.958E+00	1.958E+00	45.72

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-228	911.20	227	25.80*	1.678E+00	1.604E+00	1.604E+00	23.10
	968.97	161	15.80	1.589E+00	1.965E+00	1.965E+00	33.22
	338.32	289	11.27	4.020E+00	1.958E+00	1.958E+00	45.72
	911.20	227	25.80*	1.678E+00	1.604E+00	1.604E+00	23.10
TH-228	968.97	161	15.80	1.589E+00	1.965E+00	1.965E+00	33.22
	74.82	709	10.28	9.694E+00	2.180E+00	2.180E+00	16.05
	77.11	1015	17.10	9.652E+00	1.884E+00	1.884E+00	13.45
	238.63	1270	43.60*	5.339E+00	1.672E+00	1.672E+00	13.06
TH-232	300.09	102	3.30	4.447E+00	2.127E+00	2.127E+00	74.85
	338.32	289	11.27	4.020E+00	1.958E+00	1.958E+00	20.61
	911.20	227	25.80*	1.678E+00	1.604E+00	1.604E+00	23.10
	968.97	161	15.80	1.589E+00	1.965E+00	1.965E+00	33.22
TH-234	63.29	231	3.70*	9.778E+00	1.958E+00	1.958E+00	50.26
	92.59	400	4.23	9.240E+00	3.139E+00	3.139E+00	31.36
U-235	89.96	328	3.47	9.325E+00	3.103E+00	3.103E+00	32.26
	93.35	400	5.60	9.240E+00	2.371E+00	2.371E+00	32.09
	143.76	-----	10.96*	7.568E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.998E+00	-----	Line Not Found	-----
NP-237	185.72	309	57.20	6.417E+00	2.581E-01	2.581E-01	31.49
	205.31	-----	5.01	5.979E+00	-----	Line Not Found	-----
	86.48	457	12.40*	9.405E+00	1.202E+00	1.202E+00	28.78
	95.86	-----	2.68	9.143E+00	-----	Line Not Found	-----
U-238	63.29	231	3.70*	9.778E+00	1.958E+00	1.958E+00	50.26
	92.59	400	4.23	9.240E+00	3.139E+00	3.139E+00	23.88

Flag: "*" = Keyline

Total number of lines in spectrum 31
Number of unidentified lines 2
Number of lines tentatively identified by NID 29 93.55%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.368E+01	3.368E+01	0.352E+01	10.46	
CD-109	461.40D	1.02	4.027E+00	4.126E+00	0.813E+00	19.72	
SN-126	2.30E+05Y	1.00	4.027E-01	4.027E-01	0.794E-01	19.72	
BA-137M	30.08Y	1.00	1.561E-01	1.563E-01	0.965E-01	61.75	
CS-137	30.08Y	1.00	1.649E-01	1.651E-01	1.020E-01	61.76	
EU-155	4.75Y	1.01	1.349E-01	1.358E-01	1.240E-01	91.35	
TL-208	1.41E+10Y	1.00	5.006E-01	5.006E-01	0.925E-01	18.47	
PB-210	22.20Y	1.00	1.311E+00	1.313E+00	0.659E+00	50.17	
BI-211	7.04E+08Y	1.00	3.564E+00	3.564E+00	0.546E+00	15.32	
PB-212	1.41E+10Y	1.00	1.672E+00	1.672E+00	0.218E+00	13.06	
BI-214	1600.00Y	1.00	1.202E+00	1.202E+00	0.214E+00	17.81	
PB-214	1600.00Y	1.00	1.294E+00	1.294E+00	0.211E+00	16.28	
RA-224	1.41E+10Y	1.00	5.051E+00	5.051E+00	1.349E+00	26.71	
RA-226	1600.00Y	1.00	1.202E+00	1.202E+00	0.214E+00	17.81	
AC-228	1.41E+10Y	1.00	1.604E+00	1.604E+00	0.371E+00	23.10	
RA-228	1.41E+10Y	1.00	1.604E+00	1.604E+00	0.371E+00	23.10	
TH-228	1.41E+10Y	1.00	1.672E+00	1.672E+00	0.218E+00	13.06	
TH-232	1.41E+10Y	1.00	1.604E+00	1.604E+00	0.371E+00	23.10	
TH-234	4.47E+09Y	1.00	1.958E+00	1.958E+00	0.984E+00	50.26	
U-235	7.04E+08Y	1.00	2.581E-01	2.581E-01	0.813E-01	31.49	K
NP-237	2.14E+06Y	1.00	1.202E+00	1.202E+00	0.346E+00	28.78	
U-238	4.47E+09Y	1.00	1.958E+00	1.958E+00	0.984E+00	50.26	
Total Activity :			6.622E+01	6.632E+01			

Grand Total Activity : 6.622E+01 6.632E+01

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

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

Unidentified Energy Lines
Sample ID : G248112007

Page : 4
Acquisition date : 10-MAR-2010 13:25:01

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.57	127	274	1.11	418.68	414	10	1.76E-02	53.0	5.89E+00	T
0	270.65	121	167	1.49	540.82	536	10	1.68E-02	44.3	4.83E+00	T
0	327.69	85	121	1.30	654.90	651	9	1.18E-02	51.5	4.13E+00	T
0	408.95	47	152	1.55	817.41	810	12	6.59E-03	****	3.41E+00	
0	463.14	83	98	1.20	925.79	920	12	1.15E-02	52.7	3.06E+00	T
0	727.00	86	75	1.28	1453.48	1447	12	1.19E-02	45.7	2.05E+00	T
0	933.75	41	62	5.19	1866.99	1857	19	5.67E-03	97.6	1.64E+00	
2	964.46	66	58	2.06	1928.40	1919	24	9.18E-03	51.7	1.60E+00	T
0	1238.63	39	50	1.63	2476.76	2472	9	5.46E-03	72.9	1.28E+00	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112007.CNF;1 *
* Acquisition date   : 10-MAR-2010 13:25:01 Detector SN#      :              *
* Detector ID        : GAM25 Sensitivity      : 5.00000         *
* Geometry           : CAN Energy tolerance: 1.50000         *
* Elapsed live time: 0 02:00:00.00 Abundance limit : 75.00000    *
* Elapsed real time: 0 02:00:01.93 Half life ratio : 8.00000    *
*****
*                                     SAMPLE DATA                            *
* Sample date        : 22-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248112007 Analyst initials: MXR1         *
* Batch Number       : 959270 Sample Quantity : 1.22500E+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	3.368E+01	3.522E+00	5.944E-01	5.062E-02	56.657
CD-109	4.126E+00	8.134E-01	6.938E-01	7.455E-02	5.947
SN-126	4.027E-01	7.940E-02	6.758E-02	7.246E-03	5.959
BA-137M	1.563E-01	9.652E-02	5.787E-02	6.411E-03	2.701
CS-137	1.651E-01	1.020E-01	6.114E-02	6.781E-03	2.701
EU-155	1.358E-01	1.240E-01	1.162E-01	1.373E-02	1.168
TL-208	5.006E-01	9.248E-02	6.646E-02	7.486E-03	7.533
PB-210	1.313E+00	6.588E-01	5.359E-01	5.489E-02	2.450
BI-211	3.564E+00	5.459E-01	3.151E-01	3.320E-02	11.312
PB-212	1.672E+00	2.183E-01	7.472E-02	8.537E-03	22.381
BI-214	1.202E+00	2.140E-01	1.197E-01	1.449E-02	10.040
PB-214	1.294E+00	2.106E-01	1.076E-01	1.278E-02	12.022
RA-224	5.051E+00	1.349E+00	8.019E-01	8.427E-02	6.299
RA-226	1.202E+00	2.140E-01	1.197E-01	1.449E-02	10.040
AC-228	1.604E+00	3.705E-01	2.339E-01	2.860E-02	6.858
RA-228	1.604E+00	3.705E-01	2.339E-01	2.860E-02	6.858
TH-228	1.672E+00	2.183E-01	7.472E-02	8.537E-03	22.381
TH-232	1.604E+00	3.705E-01	2.339E-01	2.860E-02	6.858

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	1.958E+00	9.840E-01	7.153E-01	1.358E-01	2.737
U-235	2.581E-01	8.128E-02	2.676E-01	4.916E-02	0.964
NP-237	1.202E+00	3.458E-01	2.007E-01	4.721E-02	5.988
U-238	1.958E+00	9.840E-01	7.153E-01	1.358E-01	2.737

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.951E-01		3.439E-01	5.065E-01	5.362E-02	-0.780
NA-22	2.275E-03		5.374E-02	8.869E-02	7.273E-03	0.026
NA-24	-2.362E-01		1.050E+00	Half-Life too short		
SC-46	-6.992E-03		4.555E-02	7.302E-02	6.992E-03	-0.096
V-48	-1.349E-02		8.312E-02	1.316E-01	1.220E-02	-0.103
CR-51	-1.801E-01		3.409E-01	5.556E-01	6.166E-02	-0.324
MN-54	3.692E-04		4.081E-02	6.686E-02	6.784E-03	0.006
CO-56	-1.196E-02		4.302E-02	6.844E-02	6.867E-03	-0.175
CO-57	-6.896E-03		1.821E-02	3.017E-02	3.890E-03	-0.229
CO-58	-2.633E-02		4.319E-02	6.673E-02	6.924E-03	-0.395
FE-59	1.828E-02		1.095E-01	1.852E-01	1.744E-02	0.099
CO-60	-8.013E-04		4.638E-02	7.587E-02	6.162E-03	-0.011
ZN-65	-3.647E-01		1.276E-01	1.584E-01	1.368E-02	-2.303
SE-75	1.830E-02		3.865E-02	6.340E-02	6.949E-03	0.289
SR-85	-2.094E-01		5.725E-02	6.477E-02	6.682E-03	-3.233
Y-88	2.312E-02		3.378E-02	6.344E-02	5.184E-03	0.365
Y-91	6.766E+00		2.553E+01	4.312E+01	3.548E+00	0.157
NB-94	-2.574E-02		3.455E-02	5.373E-02	5.900E-03	-0.479
NB-95	3.799E-02		5.060E-02	8.769E-02	9.367E-03	0.433
NB-95M	7.468E-02		1.093E-01	1.645E-01	1.889E-02	0.454
ZR-95	-4.973E-02		8.004E-02	1.249E-01	1.433E-02	-0.398
MO-99	-1.904E+01		1.645E+01	2.379E+01	4.060E+00	-0.801
TC-99M	-4.204E+10		1.949E+11	Half-Life too short		
RU-103	-1.232E-02		3.862E-02	6.090E-02	9.123E-03	-0.202
RH-106	-3.008E-01		3.121E-01	4.774E-01	7.102E-02	-0.630
RU-106	-3.008E-01		3.106E-01	4.774E-01	5.227E-02	-0.630
AG-108M	-1.918E-02		2.842E-02	4.420E-02	4.343E-03	-0.434
AG-110M	1.415E-02		4.018E-02	6.081E-02	6.852E-03	0.233
SN-113	-4.347E-02		4.155E-02	6.341E-02	5.923E-03	-0.685
CD-115	1.076E+01		1.628E+01	2.759E+01	2.875E+00	0.390
SN-117M	2.190E-02		4.706E-02	7.958E-02	7.727E-03	0.275
TE-123M	7.625E-03		2.302E-02	3.872E-02	3.759E-03	0.197
SB-124	1.209E-02		6.827E-02	1.177E-01	1.020E-02	0.103
SB-125	1.992E-02		8.860E-02	1.480E-01	1.429E-02	0.135
TE-125M	2.616E-01		7.520E+00	1.139E+01	1.527E+00	0.023
I-126	3.767E-01		2.656E-01	4.413E-01	4.886E-02	0.853
SB-126	5.961E-02		1.762E-01	2.641E-01	2.883E-02	0.226
SB-127	-2.060E-01		1.580E+00	2.605E+00	3.525E-01	-0.079
I-131	6.845E-03		1.182E-01	1.979E-01	2.031E-02	0.035

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	2.002E-01		7.951E-01	1.299E+00	2.201E-01	0.154
BA-133	-3.852E-02		4.346E-02	5.816E-02	8.112E-03	-0.662
I-133	-1.974E-03		6.868E-03	Half-Life too short		
CS-134	5.709E-02		5.103E-02	9.089E-02	9.568E-03	0.628
CS-135	6.936E-02		1.595E-01	2.333E-01	2.816E-02	0.297
I-135	8.540E+09		3.856E+10	Half-Life too short		
CS-136	8.683E-02		1.220E-01	2.169E-01	2.028E-02	0.400
CE-139	6.807E-03		2.410E-02	4.035E-02	3.597E-03	0.169
BA-140	2.966E-01		3.103E-01	5.104E-01	1.758E-01	0.581
LA-140	-3.062E-03		9.233E-02	1.534E-01	1.275E-02	-0.020
CE-141	-1.963E-02		5.062E-02	8.287E-02	9.216E-03	-0.237
CE-143	6.935E-04		1.338E-04	Half-Life too short		
CE-144	-1.226E-01		1.557E-01	2.495E-01	4.349E-02	-0.492
PM-144	4.560E-02		3.786E-02	6.797E-02	7.479E-03	0.671
PR-144	3.397E+00		2.834E+00	5.085E+00	5.594E-01	0.668
PM-146	2.004E-02		4.265E-02	7.204E-02	8.325E-03	0.278
ND-147	-1.357E-01		6.431E-01	1.019E+00	1.638E-01	-0.133
PM-149	-2.631E+01		1.163E+02	1.810E+02	3.087E+01	-0.145
EU-152	-6.947E-02		8.479E-02	1.339E-01	1.437E-02	-0.519
GD-153	-3.330E-03		6.056E-02	9.178E-02	1.034E-02	-0.036
EU-154	8.525E-02		1.453E-01	2.516E-01	2.782E-02	0.339
TB-160	-1.338E-01		1.600E-01	2.383E-01	2.309E-02	-0.561
HO-166M	3.210E-02		6.009E-02	1.042E-01	1.141E-02	0.308
TA-182	1.709E-02		2.528E-01	4.195E-01	3.450E-02	0.041
IR-192	1.009E-02		3.127E-02	5.369E-02	5.799E-03	0.188
HG-203	2.283E-02		3.461E-02	5.710E-02	6.470E-03	0.400
BI-207	-2.257E-02		5.914E-02	9.549E-02	8.522E-03	-0.236
PB-211	4.281E-01		8.350E-01	1.229E+00	5.964E-01	0.348
BI-212	1.927E+00	+	9.212E-01	1.259E+00	1.778E-01	1.530
RN-219	-1.401E-01		4.265E-01	6.351E-01	9.668E-02	-0.221
RA-223	5.529E-02		6.551E-01	9.794E-01	1.806E-01	0.056
AC-227	3.136E-03		2.282E-01	3.646E-01	4.988E-02	0.009
TH-227	3.136E-03		2.282E-01	3.646E-01	5.494E-02	0.009
TH-229	8.215E-02		4.330E-01	7.141E-01	6.811E-02	0.115
PA-231	7.211E-01		1.304E+00	2.133E+00	3.455E-01	0.338
TH-231	5.529E-02		6.551E-01	9.794E-01	1.806E-01	0.056
PA-233	1.858E-02		5.888E-02	1.011E-01	1.117E-02	0.184
PA-234	2.616E-01		3.328E-01	5.736E-01	1.097E-01	0.456
PA-234M	2.405E+00		5.602E+00	9.348E+00	9.791E-01	0.257
NP-239	-3.987E-02		2.802E-01	4.709E-01	5.907E-02	-0.085
AM-241	-5.161E-03		4.855E-02	7.096E-02	7.373E-03	-0.073
CM-247	7.784E-03		4.043E-02	5.979E-02	5.510E-03	0.130
CF-249	2.433E-02		3.757E-02	6.486E-02	5.964E-03	0.375
CF-251	-4.202E-02		1.050E-01	1.689E-01	1.550E-02	-0.249
ANH-511	6.070E-02		4.693E-02	8.809E-02	9.067E-03	0.689

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G248112007            *
* Acquisition date   : 10-MAR-2010 13:25:01 Detector SN# :                  *
* Detector ID        : GAM25 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.93 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248112007 Analyst initials: MXR1                  *
* Batch Number       : 959270 Sample Quantity : 1.2250E+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 :                              *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.368E+01	3.452E+00	2.969E-01	1.761E+00
CD-109	4.126E+00	7.971E-01	3.592E-01	4.067E-01
SN-126	4.027E-01	7.781E-02	3.499E-02	3.970E-02
BA-137M	1.563E-01	9.459E-02	2.921E-02	4.826E-02
CS-137	1.651E-01	9.993E-02	3.086E-02	5.098E-02
EU-155	1.358E-01	1.215E-01	6.003E-02	6.201E-02
TL-208	5.006E-01	9.063E-02	3.360E-02	4.624E-02
PB-210	1.313E+00	6.456E-01	2.796E-01	3.294E-01
BI-211	3.564E+00	5.350E-01	1.603E-01	2.729E-01
PB-212	1.672E+00	2.140E-01	3.821E-02	1.092E-01
BI-214	1.202E+00	2.097E-01	6.047E-02	1.070E-01
PB-214	1.294E+00	2.064E-01	5.475E-02	1.053E-01
RA-224	5.051E+00	1.322E+00	4.100E-01	6.746E-01
RA-226	1.202E+00	2.097E-01	6.047E-02	1.070E-01
AC-228	1.604E+00	3.631E-01	1.176E-01	1.853E-01
RA-228	1.604E+00	3.631E-01	1.176E-01	1.853E-01
TH-228	1.672E+00	2.140E-01	3.821E-02	1.092E-01
TH-232	1.604E+00	3.631E-01	1.176E-01	1.853E-01
TH-234	1.958E+00	9.643E-01	3.718E-01	4.920E-01
U-235	8.148E-02	1.573E-01	1.377E-01	8.027E-02
NP-237	1.202E+00	3.389E-01	1.039E-01	1.729E-01
U-238	1.958E+00	9.643E-01	3.718E-01	4.920E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.951E-01	3.371E-01	2.567E-01	1.720E-01 NOT IDENT.
NA-22	2.275E-03	5.266E-02	4.438E-02	2.687E-02 NOT IDENT.
NA-24	-2.362E+05	2.059E+06	0.000E+00	1.050E+06 SHORT HLIF
SC-46	-6.992E-03	4.464E-02	3.671E-02	2.277E-02 NOT IDENT.
V-48	-1.349E-02	8.146E-02	6.608E-02	4.156E-02 NOT IDENT.

CR-51	-1.801E-01	3.341E-01	2.830E-01	1.705E-01	NOT IDENT.
MN-54	3.692E-04	4.000E-02	3.364E-02	2.041E-02	NOT IDENT.
CO-56	-1.196E-02	4.216E-02	3.443E-02	2.151E-02	FAIL ABUN
CO-57	-6.896E-03	1.785E-02	1.556E-02	9.107E-03	NOT IDENT.
CO-58	-2.633E-02	4.233E-02	3.359E-02	2.160E-02	NOT IDENT.
FE-59	1.828E-02	1.073E-01	9.286E-02	5.476E-02	NOT IDENT.
CO-60	-8.013E-04	4.545E-02	3.794E-02	2.319E-02	NOT IDENT.
ZN-65	-3.647E-01	1.251E-01	7.938E-02	6.380E-02	NOT IDENT.
SE-75	1.830E-02	3.787E-02	3.238E-02	1.932E-02	NOT IDENT.
SR-85	-2.094E-01	5.611E-02	3.279E-02	2.863E-02	NOT IDENT.
Y-88	2.312E-02	3.311E-02	3.159E-02	1.689E-02	NOT IDENT.
Y-91	6.766E+00	2.502E+01	2.159E+01	1.277E+01	NOT IDENT.
NB-94	-2.574E-02	3.386E-02	2.710E-02	1.728E-02	NOT IDENT.
NB-95	3.799E-02	4.959E-02	4.417E-02	2.530E-02	NOT IDENT.
NB-95M	7.468E-02	1.071E-01	8.414E-02	5.465E-02	NOT IDENT.
ZR-95	-4.973E-02	7.844E-02	6.291E-02	4.002E-02	NOT IDENT.
MO-99	-1.904E+01	1.613E+01	1.199E+01	8.227E+00	NOT IDENT.
TC-99M	-4.204E+16	3.819E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.232E-02	3.784E-02	3.085E-02	1.931E-02	FAIL ABUN
RH-106	-3.008E-01	3.058E-01	2.411E-01	1.560E-01	NOT IDENT.
RU-106	-3.008E-01	3.044E-01	2.411E-01	1.553E-01	NOT IDENT.
AG-108M	-1.918E-02	2.785E-02	2.243E-02	1.421E-02	NOT IDENT.
AG-110M	1.415E-02	3.938E-02	3.069E-02	2.009E-02	NOT IDENT.
SN-113	-4.347E-02	4.072E-02	3.222E-02	2.077E-02	NOT IDENT.
CD-115	1.076E+01	1.595E+01	1.396E+01	8.138E+00	NOT IDENT.
SN-117M	2.190E-02	4.612E-02	4.090E-02	2.353E-02	NOT IDENT.
TE-123M	7.625E-03	2.256E-02	1.990E-02	1.151E-02	NOT IDENT.
SB-124	1.209E-02	6.691E-02	5.870E-02	3.414E-02	NOT IDENT.
SB-125	1.992E-02	8.682E-02	7.514E-02	4.430E-02	FAIL ABUN
TE-125M	2.616E-01	7.370E+00	5.882E+00	3.760E+00	NOT IDENT.
I-126	3.767E-01	2.603E-01	2.227E-01	1.328E-01	NOT IDENT.
SB-126	5.961E-02	1.727E-01	1.332E-01	8.811E-02	NOT IDENT.
SB-127	-2.060E-01	1.549E+00	1.314E+00	7.901E-01	NOT IDENT.
I-131	6.845E-03	1.159E-01	1.006E-01	5.911E-02	NOT IDENT.
TE-132	2.002E-01	7.792E-01	6.644E-01	3.976E-01	NOT IDENT.
BA-133	-3.852E-02	4.259E-02	2.959E-02	2.173E-02	NOT IDENT.
I-133	-1.974E+03	1.346E+04	0.000E+00	6.868E+03	SHORT HLIF
CS-134	5.709E-02	5.001E-02	4.576E-02	2.551E-02	NOT IDENT.
CS-135	6.936E-02	1.563E-01	1.191E-01	7.976E-02	NOT IDENT.
I-135	8.540E+15	7.558E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.683E-02	1.195E-01	1.088E-01	6.099E-02	NOT IDENT.
CE-139	6.807E-03	2.362E-02	2.072E-02	1.205E-02	NOT IDENT.
BA-140	2.966E-01	3.041E-01	2.583E-01	1.552E-01	NOT IDENT.
LA-140	-3.062E-03	9.048E-02	7.653E-02	4.616E-02	FAIL ABUN
CE-141	-1.963E-02	4.961E-02	4.264E-02	2.531E-02	NOT IDENT.
CE-143	6.935E+02	2.622E+02	0.000E+00	1.338E+02	SHORT HLIF
CE-144	-1.226E-01	1.525E-01	1.285E-01	7.783E-02	NOT IDENT.
PM-144	4.560E-02	3.711E-02	3.428E-02	1.893E-02	NOT IDENT.
PR-144	3.397E+00	2.777E+00	2.565E+00	1.417E+00	NOT IDENT.
PM-146	2.004E-02	4.179E-02	3.654E-02	2.132E-02	NOT IDENT.
ND-147	-1.357E-01	6.302E-01	5.160E-01	3.215E-01	FAIL ABUN
PM-149	-2.631E+01	1.139E+02	9.233E+01	5.813E+01	NOT IDENT.
EU-152	-6.947E-02	8.310E-02	6.813E-02	4.240E-02	FAIL ABUN
GD-153	-3.330E-03	5.935E-02	4.746E-02	3.028E-02	NOT IDENT.
EU-154	8.525E-02	1.424E-01	1.259E-01	7.264E-02	NOT IDENT.
TB-160	-1.338E-01	1.568E-01	1.198E-01	8.001E-02	FAIL ABUN
HO-166M	3.210E-02	5.889E-02	5.253E-02	3.005E-02	NOT IDENT.
TA-182	1.709E-02	2.478E-01	2.100E-01	1.264E-01	NOT IDENT.
IR-192	1.009E-02	3.064E-02	2.736E-02	1.563E-02	FAIL ABUN
HG-203	2.283E-02	3.392E-02	2.914E-02	1.731E-02	NOT IDENT.
BI-207	-2.257E-02	5.796E-02	4.789E-02	2.957E-02	FAIL ABUN
PB-211	4.281E-01	8.183E-01	6.244E-01	4.175E-01	NOT IDENT.
BI-212	1.927E+00	9.028E-01	6.346E-01	4.606E-01	FAIL ABUN
RN-219	-1.401E-01	4.180E-01	3.226E-01	2.133E-01	FAIL ABUN
RA-223	5.529E-02	6.420E-01	4.988E-01	3.275E-01	FAIL ABUN
AC-227	3.136E-03	2.236E-01	1.863E-01	1.141E-01	FAIL ABUN
TH-227	3.136E-03	2.236E-01	1.863E-01	1.141E-01	FAIL ABUN
TH-229	8.215E-02	4.244E-01	3.661E-01	2.165E-01	FAIL ABUN
PA-231	7.211E-01	1.278E+00	1.088E+00	6.521E-01	NOT IDENT.
TH-231	5.529E-02	6.420E-01	4.988E-01	3.275E-01	FAIL ABUN
PA-233	1.858E-02	5.770E-02	5.152E-02	2.944E-02	FAIL ABUN
PA-234	2.616E-01	3.261E-01	2.881E-01	1.664E-01	NOT IDENT.
PA-234M	2.405E+00	5.490E+00	4.692E+00	2.801E+00	NOT IDENT.
NP-239	-3.987E-02	2.746E-01	2.430E-01	1.401E-01	FAIL ABUN
AM-241	-5.161E-03	4.757E-02	3.691E-02	2.427E-02	NOT IDENT.
CM-247	7.784E-03	3.962E-02	3.037E-02	2.022E-02	NOT IDENT.
CF-249	2.433E-02	3.682E-02	3.296E-02	1.878E-02	NOT IDENT.
CF-251	-4.202E-02	1.029E-01	8.667E-02	5.249E-02	NOT IDENT.

ANH-511	6.070E-02	4.599E-02	4.460E-02	2.346E-02 NOT IDENT.
---------	-----------	-----------	-----------	----------------------

```

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

```

ENERGY	MDA COUNTS
46.54	215.2445
49.72	226.2720
57.36	0.0000
59.54	309.1247
63.29	329.8881
63.29	329.8881
64.28	331.0870
67.75	356.0977
69.67	381.4492
70.83	359.5130
72.81	381.1869
72.87	381.2633
72.87	381.2633
74.82	383.7177
74.82	383.7177
74.82	383.7177
74.97	383.9050
77.11	386.5616
77.11	386.5616
77.11	386.5616
79.69	337.8320
79.80	337.9474
80.12	338.2828
80.19	338.3554
80.57	341.1724
81.00	295.5898
81.07	295.6530
81.07	295.6530
83.79	268.7796
83.79	268.7796
85.43	270.0938
86.48	270.9280
86.55	270.9834
86.79	271.1714
86.94	271.2923
87.57	271.7891
88.03	272.1500
88.47	272.4957
89.96	273.6572
91.11	274.5485
92.59	268.1661
92.59	268.1661
93.35	268.7310
94.67	269.7074
94.87	248.4173
94.87	248.4173
95.86	274.3741
97.43	255.2187
98.44	232.2249
99.53	224.7225
100.11	242.1153
103.18	233.3037
103.37	220.5210
105.31	228.0889
106.12	228.5535
109.28	232.9650
111.00	241.8285
111.76	229.1051
116.30	205.8509
117.23	220.5243
121.12	227.8801
121.78	230.0169
122.06	222.0699
123.07	210.8580
131.20	272.4101
133.52	250.7030
136.00	217.7212

136.47	228.1351
140.51	223.4741
140.51	0.0000
143.76	202.3411
144.24	204.4176
144.24	204.4176
145.44	240.7823
152.43	222.0313
153.25	213.7469
154.21	211.2518
154.21	211.2518
156.02	231.2354
158.56	210.0576
159.00	205.3815
162.66	208.6992
163.33	185.5159
165.86	198.1225
176.60	183.8390
177.52	200.1343
181.07	167.5975
184.41	202.4211
185.72	202.8503
193.51	182.7857
197.04	197.2116
205.31	175.6511
210.85	183.4165
215.65	191.0614
222.11	191.7462
227.38	167.2529
228.16	173.9122
228.18	173.9171
235.69	140.7709
235.96	140.8208
235.96	140.8208
238.63	148.9893
238.63	148.9893
240.99	149.4514
242.00	149.6492
244.70	150.1736
252.40	148.3113
252.80	150.6184
256.23	150.1455
256.23	150.1455
260.90	141.9987
264.66	122.2712
268.22	144.9706
269.46	150.3101
269.46	150.3101
271.23	142.6392
273.65	130.4603
276.40	128.5863
277.37	145.9730
277.60	146.0117
278.00	138.0273
279.20	124.3982
279.54	169.3856
280.46	197.2526
283.69	121.5707
284.31	122.8148
285.41	143.8518
285.90	145.0907
287.50	137.2153
293.27	0.0000
295.22	120.5189
295.96	120.6192
298.57	120.9662
299.98	121.1523
299.98	121.1523
300.09	121.1669
300.09	121.1669
300.13	121.1732
301.36	136.0383
302.85	132.0005
304.50	125.1250
304.50	125.1250
304.85	113.7930
308.46	140.1180
311.90	128.0903

316.51	119.7114
319.41	141.7422
320.08	134.6129
323.87	127.7031
323.87	127.7031
328.76	118.1323
333.37	111.7223
334.37	111.4673
334.37	111.4673
338.28	122.2082
338.28	122.2082
338.32	122.2122
338.32	122.2122
338.32	122.2122
340.48	106.2422
340.55	106.2492
344.28	121.2634
351.06	123.7381
351.93	109.1073
356.01	124.3237
364.49	111.3506
366.42	103.0424
383.85	102.7648
388.16	96.4081
388.63	91.6268
391.69	116.0504
400.66	107.2087
401.81	114.4688
402.40	103.0734
404.85	107.9843
410.95	88.0934
414.70	100.3175
423.72	105.3271
427.09	92.6637
427.87	94.7159
433.94	101.1926
453.88	90.5807
463.37	95.3415
468.07	75.7214
473.00	89.8382
476.78	105.6248
477.60	112.9418
487.02	73.0334
492.35	75.4113
497.08	78.8200
511.00	92.3346
514.00	259.5032
527.90	76.2349
529.87	0.0000
531.02	90.3831
537.26	69.1543
546.56	0.0000
563.25	69.2427
569.33	80.5455
569.50	80.5544
569.70	80.5633
583.19	97.9446
600.60	87.3000
602.73	87.8643
604.72	70.6759
609.32	84.1428
609.32	84.1428
610.33	66.3885
614.28	77.1329
618.01	68.2086
621.93	80.2162
621.93	80.2162
633.25	80.7490
635.95	89.1472
636.99	82.7644
645.85	76.7162
657.76	65.1379
661.66	66.2123
661.66	66.2123
664.57	0.0000
666.33	52.9825
666.50	52.9880
677.62	67.7391

685.70	67.0929
695.00	75.9766
696.49	65.5820
696.51	65.5837
697.00	69.4035
702.65	81.0551
706.68	65.9375
711.68	56.5297
720.70	60.9676
721.93	0.0000
722.78	70.6711
722.91	70.6764
723.31	75.5106
724.19	75.5450
727.33	78.8873
733.00	56.7425
735.93	71.7959
739.50	75.8139
747.24	79.0383
752.31	65.5425
753.82	57.7612
756.73	77.4532
763.94	105.2785
765.81	81.7396
766.42	78.8086
777.92	59.4390
778.90	68.3885
783.70	50.6651
785.37	55.6773
795.86	56.9555
801.95	69.1466
810.29	77.4662
810.76	68.4267
815.77	62.5343
818.51	60.5947
832.01	70.1186
834.85	67.1569
836.80	0.0000
846.77	61.3813
856.80	87.3491
860.56	46.3206
871.09	55.8431
873.19	54.8594
875.33	0.0000
879.36	68.5008
880.51	63.3426
883.24	50.9416
884.68	50.9739
889.28	62.5415
898.04	58.5922
911.20	50.5031
911.20	50.5031
911.20	50.5031
926.50	49.4159
937.49	35.4574
944.13	62.9309
946.00	44.8321
949.00	50.2312
962.29	70.9178
964.08	70.9677
966.15	71.0273
968.97	66.4385
968.97	66.4385
968.97	66.4385
983.53	55.2645
996.26	65.3423
1001.03	62.1907
1004.73	74.2986
1037.84	59.0130
1038.76	0.0000
1048.07	45.3553
1050.41	62.9974
1050.41	62.9974
1063.66	61.4453
1085.87	43.1737
1099.45	62.2456
1112.07	55.8935
1115.54	137.5364

1120.29	57.9570
1120.29	57.9570
1120.55	56.0615
1121.30	59.8777
1131.51	0.0000
1173.23	66.7623
1177.93	76.5570
1189.05	61.2799
1204.77	66.4893
1221.41	85.5309
1231.02	86.3881
1235.36	93.1117
1238.28	71.1709
1260.41	0.0000
1271.85	36.9654
1274.44	46.9943
1274.54	57.9929
1291.59	40.2083
1298.22	0.0000
1312.11	38.4391
1332.49	35.6238
1365.19	27.7493
1368.63	0.0000
1384.29	15.5023
1408.01	30.1765
1457.56	0.0000
1460.82	24.2915
1489.16	19.1587
1505.03	21.3794
1596.21	19.7065
1620.50	18.8839
1678.03	0.0000
1690.97	8.6469
1764.49	8.7994
1764.49	8.7994
1770.23	13.7061
1771.35	6.8547
1791.20	0.0000
1836.06	6.9568

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248112007

Total Uranium Activity	5.8618E+00	ug/g
Total Uranium Counting Unc.	2.8698E+00	ug/g
Total Uranium Tpu	1.4642E-06	ug/g
Total Uranium Mda	1.1081E+00	ug/g

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 959270                          SAMPLE ID   : G248112007
*  ANALYST       : MXR1                             DETECTOR    : GAM25
*  SAMPLE DATE   : 22-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 10-MAR-2010 13:25:01.57          SAMPLE ALQT  : 122.500 GRAM
*
*****

```

```

GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.600E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.225E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 2.746E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.330E+00

```

VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 15:42:43.89

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112008.CNF;1
Sample date        : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:42:11
Sample ID          : G248112008 Sample quantity : 1.14550E+02 GRAM
Detector name      : GAM05 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.69 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959270 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	45.75*	209	483	1.33	92.47	86	11	2.90E-02	23.3	
2	0	62.89*	318	823	1.15	126.75	122	12	4.42E-02	19.2	
3	3	74.35*	605	546	1.22	149.68	145	15	8.40E-02	7.5	5.06E-01
4	3	76.70*	860	392	1.07	154.37	145	15	1.19E-01	5.3	
5	3	86.85	287	550	1.42	174.67	163	29	3.99E-02	15.8	8.32E-01
6	3	89.44	185	352	0.98	179.85	163	29	2.57E-02	17.7	
7	3	92.31*	454	392	1.21	185.60	163	29	6.30E-02	9.2	
8	0	185.44*	213	308	1.49	371.83	367	10	2.95E-02	17.5	
9	0	208.39	86	274	1.05	417.72	415	9	1.20E-02	36.2	
10	3	238.22*	1075	151	1.22	477.37	470	19	1.49E-01	3.7	1.04E+00
11	3	241.23	281	233	2.01	483.39	470	19	3.90E-02	16.6	
12	0	269.59	164	147	1.33	540.09	535	11	2.28E-02	16.3	
13	0	294.82*	363	173	1.38	590.54	585	12	5.05E-02	9.1	
14	0	300.14	75	157	0.76	601.17	597	11	1.04E-02	34.4	
15	0	337.93	239	129	1.36	676.73	673	10	3.32E-02	11.0	
16	0	351.44*	529	163	1.31	703.74	699	11	7.34E-02	6.5	
17	0	463.03	74	117	1.67	926.85	919	13	1.03E-02	32.3	
18	0	510.43*	121	132	1.83	1021.61	1013	19	1.68E-02	27.6	
19	0	582.68*	334	97	1.53	1166.03	1159	16	4.64E-02	8.7	
20	0	608.81*	346	94	1.47	1218.26	1211	15	4.80E-02	8.3	
21	0	784.66	29	32	1.21	1569.75	1566	7	3.96E-03	37.6	
22	0	794.60	75	43	1.11	1589.62	1583	16	1.04E-02	23.0	
23	0	860.34	69	57	0.57	1721.01	1713	19	9.54E-03	29.8	
24	0	910.31*	226	70	1.54	1820.88	1812	15	3.14E-02	10.7	
25	1	963.72	54	33	2.19	1927.60	1919	27	7.44E-03	27.0	1.17E+00
26	1	968.12*	113	33	2.19	1936.40	1919	27	1.57E-02	15.3	
27	0	1119.34	114	40	2.13	2238.58	2230	16	1.59E-02	15.5	
28	0	1459.85*	895	22	2.00	2918.86	2910	18	1.24E-01	3.6	
29	0	1763.45*	61	8	2.32	3525.23	3517	16	8.53E-03	17.2	

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

VMS Nuclide Identification Report V3.1 Generated 10-MAR-2010 15:42:46

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112008.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:42:11
Sample ID        : G248112008 Sample quantity : 114.55 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA5 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.69 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	2.740E+01	2.606E+00	7.829E-01	4.869E-02	35.003
CD-109	+	88.03	*	3.313E+00	1.074E+00	1.102E+00	8.393E-02	3.005
SN-126	+	64.28		1.347E+00	5.548E-01	4.507E-01	6.718E-02	2.987
	+	86.94		1.344E+00	6.968E-01	4.458E-01	1.835E-01	3.015
	+	87.57	*	3.233E-01	1.048E-01	1.074E-01	8.182E-03	3.009
CS-135	+	268.22	*	7.707E-01	2.641E-01	2.831E-01	3.029E-02	2.722
TL-208		277.37		4.648E-01	4.732E-01	8.196E-01	1.067E-01	0.567
	+	583.19	*	5.699E-01	1.080E-01	7.201E-02	5.289E-03	7.914
	+	860.56		1.132E+00	6.850E-01	5.337E-01	5.415E-02	2.121
PB-210	+	46.54	*	2.127E+00	1.003E+00	9.203E-01	7.098E-02	2.311
BI-211	+	72.87		2.004E+01	3.396E+00	3.859E+00	3.038E-01	5.193
	+	351.06	*	3.810E+00	5.779E-01	4.263E-01	3.379E-02	8.938
PB-212	+	74.82		2.397E+00	4.685E-01	4.445E-01	5.550E-02	5.394
	+	77.11		2.057E+00	2.720E-01	2.684E-01	2.089E-02	7.663
	+	238.63	*	1.691E+00	2.214E-01	1.087E-01	1.176E-02	15.556
	+	300.09		1.857E+00	1.293E+00	1.328E+00	1.426E-01	1.398
BI-214	+	609.32	*	1.146E+00	2.135E-01	1.272E-01	1.073E-02	9.010
	+	1120.29		1.996E+00	6.475E-01	6.007E-01	5.772E-02	3.322
	+	1764.49		1.527E+00	5.333E-01	3.047E-01	1.762E-02	5.009
PB-214	+	74.82		4.249E+00	7.952E-01	7.878E-01	8.780E-02	5.394
	+	77.11		3.626E+00	5.651E-01	4.732E-01	5.366E-02	7.663
	+	242.00		2.681E+00	9.400E-01	6.315E-01	7.176E-02	4.245
	+	295.22		1.592E+00	3.402E-01	2.744E-01	3.042E-02	5.803
	+	351.93	*	1.383E+00	2.232E-01	1.503E-01	1.448E-02	9.198
RA-224	+	240.99	*	4.740E+00	1.639E+00	1.165E+00	1.140E-01	4.070
RA-226	+	609.32	*	1.146E+00	2.135E-01	1.272E-01	1.073E-02	9.010
	+	1120.29		1.996E+00	6.475E-01	6.007E-01	5.772E-02	3.322
	+	1764.49		1.527E+00	5.333E-01	3.047E-01	1.762E-02	5.009
AC-228	+	338.32		1.911E+00	8.991E-01	4.757E-01	1.977E-01	4.018
	+	911.20	*	1.897E+00	4.719E-01	3.514E-01	4.461E-02	5.399
	+	968.97		1.638E+00	6.437E-01	4.614E-01	1.137E-01	3.549
RA-228	+	338.32		1.911E+00	8.991E-01	4.757E-01	1.977E-01	4.018
	+	911.20	*	1.897E+00	4.719E-01	3.514E-01	4.461E-02	5.399
	+	968.97		1.638E+00	6.437E-01	4.614E-01	1.137E-01	3.549

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	+	74.82		2.397E+00	4.073E-01	4.445E-01	3.518E-02	5.394
	+	77.11		2.057E+00	2.720E-01	2.684E-01	2.089E-02	7.663
	+	238.63	*	1.691E+00	2.214E-01	1.087E-01	1.176E-02	15.556
	+	300.09		1.857E+00	1.710E+00	1.328E+00	8.133E-01	1.398
TH-229	+	85.43		8.138E-01	2.638E-01	2.688E-01	2.055E-02	3.028
	+	88.47		3.235E-01	1.175E-01	1.661E-01	1.277E-02	1.948
		193.51	*	-6.352E-01	6.355E-01	9.634E-01	9.621E-02	-0.659
		210.85		1.065E+00	1.291E+00	1.880E+00	1.873E-01	0.567
TH-232	+	338.32		1.911E+00	4.470E-01	4.757E-01	3.729E-02	4.018
	+	911.20	*	1.897E+00	4.719E-01	3.514E-01	4.461E-02	5.399
	+	968.97		1.638E+00	6.437E-01	4.614E-01	1.137E-01	3.549
TH-234	+	63.29	*	3.494E+00	1.484E+00	1.169E+00	2.122E-01	2.988
	+	92.59		4.531E+00	1.297E+00	9.543E-01	2.099E-01	4.748
U-235	+	89.96		2.238E+00	9.628E-01	1.154E+00	2.814E-01	1.939
	+	93.35		3.422E+00	1.007E+00	7.048E-01	1.626E-01	4.856
		143.76	*	1.228E-01	2.420E-01	3.977E-01	7.585E-02	0.309
		163.33		-1.429E-02	5.216E-01	8.393E-01	1.576E-01	-0.017
	+	185.72		2.150E-01	7.816E-02	7.801E-02	7.785E-03	2.756
		205.31		2.891E-01	6.781E-01	9.671E-01	1.821E-01	0.299
NP-237	+	86.48	*	9.648E-01	3.725E-01	3.196E-01	7.131E-02	3.019
		95.86		-2.686E-01	1.062E+00	1.502E+00	3.622E-01	-0.179
U-238	+	63.29	*	3.494E+00	1.484E+00	1.169E+00	2.122E-01	2.988
	+	92.59		4.531E+00	9.134E-01	9.543E-01	8.019E-02	4.748
ANH-511	+	511.00	*	1.555E-01	8.636E-02	5.605E-02	3.587E-03	2.774

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	-4.927E-01	4.416E-01	6.333E-01	4.535E-02	-0.778
NA-22		1274.54	*	1.306E-03	5.606E-02	9.098E-02	5.299E-03	0.014
NA-24		1368.63	*	5.787E-01	5.606E-02	Half-Life too short		
SC-46		889.28	*	2.178E-02	4.848E-02	8.355E-02	8.393E-03	0.261
	+	1120.55		3.403E-01	1.080E-01	1.596E-01	1.098E-02	2.132
V-48		944.13		-1.821E-01	1.152E+00	1.869E+00	1.808E-01	-0.097
		983.53	*	-3.770E-02	9.156E-02	1.440E-01	1.319E-02	-0.262
		1312.11		-3.573E-02	9.535E-02	1.458E-01	8.456E-03	-0.245
CR-51		320.08	*	2.287E-01	4.461E-01	7.616E-01	6.730E-02	0.300
MN-54		834.85	*	2.338E-03	4.628E-02	7.715E-02	7.068E-03	0.030
CO-56		846.77	*	6.892E-04	4.892E-02	8.124E-02	7.598E-03	0.008
		1037.84		1.164E-02	3.814E-01	6.272E-01	5.527E-02	0.019
		1238.28		2.110E-01	1.198E-01	2.209E-01	1.365E-02	0.955
		1771.35		-3.842E-01	3.521E-01	4.658E-01	2.690E-02	-0.825
CO-57		122.06	*	8.250E-03	2.897E-02	4.762E-02	6.756E-03	0.173
		136.47		1.038E-01	2.521E-01	4.145E-01	5.551E-02	0.250
CO-58		810.76	*	-3.706E-02	5.057E-02	7.835E-02	6.896E-03	-0.473
FE-59		1099.45	*	6.317E-03	1.218E-01	2.000E-01	1.619E-02	0.032
		1291.59		-8.416E-02	1.465E-01	2.187E-01	1.624E-02	-0.385
CO-60		1173.23		-5.803E-03	6.274E-02	1.012E-01	5.872E-03	-0.057

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1332.49	*		3.232E-04	4.899E-02	7.913E-02	4.579E-03	0.004
ZN-65	1115.54	*		1.540E-01	1.343E-01	2.156E-01	1.506E-02	0.714
SE-75	121.12			1.312E-01	1.516E-01	2.529E-01	3.951E-02	0.519
	136.00			-4.076E-03	4.907E-02	7.927E-02	1.034E-02	-0.051
	264.66	*		-1.036E-02	5.602E-02	8.043E-02	7.679E-03	-0.129
	279.54			-2.482E-02	1.317E-01	2.180E-01	2.088E-02	-0.114
	400.66			2.961E-01	3.297E-01	5.694E-01	5.192E-02	0.520
SR-85	514.00	*		1.962E-02	5.445E-02	7.925E-02	5.080E-03	0.248
Y-88	898.04			1.468E-02	5.471E-02	9.259E-02	9.466E-03	0.159
	1836.06	*		8.670E-03	4.127E-02	7.078E-02	4.050E-03	0.122
Y-91	1204.77	*		-1.478E+00	2.968E+01	4.800E+01	2.789E+00	-0.031
NB-94	702.65	*		1.584E-02	4.292E-02	7.382E-02	5.282E-03	0.215
	871.09			-3.514E-03	4.053E-02	6.504E-02	6.339E-03	-0.054
NB-95	765.81	*		2.430E-02	5.723E-02	9.831E-02	7.951E-03	0.247
NB-95M	235.69	*		1.160E+00	2.346E-01	3.644E-01	3.993E-02	3.184
ZR-95	724.19			1.868E-01	1.295E-01	2.356E-01	1.954E-02	0.793
	756.73	*		-4.803E-02	1.011E-01	1.625E-01	1.450E-02	-0.296
MO-99	140.51			-3.883E+01	3.584E+01	5.326E+01	1.356E+01	-0.729
	181.07			-1.529E+01	3.205E+01	4.336E+01	8.431E+00	-0.353
	366.42			-3.872E+01	1.475E+02	2.397E+02	1.645E+01	-0.162
	739.50	*		8.590E+00	2.091E+01	3.596E+01	5.492E+00	0.239
	777.92			-4.159E+01	6.306E+01	9.044E+01	7.483E+00	-0.460
TC-99M	140.51	*		-7.334E+11	6.306E+01	Half-Life	too short	
RU-103	497.08	*		4.709E-02	5.238E-02	9.022E-02	1.145E-02	0.522
	610.33			1.159E+01	2.417E+00	3.282E+00	5.046E-01	3.531
RH-106	621.93	*		-4.586E-01	4.085E-01	5.854E-01	7.046E-02	-0.783
	1050.41			1.971E+00	3.289E+00	5.697E+00	4.639E-01	0.346
RU-106	621.93	*		-4.586E-01	4.059E-01	5.854E-01	3.859E-02	-0.783
	1050.41			1.971E+00	3.289E+00	5.697E+00	4.639E-01	0.346
AG-108M	433.94	*		-2.110E-02	3.712E-02	5.847E-02	3.775E-03	-0.361
	614.28			7.421E-03	4.803E-02	6.801E-02	4.731E-03	0.109
	722.91			-8.439E-02	5.006E-02	7.200E-02	5.593E-03	-1.172
AG-110M	657.76	*		1.473E-02	4.728E-02	7.785E-02	5.382E-03	0.189
	677.62			1.788E-01	4.082E-01	7.067E-01	5.025E-02	0.253
	706.68			-3.830E-01	2.685E-01	3.948E-01	2.964E-02	-0.970
	763.94			-2.926E-02	2.062E-01	3.401E-01	2.827E-02	-0.086
	884.68			-5.245E-02	6.166E-02	9.288E-02	9.482E-03	-0.565
	937.49			-9.067E-03	1.518E-01	2.490E-01	2.497E-02	-0.036
	1384.29			6.636E-02	1.888E-01	3.299E-01	2.033E-02	0.201
	1505.03			1.489E-01	3.785E-01	6.611E-01	3.886E-02	0.225
SN-113	391.69	*		5.287E-02	5.590E-02	9.715E-02	6.026E-03	0.544
CD-115	260.90			-1.248E+02	2.131E+02	3.458E+02	3.307E+01	-0.361
	492.35			-4.547E+00	6.746E+01	1.094E+02	6.931E+00	-0.042
	527.90	*		4.803E+00	1.928E+01	3.192E+01	2.059E+00	0.150
SN-117M	156.02			1.089E-01	2.837E+00	4.586E+00	5.057E-01	0.024
	158.56	*		-4.696E-02	6.997E-02	1.092E-01	1.175E-02	-0.430
TE-123M	159.00	*		-3.170E-03	3.444E-02	5.531E-02	5.943E-03	-0.057
SB-124	602.73			6.938E-03	5.387E-02	7.609E-02	5.011E-03	0.091
	645.85			2.666E-01	5.971E-01	9.991E-01	7.217E-02	0.267

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125		722.78		-1.146E+00	5.221E-01	7.111E-01	5.459E-02	-1.611
		1690.97	*	-3.934E-02	8.138E-02	1.189E-01	7.559E-03	-0.331
		427.87	*	3.772E-02	1.150E-01	1.927E-01	1.207E-02	0.196
	+	463.37		8.362E-01	5.436E-01	6.735E-01	4.773E-02	1.241
		600.60		-1.242E-01	2.417E-01	3.484E-01	2.577E-02	-0.356
TE-125M I-126		635.95		6.941E-02	3.722E-01	6.079E-01	4.549E-02	0.114
		109.28	*	5.975E-02	1.143E+01	1.827E+01	2.371E+00	0.003
		388.63		-1.137E-01	2.280E-01	3.645E-01	2.169E-02	-0.312
		666.33	*	1.506E-01	3.117E-01	5.196E-01	3.450E-02	0.290
		753.82		3.421E+00	2.708E+00	4.896E+00	3.872E-01	0.699
SB-126		414.70		-7.445E-03	9.774E-02	1.598E-01	9.521E-03	-0.047
		666.50		5.045E-02	1.071E-01	1.785E-01	1.185E-02	0.283
		695.00		-3.856E-02	1.209E-01	1.822E-01	1.283E-02	-0.212
		697.00		1.004E-02	3.823E-01	6.418E-01	4.541E-02	0.016
		720.70	*	-5.322E-01	2.160E-01	2.854E-01	2.117E-02	-1.865
SB-127		856.80		6.072E-01	7.364E-01	1.154E+00	1.098E-01	0.526
		252.40		-3.656E+00	6.177E+00	9.743E+00	4.076E+00	-0.375
		473.00		1.070E+00	2.450E+00	4.120E+00	4.775E-01	0.260
		685.70	*	-3.249E-01	2.010E+00	3.330E+00	3.481E-01	-0.098
	+	783.70		6.514E+00	4.971E+00	9.693E+00	1.206E+00	0.672
I-131		80.19		-3.675E-01	6.127E+00	6.347E+00	4.948E-01	-0.058
		284.31		-8.584E-01	1.875E+00	3.053E+00	2.934E-01	-0.281
		364.49	*	-6.647E-02	1.449E-01	2.322E-01	1.744E-02	-0.286
		636.99		-6.854E-02	2.374E+00	3.809E+00	2.755E-01	-0.018
		49.72		-9.873E+00	6.318E+00	8.447E+00	8.576E-01	-1.169
TE-132		111.76		-2.600E+01	4.655E+01	7.405E+01	1.040E+01	-0.351
		116.30		-6.811E+00	3.973E+01	6.424E+01	9.543E+00	-0.106
		228.16	*	-3.142E-01	9.979E-01	1.653E+00	2.765E-01	-0.190
		81.00		8.835E-03	1.181E-01	1.236E-01	1.859E-02	0.071
		276.40		3.536E-01	4.605E-01	7.525E-01	1.095E-01	0.470
BA-133		302.85		-9.582E-02	1.887E-01	2.618E-01	3.453E-02	-0.366
		356.01	*	1.049E-02	5.849E-02	8.519E-02	1.029E-02	0.123
		383.85		4.650E-01	3.845E-01	6.718E-01	7.297E-02	0.692
		529.87	*	5.775E-03	3.845E-01	Half-Life	too short	
		875.33		-1.053E-01	3.845E-01	Half-Life	too short	
CS-134		1298.22		2.738E-01	3.845E-01	Half-Life	too short	
		563.25		1.640E-01	4.702E-01	7.690E-01	5.109E-02	0.213
		569.33		-2.352E-02	2.629E-01	4.198E-01	2.812E-02	-0.056
		604.72		-2.493E-02	4.881E-02	6.374E-02	4.215E-03	-0.391
	+	795.86	*	1.891E-01	8.834E-02	1.154E-01	9.937E-03	1.639
I-135		801.95		-4.782E-01	5.832E-01	7.608E-01	6.613E-02	-0.629
		1365.19		-4.012E-01	1.503E+00	2.322E+00	1.484E-01	-0.173
		546.56		1.487E+11	1.503E+00	Half-Life	too short	
		836.80		3.373E+11	1.503E+00	Half-Life	too short	
		1038.76		-9.616E+10	1.503E+00	Half-Life	too short	
		1131.51		6.085E+10	1.503E+00	Half-Life	too short	
		1260.41	*	7.198E+10	1.503E+00	Half-Life	too short	
		1457.56		1.408E+13	1.503E+00	Half-Life	too short	
		1678.03		1.232E+11	1.503E+00	Half-Life	too short	
						Half-Life	too short	

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	1791.20			2.167E+11	1.503E+00	Half-Life	too short	
	153.25			3.494E-01	1.071E+00	1.751E+00	2.210E-01	0.200
	176.60			-2.143E-03	6.433E-01	1.033E+00	1.110E-01	-0.002
	273.65			-7.307E-01	7.741E-01	1.050E+00	1.055E-01	-0.696
	340.55			3.246E-01	2.191E-01	3.459E-01	2.813E-02	0.938
	818.51			-1.286E-02	9.425E-02	1.546E-01	1.377E-02	-0.083
BA-137M	1048.07	*		8.589E-02	1.450E-01	2.510E-01	2.149E-02	0.342
	1235.36			7.888E-01	8.650E-01	1.497E+00	1.482E-01	0.527
	661.66	*		1.962E-02	4.845E-02	8.029E-02	5.280E-03	0.244
CS-137	661.66	*		2.073E-02	5.118E-02	8.482E-02	5.596E-03	0.244
CE-139	165.86	*		4.717E-03	3.579E-02	5.796E-02	5.754E-03	0.081
BA-140	162.66			8.766E-02	1.038E+00	1.678E+00	1.810E-01	0.052
	304.85			8.224E-01	1.828E+00	2.716E+00	7.961E-01	0.303
	423.72			4.946E-01	2.680E+00	4.442E+00	1.435E+00	0.111
LA-140	537.26	*		2.229E-01	3.582E-01	5.968E-01	1.995E-01	0.374
	328.76			8.470E-01	3.984E-01	7.184E-01	6.214E-02	1.179
	487.02			-1.399E-01	1.878E-01	2.891E-01	2.030E-02	-0.484
	815.77			8.273E-02	4.158E-01	7.037E-01	6.928E-02	0.118
CE-141	1596.21	*		2.376E-02	1.101E-01	1.885E-01	1.108E-02	0.126
	145.44	*		3.057E-03	7.636E-02	1.237E-01	1.512E-02	0.025
CE-143	57.36			2.922E-04	7.636E-02	Half-Life	too short	
	293.27	*		1.882E-03	7.636E-02	Half-Life	too short	
	664.57			-4.706E-04	7.636E-02	Half-Life	too short	
CE-144	721.93			-8.490E-03	7.636E-02	Half-Life	too short	
	80.12			-1.172E-01	3.056E+00	3.171E+00	2.451E-01	-0.037
	133.52	*		-5.411E-02	2.433E-01	3.909E-01	7.145E-02	-0.138
PM-144	476.78			-4.170E-02	8.545E-02	1.290E-01	9.366E-03	-0.323
	618.01			4.094E-02	3.912E-02	6.851E-02	4.730E-03	0.598
PR-144	696.49	*		8.295E-03	4.583E-02	7.778E-02	5.500E-03	0.107
	696.51	*		6.211E-01	3.431E+00	5.824E+00	4.116E-01	0.107
PM-146	1489.16			-8.409E+00	1.395E+01	2.074E+01	1.218E+00	-0.405
	453.88	*		1.719E-02	5.348E-02	8.719E-02	7.596E-03	0.197
	633.25			1.660E+00	1.996E+00	3.265E+00	1.234E+00	0.508
	735.93			-1.879E-01	2.042E-01	3.052E-01	8.465E-02	-0.616
ND-147	747.24			-8.936E-02	1.386E-01	2.194E-01	3.098E-02	-0.407
	91.11	+		1.900E+00	3.890E-01	6.439E-01	5.731E-02	2.950
	319.41			6.958E-01	4.356E+00	7.301E+00	6.127E-01	0.095
	531.02	*		6.617E-02	7.528E-01	1.231E+00	1.701E-01	0.054
PM-149	285.90	*		-2.730E+01	1.449E+02	2.394E+02	3.795E+01	-0.114
EU-152	121.78			3.607E-02	8.383E-02	1.384E-01	2.068E-02	0.261
	244.70			-3.187E-02	4.195E-01	6.101E-01	5.948E-02	-0.052
	344.28	*		-5.782E-03	1.401E-01	2.007E-01	1.649E-02	-0.029
	778.90			-1.113E-01	3.720E-01	5.131E-01	4.252E-02	-0.217
GD-153	964.08	+		8.357E-01	4.588E-01	7.375E-01	6.948E-02	1.133
	1085.87			-1.023E-01	5.511E-01	8.807E-01	6.630E-02	-0.116
	1112.07			-2.465E-01	4.609E-01	5.922E-01	4.170E-02	-0.416
	1408.01			1.365E-01	2.068E-01	3.753E-01	2.193E-02	0.364
GD-153	69.67			1.364E+00	1.593E+00	2.036E+00	1.619E-01	0.670
	97.43	*		1.105E-01	9.667E-02	1.459E-01	1.353E-02	0.757

---- 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		4.105E-03	1.179E-01	1.930E-01	1.995E-02	0.021
		123.07		4.228E-03	5.959E-02	9.716E-02	1.548E-02	0.044
		723.31		-1.142E-01	2.214E-01	3.555E-01	3.004E-02	-0.321
		873.19		-9.370E-02	3.371E-01	5.422E-01	6.919E-02	-0.173
		996.26		-2.601E-01	4.605E-01	7.099E-01	1.253E-01	-0.366
		1004.73		-2.569E-01	2.866E-01	4.268E-01	5.042E-02	-0.602
EU-155		1274.44	*	3.698E-03	1.588E-01	2.576E-01	2.430E-02	0.014
	+	86.55		3.922E-01	1.272E-01	1.769E-01	1.367E-02	2.217
		105.31	*	3.836E-02	1.154E-01	1.907E-01	2.065E-02	0.201
TB-160	+	86.79		1.050E+00	3.403E-01	4.737E-01	3.612E-02	2.216
		197.04		5.159E-01	7.055E-01	1.137E+00	1.136E-01	0.454
		215.65		-7.604E-02	9.028E-01	1.478E+00	1.471E-01	-0.051
		298.57		2.723E-01	2.045E-01	2.365E-01	2.105E-02	1.151
		879.36	*	1.573E-01	1.752E-01	3.129E-01	3.092E-02	0.503
	+	962.29		1.584E+00	8.696E-01	1.354E+00	1.278E-01	1.170
HO-166M		966.15		1.476E+00	3.601E-01	6.891E-01	6.474E-02	2.142
		1177.93		-1.083E-01	4.932E-01	7.857E-01	4.559E-02	-0.138
		1271.85		-8.597E-02	8.391E-01	1.341E+00	7.795E-02	-0.064
		80.57		-1.938E-02	3.341E-01	3.461E-01	2.672E-02	-0.056
	+	184.41		1.708E-01	6.210E-02	8.598E-02	8.580E-03	1.986
		280.46		-6.476E-02	1.032E-01	1.669E-01	1.545E-02	-0.388
		410.95		2.823E-01	3.124E-01	5.404E-01	3.208E-02	0.522
		711.68	*	2.477E-02	7.799E-02	1.337E-01	9.739E-03	0.185
		752.31		3.931E-01	3.971E-01	7.062E-01	5.569E-02	0.557
		810.29		-4.934E-02	7.420E-02	1.157E-01	1.015E-02	-0.427
TA-182		67.75		-9.013E-02	8.560E-02	1.184E-01	9.476E-03	-0.761
		100.11		-5.036E-02	1.849E-01	2.992E-01	2.921E-02	-0.168
		152.43		1.828E-01	4.199E-01	6.895E-01	7.864E-02	0.265
		222.11		6.427E-02	3.878E-01	6.582E-01	6.527E-02	0.098
		1121.30		6.701E-01	2.395E-01	4.291E-01	2.945E-02	1.562
		1189.05		9.235E-02	4.061E-01	6.744E-01	3.916E-02	0.137
IR-192		1221.41	*	-2.417E-01	2.704E-01	4.017E-01	2.335E-02	-0.602
		1231.02		5.258E-02	7.030E-01	1.147E+00	6.672E-02	0.046
	+	295.96		1.188E+00	2.421E-01	3.378E-01	3.045E-02	3.517
		308.46		-5.408E-02	1.107E-01	1.789E-01	1.559E-02	-0.302
		316.51	*	8.252E-03	4.304E-02	7.228E-02	6.135E-03	0.114
HG-203		468.07		-4.838E-03	9.711E-02	1.365E-01	9.660E-03	-0.035
		70.83		7.652E-01	1.112E+00	1.645E+00	2.583E-01	0.465
	+	72.87		5.060E+00	1.079E+00	1.315E+00	1.990E-01	3.849
BI-207		279.20	*	-5.742E-03	4.749E-02	7.889E-02	7.483E-03	-0.073
		72.81		9.414E-01	1.917E-01	2.980E-01	2.346E-02	3.159
	+	74.97		6.910E-01	1.171E-01	2.257E-01	1.766E-02	3.062
		569.70		-1.647E-02	4.104E-02	6.389E-02	4.181E-03	-0.258
PB-211		1063.66	*	-1.008E-02	7.384E-02	1.193E-01	9.450E-03	-0.084
		1770.23		-2.885E-01	6.820E-01	8.353E-01	4.825E-02	-0.345
		404.85	*	-1.415E+00	1.185E+00	1.459E+00	7.001E-01	-0.969
BI-212		427.09		6.612E-01	2.004E+00	3.319E+00	1.522E+00	0.199
		832.01		-1.948E-01	1.205E+00	1.963E+00	1.020E+00	-0.099
		727.33	*	1.235E+00	7.680E-01	1.390E+00	1.630E-01	0.888

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	785.37		4.916E+00	3.724E+00	7.493E+00	6.284E-01	0.656
		1620.50		2.280E+00	2.912E+00	5.394E+00	3.166E-01	0.423
RN-219		271.23		7.551E-01	3.436E-01	5.524E-01	6.037E-02	1.367
		401.81	*	1.861E-01	5.390E-01	9.038E-01	1.218E-01	0.206
RA-223		81.07		2.927E-02	2.680E-01	2.813E-01	2.169E-02	0.104
		83.79		2.682E-01	1.127E-01	1.895E-01	1.453E-02	1.415
		94.87		5.047E-01	5.305E-01	7.914E-01	6.970E-02	0.638
		144.24		4.972E-01	8.097E-01	1.338E+00	1.734E-01	0.372
		154.21		2.203E-01	4.688E-01	7.704E-01	9.140E-02	0.286
	+	269.46		8.872E-01	3.011E-01	4.279E-01	4.106E-02	2.073
		323.87	*	-1.565E+00	8.646E-01	1.225E+00	2.103E-01	-1.277
	+	338.28		7.585E+00	1.886E+00	2.822E+00	3.253E-01	2.688
AC-227		79.69		2.500E-01	1.519E+00	1.602E+00	2.693E-01	0.156
		235.96		2.247E+00	3.659E-01	5.112E-01	5.811E-02	4.396
		256.23	*	2.027E-01	2.976E-01	5.128E-01	6.557E-02	0.395
	+	299.98		2.042E+00	1.429E+00	1.814E+00	2.335E-01	1.126
		304.50		9.214E-01	2.078E+00	3.104E+00	5.154E-01	0.297
		334.37		-7.034E-01	2.438E+00	3.428E+00	5.222E-01	-0.205
TH-227		79.80		1.206E-01	2.000E+00	2.093E+00	4.488E-01	0.058
		235.96		2.247E+00	3.577E-01	5.112E-01	5.540E-02	4.396
		256.23	*	2.027E-01	2.979E-01	5.128E-01	7.313E-02	0.395
	+	299.98		2.042E+00	1.429E+00	1.814E+00	2.335E-01	1.126
		304.50		9.214E-01	2.078E+00	3.104E+00	5.154E-01	0.297
		334.37		-7.034E-01	2.438E+00	3.428E+00	5.222E-01	-0.205
PA-231		283.69	*	-4.377E-01	1.703E+00	2.805E+00	4.189E-01	-0.156
	+	301.36		1.312E+00	9.168E-01	1.174E+00	1.444E-01	1.118
TH-231		81.07		2.927E-02	2.680E-01	2.813E-01	2.169E-02	0.104
		83.79		2.682E-01	1.127E-01	1.895E-01	1.453E-02	1.415
		94.87		5.047E-01	5.305E-01	7.914E-01	6.970E-02	0.638
		144.24		4.972E-01	8.097E-01	1.338E+00	1.734E-01	0.372
		154.21		2.203E-01	4.688E-01	7.704E-01	9.140E-02	0.286
	+	269.46		8.872E-01	3.011E-01	4.279E-01	4.106E-02	2.073
		323.87	*	-1.565E+00	8.646E-01	1.225E+00	2.103E-01	-1.277
	+	338.28		7.585E+00	1.886E+00	2.822E+00	3.253E-01	2.688
PA-233	+	300.13		9.242E-01	6.505E-01	8.248E-01	1.235E-01	1.121
		311.90	*	-5.720E-02	7.490E-02	1.189E-01	1.050E-02	-0.481
		340.48		1.525E+00	9.631E-01	1.436E+00	3.414E-01	1.062
PA-234		94.67		4.113E-01	2.001E-01	3.032E-01	3.792E-02	1.357
		98.44		1.038E-01	1.152E-01	1.577E-01	8.818E-02	0.658
		111.00		8.631E-03	2.068E-01	3.378E-01	4.927E-02	0.026
		131.20		1.468E-02	1.267E-01	2.065E-01	2.773E-02	0.071
		569.50		-4.993E-02	3.609E-01	5.738E-01	3.755E-02	-0.087
		733.00		2.085E-01	5.068E-01	8.694E-01	1.897E-01	0.240
		880.51		2.562E-01	3.471E-01	6.126E-01	6.065E-02	0.418
		883.24		6.559E-02	3.509E-01	5.867E-01	3.955E-01	0.112
		926.50		-7.908E-02	2.193E-01	3.473E-01	8.938E-02	-0.228
		946.00	*	3.069E-02	3.957E-01	6.569E-01	1.265E-01	0.047
		949.00		5.027E-01	5.724E-01	1.016E+00	9.768E-02	0.495
PA-234M		766.42		5.536E+00	1.552E+01	2.610E+01	1.322E+01	0.212

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		3.647E+00	6.265E+00	1.063E+01	1.086E+00	0.343
	99.53			2.864E-02	1.694E-01	2.787E-01	2.691E-02	0.103
	103.37			7.102E-02	1.055E-01	1.763E-01	1.829E-02	0.403
	106.12			3.202E-02	9.285E-02	1.534E-01	1.673E-02	0.209
	117.23	*		-1.521E-01	4.513E-01	7.242E-01	9.523E-02	-0.210
	228.18			-7.664E-02	2.402E-01	3.982E-01	3.935E-02	-0.192
AM-241	277.60			2.059E-01	2.137E-01	3.715E-01	3.458E-02	0.554
	59.54	*		5.449E-02	8.157E-02	1.219E-01	1.091E-02	0.447
CM-247	278.00			5.734E-01	9.204E-01	1.579E+00	1.469E-01	0.363
	287.50			-3.469E-01	1.527E+00	2.372E+00	2.165E-01	-0.146
	402.40	*		4.990E-03	4.889E-02	8.093E-02	4.761E-03	0.062
CF-249	252.80			-4.168E-01	1.124E+00	1.851E+00	1.789E-01	-0.225
	333.37			3.346E-02	2.527E-01	3.677E-01	2.938E-02	0.091
	388.16	*		-9.827E-03	5.236E-02	8.535E-02	5.097E-03	-0.115
CF-251	177.52	*		3.955E-02	1.599E-01	2.596E-01	2.586E-02	0.152
	227.38			-2.163E-01	3.949E-01	6.473E-01	6.400E-02	-0.334
	285.41			3.035E-03	2.528E+00	4.221E+00	3.869E-01	0.001

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*                                     *                                       *
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112008      *
* Acquisition date   : 10-MAR-2010 13:42:11 Detector SN#                   *
* Detector ID        : GAM05 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.69 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date       : 22-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G248112008 Analyst initials: MXR1                  *
* Batch Number      : 959270 Sample Quantity : 1.1455E+02 GRAM           *
* Recovery          : 1.00000 Carrier Weight : 0.00000                   *
*****
*                                     QC DATA                               *
*                                     *                                       *
* Standard Weight   : 0.00000                                             *
* CALIB. DATE/TIME  : 11-JUN-2009 16:41:00 MS Isotope :                  *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.740E+01	2.554E+00	7.797E-01	0.000E+00
CD-109	3.313E+00	1.052E+00	1.127E+00	0.000E+00
SN-126	3.233E-01	1.027E-01	1.098E-01	0.000E+00
CS-135	7.707E-01	2.588E-01	2.865E-01	0.000E+00
TL-208	5.699E-01	1.058E-01	7.234E-02	0.000E+00
PB-210	2.127E+00	9.834E-01	9.461E-01	0.000E+00
BI-211	3.810E+00	5.663E-01	4.302E-01	0.000E+00
PB-212	1.691E+00	2.170E-01	1.101E-01	0.000E+00
BI-214	1.146E+00	2.092E-01	1.277E-01	0.000E+00
PB-214	1.383E+00	2.187E-01	1.517E-01	0.000E+00
RA-224	4.740E+00	1.606E+00	1.180E+00	0.000E+00
RA-226	1.146E+00	2.092E-01	1.277E-01	0.000E+00
AC-228	1.897E+00	4.625E-01	3.516E-01	0.000E+00
RA-228	1.897E+00	4.625E-01	3.516E-01	0.000E+00
TH-228	1.691E+00	2.170E-01	1.101E-01	0.000E+00
TH-229	-6.352E-01	6.228E-01	9.777E-01	0.000E+00
TH-232	1.897E+00	4.625E-01	3.516E-01	0.000E+00
TH-234	3.494E+00	1.454E+00	1.199E+00	0.000E+00
U-235	1.228E-01	2.372E-01	4.047E-01	0.000E+00
NP-237	9.648E-01	3.650E-01	3.267E-01	0.000E+00
U-238	3.494E+00	1.454E+00	1.199E+00	0.000E+00
ANH-511	1.555E-01	8.464E-02	5.637E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-4.927E-01	4.328E-01	6.374E-01	0.000E+00 NOT IDENT.
NA-22	1.306E-03	5.494E-02	9.072E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.485E+06	0.000E+00	0.000E+00 SHORT HLIF
SC-46	2.178E-02	4.751E-02	8.360E-02	0.000E+00 FAIL ABUN
V-48	-3.770E-02	8.973E-02	1.440E-01	0.000E+00 NOT IDENT.

CR-51	2.287E-01	4.372E-01	7.693E-01	0.000E+00	NOT IDENT.
MN-54	2.338E-03	4.535E-02	7.724E-02	0.000E+00	NOT IDENT.
CO-56	6.892E-04	4.794E-02	8.133E-02	0.000E+00	NOT IDENT.
CO-57	8.250E-03	2.839E-02	4.853E-02	0.000E+00	NOT IDENT.
CO-58	-3.706E-02	4.956E-02	7.846E-02	0.000E+00	NOT IDENT.
FE-59	6.317E-03	1.193E-01	1.997E-01	0.000E+00	NOT IDENT.
CO-60	3.232E-04	4.801E-02	7.887E-02	0.000E+00	NOT IDENT.
ZN-65	1.540E-01	1.316E-01	2.152E-01	0.000E+00	NOT IDENT.
SE-75	-1.036E-02	5.490E-02	8.139E-02	0.000E+00	NOT IDENT.
SR-85	1.962E-02	5.336E-02	7.970E-02	0.000E+00	NOT IDENT.
Y-88	8.670E-03	4.045E-02	7.034E-02	0.000E+00	NOT IDENT.
Y-91	-1.478E+00	2.909E+01	4.789E+01	0.000E+00	NOT IDENT.
NB-94	1.584E-02	4.206E-02	7.402E-02	0.000E+00	NOT IDENT.
NB-95	2.430E-02	5.609E-02	9.850E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.299E-01	3.692E-01	0.000E+00	NOT IDENT.
ZR-95	-4.803E-02	9.912E-02	1.628E-01	0.000E+00	NOT IDENT.
MO-99	8.590E+00	2.049E+01	3.605E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.783E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	4.709E-02	5.133E-02	9.076E-02	0.000E+00	NOT IDENT.
RH-106	-4.586E-01	4.003E-01	5.877E-01	0.000E+00	NOT IDENT.
RU-106	-4.586E-01	3.977E-01	5.877E-01	0.000E+00	NOT IDENT.
AG-108M	-2.110E-02	3.638E-02	5.889E-02	0.000E+00	NOT IDENT.
AG-110M	1.473E-02	4.633E-02	7.811E-02	0.000E+00	NOT IDENT.
SN-113	5.287E-02	5.478E-02	9.795E-02	0.000E+00	NOT IDENT.
CD-115	4.803E+00	1.889E+01	3.210E+01	0.000E+00	NOT IDENT.
SN-117M	-4.696E-02	6.857E-02	1.111E-01	0.000E+00	NOT IDENT.
TE-123M	-3.170E-03	3.375E-02	5.623E-02	0.000E+00	NOT IDENT.
SB-124	-3.934E-02	7.975E-02	1.182E-01	0.000E+00	NOT IDENT.
SB-125	3.772E-02	1.127E-01	1.941E-01	0.000E+00	FAIL ABUN
TE-125M	5.975E-02	1.120E+01	1.864E+01	0.000E+00	NOT IDENT.
I-126	1.506E-01	3.054E-01	5.213E-01	0.000E+00	NOT IDENT.
SB-126	-5.322E-01	2.117E-01	2.861E-01	0.000E+00	NOT IDENT.
SB-127	-3.249E-01	1.970E+00	3.340E+00	0.000E+00	FAIL ABUN
I-131	-6.647E-02	1.420E-01	2.342E-01	0.000E+00	NOT IDENT.
TE-132	-3.142E-01	9.779E-01	1.675E+00	0.000E+00	NOT IDENT.
BA-133	1.049E-02	5.732E-02	8.597E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.616E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	8.657E-02	1.156E-01	0.000E+00	FAIL ABUN
I-135	0.000E+00	9.806E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.589E-02	1.421E-01	2.508E-01	0.000E+00	NOT IDENT.
BA-137M	1.962E-02	4.748E-02	8.056E-02	0.000E+00	NOT IDENT.
CS-137	2.073E-02	5.016E-02	8.510E-02	0.000E+00	NOT IDENT.
CE-139	4.717E-03	3.507E-02	5.891E-02	0.000E+00	NOT IDENT.
BA-140	2.229E-01	3.511E-01	6.000E-01	0.000E+00	NOT IDENT.
LA-140	2.376E-02	1.079E-01	1.876E-01	0.000E+00	NOT IDENT.
CE-141	3.057E-03	7.484E-02	1.259E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.394E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-5.411E-02	2.385E-01	3.980E-01	0.000E+00	NOT IDENT.
PM-144	8.295E-03	4.491E-02	7.800E-02	0.000E+00	NOT IDENT.
PR-144	6.211E-01	3.363E+00	5.841E+00	0.000E+00	NOT IDENT.
PM-146	1.719E-02	5.241E-02	8.779E-02	0.000E+00	NOT IDENT.
ND-147	6.617E-02	7.377E-01	1.238E+00	0.000E+00	FAIL ABUN
PM-149	-2.730E+01	1.420E+02	2.421E+02	0.000E+00	NOT IDENT.
EU-152	-5.782E-03	1.373E-01	2.026E-01	0.000E+00	FAIL ABUN
GD-153	1.105E-01	9.474E-02	1.490E-01	0.000E+00	NOT IDENT.
EU-154	3.698E-03	1.556E-01	2.569E-01	0.000E+00	NOT IDENT.
EU-155	3.836E-02	1.131E-01	1.946E-01	0.000E+00	FAIL ABUN
TB-160	1.573E-01	1.717E-01	3.131E-01	0.000E+00	FAIL ABUN
HO-166M	2.477E-02	7.643E-02	1.340E-01	0.000E+00	FAIL ABUN
TA-182	-2.417E-01	2.650E-01	4.007E-01	0.000E+00	NOT IDENT.
IR-192	8.252E-03	4.218E-02	7.302E-02	0.000E+00	FAIL ABUN
HG-203	-5.742E-03	4.654E-02	7.980E-02	0.000E+00	FAIL ABUN
BI-207	-1.008E-02	7.237E-02	1.192E-01	0.000E+00	FAIL ABUN
PB-211	-1.415E+00	1.161E+00	1.471E+00	0.000E+00	NOT IDENT.
BI-212	1.235E+00	7.527E-01	1.394E+00	0.000E+00	FAIL ABUN
RN-219	1.861E-01	5.283E-01	9.111E-01	0.000E+00	NOT IDENT.
RA-223	-1.565E+00	8.473E-01	1.238E+00	0.000E+00	FAIL ABUN
AC-227	2.027E-01	2.916E-01	5.191E-01	0.000E+00	FAIL ABUN
TH-227	2.027E-01	2.919E-01	5.191E-01	0.000E+00	FAIL ABUN
PA-231	-4.377E-01	1.669E+00	2.837E+00	0.000E+00	FAIL ABUN
TH-231	-1.565E+00	8.473E-01	1.238E+00	0.000E+00	FAIL ABUN
PA-233	-5.720E-02	7.340E-02	1.201E-01	0.000E+00	FAIL ABUN
PA-234	3.069E-02	3.878E-01	6.569E-01	0.000E+00	NOT IDENT.
PA-234M	3.647E+00	6.140E+00	1.062E+01	0.000E+00	NOT IDENT.
NP-239	-1.521E-01	4.423E-01	7.384E-01	0.000E+00	NOT IDENT.
AM-241	5.449E-02	7.994E-02	1.251E-01	0.000E+00	NOT IDENT.
CM-247	4.990E-03	4.791E-02	8.158E-02	0.000E+00	NOT IDENT.
CF-249	-9.827E-03	5.131E-02	8.607E-02	0.000E+00	NOT IDENT.

CF-251	3.955E-02	1.567E-01	2.637E-01	0.000E+00 NOT IDENT.
--------	-----------	-----------	-----------	----------------------

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112008.CNF;1
Sample date        : 22-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 13:42:11
Sample ID          : G248112008 Sample quantity : 1.14550E+02 GRAM
Detector name      : GAM05 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.69 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959270 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
K-40	1460.82	895	10.66*	1.004E+00	2.740E+01	2.740E+01	9.51
CD-109	88.03	287	3.70*	7.866E+00	3.233E+00	3.313E+00	32.42
SN-126	64.28	318	9.60	8.063E+00	1.347E+00	1.347E+00	41.20
	86.94	287	8.90	7.866E+00	1.344E+00	1.344E+00	51.84
	87.57	287	37.00*	7.866E+00	3.233E-01	3.233E-01	32.42
CS-135	268.22	164	16.00*	4.356E+00	7.707E-01	7.707E-01	34.26
TL-208	277.37	---	6.60	4.261E+00	-----	Line Not Found	-----
	583.19	334	85.00*	2.261E+00	5.699E-01	5.699E-01	18.95
	860.56	69	12.50	1.590E+00	1.132E+00	1.132E+00	60.51
PB-210	46.54	209	4.25*	7.590E+00	2.124E+00	2.127E+00	47.18
BI-211	72.87	605	1.23	8.040E+00	2.004E+01	2.004E+01	16.95
	351.06	529	12.92*	3.520E+00	3.810E+00	3.810E+00	15.17
PB-212	74.82	605	10.28	8.040E+00	2.397E+00	2.397E+00	19.54
	77.11	860	17.10	8.016E+00	2.057E+00	2.057E+00	13.22
	238.63	1075	43.60*	4.779E+00	1.691E+00	1.691E+00	13.10
	300.09	75	3.30	4.004E+00	1.857E+00	1.857E+00	69.61
BI-214	609.32	346	45.49*	2.173E+00	1.146E+00	1.146E+00	18.63
	1120.29	114	14.92	1.259E+00	1.996E+00	1.996E+00	32.44
	1764.49	61	15.30	8.616E-01	1.527E+00	1.527E+00	34.93
PB-214	74.82	605	5.80	8.040E+00	4.249E+00	4.249E+00	18.72
	77.11	860	9.70	8.016E+00	3.626E+00	3.626E+00	15.59
	242.00	281	7.25	4.735E+00	2.681E+00	2.681E+00	35.06
	295.22	363	18.42	4.062E+00	1.592E+00	1.592E+00	21.37
	351.93	529	35.60*	3.520E+00	1.383E+00	1.383E+00	16.14
RA-224	240.99	281	4.10*	4.735E+00	4.740E+00	4.740E+00	34.58
RA-226	609.32	346	45.49*	2.173E+00	1.146E+00	1.146E+00	18.63
	1120.29	114	14.92	1.259E+00	1.996E+00	1.996E+00	32.44
	1764.49	61	15.30	8.616E-01	1.527E+00	1.527E+00	34.93
AC-228	338.32	239	11.27	3.636E+00	1.911E+00	1.911E+00	47.04
	911.20	226	25.80*	1.511E+00	1.897E+00	1.897E+00	24.87
	968.97	113	15.80	1.431E+00	1.638E+00	1.638E+00	39.30
RA-228	338.32	239	11.27	3.636E+00	1.911E+00	1.911E+00	47.04

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	911.20	226	25.80*	1.511E+00	1.897E+00	1.897E+00	24.87
	968.97	113	15.80	1.431E+00	1.638E+00	1.638E+00	39.30
	74.82	605	10.28	8.040E+00	2.397E+00	2.397E+00	16.99
	77.11	860	17.10	8.016E+00	2.057E+00	2.057E+00	13.22
	238.63	1075	43.60*	4.779E+00	1.691E+00	1.691E+00	13.10
TH-229	300.09	75	3.30	4.004E+00	1.857E+00	1.857E+00	92.10
	85.43	287	14.70	7.866E+00	8.138E-01	8.138E-01	32.42
	88.47	185	24.00	7.818E+00	3.235E-01	3.235E-01	36.33
	193.51	-----	4.41*	5.516E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.209E+00	-----	Line Not Found	-----
TH-232	338.32	239	11.27	3.636E+00	1.911E+00	1.911E+00	23.38
	911.20	226	25.80*	1.511E+00	1.897E+00	1.897E+00	24.87
	968.97	113	15.80	1.431E+00	1.638E+00	1.638E+00	39.30
TH-234	63.29	318	3.70*	8.063E+00	3.494E+00	3.494E+00	42.47
	92.59	454	4.23	7.761E+00	4.531E+00	4.531E+00	28.63
U-235	89.96	185	3.47	7.818E+00	2.238E+00	2.238E+00	43.03
	93.35	454	5.60	7.761E+00	3.422E+00	3.422E+00	29.42
	143.76	-----	10.96*	6.557E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.119E+00	-----	Line Not Found	-----
	185.72	213	57.20	5.668E+00	2.150E-01	2.150E-01	36.36
NP-237	205.31	-----	5.01	5.304E+00	-----	Line Not Found	-----
	86.48	287	12.40*	7.866E+00	9.648E-01	9.648E-01	38.61
	95.86	-----	2.68	7.688E+00	-----	Line Not Found	-----
U-238	63.29	318	3.70*	8.063E+00	3.494E+00	3.494E+00	42.47
	92.59	454	4.23	7.761E+00	4.531E+00	4.531E+00	20.16
ANH-511	511.00	121	100.00*	2.546E+00	1.555E-01	1.555E-01	55.55

Flag: "*" = Keyline

Total number of lines in spectrum 29
Number of unidentified lines 1
Number of lines tentatively identified by NID 28 96.55%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	2.740E+01	2.740E+01	0.261E+01	9.51	
CD-109	461.40D	1.02	3.233E+00	3.313E+00	1.074E+00	32.42	
SN-126	2.30E+05Y	1.00	3.233E-01	3.233E-01	1.048E-01	32.42	
CS-135	2.30E+06Y	1.00	7.707E-01	7.707E-01	2.641E-01	34.26	
TL-208	1.41E+10Y	1.00	5.699E-01	5.699E-01	1.080E-01	18.95	
PB-210	22.20Y	1.00	2.124E+00	2.127E+00	1.003E+00	47.18	
BI-211	7.04E+08Y	1.00	3.810E+00	3.810E+00	0.578E+00	15.17	
PB-212	1.41E+10Y	1.00	1.691E+00	1.691E+00	0.221E+00	13.10	
BI-214	1600.00Y	1.00	1.146E+00	1.146E+00	0.213E+00	18.63	
PB-214	1600.00Y	1.00	1.383E+00	1.383E+00	0.223E+00	16.14	
RA-224	1.41E+10Y	1.00	4.740E+00	4.740E+00	1.639E+00	34.58	
RA-226	1600.00Y	1.00	1.146E+00	1.146E+00	0.213E+00	18.63	
AC-228	1.41E+10Y	1.00	1.897E+00	1.897E+00	0.472E+00	24.87	
RA-228	1.41E+10Y	1.00	1.897E+00	1.897E+00	0.472E+00	24.87	
TH-228	1.41E+10Y	1.00	1.691E+00	1.691E+00	0.221E+00	13.10	
TH-229	7340.00Y	1.00	3.235E-01	3.235E-01	1.175E-01	36.33	K
TH-232	1.41E+10Y	1.00	1.897E+00	1.897E+00	0.472E+00	24.87	
TH-234	4.47E+09Y	1.00	3.494E+00	3.494E+00	1.484E+00	42.47	
U-235	7.04E+08Y	1.00	2.150E-01	2.150E-01	0.782E-01	36.36	K
NP-237	2.14E+06Y	1.00	9.648E-01	9.648E-01	3.725E-01	38.61	
U-238	4.47E+09Y	1.00	3.494E+00	3.494E+00	1.484E+00	42.47	
ANH-511	1.00E+09Y	1.00	1.555E-01	1.555E-01	0.864E-01	55.55	

Total Activity : 6.437E+01 6.445E+01

Grand Total Activity : 6.437E+01 6.445E+01

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

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

Unidentified Energy Lines
Sample ID : G248112008

Page : 4
Acquisition date : 10-MAR-2010 13:42:11

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	208.39	86	274	1.05	417.72	415	9	1.20E-02	72.4	5.25E+00	
0	463.03	74	117	1.67	926.85	919	13	1.03E-02	64.6	2.78E+00	T
0	784.66	29	32	1.21	1569.75	1566	7	3.96E-03	75.3	1.73E+00	T
0	794.60	75	43	1.11	1589.62	1583	16	1.04E-02	45.9	1.71E+00	T
1	963.72	54	33	2.19	1927.60	1919	27	7.44E-03	54.1	1.44E+00	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248112008.CNF;1  *
* Acquisition date   : 10-MAR-2010 13:42:11  Detector SN#      :              *
* Detector ID        : GAM05                      Sensitivity   : 5.00000      *
* Geometry           : CAN                      Energy tolerance: 1.50000      *
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.00000      *
* Elapsed real time  : 0 02:00:01.69           Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-FEB-2010 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G248112008              Analyst initials: MXR1         *
* Batch Number       : 959270                  Sample Quantity : 1.14550E+02 GRAM  *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00.5MS Isotope       :              *
* MSD ID              :                      MSD Isotope       :              *
* LCS ID              : 1032-A                LCS Isotope      :              *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.740E+01	2.606E+00	7.829E-01	4.869E-02	35.003
CD-109	3.313E+00	1.074E+00	1.102E+00	8.393E-02	3.005
SN-126	3.233E-01	1.048E-01	1.074E-01	8.182E-03	3.009
CS-135	7.707E-01	2.641E-01	2.831E-01	3.029E-02	2.722
TL-208	5.699E-01	1.080E-01	7.201E-02	5.289E-03	7.914
PB-210	2.127E+00	1.003E+00	9.203E-01	7.098E-02	2.311
BI-211	3.810E+00	5.779E-01	4.263E-01	3.379E-02	8.938
PB-212	1.691E+00	2.214E-01	1.087E-01	1.176E-02	15.556
BI-214	1.146E+00	2.135E-01	1.272E-01	1.073E-02	9.010
PB-214	1.383E+00	2.232E-01	1.503E-01	1.448E-02	9.198
RA-224	4.740E+00	1.639E+00	1.165E+00	1.140E-01	4.070
RA-226	1.146E+00	2.135E-01	1.272E-01	1.073E-02	9.010
AC-228	1.897E+00	4.719E-01	3.514E-01	4.461E-02	5.399
RA-228	1.897E+00	4.719E-01	3.514E-01	4.461E-02	5.399
TH-228	1.691E+00	2.214E-01	1.087E-01	1.176E-02	15.556
TH-229	3.235E-01	1.175E-01	9.634E-01	9.621E-02	0.336
TH-232	1.897E+00	4.719E-01	3.514E-01	4.461E-02	5.399
TH-234	3.494E+00	1.484E+00	1.169E+00	2.122E-01	2.988

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	2.150E-01	7.816E-02	3.977E-01	7.585E-02	0.541
NP-237	9.648E-01	3.725E-01	3.196E-01	7.131E-02	3.019
U-238	3.494E+00	1.484E+00	1.169E+00	2.122E-01	2.988
ANH-511	1.555E-01	8.636E-02	5.605E-02	3.587E-03	2.774

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-4.927E-01		4.416E-01	6.333E-01	4.535E-02	-0.778
NA-22	1.306E-03		5.606E-02	9.098E-02	5.299E-03	0.014
NA-24	5.787E-01		1.268E+00	Half-Life too short		
SC-46	2.178E-02		4.848E-02	8.355E-02	8.393E-03	0.261
V-48	-3.770E-02		9.156E-02	1.440E-01	1.319E-02	-0.262
CR-51	2.287E-01		4.461E-01	7.616E-01	6.730E-02	0.300
MN-54	2.338E-03		4.628E-02	7.715E-02	7.068E-03	0.030
CO-56	6.892E-04		4.892E-02	8.124E-02	7.598E-03	0.008
CO-57	8.250E-03		2.897E-02	4.762E-02	6.756E-03	0.173
CO-58	-3.706E-02		5.057E-02	7.835E-02	6.896E-03	-0.473
FE-59	6.317E-03		1.218E-01	2.000E-01	1.619E-02	0.032
CO-60	3.232E-04		4.899E-02	7.913E-02	4.579E-03	0.004
ZN-65	1.540E-01		1.343E-01	2.156E-01	1.506E-02	0.714
SE-75	-1.036E-02		5.602E-02	8.043E-02	7.679E-03	-0.129
SR-85	1.962E-02		5.445E-02	7.925E-02	5.080E-03	0.248
Y-88	8.670E-03		4.127E-02	7.078E-02	4.050E-03	0.122
Y-91	-1.478E+00		2.968E+01	4.800E+01	2.789E+00	-0.031
NB-94	1.584E-02		4.292E-02	7.382E-02	5.282E-03	0.215
NB-95	2.430E-02		5.723E-02	9.831E-02	7.951E-03	0.247
NB-95M	1.160E+00		2.346E-01	3.644E-01	3.993E-02	3.184
ZR-95	-4.803E-02		1.011E-01	1.625E-01	1.450E-02	-0.296
MO-99	8.590E+00		2.091E+01	3.596E+01	5.492E+00	0.239
TC-99M	-7.334E+11		3.461E+11	Half-Life too short		
RU-103	4.709E-02		5.238E-02	9.022E-02	1.145E-02	0.522
RH-106	-4.586E-01		4.085E-01	5.854E-01	7.046E-02	-0.783
RU-106	-4.586E-01		4.059E-01	5.854E-01	3.859E-02	-0.783
AG-108M	-2.110E-02		3.712E-02	5.847E-02	3.775E-03	-0.361
AG-110M	1.473E-02		4.728E-02	7.785E-02	5.382E-03	0.189
SN-113	5.287E-02		5.590E-02	9.715E-02	6.026E-03	0.544
CD-115	4.803E+00		1.928E+01	3.192E+01	2.059E+00	0.150
SN-117M	-4.696E-02		6.997E-02	1.092E-01	1.175E-02	-0.430
TE-123M	-3.170E-03		3.444E-02	5.531E-02	5.943E-03	-0.057
SB-124	-3.934E-02		8.138E-02	1.189E-01	7.559E-03	-0.331
SB-125	3.772E-02		1.150E-01	1.927E-01	1.207E-02	0.196
TE-125M	5.975E-02		1.143E+01	1.827E+01	2.371E+00	0.003
I-126	1.506E-01		3.117E-01	5.196E-01	3.450E-02	0.290
SB-126	-5.322E-01		2.160E-01	2.854E-01	2.117E-02	-1.865
SB-127	-3.249E-01		2.010E+00	3.330E+00	3.481E-01	-0.098
I-131	-6.647E-02		1.449E-01	2.322E-01	1.744E-02	-0.286

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-132	-3.142E-01		9.979E-01	1.653E+00	2.765E-01	-0.190
BA-133	1.049E-02		5.849E-02	8.519E-02	1.029E-02	0.123
I-133	5.775E-03		8.246E-03	Half-Life too short		
CS-134	1.891E-01	+	8.834E-02	1.154E-01	9.937E-03	1.639
I-135	7.198E+10		5.003E+10	Half-Life too short		
CS-136	8.589E-02		1.450E-01	2.510E-01	2.149E-02	0.342
BA-137M	1.962E-02		4.845E-02	8.029E-02	5.280E-03	0.244
CS-137	2.073E-02		5.118E-02	8.482E-02	5.596E-03	0.244
CE-139	4.717E-03		3.579E-02	5.796E-02	5.754E-03	0.081
BA-140	2.229E-01		3.582E-01	5.968E-01	1.995E-01	0.374
LA-140	2.376E-02		1.101E-01	1.885E-01	1.108E-02	0.126
CE-141	3.057E-03		7.636E-02	1.237E-01	1.512E-02	0.025
CE-143	1.882E-03		2.752E-04	Half-Life too short		
CE-144	-5.411E-02		2.433E-01	3.909E-01	7.145E-02	-0.138
PM-144	8.295E-03		4.583E-02	7.778E-02	5.500E-03	0.107
PR-144	6.211E-01		3.431E+00	5.824E+00	4.116E-01	0.107
PM-146	1.719E-02		5.348E-02	8.719E-02	7.596E-03	0.197
ND-147	6.617E-02		7.528E-01	1.231E+00	1.701E-01	0.054
PM-149	-2.730E+01		1.449E+02	2.394E+02	3.795E+01	-0.114
EU-152	-5.782E-03		1.401E-01	2.007E-01	1.649E-02	-0.029
GD-153	1.105E-01		9.667E-02	1.459E-01	1.353E-02	0.757
EU-154	3.698E-03		1.588E-01	2.576E-01	2.430E-02	0.014
EU-155	3.836E-02		1.154E-01	1.907E-01	2.065E-02	0.201
TB-160	1.573E-01		1.752E-01	3.129E-01	3.092E-02	0.503
HO-166M	2.477E-02		7.799E-02	1.337E-01	9.739E-03	0.185
TA-182	-2.417E-01		2.704E-01	4.017E-01	2.335E-02	-0.602
IR-192	8.252E-03		4.304E-02	7.228E-02	6.135E-03	0.114
HG-203	-5.742E-03		4.749E-02	7.889E-02	7.483E-03	-0.073
BI-207	-1.008E-02		7.384E-02	1.193E-01	9.450E-03	-0.084
PB-211	-1.415E+00		1.185E+00	1.459E+00	7.001E-01	-0.969
BI-212	1.235E+00		7.680E-01	1.390E+00	1.630E-01	0.888
RN-219	1.861E-01		5.390E-01	9.038E-01	1.218E-01	0.206
RA-223	-1.565E+00		8.646E-01	1.225E+00	2.103E-01	-1.277
AC-227	2.027E-01		2.976E-01	5.128E-01	6.557E-02	0.395
TH-227	2.027E-01		2.979E-01	5.128E-01	7.313E-02	0.395
PA-231	-4.377E-01		1.703E+00	2.805E+00	4.189E-01	-0.156
TH-231	-1.565E+00		8.646E-01	1.225E+00	2.103E-01	-1.277
PA-233	-5.720E-02		7.490E-02	1.189E-01	1.050E-02	-0.481
PA-234	3.069E-02		3.957E-01	6.569E-01	1.265E-01	0.047
PA-234M	3.647E+00		6.265E+00	1.063E+01	1.086E+00	0.343
NP-239	-1.521E-01		4.513E-01	7.242E-01	9.523E-02	-0.210
AM-241	5.449E-02		8.157E-02	1.219E-01	1.091E-02	0.447
CM-247	4.990E-03		4.889E-02	8.093E-02	4.761E-03	0.062
CF-249	-9.827E-03		5.236E-02	8.535E-02	5.097E-03	-0.115
CF-251	3.955E-02		1.599E-01	2.596E-01	2.586E-02	0.152

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248112008          *
* Acquisition date   : 10-MAR-2010 13:42:11 Detector SN# :                  *
* Detector ID        : GAM05 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.69 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248112008 Analyst initials: MXR1                  *
* Batch Number       : 959270 Sample Quantity : 1.1455E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00 MS Isotope :                  *
* MSD DPM             : 0.000 MSD Isotope :                  *
* LCS DPM             : 0.000 LCS Isotope :                  *
* LCSD DPM            : 0.000 LCSD Isotope :                  *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.740E+01	2.554E+00	3.901E-01	1.303E+00
CD-109	3.313E+00	1.052E+00	5.637E-01	5.369E-01
SN-126	3.233E-01	1.027E-01	5.495E-02	5.241E-02
CS-135	7.707E-01	2.588E-01	1.433E-01	1.320E-01
TL-208	5.699E-01	1.058E-01	3.619E-02	5.399E-02
PB-210	2.127E+00	9.834E-01	4.733E-01	5.017E-01
BI-211	3.810E+00	5.663E-01	2.152E-01	2.889E-01
PB-212	1.691E+00	2.170E-01	5.507E-02	1.107E-01
BI-214	1.146E+00	2.092E-01	6.390E-02	1.067E-01
PB-214	1.383E+00	2.187E-01	7.591E-02	1.116E-01
RA-224	4.740E+00	1.606E+00	5.902E-01	8.196E-01
RA-226	1.146E+00	2.092E-01	6.390E-02	1.067E-01
AC-228	1.897E+00	4.625E-01	1.759E-01	2.360E-01
RA-228	1.897E+00	4.625E-01	1.759E-01	2.360E-01
TH-228	1.691E+00	2.170E-01	5.507E-02	1.107E-01
TH-229	-6.352E-01	6.228E-01	4.891E-01	3.177E-01
TH-232	1.897E+00	4.625E-01	1.759E-01	2.360E-01
TH-234	3.494E+00	1.454E+00	5.998E-01	7.420E-01
U-235	1.228E-01	2.372E-01	2.025E-01	1.210E-01
NP-237	9.648E-01	3.650E-01	1.635E-01	1.862E-01
U-238	3.494E+00	1.454E+00	5.998E-01	7.420E-01
ANH-511	1.555E-01	8.464E-02	2.820E-02	4.318E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-4.927E-01	4.328E-01	3.189E-01	2.208E-01 NOT IDENT.
NA-22	1.306E-03	5.494E-02	4.539E-02	2.803E-02 NOT IDENT.
NA-24	5.787E+05	2.485E+06	0.000E+00	1.268E+06 SHORT HLIF
SC-46	2.178E-02	4.751E-02	4.183E-02	2.424E-02 FAIL ABUN
V-48	-3.770E-02	8.973E-02	7.202E-02	4.578E-02 NOT IDENT.

CR-51	2.287E-01	4.372E-01	3.849E-01	2.231E-01	NOT IDENT.
MN-54	2.338E-03	4.535E-02	3.864E-02	2.314E-02	NOT IDENT.
CO-56	6.892E-04	4.794E-02	4.069E-02	2.446E-02	NOT IDENT.
CO-57	8.250E-03	2.839E-02	2.428E-02	1.449E-02	NOT IDENT.
CO-58	-3.706E-02	4.956E-02	3.925E-02	2.528E-02	NOT IDENT.
FE-59	6.317E-03	1.193E-01	9.989E-02	6.089E-02	NOT IDENT.
CO-60	3.232E-04	4.801E-02	3.946E-02	2.449E-02	NOT IDENT.
ZN-65	1.540E-01	1.316E-01	1.077E-01	6.716E-02	NOT IDENT.
SE-75	-1.036E-02	5.490E-02	4.072E-02	2.801E-02	NOT IDENT.
SR-85	1.962E-02	5.336E-02	3.988E-02	2.722E-02	NOT IDENT.
Y-88	8.670E-03	4.045E-02	3.519E-02	2.064E-02	NOT IDENT.
Y-91	-1.478E+00	2.909E+01	2.396E+01	1.484E+01	NOT IDENT.
NB-94	1.584E-02	4.206E-02	3.703E-02	2.146E-02	NOT IDENT.
NB-95	2.430E-02	5.609E-02	4.928E-02	2.862E-02	NOT IDENT.
NB-95M	1.160E+00	2.299E-01	1.847E-01	1.173E-01	NOT IDENT.
ZR-95	-4.803E-02	9.912E-02	8.147E-02	5.057E-02	NOT IDENT.
MO-99	8.590E+00	2.049E+01	1.803E+01	1.046E+01	NOT IDENT.
TC-99M	-7.334E+17	6.783E+17	0.000E+00	0.000E+00	SHORT HLIF
RU-103	4.709E-02	5.133E-02	4.541E-02	2.619E-02	NOT IDENT.
RH-106	-4.586E-01	4.003E-01	2.940E-01	2.042E-01	NOT IDENT.
RU-106	-4.586E-01	3.977E-01	2.940E-01	2.029E-01	NOT IDENT.
AG-108M	-2.110E-02	3.638E-02	2.946E-02	1.856E-02	NOT IDENT.
AG-110M	1.473E-02	4.633E-02	3.908E-02	2.364E-02	NOT IDENT.
SN-113	5.287E-02	5.478E-02	4.901E-02	2.795E-02	NOT IDENT.
CD-115	4.803E+00	1.889E+01	1.606E+01	9.639E+00	NOT IDENT.
SN-117M	-4.696E-02	6.857E-02	5.557E-02	3.498E-02	NOT IDENT.
TE-123M	-3.170E-03	3.375E-02	2.813E-02	1.722E-02	NOT IDENT.
SB-124	-3.934E-02	7.975E-02	5.915E-02	4.069E-02	NOT IDENT.
SB-125	3.772E-02	1.127E-01	9.713E-02	5.751E-02	FAIL ABUN
TE-125M	5.975E-02	1.120E+01	9.323E+00	5.715E+00	NOT IDENT.
I-126	1.506E-01	3.054E-01	2.608E-01	1.558E-01	NOT IDENT.
SB-126	-5.322E-01	2.117E-01	1.431E-01	1.080E-01	NOT IDENT.
SB-127	-3.249E-01	1.970E+00	1.671E+00	1.005E+00	FAIL ABUN
I-131	-6.647E-02	1.420E-01	1.172E-01	7.244E-02	NOT IDENT.
TE-132	-3.142E-01	9.779E-01	8.382E-01	4.989E-01	NOT IDENT.
BA-133	1.049E-02	5.732E-02	4.301E-02	2.925E-02	NOT IDENT.
I-133	5.775E+03	1.616E+04	0.000E+00	8.246E+03	SHORT HLIF
CS-134	1.891E-01	8.657E-02	5.782E-02	4.417E-02	FAIL ABUN
I-135	7.198E+16	9.806E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.589E-02	1.421E-01	1.255E-01	7.250E-02	NOT IDENT.
BA-137M	1.962E-02	4.748E-02	4.030E-02	2.422E-02	NOT IDENT.
CS-137	2.073E-02	5.016E-02	4.258E-02	2.559E-02	NOT IDENT.
CE-139	4.717E-03	3.507E-02	2.947E-02	1.790E-02	NOT IDENT.
BA-140	2.229E-01	3.511E-01	3.002E-01	1.791E-01	NOT IDENT.
LA-140	2.376E-02	1.079E-01	9.386E-02	5.504E-02	NOT IDENT.
CE-141	3.057E-03	7.484E-02	6.297E-02	3.818E-02	NOT IDENT.
CE-143	1.882E+03	5.394E+02	0.000E+00	2.752E+02	SHORT HLIF
CE-144	-5.411E-02	2.385E-01	1.991E-01	1.217E-01	NOT IDENT.
PM-144	8.295E-03	4.491E-02	3.902E-02	2.291E-02	NOT IDENT.
PR-144	6.211E-01	3.363E+00	2.922E+00	1.716E+00	NOT IDENT.
PM-146	1.719E-02	5.241E-02	4.392E-02	2.674E-02	NOT IDENT.
ND-147	6.617E-02	7.377E-01	6.191E-01	3.764E-01	FAIL ABUN
PM-149	-2.730E+01	1.420E+02	1.211E+02	7.245E+01	NOT IDENT.
EU-152	-5.782E-03	1.373E-01	1.014E-01	7.004E-02	FAIL ABUN
GD-153	1.105E-01	9.474E-02	7.456E-02	4.834E-02	NOT IDENT.
EU-154	3.698E-03	1.556E-01	1.285E-01	7.938E-02	NOT IDENT.
EU-155	3.836E-02	1.131E-01	9.737E-02	5.771E-02	FAIL ABUN
TB-160	1.573E-01	1.717E-01	1.566E-01	8.761E-02	FAIL ABUN
HO-166M	2.477E-02	7.643E-02	6.705E-02	3.900E-02	FAIL ABUN
TA-182	-2.417E-01	2.650E-01	2.005E-01	1.352E-01	NOT IDENT.
IR-192	8.252E-03	4.218E-02	3.653E-02	2.152E-02	FAIL ABUN
HG-203	-5.742E-03	4.654E-02	3.992E-02	2.375E-02	FAIL ABUN
BI-207	-1.008E-02	7.237E-02	5.964E-02	3.692E-02	FAIL ABUN
PB-211	-1.415E+00	1.161E+00	7.358E-01	5.925E-01	NOT IDENT.
BI-212	1.235E+00	7.527E-01	6.973E-01	3.840E-01	FAIL ABUN
RN-219	1.861E-01	5.283E-01	4.558E-01	2.695E-01	NOT IDENT.
RA-223	-1.565E+00	8.473E-01	6.193E-01	4.323E-01	FAIL ABUN
AC-227	2.027E-01	2.916E-01	2.597E-01	1.488E-01	FAIL ABUN
TH-227	2.027E-01	2.919E-01	2.597E-01	1.489E-01	FAIL ABUN
PA-231	-4.377E-01	1.669E+00	1.419E+00	8.517E-01	FAIL ABUN
TH-231	-1.565E+00	8.473E-01	6.193E-01	4.323E-01	FAIL ABUN
PA-233	-5.720E-02	7.340E-02	6.009E-02	3.745E-02	FAIL ABUN
PA-234	3.069E-02	3.878E-01	3.286E-01	1.978E-01	NOT IDENT.
PA-234M	3.647E+00	6.140E+00	5.313E+00	3.133E+00	NOT IDENT.
NP-239	-1.521E-01	4.423E-01	3.694E-01	2.257E-01	NOT IDENT.
AM-241	5.449E-02	7.994E-02	6.256E-02	4.078E-02	NOT IDENT.
CM-247	4.990E-03	4.791E-02	4.081E-02	2.444E-02	NOT IDENT.
CF-249	-9.827E-03	5.131E-02	4.306E-02	2.618E-02	NOT IDENT.

CF-251	3.955E-02	1.567E-01	1.319E-01	7.995E-02 NOT IDENT.
--------	-----------	-----------	-----------	----------------------

```

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

```

ENERGY	MDA COUNTS
46.54	382.8150
49.72	496.3748
57.36	0.0000
59.54	483.9390
63.29	524.4302
63.29	524.4302
64.28	525.1757
67.75	632.5063
69.67	542.9075
70.83	584.7394
72.81	628.9561
72.87	629.0071
72.87	629.0071
74.82	580.5983
74.82	580.5983
74.82	580.5983
74.97	580.7101
77.11	582.3182
77.11	582.3182
77.11	582.3182
79.69	474.3295
79.80	474.3948
80.12	474.5855
80.19	474.6273
80.57	474.8524
81.00	475.1066
81.07	475.1484
81.07	475.1484
83.79	417.7937
83.79	417.7937
85.43	418.6243
86.48	419.1526
86.55	419.1877
86.79	419.3070
86.94	419.3834
87.57	419.6968
88.03	419.9260
88.47	420.1440
89.96	420.8792
91.11	421.4441
92.59	422.1633
92.59	422.1633
93.35	401.9253
94.67	428.4989
94.87	451.3241
94.87	451.3241
95.86	429.0741
97.43	340.2807
98.44	340.9337
99.53	370.2422
100.11	378.6424
103.18	366.5927
103.37	336.9657
105.31	366.4008
106.12	370.8243
109.28	373.0833
111.00	366.5190
111.76	387.4698
116.30	339.4279
117.23	340.7812
121.12	296.1977
121.78	316.2160
122.06	315.2588
123.07	327.0605
131.20	352.7478
133.52	357.7253
136.00	351.1314

136.47	330.1194
140.51	384.4124
140.51	0.0000
143.76	324.8118
144.24	320.6852
144.24	320.6852
145.44	326.3553
152.43	304.7098
153.25	304.9200
154.21	307.3138
154.21	307.3138
156.02	305.6263
158.56	321.3676
159.00	302.0651
162.66	301.8867
163.33	294.4723
165.86	283.1370
176.60	287.7205
177.52	282.4493
181.07	310.8757
184.41	285.2462
185.72	274.9500
193.51	283.6191
197.04	239.9134
205.31	260.9839
210.85	276.3428
215.65	254.0431
222.11	210.6457
227.38	225.8933
228.16	218.7475
228.18	218.7505
235.69	220.4205
235.96	220.4589
235.96	220.4589
238.63	220.2243
238.63	220.2243
240.99	220.5524
242.00	201.4617
244.70	206.3892
252.40	211.0577
252.80	207.4219
256.23	182.9113
256.23	182.9113
260.90	192.6895
264.66	164.0291
268.22	169.0263
269.46	181.5628
269.46	181.5628
271.23	180.1974
273.65	244.2297
276.40	193.9816
277.37	188.9460
277.60	186.1641
278.00	199.3053
279.20	203.1885
279.54	197.6090
280.46	208.9563
283.69	181.1778
284.31	179.3633
285.41	170.0786
285.90	175.7645
287.50	175.2164
293.27	0.0000
295.22	181.0866
295.96	132.3267
298.57	132.5164
299.98	132.6172
299.98	132.6172
300.09	132.6257
300.09	132.6257
300.13	132.6292
301.36	156.4177
302.85	177.1009
304.50	140.8569
304.50	140.8569
304.85	140.8841
308.46	154.1630
311.90	162.0728

316.51	160.5557
319.41	159.8426
320.08	140.7482
323.87	217.7754
323.87	217.7754
328.76	138.4980
333.37	162.2818
334.37	173.6169
334.37	173.6169
338.28	163.3288
338.28	163.3288
338.32	163.3330
338.32	163.3330
338.32	163.3330
340.48	154.8027
340.55	154.8086
344.28	158.3269
351.06	162.1012
351.93	152.4402
356.01	138.1181
364.49	125.3063
366.42	127.3816
383.85	123.4879
388.16	149.4682
388.63	151.4816
391.69	115.0088
400.66	121.4490
401.81	139.4412
402.40	140.4733
404.85	178.5258
410.95	120.0073
414.70	119.2034
423.72	125.7050
427.09	119.8454
427.87	112.8340
433.94	121.2070
453.88	99.5884
463.37	105.6568
468.07	104.1500
473.00	96.4877
476.78	99.7175
477.60	115.1746
487.02	112.5074
492.35	103.4338
497.08	86.0081
511.00	87.5099
514.00	100.8203
527.90	82.8246
529.87	0.0000
531.02	86.0700
537.26	76.7979
546.56	0.0000
563.25	80.7073
569.33	83.0102
569.50	83.0140
569.70	88.3415
583.19	82.3426
600.60	92.7861
602.73	75.3594
604.72	93.3656
609.32	67.9742
609.32	67.9742
610.33	77.3514
614.28	70.2495
618.01	58.4336
621.93	91.0137
621.93	91.0137
633.25	69.6031
635.95	81.6376
636.99	87.1094
645.85	58.9676
657.76	78.9240
661.66	80.1200
661.66	80.1200
664.57	0.0000
666.33	76.9402
666.50	76.9436
677.62	74.4552

685.70	78.3282
695.00	90.5651
696.49	85.0596
696.51	85.0596
697.00	89.6962
702.65	75.9558
706.68	93.6703
711.68	72.4490
720.70	123.8676
721.93	0.0000
722.78	118.3545
722.91	107.1738
723.31	88.5464
724.19	74.5850
727.33	80.2523
733.00	74.7786
735.93	90.7480
739.50	70.2393
747.24	93.8639
752.31	75.2018
753.82	68.6514
756.73	87.5338
763.94	76.3956
765.81	80.2115
766.42	84.0006
777.92	73.2285
778.90	64.9498
783.70	48.3718
785.37	52.7930
795.86	52.3424
801.95	63.7341
810.29	66.8840
810.76	69.7593
815.77	51.6731
818.51	54.5844
832.01	58.6284
834.85	62.5204
836.80	0.0000
846.77	55.0007
856.80	53.0737
860.56	48.4222
871.09	46.6133
873.19	51.4969
875.33	0.0000
879.36	42.8202
880.51	43.8062
883.24	47.7339
884.68	60.4207
889.28	45.8564
898.04	55.7371
911.20	80.7321
911.20	80.7321
911.20	80.7321
926.50	54.1686
937.49	63.2031
944.13	52.4263
946.00	55.4189
949.00	44.5660
962.29	46.6969
964.08	46.7170
966.15	46.7409
968.97	46.7724
968.97	46.7724
968.97	46.7724
983.53	51.9281
996.26	58.0956
1001.03	46.1273
1004.73	67.2440
1037.84	45.5109
1038.76	0.0000
1048.07	44.6034
1050.41	44.6266
1050.41	44.6266
1063.66	62.0549
1085.87	54.1840
1099.45	53.3203
1112.07	58.1689
1115.54	45.8645

1120.29	54.7409
1120.29	54.7409
1120.55	54.7430
1121.30	44.1546
1131.51	0.0000
1173.23	65.6276
1177.93	63.6062
1189.05	55.3916
1204.77	65.0072
1221.41	77.8542
1231.02	80.1130
1235.36	70.6886
1238.28	50.6719
1260.41	0.0000
1271.85	37.1960
1274.44	43.5942
1274.54	43.5942
1291.59	38.4067
1298.22	0.0000
1312.11	32.1326
1332.49	31.1818
1365.19	27.0467
1368.63	0.0000
1384.29	24.1964
1408.01	19.6282
1457.56	0.0000
1460.82	30.1942
1489.16	19.9138
1505.03	24.7232
1596.21	18.3479
1620.50	13.5737
1678.03	0.0000
1690.97	11.7673
1764.49	6.9434
1764.49	6.9434
1770.23	15.6363
1771.35	25.8168
1791.20	0.0000
1836.06	10.0269

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248112008

Total Uranium Activity	1.0451E+01	ug/g
Total Uranium Counting Unc.	4.3278E+00	ug/g
Total Uranium Tpu	2.2081E-06	ug/g
Total Uranium Mda	1.7868E+00	ug/g

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*   BATCH ID      : 959270                      SAMPLE ID   : G248112008
*   ANALYST       : MXR1                        DETECTOR    : GAM05
*   SAMPLE DATE   : 22-FEB-2010 12:00:00.00    COUNT TIME   : 0 02:00:00.00
*   ANALYSIS DATE : 10-MAR-2010 13:42:11.12    SAMPLE ALQT  : 114.550 GRAM
*
*****

```

```

GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.411E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.232E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.974E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.937E+00

```

VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 16:58:37.39

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248137001.CNF;1
Sample date       : 23-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 14:58:13
Sample ID        : G248137001 Sample quantity : 1.24200E+02 GRAM
Detector name    : GAM01 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.06 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 959270 Detector SN# :
Matrix Spike ID : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.25*	99	326	1.49	127.22	123	9	1.37E-02	35.8	
2	2	74.92*	269	408	1.31	150.55	143	17	3.74E-02	14.9	1.56E+00
3	2	77.16*	389	316	1.04	155.03	143	17	5.40E-02	9.0	
4	0	87.33	82	502	1.24	175.36	171	9	1.14E-02	50.5	
5	0	129.32	93	278	1.69	259.29	255	9	1.30E-02	33.8	
6	0	186.52*	134	375	1.50	373.64	367	13	1.87E-02	32.3	
7	0	209.64*	79	244	1.52	419.85	415	10	1.10E-02	39.2	
8	3	239.06*	848	182	1.27	478.66	473	16	1.18E-01	4.5	1.27E+00
9	3	241.97	180	182	1.54	484.46	473	16	2.50E-02	17.5	
10	0	295.59*	226	211	1.43	591.65	584	13	3.13E-02	15.0	
11	0	300.65	69	197	1.39	601.76	597	13	9.60E-03	43.7	
12	0	338.70*	187	189	1.31	677.82	671	14	2.60E-02	17.6	
13	0	352.36*	381	151	1.26	705.13	699	11	5.28E-02	8.2	
14	0	511.10*	77	149	1.94	1022.40	1014	19	1.06E-02	44.0	
15	0	583.50*	257	85	1.44	1167.13	1161	13	3.58E-02	9.9	
16	0	609.79*	313	78	1.41	1219.67	1212	14	4.34E-02	8.4	
17	0	728.02*	44	68	1.15	1455.97	1450	11	6.07E-03	40.6	
18	1	861.29	38	58	1.86	1722.34	1715	22	5.29E-03	39.8	2.88E+00
19	1	866.45	36	28	1.86	1732.66	1715	22	5.00E-03	33.3	
20	0	911.53*	158	66	1.48	1822.74	1815	14	2.19E-02	13.9	
21	0	968.25	181	40	4.65	1936.11	1925	20	2.51E-02	11.3	
22	0	1120.68*	44	45	1.56	2240.75	2236	9	6.10E-03	32.7	
23	0	1378.96	17	18	1.77	2756.93	2750	9	2.35E-03	51.4	
24	0	1461.19*	1249	10	1.86	2921.26	2911	20	1.73E-01	2.9	
25	0	1765.32*	45	4	2.18	3529.03	3521	14	6.23E-03	19.5	

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

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248137001.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 23-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 14:58:13
Sample ID        : G248137001 Sample quantity : 124.20 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA1 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.06 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00 %
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.82	*	3.744E+01	3.982E+00	4.968E-01	4.417E-02	75.356
CD-109	+	88.03	*	1.319E+00	1.339E+00	1.500E+00	1.419E-01	0.879
SN-126	+	64.28		1.121E+00	8.194E-01	8.328E-01	1.226E-01	1.347
	+	86.94		5.360E-01	5.858E-01	6.189E-01	2.569E-01	0.866
	+	87.57	*	1.289E-01	1.309E-01	1.478E-01	1.392E-02	0.872
TL-208		277.37		5.364E-01	4.195E-01	7.306E-01	9.422E-02	0.734
	+	583.19	*	4.273E-01	9.293E-02	6.708E-02	6.084E-03	6.370
	+	860.56		6.052E-01	4.854E-01	5.261E-01	5.040E-02	1.150
BI-211		72.87		4.277E+00	3.412E+00	5.745E+00	4.712E-01	0.744
	+	351.06	*	2.760E+00	5.176E-01	3.915E-01	3.561E-02	7.051
PB-212	+	74.82		1.901E+00	6.170E-01	5.941E-01	7.607E-02	3.199
	+	77.11		1.568E+00	3.117E-01	3.391E-01	2.878E-02	4.625
	+	238.63	*	1.353E+00	1.844E-01	1.052E-01	1.070E-02	12.863
	+	300.09		1.734E+00	1.526E+00	1.207E+00	1.318E-01	1.437
BI-214	+	609.32	*	1.007E+00	1.969E-01	1.191E-01	1.180E-02	8.453
	+	1120.29		7.459E-01	4.949E-01	6.586E-01	7.079E-02	1.132
	+	1764.49		1.073E+00	4.289E-01	3.576E-01	2.999E-02	3.002
PB-214	+	74.82		3.369E+00	1.077E+00	1.053E+00	1.211E-01	3.199
	+	77.11		2.765E+00	5.950E-01	5.979E-01	7.075E-02	4.625
	+	242.00		1.740E+00	6.373E-01	6.399E-01	6.898E-02	2.719
	+	295.22		1.000E+00	3.211E-01	2.343E-01	2.623E-02	4.269
	+	351.93	*	1.002E+00	1.958E-01	1.412E-01	1.501E-02	7.096
RA-224	+	240.99	*	3.076E+00	1.113E+00	1.128E+00	1.025E-01	2.728
RA-226	+	609.32	*	1.007E+00	1.969E-01	1.191E-01	1.180E-02	8.453
	+	1120.29		7.459E-01	4.949E-01	6.586E-01	7.079E-02	1.132
	+	1764.49		1.073E+00	4.289E-01	3.576E-01	2.999E-02	3.002
AC-228	+	338.32		1.506E+00	8.225E-01	4.066E-01	1.698E-01	3.705
	+	911.20	*	1.281E+00	3.869E-01	2.786E-01	3.320E-02	4.596
	+	968.97		2.536E+00	8.461E-01	4.321E-01	1.058E-01	5.868
RA-228	+	338.32		1.506E+00	8.225E-01	4.066E-01	1.698E-01	3.705
	+	911.20	*	1.281E+00	3.869E-01	2.786E-01	3.320E-02	4.596
	+	968.97		2.536E+00	8.461E-01	4.321E-01	1.058E-01	5.868
TH-228	+	74.82		1.901E+00	5.891E-01	5.941E-01	4.995E-02	3.199
	+	77.11		1.568E+00	3.117E-01	3.391E-01	2.878E-02	4.625

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	238.63	*	1.353E+00	1.844E-01	1.052E-01	1.070E-02	12.863
	+	300.09		1.734E+00	1.849E+00	1.207E+00	7.395E-01	1.437
TH-232	+	338.32		1.506E+00	5.463E-01	4.066E-01	3.579E-02	3.705
	+	911.20	*	1.281E+00	3.869E-01	2.786E-01	3.320E-02	4.596
	+	968.97		2.536E+00	8.461E-01	4.321E-01	1.058E-01	5.868
NP-237	+	86.48	*	3.847E-01	3.988E-01	4.118E-01	9.448E-02	0.934
		95.86		-4.620E+00	1.590E+00	1.498E+00	3.612E-01	-3.084
ANH-511	+	511.00	*	9.684E-02	8.567E-02	5.379E-02	4.559E-03	1.800

---- 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	*	-3.765E-01	3.867E-01	5.675E-01	5.162E-02	-0.663
NA-22		1274.54	*	-3.353E-02	5.200E-02	8.064E-02	6.772E-03	-0.416
NA-24		1368.63	*	-3.895E-01	5.200E-02	Half-Life too short		
SC-46		889.28	*	-3.174E-02	4.653E-02	7.041E-02	6.365E-03	-0.451
	+	1120.55		1.262E-01	8.329E-02	1.391E-01	1.169E-02	0.907
V-48		944.13		1.460E-01	1.005E+00	1.662E+00	1.497E-01	0.088
	*	983.53		5.989E-02	7.909E-02	1.389E-01	1.240E-02	0.431
		1312.11		8.806E-03	9.594E-02	1.615E-01	1.369E-02	0.055
CR-51		320.08	*	1.192E-01	4.250E-01	7.080E-01	6.655E-02	0.168
MN-54		834.85	*	4.799E-02	4.305E-02	7.736E-02	6.885E-03	0.620
CO-56		846.77	*	-5.657E-03	4.465E-02	7.227E-02	6.457E-03	-0.078
		1037.84		-6.382E-02	3.648E-01	5.784E-01	5.327E-02	-0.110
		1238.28		1.601E-01	1.215E-01	2.208E-01	1.888E-02	0.725
		1771.35		-7.119E-01	3.790E-01	3.996E-01	3.345E-02	-1.782
CO-57		122.06	*	-1.134E-03	2.862E-02	4.450E-02	3.917E-03	-0.025
		136.47		-3.287E-02	2.156E-01	3.636E-01	3.356E-02	-0.090
CO-58		810.76	*	-1.097E-02	4.275E-02	6.840E-02	6.051E-03	-0.160
FE-59		1099.45	*	2.693E-02	1.187E-01	1.955E-01	1.802E-02	0.138
		1291.59		-8.410E-03	1.417E-01	2.348E-01	2.259E-02	-0.036
CO-60		1173.23		6.766E-03	6.051E-02	1.025E-01	8.296E-03	0.066
	*	1332.49		-4.022E-02	4.206E-02	6.005E-02	5.119E-03	-0.670
ZN-65		1115.54	*	-1.180E-01	1.344E-01	1.612E-01	1.360E-02	-0.732
SE-75		121.12		1.052E-02	1.485E-01	2.322E-01	2.603E-02	0.045
		136.00		-7.284E-05	4.106E-02	6.971E-02	6.034E-03	-0.001
	*	264.66		-8.495E-03	4.427E-02	7.231E-02	6.643E-03	-0.117
		279.54		6.872E-02	1.215E-01	2.062E-01	1.950E-02	0.333
		400.66		8.605E-02	2.818E-01	4.664E-01	4.985E-02	0.184
SR-85		514.00	*	7.297E-02	5.528E-02	8.612E-02	7.302E-03	0.847
Y-88		898.04		-5.530E-02	5.070E-02	7.281E-02	6.624E-03	-0.760
	*	1836.06		-8.605E-03	3.455E-02	5.251E-02	4.319E-03	-0.164
Y-91		1204.77	*	-2.801E+01	2.506E+01	3.724E+01	3.051E+00	-0.752
NB-94		702.65	*	2.382E-02	3.840E-02	6.684E-02	5.611E-03	0.356
		871.09		6.792E-04	4.218E-02	5.988E-02	5.388E-03	0.011
NB-95		765.81	*	-3.117E-02	5.396E-02	8.487E-02	7.354E-03	-0.367
NB-95M		235.69	*	1.071E-01	1.459E-01	2.230E-01	2.292E-02	0.480
ZR-95		724.19		8.080E-03	1.170E-01	1.696E-01	1.565E-02	0.048

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
MO-99		756.73	*	-4.746E-02	8.336E-02	1.302E-01	1.241E-02	-0.365
		140.51		-9.866E+00	2.295E+01	3.805E+01	9.026E+00	-0.259
		181.07		-1.102E-01	2.080E+01	3.079E+01	5.789E+00	-0.004
		366.42		-1.013E+01	1.080E+02	1.745E+02	1.476E+01	-0.058
		739.50	*	1.108E+01	1.406E+01	2.470E+01	3.883E+00	0.449
TC-99M		777.92		-2.384E+01	4.166E+01	6.485E+01	5.650E+00	-0.368
		140.51	*	-1.727E+10	4.166E+01	Half-Life	too short	
RU-103		497.08	*	-2.505E-02	4.258E-02	6.407E-02	8.884E-03	-0.391
RH-106	+	610.33		1.039E+01	2.431E+00	2.985E+00	4.843E-01	3.481
		621.93	*	1.815E-02	3.154E-01	5.298E-01	6.932E-02	0.034
RU-106		1050.41		-3.701E-01	3.241E+00	5.176E+00	4.514E-01	-0.072
		621.93	*	1.815E-02	3.154E-01	5.298E-01	4.425E-02	0.034
AG-108M		1050.41		-3.701E-01	3.241E+00	5.176E+00	4.514E-01	-0.072
		433.94	*	3.416E-03	3.380E-02	5.493E-02	4.701E-03	0.062
AG-110M		614.28		2.148E-02	4.054E-02	6.272E-02	5.436E-03	0.342
		722.91		-3.628E-03	4.840E-02	6.889E-02	6.040E-03	-0.053
		657.76	*	2.234E-03	3.602E-02	6.032E-02	5.115E-03	0.037
		677.62		-4.229E-02	3.587E-01	5.903E-01	5.036E-02	-0.072
		706.68		-1.551E-01	2.370E-01	3.694E-01	3.202E-02	-0.420
		763.94		-1.099E-01	2.034E-01	3.205E-01	2.850E-02	-0.343
		884.68		-2.160E-02	5.726E-02	8.981E-02	8.347E-03	-0.240
SN-113		937.49		2.438E-02	1.260E-01	2.095E-01	1.951E-02	0.116
		1384.29		-5.603E-02	1.726E-01	2.486E-01	2.193E-02	-0.225
		1505.03		-1.685E-01	2.775E-01	4.045E-01	3.502E-02	-0.416
		391.69	*	-3.618E-02	4.877E-02	7.443E-02	6.199E-03	-0.486
	CD-115		260.90		1.298E+01	1.386E+02	2.306E+02	2.109E+01
SN-117M		492.35		4.687E+01	4.128E+01	7.238E+01	6.114E+00	0.647
		527.90	*	-2.658E+00	1.292E+01	2.145E+01	1.821E+00	-0.124
		156.02		2.158E+00	2.396E+00	4.183E+00	3.562E-01	0.516
TE-123M		158.56	*	-1.238E-02	5.734E-02	9.593E-02	8.167E-03	-0.129
SB-124		159.00	*	-1.456E-02	2.971E-02	4.906E-02	4.203E-03	-0.297
		602.73		-4.210E-02	4.922E-02	6.430E-02	5.408E-03	-0.655
		645.85		4.591E-01	5.074E-01	9.112E-01	7.999E-02	0.504
		722.78		-3.034E-02	4.867E-01	6.938E-01	6.028E-02	-0.044
		1690.97	*	-5.546E-02	7.249E-02	9.273E-02	8.240E-03	-0.598
SB-125		427.87	*	8.288E-04	1.016E-01	1.641E-01	1.380E-02	0.005
		463.37		3.971E-01	3.305E-01	5.733E-01	5.184E-02	0.693
		600.60		-8.199E-03	1.949E-01	3.252E-01	2.948E-02	-0.025
		635.95		1.806E-01	2.809E-01	4.946E-01	4.465E-02	0.365
TE-125M		109.28	*	1.512E+01	1.056E+01	1.775E+01	1.867E+00	0.852
I-126		388.63		1.676E-01	1.865E-01	3.209E-01	2.599E-02	0.522
		666.33	*	-1.313E-01	2.516E-01	4.000E-01	3.286E-02	-0.328
SB-126		753.82		9.521E-01	2.036E+00	3.503E+00	3.019E-01	0.272
		414.70		-5.228E-02	8.616E-02	1.327E-01	1.085E-02	-0.394
		666.50		-2.478E-02	8.567E-02	1.391E-01	1.143E-02	-0.178
		695.00		1.630E-03	8.288E-02	1.378E-01	1.152E-02	0.012
		697.00		6.878E-03	2.856E-01	4.751E-01	3.975E-02	0.014
		720.70	*	-6.818E-02	1.801E-01	2.705E-01	2.293E-02	-0.252
	856.80		-3.608E-01	6.643E-01	8.696E-01	7.793E-02	-0.415	

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127		252.40		-1.627E+00	4.610E+00	7.404E+00	3.083E+00	-0.220
		473.00		2.579E+00	1.832E+00	3.229E+00	4.077E-01	0.799
		685.70	*	2.073E-01	1.453E+00	2.444E+00	2.723E-01	0.085
		783.70		3.429E+00	3.755E+00	6.680E+00	8.307E-01	0.513
I-131		80.19		1.617E+00	5.344E+00	7.786E+00	6.837E-01	0.208
		284.31		9.590E-01	1.586E+00	2.703E+00	2.582E-01	0.355
		364.49	*	-3.882E-02	1.235E-01	1.962E-01	1.757E-02	-0.198
		636.99		9.509E-01	1.616E+00	2.834E+00	2.497E-01	0.336
TE-132		49.72		1.167E+00	2.235E+01	3.655E+01	3.984E+00	0.032
		111.76		-2.861E+01	3.691E+01	5.630E+01	6.217E+00	-0.508
		116.30		2.645E+01	3.090E+01	5.096E+01	5.641E+00	0.519
		228.16	*	5.643E-01	7.956E-01	1.361E+00	2.183E-01	0.415
BA-133		81.00		-8.474E-02	1.159E-01	1.584E-01	2.474E-02	-0.535
		276.40		4.715E-01	3.836E-01	6.655E-01	9.610E-02	0.708
		302.85		1.087E-01	1.648E-01	2.500E-01	3.343E-02	0.435
		356.01	*	3.583E-02	5.039E-02	7.655E-02	9.905E-03	0.468
		383.85		2.345E-01	3.344E-01	5.672E-01	6.877E-02	0.413
I-133		529.87	*	2.793E-03	3.344E-01	Half-Life too short		
		875.33		1.011E-02	3.344E-01	Half-Life too short		
		1298.22		1.228E-01	3.344E-01	Half-Life too short		
CS-134		563.25		-7.527E-02	4.145E-01	6.870E-01	5.882E-02	-0.110
		569.33		-1.601E-02	2.216E-01	3.700E-01	3.179E-02	-0.043
		604.72		-1.852E-02	4.072E-02	5.605E-02	4.723E-03	-0.330
		795.86	*	3.630E-02	5.653E-02	9.791E-02	8.653E-03	0.371
		801.95		-1.332E-01	4.419E-01	7.050E-01	6.236E-02	-0.189
		1365.19		1.462E+00	1.176E+00	2.310E+00	2.072E-01	0.633
CS-135		268.22	*	-1.190E-01	1.644E-01	2.594E-01	2.705E-02	-0.459
I-135		546.56		-1.087E+10	1.644E-01	Half-Life too short		
		836.80		-1.312E+09	1.644E-01	Half-Life too short		
		1038.76		-5.252E+09	1.644E-01	Half-Life too short		
		1131.51		1.947E+09	1.644E-01	Half-Life too short		
		1260.41	*	5.223E+09	1.644E-01	Half-Life too short		
		1457.56		4.224E+11	1.644E-01	Half-Life too short		
		1678.03		3.412E+09	1.644E-01	Half-Life too short		
		1791.20		-6.419E+09	1.644E-01	Half-Life too short		
CS-136		153.25		-2.744E-01	9.141E-01	1.526E+00	1.554E-01	-0.180
		176.60		3.096E-02	5.067E-01	8.545E-01	8.116E-02	0.036
		273.65		-9.582E-01	5.763E-01	8.499E-01	8.363E-02	-1.127
		340.55		7.138E-01	2.107E-01	3.582E-01	3.260E-02	1.993
		818.51		-7.171E-03	8.049E-02	1.310E-01	1.161E-02	-0.055
		1048.07	*	9.100E-02	1.311E-01	2.269E-01	2.062E-02	0.401
		1235.36		2.361E-01	7.669E-01	1.311E+00	1.511E-01	0.180
BA-137M		661.66	*	4.157E-03	3.848E-02	6.465E-02	5.295E-03	0.064
CS-137		661.66	*	4.392E-03	4.065E-02	6.830E-02	5.606E-03	0.064
CE-139		165.86	*	-8.691E-03	3.110E-02	5.178E-02	4.410E-03	-0.168
BA-140		162.66		3.567E-01	8.310E-01	1.426E+00	1.298E-01	0.250
		304.85		3.967E-03	1.577E+00	2.272E+00	6.679E-01	0.002
		423.72		4.021E-01	2.207E+00	3.606E+00	1.183E+00	0.111
		537.26	*	2.919E-02	2.936E-01	4.980E-01	1.687E-01	0.059

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

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LA-140		328.76	3.968E-01	3.385E-01	5.885E-01	5.515E-02	0.674
		487.02	1.257E-01	1.546E-01	2.641E-01	2.371E-02	0.476
		815.77	-8.755E-02	3.505E-01	5.605E-01	5.510E-02	-0.156
CE-141	1596.21	*	1.776E-02	1.013E-01	1.711E-01	1.476E-02	0.104
	145.44	*	1.304E-02	6.365E-02	1.087E-01	9.454E-03	0.120
	57.36		-4.433E-04	6.365E-02	Half-Life	too short	
CE-143	293.27	*	2.456E-04	6.365E-02	Half-Life	too short	
	664.57		6.999E-04	6.365E-02	Half-Life	too short	
	721.93		-5.448E-04	6.365E-02	Half-Life	too short	
CE-144	80.12		8.256E-01	2.886E+00	4.202E+00	3.665E-01	0.196
	133.52	*	-7.265E-02	2.487E-01	3.397E-01	5.192E-02	-0.214
	476.78		-9.025E-02	7.683E-02	1.102E-01	1.011E-02	-0.819
PM-144	618.01		2.422E-02	3.344E-02	5.921E-02	5.100E-03	0.409
	696.49	*	-1.255E-02	3.711E-02	5.971E-02	4.997E-03	-0.210
	696.51	*	-9.440E-01	2.777E+00	4.467E+00	3.737E-01	-0.211
PR-144	1489.16		1.091E+01	1.491E+01	2.729E+01	2.362E+00	0.400
	453.88	*	-5.090E-02	4.828E-02	7.028E-02	7.287E-03	-0.724
	633.25		-2.937E-01	1.493E+00	2.440E+00	9.305E-01	-0.120
PM-146	735.93		-8.471E-02	1.565E-01	2.418E-01	6.772E-02	-0.350
	747.24		-4.802E-02	1.100E-01	1.739E-01	2.534E-02	-0.276
	91.11		-7.123E-01	3.880E-01	5.232E-01	5.175E-02	-1.361
ND-147	319.41		1.496E+00	3.897E+00	6.528E+00	5.856E-01	0.229
	531.02	*	-1.045E-01	6.290E-01	1.047E+00	1.557E-01	-0.100
	285.90	*	-5.127E+01	9.877E+01	1.570E+02	2.486E+01	-0.327
PM-149	121.78		-1.398E-02	8.191E-02	1.265E-01	1.271E-02	-0.111
	244.70		2.927E-01	3.915E-01	6.002E-01	5.463E-02	0.488
	344.28	*	-5.798E-02	1.239E-01	1.691E-01	1.563E-02	-0.343
EU-152	778.90		-4.454E-01	3.018E-01	4.199E-01	3.660E-02	-1.061
	964.08		5.315E-01	3.664E-01	6.085E-01	5.458E-02	0.873
	1085.87		3.655E-01	5.098E-01	8.787E-01	7.533E-02	0.416
GD-153	1112.07		9.554E-03	3.686E-01	5.950E-01	5.026E-02	0.016
	1408.01		-9.962E-02	2.013E-01	3.091E-01	2.662E-02	-0.322
	69.67		-1.487E+00	2.098E+00	2.886E+00	2.315E-01	-0.515
EU-154	97.43	*	-7.161E-02	9.482E-02	1.460E-01	1.297E-02	-0.490
	103.18		-3.976E-02	1.243E-01	1.954E-01	1.704E-02	-0.203
	123.07		4.521E-02	5.737E-02	9.409E-02	1.079E-02	0.481
EU-155	723.31		-4.182E-02	2.174E-01	3.047E-01	2.856E-02	-0.137
	873.19		-4.040E-02	3.084E-01	4.832E-01	5.883E-02	-0.084
	996.26		-9.027E-02	4.185E-01	6.623E-01	1.166E-01	-0.136
TB-160	1004.73		-3.989E-03	2.447E-01	3.960E-01	4.683E-02	-0.010
	1274.44	*	-7.614E-02	1.462E-01	2.298E-01	2.575E-02	-0.331
	86.55	+	1.563E-01	1.587E-01	1.947E-01	1.829E-02	0.803
TB-160	105.31	*	-7.930E-02	1.163E-01	1.790E-01	1.574E-02	-0.443
	86.79	+	4.148E-01	4.211E-01	5.165E-01	4.823E-02	0.803
	197.04		1.279E-01	5.560E-01	9.410E-01	8.272E-02	0.136
TB-160	215.65		-2.139E-01	8.223E-01	1.308E+00	1.169E-01	-0.164
	298.57		1.707E-01	1.851E-01	2.171E-01	1.974E-02	0.786
	879.36	*	-6.379E-04	1.617E-01	2.644E-01	2.384E-02	-0.002
TB-160	962.29		3.938E-01	6.419E-01	9.814E-01	8.808E-02	0.401

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		966.15		5.448E-01	2.558E-01	4.797E-01	4.302E-02	1.136
		1177.93		9.109E-02	4.814E-01	8.202E-01	6.651E-02	0.111
		1271.85		2.428E-01	8.195E-01	1.411E+00	1.182E-01	0.172
		80.57		-5.886E-02	3.203E-01	4.544E-01	3.980E-02	-0.130
		184.41		6.229E-02	4.250E-02	6.738E-02	5.847E-03	0.924
		280.46		-9.237E-02	9.409E-02	1.457E-01	1.332E-02	-0.634
		410.95		1.929E-01	2.898E-01	4.893E-01	3.990E-02	0.394
		711.68	*	-3.488E-03	6.852E-02	1.131E-01	9.539E-03	-0.031
TA-182		752.31		1.718E-01	3.091E-01	5.356E-01	4.613E-02	0.321
		810.29		-1.468E-02	6.456E-02	1.036E-01	9.146E-03	-0.142
		67.75		2.737E-02	1.310E-01	1.912E-01	1.515E-02	0.143
		100.11		2.028E-02	2.035E-01	3.265E-01	2.871E-02	0.062
		152.43		-3.710E-02	3.699E-01	6.229E-01	5.307E-02	-0.060
		222.11		-2.542E-01	3.722E-01	5.977E-01	5.371E-02	-0.425
	+	1121.30		3.495E-01	2.307E-01	4.006E-01	3.364E-02	0.873
		1189.05		-2.718E-02	3.887E-01	6.481E-01	5.278E-02	-0.042
IR-192		1221.41	*	-2.226E-01	2.616E-01	4.063E-01	3.349E-02	-0.548
		1231.02		-4.909E-01	6.456E-01	1.014E+00	8.382E-02	-0.484
	+	295.96		7.398E-01	2.326E-01	2.878E-01	2.636E-02	2.571
		308.46		5.082E-02	1.070E-01	1.750E-01	1.590E-02	0.290
HG-203		316.51	*	-2.094E-03	4.085E-02	6.677E-02	6.015E-03	-0.031
		468.07		-4.785E-02	7.737E-02	1.177E-01	1.063E-02	-0.407
		70.83		-3.192E-01	1.571E+00	2.227E+00	3.514E-01	-0.143
		72.87		1.065E+00	8.607E-01	1.430E+00	2.190E-01	0.744
BI-207		279.20	*	2.180E-02	4.292E-02	7.267E-02	6.797E-03	0.300
		72.81		2.059E-01	1.948E-01	3.262E-01	2.674E-02	0.631
	+	74.97		5.478E-01	1.697E-01	2.391E-01	1.993E-02	2.291
		569.70		2.177E-04	3.401E-02	5.714E-02	4.841E-03	0.004
PB-210		1063.66	*	1.491E-02	6.957E-02	1.161E-01	1.007E-02	0.128
		1770.23		2.642E-01	4.747E-01	7.960E-01	6.665E-02	0.332
		46.54	*	2.193E+00	4.390E+00	7.157E+00	6.703E-01	0.306
		404.85	*	-2.280E-01	7.909E-01	1.240E+00	5.988E-01	-0.184
PB-211		427.09		-6.932E-01	1.768E+00	2.719E+00	1.256E+00	-0.255
		832.01		-8.607E-01	1.248E+00	1.774E+00	9.208E-01	-0.485
	+	727.33	*	1.119E+00	9.194E-01	1.254E+00	1.553E-01	0.892
		785.37		6.627E-01	3.526E+00	5.910E+00	5.164E-01	0.112
RN-219		1620.50		9.048E-01	2.211E+00	3.932E+00	3.384E-01	0.230
		271.23		3.187E-01	2.554E-01	4.460E-01	4.775E-02	0.714
		401.81	*	1.956E-01	4.473E-01	7.462E-01	1.088E-01	0.262
		81.07		-3.317E-02	2.515E-01	3.577E-01	3.148E-02	-0.093
RA-223		83.79		-6.102E-03	1.512E-01	2.127E-01	1.924E-02	-0.029
		94.87		-7.701E-01	5.491E-01	8.228E-01	7.400E-02	-0.936
		144.24		3.557E-01	7.106E-01	1.191E+00	1.138E-01	0.299
		154.21		-9.440E-02	4.196E-01	7.028E-01	6.572E-02	-0.134
		269.46		2.134E-01	1.941E-01	3.380E-01	3.148E-02	0.631
		323.87	*	-1.884E-01	7.039E-01	1.132E+00	1.979E-01	-0.167
	+	338.28		5.978E+00	2.226E+00	2.574E+00	3.141E-01	2.323
		79.69		3.345E-01	1.460E+00	2.118E+00	3.658E-01	0.158
AC-227		235.96		1.766E-01	1.775E-01	2.750E-01	2.947E-02	0.642

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-227		256.23	*	-2.133E-03	2.657E-01	4.397E-01	5.463E-02	-0.005
	+	299.98		1.907E+00	1.684E+00	1.750E+00	2.280E-01	1.090
		304.50		-3.688E-01	1.917E+00	2.712E+00	4.546E-01	-0.136
		334.37		-1.038E+00	2.133E+00	2.909E+00	4.571E-01	-0.357
		79.80		6.325E-01	1.910E+00	2.781E+00	6.065E-01	0.227
		235.96		1.766E-01	1.774E-01	2.750E-01	2.792E-02	0.642
TH-229		256.23	*	-2.133E-03	2.657E-01	4.397E-01	6.128E-02	-0.005
	+	299.98		1.907E+00	1.684E+00	1.750E+00	2.280E-01	1.090
		304.50		-3.688E-01	1.917E+00	2.712E+00	4.546E-01	-0.136
		334.37		-1.038E+00	2.133E+00	2.909E+00	4.571E-01	-0.357
		85.43		3.260E-01	2.447E-01	3.670E-01	3.377E-02	0.888
	+	88.47		1.988E-01	2.018E-01	2.446E-01	2.304E-02	0.813
PA-231		193.51	*	3.633E-02	5.210E-01	8.759E-01	7.673E-02	0.041
	+	210.85		1.791E+00	1.413E+00	1.695E+00	1.510E-01	1.056
		283.69	*	1.446E+00	1.533E+00	2.642E+00	3.936E-01	0.547
TH-231	+	301.36		1.225E+00	1.081E+00	1.124E+00	1.403E-01	1.090
		81.07		-3.317E-02	2.515E-01	3.577E-01	3.148E-02	-0.093
		83.79		-6.102E-03	1.512E-01	2.127E-01	1.924E-02	-0.029
PA-233		94.87		-7.701E-01	5.491E-01	8.228E-01	7.400E-02	-0.936
		144.24		3.557E-01	7.106E-01	1.191E+00	1.138E-01	0.299
		154.21		-9.440E-02	4.196E-01	7.028E-01	6.572E-02	-0.134
		269.46		2.134E-01	1.941E-01	3.380E-01	3.148E-02	0.631
		323.87	*	-1.884E-01	7.039E-01	1.132E+00	1.979E-01	-0.167
	+	338.28		5.978E+00	2.226E+00	2.574E+00	3.141E-01	2.323
	+	300.13		8.629E-01	7.646E-01	7.913E-01	1.195E-01	1.090
		311.90	*	2.899E-02	7.443E-02	1.248E-01	1.156E-02	0.232
		340.48		3.163E+00	1.150E+00	1.545E+00	3.728E-01	2.047
	PA-234	94.67		-5.219E-02	1.984E-01	3.142E-01	3.981E-02	-0.166
		98.44		5.905E-02	1.069E-01	1.667E-01	9.308E-02	0.354
		111.00		-3.879E-03	1.987E-01	3.160E-01	3.830E-02	-0.012
PA-234M		131.20		9.646E-03	1.339E-01	1.878E-01	1.624E-02	0.051
		569.50		1.697E-02	3.032E-01	5.112E-01	4.331E-02	0.033
		733.00		8.926E-02	4.276E-01	6.318E-01	1.400E-01	0.141
		880.51		1.208E-01	3.248E-01	5.511E-01	4.971E-02	0.219
		883.24		2.888E-01	3.840E-01	5.889E-01	3.962E-01	0.490
		926.50		3.035E-02	2.057E-01	3.403E-01	8.650E-02	0.089
		946.00	*	5.859E-02	3.390E-01	5.621E-01	1.065E-01	0.104
		949.00		3.116E-01	5.126E-01	8.863E-01	7.975E-02	0.352
		766.42		7.784E+00	1.445E+01	2.394E+01	1.215E+01	0.325
		1001.03	*	1.701E-01	6.016E+00	9.461E+00	9.644E-01	0.018
	TH-234	63.29	*	2.910E+00	2.147E+00	2.617E+00	4.701E-01	1.112
		92.59		1.710E-01	8.383E-01	1.383E+00	3.081E-01	0.124
U-235		89.96		-4.522E+00	1.668E+00	1.450E+00	3.604E-01	-3.119
		93.35		7.618E-01	6.316E-01	1.037E+00	2.414E-01	0.734
		143.76	*	-1.002E-02	2.160E-01	3.548E-01	6.002E-02	-0.028
		163.33		8.433E-02	4.438E-01	7.542E-01	1.350E-01	0.112
U-238	+	185.72		1.378E-01	8.989E-02	9.606E-02	8.347E-03	1.435
		205.31		8.386E-02	5.467E-01	8.127E-01	1.484E-01	0.103
	+	63.29	*	2.910E+00	2.147E+00	2.617E+00	4.701E-01	1.112

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	92.59			1.710E-01	8.375E-01	1.383E+00	1.261E-01	0.124
	99.53			1.979E-01	1.837E-01	3.063E-01	2.698E-02	0.646
	103.37			2.043E-02	1.105E-01	1.779E-01	1.551E-02	0.115
	106.12			-6.537E-02	9.245E-02	1.421E-01	1.234E-02	-0.460
	117.23	*		-9.701E-02	4.283E-01	6.723E-01	5.857E-02	-0.144
	228.18			1.657E-01	2.342E-01	4.023E-01	3.630E-02	0.412
AM-241	277.60			1.918E-01	1.924E-01	3.332E-01	3.047E-02	0.576
	59.54	*		6.243E-02	1.884E-01	2.784E-01	2.294E-02	0.224
CM-247	278.00			6.927E-01	8.179E-01	1.407E+00	1.287E-01	0.492
	287.50			-4.451E-01	1.285E+00	2.070E+00	1.889E-01	-0.215
CF-249	402.40	*		1.956E-03	4.029E-02	6.547E-02	5.309E-03	0.030
	252.80			-4.959E-01	9.896E-01	1.590E+00	1.452E-01	-0.312
	333.37			-1.255E-01	2.289E-01	3.112E-01	2.755E-02	-0.403
	388.16	*		1.677E-02	4.648E-02	7.724E-02	6.263E-03	0.217
CF-251	177.52	*		7.856E-02	1.308E-01	2.256E-01	1.943E-02	0.348
	227.38			2.382E-01	3.882E-01	6.641E-01	5.989E-02	0.359
	285.41			2.388E-01	2.287E+00	3.792E+00	3.464E-01	0.063

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248137001      *
* Acquisition date   : 10-MAR-2010 14:58:13 Detector SN#                   *
* Detector ID        : GAM01 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.06 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 23-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248137001 Analyst initials: MXR1                 *
* Batch Number       : 959270 Sample Quantity : 1.2420E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52 MS Isotope                   *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                               *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.744E+01	3.902E+00	4.963E-01	0.000E+00
CD-109	1.319E+00	1.312E+00	1.556E+00	0.000E+00
SN-126	1.289E-01	1.283E-01	1.533E-01	0.000E+00
TL-208	4.273E-01	9.107E-02	6.786E-02	0.000E+00
BI-211	2.760E+00	5.073E-01	3.988E-01	0.000E+00
PB-212	1.353E+00	1.807E-01	1.077E-01	0.000E+00
BI-214	1.007E+00	1.929E-01	1.204E-01	0.000E+00
PB-214	1.002E+00	1.919E-01	1.438E-01	0.000E+00
RA-224	3.076E+00	1.091E+00	1.154E+00	0.000E+00
RA-226	1.007E+00	1.929E-01	1.204E-01	0.000E+00
AC-228	1.281E+00	3.791E-01	2.801E-01	0.000E+00
RA-228	1.281E+00	3.791E-01	2.801E-01	0.000E+00
TH-228	1.353E+00	1.807E-01	1.077E-01	0.000E+00
TH-232	1.281E+00	3.791E-01	2.801E-01	0.000E+00
NP-237	3.847E-01	3.908E-01	4.274E-01	0.000E+00
ANH-511	9.684E-02	8.395E-02	5.452E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-3.765E-01	3.790E-01	5.757E-01	0.000E+00 NOT IDENT.
NA-22	-3.353E-02	5.096E-02	8.070E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	7.452E+05	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-3.174E-02	4.560E-02	7.082E-02	0.000E+00 FAIL ABUN
V-48	5.989E-02	7.751E-02	1.395E-01	0.000E+00 NOT IDENT.
CR-51	1.192E-01	4.165E-01	7.221E-01	0.000E+00 NOT IDENT.
MN-54	4.799E-02	4.219E-02	7.787E-02	0.000E+00 NOT IDENT.
CO-56	-5.657E-03	4.376E-02	7.273E-02	0.000E+00 NOT IDENT.
CO-57	-1.134E-03	2.805E-02	4.597E-02	0.000E+00 NOT IDENT.
CO-58	-1.097E-02	4.189E-02	6.888E-02	0.000E+00 NOT IDENT.
FE-59	2.693E-02	1.163E-01	1.961E-01	0.000E+00 NOT IDENT.

CO-60	-4.022E-02	4.122E-02	6.006E-02	0.000E+00	NOT IDENT.
ZN-65	-1.180E-01	1.317E-01	1.616E-01	0.000E+00	NOT IDENT.
SE-75	-8.495E-03	4.338E-02	7.394E-02	0.000E+00	NOT IDENT.
SR-85	7.297E-02	5.418E-02	8.728E-02	0.000E+00	NOT IDENT.
Y-88	-8.605E-03	3.386E-02	5.228E-02	0.000E+00	NOT IDENT.
Y-91	-2.801E+01	2.456E+01	3.730E+01	0.000E+00	NOT IDENT.
NB-94	2.382E-02	3.764E-02	6.745E-02	0.000E+00	NOT IDENT.
NB-95	-3.117E-02	5.288E-02	8.554E-02	0.000E+00	NOT IDENT.
NB-95M	1.071E-01	1.429E-01	2.284E-01	0.000E+00	NOT IDENT.
ZR-95	-4.746E-02	8.169E-02	1.312E-01	0.000E+00	NOT IDENT.
MO-99	1.108E+01	1.378E+01	2.490E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.949E+16	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.505E-02	4.173E-02	6.496E-02	0.000E+00	FAIL ABUN
RH-106	1.815E-02	3.091E-01	5.355E-01	0.000E+00	NOT IDENT.
RU-106	1.815E-02	3.091E-01	5.355E-01	0.000E+00	NOT IDENT.
AG-108M	3.416E-03	3.313E-02	5.580E-02	0.000E+00	NOT IDENT.
AG-110M	2.234E-03	3.530E-02	6.093E-02	0.000E+00	NOT IDENT.
SN-113	-3.618E-02	4.780E-02	7.571E-02	0.000E+00	NOT IDENT.
CD-115	-2.658E+00	1.266E+01	2.173E+01	0.000E+00	NOT IDENT.
SN-117M	-1.238E-02	5.620E-02	9.876E-02	0.000E+00	NOT IDENT.
TE-123M	-1.456E-02	2.911E-02	5.051E-02	0.000E+00	NOT IDENT.
SB-124	-5.546E-02	7.104E-02	9.243E-02	0.000E+00	NOT IDENT.
SB-125	8.288E-04	9.960E-02	1.667E-01	0.000E+00	NOT IDENT.
TE-125M	1.512E+01	1.035E+01	1.837E+01	0.000E+00	NOT IDENT.
I-126	-1.313E-01	2.466E-01	4.039E-01	0.000E+00	NOT IDENT.
SB-126	-6.818E-02	1.765E-01	2.729E-01	0.000E+00	NOT IDENT.
SB-127	2.073E-01	1.424E+00	2.467E+00	0.000E+00	NOT IDENT.
I-131	-3.882E-02	1.210E-01	1.998E-01	0.000E+00	NOT IDENT.
TE-132	5.643E-01	7.797E-01	1.394E+00	0.000E+00	NOT IDENT.
BA-133	3.583E-02	4.938E-02	7.796E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	6.602E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	3.630E-02	5.540E-02	9.863E-02	0.000E+00	NOT IDENT.
CS-135	-1.190E-01	1.611E-01	2.652E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.358E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	9.100E-02	1.285E-01	2.277E-01	0.000E+00	NOT IDENT.
BA-137M	4.157E-03	3.771E-02	6.529E-02	0.000E+00	NOT IDENT.
CS-137	4.392E-03	3.983E-02	6.897E-02	0.000E+00	NOT IDENT.
CE-139	-8.691E-03	3.048E-02	5.328E-02	0.000E+00	NOT IDENT.
BA-140	2.919E-02	2.877E-01	5.043E-01	0.000E+00	NOT IDENT.
LA-140	1.776E-02	9.926E-02	1.706E-01	0.000E+00	NOT IDENT.
CE-141	1.304E-02	6.237E-02	1.120E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.645E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-7.265E-02	2.437E-01	3.505E-01	0.000E+00	NOT IDENT.
PM-144	-1.255E-02	3.637E-02	6.026E-02	0.000E+00	NOT IDENT.
PR-144	-9.440E-01	2.721E+00	4.508E+00	0.000E+00	NOT IDENT.
PM-146	-5.090E-02	4.731E-02	7.135E-02	0.000E+00	NOT IDENT.
ND-147	-1.045E-01	6.164E-01	1.060E+00	0.000E+00	NOT IDENT.
PM-149	-5.127E+01	9.679E+01	1.604E+02	0.000E+00	NOT IDENT.
EU-152	-5.798E-02	1.214E-01	1.723E-01	0.000E+00	NOT IDENT.
GD-153	-7.161E-02	9.292E-02	1.513E-01	0.000E+00	NOT IDENT.
EU-154	-7.614E-02	1.432E-01	2.300E-01	0.000E+00	NOT IDENT.
EU-155	-7.930E-02	1.139E-01	1.853E-01	0.000E+00	FAIL ABUN
TB-160	-6.379E-04	1.585E-01	2.660E-01	0.000E+00	FAIL ABUN
HO-166M	-3.488E-03	6.715E-02	1.141E-01	0.000E+00	NOT IDENT.
TA-182	-2.226E-01	2.563E-01	4.068E-01	0.000E+00	FAIL ABUN
IR-192	-2.094E-03	4.004E-02	6.811E-02	0.000E+00	FAIL ABUN
HG-203	2.180E-02	4.206E-02	7.426E-02	0.000E+00	NOT IDENT.
BI-207	1.491E-02	6.818E-02	1.165E-01	0.000E+00	FAIL ABUN
PB-210	2.193E+00	4.302E+00	7.487E+00	0.000E+00	NOT IDENT.
PB-211	-2.280E-01	7.751E-01	1.260E+00	0.000E+00	NOT IDENT.
BI-212	1.119E+00	9.010E-01	1.265E+00	0.000E+00	FAIL ABUN
RN-219	1.956E-01	4.383E-01	7.587E-01	0.000E+00	NOT IDENT.
RA-223	-1.884E-01	6.898E-01	1.154E+00	0.000E+00	FAIL ABUN
AC-227	-2.133E-03	2.604E-01	4.498E-01	0.000E+00	FAIL ABUN
TH-227	-2.133E-03	2.604E-01	4.498E-01	0.000E+00	FAIL ABUN
TH-229	3.633E-02	5.106E-01	8.994E-01	0.000E+00	FAIL ABUN
PA-231	1.446E+00	1.502E+00	2.699E+00	0.000E+00	FAIL ABUN
TH-231	-1.884E-01	6.898E-01	1.154E+00	0.000E+00	FAIL ABUN
PA-233	2.899E-02	7.294E-02	1.274E-01	0.000E+00	FAIL ABUN
PA-234	5.859E-02	3.322E-01	5.648E-01	0.000E+00	NOT IDENT.
PA-234M	1.701E-01	5.896E+00	9.501E+00	0.000E+00	NOT IDENT.
TH-234	0.000E+00	2.104E+00	2.727E+00	0.000E+00	FAIL ABUN
U-235	-1.002E-02	2.117E-01	3.658E-01	0.000E+00	FAIL ABUN
U-238	0.000E+00	2.104E+00	2.727E+00	0.000E+00	FAIL ABUN
NP-239	-9.701E-02	4.197E-01	6.950E-01	0.000E+00	NOT IDENT.
AM-241	6.243E-02	1.846E-01	2.903E-01	0.000E+00	NOT IDENT.
CM-247	1.956E-03	3.948E-02	6.657E-02	0.000E+00	NOT IDENT.
CF-249	1.677E-02	4.555E-02	7.857E-02	0.000E+00	NOT IDENT.

CF-251	7.856E-02	1.282E-01	2.319E-01	0.000E+00 NOT IDENT.
--------	-----------	-----------	-----------	----------------------

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248137001.CNF;1
Sample date       : 23-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 14:58:13
Sample ID        : G248137001 Sample quantity : 1.24200E+02 GRAM
Detector name    : GAM01 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.06 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 959270 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
K-40	1460.82	1249	10.66*	9.455E-01	3.744E+01	3.744E+01	10.64
CD-109	88.03	82	3.70*	5.196E+00	1.289E+00	1.319E+00	101.53
SN-126	64.28	99	9.60	2.771E+00	1.121E+00	1.121E+00	73.06
	86.94	82	8.90	5.196E+00	5.360E-01	5.360E-01	109.29
	87.57	82	37.00*	5.196E+00	1.289E-01	1.289E-01	101.53
TL-208	277.37	-----	6.60	3.885E+00	-----	Line Not Found	-----
	583.19	257	85.00*	2.142E+00	4.273E-01	4.273E-01	21.75
	860.56	38	12.50	1.521E+00	6.052E-01	6.052E-01	80.20
BI-211	72.87	-----	1.23	3.944E+00	-----	Line Not Found	-----
	351.06	381	12.92*	3.225E+00	2.760E+00	2.760E+00	18.75
PB-212	74.82	269	10.28	4.161E+00	1.901E+00	1.901E+00	32.46
	77.11	389	17.10	4.385E+00	1.568E+00	1.568E+00	19.88
	238.63	848	43.60*	4.345E+00	1.353E+00	1.353E+00	13.63
	300.09	69	3.30	3.651E+00	1.734E+00	1.734E+00	88.00
BI-214	609.32	313	45.49*	2.064E+00	1.007E+00	1.007E+00	19.56
	1120.29	44	14.92	1.193E+00	7.459E-01	7.459E-01	66.35
	1764.49	45	15.30	8.254E-01	1.073E+00	1.073E+00	39.97
PB-214	74.82	269	5.80	4.161E+00	3.369E+00	3.369E+00	31.97
	77.11	389	9.70	4.385E+00	2.765E+00	2.765E+00	21.52
	242.00	180	7.25	4.306E+00	1.740E+00	1.740E+00	36.63
	295.22	226	18.42	3.699E+00	1.000E+00	1.000E+00	32.09
	351.93	381	35.60*	3.225E+00	1.002E+00	1.002E+00	19.55
RA-224	240.99	180	4.10*	4.306E+00	3.076E+00	3.076E+00	36.17
RA-226	609.32	313	45.49*	2.064E+00	1.007E+00	1.007E+00	19.56
	1120.29	44	14.92	1.193E+00	7.459E-01	7.459E-01	66.35
	1764.49	45	15.30	8.254E-01	1.073E+00	1.073E+00	39.97
AC-228	338.32	187	11.27	3.327E+00	1.506E+00	1.506E+00	54.60
	911.20	158	25.80*	1.444E+00	1.281E+00	1.281E+00	30.21
	968.97	181	15.80	1.365E+00	2.536E+00	2.536E+00	33.37
RA-228	338.32	187	11.27	3.327E+00	1.506E+00	1.506E+00	54.60
	911.20	158	25.80*	1.444E+00	1.281E+00	1.281E+00	30.21
	968.97	181	15.80	1.365E+00	2.536E+00	2.536E+00	33.37

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	269	10.28	4.161E+00	1.901E+00	1.901E+00	30.99
	77.11	389	17.10	4.385E+00	1.568E+00	1.568E+00	19.88
	238.63	848	43.60*	4.345E+00	1.353E+00	1.353E+00	13.63
	300.09	69	3.30	3.651E+00	1.734E+00	1.734E+00	106.67
TH-232	338.32	187	11.27	3.327E+00	1.506E+00	1.506E+00	36.26
	911.20	158	25.80*	1.444E+00	1.281E+00	1.281E+00	30.21
	968.97	181	15.80	1.365E+00	2.536E+00	2.536E+00	33.37
NP-237	86.48	82	12.40*	5.196E+00	3.847E-01	3.847E-01	103.67
	95.86	-----	2.68	5.636E+00	-----	Line Not Found	-----
ANH-511	511.00	77	100.00*	2.392E+00	9.684E-02	9.684E-02	88.46

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G248137001

Page : 3
Acquisition date : 10-MAR-2010 14:58:13

Total number of lines in spectrum 25
Number of unidentified lines 3
Number of lines tentatively identified by NID 22 88.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	3.744E+01	3.744E+01	0.398E+01	10.64	
CD-109	461.40D	1.02	1.289E+00	1.319E+00	1.339E+00	101.53	
SN-126	2.30E+05Y	1.00	1.289E-01	1.289E-01	1.309E-01	101.53	
TL-208	1.41E+10Y	1.00	4.273E-01	4.273E-01	0.929E-01	21.75	
BI-211	7.04E+08Y	1.00	2.760E+00	2.760E+00	0.518E+00	18.75	
PB-212	1.41E+10Y	1.00	1.353E+00	1.353E+00	0.184E+00	13.63	
BI-214	1600.00Y	1.00	1.007E+00	1.007E+00	0.197E+00	19.56	
PB-214	1600.00Y	1.00	1.002E+00	1.002E+00	0.196E+00	19.55	
RA-224	1.41E+10Y	1.00	3.076E+00	3.076E+00	1.113E+00	36.17	
RA-226	1600.00Y	1.00	1.007E+00	1.007E+00	0.197E+00	19.56	
AC-228	1.41E+10Y	1.00	1.281E+00	1.281E+00	0.387E+00	30.21	
RA-228	1.41E+10Y	1.00	1.281E+00	1.281E+00	0.387E+00	30.21	
TH-228	1.41E+10Y	1.00	1.353E+00	1.353E+00	0.184E+00	13.63	
TH-232	1.41E+10Y	1.00	1.281E+00	1.281E+00	0.387E+00	30.21	
NP-237	2.14E+06Y	1.00	3.847E-01	3.847E-01	3.988E-01	103.67	
ANH-511	1.00E+09Y	1.00	9.684E-02	9.684E-02	8.567E-02	88.46	

Total Activity : 5.517E+01 5.520E+01

Grand Total Activity : 5.517E+01 5.520E+01

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

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

Unidentified Energy Lines
Sample ID : G248137001

Page : 4
Acquisition date : 10-MAR-2010 14:58:13

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.32	93	278	1.69	259.29	255	9	1.30E-02	67.6	6.02E+00	
0	186.52	134	375	1.50	373.64	367	13	1.87E-02	64.6	5.15E+00	T
0	209.64	79	244	1.52	419.85	415	10	1.10E-02	78.4	4.77E+00	T
0	728.02	44	68	1.15	1455.97	1450	11	6.07E-03	81.2	1.77E+00	T
1	866.45	36	28	1.86	1732.66	1715	22	5.00E-03	66.7	1.51E+00	
0	1378.96	17	18	1.77	2756.93	2750	9	2.35E-03	***	9.92E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 16:58:41.83

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
*                               DETECTOR DATA                          *
*                               *                                         *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G248137001.CNF;1 *
* Acquisition date   : 10-MAR-2010 14:58:13   Detector SN#      :          *
* Detector ID        : GAM01                   Sensitivity       : 5.00000    *
* Geometry           : CAN                     Energy tolerance: 1.50000    *
* Elapsed live time  : 0 02:00:00.00           Abundance limit  : 75.00000    *
* Elapsed real time  : 0 02:00:01.06           Half life ratio : 8.00000    *
*****
*                               SAMPLE DATA                             *
*                               *                                         *
* Sample date        : 23-FEB-2010 12:00:00   Nuclide Library : SOLID      *
* Sample ID          : G248137001             Analyst initials: MXR1       *
* Batch Number       : 959270                  Sample Quantity : 1.24200E+02 GRAM *
*****
*                               QC DATA                                *
*                               *                                         *
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52.7MS Isotope      :          *
* MSD ID              :                          MSD Isotope   :          *
* LCS ID              : 1032-A                  LCS Isotope    :          *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.744E+01	3.982E+00	4.968E-01	4.417E-02	75.356
CD-109	1.319E+00	1.339E+00	1.500E+00	1.419E-01	0.879
SN-126	1.289E-01	1.309E-01	1.478E-01	1.392E-02	0.872
TL-208	4.273E-01	9.293E-02	6.708E-02	6.084E-03	6.370
BI-211	2.760E+00	5.176E-01	3.915E-01	3.561E-02	7.051
PB-212	1.353E+00	1.844E-01	1.052E-01	1.070E-02	12.863
BI-214	1.007E+00	1.969E-01	1.191E-01	1.180E-02	8.453
PB-214	1.002E+00	1.958E-01	1.412E-01	1.501E-02	7.096
RA-224	3.076E+00	1.113E+00	1.128E+00	1.025E-01	2.728
RA-226	1.007E+00	1.969E-01	1.191E-01	1.180E-02	8.453
AC-228	1.281E+00	3.869E-01	2.786E-01	3.320E-02	4.596
RA-228	1.281E+00	3.869E-01	2.786E-01	3.320E-02	4.596
TH-228	1.353E+00	1.844E-01	1.052E-01	1.070E-02	12.863
TH-232	1.281E+00	3.869E-01	2.786E-01	3.320E-02	4.596
NP-237	3.847E-01	3.988E-01	4.118E-01	9.448E-02	0.934
ANH-511	9.684E-02	8.567E-02	5.379E-02	4.559E-03	1.800

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.765E-01		3.867E-01	5.675E-01	5.162E-02	-0.663

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-3.353E-02		5.200E-02	8.064E-02	6.772E-03	-0.416
NA-24	-3.895E-01		3.802E-01	Half-Life too short		
SC-46	-3.174E-02		4.653E-02	7.041E-02	6.365E-03	-0.451
V-48	5.989E-02		7.909E-02	1.389E-01	1.240E-02	0.431
CR-51	1.192E-01		4.250E-01	7.080E-01	6.655E-02	0.168
MN-54	4.799E-02		4.305E-02	7.736E-02	6.885E-03	0.620
CO-56	-5.657E-03		4.465E-02	7.227E-02	6.457E-03	-0.078
CO-57	-1.134E-03		2.862E-02	4.450E-02	3.917E-03	-0.025
CO-58	-1.097E-02		4.275E-02	6.840E-02	6.051E-03	-0.160
FE-59	2.693E-02		1.187E-01	1.955E-01	1.802E-02	0.138
CO-60	-4.022E-02		4.206E-02	6.005E-02	5.119E-03	-0.670
ZN-65	-1.180E-01		1.344E-01	1.612E-01	1.360E-02	-0.732
SE-75	-8.495E-03		4.427E-02	7.231E-02	6.643E-03	-0.117
SR-85	7.297E-02		5.528E-02	8.612E-02	7.302E-03	0.847
Y-88	-8.605E-03		3.455E-02	5.251E-02	4.319E-03	-0.164
Y-91	-2.801E+01		2.506E+01	3.724E+01	3.051E+00	-0.752
NB-94	2.382E-02		3.840E-02	6.684E-02	5.611E-03	0.356
NB-95	-3.117E-02		5.396E-02	8.487E-02	7.354E-03	-0.367
NB-95M	1.071E-01		1.459E-01	2.230E-01	2.292E-02	0.480
ZR-95	-4.746E-02		8.336E-02	1.302E-01	1.241E-02	-0.365
MO-99	1.108E+01		1.406E+01	2.470E+01	3.883E+00	0.449
TC-99M	-1.727E+10		2.015E+10	Half-Life too short		
RU-103	-2.505E-02		4.258E-02	6.407E-02	8.884E-03	-0.391
RH-106	1.815E-02		3.154E-01	5.298E-01	6.932E-02	0.034
RU-106	1.815E-02		3.154E-01	5.298E-01	4.425E-02	0.034
AG-108M	3.416E-03		3.380E-02	5.493E-02	4.701E-03	0.062
AG-110M	2.234E-03		3.602E-02	6.032E-02	5.115E-03	0.037
SN-113	-3.618E-02		4.877E-02	7.443E-02	6.199E-03	-0.486
CD-115	-2.658E+00		1.292E+01	2.145E+01	1.821E+00	-0.124
SN-117M	-1.238E-02		5.734E-02	9.593E-02	8.167E-03	-0.129
TE-123M	-1.456E-02		2.971E-02	4.906E-02	4.203E-03	-0.297
SB-124	-5.546E-02		7.249E-02	9.273E-02	8.240E-03	-0.598
SB-125	8.288E-04		1.016E-01	1.641E-01	1.380E-02	0.005
TE-125M	1.512E+01		1.056E+01	1.775E+01	1.867E+00	0.852
I-126	-1.313E-01		2.516E-01	4.000E-01	3.286E-02	-0.328
SB-126	-6.818E-02		1.801E-01	2.705E-01	2.293E-02	-0.252
SB-127	2.073E-01		1.453E+00	2.444E+00	2.723E-01	0.085
I-131	-3.882E-02		1.235E-01	1.962E-01	1.757E-02	-0.198
TE-132	5.643E-01		7.956E-01	1.361E+00	2.183E-01	0.415
BA-133	3.583E-02		5.039E-02	7.655E-02	9.905E-03	0.468
I-133	2.793E-03		3.368E-03	Half-Life too short		
CS-134	3.630E-02		5.653E-02	9.791E-02	8.653E-03	0.371
CS-135	-1.190E-01		1.644E-01	2.594E-01	2.705E-02	-0.459
I-135	5.223E+09		4.264E+09	Half-Life too short		
CS-136	9.100E-02		1.311E-01	2.269E-01	2.062E-02	0.401
BA-137M	4.157E-03		3.848E-02	6.465E-02	5.295E-03	0.064
CS-137	4.392E-03		4.065E-02	6.830E-02	5.606E-03	0.064
CE-139	-8.691E-03		3.110E-02	5.178E-02	4.410E-03	-0.168

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-140	2.919E-02		2.936E-01	4.980E-01	1.687E-01	0.059
LA-140	1.776E-02		1.013E-01	1.711E-01	1.476E-02	0.104
CE-141	1.304E-02		6.365E-02	1.087E-01	9.454E-03	0.120
CE-143	2.456E-04		8.395E-05	Half-Life too short		
CE-144	-7.265E-02		2.487E-01	3.397E-01	5.192E-02	-0.214
PM-144	-1.255E-02		3.711E-02	5.971E-02	4.997E-03	-0.210
PR-144	-9.440E-01		2.777E+00	4.467E+00	3.737E-01	-0.211
PM-146	-5.090E-02		4.828E-02	7.028E-02	7.287E-03	-0.724
ND-147	-1.045E-01		6.290E-01	1.047E+00	1.557E-01	-0.100
PM-149	-5.127E+01		9.877E+01	1.570E+02	2.486E+01	-0.327
EU-152	-5.798E-02		1.239E-01	1.691E-01	1.563E-02	-0.343
GD-153	-7.161E-02		9.482E-02	1.460E-01	1.297E-02	-0.490
EU-154	-7.614E-02		1.462E-01	2.298E-01	2.575E-02	-0.331
EU-155	-7.930E-02		1.163E-01	1.790E-01	1.574E-02	-0.443
TB-160	-6.379E-04		1.617E-01	2.644E-01	2.384E-02	-0.002
HO-166M	-3.488E-03		6.852E-02	1.131E-01	9.539E-03	-0.031
TA-182	-2.226E-01		2.616E-01	4.063E-01	3.349E-02	-0.548
IR-192	-2.094E-03		4.085E-02	6.677E-02	6.015E-03	-0.031
HG-203	2.180E-02		4.292E-02	7.267E-02	6.797E-03	0.300
BI-207	1.491E-02		6.957E-02	1.161E-01	1.007E-02	0.128
PB-210	2.193E+00		4.390E+00	7.157E+00	6.703E-01	0.306
PB-211	-2.280E-01		7.909E-01	1.240E+00	5.988E-01	-0.184
BI-212	1.119E+00	+	9.194E-01	1.254E+00	1.553E-01	0.892
RN-219	1.956E-01		4.473E-01	7.462E-01	1.088E-01	0.262
RA-223	-1.884E-01		7.039E-01	1.132E+00	1.979E-01	-0.167
AC-227	-2.133E-03		2.657E-01	4.397E-01	5.463E-02	-0.005
TH-227	-2.133E-03		2.657E-01	4.397E-01	6.128E-02	-0.005
TH-229	3.633E-02		5.210E-01	8.759E-01	7.673E-02	0.041
PA-231	1.446E+00		1.533E+00	2.642E+00	3.936E-01	0.547
TH-231	-1.884E-01		7.039E-01	1.132E+00	1.979E-01	-0.167
PA-233	2.899E-02		7.443E-02	1.248E-01	1.156E-02	0.232
PA-234	5.859E-02		3.390E-01	5.621E-01	1.065E-01	0.104
PA-234M	1.701E-01		6.016E+00	9.461E+00	9.644E-01	0.018
TH-234	2.910E+00	+	2.147E+00	2.617E+00	4.701E-01	1.112
U-235	-1.002E-02		2.160E-01	3.548E-01	6.002E-02	-0.028
U-238	2.910E+00	+	2.147E+00	2.617E+00	4.701E-01	1.112
NP-239	-9.701E-02		4.283E-01	6.723E-01	5.857E-02	-0.144
AM-241	6.243E-02		1.884E-01	2.784E-01	2.294E-02	0.224
CM-247	1.956E-03		4.029E-02	6.547E-02	5.309E-03	0.030
CF-249	1.677E-02		4.648E-02	7.724E-02	6.263E-03	0.217
CF-251	7.856E-02		1.308E-01	2.256E-01	1.943E-02	0.348

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G248137001          *
* Acquisition date   : 10-MAR-2010 14:58:13 Detector SN#      :             *
* Detector ID        : GAM01                      Sensitivity   : 5.000        *
* Geometry           : CAN                        Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00              Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:01.06              Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 23-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G248137001              Analyst initials: MXR1          *
* Batch Number       : 959270                  Sample Quantity : 1.2420E+02 GRAM *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52 MS Isotope         :             *
* MSD DPM             : 0.000                      MSD Isotope   :             *
* LCS DPM             : 0.000                      LCS Isotope   :             *
* LCSD DPM            : 0.000                      LCSD Isotope  :             *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	3.744E+01	3.902E+00	2.483E-01	1.991E+00
CD-109	1.319E+00	1.312E+00	7.786E-01	6.696E-01
SN-126	1.289E-01	1.283E-01	7.671E-02	6.545E-02
TL-208	4.273E-01	9.107E-02	3.395E-02	4.647E-02
BI-211	2.760E+00	5.073E-01	1.995E-01	2.588E-01
PB-212	1.353E+00	1.807E-01	5.388E-02	9.219E-02
BI-214	1.007E+00	1.929E-01	6.023E-02	9.843E-02
PB-214	1.002E+00	1.919E-01	7.195E-02	9.791E-02
RA-224	3.076E+00	1.091E+00	5.776E-01	5.564E-01
RA-226	1.007E+00	1.929E-01	6.023E-02	9.843E-02
AC-228	1.281E+00	3.791E-01	1.402E-01	1.934E-01
RA-228	1.281E+00	3.791E-01	1.402E-01	1.934E-01
TH-228	1.353E+00	1.807E-01	5.388E-02	9.219E-02
TH-232	1.281E+00	3.791E-01	1.402E-01	1.934E-01
NP-237	3.847E-01	3.908E-01	2.138E-01	1.994E-01
ANH-511	9.684E-02	8.395E-02	2.728E-02	4.283E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-3.765E-01	3.790E-01	2.880E-01	1.934E-01 NOT IDENT.
NA-22	-3.353E-02	5.096E-02	4.037E-02	2.600E-02 NOT IDENT.
NA-24	-3.895E+05	7.452E+05	0.000E+00	3.802E+05 SHORT HLIF
SC-46	-3.174E-02	4.560E-02	3.543E-02	2.326E-02 FAIL ABUN
V-48	5.989E-02	7.751E-02	6.980E-02	3.955E-02 NOT IDENT.
CR-51	1.192E-01	4.165E-01	3.613E-01	2.125E-01 NOT IDENT.
MN-54	4.799E-02	4.219E-02	3.896E-02	2.153E-02 NOT IDENT.
CO-56	-5.657E-03	4.376E-02	3.639E-02	2.232E-02 NOT IDENT.
CO-57	-1.134E-03	2.805E-02	2.300E-02	1.431E-02 NOT IDENT.
CO-58	-1.097E-02	4.189E-02	3.446E-02	2.137E-02 NOT IDENT.
FE-59	2.693E-02	1.163E-01	9.809E-02	5.933E-02 NOT IDENT.

CO-60	-4.022E-02	4.122E-02	3.005E-02	2.103E-02	NOT IDENT.
ZN-65	-1.180E-01	1.317E-01	8.084E-02	6.719E-02	NOT IDENT.
SE-75	-8.495E-03	4.338E-02	3.699E-02	2.213E-02	NOT IDENT.
SR-85	7.297E-02	5.418E-02	4.366E-02	2.764E-02	NOT IDENT.
Y-88	-8.605E-03	3.386E-02	2.616E-02	1.728E-02	NOT IDENT.
Y-91	-2.801E+01	2.456E+01	1.866E+01	1.253E+01	NOT IDENT.
NB-94	2.382E-02	3.764E-02	3.374E-02	1.920E-02	NOT IDENT.
NB-95	-3.117E-02	5.288E-02	4.279E-02	2.698E-02	NOT IDENT.
NB-95M	1.071E-01	1.429E-01	1.143E-01	7.293E-02	NOT IDENT.
ZR-95	-4.746E-02	8.169E-02	6.565E-02	4.168E-02	NOT IDENT.
MO-99	1.108E+01	1.378E+01	1.246E+01	7.030E+00	NOT IDENT.
TC-99M	-1.727E+16	3.949E+16	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.505E-02	4.173E-02	3.250E-02	2.129E-02	FAIL ABUN
RH-106	1.815E-02	3.091E-01	2.679E-01	1.577E-01	NOT IDENT.
RU-106	1.815E-02	3.091E-01	2.679E-01	1.577E-01	NOT IDENT.
AG-108M	3.416E-03	3.313E-02	2.792E-02	1.690E-02	NOT IDENT.
AG-110M	2.234E-03	3.530E-02	3.048E-02	1.801E-02	NOT IDENT.
SN-113	-3.618E-02	4.780E-02	3.788E-02	2.439E-02	NOT IDENT.
CD-115	-2.658E+00	1.266E+01	1.087E+01	6.460E+00	NOT IDENT.
SN-117M	-1.238E-02	5.620E-02	4.941E-02	2.867E-02	NOT IDENT.
TE-123M	-1.456E-02	2.911E-02	2.527E-02	1.485E-02	NOT IDENT.
SB-124	-5.546E-02	7.104E-02	4.624E-02	3.625E-02	NOT IDENT.
SB-125	8.288E-04	9.960E-02	8.342E-02	5.082E-02	NOT IDENT.
TE-125M	1.512E+01	1.035E+01	9.189E+00	5.278E+00	NOT IDENT.
I-126	-1.313E-01	2.466E-01	2.021E-01	1.258E-01	NOT IDENT.
SB-126	-6.818E-02	1.765E-01	1.365E-01	9.004E-02	NOT IDENT.
SB-127	2.073E-01	1.424E+00	1.234E+00	7.265E-01	NOT IDENT.
I-131	-3.882E-02	1.210E-01	9.994E-02	6.174E-02	NOT IDENT.
TE-132	5.643E-01	7.797E-01	6.975E-01	3.978E-01	NOT IDENT.
BA-133	3.583E-02	4.938E-02	3.900E-02	2.519E-02	NOT IDENT.
I-133	2.793E+03	6.602E+03	0.000E+00	3.368E+03	SHORT HLIF
CS-134	3.630E-02	5.540E-02	4.935E-02	2.826E-02	NOT IDENT.
CS-135	-1.190E-01	1.611E-01	1.327E-01	8.219E-02	NOT IDENT.
I-135	5.223E+15	8.358E+15	0.000E+00	4.264E+15	SHORT HLIF
CS-136	9.100E-02	1.285E-01	1.139E-01	6.555E-02	NOT IDENT.
BA-137M	4.157E-03	3.771E-02	3.266E-02	1.924E-02	NOT IDENT.
CS-137	4.392E-03	3.983E-02	3.451E-02	2.032E-02	NOT IDENT.
CE-139	-8.691E-03	3.048E-02	2.665E-02	1.555E-02	NOT IDENT.
BA-140	2.919E-02	2.877E-01	2.523E-01	1.468E-01	NOT IDENT.
LA-140	1.776E-02	9.926E-02	8.537E-02	5.064E-02	NOT IDENT.
CE-141	1.304E-02	6.237E-02	5.605E-02	3.182E-02	NOT IDENT.
CE-143	2.456E+02	1.645E+02	0.000E+00	8.395E+01	SHORT HLIF
CE-144	-7.265E-02	2.437E-01	1.754E-01	1.243E-01	NOT IDENT.
PM-144	-1.255E-02	3.637E-02	3.015E-02	1.856E-02	NOT IDENT.
PR-144	-9.440E-01	2.721E+00	2.256E+00	1.389E+00	NOT IDENT.
PM-146	-5.090E-02	4.731E-02	3.569E-02	2.414E-02	NOT IDENT.
ND-147	-1.045E-01	6.164E-01	5.305E-01	3.145E-01	NOT IDENT.
PM-149	-5.127E+01	9.679E+01	8.024E+01	4.938E+01	NOT IDENT.
EU-152	-5.798E-02	1.214E-01	8.619E-02	6.193E-02	NOT IDENT.
GD-153	-7.161E-02	9.292E-02	7.570E-02	4.741E-02	NOT IDENT.
EU-154	-7.614E-02	1.432E-01	1.151E-01	7.308E-02	NOT IDENT.
EU-155	-7.930E-02	1.139E-01	9.270E-02	5.813E-02	FAIL ABUN
TB-160	-6.379E-04	1.585E-01	1.331E-01	8.085E-02	FAIL ABUN
HO-166M	-3.488E-03	6.715E-02	5.707E-02	3.426E-02	NOT IDENT.
TA-182	-2.226E-01	2.563E-01	2.035E-01	1.308E-01	FAIL ABUN
IR-192	-2.094E-03	4.004E-02	3.407E-02	2.043E-02	FAIL ABUN
HG-203	2.180E-02	4.206E-02	3.715E-02	2.146E-02	NOT IDENT.
BI-207	1.491E-02	6.818E-02	5.828E-02	3.478E-02	FAIL ABUN
PB-210	2.193E+00	4.302E+00	3.746E+00	2.195E+00	NOT IDENT.
PB-211	-2.280E-01	7.751E-01	6.306E-01	3.955E-01	NOT IDENT.
BI-212	1.119E+00	9.010E-01	6.330E-01	4.597E-01	FAIL ABUN
RN-219	1.956E-01	4.383E-01	3.796E-01	2.236E-01	NOT IDENT.
RA-223	-1.884E-01	6.898E-01	5.773E-01	3.519E-01	FAIL ABUN
AC-227	-2.133E-03	2.604E-01	2.250E-01	1.328E-01	FAIL ABUN
TH-227	-2.133E-03	2.604E-01	2.250E-01	1.328E-01	FAIL ABUN
TH-229	3.633E-02	5.106E-01	4.500E-01	2.605E-01	FAIL ABUN
PA-231	1.446E+00	1.502E+00	1.350E+00	7.665E-01	FAIL ABUN
TH-231	-1.884E-01	6.898E-01	5.773E-01	3.519E-01	FAIL ABUN
PA-233	2.899E-02	7.294E-02	6.373E-02	3.721E-02	FAIL ABUN
PA-234	5.859E-02	3.322E-01	2.826E-01	1.695E-01	NOT IDENT.
PA-234M	1.701E-01	5.896E+00	4.753E+00	3.008E+00	NOT IDENT.
TH-234	2.910E+00	2.104E+00	1.364E+00	1.074E+00	FAIL ABUN
U-235	-1.002E-02	2.117E-01	1.830E-01	1.080E-01	FAIL ABUN
U-238	2.910E+00	2.104E+00	1.364E+00	1.074E+00	FAIL ABUN
NP-239	-9.701E-02	4.197E-01	3.477E-01	2.141E-01	NOT IDENT.
AM-241	6.243E-02	1.846E-01	1.452E-01	9.420E-02	NOT IDENT.
CM-247	1.956E-03	3.948E-02	3.331E-02	2.014E-02	NOT IDENT.
CF-249	1.677E-02	4.555E-02	3.931E-02	2.324E-02	NOT IDENT.

CF-251	7.856E-02	1.282E-01	1.160E-01	6.539E-02 NOT IDENT.
--------	-----------	-----------	-----------	----------------------

```

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

```

ENERGY	MDA COUNTS
46.54	218.0512
49.72	232.8941
57.36	0.0000
59.54	245.7483
63.29	277.0111
63.29	277.0111
64.28	273.2560
67.75	281.2802
69.67	319.0647
70.83	300.3981
72.81	324.4694
72.87	324.5001
72.87	324.5001
74.82	325.5154
74.82	325.5154
74.82	325.5154
74.97	325.5922
77.11	326.6905
77.11	326.6905
77.11	326.6905
79.69	324.1933
79.80	316.1011
80.12	316.2550
80.19	316.2890
80.57	340.9405
81.00	373.8092
81.07	334.6687
81.07	334.6687
83.79	337.6717
83.79	337.6717
85.43	290.8376
86.48	348.8816
86.55	410.3598
86.79	410.5025
86.94	410.5919
87.57	410.9666
88.03	409.0396
88.47	379.5898
89.96	645.0211
91.11	467.1572
92.59	372.9492
92.59	372.9492
93.35	307.9806
94.67	399.5490
94.87	428.5231
94.87	428.5231
95.86	490.2437
97.43	307.4720
98.44	269.9618
99.53	256.9484
100.11	294.0410
103.18	287.3685
103.37	263.8611
105.31	282.5320
106.12	282.8257
109.28	221.7352
111.00	255.0900
111.76	283.6990
116.30	220.2319
117.23	242.1823
121.12	237.5634
121.78	243.4898
122.06	243.5690
123.07	232.3532
131.20	259.4723
133.52	249.6630
136.00	249.4663

136.47	257.4766
140.51	267.3939
140.51	0.0000
143.76	240.0710
144.24	215.4658
144.24	215.4658
145.44	240.4923
152.43	262.7051
153.25	271.8361
154.21	274.7754
154.21	274.7754
156.02	231.4781
158.56	244.6049
159.00	249.1930
162.66	219.4980
163.33	221.4417
165.86	238.2228
176.60	209.6395
177.52	193.3963
181.07	225.5032
184.41	243.8044
185.72	223.3185
193.51	188.7598
197.04	190.2591
205.31	189.9062
210.85	202.7900
215.65	205.7320
222.11	203.6785
227.38	185.4934
228.16	177.9904
228.18	177.9933
235.69	182.2725
235.96	180.7782
235.96	180.7782
238.63	201.4812
238.63	201.4812
240.99	201.8369
242.00	201.9891
244.70	160.3723
252.40	160.8872
252.80	156.0867
256.23	150.6393
256.23	150.6393
260.90	130.6631
264.66	131.0086
268.22	163.6771
269.46	137.3318
269.46	137.3318
271.23	138.4806
273.65	202.6555
276.40	130.0986
277.37	132.1577
277.60	141.0558
278.00	144.0529
279.20	151.0833
279.54	148.1552
280.46	171.9662
283.69	117.8633
284.31	126.8281
285.41	130.8882
285.90	145.8089
287.50	135.0413
293.27	0.0000
295.22	129.3370
295.96	129.3983
298.57	128.0176
299.98	128.1328
299.98	128.1328
300.09	107.3194
300.09	107.3194
300.13	107.3210
301.36	107.4061
302.85	115.5305
304.50	125.2894
304.50	125.2894
304.85	120.4980
308.46	116.1718
311.90	134.1446

316.51	144.6452
319.41	133.7563
320.08	131.7833
323.87	131.0727
323.87	131.0727
328.76	121.2697
333.37	138.9779
334.37	132.5149
334.37	132.5149
338.28	117.8603
338.28	117.8603
338.32	117.8620
338.32	117.8620
338.32	117.8620
340.48	108.3666
340.55	108.3699
344.28	126.7079
351.06	135.4662
351.93	133.2616
356.01	92.7746
364.49	101.9597
366.42	104.1519
383.85	96.7407
388.16	106.4495
388.63	89.6095
391.69	107.7057
400.66	94.4253
401.81	91.2963
402.40	93.4490
404.85	101.0114
410.95	103.4621
414.70	107.9367
423.72	92.3277
427.09	100.0116
427.87	90.3677
433.94	90.6407
453.88	101.3299
463.37	86.4653
468.07	96.5280
473.00	60.4693
476.78	103.5282
477.60	103.5670
487.02	66.3931
492.35	55.4611
497.08	74.4764
511.00	83.8858
514.00	94.9711
527.90	81.1230
529.87	0.0000
531.02	79.4256
537.26	73.3034
546.56	0.0000
563.25	83.2486
569.33	77.9526
569.50	75.2074
569.70	75.2134
583.19	75.6218
600.60	73.3585
602.73	85.1900
604.72	75.9564
609.32	63.3582
609.32	63.3582
610.33	63.3831
614.28	54.4554
618.01	51.4175
621.93	53.3665
621.93	53.3665
633.25	59.2363
635.95	48.0018
636.99	48.0204
645.85	44.4010
657.76	55.0334
661.66	60.8125
661.66	60.8125
664.57	0.0000
666.33	75.1927
666.50	71.3892
677.62	66.8965

685.70	57.5054
695.00	58.6559
696.49	64.4581
696.51	64.4597
697.00	58.6961
702.65	60.7406
706.68	70.4799
711.68	62.8656
720.70	71.5479
721.93	0.0000
722.78	64.7233
722.91	64.7249
723.31	64.7347
724.19	63.1354
727.33	58.3403
733.00	43.8398
735.93	56.5599
739.50	48.8171
747.24	61.6680
752.31	50.9869
753.82	51.9933
756.73	65.7896
763.94	83.6615
765.81	89.6226
766.42	70.9242
777.92	63.2797
778.90	73.1888
783.70	41.6042
785.37	54.5112
795.86	59.6646
801.95	54.7986
810.29	49.9475
810.76	49.9548
815.77	47.0310
818.51	46.0696
832.01	64.3641
834.85	45.2944
836.80	0.0000
846.77	50.5103
856.80	64.1729
860.56	50.7202
871.09	40.7031
873.19	41.8599
875.33	0.0000
879.36	47.9432
880.51	43.8776
883.24	38.8071
884.68	51.0828
889.28	56.2662
898.04	60.5125
911.20	54.5644
911.20	54.5644
911.20	54.5644
926.50	45.4964
937.49	43.5627
944.13	42.6046
946.00	41.5869
949.00	39.5410
962.29	41.7744
964.08	40.0535
966.15	43.9093
968.97	43.9431
968.97	43.9431
968.97	43.9431
983.53	33.6133
996.26	47.4302
1001.03	45.3799
1004.73	44.3686
1037.84	45.8198
1038.76	0.0000
1048.07	40.5995
1050.41	52.3831
1050.41	52.3831
1063.66	47.1969
1085.87	46.3846
1099.45	51.9539
1112.07	47.7727
1115.54	67.0113

1120.29	69.6250
1120.29	69.6250
1120.55	64.1913
1121.30	65.2910
1131.51	0.0000
1173.23	66.1084
1177.93	64.3433
1189.05	60.8250
1204.77	63.8199
1221.41	81.7051
1231.02	86.5366
1235.36	76.3779
1238.28	66.1754
1260.41	0.0000
1271.85	36.6228
1274.44	46.0412
1274.54	47.9204
1291.59	36.7831
1298.22	0.0000
1312.11	35.0518
1332.49	32.3509
1365.19	9.5809
1368.63	0.0000
1384.29	21.8034
1408.01	27.0658
1457.56	0.0000
1460.82	12.7006
1489.16	14.7363
1505.03	18.7240
1596.21	18.0469
1620.50	9.0637
1678.03	0.0000
1690.97	11.2189
1764.49	10.3300
1764.49	10.3300
1770.23	5.3178
1771.35	36.1977
1791.20	0.0000
1836.06	9.4094

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G248137001

Total Uranium Activity	8.6521E+00	ug/g
Total Uranium Counting Unc.	6.2609E+00	ug/g
Total Uranium Tpu	3.1944E-06	ug/g
Total Uranium Mda	4.0601E+00	ug/g

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 959270                          SAMPLE ID   : G248137001
*  ANALYST       : MXR1                             DETECTOR    : GAM01
*  SAMPLE DATE   : 23-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 10-MAR-2010 14:58:13.27          SAMPLE ALQT  : 124.200 GRAM
*
*****

```

```

GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.468E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.479E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.029E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.466E+00

```


VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 17:42:27.37

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057335.CNF;1
Sample date        : 3-MAR-2010 00:00:00. Acquisition date : 10-MAR-2010 15:41:36
Sample ID          : G1202057335      Sample quantity   : 1.43040E+02 GRAM
Detector name      : GAM19             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:00.65  0.0%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 959270             Detector SN#      :
Matrix Spike ID    :                   LCS ID           : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	928.52	17	2	1.52	1856.16	1852	9	2.37E-03	28.8	

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

VMS Nuclide Identification Report V3.1 Generated 10-MAR-2010 17:42:29

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057335.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 : 10-MAR-2010 15:41:36
Sample ID        : G1202057335           Sample quantity  : 143.04 GRAM
Sample type       : SOLID                 Sample geometry   :
Detector name     : GAMMA19              Detector geometry: CAN
Elapsed live time : 0 02:00:00.00         Elapsed real time: 0 02:00:00.65   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

---- 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	*	-9.417E-02	1.579E-01	2.427E-01	1.646E-02	-0.388	
NA-22	1274.54	*	5.919E-03	1.891E-02	3.335E-02	2.225E-03	0.178	
NA-24	1368.63	*	2.000E-05	1.891E-02	Half-Life	too short		
K-40	1460.82	*	-1.172E-01	2.590E-01	4.039E-01	3.008E-02	-0.290	
SC-46	889.28	*	7.809E-03	1.770E-02	3.085E-02	2.681E-03	0.253	
	1120.55		-9.736E-04	2.053E-02	3.401E-02	2.145E-03	-0.029	
V-48	944.13		-7.208E-02	3.406E-01	5.271E-01	4.441E-02	-0.137	
	983.53	*	6.955E-03	2.191E-02	3.760E-02	3.023E-03	0.185	
	1312.11		-1.150E-02	3.127E-02	4.824E-02	3.433E-03	-0.238	
CR-51	320.08	*	-8.046E-02	1.686E-01	2.708E-01	1.749E-02	-0.297	
MN-54	834.85	*	1.022E-03	2.071E-02	3.375E-02	2.685E-03	0.030	
CO-56	846.77	*	9.449E-03	2.411E-02	4.096E-02	3.324E-03	0.231	
	1037.84		-9.022E-02	1.521E-01	2.302E-01	1.829E-02	-0.392	
	1238.28		3.866E-02	3.180E-02	6.374E-02	4.187E-03	0.606	
	1771.35		-6.684E-02	1.373E-01	1.928E-01	1.162E-02	-0.347	
CO-57	122.06	*	1.702E-03	1.109E-02	1.828E-02	1.091E-03	0.093	
	136.47		1.853E-02	8.410E-02	1.393E-01	9.177E-03	0.133	
CO-58	810.76	*	3.983E-03	1.906E-02	3.191E-02	2.445E-03	0.125	
FE-59	1099.45	*	2.454E-02	4.020E-02	7.359E-02	5.521E-03	0.333	
	1291.59		1.567E-02	5.860E-02	9.768E-02	8.088E-03	0.160	
CO-60	1173.23		1.239E-02	1.884E-02	3.508E-02	1.923E-03	0.353	
	1332.49	*	1.270E-02	2.182E-02	3.984E-02	2.936E-03	0.319	
ZN-65	1115.54	*	1.467E-02	3.554E-02	6.389E-02	4.085E-03	0.230	
SE-75	121.12		5.146E-03	5.582E-02	9.159E-02	8.432E-03	0.056	
	136.00		7.406E-03	1.586E-02	2.684E-02	1.546E-03	0.276	
	264.66	*	-1.800E-02	2.211E-02	3.468E-02	2.017E-03	-0.519	
	279.54		-1.639E-02	5.031E-02	8.223E-02	5.155E-03	-0.199	
	400.66		-9.602E-02	1.165E-01	1.743E-01	1.559E-02	-0.551	
SR-85	514.00	*	-4.701E-02	2.974E-02	4.314E-02	2.547E-03	-1.090	
Y-88	898.04		-1.768E-03	1.692E-02	2.668E-02	2.362E-03	-0.066	
	1836.06	*	-1.188E-02	1.962E-02	2.566E-02	1.465E-03	-0.463	
Y-91	1204.77	*	-8.101E-01	9.714E+00	1.596E+01	9.316E-01	-0.051	
NB-94	702.65	*	1.793E-02	2.067E-02	3.701E-02	2.331E-03	0.484	
	871.09		1.311E-02	1.785E-02	3.225E-02	2.723E-03	0.406	

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95	765.81	*		-8.144E-04	1.831E-02	2.953E-02	2.086E-03	-0.028
NB-95M	235.69	*		-3.378E-02	5.939E-02	9.025E-02	6.708E-03	-0.374
ZR-95	724.19			1.294E-02	4.033E-02	6.886E-02	5.155E-03	0.188
	756.73	*		-3.824E-02	3.303E-02	4.212E-02	3.388E-03	-0.908
MO-99	140.51			-1.761E-01	1.498E+00	2.404E+00	5.487E-01	-0.073
	181.07			-1.570E+00	1.366E+00	1.938E+00	3.395E-01	-0.810
	366.42			7.374E+00	7.552E+00	1.382E+01	7.863E-01	0.534
	739.50	*		-4.708E-01	9.861E-01	1.479E+00	2.191E-01	-0.318
	777.92			-2.190E+00	3.101E+00	4.481E+00	3.235E-01	-0.489
TC-99M	140.51	*		-2.201E+00	3.101E+00	Half-Life too short		
RU-103	497.08	*		1.641E-02	2.024E-02	3.615E-02	4.506E-03	0.454
	610.33			1.116E-01	4.058E-01	6.192E-01	9.346E-02	0.180
RH-106	621.93	*		-1.047E-02	1.775E-01	2.886E-01	3.368E-02	-0.036
	1050.41			1.399E+00	1.115E+00	2.252E+00	1.637E-01	0.621
RU-106	621.93	*		-1.047E-02	1.774E-01	2.886E-01	1.702E-02	-0.036
	1050.41			1.399E+00	1.115E+00	2.252E+00	1.637E-01	0.621
AG-108M	433.94	*		6.528E-05	1.458E-02	2.423E-02	1.487E-03	0.003
	614.28			-1.086E-02	1.913E-02	2.900E-02	1.831E-03	-0.375
	722.91			1.590E-02	1.873E-02	3.413E-02	2.355E-03	0.466
CD-109	88.03	*		-3.479E-01	3.154E-01	4.693E-01	4.203E-02	-0.741
AG-110M	657.76	*		-2.133E-02	1.686E-02	2.164E-02	1.343E-03	-0.986
	677.62			-1.853E-01	1.599E-01	2.120E-01	1.348E-02	-0.874
	706.68			-1.024E-01	1.250E-01	1.814E-01	1.212E-02	-0.564
	763.94			6.759E-02	7.529E-02	1.387E-01	1.017E-02	0.487
	884.68			1.614E-02	2.091E-02	3.881E-02	3.455E-03	0.416
	937.49			-2.102E-02	5.001E-02	7.334E-02	6.454E-03	-0.287
	1384.29			6.210E-03	8.281E-02	1.391E-01	1.053E-02	0.045
	1505.03			3.255E-02	1.081E-01	1.942E-01	1.369E-02	0.168
SN-113	391.69	*		1.406E-02	2.166E-02	3.847E-02	2.295E-03	0.365
CD-115	260.90			1.303E+00	7.258E+00	1.178E+01	6.766E-01	0.111
	492.35			-9.856E-01	2.203E+00	3.459E+00	2.031E-01	-0.285
	527.90	*		3.607E-01	5.887E-01	1.043E+00	6.173E-02	0.346
SN-117M	156.02			2.019E-01	6.956E-01	1.154E+00	6.184E-02	0.175
	158.56	*		2.748E-03	1.694E-02	2.780E-02	1.480E-03	0.099
TE-123M	159.00	*		-6.540E-03	1.247E-02	1.921E-02	1.037E-03	-0.340
SB-124	602.73			3.167E-03	2.467E-02	3.568E-02	2.112E-03	0.089
	645.85			1.514E-01	2.138E-01	3.864E-01	2.537E-02	0.392
	722.78			1.531E-01	1.737E-01	3.174E-01	2.157E-02	0.482
	1690.97	*		-6.600E-03	5.294E-02	8.420E-02	5.789E-03	-0.078
SB-125	427.87	*		1.422E-02	4.254E-02	7.351E-02	4.371E-03	0.193
	463.37			-5.872E-02	1.426E-01	2.253E-01	1.517E-02	-0.261
	600.60			1.013E-02	1.251E-01	1.801E-01	1.228E-02	0.056
	635.95			4.224E-02	1.381E-01	2.359E-01	1.618E-02	0.179
TE-125M	109.28	*		-1.421E+00	3.722E+00	5.865E+00	5.278E-01	-0.242
I-126	388.63			-3.009E-02	5.821E-02	9.169E-02	5.117E-03	-0.328
	666.33	*		8.891E-03	7.402E-02	1.231E-01	7.231E-03	0.072
	753.82			2.107E-01	5.934E-01	1.019E+00	7.047E-02	0.207
SB-126	414.70			2.143E-02	2.598E-02	4.682E-02	2.649E-03	0.458
	666.50			2.395E-03	2.485E-02	4.118E-02	2.420E-03	0.058

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		695.00		9.789E-03	3.173E-02	5.362E-02	3.329E-03	0.183
		697.00		-1.448E-02	1.128E-01	1.813E-01	1.130E-02	-0.080
		720.70	*	1.729E-02	4.824E-02	8.269E-02	5.386E-03	0.209
SN-126		856.80		-6.507E-03	1.918E-01	3.085E-01	2.544E-02	-0.021
		64.28		-4.001E-02	2.186E-01	3.505E-01	5.118E-02	-0.114
		86.94		-4.842E-02	1.225E-01	1.916E-01	7.932E-02	-0.253
		87.57	*	-1.109E-02	2.877E-02	4.561E-02	4.068E-03	-0.243
SB-127		252.40		1.844E-01	5.512E-01	9.025E-01	3.661E-01	0.204
		473.00		1.090E-01	2.150E-01	3.770E-01	3.485E-02	0.289
		685.70	*	-1.204E-01	2.093E-01	2.967E-01	2.198E-02	-0.406
		783.70		3.545E-01	4.563E-01	8.260E-01	8.017E-02	0.429
I-131		80.19		-6.018E-01	9.072E-01	1.408E+00	1.170E-01	-0.427
		284.31		-4.292E-03	3.830E-01	6.440E-01	4.109E-02	-0.007
		364.49	*	-8.628E-03	3.239E-02	5.267E-02	3.331E-03	-0.164
TE-132		636.99		-7.111E-03	4.197E-01	6.853E-01	4.470E-02	-0.010
		49.72		-1.842E+00	1.525E+00	2.274E+00	1.807E-01	-0.810
		111.76		2.580E+00	2.743E+00	4.818E+00	3.590E-01	0.536
		116.30		-1.653E+00	2.428E+00	3.706E+00	2.665E-01	-0.446
		228.16	*	1.052E-03	6.335E-02	1.017E-01	1.336E-02	0.010
BA-133		81.00		-6.055E-03	3.554E-02	5.753E-02	8.843E-03	-0.105
		276.40		-4.289E-02	1.637E-01	2.690E-01	3.385E-02	-0.159
		302.85		2.565E-03	6.306E-02	1.064E-01	1.214E-02	0.024
		356.01	*	-1.230E-02	2.061E-02	3.220E-02	3.619E-03	-0.382
		383.85		1.436E-01	1.453E-01	2.657E-01	2.806E-02	0.541
I-133		529.87	*	3.293E-06	1.453E-01	Half-Life	too short	
		875.33		-1.925E-05	1.453E-01	Half-Life	too short	
		1298.22		5.059E-05	1.453E-01	Half-Life	too short	
CS-134		563.25		-1.428E-01	2.235E-01	3.412E-01	2.066E-02	-0.418
		569.33		6.804E-02	1.091E-01	1.924E-01	1.174E-02	0.354
		604.72		8.026E-03	2.006E-02	3.431E-02	2.041E-03	0.234
		795.86	*	3.496E-03	2.356E-02	3.908E-02	2.938E-03	0.089
		801.95		1.348E-01	1.950E-01	3.507E-01	2.659E-02	0.384
		1365.19		-3.296E-01	6.712E-01	9.909E-01	7.723E-02	-0.333
CS-135		268.22	*	8.277E-02	7.612E-02	1.392E-01	1.062E-02	0.595
I-135		546.56		-3.961E+01	7.612E-02	Half-Life	too short	
		836.80		4.732E+01	7.612E-02	Half-Life	too short	
		1038.76		-2.366E+01	7.612E-02	Half-Life	too short	
		1131.51		-2.457E+00	7.612E-02	Half-Life	too short	
		1260.41	*	-4.445E-01	7.612E-02	Half-Life	too short	
		1457.56		-6.824E+00	7.612E-02	Half-Life	too short	
		1678.03		5.884E+01	7.612E-02	Half-Life	too short	
		1791.20		-1.827E+00	7.612E-02	Half-Life	too short	
CS-136		153.25		-9.457E-02	2.501E-01	3.907E-01	3.031E-02	-0.242
		176.60		-5.643E-02	1.663E-01	2.605E-01	1.727E-02	-0.217
		273.65		-1.242E-01	1.607E-01	2.514E-01	1.712E-02	-0.494
		340.55		1.769E-02	4.322E-02	7.533E-02	4.705E-03	0.235
		818.51		-2.353E-02	2.571E-02	3.445E-02	2.667E-03	-0.683
		1048.07	*	7.792E-03	3.443E-02	5.988E-02	4.622E-03	0.130
		1235.36		-6.423E-02	1.374E-01	2.052E-01	2.076E-02	-0.313

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-137M	661.66	*		1.829E-02	1.675E-02	3.163E-02	1.842E-03	0.578
CS-137	661.66	*		1.932E-02	1.770E-02	3.342E-02	1.954E-03	0.578
CE-139	165.86	*		3.430E-03	1.180E-02	1.961E-02	1.024E-03	0.175
BA-140	162.66			-7.809E-02	2.592E-01	3.915E-01	2.415E-02	-0.199
	304.85			-5.515E-01	4.336E-01	5.786E-01	1.653E-01	-0.953
	423.72			-4.849E-02	6.261E-01	1.031E+00	3.325E-01	-0.047
	537.26	*		-2.404E-03	9.023E-02	1.482E-01	4.939E-02	-0.016
LA-140	328.76			5.765E-02	9.362E-02	1.659E-01	1.080E-02	0.347
	487.02			-3.190E-03	5.046E-02	8.285E-02	5.485E-03	-0.039
	815.77			3.511E-02	1.079E-01	1.844E-01	1.627E-02	0.190
	1596.21	*		-1.141E-02	3.346E-02	5.041E-02	3.411E-03	-0.226
CE-141	145.44	*		8.221E-03	2.423E-02	4.038E-02	2.326E-03	0.204
CE-143	57.36			-6.800E+00	9.752E+00	1.515E+01	1.338E+00	-0.449
	293.27	*		4.570E-01	1.559E+00	2.532E+00	5.097E-01	0.180
	664.57			-4.998E+00	1.470E+01	2.277E+01	6.628E+00	-0.219
	721.93			1.855E+01	1.579E+01	2.860E+01	7.776E+00	0.649
CE-144	80.12			-5.937E-01	9.184E-01	1.428E+00	1.183E-01	-0.416
	133.52	*		-4.109E-02	8.145E-02	1.257E-01	1.742E-02	-0.327
PM-144	476.78			-2.885E-02	3.492E-02	5.203E-02	3.585E-03	-0.555
	618.01			7.755E-03	1.668E-02	2.899E-02	1.811E-03	0.267
	696.49	*		7.588E-03	2.081E-02	3.539E-02	2.204E-03	0.214
PR-144	696.51	*		5.584E-01	1.550E+00	2.635E+00	1.641E-01	0.212
	1489.16			3.985E+00	7.165E+00	1.322E+01	9.367E-01	0.302
PM-146	453.88	*		-7.778E-03	2.369E-02	3.789E-02	3.200E-03	-0.205
	633.25			-1.142E-01	7.482E-01	1.197E+00	4.508E-01	-0.095
	735.93			-3.349E-02	7.340E-02	1.095E-01	3.010E-02	-0.306
	747.24			3.203E-02	5.680E-02	9.899E-02	1.347E-02	0.324
ND-147	91.11			8.962E-02	7.358E-02	1.292E-01	1.194E-02	0.694
	319.41			-1.052E-01	1.134E+00	1.887E+00	1.097E-01	-0.056
	531.02	*		1.233E-03	1.786E-01	2.947E-01	4.001E-02	0.004
PM-149	285.90	*		4.558E+00	4.386E+00	7.959E+00	1.127E+00	0.573
EU-152	121.78			1.797E-02	3.171E-02	5.407E-02	4.170E-03	0.332
	244.70			7.997E-02	1.489E-01	2.509E-01	1.426E-02	0.319
	344.28	*		3.710E-02	4.672E-02	8.420E-02	5.476E-03	0.441
	778.90			3.999E-02	1.357E-01	2.302E-01	1.665E-02	0.174
	964.08			-9.315E-02	1.506E-01	2.170E-01	1.787E-02	-0.429
	1085.87			-2.906E-02	1.843E-01	2.998E-01	2.040E-02	-0.097
	1112.07			-3.160E-02	1.303E-01	2.076E-01	1.335E-02	-0.152
	1408.01			1.736E-02	1.076E-01	1.831E-01	1.330E-02	0.095
GD-153	69.67			-2.697E-01	6.347E-01	1.009E+00	7.762E-02	-0.267
	97.43	*		9.161E-03	3.843E-02	6.395E-02	4.974E-03	0.143
	103.18			6.805E-03	4.453E-02	7.370E-02	5.337E-03	0.092
EU-154	123.07			2.455E-03	2.273E-02	3.734E-02	3.537E-03	0.066
	723.31			6.566E-02	8.386E-02	1.517E-01	1.162E-02	0.433
	873.19			1.163E-01	1.485E-01	2.692E-01	3.173E-02	0.432
	996.26			7.048E-02	1.631E-01	2.836E-01	4.858E-02	0.248
	1004.73			-4.590E-02	1.119E-01	1.757E-01	1.942E-02	-0.261
	1274.44	*		2.336E-02	5.288E-02	9.549E-02	9.526E-03	0.245
EU-155	86.55			-2.004E-03	3.533E-02	5.764E-02	5.136E-03	-0.035

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	105.31	*		-2.015E-02	4.351E-02	6.807E-02	4.893E-03	-0.296
	86.79			-1.494E-02	8.654E-02	1.398E-01	1.237E-02	-0.107
	197.04			3.337E-01	2.557E-01	4.544E-01	2.462E-02	0.734
	215.65			1.081E-01	3.028E-01	5.032E-01	2.785E-02	0.215
	298.57			9.458E-03	5.002E-02	8.547E-02	4.970E-03	0.111
	879.36	*		-1.643E-02	5.847E-02	8.883E-02	7.598E-03	-0.185
	962.29			1.541E-01	2.181E-01	3.941E-01	3.252E-02	0.391
	966.15			-5.798E-02	9.864E-02	1.430E-01	1.175E-02	-0.405
	1177.93			5.507E-02	1.486E-01	2.636E-01	1.458E-02	0.209
	1271.85			5.509E-02	2.932E-01	5.051E-01	3.347E-02	0.109
HO-166M	80.57			-5.365E-02	1.026E-01	1.614E-01	1.343E-02	-0.332
	184.41			-3.958E-03	1.939E-02	3.091E-02	1.649E-03	-0.128
	280.46			-2.509E-02	4.162E-02	6.625E-02	3.838E-03	-0.379
	410.95			1.104E-01	1.225E-01	2.25E-01	1.256E-02	0.496
	711.68	*		-2.397E-03	3.286E-02	5.300E-02	3.395E-03	-0.045
	752.31			7.379E-03	1.516E-01	2.482E-01	1.712E-02	0.030
	810.29			3.749E-03	3.125E-02	5.161E-02	3.940E-03	0.073
	67.75			1.637E-02	4.172E-02	7.064E-02	5.390E-03	0.232
TA-182	100.11			-1.011E-02	7.517E-02	1.215E-01	9.131E-03	-0.083
	152.43			-1.549E-01	1.476E-01	2.153E-01	1.165E-02	-0.719
	222.11			-1.708E-02	1.376E-01	2.175E-01	1.212E-02	-0.079
	1121.30			1.548E-02	5.760E-02	1.007E-01	6.338E-03	0.154
	1189.05			4.262E-02	1.101E-01	1.978E-01	1.119E-02	0.216
	1221.41	*		4.869E-03	9.500E-02	1.593E-01	9.604E-03	0.031
	1231.02			-2.359E-01	1.624E-01	1.666E-01	1.023E-02	-1.417
	295.96			-7.424E-03	4.903E-02	8.137E-02	4.805E-03	-0.091
IR-192	308.46			1.547E-02	4.221E-02	7.338E-02	4.316E-03	0.211
	316.51	*		1.226E-02	1.804E-02	3.194E-02	1.866E-03	0.384
	468.07			4.712E-03	3.044E-02	5.138E-02	3.450E-03	0.092
	70.83			-5.153E-02	4.346E-01	7.080E-01	1.105E-01	-0.073
HG-203	72.87			-6.507E-02	2.410E-01	3.871E-01	5.850E-02	-0.168
	279.20	*		5.274E-03	1.606E-02	2.783E-02	1.702E-03	0.189
BI-207	72.81			-3.775E-02	6.386E-02	9.984E-02	7.820E-03	-0.378
	74.97			-6.677E-02	4.746E-02	5.834E-02	4.636E-03	-1.145
	569.70			4.829E-03	1.709E-02	2.904E-02	1.723E-03	0.166
	1063.66	*		-3.950E-03	2.396E-02	3.893E-02	2.764E-03	-0.101
TL-208	1770.23			-8.915E-02	3.014E-01	4.532E-01	2.734E-02	-0.197
	277.37			9.679E-02	1.772E-01	3.123E-01	3.365E-02	0.310
	583.19	*		-7.961E-03	2.202E-02	3.456E-02	2.345E-03	-0.230
	860.56			1.124E-01	1.645E-01	2.937E-01	2.629E-02	0.383
PB-210	46.54	*		9.771E-02	1.442E+00	2.349E+00	1.770E-01	0.042
BI-211	72.87			-2.920E-01	1.081E+00	1.737E+00	1.361E-01	-0.168
	351.06	*		4.255E-02	9.901E-02	1.726E-01	1.102E-02	0.247
PB-211	404.85	*		2.141E-01	3.334E-01	5.700E-01	2.733E-01	0.376
	427.09			1.407E-01	7.273E-01	1.232E+00	5.643E-01	0.114
	832.01			2.663E-01	4.883E-01	8.317E-01	4.304E-01	0.320
BI-212	727.33	*		-2.914E-01	2.583E-01	3.385E-01	3.775E-02	-0.861
	785.37			-5.072E-01	1.580E+00	2.428E+00	1.776E-01	-0.209
	1620.50			-3.427E-02	1.135E+00	1.711E+00	1.142E-01	-0.020

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PB-212	74.82			-2.283E-01	1.657E-01	2.015E-01	2.530E-02	-1.133
	77.11			4.810E-02	7.323E-02	1.262E-01	1.020E-02	0.381
	238.63	*		1.675E-04	3.234E-02	5.072E-02	3.693E-03	0.003
	300.09			7.940E-02	3.742E-01	6.409E-01	5.383E-02	0.124
BI-214	609.32	*		1.445E-02	4.449E-02	6.825E-02	5.408E-03	0.212
	1120.29			-5.908E-02	1.355E-01	2.091E-01	1.925E-02	-0.283
	1764.49			-1.968E-02	1.519E-01	2.187E-01	1.325E-02	-0.090
	74.82			-4.047E-01	2.929E-01	3.572E-01	4.008E-02	-1.133
PB-214	77.11			8.479E-02	1.293E-01	2.225E-01	2.569E-02	0.381
	242.00			-2.204E-01	1.772E-01	2.474E-01	2.005E-02	-0.891
	295.22			-1.125E-02	7.356E-02	1.146E-01	1.000E-02	-0.098
	351.93	*		1.671E-02	3.539E-02	6.195E-02	5.226E-03	0.270
RN-219	271.23			-7.834E-02	1.203E-01	1.783E-01	1.429E-02	-0.439
	401.81	*		1.704E-02	1.836E-01	3.091E-01	4.128E-02	0.055
RA-223	81.07			-1.547E-02	8.046E-02	1.300E-01	1.087E-02	-0.119
	83.79			1.290E-02	4.518E-02	7.576E-02	6.499E-03	0.170
	94.87			2.738E-02	2.093E-01	3.455E-01	2.782E-02	0.079
	144.24			6.848E-02	3.351E-01	5.264E-01	3.683E-02	0.130
	154.21			5.330E-02	1.667E-01	2.775E-01	1.839E-02	0.192
	269.46			3.683E-02	8.875E-02	1.546E-01	9.311E-03	0.238
	323.87	*		-2.491E-01	3.174E-01	4.863E-01	7.839E-02	-0.512
	338.28			-8.007E-02	4.405E-01	7.064E-01	7.233E-02	-0.113
RA-224	240.99	*		-1.472E-01	3.133E-01	4.789E-01	2.714E-02	-0.307
RA-226	609.32	*		1.445E-02	4.449E-02	6.825E-02	5.408E-03	0.212
	1120.29			-5.908E-02	1.355E-01	2.091E-01	1.925E-02	-0.283
	1764.49			-1.968E-02	1.519E-01	2.187E-01	1.325E-02	-0.090
AC-227	79.69			6.824E-02	4.504E-01	7.480E-01	1.276E-01	0.091
	235.96			1.407E-02	7.438E-02	1.210E-01	9.718E-03	0.116
	256.23	*		-4.804E-02	1.421E-01	2.132E-01	2.171E-02	-0.225
	299.98			7.826E-02	4.106E-01	7.019E-01	7.718E-02	0.112
	304.50			-8.062E-01	7.537E-01	1.108E+00	1.690E-01	-0.728
	334.37			-1.892E-01	7.730E-01	1.261E+00	1.793E-01	-0.150
TH-227	79.80			4.321E-02	5.897E-01	9.735E-01	2.107E-01	0.044
	235.96			1.407E-02	7.438E-02	1.210E-01	8.788E-03	0.116
	256.23	*		-4.804E-02	1.421E-01	2.132E-01	2.555E-02	-0.225
	299.98			7.826E-02	4.106E-01	7.019E-01	7.718E-02	0.112
	304.50			-8.062E-01	7.537E-01	1.108E+00	1.690E-01	-0.728
	334.37			-1.892E-01	7.730E-01	1.261E+00	1.793E-01	-0.150
AC-228	338.32			-2.018E-02	1.113E-01	1.780E-01	7.339E-02	-0.113
	911.20	*		2.995E-02	6.842E-02	1.187E-01	1.384E-02	0.252
	968.97			-2.392E-02	1.515E-01	2.468E-01	5.976E-02	-0.097
RA-228	338.32			-2.018E-02	1.113E-01	1.780E-01	7.339E-02	-0.113
	911.20	*		2.995E-02	6.842E-02	1.187E-01	1.384E-02	0.252
	968.97			-2.392E-02	1.515E-01	2.468E-01	5.976E-02	-0.097
TH-228	74.82			-2.283E-01	1.643E-01	2.015E-01	1.617E-02	-1.133
	77.11			4.810E-02	7.323E-02	1.262E-01	1.020E-02	0.381
	238.63	*		1.675E-04	3.234E-02	5.072E-02	3.693E-03	0.003
TH-229	300.09			7.940E-02	3.773E-01	6.409E-01	3.902E-01	0.124
	85.43			-3.043E-02	7.282E-02	1.151E-01	1.004E-02	-0.264

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	88.47			-7.360E-02	5.076E-02	7.335E-02	6.520E-03	-1.003
	193.51	*		-1.853E-01	2.519E-01	3.775E-01	2.037E-02	-0.491
	210.85			1.116E-01	3.830E-01	6.322E-01	3.481E-02	0.177
PA-231	283.69	*		-4.873E-01	7.346E-01	1.159E+00	1.520E-01	-0.420
	301.36			1.475E-03	2.550E-01	4.288E-01	4.439E-02	0.003
TH-231	81.07			-1.547E-02	8.046E-02	1.300E-01	1.087E-02	-0.119
	83.79			1.290E-02	4.518E-02	7.576E-02	6.499E-03	0.170
	94.87			2.738E-02	2.093E-01	3.455E-01	2.782E-02	0.079
	144.24			6.848E-02	3.351E-01	5.264E-01	3.683E-02	0.130
	154.21			5.330E-02	1.667E-01	2.775E-01	1.839E-02	0.192
	269.46			3.683E-02	8.875E-02	1.546E-01	9.311E-03	0.238
	323.87	*		-2.491E-01	3.174E-01	4.863E-01	7.839E-02	-0.512
	338.28			-8.007E-02	4.405E-01	7.064E-01	7.233E-02	-0.113
TH-232	338.32			-2.018E-02	1.110E-01	1.780E-01	1.029E-02	-0.113
	911.20	*		2.995E-02	6.842E-02	1.187E-01	1.384E-02	0.252
	968.97			-2.392E-02	1.515E-01	2.468E-01	5.976E-02	-0.097
PA-233	300.13			4.101E-02	1.865E-01	3.195E-01	4.279E-02	0.128
	311.90	*		-4.924E-02	3.482E-02	5.050E-02	3.119E-03	-0.975
	340.48			1.118E-01	2.744E-01	4.762E-01	1.105E-01	0.235
PA-234	94.67			2.212E-02	7.821E-02	1.303E-01	1.568E-02	0.170
	98.44			-3.606E-03	4.126E-02	6.692E-02	3.724E-02	-0.054
	111.00			2.690E-04	7.594E-02	1.239E-01	1.334E-02	0.002
	131.20			-1.991E-02	4.437E-02	6.913E-02	3.979E-03	-0.288
	569.50			8.198E-02	1.499E-01	2.623E-01	1.557E-02	0.313
	733.00			8.930E-02	1.708E-01	3.003E-01	6.461E-02	0.297
	880.51			-5.277E-02	1.333E-01	1.979E-01	1.696E-02	-0.267
	883.24			6.168E-02	1.341E-01	2.253E-01	1.515E-01	0.274
	926.50			7.264E-03	1.138E-01	1.603E-01	4.050E-02	0.045
	946.00	*		5.720E-02	1.657E-01	2.813E-01	5.251E-02	0.203
	949.00			1.234E-01	2.502E-01	4.339E-01	3.636E-02	0.284
PA-234M	766.42			-7.116E-01	5.197E+00	8.230E+00	4.156E+00	-0.086
	1001.03	*		2.566E-01	2.232E+00	3.817E+00	3.553E-01	0.067
TH-234	63.29	*		-5.661E-01	6.100E-01	9.149E-01	1.636E-01	-0.619
	92.59			-1.962E-01	3.252E-01	5.466E-01	1.201E-01	-0.359
U-235	89.96			-4.545E-01	3.649E-01	5.135E-01	1.265E-01	-0.885
	93.35			-2.182E-01	2.503E-01	4.086E-01	9.379E-02	-0.534
	143.76	*		7.697E-03	1.001E-01	1.556E-01	2.429E-02	0.049
	163.33			9.090E-03	2.078E-01	3.240E-01	5.379E-02	0.028
	185.72			6.344E-03	2.412E-02	3.969E-02	2.121E-03	0.160
	205.31			-1.006E-01	2.496E-01	3.760E-01	6.347E-02	-0.267
NP-237	86.48	*		-2.014E-03	8.751E-02	1.432E-01	3.256E-02	-0.014
	95.86			-6.722E-01	4.825E-01	6.666E-01	1.584E-01	-1.008
U-238	63.29	*		-5.661E-01	6.100E-01	9.149E-01	1.636E-01	-0.619
	92.59			-1.962E-01	3.228E-01	5.466E-01	4.551E-02	-0.359
NP-239	99.53			-2.035E-02	7.341E-02	1.173E-01	8.880E-03	-0.173
	103.37			1.073E-02	4.082E-02	6.820E-02	4.927E-03	0.157
	106.12			-1.036E-03	3.364E-02	5.477E-02	3.835E-03	-0.019
	117.23	*		5.933E-02	1.700E-01	2.854E-01	1.780E-02	0.208
	228.18			1.205E-03	9.446E-02	1.515E-01	8.492E-03	0.008

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		277.60		5.539E-02	8.206E-02	1.462E-01	8.459E-03	0.379
AM-241		59.54	*	-4.161E-02	6.117E-02	9.533E-02	7.849E-03	-0.437
CM-247		278.00		2.057E-01	3.459E-01	6.126E-01	3.546E-02	0.336
		287.50		-1.032E-01	6.342E-01	1.052E+00	6.107E-02	-0.098
		402.40	*	3.947E-03	1.739E-02	2.972E-02	1.667E-03	0.133
CF-249		252.80		-1.269E-01	4.772E-01	7.410E-01	4.235E-02	-0.171
		333.37		2.678E-02	8.198E-02	1.419E-01	8.215E-03	0.189
		388.16	*	-1.713E-02	2.121E-02	3.231E-02	1.804E-03	-0.530
CF-251		177.52	*	8.386E-03	6.445E-02	1.051E-01	5.559E-03	0.080
		227.38		2.233E-02	1.461E-01	2.380E-01	1.333E-02	0.094
		285.41		9.075E-01	1.091E+00	1.963E+00	1.139E-01	0.462
ANH-511		511.00	*	-2.277E-02	3.197E-02	5.898E-02	3.480E-03	-0.386

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     *
*               GEL Laboratories LLC   *
*               2040 Savage Road      *
*               Charleston, SC 29414  *
*                                     *
*               DETECTOR DATA        *
*                                     *
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057335 *
* Acquisition date   : 10-MAR-2010 15:41:36 Detector SN#      :      *
* Detector ID        : GAM19          Sensitivity             : 5.000  *
* Geometry           : CAN            Energy tolerance:       : 1.500  *
* Elapsed live time  : 0 02:00:00.00 Abundance limit :       : 75.000 *
* Elapsed real time  : 0 02:00:00.65 Half life ratio :       : 8.000 *
*                                     *
*               SAMPLE DATA          *
*                                     *
* Sample date        : 3-MAR-2010 00:00:00 Nuclide Library : SOLID *
* Sample ID          : G1202057335   Analyst initials: MXR1  *
* Batch Number       : 959270         Sample Quantity : 1.4304E+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           :      *
*                                     *

```

Combined Activity-MDA Report

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)
---------	-------------------------------------	------------------------	--------------------

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)	
BE-7	-9.417E-02	1.547E-01	2.499E-01	0.000E+00 NOT IDENT.
NA-22	5.919E-03	1.853E-02	3.361E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	9.870E+01	0.000E+00	0.000E+00 SHORT HLIF
K-40	-1.172E-01	2.538E-01	4.058E-01	0.000E+00 NOT IDENT.
SC-46	7.809E-03	1.734E-02	3.134E-02	0.000E+00 NOT IDENT.
V-48	6.955E-03	2.148E-02	3.812E-02	0.000E+00 NOT IDENT.
CR-51	-8.046E-02	1.652E-01	2.812E-01	0.000E+00 NOT IDENT.
MN-54	1.022E-03	2.029E-02	3.433E-02	0.000E+00 NOT IDENT.
CO-56	9.449E-03	2.363E-02	4.166E-02	0.000E+00 NOT IDENT.
CO-57	1.702E-03	1.087E-02	1.937E-02	0.000E+00 NOT IDENT.
CO-58	3.983E-03	1.868E-02	3.249E-02	0.000E+00 NOT IDENT.
FE-59	2.454E-02	3.940E-02	7.442E-02	0.000E+00 NOT IDENT.
CO-60	1.270E-02	2.138E-02	4.011E-02	0.000E+00 NOT IDENT.
ZN-65	1.467E-02	3.483E-02	6.458E-02	0.000E+00 NOT IDENT.
SE-75	-1.800E-02	2.166E-02	3.617E-02	0.000E+00 NOT IDENT.
SR-85	-4.701E-02	2.915E-02	4.436E-02	0.000E+00 NOT IDENT.
Y-88	-1.188E-02	1.923E-02	2.565E-02	0.000E+00 NOT IDENT.
Y-91	-8.101E-01	9.520E+00	1.610E+01	0.000E+00 NOT IDENT.
NB-94	1.793E-02	2.026E-02	3.780E-02	0.000E+00 NOT IDENT.
NB-95	-8.144E-04	1.794E-02	3.010E-02	0.000E+00 NOT IDENT.
NB-95M	-3.378E-02	5.821E-02	9.436E-02	0.000E+00 NOT IDENT.
ZR-95	-3.824E-02	3.237E-02	4.295E-02	0.000E+00 NOT IDENT.
MO-99	-4.708E-01	9.664E-01	1.509E+00	0.000E+00 NOT IDENT.
TC-99M	0.000E+00	1.834E+07	0.000E+00	0.000E+00 SHORT HLIF
RU-103	1.641E-02	1.983E-02	3.720E-02	0.000E+00 NOT IDENT.
RH-106	-1.047E-02	1.739E-01	2.955E-01	0.000E+00 NOT IDENT.

RU-106	-1.047E-02	1.739E-01	2.955E-01	0.000E+00	NOT IDENT.
AG-108M	6.528E-05	1.429E-02	2.500E-02	0.000E+00	NOT IDENT.
CD-109	-3.479E-01	3.091E-01	5.007E-01	0.000E+00	NOT IDENT.
AG-110M	-2.133E-02	1.652E-02	2.213E-02	0.000E+00	NOT IDENT.
SN-113	1.406E-02	2.123E-02	3.979E-02	0.000E+00	NOT IDENT.
CD-115	3.607E-01	5.769E-01	1.072E+00	0.000E+00	NOT IDENT.
SN-117M	2.748E-03	1.660E-02	2.930E-02	0.000E+00	NOT IDENT.
TE-123M	-6.540E-03	1.222E-02	2.025E-02	0.000E+00	NOT IDENT.
SB-124	-6.600E-03	5.188E-02	8.431E-02	0.000E+00	NOT IDENT.
SB-125	1.422E-02	4.169E-02	7.588E-02	0.000E+00	NOT IDENT.
TE-125M	-1.421E+00	3.648E+00	6.230E+00	0.000E+00	NOT IDENT.
I-126	8.891E-03	7.254E-02	1.258E-01	0.000E+00	NOT IDENT.
SB-126	1.729E-02	4.728E-02	8.440E-02	0.000E+00	NOT IDENT.
SN-126	-1.109E-02	2.820E-02	4.867E-02	0.000E+00	NOT IDENT.
SB-127	-1.204E-01	2.051E-01	3.032E-01	0.000E+00	NOT IDENT.
I-131	-8.628E-03	3.174E-02	5.456E-02	0.000E+00	NOT IDENT.
TE-132	1.052E-03	6.208E-02	1.064E-01	0.000E+00	NOT IDENT.
BA-133	-1.230E-02	2.020E-02	3.337E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	7.385E+00	0.000E+00	0.000E+00	SHORT HLIF
CS-134	3.496E-03	2.309E-02	3.980E-02	0.000E+00	NOT IDENT.
CS-135	8.277E-02	7.460E-02	1.451E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.808E+07	0.000E+00	0.000E+00	SHORT HLIF
CS-136	7.792E-03	3.374E-02	6.062E-02	0.000E+00	NOT IDENT.
BA-137M	1.829E-02	1.642E-02	3.235E-02	0.000E+00	NOT IDENT.
CS-137	1.932E-02	1.734E-02	3.417E-02	0.000E+00	NOT IDENT.
CE-139	3.430E-03	1.157E-02	2.065E-02	0.000E+00	NOT IDENT.
BA-140	-2.404E-03	8.843E-02	1.522E-01	0.000E+00	NOT IDENT.
LA-140	-1.141E-02	3.279E-02	5.054E-02	0.000E+00	NOT IDENT.
CE-141	8.221E-03	2.375E-02	4.265E-02	0.000E+00	NOT IDENT.
CE-143	4.570E-01	1.528E+00	2.635E+00	0.000E+00	NOT IDENT.
CE-144	-4.109E-02	7.982E-02	1.330E-01	0.000E+00	NOT IDENT.
PM-144	7.588E-03	2.039E-02	3.615E-02	0.000E+00	NOT IDENT.
PR-144	5.584E-01	1.519E+00	2.692E+00	0.000E+00	NOT IDENT.
PM-146	-7.778E-03	2.322E-02	3.906E-02	0.000E+00	NOT IDENT.
ND-147	1.233E-03	1.750E-01	3.028E-01	0.000E+00	NOT IDENT.
PM-149	4.558E+00	4.298E+00	8.287E+00	0.000E+00	NOT IDENT.
EU-152	3.710E-02	4.579E-02	8.732E-02	0.000E+00	NOT IDENT.
GD-153	9.161E-03	3.766E-02	6.809E-02	0.000E+00	NOT IDENT.
EU-154	2.336E-02	5.182E-02	9.624E-02	0.000E+00	NOT IDENT.
EU-155	-2.015E-02	4.264E-02	7.236E-02	0.000E+00	NOT IDENT.
TB-160	-1.643E-02	5.730E-02	9.027E-02	0.000E+00	NOT IDENT.
HO-166M	-2.397E-03	3.221E-02	5.411E-02	0.000E+00	NOT IDENT.
TA-182	4.869E-03	9.310E-02	1.607E-01	0.000E+00	NOT IDENT.
IR-192	1.226E-02	1.768E-02	3.319E-02	0.000E+00	NOT IDENT.
HG-203	5.274E-03	1.574E-02	2.900E-02	0.000E+00	NOT IDENT.
BI-207	-3.950E-03	2.348E-02	3.939E-02	0.000E+00	NOT IDENT.
TL-208	-7.961E-03	2.158E-02	3.544E-02	0.000E+00	NOT IDENT.
PB-210	9.771E-02	1.413E+00	2.538E+00	0.000E+00	NOT IDENT.
BI-211	4.255E-02	9.703E-02	1.789E-01	0.000E+00	NOT IDENT.
PB-211	2.141E-01	3.268E-01	5.892E-01	0.000E+00	NOT IDENT.
BI-212	-2.914E-01	2.531E-01	3.454E-01	0.000E+00	NOT IDENT.
PB-212	1.675E-04	3.170E-02	5.301E-02	0.000E+00	NOT IDENT.
BI-214	1.445E-02	4.360E-02	6.992E-02	0.000E+00	NOT IDENT.
PB-214	1.671E-02	3.468E-02	6.422E-02	0.000E+00	NOT IDENT.
RN-219	1.704E-02	1.799E-01	3.195E-01	0.000E+00	NOT IDENT.
RA-223	-2.491E-01	3.111E-01	5.050E-01	0.000E+00	NOT IDENT.
RA-224	-1.472E-01	3.070E-01	5.004E-01	0.000E+00	NOT IDENT.
RA-226	1.445E-02	4.360E-02	6.992E-02	0.000E+00	NOT IDENT.
AC-227	-4.804E-02	1.392E-01	2.225E-01	0.000E+00	NOT IDENT.
TH-227	-4.804E-02	1.393E-01	2.225E-01	0.000E+00	NOT IDENT.
AC-228	2.995E-02	6.705E-02	1.205E-01	0.000E+00	NOT IDENT.
RA-228	2.995E-02	6.705E-02	1.205E-01	0.000E+00	NOT IDENT.
TH-228	1.675E-04	3.170E-02	5.301E-02	0.000E+00	NOT IDENT.
TH-229	-1.853E-01	2.469E-01	3.963E-01	0.000E+00	NOT IDENT.
PA-231	-4.873E-01	7.199E-01	1.207E+00	0.000E+00	NOT IDENT.
TH-231	-2.491E-01	3.111E-01	5.050E-01	0.000E+00	NOT IDENT.
TH-232	2.995E-02	6.705E-02	1.205E-01	0.000E+00	NOT IDENT.
PA-233	-4.924E-02	3.412E-02	5.249E-02	0.000E+00	NOT IDENT.
PA-234	5.720E-02	1.624E-01	2.854E-01	0.000E+00	NOT IDENT.
PA-234M	2.566E-01	2.188E+00	3.867E+00	0.000E+00	NOT IDENT.
TH-234	-5.661E-01	5.978E-01	9.825E-01	0.000E+00	NOT IDENT.
U-235	7.697E-03	9.806E-02	1.643E-01	0.000E+00	NOT IDENT.
NP-237	-2.014E-03	8.576E-02	1.528E-01	0.000E+00	NOT IDENT.
U-238	-5.661E-01	5.978E-01	9.825E-01	0.000E+00	NOT IDENT.
NP-239	5.933E-02	1.666E-01	3.027E-01	0.000E+00	NOT IDENT.
AM-241	-4.161E-02	5.995E-02	1.025E-01	0.000E+00	NOT IDENT.
CM-247	3.947E-03	1.705E-02	3.072E-02	0.000E+00	NOT IDENT.
CF-249	-1.713E-02	2.078E-02	3.342E-02	0.000E+00	NOT IDENT.

CF-251	8.386E-03	6.316E-02	1.105E-01	0.000E+00 NOT IDENT.
ANH-511	-2.277E-02	3.133E-02	6.065E-02	0.000E+00 NOT IDENT.

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057335.CNF;1
Sample date        : 3-MAR-2010 00:00:00. Acquisition date : 10-MAR-2010 15:41:36
Sample ID          : G1202057335      Sample quantity   : 1.43040E+02 GRAM
Detector name      : GAM19             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:00.65  0.0%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 959270            Detector SN#      :
Matrix Spike ID    :                   LCS ID            : 1032-A
*****

```

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1202057335

Page : 2
Acquisition date : 10-MAR-2010 15:41:36

Total number of lines in spectrum 1
Number of unidentified lines 1
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

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

Unidentified Energy Lines
Sample ID : G1202057335

Page : 3
Acquisition date : 10-MAR-2010 15:41:36

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	928.52	17	2	1.52	1856.16	1852	9	2.37E-03	57.5	1.72E+00	

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057335.CNF;1
* Acquisition date   : 10-MAR-2010 15:41:36  Detector SN#      :
* Detector ID        : GAM19                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance  : 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit   : 75.00000
* Elapsed real time  : 0 02:00:00.65          Half life ratio   : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 3-MAR-2010 00:00:00.  Nuclide Library   : SOLID
* Sample ID          : G1202057335           Analyst initials  : MXR1
* Batch Number       : 959270                Sample Quantity   : 1.43040E+02 GRAM
*****
*                               QC DATA                                   *
*
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54.1MS Isotope       :
* MSD ID              :                      MSD Isotope       :
* LCS ID              : 1032-A                LCS Isotope       :
*****

```

Combined Activity-MDA Report

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-9.417E-02		1.579E-01	2.427E-01	1.646E-02	-0.388
NA-22	5.919E-03		1.891E-02	3.335E-02	2.225E-03	0.178
NA-24	2.000E-05		5.036E-05	Half-Life too short		
K-40	-1.172E-01		2.590E-01	4.039E-01	3.008E-02	-0.290
SC-46	7.809E-03		1.770E-02	3.085E-02	2.681E-03	0.253
V-48	6.955E-03		2.191E-02	3.760E-02	3.023E-03	0.185
CR-51	-8.046E-02		1.686E-01	2.708E-01	1.749E-02	-0.297
MN-54	1.022E-03		2.071E-02	3.375E-02	2.685E-03	0.030
CO-56	9.449E-03		2.411E-02	4.096E-02	3.324E-03	0.231
CO-57	1.702E-03		1.109E-02	1.828E-02	1.091E-03	0.093
CO-58	3.983E-03		1.906E-02	3.191E-02	2.445E-03	0.125
FE-59	2.454E-02		4.020E-02	7.359E-02	5.521E-03	0.333
CO-60	1.270E-02		2.182E-02	3.984E-02	2.936E-03	0.319
ZN-65	1.467E-02		3.554E-02	6.389E-02	4.085E-03	0.230
SE-75	-1.800E-02		2.211E-02	3.468E-02	2.017E-03	-0.519
SR-85	-4.701E-02		2.974E-02	4.314E-02	2.547E-03	-1.090
Y-88	-1.188E-02		1.962E-02	2.566E-02	1.465E-03	-0.463

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-91	-8.101E-01		9.714E+00	1.596E+01	9.316E-01	-0.051
NB-94	1.793E-02		2.067E-02	3.701E-02	2.331E-03	0.484
NB-95	-8.144E-04		1.831E-02	2.953E-02	2.086E-03	-0.028
NB-95M	-3.378E-02		5.939E-02	9.025E-02	6.708E-03	-0.374
ZR-95	-3.824E-02		3.303E-02	4.212E-02	3.388E-03	-0.908
MO-99	-4.708E-01		9.861E-01	1.479E+00	2.191E-01	-0.318
TC-99M	-2.201E+00		9.359E+00	Half-Life too short		
RU-103	1.641E-02		2.024E-02	3.615E-02	4.506E-03	0.454
RH-106	-1.047E-02		1.775E-01	2.886E-01	3.368E-02	-0.036
RU-106	-1.047E-02		1.774E-01	2.886E-01	1.702E-02	-0.036
AG-108M	6.528E-05		1.458E-02	2.423E-02	1.487E-03	0.003
CD-109	-3.479E-01		3.154E-01	4.693E-01	4.203E-02	-0.741
AG-110M	-2.133E-02		1.686E-02	2.164E-02	1.343E-03	-0.986
SN-113	1.406E-02		2.166E-02	3.847E-02	2.295E-03	0.365
CD-115	3.607E-01		5.887E-01	1.043E+00	6.173E-02	0.346
SN-117M	2.748E-03		1.694E-02	2.780E-02	1.480E-03	0.099
TE-123M	-6.540E-03		1.247E-02	1.921E-02	1.037E-03	-0.340
SB-124	-6.600E-03		5.294E-02	8.420E-02	5.789E-03	-0.078
SB-125	1.422E-02		4.254E-02	7.351E-02	4.371E-03	0.193
TE-125M	-1.421E+00		3.722E+00	5.865E+00	5.278E-01	-0.242
I-126	8.891E-03		7.402E-02	1.231E-01	7.231E-03	0.072
SB-126	1.729E-02		4.824E-02	8.269E-02	5.386E-03	0.209
SN-126	-1.109E-02		2.877E-02	4.561E-02	4.068E-03	-0.243
SB-127	-1.204E-01		2.093E-01	2.967E-01	2.198E-02	-0.406
I-131	-8.628E-03		3.239E-02	5.267E-02	3.331E-03	-0.164
TE-132	1.052E-03		6.335E-02	1.017E-01	1.336E-02	0.010
BA-133	-1.230E-02		2.061E-02	3.220E-02	3.619E-03	-0.382
I-133	3.293E-06		3.768E-06	Half-Life too short		
CS-134	3.496E-03		2.356E-02	3.908E-02	2.938E-03	0.089
CS-135	8.277E-02		7.612E-02	1.392E-01	1.062E-02	0.595
I-135	-4.445E-01		9.226E+00	Half-Life too short		
CS-136	7.792E-03		3.443E-02	5.988E-02	4.622E-03	0.130
BA-137M	1.829E-02		1.675E-02	3.163E-02	1.842E-03	0.578
CS-137	1.932E-02		1.770E-02	3.342E-02	1.954E-03	0.578
CE-139	3.430E-03		1.180E-02	1.961E-02	1.024E-03	0.175
BA-140	-2.404E-03		9.023E-02	1.482E-01	4.939E-02	-0.016
LA-140	-1.141E-02		3.346E-02	5.041E-02	3.411E-03	-0.226
CE-141	8.221E-03		2.423E-02	4.038E-02	2.326E-03	0.204
CE-143	4.570E-01		1.559E+00	2.532E+00	5.097E-01	0.180
CE-144	-4.109E-02		8.145E-02	1.257E-01	1.742E-02	-0.327
PM-144	7.588E-03		2.081E-02	3.539E-02	2.204E-03	0.214
PR-144	5.584E-01		1.550E+00	2.635E+00	1.641E-01	0.212
PM-146	-7.778E-03		2.369E-02	3.789E-02	3.200E-03	-0.205
ND-147	1.233E-03		1.786E-01	2.947E-01	4.001E-02	0.004
PM-149	4.558E+00		4.386E+00	7.959E+00	1.127E+00	0.573
EU-152	3.710E-02		4.672E-02	8.420E-02	5.476E-03	0.441
GD-153	9.161E-03		3.843E-02	6.395E-02	4.974E-03	0.143
EU-154	2.336E-02		5.288E-02	9.549E-02	9.526E-03	0.245

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	-2.015E-02		4.351E-02	6.807E-02	4.893E-03	-0.296
TB-160	-1.643E-02		5.847E-02	8.883E-02	7.598E-03	-0.185
HO-166M	-2.397E-03		3.286E-02	5.300E-02	3.395E-03	-0.045
TA-182	4.869E-03		9.500E-02	1.593E-01	9.604E-03	0.031
IR-192	1.226E-02		1.804E-02	3.194E-02	1.866E-03	0.384
HG-203	5.274E-03		1.606E-02	2.783E-02	1.702E-03	0.189
BI-207	-3.950E-03		2.396E-02	3.893E-02	2.764E-03	-0.101
TL-208	-7.961E-03		2.202E-02	3.456E-02	2.345E-03	-0.230
PB-210	9.771E-02		1.442E+00	2.349E+00	1.770E-01	0.042
BI-211	4.255E-02		9.901E-02	1.726E-01	1.102E-02	0.247
PB-211	2.141E-01		3.334E-01	5.700E-01	2.733E-01	0.376
BI-212	-2.914E-01		2.583E-01	3.385E-01	3.775E-02	-0.861
PB-212	1.675E-04		3.234E-02	5.072E-02	3.693E-03	0.003
BI-214	1.445E-02		4.449E-02	6.825E-02	5.408E-03	0.212
PB-214	1.671E-02		3.539E-02	6.195E-02	5.226E-03	0.270
RN-219	1.704E-02		1.836E-01	3.091E-01	4.128E-02	0.055
RA-223	-2.491E-01		3.174E-01	4.863E-01	7.839E-02	-0.512
RA-224	-1.472E-01		3.133E-01	4.789E-01	2.714E-02	-0.307
RA-226	1.445E-02		4.449E-02	6.825E-02	5.408E-03	0.212
AC-227	-4.804E-02		1.421E-01	2.132E-01	2.171E-02	-0.225
TH-227	-4.804E-02		1.421E-01	2.132E-01	2.555E-02	-0.225
AC-228	2.995E-02		6.842E-02	1.187E-01	1.384E-02	0.252
RA-228	2.995E-02		6.842E-02	1.187E-01	1.384E-02	0.252
TH-228	1.675E-04		3.234E-02	5.072E-02	3.693E-03	0.003
TH-229	-1.853E-01		2.519E-01	3.775E-01	2.037E-02	-0.491
PA-231	-4.873E-01		7.346E-01	1.159E+00	1.520E-01	-0.420
TH-231	-2.491E-01		3.174E-01	4.863E-01	7.839E-02	-0.512
TH-232	2.995E-02		6.842E-02	1.187E-01	1.384E-02	0.252
PA-233	-4.924E-02		3.482E-02	5.050E-02	3.119E-03	-0.975
PA-234	5.720E-02		1.657E-01	2.813E-01	5.251E-02	0.203
PA-234M	2.566E-01		2.232E+00	3.817E+00	3.553E-01	0.067
TH-234	-5.661E-01		6.100E-01	9.149E-01	1.636E-01	-0.619
U-235	7.697E-03		1.001E-01	1.556E-01	2.429E-02	0.049
NP-237	-2.014E-03		8.751E-02	1.432E-01	3.256E-02	-0.014
U-238	-5.661E-01		6.100E-01	9.149E-01	1.636E-01	-0.619
NP-239	5.933E-02		1.700E-01	2.854E-01	1.780E-02	0.208
AM-241	-4.161E-02		6.117E-02	9.533E-02	7.849E-03	-0.437
CM-247	3.947E-03		1.739E-02	2.972E-02	1.667E-03	0.133
CF-249	-1.713E-02		2.121E-02	3.231E-02	1.804E-03	-0.530
CF-251	8.386E-03		6.445E-02	1.051E-01	5.559E-03	0.080
ANH-511	-2.277E-02		3.197E-02	5.898E-02	3.480E-03	-0.386

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202057335          *
* Acquisition date   : 10-MAR-2010 15:41:36 Detector SN# :                  *
* Detector ID        : GAM19 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance   : 1.500                      *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000              *
* Elapsed real time  : 0 02:00:00.65 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 3-MAR-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202057335 Analyst initials: MXR1                 *
* Batch Number       : 959270 Sample Quantity : 1.4304E+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 :                  *
*****

```

Combined Activity-MDA Report

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act Error	DLC (pCi/GRAM)	TPU
---------	-------------------------------------	---------------	--------------------	-----

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-9.417E-02	1.547E-01	1.250E-01	7.895E-02 NOT IDENT.
NA-22	5.919E-03	1.853E-02	1.681E-02	9.453E-03 NOT IDENT.
NA-24	2.000E+01	9.870E+01	0.000E+00	5.036E+01 SHORT HLIF
K-40	-1.172E-01	2.538E-01	2.030E-01	1.295E-01 NOT IDENT.
SC-46	7.809E-03	1.734E-02	1.568E-02	8.849E-03 NOT IDENT.
V-48	6.955E-03	2.148E-02	1.907E-02	1.096E-02 NOT IDENT.
CR-51	-8.046E-02	1.652E-01	1.407E-01	8.430E-02 NOT IDENT.
MN-54	1.022E-03	2.029E-02	1.718E-02	1.035E-02 NOT IDENT.
CO-56	9.449E-03	2.363E-02	2.084E-02	1.206E-02 NOT IDENT.
CO-57	1.702E-03	1.087E-02	9.693E-03	5.544E-03 NOT IDENT.
CO-58	3.983E-03	1.868E-02	1.625E-02	9.528E-03 NOT IDENT.
FE-59	2.454E-02	3.940E-02	3.723E-02	2.010E-02 NOT IDENT.
CO-60	1.270E-02	2.138E-02	2.007E-02	1.091E-02 NOT IDENT.
ZN-65	1.467E-02	3.483E-02	3.231E-02	1.777E-02 NOT IDENT.
SE-75	-1.800E-02	2.166E-02	1.810E-02	1.105E-02 NOT IDENT.
SR-85	-4.701E-02	2.915E-02	2.219E-02	1.487E-02 NOT IDENT.
Y-88	-1.188E-02	1.923E-02	1.283E-02	9.809E-03 NOT IDENT.
Y-91	-8.101E-01	9.520E+00	8.057E+00	4.857E+00 NOT IDENT.
NB-94	1.793E-02	2.026E-02	1.891E-02	1.034E-02 NOT IDENT.
NB-95	-8.144E-04	1.794E-02	1.506E-02	9.154E-03 NOT IDENT.
NB-95M	-3.378E-02	5.821E-02	4.721E-02	2.970E-02 NOT IDENT.
ZR-95	-3.824E-02	3.237E-02	2.149E-02	1.652E-02 NOT IDENT.
MO-99	-4.708E-01	9.664E-01	7.547E-01	4.931E-01 NOT IDENT.
TC-99M	-2.201E+06	1.834E+07	0.000E+00	9.359E+06 SHORT HLIF
RU-103	1.641E-02	1.983E-02	1.861E-02	1.012E-02 NOT IDENT.
RH-106	-1.047E-02	1.739E-01	1.479E-01	8.873E-02 NOT IDENT.

RU-106	-1.047E-02	1.739E-01	1.479E-01	8.872E-02	NOT IDENT.
AG-108M	6.528E-05	1.429E-02	1.251E-02	7.290E-03	NOT IDENT.
CD-109	-3.479E-01	3.091E-01	2.505E-01	1.577E-01	NOT IDENT.
AG-110M	-2.133E-02	1.652E-02	1.107E-02	8.429E-03	NOT IDENT.
SN-113	1.406E-02	2.123E-02	1.991E-02	1.083E-02	NOT IDENT.
CD-115	3.607E-01	5.769E-01	5.362E-01	2.943E-01	NOT IDENT.
SN-117M	2.748E-03	1.660E-02	1.466E-02	8.471E-03	NOT IDENT.
TE-123M	-6.540E-03	1.222E-02	1.013E-02	6.233E-03	NOT IDENT.
SB-124	-6.600E-03	5.188E-02	4.218E-02	2.647E-02	NOT IDENT.
SB-125	1.422E-02	4.169E-02	3.796E-02	2.127E-02	NOT IDENT.
TE-125M	-1.421E+00	3.648E+00	3.117E+00	1.861E+00	NOT IDENT.
I-126	8.891E-03	7.254E-02	6.295E-02	3.701E-02	NOT IDENT.
SB-126	1.729E-02	4.728E-02	4.223E-02	2.412E-02	NOT IDENT.
SN-126	-1.109E-02	2.820E-02	2.435E-02	1.439E-02	NOT IDENT.
SB-127	-1.204E-01	2.051E-01	1.517E-01	1.046E-01	NOT IDENT.
I-131	-8.628E-03	3.174E-02	2.730E-02	1.620E-02	NOT IDENT.
TE-132	1.052E-03	6.208E-02	5.321E-02	3.167E-02	NOT IDENT.
BA-133	-1.230E-02	2.020E-02	1.670E-02	1.030E-02	NOT IDENT.
I-133	3.293E+00	7.385E+00	0.000E+00	3.768E+00	SHORT HLIF
CS-134	3.496E-03	2.309E-02	1.991E-02	1.178E-02	NOT IDENT.
CS-135	8.277E-02	7.460E-02	7.260E-02	3.806E-02	NOT IDENT.
I-135	-4.445E+05	1.808E+07	0.000E+00	9.226E+06	SHORT HLIF
CS-136	7.792E-03	3.374E-02	3.033E-02	1.721E-02	NOT IDENT.
BA-137M	1.829E-02	1.642E-02	1.618E-02	8.377E-03	NOT IDENT.
CS-137	1.932E-02	1.734E-02	1.710E-02	8.849E-03	NOT IDENT.
CE-139	3.430E-03	1.157E-02	1.033E-02	5.901E-03	NOT IDENT.
BA-140	-2.404E-03	8.843E-02	7.616E-02	4.512E-02	NOT IDENT.
LA-140	-1.141E-02	3.279E-02	2.529E-02	1.673E-02	NOT IDENT.
CE-141	8.221E-03	2.375E-02	2.134E-02	1.212E-02	NOT IDENT.
CE-143	4.570E-01	1.528E+00	1.318E+00	7.797E-01	NOT IDENT.
CE-144	-4.109E-02	7.982E-02	6.653E-02	4.073E-02	NOT IDENT.
PM-144	7.588E-03	2.039E-02	1.808E-02	1.040E-02	NOT IDENT.
PR-144	5.584E-01	1.519E+00	1.347E+00	7.751E-01	NOT IDENT.
PM-146	-7.778E-03	2.322E-02	1.954E-02	1.185E-02	NOT IDENT.
ND-147	1.233E-03	1.750E-01	1.515E-01	8.929E-02	NOT IDENT.
PM-149	4.558E+00	4.298E+00	4.146E+00	2.193E+00	NOT IDENT.
EU-152	3.710E-02	4.579E-02	4.369E-02	2.336E-02	NOT IDENT.
GD-153	9.161E-03	3.766E-02	3.406E-02	1.922E-02	NOT IDENT.
EU-154	2.336E-02	5.182E-02	4.815E-02	2.644E-02	NOT IDENT.
EU-155	-2.015E-02	4.264E-02	3.620E-02	2.175E-02	NOT IDENT.
TB-160	-1.643E-02	5.730E-02	4.516E-02	2.923E-02	NOT IDENT.
HO-166M	-2.397E-03	3.221E-02	2.707E-02	1.643E-02	NOT IDENT.
TA-182	4.869E-03	9.310E-02	8.039E-02	4.750E-02	NOT IDENT.
IR-192	1.226E-02	1.768E-02	1.660E-02	9.018E-03	NOT IDENT.
HG-203	5.274E-03	1.574E-02	1.451E-02	8.030E-03	NOT IDENT.
BI-207	-3.950E-03	2.348E-02	1.971E-02	1.198E-02	NOT IDENT.
TL-208	-7.961E-03	2.158E-02	1.773E-02	1.101E-02	NOT IDENT.
PB-210	9.771E-02	1.413E+00	1.270E+00	7.208E-01	NOT IDENT.
BI-211	4.255E-02	9.703E-02	8.950E-02	4.951E-02	NOT IDENT.
PB-211	2.141E-01	3.268E-01	2.948E-01	1.667E-01	NOT IDENT.
BI-212	-2.914E-01	2.531E-01	1.728E-01	1.292E-01	NOT IDENT.
PB-212	1.675E-04	3.170E-02	2.652E-02	1.617E-02	NOT IDENT.
BI-214	1.445E-02	4.360E-02	3.498E-02	2.225E-02	NOT IDENT.
PB-214	1.671E-02	3.468E-02	3.213E-02	1.770E-02	NOT IDENT.
RN-219	1.704E-02	1.799E-01	1.599E-01	9.181E-02	NOT IDENT.
RA-223	-2.491E-01	3.111E-01	2.527E-01	1.587E-01	NOT IDENT.
RA-224	-1.472E-01	3.070E-01	2.504E-01	1.566E-01	NOT IDENT.
RA-226	1.445E-02	4.360E-02	3.498E-02	2.225E-02	NOT IDENT.
AC-227	-4.804E-02	1.392E-01	1.113E-01	7.103E-02	NOT IDENT.
TH-227	-4.804E-02	1.393E-01	1.113E-01	7.105E-02	NOT IDENT.
AC-228	2.995E-02	6.705E-02	6.029E-02	3.421E-02	NOT IDENT.
RA-228	2.995E-02	6.705E-02	6.029E-02	3.421E-02	NOT IDENT.
TH-228	1.675E-04	3.170E-02	2.652E-02	1.617E-02	NOT IDENT.
TH-229	-1.853E-01	2.469E-01	1.983E-01	1.260E-01	NOT IDENT.
PA-231	-4.873E-01	7.199E-01	6.038E-01	3.673E-01	NOT IDENT.
TH-231	-2.491E-01	3.111E-01	2.527E-01	1.587E-01	NOT IDENT.
TH-232	2.995E-02	6.705E-02	6.029E-02	3.421E-02	NOT IDENT.
PA-233	-4.924E-02	3.412E-02	2.626E-02	1.741E-02	NOT IDENT.
PA-234	5.720E-02	1.624E-01	1.428E-01	8.287E-02	NOT IDENT.
PA-234M	2.566E-01	2.188E+00	1.935E+00	1.116E+00	NOT IDENT.
TH-234	-5.661E-01	5.978E-01	4.915E-01	3.050E-01	NOT IDENT.
U-235	7.697E-03	9.806E-02	8.222E-02	5.003E-02	NOT IDENT.
NP-237	-2.014E-03	8.576E-02	7.644E-02	4.375E-02	NOT IDENT.
U-238	-5.661E-01	5.978E-01	4.915E-01	3.050E-01	NOT IDENT.
NP-239	5.933E-02	1.666E-01	1.514E-01	8.502E-02	NOT IDENT.
AM-241	-4.161E-02	5.995E-02	5.128E-02	3.059E-02	NOT IDENT.
CM-247	3.947E-03	1.705E-02	1.537E-02	8.697E-03	NOT IDENT.
CF-249	-1.713E-02	2.078E-02	1.672E-02	1.060E-02	NOT IDENT.

CF-251	8.386E-03	6.316E-02	5.530E-02	3.223E-02	NOT IDENT.
ANH-511	-2.277E-02	3.133E-02	3.034E-02	1.598E-02	NOT IDENT.

```

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

```

ENERGY	MDA COUNTS
46.54	76.7775
49.72	103.4127
57.36	85.6151
59.54	91.7351
63.29	98.0385
63.29	98.0385
64.28	81.2862
67.75	82.5653
69.67	87.7053
70.83	80.8195
72.81	86.9715
72.87	78.9786
72.87	78.9786
74.82	85.1336
74.82	85.1336
74.82	85.1336
74.97	87.1490
77.11	71.2633
77.11	71.2633
77.11	71.2633
79.69	76.4615
79.80	76.4694
80.12	92.5949
80.19	92.6008
80.57	92.6324
81.00	86.6246
81.07	86.6299
81.07	86.6299
83.79	73.7126
83.79	73.7126
85.43	78.8742
86.48	77.9341
86.55	77.9388
86.79	77.9546
86.94	82.0150
87.57	81.0464
88.03	104.3882
88.47	120.6492
89.96	120.8017
91.11	94.4992
92.59	79.3553
92.59	79.3553
93.35	87.5494
94.67	109.0462
94.87	104.9870
94.87	104.9870
95.86	135.6753
97.43	88.8628
98.44	86.8907
99.53	86.9662
100.11	82.9120
103.18	66.6950
103.37	63.6263
105.31	73.9998
106.12	64.7899
109.28	74.2239
111.00	67.0942
111.76	56.8044
116.30	75.6469
117.23	63.2546
121.12	69.6703
121.78	62.4204
122.06	70.7572
123.07	69.7664
131.20	72.2533
133.52	69.2201
136.00	57.7787

136.47	59.8984
140.51	75.8622
140.51	0.0000
143.76	76.0215
144.24	73.9328
144.24	73.9328
145.44	71.8754
152.43	82.8083
153.25	72.2287
154.21	62.7060
154.21	62.7060
156.02	68.0957
158.56	68.2012
159.00	77.8126
162.66	66.2326
163.33	60.9156
165.86	53.5149
176.60	82.9263
177.52	77.5822
181.07	97.1713
184.41	68.1468
185.72	57.3711
193.51	79.3564
197.04	59.9020
205.31	73.2889
210.85	55.9462
215.65	50.5841
222.11	47.4377
227.38	44.2426
228.16	50.8982
228.18	50.8986
235.69	87.7292
235.96	72.1917
235.96	72.1917
238.63	63.3870
238.63	63.3870
240.99	75.7036
242.00	83.5361
244.70	47.9544
252.40	50.3637
252.80	59.3280
256.23	62.7840
256.23	62.7840
260.90	60.6693
264.66	73.8250
268.22	47.7919
269.46	56.8400
269.46	56.8400
271.23	61.3984
273.65	64.1747
276.40	56.1073
277.37	47.0774
277.60	47.0818
278.00	47.0901
279.20	48.9263
279.54	58.9015
280.46	63.4572
283.69	65.3607
284.31	54.4812
285.41	47.2393
285.90	42.7056
287.50	60.9199
293.27	54.6870
295.22	56.5557
295.96	62.0475
298.57	52.9802
299.98	50.2687
299.98	50.2687
300.09	50.2714
300.09	50.2714
300.13	50.2721
301.36	48.4686
302.85	44.8375
304.50	55.8561
304.50	55.8561
304.85	56.7801
308.46	41.2712
311.90	73.4727

316.51	53.3661
319.41	58.9543
320.08	64.4979
323.87	56.2895
323.87	56.2895
328.76	40.6796
333.37	38.8997
334.37	43.5473
334.37	43.5473
338.28	36.1893
338.28	36.1893
338.32	36.1897
338.32	36.1897
338.32	36.1897
340.48	38.0766
340.55	38.0776
344.28	35.3416
351.06	40.0931
351.93	38.2408
356.01	48.5742
364.49	49.6616
366.42	32.8185
383.85	30.1930
388.16	52.9170
388.63	48.2004
391.69	35.0064
400.66	42.7072
401.81	31.3307
402.40	32.2867
404.85	25.6609
410.95	31.4281
414.70	33.3748
423.72	34.4312
427.09	30.6395
427.87	28.7322
433.94	33.5871
453.88	45.3918
463.37	42.6212
468.07	30.0725
473.00	28.1752
476.78	44.7439
477.60	41.8363
487.02	37.0774
492.35	44.9550
497.08	32.2963
511.00	39.3081
514.00	122.9454
527.90	25.6756
529.87	0.0000
531.02	28.6637
537.26	28.7147
546.56	0.0000
563.25	48.8708
569.33	28.9717
569.50	28.9731
569.70	31.9719
583.19	34.0946
600.60	36.2672
602.73	35.2794
604.72	38.3238
609.32	31.3020
609.32	31.3020
610.33	32.3203
614.28	36.3973
618.01	24.2883
621.93	32.4172
621.93	32.4172
633.25	27.4311
635.95	22.3668
636.99	24.4066
645.85	16.3074
657.76	31.6895
661.66	14.3254
661.66	14.3254
664.57	30.7192
666.33	23.5615
666.50	23.5626
677.62	32.8719

685.70	30.8774
695.00	34.0413
696.49	33.0219
696.51	33.0219
697.00	40.2502
702.65	28.9365
706.68	40.3425
711.68	26.9268
720.70	20.7568
721.93	14.5339
722.78	17.6516
722.91	17.6524
723.31	17.6541
724.19	19.7348
727.33	31.1829
733.00	14.5711
735.93	23.9546
739.50	26.0590
747.24	24.0169
752.31	25.0898
753.82	17.7782
756.73	23.0221
763.94	14.6740
765.81	20.9717
766.42	20.9746
777.92	30.4911
778.90	19.9815
783.70	15.7917
785.37	23.1693
795.86	21.1118
801.95	14.7978
810.29	20.1188
810.76	19.0622
815.77	15.9020
818.51	24.3976
832.01	13.8296
834.85	25.5469
836.80	0.0000
846.77	27.7456
856.80	28.8727
860.56	16.0529
871.09	13.9429
873.19	13.9490
875.33	0.0000
879.36	15.0408
880.51	17.1938
883.24	10.7520
884.68	8.6041
889.28	12.9182
898.04	12.9410
911.20	14.0566
911.20	14.0566
911.20	14.0566
926.50	19.8833
937.49	16.3033
944.13	19.5891
946.00	17.4191
949.00	17.4293
962.29	12.0133
964.08	27.3120
966.15	27.3230
968.97	18.5896
968.97	18.5896
968.97	18.5896
983.53	9.8688
996.26	10.9917
1001.03	16.5022
1004.73	22.0181
1037.84	22.1533
1038.76	0.0000
1048.07	13.8715
1050.41	6.4759
1050.41	6.4759
1063.66	14.8379
1085.87	15.8275
1099.45	13.0658
1112.07	14.0295
1115.54	10.2946

1120.29	18.7329
1120.29	18.7329
1120.55	14.9870
1121.30	13.1153
1131.51	0.0000
1173.23	9.4511
1177.93	12.2959
1189.05	8.5283
1204.77	19.0015
1221.41	20.0054
1231.02	17.1746
1235.36	13.3671
1238.28	6.6867
1260.41	0.0000
1271.85	10.5645
1274.44	8.6470
1274.54	9.6082
1291.59	10.5972
1298.22	0.0000
1312.11	16.4300
1332.49	10.6643
1365.19	13.6405
1368.63	0.0000
1384.29	10.7485
1408.01	12.7472
1457.56	0.0000
1460.82	11.8574
1489.16	6.9447
1505.03	3.9774
1596.21	11.0756
1620.50	3.0304
1678.03	0.0000
1690.97	11.2148
1764.49	6.1748
1764.49	6.1748
1770.23	9.2688
1771.35	9.2699
1791.20	0.0000
1836.06	8.3060

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202057335

Total Uranium Activity	-1.6806E+00	ug/g
Total Uranium Counting Unc.	1.7792E+00	ug/g
Total Uranium Tpu	9.0774E-07	ug/g
Total Uranium Mda	1.4628E+00	ug/g

```

*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 959270                SAMPLE ID   : G1202057335                *
*  ANALYST       : MXR1                  DETECTOR    : GAM19                    *
*  SAMPLE DATE   : 3-MAR-2010 00:00:00.00  COUNT TIME : 0 02:00:00.00            *
*  ANALYSIS DATE: 10-MAR-2010 15:41:36.70  SAMPLE ALQT: 143.040 GRAM            *
*
*****

```

```

GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.606E-02
GROSS GAMMA ERROR (pCi/GRAM )   : 7.496E-03
GROSS GAMMA MDA (pCi/GRAM )     : 6.640E-02
GROSS GAMMA DLC (pCi/GRAM )     : 3.115E-02

```

VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 17:43:11.43

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057336.CNF;1
Sample date        : 23-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 15:42:33
Sample ID          : G1202057336 Sample quantity : 1.24200E+02 GRAM
Detector name      : GAM22 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:02.08 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 959270 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.08*	97	476	1.08	126.41	123	7	1.34E-02	40.4	
2	3	74.86	449	529	1.07	149.96	146	14	6.24E-02	9.3	3.89E-01
3	3	77.15*	800	574	1.09	154.52	146	14	1.11E-01	6.4	
4	4	87.30*	346	573	1.27	174.81	171	22	4.81E-02	12.8	2.40E+00
5	4	90.06	218	392	1.06	180.33	171	22	3.02E-02	15.9	
6	4	92.67*	463	516	1.50	185.54	171	22	6.43E-02	11.1	
7	0	185.99*	281	444	1.31	371.99	367	10	3.90E-02	16.1	
8	0	209.35	65	437	1.01	418.66	414	9	9.09E-03	58.7	
9	3	238.70*	1659	249	1.24	477.33	469	21	2.30E-01	3.0	1.75E+00
10	3	241.73	379	299	1.56	483.37	469	21	5.26E-02	10.6	
11	0	270.67	145	340	1.64	541.19	535	12	2.02E-02	26.8	
12	0	277.37	66	226	1.50	554.59	551	8	9.13E-03	41.5	
13	1	295.23*	568	236	1.61	590.28	583	23	7.89E-02	6.6	1.77E+00
14	1	300.15	137	232	1.67	600.12	583	23	1.90E-02	22.6	
15	0	328.31	85	249	0.95	656.39	651	10	1.18E-02	36.5	
16	0	338.45*	285	258	1.55	676.66	672	10	3.95E-02	12.3	
17	0	351.96*	874	251	1.37	703.65	699	12	1.21E-01	5.0	
18	0	409.31*	106	223	1.52	818.27	813	13	1.48E-02	30.9	
19	0	463.16*	89	166	1.32	925.88	922	12	1.24E-02	31.0	
20	0	510.84*	179	238	1.60	1021.18	1012	18	2.49E-02	24.4	
21	0	583.25*	578	145	1.49	1165.91	1160	14	8.02E-02	6.3	
22	0	609.31*	672	171	1.40	1218.01	1210	15	9.34E-02	5.9	
23	0	727.44*	178	105	2.04	1454.15	1446	15	2.47E-02	14.9	
24	0	795.28	90	89	1.26	1589.76	1581	16	1.24E-02	26.5	
25	0	860.71*	108	60	1.78	1720.57	1712	16	1.51E-02	19.6	
26	0	911.37*	423	116	1.98	1821.85	1814	15	5.88E-02	7.7	
27	0	969.60	189	185	2.03	1938.29	1932	17	2.63E-02	18.7	
28	0	1003.91	71	115	2.24	2006.90	1997	22	9.92E-03	40.8	
29	0	1121.29*	73	159	1.41	2241.61	2234	17	1.01E-02	42.3	
30	0	1460.91*	1929	58	2.63	2920.84	2910	21	2.68E-01	2.5	
31	0	1509.75	54	21	2.33	3018.54	3010	21	7.50E-03	25.2	
32	0	1730.79	35	20	2.78	3460.74	3450	20	4.86E-03	35.6	
33	0	1764.66*	125	21	2.87	3528.51	3518	21	1.73E-02	14.1	

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

VMS Nuclide Identification Report V3.1 Generated 10-MAR-2010 17:43:13

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057336.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 23-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 15:42:33
Sample ID        : G1202057336 Sample quantity : 124.20 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA22 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.08 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	*	2.865E+01	2.992E+00	4.485E-01	4.109E-02	63.878
CD-109	+	88.03	*	3.863E+00	1.054E+00	1.102E+00	1.045E-01	3.507
SN-126	+	64.28		7.090E-01	5.818E-01	6.903E-01	1.003E-01	1.027
	+	86.94		1.570E+00	7.659E-01	4.520E-01	1.877E-01	3.472
	+	87.57	*	3.775E-01	1.030E-01	1.081E-01	1.021E-02	3.492
TL-208	+	277.37		4.872E-01	4.122E-01	5.581E-01	9.284E-02	0.873
	+	583.19	*	5.227E-01	8.649E-02	5.046E-02	5.467E-03	10.358
	+	860.56		8.972E-01	3.669E-01	4.061E-01	4.731E-02	2.209
BI-211		72.87		5.349E+00	3.109E+00	4.833E+00	3.868E-01	1.107
	+	351.06	*	3.787E+00	5.832E-01	3.043E-01	3.551E-02	12.445
PB-212	+	74.82		2.139E+00	4.817E-01	5.111E-01	6.490E-02	4.185
	+	77.11		2.188E+00	3.335E-01	2.944E-01	2.462E-02	7.433
	+	238.63	*	1.714E+00	2.495E-01	8.524E-02	1.129E-02	20.112
	+	300.09		2.116E+00	1.005E+00	1.166E+00	1.710E-01	1.814
BI-214	+	609.32	*	1.172E+00	1.943E-01	1.041E-01	1.214E-02	11.264
	+	1120.29		6.310E-01	5.388E-01	4.503E-01	4.997E-02	1.401
	+	1764.49		1.435E+00	4.222E-01	2.552E-01	2.126E-02	5.624
PB-214	+	74.82		3.791E+00	8.266E-01	9.058E-01	1.031E-01	4.185
	+	77.11		3.857E+00	6.684E-01	5.189E-01	6.095E-02	7.433
	+	242.00		2.370E+00	5.989E-01	5.177E-01	7.159E-02	4.579
	+	295.22		1.560E+00	3.126E-01	2.065E-01	3.097E-02	7.558
	+	351.93	*	1.375E+00	2.248E-01	1.070E-01	1.378E-02	12.842
RA-224	+	240.99	*	4.192E+00	1.031E+00	9.127E-01	1.143E-01	4.593
RA-226	+	609.32	*	1.172E+00	1.943E-01	1.041E-01	1.214E-02	11.264
	+	1120.29		6.310E-01	5.388E-01	4.503E-01	4.997E-02	1.401
	+	1764.49		1.435E+00	4.222E-01	2.552E-01	2.126E-02	5.624
AC-228	+	338.32		1.382E+00	6.793E-01	3.531E-01	1.501E-01	3.913
	+	911.20	*	1.778E+00	3.649E-01	2.198E-01	2.978E-02	8.089
	+	968.97		1.369E+00	6.175E-01	4.941E-01	1.242E-01	2.770
RA-228	+	338.32		1.382E+00	6.793E-01	3.531E-01	1.501E-01	3.913
	+	911.20	*	1.778E+00	3.649E-01	2.198E-01	2.978E-02	8.089
	+	968.97		1.369E+00	6.175E-01	4.941E-01	1.242E-01	2.770
TH-228	+	74.82		2.139E+00	4.351E-01	5.111E-01	4.214E-02	4.185
	+	77.11		2.188E+00	3.335E-01	2.944E-01	2.462E-02	7.433

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	+	238.63	*	1.714E+00	2.495E-01	8.524E-02	1.129E-02	20.112
	+	300.09		2.116E+00	1.624E+00	1.166E+00	7.238E-01	1.814
	+	338.32		1.382E+00	3.787E-01	3.531E-01	4.199E-02	3.913
	+	911.20	*	1.778E+00	3.649E-01	2.198E-01	2.978E-02	8.089
TH-234	+	968.97		1.369E+00	6.175E-01	4.941E-01	1.242E-01	2.770
	+	63.29	*	1.840E+00	1.522E+00	1.891E+00	3.365E-01	0.973
	+	92.59		4.210E+00	1.322E+00	9.106E-01	2.028E-01	4.624
U-235	+	89.96		2.464E+00	9.949E-01	1.130E+00	2.810E-01	2.180
	+	93.35		3.180E+00	1.022E+00	6.847E-01	1.592E-01	4.645
NP-237		143.76	*	-5.351E-02	1.950E-01	3.173E-01	5.423E-02	-0.169
		163.33		3.602E-01	4.245E-01	6.978E-01	1.290E-01	0.516
	+	185.72		1.953E-01	6.601E-02	6.358E-02	6.657E-03	3.073
		205.31		-3.270E-01	5.420E-01	7.505E-01	1.463E-01	-0.436
	+	86.48	*	1.127E+00	3.877E-01	3.734E-01	8.568E-02	3.017
		95.86		-4.333E-01	9.255E-01	1.291E+00	3.109E-01	-0.336
U-238	+	63.29	*	1.840E+00	1.522E+00	1.891E+00	3.365E-01	0.973
	+	92.59		4.210E+00	1.008E+00	9.106E-01	8.283E-02	4.624
ANH-511	+	511.00	*	1.262E-01	6.286E-02	4.359E-02	4.368E-03	2.895

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	4.423E-02	2.900E-01	4.727E-01	4.932E-02	0.094
NA-22		1274.54	*	-8.542E-03	3.869E-02	6.299E-02	5.429E-03	-0.136
NA-24		1368.63	*	-3.647E-01	3.869E-02	Half-Life too short		
SC-46		889.28	*	-1.281E-02	3.441E-02	5.557E-02	6.220E-03	-0.231
	+	1120.55		1.068E-01	9.089E-02	1.057E-01	9.344E-03	1.010
V-48		944.13		-2.890E-01	7.679E-01	1.231E+00	1.335E-01	-0.235
		983.53	*	-1.851E-02	6.241E-02	1.002E-01	1.051E-02	-0.185
		1312.11		9.625E-03	7.106E-02	1.185E-01	1.044E-02	0.081
CR-51		320.08	*	9.549E-02	3.344E-01	5.660E-01	7.326E-02	0.169
MN-54		834.85	*	5.660E-04	3.448E-02	5.758E-02	6.397E-03	0.010
CO-56		846.77	*	-5.296E-02	3.508E-02	5.166E-02	5.750E-03	-1.025
		1037.84		-3.001E-02	2.680E-01	4.342E-01	4.474E-02	-0.069
		1238.28		2.756E-02	8.383E-02	1.418E-01	1.229E-02	0.194
		1771.35		1.662E-01	2.067E-01	3.358E-01	2.790E-02	0.495
CO-57		122.06	*	-1.388E-03	2.465E-02	3.899E-02	3.216E-03	-0.036
		136.47		-1.435E-01	1.854E-01	3.044E-01	2.821E-02	-0.472
CO-58		810.76	*	-2.815E-02	3.437E-02	5.425E-02	6.007E-03	-0.519
FE-59		1099.45	*	-9.821E-02	8.432E-02	1.242E-01	1.217E-02	-0.791
		1291.59		-9.393E-03	1.081E-01	1.775E-01	1.749E-02	-0.053
CO-60		1173.23		2.892E-03	4.046E-02	6.781E-02	5.453E-03	0.043
		1332.49	*	3.672E-03	3.603E-02	5.735E-02	5.114E-03	0.064
ZN-65		1115.54	*	-6.676E-02	1.109E-01	1.443E-01	1.287E-02	-0.463
SE-75		121.12		-4.664E-02	1.278E-01	1.995E-01	2.154E-02	-0.234
		136.00		-2.958E-02	3.601E-02	5.906E-02	5.126E-03	-0.501
		264.66	*	3.779E-02	4.736E-02	6.943E-02	9.346E-03	0.544
		279.54		3.073E-02	1.227E-01	1.736E-01	2.464E-02	0.177

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	400.66			6.084E-02	2.301E-01	3.826E-01	4.468E-02	0.159
SR-85	514.00	*		1.359E-01	4.410E-02	7.072E-02	7.096E-03	1.921
Y-88	898.04			-1.148E-02	3.626E-02	5.876E-02	6.602E-03	-0.195
	1836.06	*		1.585E-02	2.988E-02	5.239E-02	4.235E-03	0.303
Y-91	1204.77	*		1.579E+00	1.899E+01	3.177E+01	2.612E+00	0.050
NB-94	702.65	*		-2.740E-02	3.198E-02	4.938E-02	5.291E-03	-0.555
	871.09			-6.543E-03	2.900E-02	4.743E-02	5.299E-03	-0.138
NB-95	765.81	*		4.062E-02	4.184E-02	7.098E-02	7.762E-03	0.572
NB-95M	235.69	*		2.006E-01	1.405E-01	2.101E-01	2.780E-02	0.955
ZR-95	724.19			1.241E-01	1.032E-01	1.563E-01	1.780E-02	0.794
	756.73	*		5.138E-02	6.607E-02	1.119E-01	1.302E-02	0.459
MO-99	140.51			-1.786E+01	2.125E+01	3.350E+01	7.974E+00	-0.533
	181.07			1.131E+01	1.905E+01	2.835E+01	5.564E+00	0.399
	366.42			2.092E+01	8.715E+01	1.458E+02	1.547E+01	0.143
	739.50	*		1.586E+01	1.108E+01	1.912E+01	3.266E+00	0.829
	777.92			-3.775E+01	3.375E+01	4.995E+01	5.480E+00	-0.756
TC-99M	140.51	*		-3.379E+10	3.375E+01	Half-Life too short		
RU-103	497.08	*		-2.380E-02	3.571E-02	5.483E-02	8.128E-03	-0.434
	610.33			1.211E+01	2.539E+00	2.422E+00	4.204E-01	4.998
RH-106	621.93	*		-2.114E-02	2.857E-01	4.697E-01	6.815E-02	-0.045
	1050.41			1.492E+00	2.456E+00	4.162E+00	4.062E-01	0.358
RU-106	621.93	*		-2.114E-02	2.857E-01	4.697E-01	4.906E-02	-0.045
	1050.41			1.492E+00	2.456E+00	4.162E+00	4.062E-01	0.358
AG-108M	433.94	*		2.835E-03	2.587E-02	4.242E-02	4.175E-03	0.067
	614.28			-6.730E-03	3.751E-02	5.254E-02	5.599E-03	-0.128
	722.91			-8.099E-03	3.909E-02	5.344E-02	5.887E-03	-0.152
AG-110M	657.76	*		-2.148E-02	3.102E-02	4.865E-02	5.229E-03	-0.441
	677.62			4.639E-02	2.757E-01	4.562E-01	4.935E-02	0.102
	706.68			7.508E-02	1.973E-01	3.287E-01	3.594E-02	0.228
	763.94			-2.464E-01	1.640E-01	2.380E-01	2.646E-02	-1.036
	884.68			2.082E-02	4.267E-02	7.304E-02	8.328E-03	0.285
	937.49			1.782E-03	9.939E-02	1.642E-01	1.831E-02	0.011
	1384.29			-1.814E-01	1.600E-01	2.359E-01	2.162E-02	-0.769
	1505.03			2.882E-01	2.707E-01	4.333E-01	3.853E-02	0.665
SN-113	391.69	*		-8.829E-03	3.962E-02	6.442E-02	6.152E-03	-0.137
CD-115	260.90			-6.233E+01	1.319E+02	2.072E+02	2.753E+01	-0.301
	492.35			5.033E+00	3.537E+01	5.746E+01	5.704E+00	0.088
	527.90	*		-9.620E+00	1.011E+01	1.597E+01	1.612E+00	-0.603
SN-117M	156.02			1.221E+00	2.134E+00	3.637E+00	3.410E-01	0.336
	158.56	*		-1.516E-03	5.108E-02	8.537E-02	8.097E-03	-0.018
TE-123M	159.00	*		8.331E-04	2.630E-02	4.404E-02	4.206E-03	0.019
SB-124	602.73			1.654E-02	3.874E-02	5.704E-02	5.925E-03	0.290
	645.85			2.999E-01	4.206E-01	7.205E-01	7.867E-02	0.416
	722.78			-7.880E-02	3.930E-01	5.376E-01	5.887E-02	-0.147
	1690.97	*		6.245E-03	6.529E-02	1.094E-01	9.757E-03	0.057
SB-125	427.87	*		-1.714E-02	8.339E-02	1.346E-01	1.305E-02	-0.127
	463.37			5.652E-01	3.553E-01	4.469E-01	4.624E-02	1.265
	600.60			1.415E-02	1.740E-01	2.686E-01	2.932E-02	0.053
	635.95			-2.156E-02	2.358E-01	3.863E-01	4.275E-02	-0.056

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M	109.28	*	-1.364E+00	9.300E+00	1.478E+01	1.519E+00	-0.092	
I-126	388.63		8.425E-02	1.488E-01	2.514E-01	2.380E-02	0.335	
	666.33	*	-2.546E-02	1.847E-01	3.004E-01	3.174E-02	-0.085	
	753.82		3.549E-01	1.629E+00	2.678E+00	2.918E-01	0.133	
SB-126	414.70		-2.956E-02	7.915E-02	1.088E-01	1.030E-02	-0.272	
	666.50		-7.399E-03	6.350E-02	1.034E-01	1.093E-02	-0.072	
	695.00		-5.346E-02	7.682E-02	1.168E-01	1.248E-02	-0.458	
	697.00		1.757E-02	2.502E-01	4.104E-01	4.388E-02	0.043	
	720.70	*	-3.610E-03	1.537E-01	2.139E-01	2.306E-02	-0.017	
	856.80		2.917E-01	4.559E-01	6.882E-01	7.673E-02	0.424	
SB-127	252.40		4.312E+00	4.506E+00	6.938E+00	2.959E+00	0.622	
	473.00		-1.644E-01	1.475E+00	2.369E+00	3.227E-01	-0.069	
	685.70	*	3.489E-02	1.254E+00	2.055E+00	2.668E-01	0.017	
	783.70		2.108E+00	3.260E+00	5.460E+00	7.707E-01	0.386	
I-131	80.19		-2.529E+00	4.474E+00	6.354E+00	5.532E-01	-0.398	
	284.31		-1.136E+00	1.485E+00	2.273E+00	3.212E-01	-0.500	
	364.49	*	-1.075E-01	1.051E-01	1.639E-01	1.816E-02	-0.656	
	636.99		-2.681E-01	1.370E+00	2.229E+00	2.429E-01	-0.120	
TE-132	49.72		-2.001E+01	1.446E+01	2.271E+01	2.395E+00	-0.881	
	111.76		-2.704E+01	3.313E+01	5.103E+01	5.506E+00	-0.530	
	116.30		2.988E+01	2.907E+01	4.774E+01	5.130E+00	0.626	
	228.16	*	2.371E-03	7.375E-01	1.200E+00	2.150E-01	0.002	
BA-133	81.00		-1.557E-01	9.729E-02	1.273E-01	1.984E-02	-1.223	
+	276.40		4.503E-01	3.821E-01	5.769E-01	1.028E-01	0.781	
	302.85		2.358E-02	1.421E-01	2.099E-01	3.463E-02	0.112	
	356.01	*	-1.453E-02	4.343E-02	6.101E-02	8.983E-03	-0.238	
	383.85		-1.210E-01	2.620E-01	4.208E-01	5.560E-02	-0.288	
I-133	529.87	*	1.274E-03	2.620E-01	Half-Life	too short		
	875.33		-7.425E-03	2.620E-01	Half-Life	too short		
	1298.22		7.649E-02	2.620E-01	Half-Life	too short		
CS-134	563.25		1.192E-01	3.273E-01	5.554E-01	5.730E-02	0.215	
	569.33		-8.556E-02	1.757E-01	2.843E-01	2.949E-02	-0.301	
	604.72		1.675E-02	3.383E-02	4.999E-02	5.204E-03	0.335	
+	795.86	*	1.146E-01	6.200E-02	7.099E-02	7.857E-03	1.614	
	801.95		-2.445E-01	4.201E-01	5.420E-01	6.002E-02	-0.451	
	1365.19		2.753E-01	1.099E+00	1.847E+00	1.721E-01	0.149	
CS-135	268.22	*	1.759E-01	1.804E-01	2.642E-01	3.822E-02	0.666	
I-135	546.56		-8.432E+09	1.804E-01	Half-Life	too short		
	836.80		1.973E+10	1.804E-01	Half-Life	too short		
	1038.76		-1.584E+10	1.804E-01	Half-Life	too short		
	1131.51		2.025E+09	1.804E-01	Half-Life	too short		
	1260.41	*	-3.102E+09	1.804E-01	Half-Life	too short		
	1457.56		1.247E+12	1.804E-01	Half-Life	too short		
	1678.03		3.062E+09	1.804E-01	Half-Life	too short		
	1791.20		-1.123E+10	1.804E-01	Half-Life	too short		
CS-136	153.25		1.249E+00	8.111E-01	1.408E+00	1.523E-01	0.887	
	176.60		1.782E-02	4.775E-01	7.937E-01	8.670E-02	0.022	
	273.65		3.493E-01	6.920E-01	7.316E-01	1.043E-01	0.477	
	340.55		6.483E-01	1.835E-01	2.874E-01	3.460E-02	2.256	

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		818.51		1.894E-02	6.132E-02	1.046E-01	1.159E-02	0.181
		1048.07	*	3.376E-02	1.027E-01	1.713E-01	1.732E-02	0.197
		1235.36		5.895E-01	5.342E-01	9.331E-01	1.082E-01	0.632
BA-137M		661.66	*	1.930E-02	3.079E-02	5.235E-02	5.521E-03	0.369
CS-137		661.66	*	2.039E-02	3.253E-02	5.531E-02	5.840E-03	0.369
CE-139		165.86	*	1.845E-02	2.769E-02	4.714E-02	4.623E-03	0.391
BA-140		162.66		3.463E-01	7.822E-01	1.283E+00	1.306E-01	0.270
		304.85		2.402E-01	1.367E+00	2.018E+00	6.241E-01	0.119
		423.72		4.025E-01	1.830E+00	3.015E+00	9.994E-01	0.133
		537.26	*	-4.847E-02	2.415E-01	3.988E-01	1.369E-01	-0.122
LA-140	+	328.76		5.148E-01	3.815E-01	4.957E-01	6.266E-02	1.038
		487.02		5.396E-02	1.256E-01	2.075E-01	2.150E-02	0.260
		815.77		1.152E-01	2.698E-01	4.633E-01	5.501E-02	0.249
		1596.21	*	-7.610E-02	8.093E-02	1.218E-01	1.068E-02	-0.625
CE-141		145.44	*	9.614E-02	5.844E-02	1.024E-01	9.322E-03	0.939
CE-143		57.36		-3.542E-04	5.844E-02	Half-Life	too short	
		293.27	*	7.742E-04	5.844E-02	Half-Life	too short	
		664.57		5.975E-04	5.844E-02	Half-Life	too short	
		721.93		5.152E-05	5.844E-02	Half-Life	too short	
CE-144		80.12		-1.254E+00	2.414E+00	3.436E+00	2.971E-01	-0.365
		133.52	*	5.118E-02	1.846E-01	3.150E-01	4.801E-02	0.162
PM-144		476.78		-4.861E-02	5.992E-02	9.193E-02	9.654E-03	-0.529
		618.01		1.453E-03	2.981E-02	4.832E-02	5.139E-03	0.030
		696.49	*	-6.199E-03	3.235E-02	5.225E-02	5.588E-03	-0.119
PR-144		696.51	*	-4.667E-01	2.421E+00	3.910E+00	4.181E-01	-0.119
		1489.16		-2.143E-01	1.020E+01	1.657E+01	1.476E+00	-0.013
PM-146		453.88	*	-1.214E-02	3.833E-02	6.109E-02	7.024E-03	-0.199
		633.25		-5.777E-01	1.273E+00	2.007E+00	7.760E-01	-0.288
		735.93		6.851E-04	1.317E-01	2.039E-01	5.870E-02	0.003
		747.24		-1.129E-02	8.651E-02	1.391E-01	2.229E-02	-0.081
ND-147	+	91.11		7.997E-01	2.667E-01	5.055E-01	4.997E-02	1.582
		319.41		-1.021E+00	3.017E+00	4.968E+00	6.289E-01	-0.205
		531.02	*	3.766E-01	5.025E-01	8.687E-01	1.377E-01	0.434
PM-149		285.90	*	-5.876E+00	9.203E+01	1.465E+02	2.771E+01	-0.040
EU-152		121.78		-6.931E-03	7.050E-02	1.113E-01	1.066E-02	-0.062
		244.70		4.757E-01	3.282E-01	4.970E-01	6.292E-02	0.957
		344.28	*	-4.112E-02	9.810E-02	1.445E-01	1.737E-02	-0.285
		778.90		-2.816E-01	2.412E-01	3.553E-01	3.899E-02	-0.793
		964.08		4.627E-01	3.251E-01	5.030E-01	5.367E-02	0.920
		1085.87		-3.960E-02	3.506E-01	5.655E-01	5.269E-02	-0.070
		1112.07		-4.291E-02	3.614E-01	5.120E-01	4.588E-02	-0.084
		1408.01		1.126E-01	1.726E-01	2.978E-01	2.662E-02	0.378
GD-153		69.67		-1.292E+00	1.553E+00	2.358E+00	1.830E-01	-0.548
		97.43	*	-1.225E-03	8.657E-02	1.228E-01	1.080E-02	-0.010
		103.18		-8.711E-02	1.049E-01	1.626E-01	1.389E-02	-0.536
EU-154		123.07		4.085E-02	5.033E-02	8.198E-02	9.083E-03	0.498
		723.31		-1.882E-02	1.814E-01	2.505E-01	2.882E-02	-0.075
		873.19		7.117E-02	2.399E-01	4.064E-01	5.631E-02	0.175
		996.26		3.179E-01	3.271E-01	5.013E-01	9.220E-02	0.634

----- 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		4.704E-01	3.891E-01	3.174E-01	4.097E-02	1.482
		1274.44	*	-2.092E-02	1.099E-01	1.793E-01	2.039E-02	-0.117
	+	86.55		4.578E-01	1.251E-01	1.743E-01	1.640E-02	2.626
TB-160		105.31	*	4.317E-02	9.986E-02	1.625E-01	1.395E-02	0.266
	+	86.79		1.215E+00	3.316E-01	4.617E-01	4.318E-02	2.632
		197.04		1.573E-01	5.650E-01	9.042E-01	9.832E-02	0.174
HO-166M		215.65		-2.215E-01	7.133E-01	1.151E+00	1.331E-01	-0.192
		298.57		1.904E-01	1.085E-01	1.891E-01	2.534E-02	1.007
		879.36	*	-6.834E-02	1.184E-01	1.881E-01	2.103E-02	-0.363
		962.29		9.913E-01	5.554E-01	8.859E-01	9.467E-02	1.119
		966.15		1.213E+00	2.964E-01	4.805E-01	5.118E-02	2.524
		1177.93		5.056E-02	3.234E-01	5.447E-01	4.395E-02	0.093
		1271.85		2.035E-01	5.979E-01	1.015E+00	8.722E-02	0.200
		80.57		-2.127E-01	2.610E-01	3.657E-01	3.177E-02	-0.582
		184.41		8.708E-02	4.156E-02	6.545E-02	6.824E-03	1.330
		280.46		-1.083E-02	9.341E-02	1.292E-01	1.805E-02	-0.084
TA-182		410.95		5.341E-01	2.706E-01	4.262E-01	4.023E-02	1.253
		711.68	*	-1.746E-02	5.662E-02	9.053E-02	9.733E-03	-0.193
		752.31		-3.054E-01	2.595E-01	3.849E-01	4.193E-02	-0.794
		810.29		-2.130E-02	5.154E-02	8.389E-02	9.275E-03	-0.254
		67.75		-7.750E-02	9.601E-02	1.522E-01	1.161E-02	-0.509
		100.11		6.813E-02	1.640E-01	2.678E-01	2.320E-02	0.254
		152.43		3.258E-01	3.218E-01	5.555E-01	5.125E-02	0.586
		222.11		-2.861E-02	3.341E-01	5.430E-01	6.408E-02	-0.053
	+	1121.30		2.957E-01	2.518E-01	2.889E-01	2.551E-02	1.024
		1189.05		7.557E-02	2.730E-01	4.628E-01	3.764E-02	0.163
IR-192		1221.41	*	3.172E-02	1.753E-01	2.945E-01	2.449E-02	0.108
		1231.02		-3.233E-01	4.536E-01	7.211E-01	6.035E-02	-0.448
	+	295.96		1.154E+00	2.190E-01	2.594E-01	3.510E-02	4.449
		308.46		3.861E-02	8.685E-02	1.482E-01	1.941E-02	0.260
HG-203		316.51	*	1.185E-02	3.065E-02	5.214E-02	6.663E-03	0.227
		468.07		9.338E-03	7.147E-02	1.008E-01	1.044E-02	0.093
		70.83		1.657E+00	1.259E+00	1.919E+00	3.005E-01	0.863
		72.87		1.332E+00	7.935E-01	1.204E+00	1.830E-01	1.107
BI-207		279.20	*	2.257E-02	4.361E-02	6.256E-02	8.845E-03	0.361
		72.81		2.783E-01	1.780E-01	2.756E-01	2.205E-02	1.010
	+	74.97		6.164E-01	1.252E-01	2.064E-01	1.688E-02	2.986
		569.70		-6.885E-03	2.681E-02	4.397E-02	4.516E-03	-0.157
PB-210		1063.66	*	6.168E-03	4.527E-02	7.454E-02	7.155E-03	0.083
		1770.23		1.185E+00	4.992E-01	9.418E-01	7.829E-02	1.258
		46.54	*	2.752E+00	2.850E+00	4.751E+00	4.376E-01	0.579
		404.85	*	4.545E-02	7.382E-01	1.052E+00	5.107E-01	0.043
PB-211		427.09		-5.878E-01	1.440E+00	2.257E+00	1.048E+00	-0.260
		832.01		-3.798E-01	8.981E-01	1.422E+00	7.443E-01	-0.267
	+	727.33	*	2.412E+00	7.948E-01	1.030E+00	1.449E-01	2.341
		785.37		2.322E+00	3.096E+00	4.997E+00	5.492E-01	0.465
RN-219		1620.50		1.731E+00	2.136E+00	3.828E+00	3.337E-01	0.452
	+	271.23		6.488E-01	3.612E-01	4.091E-01	6.044E-02	1.586
		401.81	*	3.615E-03	3.747E-01	5.988E-01	9.175E-02	0.006

---- 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		-3.531E-01	2.156E-01	2.883E-01	2.520E-02	-1.224
		83.79		1.463E-01	1.238E-01	1.858E-01	1.676E-02	0.787
		94.87		1.077E+00	4.461E-01	6.988E-01	6.248E-02	1.542
		144.24		1.712E-01	6.464E-01	1.070E+00	1.058E-01	0.160
		154.21		3.064E-01	3.694E-01	6.336E-01	6.380E-02	0.484
+ 269.46				5.041E-01	2.794E-01	3.181E-01	4.367E-02	1.585
		323.87	*	-8.556E-02	6.527E-01	9.406E-01	1.838E-01	-0.091
		338.28		5.483E+00	1.573E+00	2.094E+00	3.055E-01	2.619
		79.69		5.883E-01	1.171E+00	1.740E+00	2.998E-01	0.338
		235.96		5.564E-01	1.941E-01	2.893E-01	3.931E-02	1.923
AC-227		256.23	*	-8.401E-02	2.443E-01	3.872E-01	6.033E-02	-0.217
		299.98		2.327E+00	1.118E+00	1.461E+00	2.381E-01	1.593
		304.50		2.429E-01	1.630E+00	2.405E+00	4.647E-01	0.101
		334.37		4.784E-01	1.906E+00	2.467E+00	4.372E-01	0.194
		79.80		7.019E-01	1.544E+00	2.286E+00	4.978E-01	0.307
TH-227		235.96		5.564E-01	1.932E-01	2.893E-01	3.804E-02	1.923
		256.23	*	-8.401E-02	2.444E-01	3.872E-01	6.509E-02	-0.217
		299.98		2.327E+00	1.118E+00	1.461E+00	2.381E-01	1.593
		304.50		2.429E-01	1.630E+00	2.405E+00	4.647E-01	0.101
		334.37		4.784E-01	1.906E+00	2.467E+00	4.372E-01	0.194
TH-229		85.43		2.507E-01	2.151E-01	3.237E-01	2.978E-02	0.774
		88.47		5.820E-01	1.588E-01	2.189E-01	2.068E-02	2.658
		193.51	*	-3.688E-01	5.020E-01	8.026E-01	8.625E-02	-0.460
		210.85		1.469E+00	9.833E-01	1.493E+00	1.699E-01	0.984
		283.69	*	-1.008E+00	1.444E+00	2.214E+00	4.026E-01	-0.455
PA-231		301.36		1.495E+00	7.158E-01	9.333E-01	1.477E-01	1.602
		81.07		-3.531E-01	2.156E-01	2.883E-01	2.520E-02	-1.224
TH-231		83.79		1.463E-01	1.238E-01	1.858E-01	1.676E-02	0.787
		94.87		1.077E+00	4.461E-01	6.988E-01	6.248E-02	1.542
		144.24		1.712E-01	6.464E-01	1.070E+00	1.058E-01	0.160
		154.21		3.064E-01	3.694E-01	6.336E-01	6.380E-02	0.484
		269.46		5.041E-01	2.794E-01	3.181E-01	4.367E-02	1.585
+ 323.87			*	-8.556E-02	6.527E-01	9.406E-01	1.838E-01	-0.091
		338.28		5.483E+00	1.573E+00	2.094E+00	3.055E-01	2.619
		300.13		1.053E+00	5.121E-01	6.614E-01	1.190E-01	1.592
		311.90	*	-4.604E-02	5.812E-02	9.352E-02	1.225E-02	-0.492
		340.48		2.817E+00	1.013E+00	1.240E+00	3.149E-01	2.271
PA-234		94.67		5.294E-01	1.754E-01	2.674E-01	3.379E-02	1.979
		98.44		7.382E-02	1.025E-01	1.385E-01	7.728E-02	0.533
		111.00		-6.250E-02	1.780E-01	2.801E-01	3.331E-02	-0.223
		131.20		5.141E-02	9.885E-02	1.701E-01	1.441E-02	0.302
		569.50		-7.847E-02	2.392E-01	3.907E-01	4.013E-02	-0.201
733.00				-3.666E-01	3.849E-01	4.694E-01	1.086E-01	-0.781
		880.51		-2.762E-02	2.482E-01	4.091E-01	4.575E-02	-0.068
		883.24		1.096E-01	2.560E-01	4.191E-01	2.833E-01	0.262
		926.50		-9.054E-02	1.625E-01	2.555E-01	6.689E-02	-0.354
		946.00	*	-1.881E-01	2.750E-01	4.277E-01	8.502E-02	-0.440
949.00				1.240E-01	3.964E-01	6.670E-01	7.206E-02	0.186
		766.42		1.168E+01	1.267E+01	1.911E+01	9.780E+00	0.611
PA-234M								

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	1001.03	*		4.796E+00	4.814E+00	7.464E+00	8.553E-01	0.643
	99.53			1.271E-01	1.568E-01	2.547E-01	2.213E-02	0.499
	103.37			-3.002E-02	9.458E-02	1.499E-01	1.280E-02	-0.200
	106.12			-5.653E-03	8.044E-02	1.285E-01	1.086E-02	-0.044
	117.23	*		3.149E-02	3.962E-01	6.319E-01	5.221E-02	0.050
	228.18			8.526E-04	2.167E-01	3.527E-01	4.243E-02	0.002
AM-241	+	277.60		2.227E-01	1.873E-01	2.838E-01	3.956E-02	0.785
CM-247	59.54	*		1.111E-01	1.379E-01	2.130E-01	1.665E-02	0.522
	+	278.00		9.457E-01	7.955E-01	1.208E+00	1.686E-01	0.783
CF-249	287.50			9.556E-01	1.271E+00	2.018E+00	2.775E-01	0.474
	402.40	*		-6.977E-03	3.579E-02	5.471E-02	5.132E-03	-0.128
	252.80			1.068E+00	9.148E-01	1.533E+00	1.989E-01	0.697
	333.37			4.667E-02	2.633E-01	2.618E-01	3.168E-02	0.178
CF-251	388.16	*		1.470E-02	3.565E-02	5.985E-02	5.682E-03	0.246
	177.52	*		-3.995E-02	1.247E-01	2.045E-01	2.084E-02	-0.195
	227.38			1.984E-01	3.475E-01	5.766E-01	6.920E-02	0.344
	285.41			-1.625E+00	2.198E+00	3.373E+00	4.661E-01	-0.482

VAX/VMS Nuclide Identification Report Generated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*
*                               DETECTOR DATA                                *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057336        *
* Acquisition date   : 10-MAR-2010 15:42:33 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 02:00:02.08                Half life ratio : 8.000        *
*****
*
*                               SAMPLE DATA                                *
*
* Sample date        : 23-FEB-2010 12:00:00 Nuclide Library : SOLID              *
* Sample ID          : G1202057336                Analyst initials: MXR1          *
* Batch Number       : 959270                      Sample Quantity : 1.2420E+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 :                    *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.865E+01	2.933E+00	4.480E-01	0.000E+00
CD-109	3.863E+00	1.033E+00	1.143E+00	0.000E+00
SN-126	3.775E-01	1.010E-01	1.122E-01	0.000E+00
TL-208	5.227E-01	8.477E-02	5.105E-02	0.000E+00
BI-211	3.787E+00	5.716E-01	3.100E-01	0.000E+00
PB-212	1.714E+00	2.445E-01	8.728E-02	0.000E+00
BI-214	1.172E+00	1.905E-01	1.052E-01	0.000E+00
PB-214	1.375E+00	2.203E-01	1.090E-01	0.000E+00
RA-224	4.192E+00	1.010E+00	9.344E-01	0.000E+00
RA-226	1.172E+00	1.905E-01	1.052E-01	0.000E+00
AC-228	1.778E+00	3.576E-01	2.210E-01	0.000E+00
RA-228	1.778E+00	3.576E-01	2.210E-01	0.000E+00
TH-228	1.714E+00	2.445E-01	8.728E-02	0.000E+00
TH-232	1.778E+00	3.576E-01	2.210E-01	0.000E+00
TH-234	1.840E+00	1.491E+00	1.970E+00	0.000E+00
U-235	-5.351E-02	1.911E-01	3.271E-01	0.000E+00
NP-237	1.127E+00	3.800E-01	3.875E-01	0.000E+00
U-238	1.840E+00	1.491E+00	1.970E+00	0.000E+00
ANH-511	1.262E-01	6.160E-02	4.418E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	4.423E-02	2.842E-01	4.795E-01	0.000E+00 NOT IDENT.
NA-22	-8.542E-03	3.792E-02	6.304E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	7.023E+05	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.281E-02	3.372E-02	5.589E-02	0.000E+00 FAIL ABUN
V-48	-1.851E-02	6.116E-02	1.007E-01	0.000E+00 NOT IDENT.
CR-51	9.549E-02	3.277E-01	5.773E-01	0.000E+00 NOT IDENT.
MN-54	5.660E-04	3.379E-02	5.797E-02	0.000E+00 NOT IDENT.
CO-56	-5.296E-02	3.437E-02	5.199E-02	0.000E+00 NOT IDENT.

CO-57	-1.388E-03	2.416E-02	4.028E-02	0.000E+00	NOT IDENT.
CO-58	-2.815E-02	3.369E-02	5.464E-02	0.000E+00	NOT IDENT.
FE-59	-9.821E-02	8.264E-02	1.246E-01	0.000E+00	NOT IDENT.
CO-60	3.672E-03	3.531E-02	5.736E-02	0.000E+00	NOT IDENT.
ZN-65	-6.676E-02	1.087E-01	1.447E-01	0.000E+00	NOT IDENT.
SE-75	3.779E-02	4.642E-02	7.100E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.322E-02	7.167E-02	0.000E+00	NOT IDENT.
Y-88	1.585E-02	2.928E-02	5.216E-02	0.000E+00	NOT IDENT.
Y-91	1.579E+00	1.861E+01	3.182E+01	0.000E+00	NOT IDENT.
NB-94	-2.740E-02	3.135E-02	4.983E-02	0.000E+00	NOT IDENT.
NB-95	4.062E-02	4.100E-02	7.154E-02	0.000E+00	NOT IDENT.
NB-95M	2.006E-01	1.377E-01	2.152E-01	0.000E+00	NOT IDENT.
ZR-95	5.138E-02	6.475E-02	1.128E-01	0.000E+00	NOT IDENT.
MO-99	1.586E+01	1.086E+01	1.928E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.980E+16	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.380E-02	3.499E-02	5.559E-02	0.000E+00	FAIL ABUN
RH-106	-2.114E-02	2.800E-01	4.748E-01	0.000E+00	NOT IDENT.
RU-106	-2.114E-02	2.800E-01	4.748E-01	0.000E+00	NOT IDENT.
AG-108M	2.835E-03	2.535E-02	4.309E-02	0.000E+00	NOT IDENT.
AG-110M	-2.148E-02	3.040E-02	4.914E-02	0.000E+00	NOT IDENT.
SN-113	-8.829E-03	3.883E-02	6.552E-02	0.000E+00	NOT IDENT.
CD-115	-9.620E+00	9.909E+00	1.617E+01	0.000E+00	NOT IDENT.
SN-117M	-1.516E-03	5.006E-02	8.790E-02	0.000E+00	NOT IDENT.
TE-123M	8.331E-04	2.577E-02	4.534E-02	0.000E+00	NOT IDENT.
SB-124	6.245E-03	6.398E-02	1.091E-01	0.000E+00	NOT IDENT.
SB-125	-1.714E-02	8.173E-02	1.367E-01	0.000E+00	FAIL ABUN
TE-125M	-1.364E+00	9.114E+00	1.529E+01	0.000E+00	NOT IDENT.
I-126	-2.546E-02	1.810E-01	3.033E-01	0.000E+00	NOT IDENT.
SB-126	-3.610E-03	1.506E-01	2.157E-01	0.000E+00	NOT IDENT.
SB-127	3.489E-02	1.229E+00	2.074E+00	0.000E+00	NOT IDENT.
I-131	-1.075E-01	1.030E-01	1.669E-01	0.000E+00	NOT IDENT.
TE-132	2.371E-03	7.227E-01	1.230E+00	0.000E+00	NOT IDENT.
BA-133	-1.453E-02	4.256E-02	6.214E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	5.312E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.076E-02	7.151E-02	0.000E+00	FAIL ABUN
CS-135	1.759E-01	1.768E-01	2.702E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.228E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.376E-02	1.007E-01	1.719E-01	0.000E+00	NOT IDENT.
BA-137M	1.930E-02	3.018E-02	5.287E-02	0.000E+00	NOT IDENT.
CS-137	2.039E-02	3.188E-02	5.586E-02	0.000E+00	NOT IDENT.
CE-139	1.845E-02	2.713E-02	4.850E-02	0.000E+00	NOT IDENT.
BA-140	-4.847E-02	2.366E-01	4.039E-01	0.000E+00	NOT IDENT.
LA-140	-7.610E-02	7.931E-02	1.215E-01	0.000E+00	FAIL ABUN
CE-141	9.614E-02	5.727E-02	1.055E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.445E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	5.118E-02	1.809E-01	3.250E-01	0.000E+00	NOT IDENT.
PM-144	-6.199E-03	3.170E-02	5.273E-02	0.000E+00	NOT IDENT.
PR-144	-4.667E-01	2.372E+00	3.946E+00	0.000E+00	NOT IDENT.
PM-146	-1.214E-02	3.757E-02	6.201E-02	0.000E+00	NOT IDENT.
ND-147	3.766E-01	4.924E-01	8.799E-01	0.000E+00	FAIL ABUN
PM-149	-5.876E+00	9.018E+01	1.496E+02	0.000E+00	NOT IDENT.
EU-152	-4.112E-02	9.614E-02	1.473E-01	0.000E+00	NOT IDENT.
GD-153	-1.225E-03	8.484E-02	1.272E-01	0.000E+00	NOT IDENT.
EU-154	-2.092E-02	1.077E-01	1.794E-01	0.000E+00	FAIL ABUN
EU-155	4.317E-02	9.786E-02	1.682E-01	0.000E+00	FAIL ABUN
TB-160	-6.834E-02	1.160E-01	1.892E-01	0.000E+00	FAIL ABUN
HO-166M	-1.746E-02	5.548E-02	9.134E-02	0.000E+00	NOT IDENT.
TA-182	3.172E-02	1.718E-01	2.950E-01	0.000E+00	FAIL ABUN
IR-192	1.185E-02	3.004E-02	5.318E-02	0.000E+00	FAIL ABUN
HG-203	2.257E-02	4.273E-02	6.393E-02	0.000E+00	NOT IDENT.
BI-207	6.168E-03	4.437E-02	7.478E-02	0.000E+00	FAIL ABUN
PB-210	2.752E+00	2.793E+00	4.970E+00	0.000E+00	NOT IDENT.
PB-211	4.545E-02	7.234E-01	1.070E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	7.789E-01	1.039E+00	0.000E+00	FAIL ABUN
RN-219	3.615E-03	3.672E-01	6.088E-01	0.000E+00	FAIL ABUN
RA-223	-8.556E-02	6.397E-01	9.592E-01	0.000E+00	FAIL ABUN
AC-227	-8.401E-02	2.394E-01	3.961E-01	0.000E+00	FAIL ABUN
TH-227	-8.401E-02	2.395E-01	3.961E-01	0.000E+00	FAIL ABUN
TH-229	-3.688E-01	4.919E-01	8.241E-01	0.000E+00	FAIL ABUN
PA-231	-1.008E+00	1.415E+00	2.261E+00	0.000E+00	FAIL ABUN
TH-231	-8.556E-02	6.397E-01	9.592E-01	0.000E+00	FAIL ABUN
PA-233	-4.604E-02	5.696E-02	9.542E-02	0.000E+00	FAIL ABUN
PA-234	-1.881E-01	2.695E-01	4.298E-01	0.000E+00	NOT IDENT.
PA-234M	4.796E+00	4.718E+00	7.495E+00	0.000E+00	NOT IDENT.
NP-239	3.149E-02	3.883E-01	6.531E-01	0.000E+00	FAIL ABUN
AM-241	1.111E-01	1.352E-01	2.221E-01	0.000E+00	NOT IDENT.
CM-247	-6.977E-03	3.508E-02	5.563E-02	0.000E+00	FAIL ABUN
CF-249	1.470E-02	3.494E-02	6.088E-02	0.000E+00	NOT IDENT.

CF-251	-3.995E-02	1.222E-01	2.102E-01	0.000E+00 NOT IDENT.
--------	------------	-----------	-----------	----------------------

VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 17:43:12.40

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057336.CNF;1
Sample date       : 23-FEB-2010 12:00:00 Acquisition date : 10-MAR-2010 15:42:33
Sample ID        : G1202057336 Sample quantity : 1.24200E+02 GRAM
Detector name    : GAM22 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.08 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 959270 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
K-40	1460.82	1929	10.66*	1.909E+00	2.865E+01	2.865E+01	10.44
CD-109	88.03	346	3.70*	7.487E+00	3.775E+00	3.863E+00	27.29
SN-126	64.28	97	9.60	4.296E+00	7.090E-01	7.090E-01	82.06
	86.94	346	8.90	7.487E+00	1.570E+00	1.570E+00	48.80
	87.57	346	37.00*	7.487E+00	3.775E-01	3.775E-01	27.29
TL-208	277.37	66	6.60	6.182E+00	4.872E-01	4.872E-01	84.60
	583.19	578	85.00*	3.930E+00	5.227E-01	5.227E-01	16.55
	860.56	108	12.50	2.923E+00	8.972E-01	8.972E-01	40.89
BI-211	72.87	-----	1.23	5.897E+00	-----	Line Not Found	-----
	351.06	874	12.92*	5.401E+00	3.787E+00	3.787E+00	15.40
PB-212	74.82	449	10.28	6.173E+00	2.139E+00	2.139E+00	22.52
	77.11	800	17.10	6.466E+00	2.188E+00	2.188E+00	15.24
	238.63	1659	43.60*	6.709E+00	1.714E+00	1.714E+00	14.55
	300.09	137	3.30	5.915E+00	2.116E+00	2.116E+00	47.49
BI-214	609.32	672	45.49*	3.811E+00	1.172E+00	1.172E+00	16.58
	1120.29	73	14.92	2.344E+00	6.310E-01	6.310E-01	85.40
	1764.49	125	15.30	1.716E+00	1.435E+00	1.435E+00	29.42
PB-214	74.82	449	5.80	6.173E+00	3.791E+00	3.791E+00	21.80
	77.11	800	9.70	6.466E+00	3.857E+00	3.857E+00	17.33
	242.00	379	7.25	6.664E+00	2.370E+00	2.370E+00	25.27
	295.22	568	18.42	5.970E+00	1.560E+00	1.560E+00	20.04
	351.93	874	35.60*	5.401E+00	1.375E+00	1.375E+00	16.36
RA-224	240.99	379	4.10*	6.664E+00	4.192E+00	4.192E+00	24.59
RA-226	609.32	672	45.49*	3.811E+00	1.172E+00	1.172E+00	16.58
	1120.29	73	14.92	2.344E+00	6.310E-01	6.310E-01	85.40
	1764.49	125	15.30	1.716E+00	1.435E+00	1.435E+00	29.42
AC-228	338.32	285	11.27	5.524E+00	1.382E+00	1.382E+00	49.17
	911.20	423	25.80*	2.788E+00	1.778E+00	1.778E+00	20.52
	968.97	189	15.80	2.647E+00	1.369E+00	1.369E+00	45.12
RA-228	338.32	285	11.27	5.524E+00	1.382E+00	1.382E+00	49.17
	911.20	423	25.80*	2.788E+00	1.778E+00	1.778E+00	20.52
	968.97	189	15.80	2.647E+00	1.369E+00	1.369E+00	45.12

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-228	74.82	449	10.28	6.173E+00	2.139E+00	2.139E+00	20.34
	77.11	800	17.10	6.466E+00	2.188E+00	2.188E+00	15.24
	238.63	1659	43.60*	6.709E+00	1.714E+00	1.714E+00	14.55
	300.09	137	3.30	5.915E+00	2.116E+00	2.116E+00	76.76
TH-232	338.32	285	11.27	5.524E+00	1.382E+00	1.382E+00	27.41
	911.20	423	25.80*	2.788E+00	1.778E+00	1.778E+00	20.52
	968.97	189	15.80	2.647E+00	1.369E+00	1.369E+00	45.12
TH-234	63.29	97	3.70*	4.296E+00	1.840E+00	1.840E+00	82.71
	92.59	463	4.23	7.858E+00	4.210E+00	4.210E+00	31.40
U-235	89.96	218	3.47	7.691E+00	2.464E+00	2.464E+00	40.38
	93.35	463	5.60	7.858E+00	3.180E+00	3.180E+00	32.12
	143.76	-----	10.96*	8.364E+00	-----	Line Not Found	-----
	163.33	-----	5.08	8.031E+00	-----	Line Not Found	-----
NP-237	185.72	281	57.20	7.605E+00	1.953E-01	1.953E-01	33.79
	205.31	-----	5.01	7.253E+00	-----	Line Not Found	-----
	86.48	346	12.40*	7.487E+00	1.127E+00	1.127E+00	34.42
	95.86	-----	2.68	8.032E+00	-----	Line Not Found	-----
U-238	63.29	97	3.70*	4.296E+00	1.840E+00	1.840E+00	82.71
	92.59	463	4.23	7.858E+00	4.210E+00	4.210E+00	23.93
ANH-511	511.00	179	100.00*	4.299E+00	1.262E-01	1.262E-01	49.81

Flag: "*" = Keyline

Total number of lines in spectrum 33
Number of unidentified lines 4
Number of lines tentatively identified by NID 29 87.88%

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	2.865E+01	2.865E+01	0.299E+01	10.44	
CD-109	461.40D	1.02	3.775E+00	3.863E+00	1.054E+00	27.29	
SN-126	2.30E+05Y	1.00	3.775E-01	3.775E-01	1.030E-01	27.29	
TL-208	1.41E+10Y	1.00	5.227E-01	5.227E-01	0.865E-01	16.55	
BI-211	7.04E+08Y	1.00	3.787E+00	3.787E+00	0.583E+00	15.40	
PB-212	1.41E+10Y	1.00	1.714E+00	1.714E+00	0.250E+00	14.55	
BI-214	1600.00Y	1.00	1.172E+00	1.172E+00	0.194E+00	16.58	
PB-214	1600.00Y	1.00	1.375E+00	1.375E+00	0.225E+00	16.36	
RA-224	1.41E+10Y	1.00	4.192E+00	4.192E+00	1.031E+00	24.59	
RA-226	1600.00Y	1.00	1.172E+00	1.172E+00	0.194E+00	16.58	
AC-228	1.41E+10Y	1.00	1.778E+00	1.778E+00	0.365E+00	20.52	
RA-228	1.41E+10Y	1.00	1.778E+00	1.778E+00	0.365E+00	20.52	
TH-228	1.41E+10Y	1.00	1.714E+00	1.714E+00	0.250E+00	14.55	
TH-232	1.41E+10Y	1.00	1.778E+00	1.778E+00	0.365E+00	20.52	
TH-234	4.47E+09Y	1.00	1.840E+00	1.840E+00	1.522E+00	82.71	
U-235	7.04E+08Y	1.00	1.953E-01	1.953E-01	0.660E-01	33.79	K
NP-237	2.14E+06Y	1.00	1.127E+00	1.127E+00	0.388E+00	34.42	
U-238	4.47E+09Y	1.00	1.840E+00	1.840E+00	1.522E+00	82.71	
ANH-511	1.00E+09Y	1.00	1.262E-01	1.262E-01	0.629E-01	49.81	
Total Activity :			5.892E+01	5.900E+01			

Grand Total Activity : 5.892E+01 5.900E+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	209.35	65	437	1.01	418.66	414	9	9.09E-03	****	7.18E+00	
0	270.67	145	340	1.64	541.19	535	12	2.02E-02	53.7	6.27E+00	T
0	328.31	85	249	0.95	656.39	651	10	1.18E-02	73.0	5.62E+00	T
0	409.31	106	223	1.52	818.27	813	13	1.48E-02	61.8	4.94E+00	
0	463.16	89	166	1.32	925.88	922	12	1.24E-02	62.0	4.58E+00	T
0	727.44	178	105	2.04	1454.15	1446	15	2.47E-02	29.8	3.34E+00	T
0	795.28	90	89	1.26	1589.76	1581	16	1.24E-02	53.0	3.12E+00	T
0	1003.91	71	115	2.24	2006.90	1997	22	9.92E-03	81.7	2.57E+00	T
0	1509.75	54	21	2.33	3018.54	3010	21	7.50E-03	50.4	1.87E+00	
0	1730.79	35	20	2.78	3460.74	3450	20	4.86E-03	71.1	1.73E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057336.CNF;1
* Acquisition date   : 10-MAR-2010 15:42:33  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 02:00:02.08        Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 23-FEB-2010 12:00:00  Nuclide Library : SOLID
* Sample ID          : G1202057336          Analyst initials: MXR1
* Batch Number       : 959270              Sample Quantity : 1.24200E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 2-DEC-2009 16:47:28.08MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A              LCS Isotope      :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.865E+01	2.992E+00	4.485E-01	4.109E-02	63.878
CD-109	3.863E+00	1.054E+00	1.102E+00	1.045E-01	3.507
SN-126	3.775E-01	1.030E-01	1.081E-01	1.021E-02	3.492
TL-208	5.227E-01	8.649E-02	5.046E-02	5.467E-03	10.358
BI-211	3.787E+00	5.832E-01	3.043E-01	3.551E-02	12.445
PB-212	1.714E+00	2.495E-01	8.524E-02	1.129E-02	20.112
BI-214	1.172E+00	1.943E-01	1.041E-01	1.214E-02	11.264
PB-214	1.375E+00	2.248E-01	1.070E-01	1.378E-02	12.842
RA-224	4.192E+00	1.031E+00	9.127E-01	1.143E-01	4.593
RA-226	1.172E+00	1.943E-01	1.041E-01	1.214E-02	11.264
AC-228	1.778E+00	3.649E-01	2.198E-01	2.978E-02	8.089
RA-228	1.778E+00	3.649E-01	2.198E-01	2.978E-02	8.089
TH-228	1.714E+00	2.495E-01	8.524E-02	1.129E-02	20.112
TH-232	1.778E+00	3.649E-01	2.198E-01	2.978E-02	8.089
TH-234	1.840E+00	1.522E+00	1.891E+00	3.365E-01	0.973
U-235	1.953E-01	6.601E-02	3.173E-01	5.423E-02	0.616
NP-237	1.127E+00	3.877E-01	3.734E-01	8.568E-02	3.017
U-238	1.840E+00	1.522E+00	1.891E+00	3.365E-01	0.973

----- Identified Nuclides -----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	1.262E-01	6.286E-02	4.359E-02	4.368E-03	2.895

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	4.423E-02		2.900E-01	4.727E-01	4.932E-02	0.094
NA-22	-8.542E-03		3.869E-02	6.299E-02	5.429E-03	-0.136
NA-24	-3.647E-01		3.583E-01	Half-Life too short		
SC-46	-1.281E-02		3.441E-02	5.557E-02	6.220E-03	-0.231
V-48	-1.851E-02		6.241E-02	1.002E-01	1.051E-02	-0.185
CR-51	9.549E-02		3.344E-01	5.660E-01	7.326E-02	0.169
MN-54	5.660E-04		3.448E-02	5.758E-02	6.397E-03	0.010
CO-56	-5.296E-02		3.508E-02	5.166E-02	5.750E-03	-1.025
CO-57	-1.388E-03		2.465E-02	3.899E-02	3.216E-03	-0.036
CO-58	-2.815E-02		3.437E-02	5.425E-02	6.007E-03	-0.519
FE-59	-9.821E-02		8.432E-02	1.242E-01	1.217E-02	-0.791
CO-60	3.672E-03		3.603E-02	5.735E-02	5.114E-03	0.064
ZN-65	-6.676E-02		1.109E-01	1.443E-01	1.287E-02	-0.463
SE-75	3.779E-02		4.736E-02	6.943E-02	9.346E-03	0.544
SR-85	1.359E-01		4.410E-02	7.072E-02	7.096E-03	1.921
Y-88	1.585E-02		2.988E-02	5.239E-02	4.235E-03	0.303
Y-91	1.579E+00		1.899E+01	3.177E+01	2.612E+00	0.050
NB-94	-2.740E-02		3.198E-02	4.938E-02	5.291E-03	-0.555
NB-95	4.062E-02		4.184E-02	7.098E-02	7.762E-03	0.572
NB-95M	2.006E-01		1.405E-01	2.101E-01	2.780E-02	0.955
ZR-95	5.138E-02		6.607E-02	1.119E-01	1.302E-02	0.459
MO-99	1.586E+01		1.108E+01	1.912E+01	3.266E+00	0.829
TC-99M	-3.379E+10		2.030E+10	Half-Life too short		
RU-103	-2.380E-02		3.571E-02	5.483E-02	8.128E-03	-0.434
RH-106	-2.114E-02		2.857E-01	4.697E-01	6.815E-02	-0.045
RU-106	-2.114E-02		2.857E-01	4.697E-01	4.906E-02	-0.045
AG-108M	2.835E-03		2.587E-02	4.242E-02	4.175E-03	0.067
AG-110M	-2.148E-02		3.102E-02	4.865E-02	5.229E-03	-0.441
SN-113	-8.829E-03		3.962E-02	6.442E-02	6.152E-03	-0.137
CD-115	-9.620E+00		1.011E+01	1.597E+01	1.612E+00	-0.603
SN-117M	-1.516E-03		5.108E-02	8.537E-02	8.097E-03	-0.018
TE-123M	8.331E-04		2.630E-02	4.404E-02	4.206E-03	0.019
SB-124	6.245E-03		6.529E-02	1.094E-01	9.757E-03	0.057
SB-125	-1.714E-02		8.339E-02	1.346E-01	1.305E-02	-0.127
TE-125M	-1.364E+00		9.300E+00	1.478E+01	1.519E+00	-0.092
I-126	-2.546E-02		1.847E-01	3.004E-01	3.174E-02	-0.085
SB-126	-3.610E-03		1.537E-01	2.139E-01	2.306E-02	-0.017
SB-127	3.489E-02		1.254E+00	2.055E+00	2.668E-01	0.017
I-131	-1.075E-01		1.051E-01	1.639E-01	1.816E-02	-0.656
TE-132	2.371E-03		7.375E-01	1.200E+00	2.150E-01	0.002
BA-133	-1.453E-02		4.343E-02	6.101E-02	8.983E-03	-0.238
I-133	1.274E-03		2.710E-03	Half-Life too short		

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	1.146E-01	+	6.200E-02	7.099E-02	7.857E-03	1.614
CS-135	1.759E-01		1.804E-01	2.642E-01	3.822E-02	0.666
I-135	-3.102E+09		3.178E+09	Half-Life too short		
CS-136	3.376E-02		1.027E-01	1.713E-01	1.732E-02	0.197
BA-137M	1.930E-02		3.079E-02	5.235E-02	5.521E-03	0.369
CS-137	2.039E-02		3.253E-02	5.531E-02	5.840E-03	0.369
CE-139	1.845E-02		2.769E-02	4.714E-02	4.623E-03	0.391
BA-140	-4.847E-02		2.415E-01	3.988E-01	1.369E-01	-0.122
LA-140	-7.610E-02		8.093E-02	1.218E-01	1.068E-02	-0.625
CE-141	9.614E-02		5.844E-02	1.024E-01	9.322E-03	0.939
CE-143	7.742E-04		1.248E-04	Half-Life too short		
CE-144	5.118E-02		1.846E-01	3.150E-01	4.801E-02	0.162
PM-144	-6.199E-03		3.235E-02	5.225E-02	5.588E-03	-0.119
PR-144	-4.667E-01		2.421E+00	3.910E+00	4.181E-01	-0.119
PM-146	-1.214E-02		3.833E-02	6.109E-02	7.024E-03	-0.199
ND-147	3.766E-01		5.025E-01	8.687E-01	1.377E-01	0.434
PM-149	-5.876E+00		9.203E+01	1.465E+02	2.771E+01	-0.040
EU-152	-4.112E-02		9.810E-02	1.445E-01	1.737E-02	-0.285
GD-153	-1.225E-03		8.657E-02	1.228E-01	1.080E-02	-0.010
EU-154	-2.092E-02		1.099E-01	1.793E-01	2.039E-02	-0.117
EU-155	4.317E-02		9.986E-02	1.625E-01	1.395E-02	0.266
TB-160	-6.834E-02		1.184E-01	1.881E-01	2.103E-02	-0.363
HO-166M	-1.746E-02		5.662E-02	9.053E-02	9.733E-03	-0.193
TA-182	3.172E-02		1.753E-01	2.945E-01	2.449E-02	0.108
IR-192	1.185E-02		3.065E-02	5.214E-02	6.663E-03	0.227
HG-203	2.257E-02		4.361E-02	6.256E-02	8.845E-03	0.361
BI-207	6.168E-03		4.527E-02	7.454E-02	7.155E-03	0.083
PB-210	2.752E+00		2.850E+00	4.751E+00	4.376E-01	0.579
PB-211	4.545E-02		7.382E-01	1.052E+00	5.107E-01	0.043
BI-212	2.412E+00	+	7.948E-01	1.030E+00	1.449E-01	2.341
RN-219	3.615E-03		3.747E-01	5.988E-01	9.175E-02	0.006
RA-223	-8.556E-02		6.527E-01	9.406E-01	1.838E-01	-0.091
AC-227	-8.401E-02		2.443E-01	3.872E-01	6.033E-02	-0.217
TH-227	-8.401E-02		2.444E-01	3.872E-01	6.509E-02	-0.217
TH-229	-3.688E-01		5.020E-01	8.026E-01	8.625E-02	-0.460
PA-231	-1.008E+00		1.444E+00	2.214E+00	4.026E-01	-0.455
TH-231	-8.556E-02		6.527E-01	9.406E-01	1.838E-01	-0.091
PA-233	-4.604E-02		5.812E-02	9.352E-02	1.225E-02	-0.492
PA-234	-1.881E-01		2.750E-01	4.277E-01	8.502E-02	-0.440
PA-234M	4.796E+00		4.814E+00	7.464E+00	8.553E-01	0.643
NP-239	3.149E-02		3.962E-01	6.319E-01	5.221E-02	0.050
AM-241	1.111E-01		1.379E-01	2.130E-01	1.665E-02	0.522
CM-247	-6.977E-03		3.579E-02	5.471E-02	5.132E-03	-0.128
CF-249	1.470E-02		3.565E-02	5.985E-02	5.682E-03	0.246
CF-251	-3.995E-02		1.247E-01	2.045E-01	2.084E-02	-0.195

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202057336          *
* Acquisition date   : 10-MAR-2010 15:42:33 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 02:00:02.08 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 23-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202057336 Analyst initials: MXR1                 *
* Batch Number       : 959270 Sample Quantity : 1.2420E+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 :                              *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.865E+01	2.933E+00	2.241E-01	1.496E+00
CD-109	3.863E+00	1.033E+00	5.718E-01	5.271E-01
SN-126	3.775E-01	1.010E-01	5.612E-02	5.152E-02
TL-208	5.227E-01	8.477E-02	2.554E-02	4.325E-02
BI-211	3.787E+00	5.716E-01	1.551E-01	2.916E-01
PB-212	1.714E+00	2.445E-01	4.367E-02	1.248E-01
BI-214	1.172E+00	1.905E-01	5.264E-02	9.717E-02
PB-214	1.375E+00	2.203E-01	5.455E-02	1.124E-01
RA-224	4.192E+00	1.010E+00	4.675E-01	5.154E-01
RA-226	1.172E+00	1.905E-01	5.264E-02	9.717E-02
AC-228	1.778E+00	3.576E-01	1.106E-01	1.825E-01
RA-228	1.778E+00	3.576E-01	1.106E-01	1.825E-01
TH-228	1.714E+00	2.445E-01	4.367E-02	1.248E-01
TH-232	1.778E+00	3.576E-01	1.106E-01	1.825E-01
TH-234	1.840E+00	1.491E+00	9.857E-01	7.608E-01
U-235	-5.351E-02	1.911E-01	1.636E-01	9.749E-02
NP-237	1.127E+00	3.800E-01	1.939E-01	1.939E-01
U-238	1.840E+00	1.491E+00	9.857E-01	7.608E-01
ANH-511	1.262E-01	6.160E-02	2.210E-02	3.143E-02

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	4.423E-02	2.842E-01	2.399E-01	1.450E-01 NOT IDENT.
NA-22	-8.542E-03	3.792E-02	3.154E-02	1.935E-02 NOT IDENT.
NA-24	-3.647E+05	7.023E+05	0.000E+00	3.583E+05 SHORT HLIF
SC-46	-1.281E-02	3.372E-02	2.796E-02	1.720E-02 FAIL ABUN
V-48	-1.851E-02	6.116E-02	5.038E-02	3.120E-02 NOT IDENT.
CR-51	9.549E-02	3.277E-01	2.888E-01	1.672E-01 NOT IDENT.
MN-54	5.660E-04	3.379E-02	2.900E-02	1.724E-02 NOT IDENT.
CO-56	-5.296E-02	3.437E-02	2.601E-02	1.754E-02 NOT IDENT.

CO-57	-1.388E-03	2.416E-02	2.015E-02	1.233E-02	NOT IDENT.
CO-58	-2.815E-02	3.369E-02	2.733E-02	1.719E-02	NOT IDENT.
FE-59	-9.821E-02	8.264E-02	6.231E-02	4.216E-02	NOT IDENT.
CO-60	3.672E-03	3.531E-02	2.870E-02	1.802E-02	NOT IDENT.
ZN-65	-6.676E-02	1.087E-01	7.239E-02	5.546E-02	NOT IDENT.
SE-75	3.779E-02	4.642E-02	3.552E-02	2.368E-02	NOT IDENT.
SR-85	1.359E-01	4.322E-02	3.586E-02	2.205E-02	NOT IDENT.
Y-88	1.585E-02	2.928E-02	2.609E-02	1.494E-02	NOT IDENT.
Y-91	1.579E+00	1.861E+01	1.592E+01	9.496E+00	NOT IDENT.
NB-94	-2.740E-02	3.135E-02	2.493E-02	1.599E-02	NOT IDENT.
NB-95	4.062E-02	4.100E-02	3.579E-02	2.092E-02	NOT IDENT.
NB-95M	2.006E-01	1.377E-01	1.077E-01	7.026E-02	NOT IDENT.
ZR-95	5.138E-02	6.475E-02	5.645E-02	3.304E-02	NOT IDENT.
MO-99	1.586E+01	1.086E+01	9.648E+00	5.539E+00	NOT IDENT.
TC-99M	-3.379E+16	3.980E+16	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.380E-02	3.499E-02	2.781E-02	1.785E-02	FAIL ABUN
RH-106	-2.114E-02	2.800E-01	2.375E-01	1.428E-01	NOT IDENT.
RU-106	-2.114E-02	2.800E-01	2.375E-01	1.428E-01	NOT IDENT.
AG-108M	2.835E-03	2.535E-02	2.156E-02	1.293E-02	NOT IDENT.
AG-110M	-2.148E-02	3.040E-02	2.458E-02	1.551E-02	NOT IDENT.
SN-113	-8.829E-03	3.883E-02	3.278E-02	1.981E-02	NOT IDENT.
CD-115	-9.620E+00	9.909E+00	8.092E+00	5.056E+00	NOT IDENT.
SN-117M	-1.516E-03	5.006E-02	4.397E-02	2.554E-02	NOT IDENT.
TE-123M	8.331E-04	2.577E-02	2.268E-02	1.315E-02	NOT IDENT.
SB-124	6.245E-03	6.398E-02	5.458E-02	3.264E-02	NOT IDENT.
SB-125	-1.714E-02	8.173E-02	6.841E-02	4.170E-02	FAIL ABUN
TE-125M	-1.364E+00	9.114E+00	7.649E+00	4.650E+00	NOT IDENT.
I-126	-2.546E-02	1.810E-01	1.518E-01	9.236E-02	NOT IDENT.
SB-126	-3.610E-03	1.506E-01	1.079E-01	7.685E-02	NOT IDENT.
SB-127	3.489E-02	1.229E+00	1.038E+00	6.269E-01	NOT IDENT.
I-131	-1.075E-01	1.030E-01	8.348E-02	5.253E-02	NOT IDENT.
TE-132	2.371E-03	7.227E-01	6.152E-01	3.687E-01	NOT IDENT.
BA-133	-1.453E-02	4.256E-02	3.109E-02	2.172E-02	FAIL ABUN
I-133	1.274E+03	5.312E+03	0.000E+00	2.710E+03	SHORT HLIF
CS-134	1.146E-01	6.076E-02	3.578E-02	3.100E-02	FAIL ABUN
CS-135	1.759E-01	1.768E-01	1.352E-01	9.020E-02	NOT IDENT.
I-135	-3.102E+15	6.228E+15	0.000E+00	3.178E+15	SHORT HLIF
CS-136	3.376E-02	1.007E-01	8.601E-02	5.137E-02	NOT IDENT.
BA-137M	1.930E-02	3.018E-02	2.645E-02	1.540E-02	NOT IDENT.
CS-137	2.039E-02	3.188E-02	2.794E-02	1.627E-02	NOT IDENT.
CE-139	1.845E-02	2.713E-02	2.426E-02	1.384E-02	NOT IDENT.
BA-140	-4.847E-02	2.366E-01	2.020E-01	1.207E-01	NOT IDENT.
LA-140	-7.610E-02	7.931E-02	6.079E-02	4.046E-02	FAIL ABUN
CE-141	9.614E-02	5.727E-02	5.280E-02	2.922E-02	NOT IDENT.
CE-143	7.742E+02	2.445E+02	0.000E+00	1.248E+02	SHORT HLIF
CE-144	5.118E-02	1.809E-01	1.626E-01	9.229E-02	NOT IDENT.
PM-144	-6.199E-03	3.170E-02	2.638E-02	1.617E-02	NOT IDENT.
PR-144	-4.667E-01	2.372E+00	1.974E+00	1.210E+00	NOT IDENT.
PM-146	-1.214E-02	3.757E-02	3.102E-02	1.917E-02	NOT IDENT.
ND-147	3.766E-01	4.924E-01	4.402E-01	2.512E-01	FAIL ABUN
PM-149	-5.876E+00	9.018E+01	7.486E+01	4.601E+01	NOT IDENT.
EU-152	-4.112E-02	9.614E-02	7.367E-02	4.905E-02	NOT IDENT.
GD-153	-1.225E-03	8.484E-02	6.364E-02	4.328E-02	NOT IDENT.
EU-154	-2.092E-02	1.077E-01	8.977E-02	5.494E-02	FAIL ABUN
EU-155	4.317E-02	9.786E-02	8.417E-02	4.993E-02	FAIL ABUN
TB-160	-6.834E-02	1.160E-01	9.467E-02	5.919E-02	FAIL ABUN
HO-166M	-1.746E-02	5.548E-02	4.570E-02	2.831E-02	NOT IDENT.
TA-182	3.172E-02	1.718E-01	1.476E-01	8.765E-02	FAIL ABUN
IR-192	1.185E-02	3.004E-02	2.661E-02	1.532E-02	FAIL ABUN
HG-203	2.257E-02	4.273E-02	3.198E-02	2.180E-02	NOT IDENT.
BI-207	6.168E-03	4.437E-02	3.741E-02	2.264E-02	FAIL ABUN
PB-210	2.752E+00	2.793E+00	2.487E+00	1.425E+00	NOT IDENT.
PB-211	4.545E-02	7.234E-01	5.352E-01	3.691E-01	NOT IDENT.
BI-212	2.412E+00	7.789E-01	5.198E-01	3.974E-01	FAIL ABUN
RN-219	3.615E-03	3.672E-01	3.046E-01	1.873E-01	FAIL ABUN
RA-223	-8.556E-02	6.397E-01	4.799E-01	3.264E-01	FAIL ABUN
AC-227	-8.401E-02	2.394E-01	1.982E-01	1.222E-01	FAIL ABUN
TH-227	-8.401E-02	2.395E-01	1.982E-01	1.222E-01	FAIL ABUN
TH-229	-3.688E-01	4.919E-01	4.123E-01	2.510E-01	FAIL ABUN
PA-231	-1.008E+00	1.415E+00	1.131E+00	7.220E-01	FAIL ABUN
TH-231	-8.556E-02	6.397E-01	4.799E-01	3.264E-01	FAIL ABUN
PA-233	-4.604E-02	5.696E-02	4.774E-02	2.906E-02	FAIL ABUN
PA-234	-1.881E-01	2.695E-01	2.150E-01	1.375E-01	NOT IDENT.
PA-234M	4.796E+00	4.718E+00	3.750E+00	2.407E+00	NOT IDENT.
NP-239	3.149E-02	3.883E-01	3.268E-01	1.981E-01	FAIL ABUN
AM-241	1.111E-01	1.352E-01	1.111E-01	6.897E-02	NOT IDENT.
CM-247	-6.977E-03	3.508E-02	2.783E-02	1.790E-02	FAIL ABUN
CF-249	1.470E-02	3.494E-02	3.046E-02	1.783E-02	NOT IDENT.

CF-251	-3.995E-02	1.222E-01	1.052E-01	6.235E-02 NOT IDENT.
--------	------------	-----------	-----------	----------------------

```

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

```

ENERGY	MDA COUNTS
46.54	289.9740
49.72	336.4577
57.36	0.0000
59.54	344.0680
63.29	465.4889
63.29	465.4889
64.28	452.6305
67.75	457.4627
69.67	496.7502
70.83	415.6468
72.81	493.7717
72.87	493.8743
72.87	493.8743
74.82	531.5005
74.82	531.5005
74.82	531.5005
74.97	531.7681
77.11	535.5484
77.11	535.5484
77.11	535.5484
79.69	454.3115
79.80	454.4713
80.12	513.5367
80.19	513.6511
80.57	514.2710
81.00	573.7378
81.07	573.8652
81.07	573.8652
83.79	458.6326
83.79	458.6326
85.43	515.8095
86.48	597.6581
86.55	597.7828
86.79	455.4806
86.94	455.6881
87.57	456.5446
88.03	457.1693
88.47	457.7653
89.96	459.7708
91.11	461.3082
92.59	463.2707
92.59	463.2707
93.35	464.2728
94.67	347.8936
94.87	348.0881
94.87	348.0881
95.86	421.7693
97.43	373.2885
98.44	351.5356
99.53	369.9866
100.11	381.4631
103.18	426.3405
103.37	406.7651
105.31	387.8303
106.12	411.8928
109.28	408.5146
111.00	419.2396
111.76	448.1059
116.30	386.0815
117.23	404.0082
121.12	387.0423
121.78	381.8824
122.06	385.5819
123.07	361.0975
131.20	412.3529
133.52	398.4879
136.00	405.0504

136.47	395.6509
140.51	420.5687
140.51	0.0000
143.76	408.8974
144.24	382.1284
144.24	382.1284
145.44	357.6396
152.43	366.2777
153.25	364.0924
154.21	396.1619
154.21	396.1619
156.02	390.1201
158.56	387.3403
159.00	380.2028
162.66	364.9635
163.33	352.2606
165.86	357.6604
176.60	387.5807
177.52	399.7516
181.07	367.4744
184.41	392.9225
185.72	387.7226
193.51	393.6457
197.04	341.1525
205.31	415.8644
210.85	355.9579
215.65	362.1726
222.11	342.8512
227.38	338.1317
228.16	368.7059
228.18	368.7167
235.69	356.9762
235.96	373.9529
235.96	373.9529
238.63	314.8676
238.63	314.8676
240.99	315.8656
242.00	316.2908
244.70	236.8973
252.40	262.5245
252.80	257.2762
256.23	302.7348
256.23	302.7348
260.90	283.8598
264.66	243.0125
268.22	300.2686
269.46	302.4823
269.46	302.4823
271.23	257.7513
273.65	225.3631
276.40	226.1071
277.37	262.5114
277.60	260.8358
278.00	263.1823
279.20	288.2461
279.54	288.3608
280.46	281.5455
283.69	301.8425
284.31	302.0609
285.41	309.1692
285.90	284.6880
287.50	264.3614
293.27	0.0000
295.22	261.0035
295.96	261.2215
298.57	261.9879
299.98	262.3992
299.98	262.3992
300.09	262.4344
300.09	262.4344
300.13	262.4449
301.36	246.3783
302.85	249.8304
304.50	238.0784
304.50	238.0784
304.85	241.2239
308.46	230.8360
311.90	253.8513

316.51	217.0727
319.41	241.9377
320.08	230.0007
323.87	235.2831
323.87	235.2831
328.76	202.0270
333.37	217.1467
334.37	212.6404
334.37	212.6404
338.28	244.7945
338.28	244.7945
338.32	244.8071
338.32	244.8071
338.32	244.8071
340.48	239.3137
340.55	231.4073
344.28	242.7230
351.06	229.0205
351.93	214.4687
356.01	223.6862
364.49	224.8556
366.42	189.1855
383.85	206.1287
388.16	189.0236
388.63	184.1260
391.69	198.6016
400.66	194.1426
401.81	196.9115
402.40	204.0079
404.85	195.1883
410.95	182.6829
414.70	198.5396
423.72	195.9452
427.09	201.6393
427.87	192.5036
433.94	165.5313
453.88	181.8591
463.37	167.6745
468.07	177.1383
473.00	166.4241
476.78	187.2278
477.60	161.6504
487.02	154.1649
492.35	158.0176
497.08	165.0792
511.00	177.7056
514.00	152.0662
527.90	167.4228
529.87	0.0000
531.02	142.7552
537.26	165.7053
546.56	0.0000
563.25	158.1764
569.33	167.3597
569.50	160.7205
569.70	157.8878
583.19	143.9056
600.60	164.2277
602.73	146.4989
604.72	151.6804
609.32	164.7812
609.32	164.7812
610.33	157.2185
614.28	169.3314
618.01	150.7701
621.93	149.3374
621.93	149.3374
633.25	143.4188
635.95	131.7607
636.99	133.8217
645.85	113.5895
657.76	150.4852
661.66	123.6732
661.66	123.6732
664.57	0.0000
666.33	128.0309
666.50	128.0439
677.62	128.8423

685.70	147.7583
695.00	163.8737
696.49	160.9320
696.51	160.9352
697.00	152.7741
702.65	175.8671
706.68	143.2646
711.68	150.8803
720.70	138.8450
721.93	0.0000
722.78	142.5614
722.91	142.5698
723.31	147.9480
724.19	144.4479
727.33	117.7428
733.00	130.7798
735.93	115.5480
739.50	93.3222
747.24	124.2203
752.31	156.2052
753.82	122.5231
756.73	116.3580
763.94	196.4007
765.81	151.9550
766.42	155.1874
777.92	144.3137
778.90	145.4546
783.70	122.2104
785.37	124.8851
795.86	88.7344
801.95	126.0746
810.29	120.9931
810.76	127.5368
815.77	93.3123
818.51	94.3669
832.01	127.8700
834.85	140.2773
836.80	0.0000
846.77	135.3667
856.80	94.8568
860.56	111.4483
871.09	101.4472
873.19	94.8359
875.33	0.0000
879.36	105.6609
880.51	107.6367
883.24	92.3705
884.68	93.3919
889.28	109.0155
898.04	109.4313
911.20	126.6085
911.20	126.6085
911.20	126.6085
926.50	118.6114
937.49	108.3254
944.13	103.6871
946.00	117.6034
949.00	99.9379
962.29	102.7224
964.08	134.1578
966.15	137.7582
968.97	216.4740
968.97	216.4740
968.97	216.4740
983.53	101.3470
996.26	65.3010
1001.03	81.3381
1004.73	89.0451
1037.84	94.2910
1038.76	0.0000
1048.07	108.0322
1050.41	105.0381
1050.41	105.0381
1063.66	90.0343
1085.87	101.2086
1099.45	122.6802
1112.07	142.5503
1115.54	162.4111

1120.29	125.7112
1120.29	125.7112
1120.55	129.4214
1121.30	117.3026
1131.51	0.0000
1173.23	114.8665
1177.93	113.1665
1189.05	109.8049
1204.77	115.1435
1221.41	121.5197
1231.02	159.3333
1235.36	128.8024
1238.28	133.7357
1260.41	0.0000
1271.85	76.8302
1274.44	93.4395
1274.54	93.4424
1291.59	83.1816
1298.22	0.0000
1312.11	74.8473
1332.49	58.4688
1365.19	56.0444
1368.63	0.0000
1384.29	91.5860
1408.01	60.8057
1457.56	0.0000
1460.82	42.1786
1489.16	36.2892
1505.03	33.3232
1596.21	61.6375
1620.50	36.2590
1678.03	0.0000
1690.97	28.1614
1764.49	22.7323
1764.49	22.7323
1770.23	16.0330
1771.35	17.8193
1791.20	0.0000
1836.06	24.1165

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202057336

Total Uranium Activity	5.4480E+00	ug/g
Total Uranium Counting Unc.	4.4368E+00	ug/g
Total Uranium Tpu	2.2637E-06	ug/g
Total Uranium Mda	2.9333E+00	ug/g


```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 959270          SAMPLE ID   : G1202057336
*  ANALYST       : MXR1            DETECTOR    : GAM22
*  SAMPLE DATE   : 23-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 10-MAR-2010 15:42:33.41  SAMPLE ALQT: 124.200 GRAM
*
*****

```

```

GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.137E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.243E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.744E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.338E+00

```

VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 16:44:55.38

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057337.CNF;1
Sample date        : 3-MAR-2010 00:00:00. Acquisition date : 10-MAR-2010 15:44:24
Sample ID          : G1202057337      Sample quantity   : 1.51730E+02 GRAM
Detector name      : GAM25             Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00    Elapsed real time: 0 01:00:02.02  0.1%
Energy tolerance   : 1.50000 keV      Analyst Initials : MXR1
Abundance limit    : 75.00000         Sensitivity       : 5.00000
Batch ID           : 959270           Detector SN#      :
Matrix Spike ID    :                  LCS ID            : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	49.61	340	1439	1.86	98.79	95	9	9.44E-02	20.8	
2	0	59.50	9761	1232	0.97	118.57	114	9	2.71E+00	1.2	
3	3	74.82*	424	395	1.00	149.19	143	15	1.18E-01	8.9	2.60E+00
4	3	77.09*	622	409	0.92	153.74	143	15	1.73E-01	6.6	
5	3	83.99*	137	283	1.08	167.54	165	18	3.80E-02	19.9	1.42E+01
6	3	87.95*	2688	304	1.02	175.45	165	18	7.47E-01	2.2	
7	3	89.99	115	221	0.89	179.54	165	18	3.20E-02	24.6	
8	0	92.82*	117	294	1.46	185.19	182	7	3.25E-02	27.3	
9	0	105.25	60	249	1.35	210.06	207	7	1.65E-02	45.9	
10	0	122.03	331	333	0.92	243.61	240	9	9.19E-02	11.3	
11	0	186.09*	92	296	0.85	371.72	368	9	2.55E-02	36.2	
12	0	209.18*	91	191	0.72	417.89	415	7	2.51E-02	27.5	
13	4	238.59*	669	184	1.05	476.71	472	19	1.86E-01	5.0	1.27E+00
14	4	241.70*	168	252	1.61	482.93	472	19	4.66E-02	21.5	
15	0	295.16*	211	191	0.99	589.85	586	10	5.87E-02	14.1	
16	0	299.81	69	155	1.02	599.14	596	8	1.92E-02	33.4	
17	0	337.87	189	223	0.91	675.25	669	12	5.24E-02	17.5	
18	0	351.80*	263	210	1.26	703.10	699	10	7.31E-02	12.0	
19	0	583.08*	189	129	1.70	1165.66	1160	12	5.26E-02	14.2	
20	0	609.08*	238	137	1.51	1217.66	1210	17	6.61E-02	13.0	
21	0	661.54*	2463	99	1.51	1322.58	1314	15	6.84E-01	2.2	
22	0	910.70*	130	140	1.84	1820.89	1812	17	3.60E-02	22.8	
23	0	969.24	99	107	2.31	1937.98	1932	14	2.75E-02	24.2	
24	0	1120.88*	51	61	0.87	2241.26	2236	11	1.40E-02	34.0	
25	0	1172.98	1814	109	1.88	2345.47	2335	19	5.04E-01	2.7	
26	0	1332.26*	1632	40	2.05	2664.03	2656	16	4.53E-01	2.6	

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

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057337.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 : 10-MAR-2010 15:44:24
Sample ID        : G1202057337           Sample quantity  : 151.73 GRAM
Sample type       : SOLID                 Sample geometry   :
Detector name     : GAMMA25               Detector geometry: CAN
Elapsed live time : 0 01:00:00.00         Elapsed real time: 0 01:00:02.02   0.1%
Peak Width (FWHM): 3.00                   Confidence level  : 5.00 %
Energy tolerance  : 1.50 keV               Half life ratio   : 8.00
Errors propagated : Yes                     Systematic Error  : 0.00 %
Efficiency type   : Empirical               Efficiencies at   : Peak Energy
Abundance limit   : 75.00                  WTM error limit   : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57	+	122.06	*	2.360E-01	6.155E-02	4.830E-02	6.228E-03	4.886
		136.47		2.843E-01	2.546E-01	4.431E-01	5.430E-02	0.642
CO-60	+	1173.23		6.715E+00	6.629E-01	1.161E-01	9.555E-03	57.844
	+	1332.49	*	6.742E+00	6.520E-01	8.670E-02	7.042E-03	77.754
CD-109	+	88.03	*	3.876E+01	4.489E+00	1.165E+00	1.252E-01	33.269
SN-126		64.28		-1.134E-01	2.927E-01	4.700E-01	7.490E-02	-0.241
	+	86.94		1.593E+01	6.702E+00	4.764E-01	1.993E-01	33.432
	+	87.57	*	3.831E+00	4.438E-01	1.149E-01	1.232E-02	33.338
BA-137M	+	661.66	*	6.078E+00	7.250E-01	1.141E-01	1.264E-02	53.257
CS-137	+	661.66	*	6.421E+00	7.666E-01	1.206E-01	1.337E-02	53.257
EU-155	+	86.55		4.632E+00	5.396E-01	1.383E-01	1.486E-02	33.489
	+	105.31	*	1.585E-01	1.467E-01	1.791E-01	2.116E-02	0.885
TL-208		277.37		4.675E-01	6.188E-01	1.018E+00	1.464E-01	0.459
	+	583.19	*	4.417E-01	1.347E-01	1.127E-01	1.269E-02	3.920
		860.56		5.989E-01	6.790E-01	1.168E+00	1.221E-01	0.513
BI-211		72.87		1.073E+00	2.317E+00	3.715E+00	3.750E-01	0.289
	+	351.06	*	2.594E+00	6.811E-01	5.471E-01	5.766E-02	4.740
PB-212	+	74.82		2.103E+00	4.785E-01	4.315E-01	6.070E-02	4.874
	+	77.11		1.864E+00	3.115E-01	2.615E-01	2.680E-02	7.128
	+	238.63	*	1.423E+00	2.169E-01	1.407E-01	1.608E-02	10.112
	+	300.09		2.332E+00	1.583E+00	1.829E+00	2.296E-01	1.275
BI-214	+	609.32	*	1.078E+00	3.098E-01	2.053E-01	2.486E-02	5.248
	+	1120.29		1.199E+00	8.265E-01	8.996E-01	9.808E-02	1.333
		1764.49		8.928E-01	4.822E-01	9.950E-01	8.197E-02	0.897
PB-214	+	74.82		3.728E+00	8.217E-01	7.648E-01	9.858E-02	4.874
	+	77.11		3.286E+00	6.124E-01	4.610E-01	6.064E-02	7.128
	+	242.00		2.168E+00	9.668E-01	8.574E-01	1.030E-01	2.529
	+	295.22		1.260E+00	3.909E-01	3.499E-01	4.484E-02	3.601
	+	351.93	*	9.413E-01	2.526E-01	2.051E-01	2.436E-02	4.590
RA-224	+	240.99	*	3.834E+00	1.695E+00	1.510E+00	1.587E-01	2.539
RA-226	+	609.32	*	1.078E+00	3.098E-01	2.053E-01	2.486E-02	5.248
	+	1120.29		1.199E+00	8.265E-01	8.996E-01	9.808E-02	1.333
		1764.49		8.928E-01	4.822E-01	9.950E-01	8.197E-02	0.897
AC-228	+	338.32		2.059E+00	1.127E+00	6.336E-01	2.669E-01	3.249

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	911.20	*	1.480E+00	6.981E-01	5.506E-01	6.731E-02	2.688
	+	968.97		1.955E+00	1.060E+00	1.007E+00	2.478E-01	1.942
RA-228	+	338.32		2.059E+00	1.127E+00	6.336E-01	2.669E-01	3.249
	+	911.20	*	1.480E+00	6.981E-01	5.506E-01	6.731E-02	2.688
	+	968.97		1.955E+00	1.060E+00	1.007E+00	2.478E-01	1.942
TH-228	+	74.82		2.103E+00	4.333E-01	4.315E-01	4.413E-02	4.874
	+	77.11		1.864E+00	3.115E-01	2.615E-01	2.680E-02	7.128
	+	238.63	*	1.423E+00	2.169E-01	1.407E-01	1.608E-02	10.112
	+	300.09		2.332E+00	2.118E+00	1.829E+00	1.127E+00	1.275
TH-229	+	85.43		4.855E-01	1.996E-01	2.865E-01	3.042E-02	1.694
	+	88.47		5.906E+00	6.842E-01	1.779E-01	1.916E-02	33.203
		193.51	*	-1.149E-01	7.501E-01	1.216E+00	1.159E-01	-0.095
		210.85		2.874E-02	1.478E+00	2.143E+00	2.124E-01	0.013
TH-232	+	338.32		2.059E+00	7.511E-01	6.336E-01	6.605E-02	3.249
	+	911.20	*	1.480E+00	6.981E-01	5.506E-01	6.731E-02	2.688
	+	968.97		1.955E+00	1.060E+00	1.007E+00	2.478E-01	1.942
U-235	+	89.96		1.764E+00	9.761E-01	1.239E+00	3.156E-01	1.424
	+	93.35		1.119E+00	6.676E-01	6.393E-01	1.541E-01	1.751
		143.76	*	-1.183E-01	2.357E-01	3.821E-01	7.019E-02	-0.310
		163.33		-2.172E-01	5.743E-01	9.260E-01	1.689E-01	-0.235
	+	185.72		1.237E-01	9.018E-02	9.163E-02	8.580E-03	1.350
		205.31		1.420E-01	7.938E-01	1.168E+00	2.188E-01	0.122
NP-237	+	86.48	*	1.143E+01	2.738E+00	3.413E-01	8.028E-02	33.500
		95.86		-1.622E-01	8.976E-01	1.371E+00	3.431E-01	-0.118
AM-241	+	59.54	*	1.381E+01	1.473E+00	1.708E-01	1.775E-02	80.851

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.60	*	7.125E-01	6.365E-01	1.095E+00	1.159E-01	0.651
NA-22		1274.54	*	1.926E-02	5.099E-02	8.860E-02	7.265E-03	0.217
NA-24		1368.63	*	-1.322E-04	5.099E-02	Half-Life too short		
K-40		1460.82	*	9.454E-01	6.011E-01	1.216E+00	1.036E-01	0.777
SC-46		889.28	*	1.083E-02	9.270E-02	1.520E-01	1.456E-02	0.071
	+	1120.55		1.907E-01	1.308E-01	1.905E-01	1.637E-02	1.001
V-48		944.13		1.642E+00	1.825E+00	3.105E+00	2.913E-01	0.529
		983.53	*	-5.959E-02	1.236E-01	1.913E-01	1.773E-02	-0.312
		1312.11		8.957E-03	6.748E-02	1.131E-01	9.219E-03	0.079
CR-51		320.08	*	1.704E-01	5.332E-01	9.119E-01	1.012E-01	0.187
MN-54		834.85	*	6.555E-02	8.081E-02	1.392E-01	1.412E-02	0.471
CO-56		846.77	*	5.761E-02	8.810E-02	1.501E-01	1.506E-02	0.384
		1037.84		-2.783E-02	6.740E-01	1.127E+00	1.068E-01	-0.025
		1238.28		1.088E-01	9.219E-02	1.735E-01	1.471E-02	0.627
		1771.35		-6.428E-01	4.378E-01	5.173E-01	4.259E-02	-1.243
CO-58		810.76	*	-7.068E-02	8.496E-02	1.308E-01	1.357E-02	-0.541
FE-59		1099.45	*	-3.996E-02	1.944E-01	3.197E-01	3.010E-02	-0.125
		1291.59		9.241E-02	1.277E-01	2.328E-01	2.187E-02	0.397
ZN-65		1115.54	*	-1.177E-01	2.266E-01	3.070E-01	2.652E-02	-0.383

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SE-75	+	121.12		1.204E+00	3.250E-01	3.751E-01	5.476E-02	3.209
		136.00		4.710E-02	4.776E-02	8.288E-02	9.834E-03	0.568
		264.66	*	5.533E-02	6.679E-02	1.111E-01	1.218E-02	0.498
		279.54		-2.457E-02	1.666E-01	2.616E-01	2.986E-02	-0.094
		400.66		-9.051E-02	4.402E-01	7.194E-01	8.303E-02	-0.126
SR-85		514.00	*	-2.146E-01	8.185E-02	1.071E-01	1.105E-02	-2.003
Y-88		898.04		5.201E-02	1.001E-01	1.682E-01	1.600E-02	0.309
		1836.06	*	4.266E-02	5.570E-02	1.050E-01	8.583E-03	0.406
Y-91		1204.77	*	-1.066E+01	3.081E+01	4.910E+01	4.040E+00	-0.217
NB-94		702.65	*	-2.047E-02	6.154E-02	9.979E-02	1.096E-02	-0.205
		871.09		2.793E-02	8.220E-02	1.371E-01	1.341E-02	0.204
NB-95		765.81	*	3.384E-02	7.674E-02	1.304E-01	1.393E-02	0.260
NB-95M		235.69	*	5.065E-02	1.985E-01	2.888E-01	3.315E-02	0.175
ZR-95		724.19		-1.919E-01	1.777E-01	2.712E-01	3.114E-02	-0.707
		756.73	*	3.710E-02	1.305E-01	2.201E-01	2.525E-02	0.169
MO-99		140.51		5.414E-01	3.944E+00	6.631E+00	1.651E+00	0.082
		181.07		-3.385E-01	3.617E+00	5.628E+00	1.074E+00	-0.060
		366.42		2.615E+00	2.667E+01	4.470E+01	4.380E+00	0.059
		739.50	*	1.823E+00	3.906E+00	6.654E+00	1.135E+00	0.274
		777.92		-5.170E+00	1.073E+01	1.700E+01	1.802E+00	-0.304
TC-99M		140.51	*	6.465E+00	1.073E+01	Half-Life too short		
RU-103		497.08	*	3.788E-02	6.694E-02	1.124E-01	1.684E-02	0.337
	+	610.33		9.745E+00	3.069E+00	3.198E+00	5.646E-01	3.048
RH-106		621.93	*	4.809E-02	5.641E-01	9.541E-01	1.419E-01	0.050
		1050.41		2.034E+00	5.703E+00	9.786E+00	8.799E-01	0.208
RU-106		621.93	*	4.809E-02	5.641E-01	9.541E-01	1.045E-01	0.050
		1050.41		2.034E+00	5.703E+00	9.786E+00	8.799E-01	0.208
AG-108M		433.94	*	-4.777E-02	5.964E-02	9.312E-02	9.149E-03	-0.513
		614.28		4.127E-02	6.862E-02	1.064E-01	1.186E-02	0.388
		722.91		-1.666E-01	8.363E-02	1.167E-01	1.299E-02	-1.427
AG-110M		657.76	*	3.377E-02	7.940E-02	1.200E-01	1.352E-02	0.281
		677.62		2.517E-01	5.716E-01	9.810E-01	1.103E-01	0.257
		706.68		-7.115E-02	4.052E-01	6.653E-01	7.427E-02	-0.107
		763.94		-1.910E-01	3.242E-01	5.118E-01	5.570E-02	-0.373
		884.68		3.694E-02	1.225E-01	2.033E-01	2.008E-02	0.182
		937.49		-1.452E-01	2.932E-01	4.583E-01	4.438E-02	-0.317
		1384.29		1.338E-02	2.230E-01	3.671E-01	3.095E-02	0.036
		1505.03		-1.991E-01	4.146E-01	6.098E-01	5.056E-02	-0.326
SN-113		391.69	*	4.345E-02	7.621E-02	1.302E-01	1.216E-02	0.334
CD-115		260.90		-9.169E+00	2.143E+01	3.325E+01	3.613E+00	-0.276
		492.35		-4.801E-01	7.429E+00	1.202E+01	1.219E+00	-0.040
		527.90	*	-1.157E-02	2.230E+00	3.598E+00	3.750E-01	-0.003
SN-117M		156.02		-1.581E+00	1.887E+00	2.988E+00	2.980E-01	-0.529
		158.56	*	-3.620E-03	4.415E-02	7.286E-02	7.074E-03	-0.050
TE-123M		159.00	*	6.742E-03	3.199E-02	5.357E-02	5.202E-03	0.126
SB-124		602.73		-1.226E-02	7.267E-02	1.051E-01	1.142E-02	-0.117
		645.85		1.043E-01	8.975E-01	1.516E+00	1.732E-01	0.069
		722.78		-1.580E+00	7.688E-01	1.065E+00	1.178E-01	-1.484
		1690.97	*	3.545E-02	9.911E-02	1.773E-01	1.536E-02	0.200

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125	427.87	*		4.517E-02	1.813E-01	3.023E-01	2.918E-02	0.149
	463.37			8.141E-02	6.155E-01	1.012E+00	1.057E-01	0.080
	600.60			1.045E-01	3.250E-01	5.461E-01	6.210E-02	0.191
	635.95			-1.887E-01	5.276E-01	8.635E-01	9.981E-02	-0.218
TE-125M	109.28	*		-1.174E+00	1.015E+01	1.540E+01	2.061E+00	-0.076
I-126	388.63			7.629E-03	2.102E-01	3.493E-01	3.207E-02	0.022
	666.33	*		-6.302E-02	3.283E-01	4.681E-01	5.183E-02	-0.135
	753.82			2.723E-01	2.440E+00	4.065E+00	4.370E-01	0.067
SB-126	414.70			6.287E-03	9.265E-02	1.534E-01	1.436E-02	0.041
	666.50			-1.884E-02	1.107E-01	1.583E-01	1.752E-02	-0.119
	695.00			1.797E-02	9.484E-02	1.600E-01	1.761E-02	0.112
	697.00			2.814E-02	3.294E-01	5.516E-01	6.067E-02	0.051
	720.70	*		4.983E-02	1.881E-01	3.178E-01	3.469E-02	0.157
SB-127	856.80			-3.972E-01	7.671E-01	1.208E+00	1.200E-01	-0.329
	252.40			-7.261E-01	1.828E+00	2.816E+00	1.170E+00	-0.258
	473.00			-2.923E-01	9.510E-01	1.523E+00	1.870E-01	-0.192
	685.70	*		4.411E-01	6.797E-01	1.179E+00	1.392E-01	0.374
	783.70			1.585E-01	1.907E+00	3.159E+00	3.902E-01	0.050
I-131	80.19			2.411E+00	2.264E+00	3.422E+00	3.554E-01	0.704
	284.31			-5.337E-01	1.286E+00	1.981E+00	2.267E-01	-0.269
	364.49	*		-3.108E-02	1.105E-01	1.815E-01	1.855E-02	-0.171
TE-132	636.99			-5.576E-01	1.617E+00	2.649E+00	3.011E-01	-0.210
	49.72	+		6.294E+00	2.690E+00	2.729E+00	2.766E-01	2.307
	111.76			-2.572E+00	7.079E+00	1.174E+01	1.485E+00	-0.219
	116.30			-4.958E+00	6.118E+00	9.905E+00	1.283E+00	-0.501
BA-133	228.16	*		1.340E-02	2.153E-01	3.483E-01	5.467E-02	0.038
	81.00			5.752E-02	1.034E-01	1.345E-01	2.229E-02	0.428
	276.40			2.237E-01	5.673E-01	9.190E-01	1.448E-01	0.243
	302.85			2.386E-02	2.308E-01	3.476E-01	5.115E-02	0.069
I-133	356.01	*		-6.677E-02	8.600E-02	1.184E-01	1.652E-02	-0.564
	383.85			-1.050E-01	5.408E-01	8.882E-01	1.148E-01	-0.118
	529.87	*		2.780E-06	5.408E-01	Half-Life	too short	
	875.33			8.114E-05	5.408E-01	Half-Life	too short	
CS-134	1298.22			-8.520E-04	5.408E-01	Half-Life	too short	
	563.25			6.767E-01	6.449E-01	1.111E+00	1.192E-01	0.609
	569.33			6.281E-02	3.816E-01	6.199E-01	6.688E-02	0.101
	604.72			-2.159E-02	6.626E-02	9.421E-02	1.026E-02	-0.229
	795.86	*		1.874E-02	9.813E-02	1.635E-01	1.721E-02	0.115
CS-135	801.95			-5.613E-01	8.656E-01	1.352E+00	1.416E-01	-0.415
	1365.19			-2.759E-01	1.722E+00	2.735E+00	2.348E-01	-0.101
	268.22	*		-2.747E-01	2.505E-01	3.686E-01	4.450E-02	-0.745
	546.56			1.008E+02	2.505E-01	Half-Life	too short	
I-135	836.80			1.117E+02	2.505E-01	Half-Life	too short	
	1038.76			7.154E+01	2.505E-01	Half-Life	too short	
	1131.51			-3.807E+01	2.505E-01	Half-Life	too short	
	1260.41	*		1.531E+01	2.505E-01	Half-Life	too short	
	1457.56			1.762E+02	2.505E-01	Half-Life	too short	
	1678.03			7.507E+01	2.505E-01	Half-Life	too short	
	1791.20			3.551E+01	2.505E-01	Half-Life	too short	

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

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136		153.25		6.159E-01	7.222E-01	1.241E+00	1.448E-01	0.496
		176.60		-2.073E-01	4.324E-01	6.924E-01	6.920E-02	-0.299
		273.65		-3.304E-01	5.511E-01	8.418E-01	9.804E-02	-0.392
		340.55		1.911E-01	1.805E-01	2.847E-01	3.032E-02	0.671
		818.51		-7.787E-02	1.171E-01	1.824E-01	1.878E-02	-0.427
		1048.07	*	-6.503E-03	1.697E-01	2.837E-01	2.651E-02	-0.023
		1235.36		3.259E-01	4.357E-01	7.833E-01	8.985E-02	0.416
CE-139		165.86	*	2.261E-02	3.924E-02	6.644E-02	5.925E-03	0.340
BA-140		162.66		-3.009E-01	7.004E-01	1.128E+00	1.107E-01	-0.267
		304.85		-1.773E+00	1.590E+00	2.168E+00	6.511E-01	-0.818
		423.72		-1.322E+00	2.608E+00	4.110E+00	1.361E+00	-0.322
		537.26	*	-1.224E-01	3.452E-01	5.378E-01	1.852E-01	-0.228
LA-140		328.76		4.374E-01	3.373E-01	5.964E-01	6.560E-02	0.733
		487.02		4.103E-03	1.936E-01	3.152E-01	3.326E-02	0.013
		815.77		2.472E-01	4.869E-01	8.263E-01	9.234E-02	0.299
		1596.21	*	-8.790E-02	8.977E-02	1.236E-01	1.027E-02	-0.711
CE-141		145.44	*	-2.714E-02	6.339E-02	1.034E-01	1.150E-02	-0.262
CE-143		57.36		1.444E+01	2.070E+01	3.105E+01	3.355E+00	0.465
		293.27	*	7.482E+00	5.502E+00	8.565E+00	1.903E+00	0.874
		664.57		6.803E+02	2.277E+02	1.867E+02	5.710E+01	3.644
		721.93		-7.235E+01	6.407E+01	9.219E+01	2.633E+01	-0.785
CE-144		80.12		9.091E-01	2.352E+00	3.450E+00	3.578E-01	0.264
		133.52	*	-2.688E-01	2.386E-01	3.713E-01	6.472E-02	-0.724
PM-144		476.78		1.333E-01	1.407E-01	2.401E-01	2.556E-02	0.555
		618.01		-1.142E-02	5.987E-02	9.678E-02	1.077E-02	-0.118
PR-144		696.49	*	3.071E-02	6.295E-02	1.082E-01	1.191E-02	0.284
		696.51	*	2.275E+00	4.691E+00	8.066E+00	8.873E-01	0.282
PM-146		1489.16		-6.819E+00	1.706E+01	2.521E+01	2.088E+00	-0.271
		453.88	*	2.335E-02	9.199E-02	1.526E-01	1.763E-02	0.153
		633.25		1.946E+00	2.797E+00	4.737E+00	1.838E+00	0.411
		735.93		2.093E-01	3.036E-01	5.169E-01	1.488E-01	0.405
ND-147	+	747.24		-5.365E-02	1.998E-01	3.237E-01	5.167E-02	-0.166
		91.11		3.561E-01	1.796E-01	2.538E-01	2.914E-02	1.403
		319.41		2.651E+00	3.558E+00	6.195E+00	6.656E-01	0.428
		531.02	*	-2.683E-01	6.959E-01	1.090E+00	1.752E-01	-0.246
PM-149		285.90	*	6.814E+00	1.430E+01	2.320E+01	3.953E+00	0.294
EU-152	+	121.78		6.916E-01	1.835E-01	2.251E-01	3.098E-02	3.072
		244.70		3.419E-02	5.284E-01	7.575E-01	8.012E-02	0.045
		344.28	*	-2.392E-02	1.664E-01	2.673E-01	2.870E-02	-0.089
		778.90		-3.525E-01	5.265E-01	8.207E-01	8.697E-02	-0.429
		964.08		3.298E-01	7.770E-01	1.124E+00	1.049E-01	0.293
		1085.87		4.713E-01	9.778E-01	1.681E+00	1.481E-01	0.280
		1112.07		3.545E-01	7.078E-01	1.218E+00	1.054E-01	0.291
GD-153		1408.01		1.341E-01	2.249E-01	4.049E-01	3.327E-02	0.331
		69.67		4.054E-01	1.299E+00	1.917E+00	1.917E-01	0.211
		97.43	*	-1.662E-02	7.809E-02	1.318E-01	1.484E-02	-0.126
EU-154	+	103.18		-8.529E-02	1.204E-01	1.766E-01	2.051E-02	-0.483
		123.07		4.887E-01	1.325E-01	1.487E-01	2.201E-02	3.286
		723.31		-7.332E-01	3.743E-01	5.221E-01	6.060E-02	-1.404

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	+	873.19		-7.595E-02	6.884E-01	1.113E+00	1.419E-01	-0.068
		996.26		2.086E-01	9.121E-01	1.490E+00	2.649E-01	0.140
		1004.73		1.591E-01	5.417E-01	8.861E-01	1.069E-01	0.180
		1274.44	*	1.004E-02	1.520E-01	2.523E-01	2.790E-02	0.040
		86.79		1.147E+01	1.329E+00	8.286E-01	8.852E-02	13.845
	+	197.04		3.585E-01	7.305E-01	1.219E+00	1.172E-01	0.294
		215.65		-1.127E-01	1.072E+00	1.727E+00	1.729E-01	-0.065
		298.57		3.057E-01	2.067E-01	2.870E-01	3.158E-02	1.065
		879.36	*	-1.557E-01	3.098E-01	4.853E-01	4.702E-02	-0.321
		962.29		1.459E-01	1.362E+00	2.007E+00	1.873E-01	0.073
HO-166M		966.15		3.734E-01	5.274E-01	7.794E-01	7.265E-02	0.479
		1177.93		2.458E-01	6.266E-01	9.426E-01	7.759E-02	0.261
		1271.85		1.229E-01	8.068E-01	1.357E+00	1.111E-01	0.091
		80.57		3.214E-01	2.840E-01	3.834E-01	3.983E-02	0.839
		184.41		3.313E-02	5.201E-02	8.139E-02	7.597E-03	0.407
		280.46		-1.127E-01	1.388E-01	2.081E-01	2.321E-02	-0.541
		410.95		3.505E-02	4.539E-01	7.525E-01	7.011E-02	0.047
		711.68	*	7.259E-02	1.230E-01	2.120E-01	2.321E-02	0.342
		752.31		9.690E-02	5.499E-01	9.205E-01	9.906E-02	0.105
		810.29		-1.508E-01	1.407E-01	2.122E-01	2.199E-02	-0.711
TA-182		67.75		1.886E-02	7.218E-02	1.153E-01	1.147E-02	0.164
		100.11		1.022E-01	1.697E-01	2.951E-01	3.370E-02	0.346
		152.43		-6.124E-02	4.163E-01	6.870E-01	7.099E-02	-0.089
		222.11		-1.189E-01	5.357E-01	8.557E-01	8.678E-02	-0.139
		1121.30		5.371E-01	3.684E-01	5.211E-01	4.477E-02	1.031
	+	1189.05		-1.219E-01	4.401E-01	7.066E-01	5.816E-02	-0.173
		1221.41	*	4.886E-02	2.574E-01	4.339E-01	3.569E-02	0.113
		1231.02		-7.524E-02	5.207E-01	8.422E-01	6.923E-02	-0.089
		295.96		8.684E-01	2.636E-01	3.498E-01	3.875E-02	2.483
		308.46		1.920E-01	1.448E-01	2.583E-01	2.823E-02	0.743
IR-192	+	316.51	*	-3.336E-04	5.380E-02	9.072E-02	9.798E-03	-0.004
		468.07		-1.420E-02	1.414E-01	2.296E-01	2.403E-02	-0.062
		70.83		-5.602E-01	9.385E-01	1.313E+00	2.214E-01	-0.427
		72.87		2.389E-01	5.170E-01	8.275E-01	1.357E-01	0.289
		279.20	*	5.834E-03	5.483E-02	8.746E-02	9.911E-03	0.067
		72.81		4.049E-02	1.324E-01	2.110E-01	2.130E-02	0.192
		74.97		6.059E-01	1.246E-01	1.829E-01	1.859E-02	3.313
		569.70		9.794E-03	5.964E-02	9.687E-02	1.036E-02	0.101
		1063.66	*	1.156E-02	1.144E-01	1.927E-01	1.720E-02	0.060
		1770.23		-2.178E+00	1.011E+00	9.651E-01	7.946E-02	-2.257
PB-210		46.54	*	8.870E-01	8.714E-01	1.382E+00	1.415E-01	0.642
PB-211		404.85	*	2.539E-01	1.361E+00	2.264E+00	1.098E+00	0.112
BI-212		427.09		-6.263E-01	3.087E+00	5.000E+00	2.322E+00	-0.125
		832.01		-1.043E+00	2.336E+00	3.599E+00	1.877E+00	-0.290
	*	727.33		1.910E+00	1.124E+00	2.002E+00	2.828E-01	0.954
		785.37		3.186E+00	6.750E+00	1.146E+01	1.209E+00	0.278
		1620.50		1.068E+00	3.340E+00	5.892E+00	4.898E-01	0.181
RN-219		271.23		2.292E-01	3.717E-01	6.098E-01	7.534E-02	0.376
	*	401.81		-1.321E-01	7.401E-01	1.211E+00	1.844E-01	-0.109

---- 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		1.291E-01	2.342E-01	3.052E-01	3.178E-02	0.423
	+	83.79		2.889E-01	1.188E-01	1.984E-01	2.091E-02	1.456
		94.87		-1.346E-02	4.228E-01	6.526E-01	7.253E-02	-0.021
		144.24		-5.215E-01	7.924E-01	1.276E+00	1.518E-01	-0.409
		154.21		4.432E-01	4.778E-01	8.241E-01	8.954E-02	0.538
		269.46		2.502E-01	2.801E-01	4.663E-01	5.195E-02	0.537
AC-227		323.87	*	-7.337E-01	1.075E+00	1.732E+00	3.194E-01	-0.424
	+	338.28		8.169E+00	3.059E+00	3.612E+00	4.846E-01	2.262
		79.69		-4.183E-01	1.205E+00	1.699E+00	3.087E-01	-0.246
		235.96		1.015E-01	2.607E-01	3.824E-01	4.542E-02	0.266
		256.23	*	6.490E-02	3.968E-01	6.395E-01	8.749E-02	0.101
	+	299.98		2.565E+00	1.751E+00	2.477E+00	3.571E-01	1.036
TH-227		304.50		-3.643E+00	3.007E+00	3.982E+00	7.108E-01	-0.915
		334.37		-2.825E+00	3.197E+00	4.368E+00	7.295E-01	-0.647
		79.80		2.602E-01	1.556E+00	2.257E+00	5.084E-01	0.115
		235.96		1.015E-01	2.607E-01	3.824E-01	4.349E-02	0.266
		256.23	*	6.490E-02	3.969E-01	6.395E-01	9.636E-02	0.101
	+	299.98		2.565E+00	1.751E+00	2.477E+00	3.571E-01	1.036
PA-231		304.50		-3.643E+00	3.007E+00	3.982E+00	7.108E-01	-0.915
		334.37		-2.825E+00	3.197E+00	4.368E+00	7.295E-01	-0.647
		283.69	*	-3.951E-02	2.346E+00	3.710E+00	6.009E-01	-0.011
		301.36		1.143E+00	9.832E-01	1.566E+00	2.180E-01	0.730
	TH-231	81.07		1.291E-01	2.342E-01	3.052E-01	3.178E-02	0.423
	+	83.79		2.889E-01	1.188E-01	1.984E-01	2.091E-02	1.456
PA-233		94.87		-1.346E-02	4.228E-01	6.526E-01	7.253E-02	-0.021
		144.24		-5.215E-01	7.924E-01	1.276E+00	1.518E-01	-0.409
		154.21		4.432E-01	4.778E-01	8.241E-01	8.954E-02	0.538
		269.46		2.502E-01	2.801E-01	4.663E-01	5.195E-02	0.537
		323.87	*	-7.337E-01	1.075E+00	1.732E+00	3.194E-01	-0.424
	+	338.28		8.169E+00	3.059E+00	3.612E+00	4.846E-01	2.262
PA-234	+	300.13		1.161E+00	7.972E-01	1.122E+00	1.831E-01	1.034
		311.90	*	2.093E-03	1.049E-01	1.773E-01	1.958E-02	0.012
		340.48		1.357E+00	1.191E+00	1.826E+00	4.521E-01	0.743
		94.67		6.399E-02	1.547E-01	2.443E-01	3.478E-02	0.262
		98.44		-3.464E-03	8.892E-02	1.511E-01	8.504E-02	-0.023
		111.00		1.477E-02	1.911E-01	3.255E-01	4.813E-02	0.045
PA-234M		131.20		1.801E-02	1.283E-01	2.154E-01	2.629E-02	0.084
		569.50		8.707E-02	5.296E-01	8.603E-01	9.201E-02	0.101
		733.00		2.702E-03	7.705E-01	1.277E+00	2.958E-01	0.002
		880.51		-2.587E-01	6.932E-01	1.098E+00	1.063E-01	-0.236
		883.24		9.172E-02	7.120E-01	1.165E+00	7.849E-01	0.079
		926.50		2.261E-02	4.645E-01	7.551E-01	1.930E-01	0.030
TH-234		946.00	*	7.212E-01	8.679E-01	1.458E+00	2.787E-01	0.495
		949.00		-2.036E-01	1.244E+00	1.989E+00	1.863E-01	-0.102
		766.42		1.020E+01	2.341E+01	3.878E+01	1.983E+01	0.263
		1001.03	*	1.594E+00	1.134E+01	1.842E+01	1.930E+00	0.087
	+	63.29	*	3.950E-01	8.134E-01	1.257E+00	2.387E-01	0.314
		92.59		1.482E+00	8.781E-01	1.187E+00	2.743E-01	1.249
U-238		63.29	*	3.950E-01	8.134E-01	1.257E+00	2.387E-01	0.314

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

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.59		1.482E+00	8.248E-01	1.187E+00	1.304E-01	1.249
		99.53		8.140E-02	1.629E-01	2.824E-01	3.216E-02	0.288
		103.37		-1.377E-02	1.096E-01	1.672E-01	1.943E-02	-0.082
	+	106.12		1.267E-01	1.173E-01	1.518E-01	1.791E-02	0.835
		117.23	*	-2.702E-01	4.558E-01	7.118E-01	8.928E-02	-0.380
		228.18		1.942E-02	3.225E-01	5.215E-01	5.352E-02	0.037
CM-247		277.60		1.872E-01	2.808E-01	4.614E-01	5.138E-02	0.406
		278.00		8.068E-01	1.195E+00	1.964E+00	2.188E-01	0.411
		287.50		-6.879E-01	2.054E+00	3.178E+00	3.529E-01	-0.216
		402.40	*	-3.970E-03	6.863E-02	1.131E-01	1.043E-02	-0.035
CF-249		252.80		-4.415E-01	1.528E+00	2.401E+00	2.574E-01	-0.184
		333.37		-3.145E-01	3.463E-01	4.764E-01	5.009E-02	-0.660
		388.16	*	-1.577E-02	7.533E-02	1.235E-01	1.136E-02	-0.128
CF-251		177.52	*	3.478E-02	1.676E-01	2.783E-01	2.555E-02	0.125
		227.38		-2.077E-01	5.311E-01	8.376E-01	8.583E-02	-0.248
		285.41		9.859E-01	3.522E+00	5.665E+00	6.299E-01	0.174
ANH-511		511.00	*	8.873E-02	7.306E-02	1.331E-01	1.370E-02	0.666

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057337
* Acquisition date   : 10-MAR-2010 15:44:24 Detector SN#      :
* Detector ID        : GAM25 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 01:00:02.02 Half life ratio : 8.000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 3-MAR-2010 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1202057337 Analyst initials: MXR1
* Batch Number       : 959270 Sample Quantity : 1.5173E+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     :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
CO-57	2.360E-01	6.032E-02	5.177E-02	0.000E+00
CO-60	6.742E+00	6.390E-01	8.756E-02	0.000E+00
CD-109	3.876E+01	4.400E+00	1.258E+00	0.000E+00
SN-126	3.831E+00	4.349E-01	1.241E-01	0.000E+00
BA-137M	6.078E+00	7.105E-01	1.174E-01	0.000E+00
CS-137	6.421E+00	7.513E-01	1.240E-01	0.000E+00
EU-155	1.585E-01	1.438E-01	1.926E-01	0.000E+00
TL-208	4.417E-01	1.320E-01	1.162E-01	0.000E+00
BI-211	2.594E+00	6.675E-01	5.717E-01	0.000E+00
PB-212	1.423E+00	2.125E-01	1.484E-01	0.000E+00
BI-214	1.078E+00	3.036E-01	2.116E-01	0.000E+00
PB-214	9.413E-01	2.475E-01	2.143E-01	0.000E+00
RA-224	3.834E+00	1.661E+00	1.593E+00	0.000E+00
RA-226	1.078E+00	3.036E-01	2.116E-01	0.000E+00
AC-228	1.480E+00	6.841E-01	5.616E-01	0.000E+00
RA-228	1.480E+00	6.841E-01	5.616E-01	0.000E+00
TH-228	1.423E+00	2.125E-01	1.484E-01	0.000E+00
TH-229	-1.149E-01	7.351E-01	1.289E+00	0.000E+00
TH-232	1.480E+00	6.841E-01	5.616E-01	0.000E+00
U-235	-1.183E-01	2.310E-01	4.080E-01	0.000E+00
NP-237	1.143E+01	2.684E+00	3.687E-01	0.000E+00
AM-241	1.381E+01	1.444E+00	1.862E-01	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	7.125E-01	6.238E-01	1.135E+00	0.000E+00 NOT IDENT.
NA-22	1.926E-02	4.997E-02	8.958E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.566E+02	0.000E+00	0.000E+00 SHORT HLIF
K-40	9.454E-01	5.891E-01	1.225E+00	0.000E+00 NOT IDENT.
SC-46	1.083E-02	9.085E-02	1.552E-01	0.000E+00 FAIL ABUN

V-48	-5.959E-02	1.211E-01	1.947E-01	0.000E+00	NOT IDENT.
CR-51	1.704E-01	5.226E-01	9.551E-01	0.000E+00	NOT IDENT.
MN-54	6.555E-02	7.920E-02	1.423E-01	0.000E+00	NOT IDENT.
CO-56	5.761E-02	8.634E-02	1.533E-01	0.000E+00	NOT IDENT.
CO-58	-7.068E-02	8.326E-02	1.338E-01	0.000E+00	NOT IDENT.
FE-59	-3.996E-02	1.905E-01	3.245E-01	0.000E+00	NOT IDENT.
ZN-65	-1.177E-01	2.221E-01	3.115E-01	0.000E+00	NOT IDENT.
SE-75	5.533E-02	6.546E-02	1.169E-01	0.000E+00	FAIL ABUN
SR-85	-2.146E-01	8.021E-02	1.109E-01	0.000E+00	NOT IDENT.
Y-88	4.266E-02	5.459E-02	1.052E-01	0.000E+00	NOT IDENT.
Y-91	-1.066E+01	3.019E+01	4.971E+01	0.000E+00	NOT IDENT.
NB-94	-2.047E-02	6.031E-02	1.025E-01	0.000E+00	NOT IDENT.
NB-95	3.384E-02	7.520E-02	1.336E-01	0.000E+00	NOT IDENT.
NB-95M	5.065E-02	1.945E-01	3.048E-01	0.000E+00	NOT IDENT.
ZR-95	3.710E-02	1.279E-01	2.256E-01	0.000E+00	NOT IDENT.
MO-99	1.823E+00	3.827E+00	6.823E+00	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.614E+07	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.788E-02	6.560E-02	1.164E-01	0.000E+00	FAIL ABUN
RH-106	4.809E-02	5.528E-01	9.828E-01	0.000E+00	NOT IDENT.
RU-106	4.809E-02	5.528E-01	9.828E-01	0.000E+00	NOT IDENT.
AG-108M	-4.777E-02	5.844E-02	9.680E-02	0.000E+00	NOT IDENT.
AG-110M	3.377E-02	7.781E-02	1.234E-01	0.000E+00	NOT IDENT.
SN-113	4.345E-02	7.469E-02	1.357E-01	0.000E+00	NOT IDENT.
CD-115	-1.157E-02	2.185E+00	3.722E+00	0.000E+00	NOT IDENT.
SN-117M	-3.620E-03	4.327E-02	7.762E-02	0.000E+00	NOT IDENT.
TE-123M	6.742E-03	3.135E-02	5.707E-02	0.000E+00	NOT IDENT.
SB-124	3.545E-02	9.713E-02	1.779E-01	0.000E+00	NOT IDENT.
SB-125	4.517E-02	1.777E-01	3.143E-01	0.000E+00	NOT IDENT.
TE-125M	-1.174E+00	9.951E+00	1.655E+01	0.000E+00	NOT IDENT.
I-126	-6.302E-02	3.218E-01	4.814E-01	0.000E+00	NOT IDENT.
SB-126	4.983E-02	1.844E-01	3.261E-01	0.000E+00	NOT IDENT.
SB-127	4.411E-01	6.661E-01	1.212E+00	0.000E+00	NOT IDENT.
I-131	-3.108E-02	1.083E-01	1.895E-01	0.000E+00	NOT IDENT.
TE-132	1.340E-02	2.110E-01	3.678E-01	0.000E+00	FAIL ABUN
BA-133	-6.677E-02	8.428E-02	1.237E-01	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.860E+01	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.874E-02	9.616E-02	1.673E-01	0.000E+00	NOT IDENT.
CS-135	-2.747E-01	2.455E-01	3.878E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	4.433E+07	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.503E-03	1.663E-01	2.883E-01	0.000E+00	NOT IDENT.
CE-139	2.261E-02	3.845E-02	7.071E-02	0.000E+00	NOT IDENT.
BA-140	-1.224E-01	3.383E-01	5.560E-01	0.000E+00	NOT IDENT.
LA-140	-8.790E-02	8.797E-02	1.242E-01	0.000E+00	NOT IDENT.
CE-141	-2.714E-02	6.212E-02	1.104E-01	0.000E+00	NOT IDENT.
CE-143	7.482E+00	5.392E+00	8.989E+00	0.000E+00	NOT IDENT.
CE-144	-2.688E-01	2.338E-01	3.971E-01	0.000E+00	NOT IDENT.
PM-144	3.071E-02	6.169E-02	1.112E-01	0.000E+00	NOT IDENT.
PR-144	2.275E+00	4.598E+00	8.284E+00	0.000E+00	NOT IDENT.
PM-146	2.335E-02	9.015E-02	1.584E-01	0.000E+00	NOT IDENT.
ND-147	-2.683E-01	6.820E-01	1.127E+00	0.000E+00	FAIL ABUN
PM-149	6.814E+00	1.401E+01	2.437E+01	0.000E+00	NOT IDENT.
EU-152	-2.392E-02	1.631E-01	2.795E-01	0.000E+00	FAIL ABUN
GD-153	-1.662E-02	7.653E-02	1.420E-01	0.000E+00	NOT IDENT.
EU-154	1.004E-02	1.489E-01	2.551E-01	0.000E+00	FAIL ABUN
TB-160	-1.557E-01	3.036E-01	4.954E-01	0.000E+00	FAIL ABUN
HO-166M	7.259E-02	1.205E-01	2.176E-01	0.000E+00	NOT IDENT.
TA-182	4.886E-02	2.522E-01	4.392E-01	0.000E+00	FAIL ABUN
IR-192	-3.336E-04	5.273E-02	9.504E-02	0.000E+00	FAIL ABUN
HG-203	5.834E-03	5.374E-02	9.191E-02	0.000E+00	NOT IDENT.
BI-207	1.156E-02	1.121E-01	1.958E-01	0.000E+00	FAIL ABUN
PB-210	8.870E-01	8.540E-01	1.514E+00	0.000E+00	NOT IDENT.
PB-211	2.539E-01	1.334E+00	2.358E+00	0.000E+00	NOT IDENT.
BI-212	1.910E+00	1.102E+00	2.054E+00	0.000E+00	NOT IDENT.
RN-219	-1.321E-01	7.253E-01	1.262E+00	0.000E+00	NOT IDENT.
RA-223	-7.337E-01	1.053E+00	1.813E+00	0.000E+00	FAIL ABUN
AC-227	6.490E-02	3.889E-01	6.734E-01	0.000E+00	FAIL ABUN
TH-227	6.490E-02	3.889E-01	6.734E-01	0.000E+00	FAIL ABUN
PA-231	-3.951E-02	2.300E+00	3.897E+00	0.000E+00	NOT IDENT.
TH-231	-7.337E-01	1.053E+00	1.813E+00	0.000E+00	FAIL ABUN
PA-233	2.093E-03	1.028E-01	1.858E-01	0.000E+00	FAIL ABUN
PA-234	7.212E-01	8.505E-01	1.485E+00	0.000E+00	NOT IDENT.
PA-234M	1.594E+00	1.112E+01	1.875E+01	0.000E+00	NOT IDENT.
TH-234	3.950E-01	7.971E-01	1.369E+00	0.000E+00	FAIL ABUN
U-238	3.950E-01	7.971E-01	1.369E+00	0.000E+00	FAIL ABUN
NP-239	-2.702E-01	4.467E-01	7.637E-01	0.000E+00	FAIL ABUN
CM-247	-3.970E-03	6.726E-02	1.178E-01	0.000E+00	NOT IDENT.
CF-249	-1.577E-02	7.383E-02	1.288E-01	0.000E+00	NOT IDENT.
CF-251	3.478E-02	1.642E-01	2.957E-01	0.000E+00	NOT IDENT.

ANH-511	8.873E-02	7.160E-02	1.378E-01	0.000E+00 NOT IDENT.
---------	-----------	-----------	-----------	----------------------

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057337.CNF;1
Sample date        : 3-MAR-2010 00:00:00. Acquisition date : 10-MAR-2010 15:44:24
Sample ID          : G1202057337      Sample quantity   : 1.51730E+02 GRAM
Detector name      : GAM25             Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00     Elapsed real time: 0 01:00:02.02  0.1%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 959270            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
CO-57	122.06	331	85.60*	8.268E+00	2.314E-01	2.360E-01	26.09
	136.47	-----	10.68	7.796E+00	-----	Line Not Found	-----
CO-60	1173.23	1814	99.85	1.343E+00	6.696E+00	6.715E+00	9.87
	1332.49	1632	99.98*	1.201E+00	6.723E+00	6.742E+00	9.67
CD-109	88.03	2688	3.70*	9.384E+00	3.831E+01	3.876E+01	11.58
SN-126	64.28	-----	9.60	9.782E+00	-----	Line Not Found	-----
	86.94	2688	8.90	9.384E+00	1.593E+01	1.593E+01	42.08
	87.57	2688	37.00*	9.384E+00	3.831E+00	3.831E+00	11.58
BA-137M	661.66	2463	89.90*	2.231E+00	6.075E+00	6.078E+00	11.93
CS-137	661.66	2463	85.10*	2.231E+00	6.418E+00	6.421E+00	11.94
EU-155	86.55	2688	30.70	9.384E+00	4.617E+00	4.632E+00	11.65
	105.31	60	21.10*	8.834E+00	1.580E-01	1.585E-01	92.60
TL-208	277.37	-----	6.60	4.738E+00	-----	Line Not Found	-----
	583.19	189	85.00*	2.497E+00	4.417E-01	4.417E-01	30.50
	860.56	-----	12.50	1.765E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	9.724E+00	-----	Line Not Found	-----
	351.06	263	12.92*	3.887E+00	2.594E+00	2.594E+00	26.26
PB-212	74.82	424	10.28	9.694E+00	2.103E+00	2.103E+00	22.75
	77.11	622	17.10	9.652E+00	1.864E+00	1.864E+00	16.71
	238.63	669	43.60*	5.339E+00	1.423E+00	1.423E+00	15.24
	300.09	69	3.30	4.446E+00	2.332E+00	2.332E+00	67.89
BI-214	609.32	238	45.49*	2.402E+00	1.078E+00	1.078E+00	28.75
	1120.29	51	14.92	1.397E+00	1.199E+00	1.199E+00	68.92
	1764.49	-----	15.30	9.412E-01	-----	Line Not Found	-----
PB-214	74.82	424	5.80	9.694E+00	3.728E+00	3.728E+00	22.04
	77.11	622	9.70	9.652E+00	3.286E+00	3.286E+00	18.63
	242.00	168	7.25	5.286E+00	2.168E+00	2.168E+00	44.59
	295.22	211	18.42	4.503E+00	1.260E+00	1.260E+00	31.02
	351.93	263	35.60*	3.887E+00	9.412E-01	9.413E-01	26.84
RA-224	240.99	168	4.10*	5.286E+00	3.834E+00	3.834E+00	44.21
RA-226	609.32	238	45.49*	2.402E+00	1.078E+00	1.078E+00	28.75
	1120.29	51	14.92	1.397E+00	1.199E+00	1.199E+00	68.92

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	1764.49	-----	15.30	9.412E-01	-----	Line Not Found	-----
AC-228	338.32	189	11.27	4.023E+00	2.059E+00	2.059E+00	54.74
	911.20	130	25.80*	1.679E+00	1.480E+00	1.480E+00	47.16
	968.97	99	15.80	1.588E+00	1.955E+00	1.955E+00	54.22
RA-228	338.32	189	11.27	4.023E+00	2.059E+00	2.059E+00	54.74
	911.20	130	25.80*	1.679E+00	1.480E+00	1.480E+00	47.16
	968.97	99	15.80	1.588E+00	1.955E+00	1.955E+00	54.22
TH-228	74.82	424	10.28	9.694E+00	2.103E+00	2.103E+00	20.60
	77.11	622	17.10	9.652E+00	1.864E+00	1.864E+00	16.71
	238.63	669	43.60*	5.339E+00	1.423E+00	1.423E+00	15.24
	300.09	69	3.30	4.446E+00	2.332E+00	2.332E+00	90.80
TH-229	85.43	137	14.70	9.492E+00	4.855E-01	4.855E-01	41.11
	88.47	2688	24.00	9.384E+00	5.906E+00	5.906E+00	11.58
	193.51	-----	4.41*	6.239E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.863E+00	-----	Line Not Found	-----
TH-232	338.32	189	11.27	4.023E+00	2.059E+00	2.059E+00	36.48
	911.20	130	25.80*	1.679E+00	1.480E+00	1.480E+00	47.16
	968.97	99	15.80	1.588E+00	1.955E+00	1.955E+00	54.22
U-235	89.96	115	3.47	9.324E+00	1.764E+00	1.764E+00	55.35
	93.35	117	5.60	9.239E+00	1.119E+00	1.119E+00	59.64
	143.76	-----	10.96*	7.568E+00	-----	Line Not Found	-----
	163.33	-----	5.08	6.998E+00	-----	Line Not Found	-----
	185.72	92	57.20	6.413E+00	1.237E-01	1.237E-01	72.92
	205.31	-----	5.01	5.979E+00	-----	Line Not Found	-----
NP-237	86.48	2688	12.40*	9.384E+00	1.143E+01	1.143E+01	23.95
	95.86	-----	2.68	9.143E+00	-----	Line Not Found	-----
AM-241	59.54	9761	35.90*	9.740E+00	1.381E+01	1.381E+01	10.67

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1202057337

Page : 3
Acquisition date : 10-MAR-2010 15:44:24

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

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	1.02	2.314E-01	2.360E-01	0.616E-01	26.09	
CO-60	5.27Y	1.00	6.723E+00	6.742E+00	0.652E+00	9.67	
CD-109	461.40D	1.01	3.831E+01	3.876E+01	0.449E+01	11.58	
SN-126	2.30E+05Y	1.00	3.831E+00	3.831E+00	0.444E+00	11.58	
BA-137M	30.08Y	1.00	6.075E+00	6.078E+00	0.725E+00	11.93	
CS-137	30.08Y	1.00	6.418E+00	6.421E+00	0.767E+00	11.94	
EU-155	4.75Y	1.00	1.580E-01	1.585E-01	1.467E-01	92.60	
TL-208	1.41E+10Y	1.00	4.417E-01	4.417E-01	1.347E-01	30.50	
BI-211	7.04E+08Y	1.00	2.594E+00	2.594E+00	0.681E+00	26.26	
PB-212	1.41E+10Y	1.00	1.423E+00	1.423E+00	0.217E+00	15.24	
BI-214	1600.00Y	1.00	1.078E+00	1.078E+00	0.310E+00	28.75	
PB-214	1600.00Y	1.00	9.412E-01	9.413E-01	2.526E-01	26.84	
RA-224	1.41E+10Y	1.00	3.834E+00	3.834E+00	1.695E+00	44.21	
RA-226	1600.00Y	1.00	1.078E+00	1.078E+00	0.310E+00	28.75	
AC-228	1.41E+10Y	1.00	1.480E+00	1.480E+00	0.698E+00	47.16	
RA-228	1.41E+10Y	1.00	1.480E+00	1.480E+00	0.698E+00	47.16	
TH-228	1.41E+10Y	1.00	1.423E+00	1.423E+00	0.217E+00	15.24	
TH-229	7340.00Y	1.00	5.906E+00	5.906E+00	0.684E+00	11.58	K
TH-232	1.41E+10Y	1.00	1.480E+00	1.480E+00	0.698E+00	47.16	
U-235	7.04E+08Y	1.00	1.237E-01	1.237E-01	0.902E-01	72.92	K
NP-237	2.14E+06Y	1.00	1.143E+01	1.143E+01	0.274E+01	23.95	
AM-241	432.60Y	1.00	1.381E+01	1.381E+01	0.147E+01	10.67	
Total Activity :			1.103E+02	1.107E+02			

Grand Total Activity : 1.103E+02 1.107E+02

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

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

Unidentified Energy Lines
Sample ID : G1202057337

Page : 4
Acquisition date : 10-MAR-2010 15:44:24

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	49.61	340	1439	1.86	98.79	95	9	9.44E-02	41.5	9.40E+00	T
0	209.18	91	191	0.72	417.89	415	7	2.51E-02	55.0	5.90E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 10-MAR-2010 16:44:59.42

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202057337.CNF;1
* Acquisition date   : 10-MAR-2010 15:44:24  Detector SN#      :
* Detector ID        : GAM25                  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 01:00:02.02          Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 3-MAR-2010 00:00:00.  Nuclide Library : SOLID
* Sample ID          : G1202057337          Analyst initials: MXR1
* Batch Number       : 959270               Sample Quantity  : 1.51730E+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
CO-57	2.360E-01	6.155E-02	4.830E-02	6.228E-03	4.886
CO-60	6.742E+00	6.520E-01	8.670E-02	7.042E-03	77.754
CD-109	3.876E+01	4.489E+00	1.165E+00	1.252E-01	33.269
SN-126	3.831E+00	4.438E-01	1.149E-01	1.232E-02	33.338
BA-137M	6.078E+00	7.250E-01	1.141E-01	1.264E-02	53.257
CS-137	6.421E+00	7.666E-01	1.206E-01	1.337E-02	53.257
EU-155	1.585E-01	1.467E-01	1.791E-01	2.116E-02	0.885
TL-208	4.417E-01	1.347E-01	1.127E-01	1.269E-02	3.920
BI-211	2.594E+00	6.811E-01	5.471E-01	5.766E-02	4.740
PB-212	1.423E+00	2.169E-01	1.407E-01	1.608E-02	10.112
BI-214	1.078E+00	3.098E-01	2.053E-01	2.486E-02	5.248
PB-214	9.413E-01	2.526E-01	2.051E-01	2.436E-02	4.590
RA-224	3.834E+00	1.695E+00	1.510E+00	1.587E-01	2.539
RA-226	1.078E+00	3.098E-01	2.053E-01	2.486E-02	5.248
AC-228	1.480E+00	6.981E-01	5.506E-01	6.731E-02	2.688
RA-228	1.480E+00	6.981E-01	5.506E-01	6.731E-02	2.688
TH-228	1.423E+00	2.169E-01	1.407E-01	1.608E-02	10.112
TH-229	5.906E+00	6.842E-01	1.216E+00	1.159E-01	4.859

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.480E+00	6.981E-01	5.506E-01	6.731E-02	2.688
U-235	1.237E-01	9.018E-02	3.821E-01	7.019E-02	0.324
NP-237	1.143E+01	2.738E+00	3.413E-01	8.028E-02	33.500
AM-241	1.381E+01	1.473E+00	1.708E-01	1.775E-02	80.851

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	7.125E-01		6.365E-01	1.095E+00	1.159E-01	0.651
NA-22	1.926E-02		5.099E-02	8.860E-02	7.265E-03	0.217
NA-24	-1.322E-04		1.309E-04	Half-Life too short		
K-40	9.454E-01		6.011E-01	1.216E+00	1.036E-01	0.777
SC-46	1.083E-02		9.270E-02	1.520E-01	1.456E-02	0.071
V-48	-5.959E-02		1.236E-01	1.913E-01	1.773E-02	-0.312
CR-51	1.704E-01		5.332E-01	9.119E-01	1.012E-01	0.187
MN-54	6.555E-02		8.081E-02	1.392E-01	1.412E-02	0.471
CO-56	5.761E-02		8.810E-02	1.501E-01	1.506E-02	0.384
CO-58	-7.068E-02		8.496E-02	1.308E-01	1.357E-02	-0.541
FE-59	-3.996E-02		1.944E-01	3.197E-01	3.010E-02	-0.125
ZN-65	-1.177E-01		2.266E-01	3.070E-01	2.652E-02	-0.383
SE-75	5.533E-02		6.679E-02	1.111E-01	1.218E-02	0.498
SR-85	-2.146E-01		8.185E-02	1.071E-01	1.105E-02	-2.003
Y-88	4.266E-02		5.570E-02	1.050E-01	8.583E-03	0.406
Y-91	-1.066E+01		3.081E+01	4.910E+01	4.040E+00	-0.217
NB-94	-2.047E-02		6.154E-02	9.979E-02	1.096E-02	-0.205
NB-95	3.384E-02		7.674E-02	1.304E-01	1.393E-02	0.260
NB-95M	5.065E-02		1.985E-01	2.888E-01	3.315E-02	0.175
ZR-95	3.710E-02		1.305E-01	2.201E-01	2.525E-02	0.169
MO-99	1.823E+00		3.906E+00	6.654E+00	1.135E+00	0.274
TC-99M	6.465E+00		2.354E+01	Half-Life too short		
RU-103	3.788E-02		6.694E-02	1.124E-01	1.684E-02	0.337
RH-106	4.809E-02		5.641E-01	9.541E-01	1.419E-01	0.050
RU-106	4.809E-02		5.641E-01	9.541E-01	1.045E-01	0.050
AG-108M	-4.777E-02		5.964E-02	9.312E-02	9.149E-03	-0.513
AG-110M	3.377E-02		7.940E-02	1.200E-01	1.352E-02	0.281
SN-113	4.345E-02		7.621E-02	1.302E-01	1.216E-02	0.334
CD-115	-1.157E-02		2.230E+00	3.598E+00	3.750E-01	-0.003
SN-117M	-3.620E-03		4.415E-02	7.286E-02	7.074E-03	-0.050
TE-123M	6.742E-03		3.199E-02	5.357E-02	5.202E-03	0.126
SB-124	3.545E-02		9.911E-02	1.773E-01	1.536E-02	0.200
SB-125	4.517E-02		1.813E-01	3.023E-01	2.918E-02	0.149
TE-125M	-1.174E+00		1.015E+01	1.540E+01	2.061E+00	-0.076
I-126	-6.302E-02		3.283E-01	4.681E-01	5.183E-02	-0.135
SB-126	4.983E-02		1.881E-01	3.178E-01	3.469E-02	0.157
SB-127	4.411E-01		6.797E-01	1.179E+00	1.392E-01	0.374
I-131	-3.108E-02		1.105E-01	1.815E-01	1.855E-02	-0.171
TE-132	1.340E-02		2.153E-01	3.483E-01	5.467E-02	0.038

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-133	-6.677E-02		8.600E-02	1.184E-01	1.652E-02	-0.564
I-133	2.780E-06		1.459E-05	Half-Life too short		
CS-134	1.874E-02		9.813E-02	1.635E-01	1.721E-02	0.115
CS-135	-2.747E-01		2.505E-01	3.686E-01	4.450E-02	-0.745
I-135	1.531E+01		2.262E+01	Half-Life too short		
CS-136	-6.503E-03		1.697E-01	2.837E-01	2.651E-02	-0.023
CE-139	2.261E-02		3.924E-02	6.644E-02	5.925E-03	0.340
BA-140	-1.224E-01		3.452E-01	5.378E-01	1.852E-01	-0.228
LA-140	-8.790E-02		8.977E-02	1.236E-01	1.027E-02	-0.711
CE-141	-2.714E-02		6.339E-02	1.034E-01	1.150E-02	-0.262
CE-143	7.482E+00		5.502E+00	8.565E+00	1.903E+00	0.874
CE-144	-2.688E-01		2.386E-01	3.713E-01	6.472E-02	-0.724
PM-144	3.071E-02		6.295E-02	1.082E-01	1.191E-02	0.284
PR-144	2.275E+00		4.691E+00	8.066E+00	8.873E-01	0.282
PM-146	2.335E-02		9.199E-02	1.526E-01	1.763E-02	0.153
ND-147	-2.683E-01		6.959E-01	1.090E+00	1.752E-01	-0.246
PM-149	6.814E+00		1.430E+01	2.320E+01	3.953E+00	0.294
EU-152	-2.392E-02		1.664E-01	2.673E-01	2.870E-02	-0.089
GD-153	-1.662E-02		7.809E-02	1.318E-01	1.484E-02	-0.126
EU-154	1.004E-02		1.520E-01	2.523E-01	2.790E-02	0.040
TB-160	-1.557E-01		3.098E-01	4.853E-01	4.702E-02	-0.321
HO-166M	7.259E-02		1.230E-01	2.120E-01	2.321E-02	0.342
TA-182	4.886E-02		2.574E-01	4.339E-01	3.569E-02	0.113
IR-192	-3.336E-04		5.380E-02	9.072E-02	9.798E-03	-0.004
HG-203	5.834E-03		5.483E-02	8.746E-02	9.911E-03	0.067
BI-207	1.156E-02		1.144E-01	1.927E-01	1.720E-02	0.060
PB-210	8.870E-01		8.714E-01	1.382E+00	1.415E-01	0.642
PB-211	2.539E-01		1.361E+00	2.264E+00	1.098E+00	0.112
BI-212	1.910E+00		1.124E+00	2.002E+00	2.828E-01	0.954
RN-219	-1.321E-01		7.401E-01	1.211E+00	1.844E-01	-0.109
RA-223	-7.337E-01		1.075E+00	1.732E+00	3.194E-01	-0.424
AC-227	6.490E-02		3.968E-01	6.395E-01	8.749E-02	0.101
TH-227	6.490E-02		3.969E-01	6.395E-01	9.636E-02	0.101
PA-231	-3.951E-02		2.346E+00	3.710E+00	6.009E-01	-0.011
TH-231	-7.337E-01		1.075E+00	1.732E+00	3.194E-01	-0.424
PA-233	2.093E-03		1.049E-01	1.773E-01	1.958E-02	0.012
PA-234	7.212E-01		8.679E-01	1.458E+00	2.787E-01	0.495
PA-234M	1.594E+00		1.134E+01	1.842E+01	1.930E+00	0.087
TH-234	3.950E-01		8.134E-01	1.257E+00	2.387E-01	0.314
U-238	3.950E-01		8.134E-01	1.257E+00	2.387E-01	0.314
NP-239	-2.702E-01		4.558E-01	7.118E-01	8.928E-02	-0.380
CM-247	-3.970E-03		6.863E-02	1.131E-01	1.043E-02	-0.035
CF-249	-1.577E-02		7.533E-02	1.235E-01	1.136E-02	-0.128
CF-251	3.478E-02		1.676E-01	2.783E-01	2.555E-02	0.125
ANH-511	8.873E-02		7.306E-02	1.331E-01	1.370E-02	0.666

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202057337          *
* Acquisition date   : 10-MAR-2010 15:44:24 Detector SN# :                  *
* Detector ID        : GAM25 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 01:00:02.02 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 3-MAR-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202057337 Analyst initials: MXR1                 *
* Batch Number       : 959270 Sample Quantity : 1.5173E+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 :                              *
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
CO-57	2.360E-01	6.032E-02	2.590E-02	3.078E-02
CO-60	6.742E+00	6.390E-01	4.381E-02	3.260E-01
CD-109	3.876E+01	4.400E+00	6.295E-01	2.245E+00
SN-126	3.831E+00	4.349E-01	6.211E-02	2.219E-01
BA-137M	6.078E+00	7.105E-01	5.872E-02	3.625E-01
CS-137	6.421E+00	7.513E-01	6.203E-02	3.833E-01
EU-155	1.585E-01	1.438E-01	9.636E-02	7.337E-02
TL-208	4.417E-01	1.320E-01	5.816E-02	6.735E-02
BI-211	2.594E+00	6.675E-01	2.860E-01	3.406E-01
PB-212	1.423E+00	2.125E-01	7.426E-02	1.084E-01
BI-214	1.078E+00	3.036E-01	1.059E-01	1.549E-01
PB-214	9.413E-01	2.475E-01	1.072E-01	1.263E-01
RA-224	3.834E+00	1.661E+00	7.968E-01	8.475E-01
RA-226	1.078E+00	3.036E-01	1.059E-01	1.549E-01
AC-228	1.480E+00	6.841E-01	2.810E-01	3.490E-01
RA-228	1.480E+00	6.841E-01	2.810E-01	3.490E-01
TH-228	1.423E+00	2.125E-01	7.426E-02	1.084E-01
TH-229	-1.149E-01	7.351E-01	6.448E-01	3.750E-01
TH-232	1.480E+00	6.841E-01	2.810E-01	3.490E-01
U-235	-1.183E-01	2.310E-01	2.041E-01	1.179E-01
NP-237	1.143E+01	2.684E+00	1.845E-01	1.369E+00
AM-241	1.381E+01	1.444E+00	9.315E-02	7.365E-01

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	7.125E-01	6.238E-01	5.679E-01	3.183E-01 NOT IDENT.
NA-22	1.926E-02	4.997E-02	4.482E-02	2.549E-02 NOT IDENT.
NA-24	-1.322E+02	2.566E+02	0.000E+00	1.309E+02 SHORT HLIF
K-40	9.454E-01	5.891E-01	6.130E-01	3.006E-01 NOT IDENT.
SC-46	1.083E-02	9.085E-02	7.762E-02	4.635E-02 FAIL ABUN

V-48	-5.959E-02	1.211E-01	9.742E-02	6.179E-02	NOT IDENT.
CR-51	1.704E-01	5.226E-01	4.778E-01	2.666E-01	NOT IDENT.
MN-54	6.555E-02	7.920E-02	7.117E-02	4.041E-02	NOT IDENT.
CO-56	5.761E-02	8.634E-02	7.672E-02	4.405E-02	NOT IDENT.
CO-58	-7.068E-02	8.326E-02	6.692E-02	4.248E-02	NOT IDENT.
FE-59	-3.996E-02	1.905E-01	1.623E-01	9.720E-02	NOT IDENT.
ZN-65	-1.177E-01	2.221E-01	1.558E-01	1.133E-01	NOT IDENT.
SE-75	5.533E-02	6.546E-02	5.850E-02	3.340E-02	FAIL ABUN
SR-85	-2.146E-01	8.021E-02	5.547E-02	4.092E-02	NOT IDENT.
Y-88	4.266E-02	5.459E-02	5.261E-02	2.785E-02	NOT IDENT.
Y-91	-1.066E+01	3.019E+01	2.487E+01	1.540E+01	NOT IDENT.
NB-94	-2.047E-02	6.031E-02	5.126E-02	3.077E-02	NOT IDENT.
NB-95	3.384E-02	7.520E-02	6.683E-02	3.837E-02	NOT IDENT.
NB-95M	5.065E-02	1.945E-01	1.525E-01	9.924E-02	NOT IDENT.
ZR-95	3.710E-02	1.279E-01	1.129E-01	6.527E-02	NOT IDENT.
MO-99	1.823E+00	3.827E+00	3.414E+00	1.953E+00	NOT IDENT.
TC-99M	6.465E+06	4.614E+07	0.000E+00	2.354E+07	SHORT HLIF
RU-103	3.788E-02	6.560E-02	5.825E-02	3.347E-02	FAIL ABUN
RH-106	4.809E-02	5.528E-01	4.917E-01	2.821E-01	NOT IDENT.
RU-106	4.809E-02	5.528E-01	4.917E-01	2.820E-01	NOT IDENT.
AG-108M	-4.777E-02	5.844E-02	4.843E-02	2.982E-02	NOT IDENT.
AG-110M	3.377E-02	7.781E-02	6.173E-02	3.970E-02	NOT IDENT.
SN-113	4.345E-02	7.469E-02	6.789E-02	3.811E-02	NOT IDENT.
CD-115	-1.157E-02	2.185E+00	1.862E+00	1.115E+00	NOT IDENT.
SN-117M	-3.620E-03	4.327E-02	3.883E-02	2.208E-02	NOT IDENT.
TE-123M	6.742E-03	3.135E-02	2.855E-02	1.599E-02	NOT IDENT.
SB-124	3.545E-02	9.713E-02	8.899E-02	4.955E-02	NOT IDENT.
SB-125	4.517E-02	1.777E-01	1.573E-01	9.065E-02	NOT IDENT.
TE-125M	-1.174E+00	9.951E+00	8.278E+00	5.077E+00	NOT IDENT.
I-126	-6.302E-02	3.218E-01	2.408E-01	1.642E-01	NOT IDENT.
SB-126	4.983E-02	1.844E-01	1.632E-01	9.407E-02	NOT IDENT.
SB-127	4.411E-01	6.661E-01	6.063E-01	3.398E-01	NOT IDENT.
I-131	-3.108E-02	1.083E-01	9.478E-02	5.527E-02	NOT IDENT.
TE-132	1.340E-02	2.110E-01	1.840E-01	1.077E-01	FAIL ABUN
BA-133	-6.677E-02	8.428E-02	6.188E-02	4.300E-02	NOT IDENT.
I-133	2.780E+00	2.860E+01	0.000E+00	1.459E+01	SHORT HLIF
CS-134	1.874E-02	9.616E-02	8.370E-02	4.906E-02	NOT IDENT.
CS-135	-2.747E-01	2.455E-01	1.940E-01	1.253E-01	NOT IDENT.
I-135	1.531E+07	4.433E+07	0.000E+00	2.262E+07	SHORT HLIF
CS-136	-6.503E-03	1.663E-01	1.442E-01	8.487E-02	NOT IDENT.
CE-139	2.261E-02	3.845E-02	3.537E-02	1.962E-02	NOT IDENT.
BA-140	-1.224E-01	3.383E-01	2.782E-01	1.726E-01	NOT IDENT.
LA-140	-8.790E-02	8.797E-02	6.212E-02	4.488E-02	NOT IDENT.
CE-141	-2.714E-02	6.212E-02	5.521E-02	3.169E-02	NOT IDENT.
CE-143	7.482E+00	5.392E+00	4.497E+00	2.751E+00	NOT IDENT.
CE-144	-2.688E-01	2.338E-01	1.987E-01	1.193E-01	NOT IDENT.
PM-144	3.071E-02	6.169E-02	5.562E-02	3.147E-02	NOT IDENT.
PR-144	2.275E+00	4.598E+00	4.145E+00	2.346E+00	NOT IDENT.
PM-146	2.335E-02	9.015E-02	7.925E-02	4.600E-02	NOT IDENT.
ND-147	-2.683E-01	6.820E-01	5.640E-01	3.479E-01	FAIL ABUN
PM-149	6.814E+00	1.401E+01	1.219E+01	7.149E+00	NOT IDENT.
EU-152	-2.392E-02	1.631E-01	1.398E-01	8.320E-02	FAIL ABUN
GD-153	-1.662E-02	7.653E-02	7.106E-02	3.904E-02	NOT IDENT.
EU-154	1.004E-02	1.489E-01	1.276E-01	7.599E-02	FAIL ABUN
TB-160	-1.557E-01	3.036E-01	2.479E-01	1.549E-01	FAIL ABUN
HO-166M	7.259E-02	1.205E-01	1.089E-01	6.149E-02	NOT IDENT.
TA-182	4.886E-02	2.522E-01	2.197E-01	1.287E-01	FAIL ABUN
IR-192	-3.336E-04	5.273E-02	4.755E-02	2.690E-02	FAIL ABUN
HG-203	5.834E-03	5.374E-02	4.598E-02	2.742E-02	NOT IDENT.
BI-207	1.156E-02	1.121E-01	9.796E-02	5.718E-02	FAIL ABUN
PB-210	8.870E-01	8.540E-01	7.575E-01	4.357E-01	NOT IDENT.
PB-211	2.539E-01	1.334E+00	1.180E+00	6.807E-01	NOT IDENT.
BI-212	1.910E+00	1.102E+00	1.028E+00	5.621E-01	NOT IDENT.
RN-219	-1.321E-01	7.253E-01	6.311E-01	3.701E-01	NOT IDENT.
RA-223	-7.337E-01	1.053E+00	9.071E-01	5.375E-01	FAIL ABUN
AC-227	6.490E-02	3.889E-01	3.369E-01	1.984E-01	FAIL ABUN
TH-227	6.490E-02	3.889E-01	3.369E-01	1.984E-01	FAIL ABUN
PA-231	-3.951E-02	2.300E+00	1.950E+00	1.173E+00	NOT IDENT.
TH-231	-7.337E-01	1.053E+00	9.071E-01	5.375E-01	FAIL ABUN
PA-233	2.093E-03	1.028E-01	9.294E-02	5.243E-02	FAIL ABUN
PA-234	7.212E-01	8.505E-01	7.430E-01	4.340E-01	NOT IDENT.
PA-234M	1.594E+00	1.112E+01	9.379E+00	5.672E+00	NOT IDENT.
TH-234	3.950E-01	7.971E-01	6.847E-01	4.067E-01	FAIL ABUN
U-238	3.950E-01	7.971E-01	6.847E-01	4.067E-01	FAIL ABUN
NP-239	-2.702E-01	4.467E-01	3.821E-01	2.279E-01	FAIL ABUN
CM-247	-3.970E-03	6.726E-02	5.895E-02	3.432E-02	NOT IDENT.
CF-249	-1.577E-02	7.383E-02	6.442E-02	3.767E-02	NOT IDENT.
CF-251	3.478E-02	1.642E-01	1.479E-01	8.379E-02	NOT IDENT.

ANH-511	8.873E-02	7.160E-02	6.895E-02	3.653E-02 NOT IDENT.
---------	-----------	-----------	-----------	----------------------

```

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

```

ENERGY	MDA COUNTS
46.54	426.2268
49.72	712.3245
57.36	961.1668
59.54	674.1469
63.29	310.4829
63.29	310.4829
64.28	337.9608
67.75	352.6179
69.67	351.8675
70.83	372.0179
72.81	346.9627
72.87	347.0323
72.87	347.0323
74.82	349.2663
74.82	349.2663
74.82	349.2663
74.97	349.4368
77.11	351.8548
77.11	351.8548
77.11	351.8548
79.69	371.6152
79.80	344.3845
80.12	344.7263
80.19	307.7423
80.57	290.3595
81.00	324.6642
81.07	324.7337
81.07	324.7337
83.79	298.1010
83.79	298.1010
85.43	299.5586
86.48	300.4838
86.55	300.5453
86.79	300.7538
86.94	300.8878
87.57	301.4388
88.03	301.8391
88.47	302.2225
89.96	303.5107
91.11	184.6963
92.59	220.5479
92.59	220.5479
93.35	205.9434
94.67	215.5139
94.87	220.6753
94.87	220.6753
95.86	221.2694
97.43	221.7821
98.44	224.9254
99.53	214.5079
100.11	211.4246
103.18	230.7258
103.37	211.4938
105.31	209.0815
106.12	196.0885
109.28	208.0979
111.00	205.0285
111.76	217.6938
116.30	214.7238
117.23	212.3436
121.12	205.8996
121.78	212.0468
122.06	212.1801
123.07	212.6602
131.20	222.8810
133.52	238.7208
136.00	204.7505

136.47	200.3137
140.51	201.9683
140.51	0.0000
143.76	200.4589
144.24	204.4176
144.24	204.4176
145.44	208.6780
152.43	214.3750
153.25	192.6598
154.21	182.4448
154.21	182.4448
156.02	211.0023
158.56	177.1454
159.00	169.5366
162.66	212.6001
163.33	216.7607
165.86	212.8346
176.60	196.8277
177.52	184.1235
181.07	194.4735
184.41	206.4695
185.72	214.0071
193.51	217.6998
197.04	200.3092
205.31	216.4273
210.85	229.2706
215.65	227.1508
222.11	234.5945
227.38	203.9406
228.16	192.2756
228.18	192.2811
235.69	225.8882
235.96	225.9683
235.96	225.9683
238.63	202.6693
238.63	202.6693
240.99	203.2979
242.00	203.5670
244.70	168.9453
252.40	194.0313
252.80	188.5520
256.23	171.4347
256.23	171.4347
260.90	180.3158
264.66	148.3105
268.22	198.9792
269.46	152.5875
269.46	152.5875
271.23	166.6025
273.65	192.2573
276.40	168.7695
277.37	162.0645
277.60	162.1075
278.00	162.1821
279.20	165.8643
279.54	169.3856
280.46	186.8708
283.69	163.2521
284.31	174.9532
285.41	155.4528
285.90	152.0551
287.50	174.4263
293.27	167.1346
295.22	159.0497
295.96	159.1821
298.57	130.6788
299.98	135.8320
299.98	135.8320
300.09	135.8484
300.09	135.8484
300.13	135.8555
301.36	150.2089
302.85	144.7747
304.50	189.1094
304.50	189.1094
304.85	178.9868
308.46	134.7632
311.90	162.1283

316.51	166.5158
319.41	158.8958
320.08	174.3644
323.87	181.3965
323.87	181.3965
328.76	154.9574
333.37	189.0121
334.37	174.5343
334.37	174.5343
338.28	155.5210
338.28	155.5210
338.32	155.5261
338.32	155.5261
338.32	155.5261
340.48	150.5098
340.55	150.5197
344.28	154.4554
351.06	143.1188
351.93	152.0042
356.01	182.7409
364.49	166.0823
366.42	153.1456
383.85	161.3503
388.16	167.7501
388.63	162.0348
391.69	135.3922
400.66	149.1176
401.81	151.2158
402.40	152.2676
404.85	157.4771
410.95	152.3936
414.70	145.9675
423.72	168.9209
427.09	165.3997
427.87	154.5364
433.94	169.3223
453.88	169.9661
463.37	194.7836
468.07	185.1883
473.00	177.6112
476.78	146.0108
477.60	138.8459
487.02	143.9802
492.35	126.7328
497.08	107.1953
511.00	136.9100
514.00	239.2960
527.90	115.9629
529.87	0.0000
531.02	119.4348
537.26	112.3757
546.56	0.0000
563.25	76.9363
569.33	102.6128
569.50	102.6241
569.70	102.6355
583.19	107.9616
600.60	95.0000
602.73	103.6348
604.72	102.2546
609.32	94.9999
609.32	94.9999
610.33	95.0563
614.28	80.1578
618.01	98.0183
621.93	89.3317
621.93	89.3317
633.25	85.3370
635.95	104.7709
636.99	105.7545
645.85	100.7478
657.76	102.3596
661.66	98.8522
661.66	98.8522
664.57	98.0786
666.33	102.8484
666.50	102.8591
677.62	79.9697

685.70	86.9373
695.00	87.3730
696.49	83.6408
696.51	83.6430
697.00	90.3196
702.65	92.4981
706.68	99.3840
711.68	91.9805
720.70	92.4141
721.93	121.3734
722.78	153.2277
722.91	153.2393
723.31	149.4146
724.19	130.1946
727.33	88.8689
733.00	98.8150
735.93	85.3789
739.50	91.3654
747.24	98.5539
752.31	88.0422
753.82	90.0684
756.73	82.3553
763.94	110.1980
765.81	91.5877
766.42	98.5107
777.92	89.1584
778.90	97.1315
783.70	97.3564
785.37	96.4411
795.86	99.9219
801.95	109.2315
810.29	127.7689
810.76	119.7467
815.77	89.7670
818.51	114.1201
832.01	113.8156
834.85	92.5952
836.80	0.0000
846.77	99.2332
856.80	129.4822
860.56	98.8172
871.09	98.2424
873.19	108.6837
875.33	0.0000
879.36	107.9406
880.51	113.1860
883.24	106.0416
884.68	108.1894
889.28	109.4476
898.04	106.7215
911.20	107.3191
911.20	107.3191
911.20	107.3191
926.50	118.5980
937.49	135.0925
944.13	122.6620
946.00	123.8221
949.00	135.7312
962.29	132.0114
964.08	114.6953
966.15	120.1725
968.97	120.6666
968.97	120.6666
968.97	120.6666
983.53	100.7765
996.26	104.5477
1001.03	103.6511
1004.73	96.1512
1037.84	94.9741
1038.76	0.0000
1048.07	96.2643
1050.41	84.3053
1050.41	84.3053
1063.66	80.9961
1085.87	101.3643
1099.45	103.7427
1112.07	89.9980
1115.54	102.4409

1120.29	66.5080
1120.29	66.5080
1120.55	61.7627
1121.30	71.2830
1131.51	0.0000
1173.23	45.4758
1177.93	44.8544
1189.05	44.7441
1204.77	50.8447
1221.41	36.3752
1231.02	28.5988
1235.36	22.7136
1238.28	18.7812
1260.41	0.0000
1271.85	20.9803
1274.44	21.9973
1274.54	17.9978
1291.59	14.0729
1298.22	0.0000
1312.11	16.1849
1332.49	20.3564
1365.19	19.5273
1368.63	0.0000
1384.29	19.6363
1408.01	11.4462
1457.56	0.0000
1460.82	9.5054
1489.16	14.9012
1505.03	20.3104
1596.21	23.4602
1620.50	11.3304
1678.03	0.0000
1690.97	7.6861
1764.49	8.7994
1764.49	8.7994
1770.23	35.2441
1771.35	26.4397
1791.20	0.0000
1836.06	7.9506

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202057337

Total Uranium Activity	1.1204E+00	ug/g
Total Uranium Counting Unc.	2.3739E+00	ug/g
Total Uranium Tpu	1.2112E-06	ug/g
Total Uranium Mda	2.0391E+00	ug/g

```

*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON , SC 29417                          *
*                               GROSS GAMMA REPORT                            *
*
*****
*
*  BATCH ID      : 959270                SAMPLE ID   : G1202057337                *
*  ANALYST       : MXR1                  DETECTOR    : GAM25                    *
*  SAMPLE DATE   : 3-MAR-2010 00:00:00.00  COUNT TIME : 0 01:00:00.00            *
*  ANALYSIS DATE: 10-MAR-2010 15:44:24.15  SAMPLE ALQT: 151.730 GRAM            *
*
*****

```

```

GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.992E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 2.344E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.342E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.622E+00

```

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 stated.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hlt 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
Alliquot Correction completed if required.			N/A
Review sample historical results if available (if REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By:

Secondary Review Performed By:

LANL

3/14 - 3/25

Tritium Que Sheet

11-MAR-10

95 /

Vacuum

Internal Due Date: 14-MAR-10

First Client Due Date 25-MAR-10

Batch #: 964052

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: [Signature] Pipet ID: 2910968 Witness: [Signature]

Sample ID	Client Samp ID	Type	Hazard Code	Min CRDL	Matrix	Client	Sample Date	Aliquot In vial (g/mL)	LSC Rack #	Dist Rig #	Vol added for Dist (mL)	Initial Sample Aliquot (g/mL)	Final Wt (g)	Total Moisture (mL)
248030001-1	RE15-10-7902	SAMPLE		.25 pCi/mL SOIL		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	19-FEB-10	10	60-41-3	2		266.44	173.99	92.45
248030003-1	RE15-10-8027	SAMPLE		.25 pCi/mL SOIL		LANL010	19-FEB-10	10	45-1	3		328.78	250.53	78.25
248030004-1	RE15-10-8028	SAMPLE		.25 pCi/mL SOIL		LANL010	19-FEB-10	10	45-2	4		514.93	459.32	55.61
248030005-1	RE15-10-8030	SAMPLE		.25 pCi/mL SOIL		LANL010	19-FEB-10	10	44-3	5		537.07	489.81	47.26
248030006-1	RE15-10-8031	SAMPLE		.25 pCi/mL SOIL		LANL010	19-FEB-10	10	44-4	6		513.41	409.70	103.71
248030007-1	RE15-10-8029	SAMPLE		.25 pCi/mL SOIL		LANL010	19-FEB-10	10	44-3	7		423.38	324.31	99.07
248030008-1	RE15-10-8032	SAMPLE		.25 pCi/mL SOIL		LANL010	19-FEB-10	10	44-4	8		556.76	484.94	71.82
248030009-1	RE15-10-8067	SAMPLE		.25 pCi/mL SOIL		LANL010	19-FEB-10	10	44-6	9		462.31	371.56	82.75
248112001-1	RE15-10-8404	SAMPLE		.25 pCi/mL SOIL		LANL010	22-FEB-10	10	44-7	10		393.86	356.84	37.02
248112002-1	RE15-10-8396	SAMPLE		.25 pCi/mL SOIL		LANL010	22-FEB-10	10	44-8	11		420.06	383.51	36.55
248112003-1	RE15-10-8393	SAMPLE		.25 pCi/mL SOIL		LANL010	22-FEB-10	10	44-9	12		500.75	400.10	100.65
248112004-1	RE15-10-8395	SAMPLE		.25 pCi/mL SOIL		LANL010	22-FEB-10	10	38-2	13		347.22	331.94	15.28
248112005-1	RE15-10-8398	SAMPLE		.25 pCi/mL SOIL		LANL010	22-FEB-10	10	44-10	14		373.37	325.58	47.79
248112006-1	RE15-10-8394	SAMPLE		.25 pCi/mL SOIL		LANL010	22-FEB-10	10	40-4	15		370.87	332.67	38.20
248112007-1	RE15-10-8399	SAMPLE		.25 pCi/mL SOIL		LANL010	22-FEB-10	10	60-5	16		2435.92	384.92	51.00
248112008-1	RE15-10-8397	SAMPLE		.25 pCi/mL SOIL		LANL010	22-FEB-10	10	44-11	17		511.47	480.21	31.20
1202068207-1	MB for batch 964052	MB		.25 pCi/mL SOIL		QC ACCOUNT		10	44-12	18		20.00	0.00	20.00
1202068208-1	RE15-10-8394(248112006DUP)	DUP		.25 pCi/mL SOIL		QC ACCOUNT	22-FEB-10	10	38-1	15		370.87	332.67	38.20
1202068209-1	LCS for batch 964052	LCS		.25 pCi/mL SOIL		QC ACCOUNT		10	24-1	19		20.00	0.00	20.00

Bkg Rack #: 45-4-1

Comments:

Bkg prepared with dead water? Yes

Instrument Used (circle as appropriate): LS6000 (Red) 7065155 LS6500 (Blue) 7067083 LS6500

(Gold) 7070506, LS6500 (Green) 7067404, Wallac (Yellow) 4140127, LS6000 (Brown) 7060655, Wallac

(Pink) 2200082, Wallac (White) 4140299, Purple 7069123, Silver 7060656, Orange DG06095168

Calibration Used: Ecoscint Ultra (10 mL sample/13 mL Ecoscint Ultra)

Data Reviewed By: [Signature] 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 : KXX2
Prep Date : 3/14/2010

H-3 Abundance : 1
Method Uncertainty : 0.0691
Geometry : 10mL DW/13mL
Eoscent Ultra

Spike S/N :
Spike Exp Date :
Spike Activity (dpm/ml):
Spike Volume Added:

LCS S/N :
LCS Exp Date :
LCS Activity (dpm/ml):
LCS Volume Added:

Procedure Code : LSC_VH3S
Parname : Tritium
Required MDC : 250 pCVL
Half-life of Tritium : 12.32 years

Pipet, 0.1 ml Stdev : +/-
Pipet, 0.5 ml Stdev : +/-
Pipet, 1.0 ml Stdev : +/-
Pipet, 5.0 ml Stdev : +/-

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	0.0925	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	423.38	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	379.56	17.90%	9	2/19/2010 12:00
10	248112001.1	393.86	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	325.58	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%	19	2/22/2010 12:00
20	1202068208.1	20.00	0.0200	0.0100	2.5729E-05	0.00	100.00%	19	3/14/2010 0:00

Count raw Data				Background			Calibration Data			Detector Efficiency		Backgrounds			
Pos.	Rack Position #	Counting Time (min.)	Quench#	Gross cpm	cpm	Count Time (min.)	Count Start Date/Time	Sample Decay	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Rack Position #	Count Start Date/Time
1	--1	65	125.2	5.06	3.91	95	3/18/2010 7:34	0.996	LSCBLUE	8/21/2009	8/31/2010	0.2014	0.00792	1-1	3/18/2010 14:38
2	44-3	40	129	6.15	3.91	95	3/18/2010 16:59	0.996	LSCBLUE	8/21/2009	8/31/2010	0.1958	0.00792	1-1	3/18/2010 14:38
3	--2	65	122.5	5.14	3.91	95	3/18/2010 8:42	0.996	LSCBLUE	8/21/2009	8/31/2010	0.2054	0.00792	1-1	3/18/2010 14:38
4	--3	65	120.9	4.95	3.91	95	3/18/2010 9:51	0.996	LSCBLUE	8/21/2009	8/31/2010	0.2076	0.00792	1-1	3/18/2010 14:38
5	44-6	40	126.4	17.5	3.91	95	3/18/2010 19:08	0.996	LSCBLUE	8/21/2009	8/31/2010	0.1987	0.00792	1-1	3/18/2010 14:38
6	44-7	40	124.4	5.38	3.91	95	3/18/2010 19:51	0.996	LSCBLUE	8/21/2009	8/31/2010	0.2026	0.00792	1-1	3/18/2010 14:38
7	--4	65	126	4.85	3.91	95	3/19/2010 11:00	0.996	LSCBLUE	8/21/2009	8/31/2010	0.2003	0.00792	1-1	3/18/2010 14:38
8	--5	65	128.8	4.72	3.91	95	3/19/2010 12:09	0.996	LSCBLUE	8/21/2009	8/31/2010	0.1961	0.00792	1-1	3/18/2010 14:38
9	--6	65	122.1	4.92	3.91	95	3/19/2010 13:17	0.996	LSCBLUE	8/21/2009	8/31/2010	0.2059	0.00792	1-1	3/18/2010 14:38
10	--7	65	125.5	5.03	3.91	95	3/19/2010 14:24	0.996	LSCBLUE	8/21/2009	8/31/2010	0.2010	0.00792	1-1	3/18/2010 14:38
11	--8	65	124.4	5.91	3.91	95	3/19/2010 15:32	0.996	LSCBLUE	8/21/2009	8/31/2010	0.2026	0.00792	1-1	3/18/2010 14:38
12	--9	65	124.3	4.29	3.91	95	3/19/2010 16:39	0.996	LSCBLUE	8/21/2009	8/31/2010	0.2028	0.00792	1-1	3/18/2010 14:38
13	38-2	40	123	5.47	3.91	95	3/19/2010 0:50	0.996	LSCBLUE	8/21/2009	8/31/2010	0.2046	0.00792	1-1	3/18/2010 14:38
14	--10	65	127.7	4.75	3.91	95	3/19/2010 17:47	0.996	LSCBLUE	8/21/2009	8/31/2010	0.1978	0.00792	1-1	3/18/2010 14:38
15	60-4	40	125.9	5.32	3.91	95	3/19/2010 3:25	0.996	LSCBLUE	8/21/2009	8/31/2010	0.2004	0.00792	1-1	3/18/2010 14:38
16	60-5	40	123.2	5.53	3.91	95	3/19/2010 4:07	0.996	LSCBLUE	8/21/2009	8/31/2010	0.2044	0.00792	1-1	3/18/2010 14:38
17	--11	65	125	4.58	3.91	95	3/19/2010 18:54	0.996	LSCBLUE	8/21/2009	8/31/2010	0.2017	0.00792	1-1	3/18/2010 14:38
18	--12	65	127	4.14	3.91	95	3/19/2010 20:02	0.999	LSCBLUE	8/21/2009	8/31/2010	0.1988	0.00792	1-1	3/18/2010 14:38
19	38-1	65	126.2	4.74	3.91	95	3/19/2010 21:09	0.996	LSCBLUE	8/21/2009	8/31/2010	0.2000	0.00792	1-1	3/18/2010 14:38
20	26-1	15	126.3	27.87	3.91	95	3/19/2010 6:57	0.996	LSCBLUE	8/21/2009	8/31/2010	0.1988	0.00792	1-1	3/18/2010 14:38

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 Prop. 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	245.5297	253.2526	0.300	0.197	1.150	0.345	77.4690	78.5296		SAMPLE				
2	200.8044	141.6284	250	300.5822	517.4508	0.197	0.197	2.240	0.441	101.9849	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	0.062	0.062	13.590	0.692	156.7275	265.5896		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	188.8614	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	86.8540		SAMPLE				
12	165.3992	116.7733	250	243.8398	84.7484	0.861	0.861	0.380	0.327	73.0062	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	169.5868	119.7297	250	250.0133	192.0814	0.402	0.402	0.840	0.338	77.2868	78.4361		SAMPLE				
15	195.9181	138.3199	250	293.5604	318.1078	0.296	0.296	1.410	0.417	94.1514	96.7231		SAMPLE				
16	192.1451	135.6561	250	287.9070	358.4470	0.262	0.262	1.620	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	74.8898	75.8158		SAMPLE				
18	168.1966	118.7483	250	247.9640	52.1626	1.408	1.408	0.230	0.324	73.4372	73.5270		SAMPLE				
19	167.7064	118.4021	250	247.2412	187.6903	0.407	0.407	0.830	0.338	76.3784	77.4889	248112006.1	MB	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	DUP	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 AQC : 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

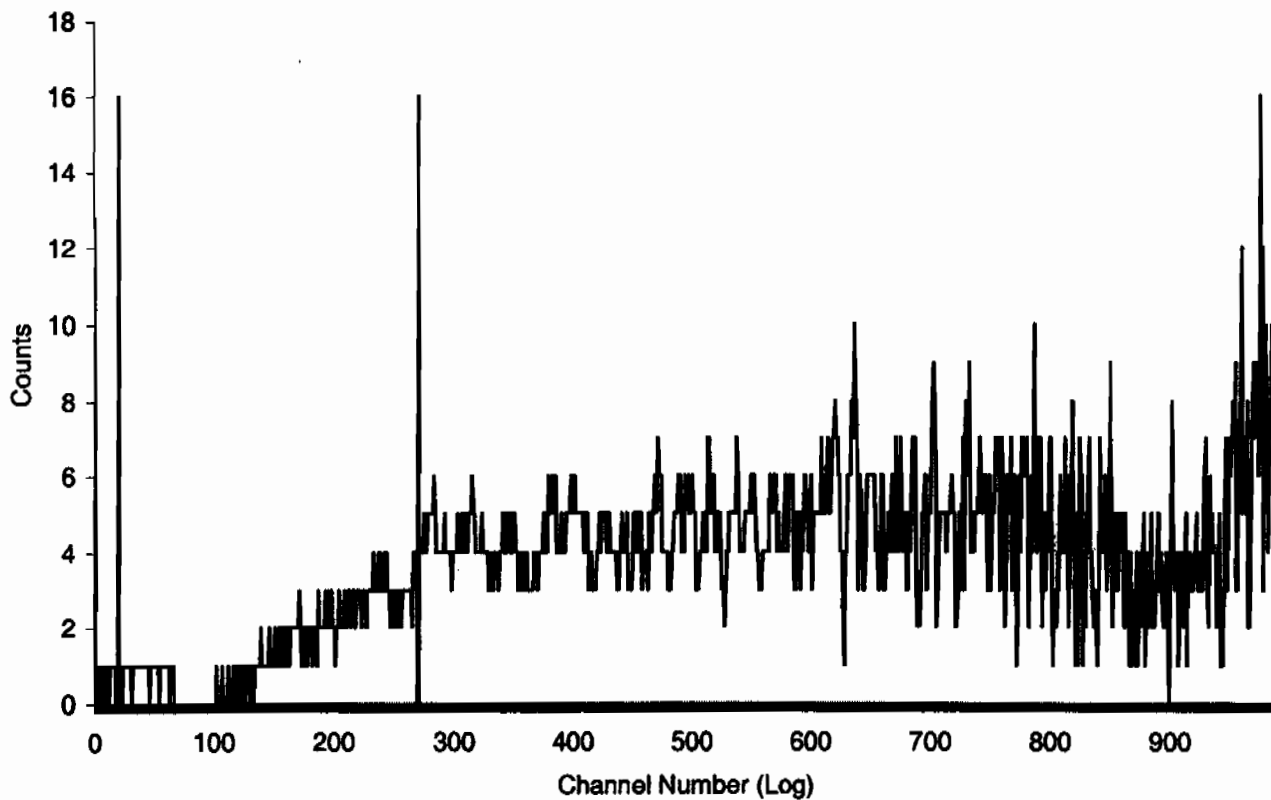
ALPHA-BETA DISCRIMINATION: NO

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

SPECTRUM PLOT

USER 03 - TRITIUM



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 AQC : 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

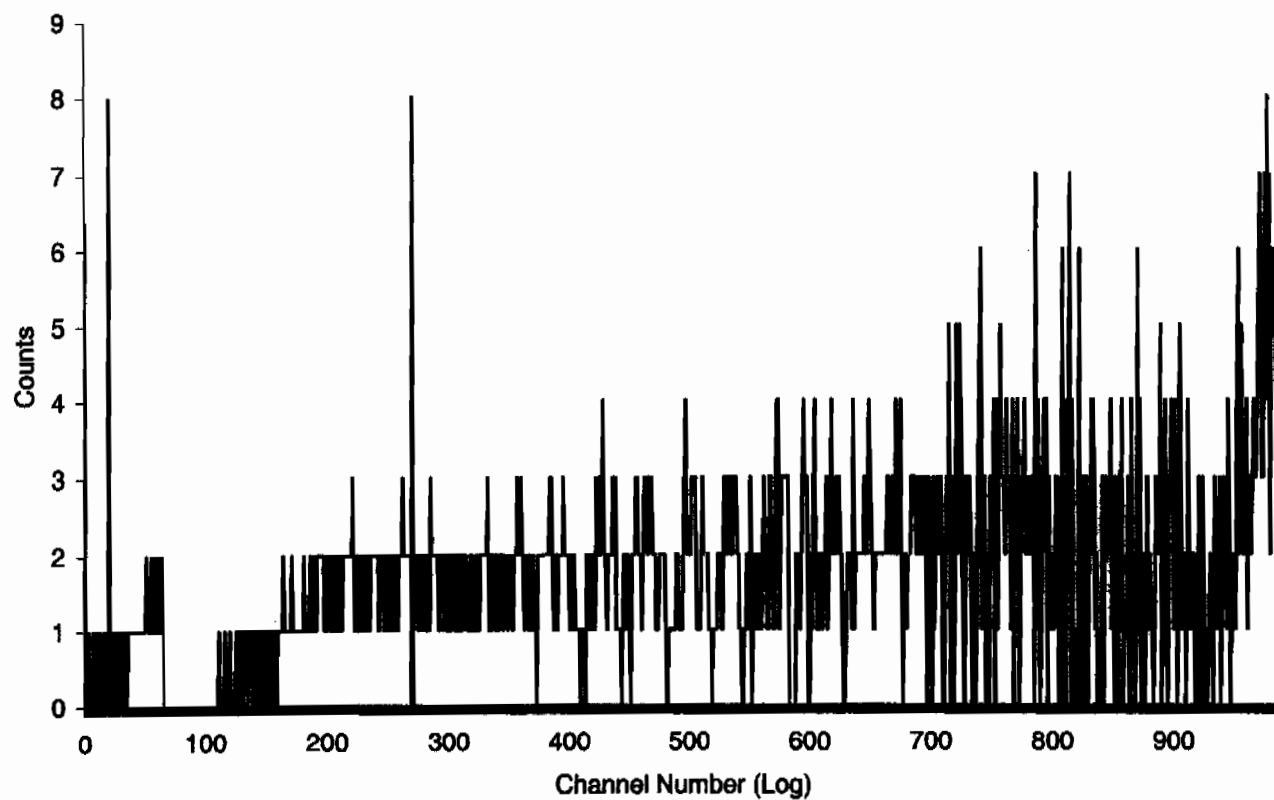
2	44-2	40.00	125.2	4.22	20.74	40.90	5.17	8.24	42.40
3	44-3	40.00	129.0	6.15	15.60	41.80	5.11	8.10	85.32
4	44-4	40.00	123.5	5.00	18.47	41.83	5.11	8.02	128.24
5	44-5	40.00	121.0	4.75	18.07	40.85	5.17	7.92	171.14
6	44-6	40.00	126.4	17.50	8.32	54.35	4.44	6.42	214.04
7	44-7	40.00	124.4	5.38	17.43	42.42	5.07	7.79	256.98
8	44-8	40.00	127.3	4.57	17.56	40.70	5.10	7.87	299.07
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	4.05	14.03	43.45	4.02	6.84	513.65
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

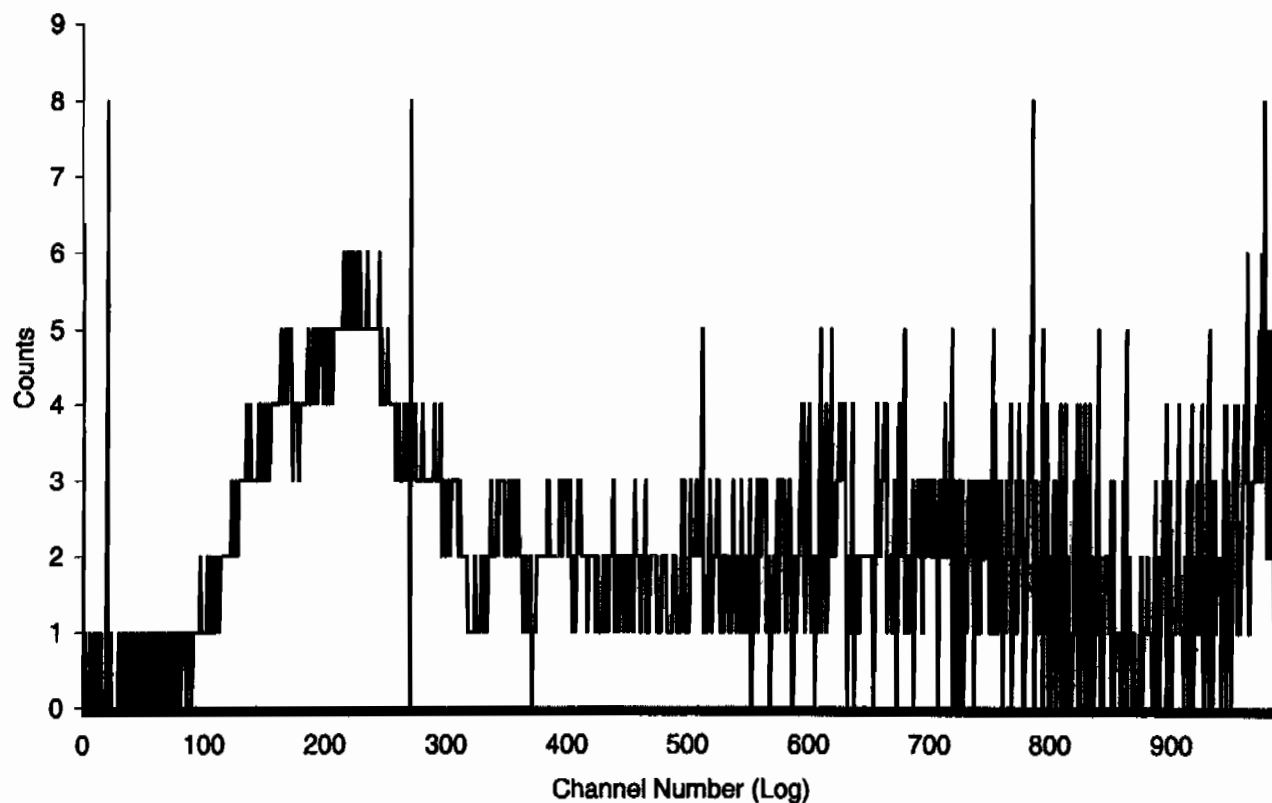
USER 04 - TRITIUM



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

SPECTRUM PLOT

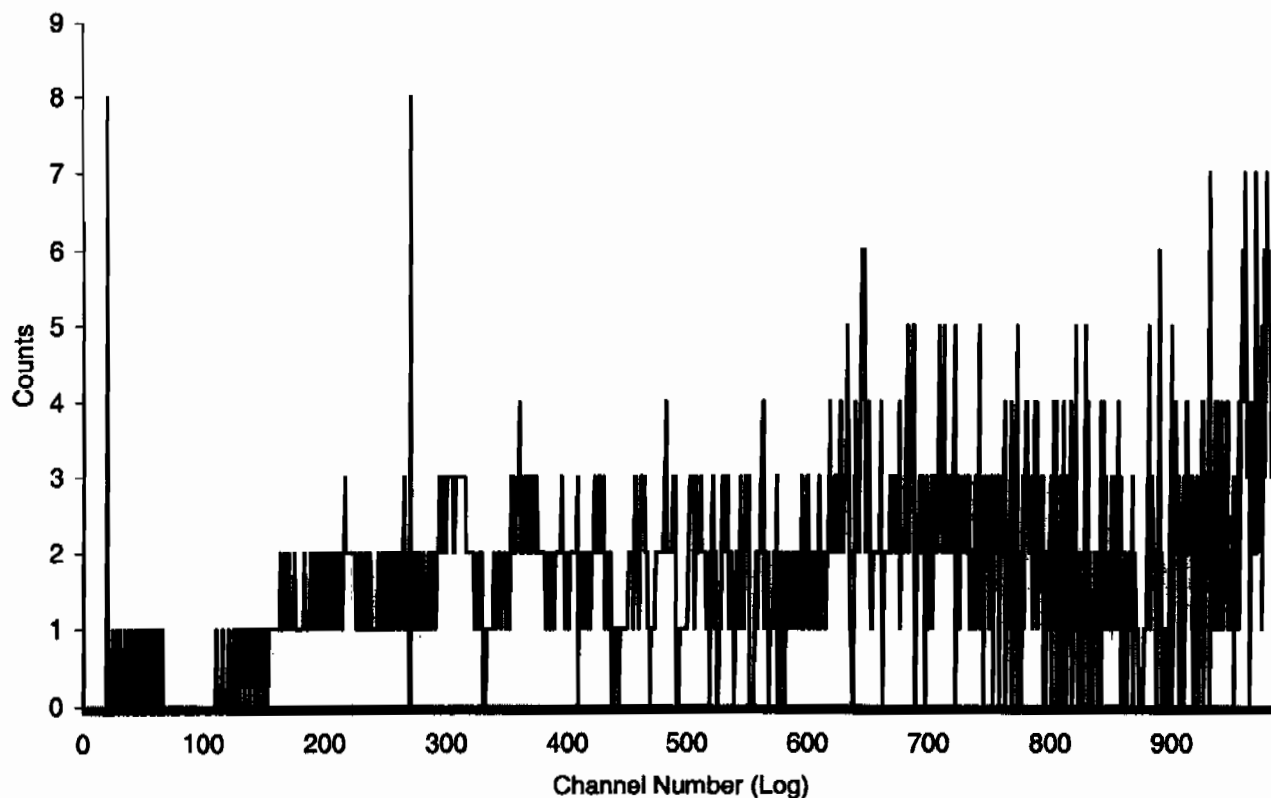
USER 04 - TRITIUM



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

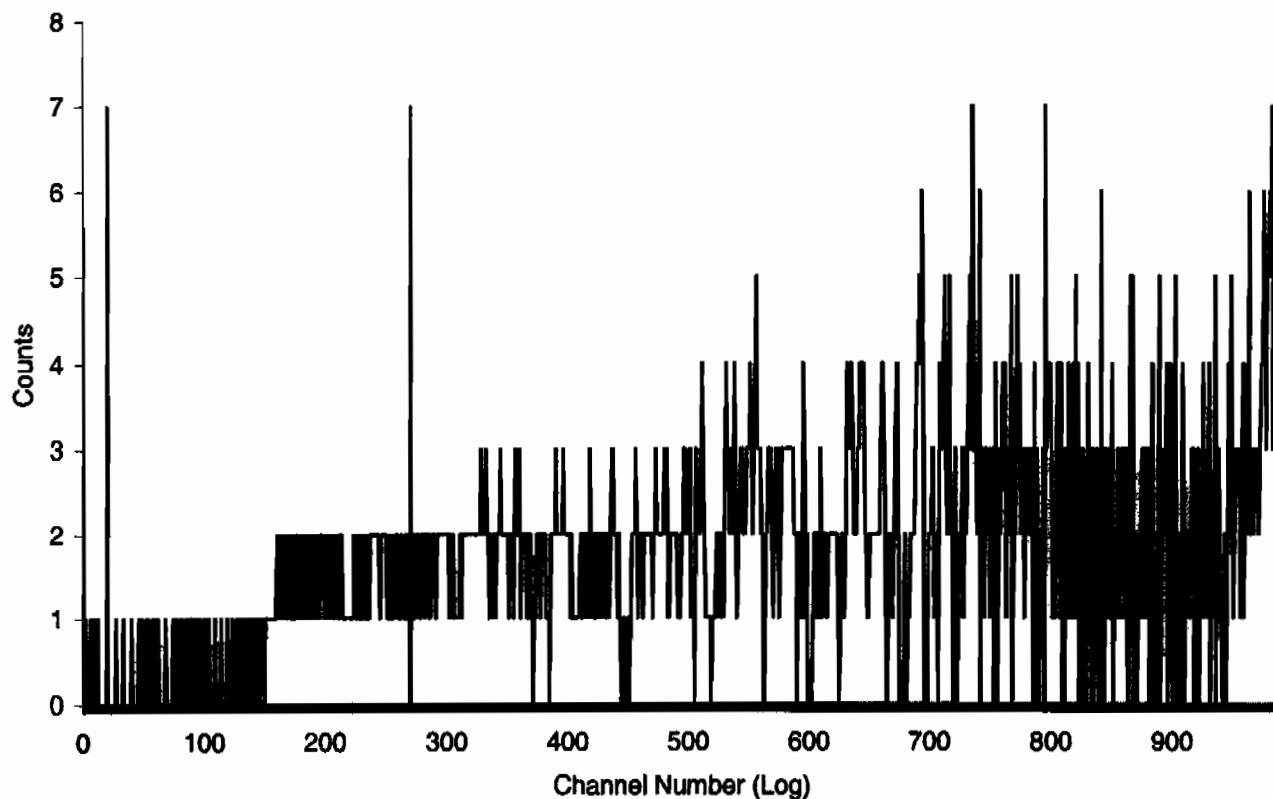
USER 04 - TRITIUM



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

SPECTRUM PLOT

USER 04 - TRITIUM



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
NO		MIN		CPM	%ERROR	CPM	%ERROR	%	TIME

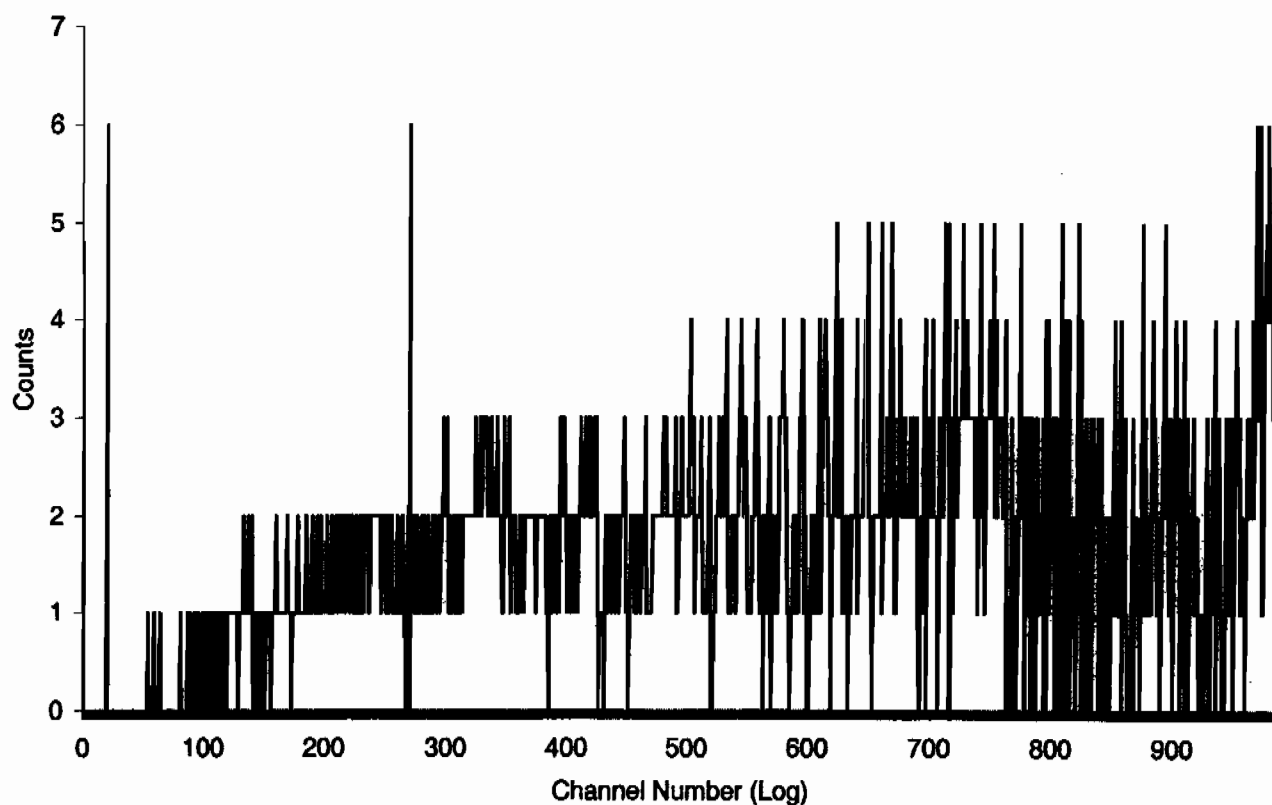
MISSING SAMPLE

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	4.96	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	10.69	42.30	5.03	6.30	140.50
7	60-7	40.00	126.8	3.95	14.75	41.90	4.91	1.06	210.49
8	60-8	40.00	127.3	4.60	13.41	41.50	5.00	6.35	253.35

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

SPECTRUM PLOT

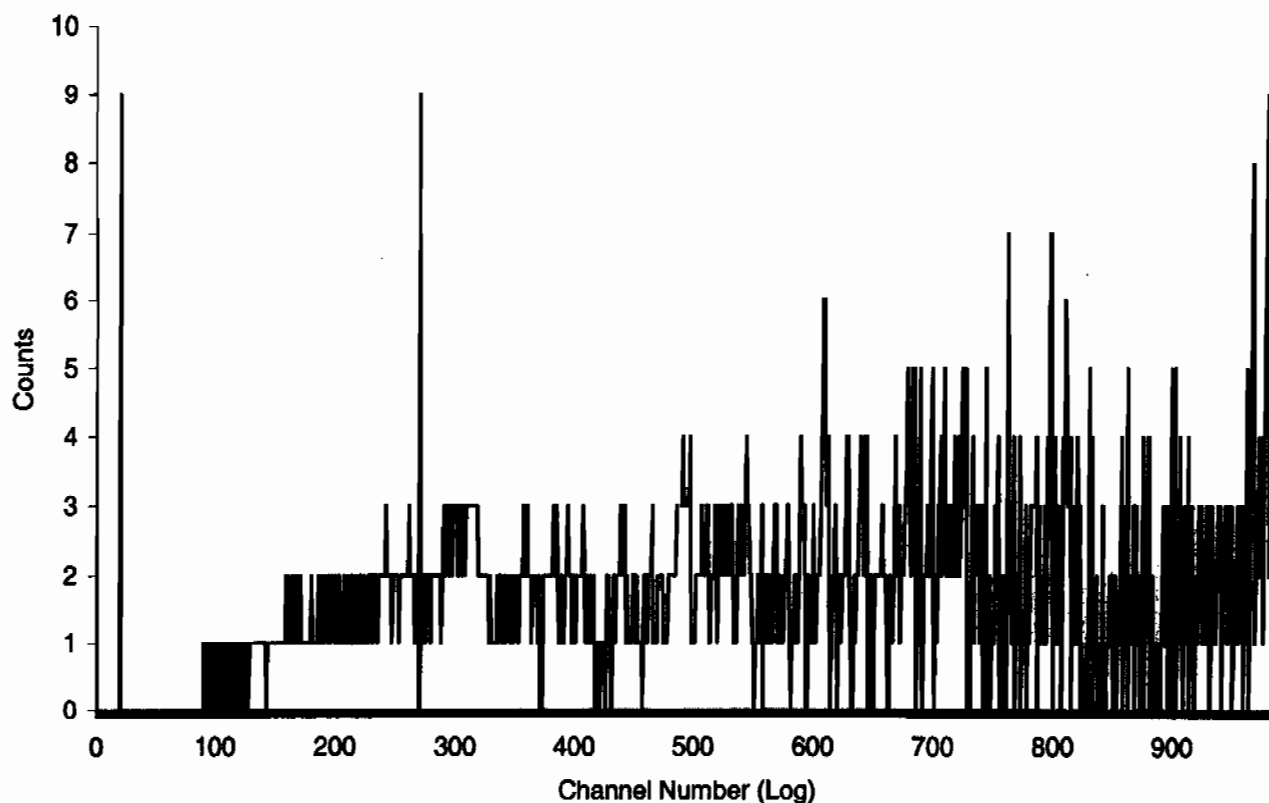
USER 04 - TRITIUM



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 06:55

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 AQC : 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

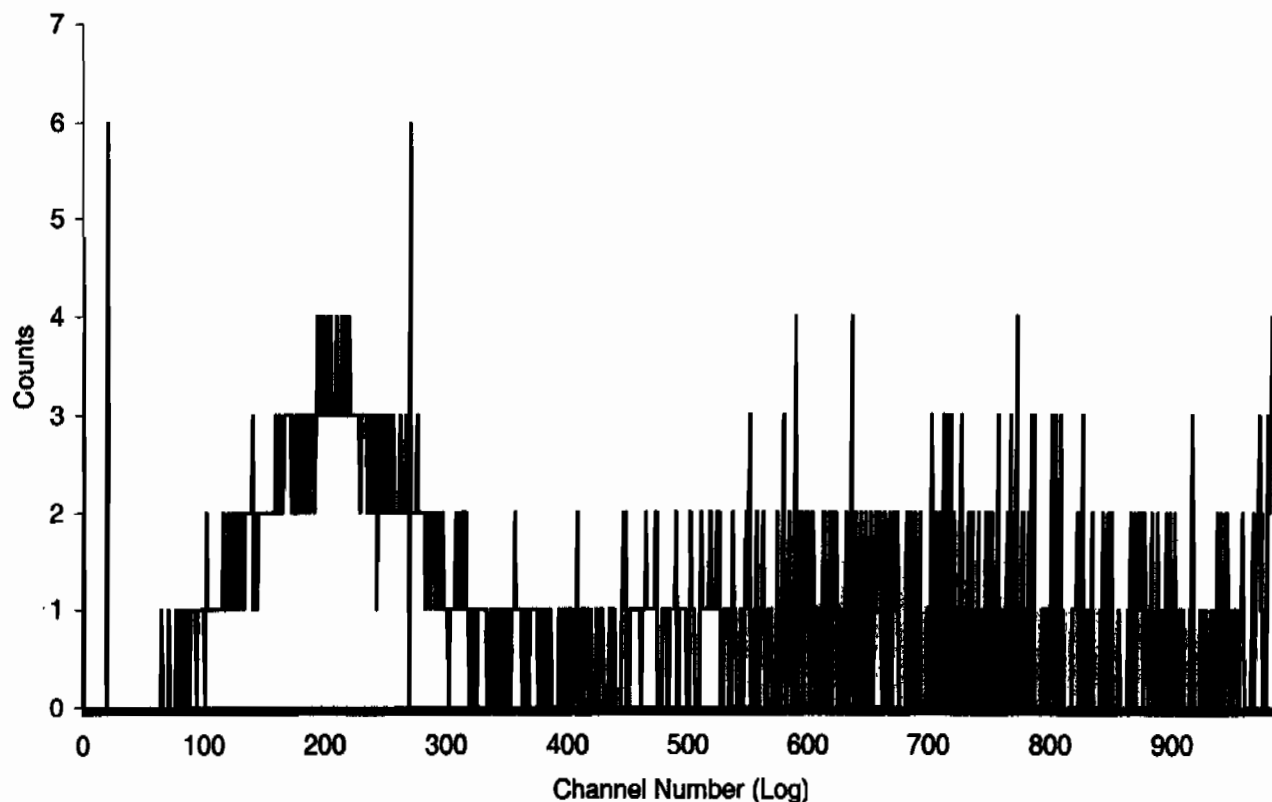
ALPHA-BETA DISCRIMINATION: NO

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	15.83

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 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

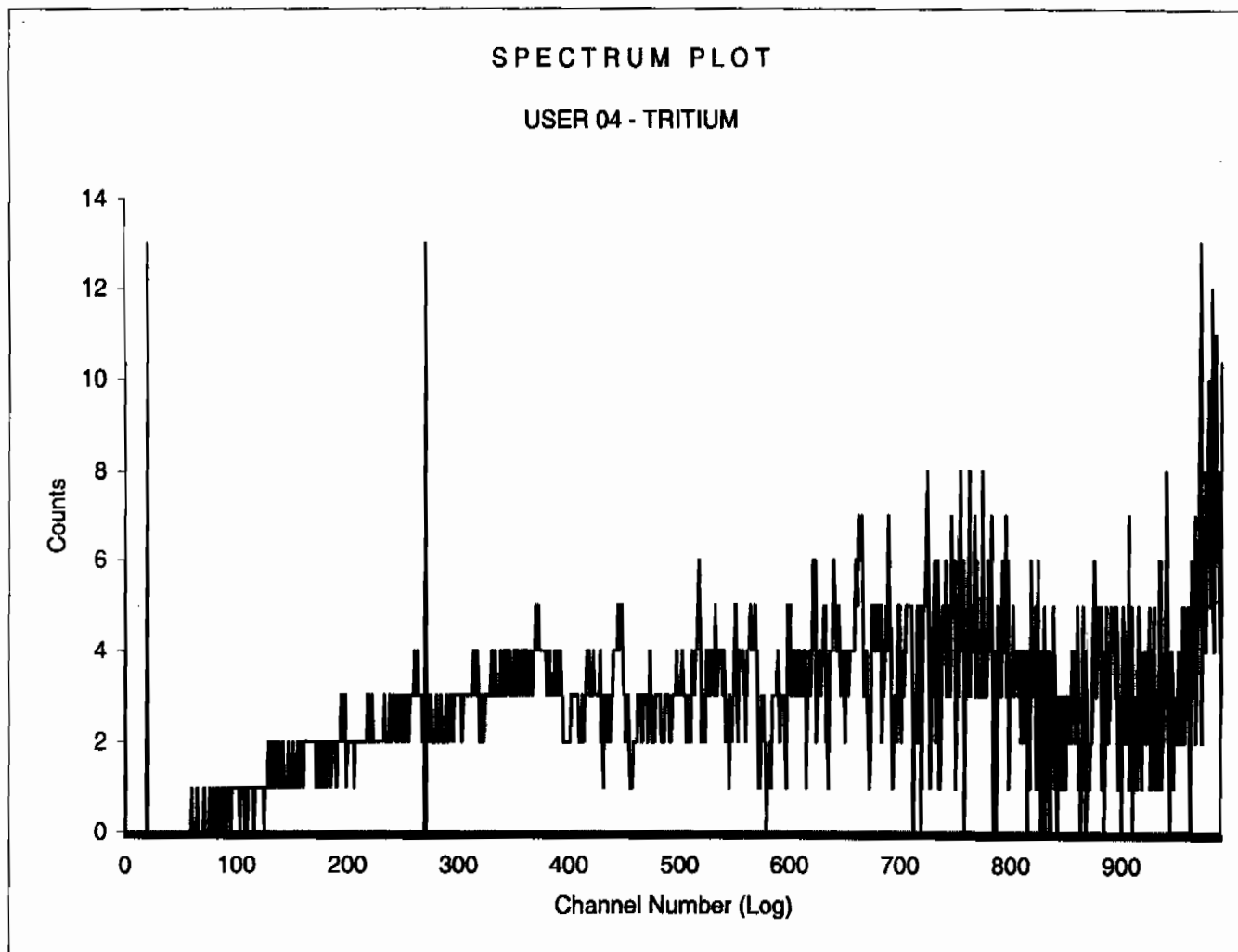
CHAN: 20.0 - 270.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

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			
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	6.11	203.51
7	4	**4	65.00	126.0	4.85	13.94	40.14	4.06	6.64	272.56
8	5	**5	65.00	128.8	4.72	14.70	41.66	3.99	6.87	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

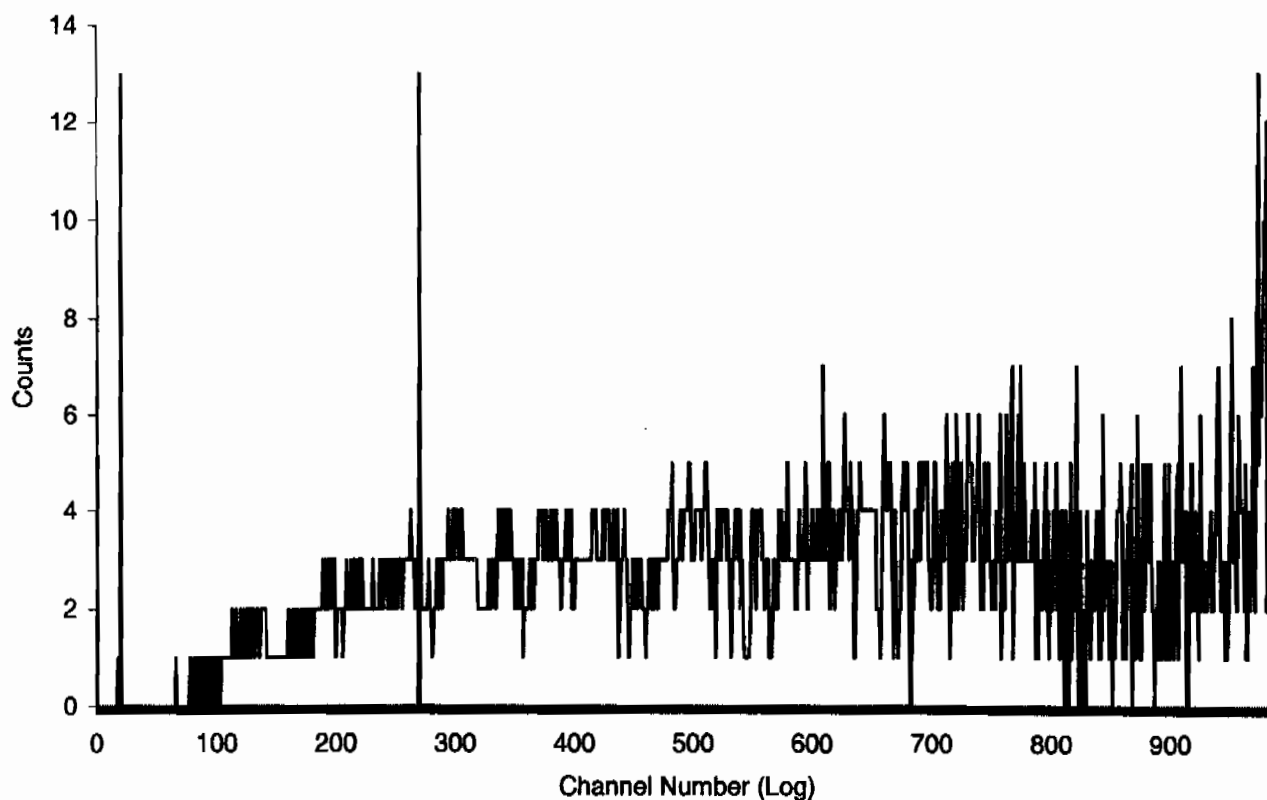
Sample Count Start Time:	19 Mar 2010 07:34:53
Data Capture Date	19 Mar 2010 08:40:40
User Filename	S040319---1A.XLS
	U040319---1A.XLS
Spectrum Type	Log Counts
User Number	04
User Id	TRITIUM
User Comment	BLUE
Scintillator	LIQUID
Sample, Rack-Pos, Time:	1 ** -1 65.00
H#, Total Counts:	125.2 3170
Win1: 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

SPECTRUM PLOT

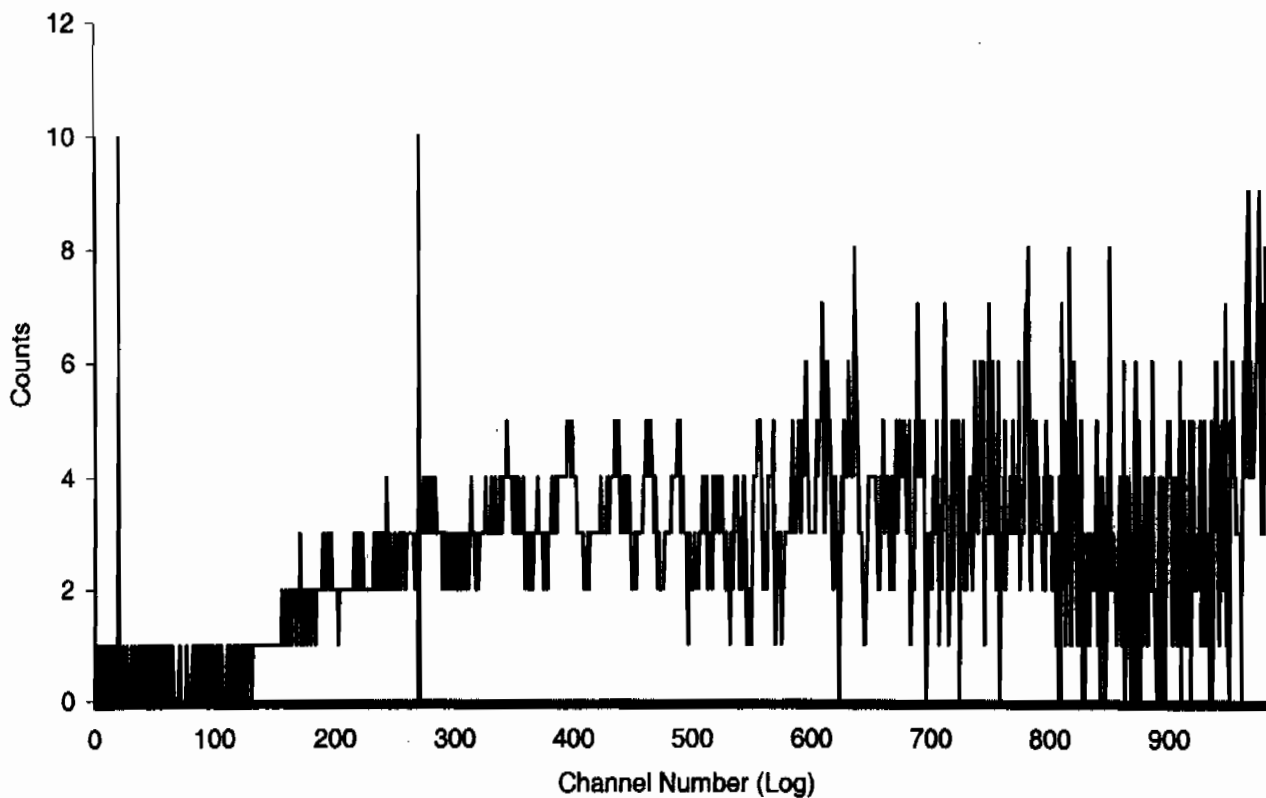
USER 04 - TRITIUM



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

SPECTRUM PLOT

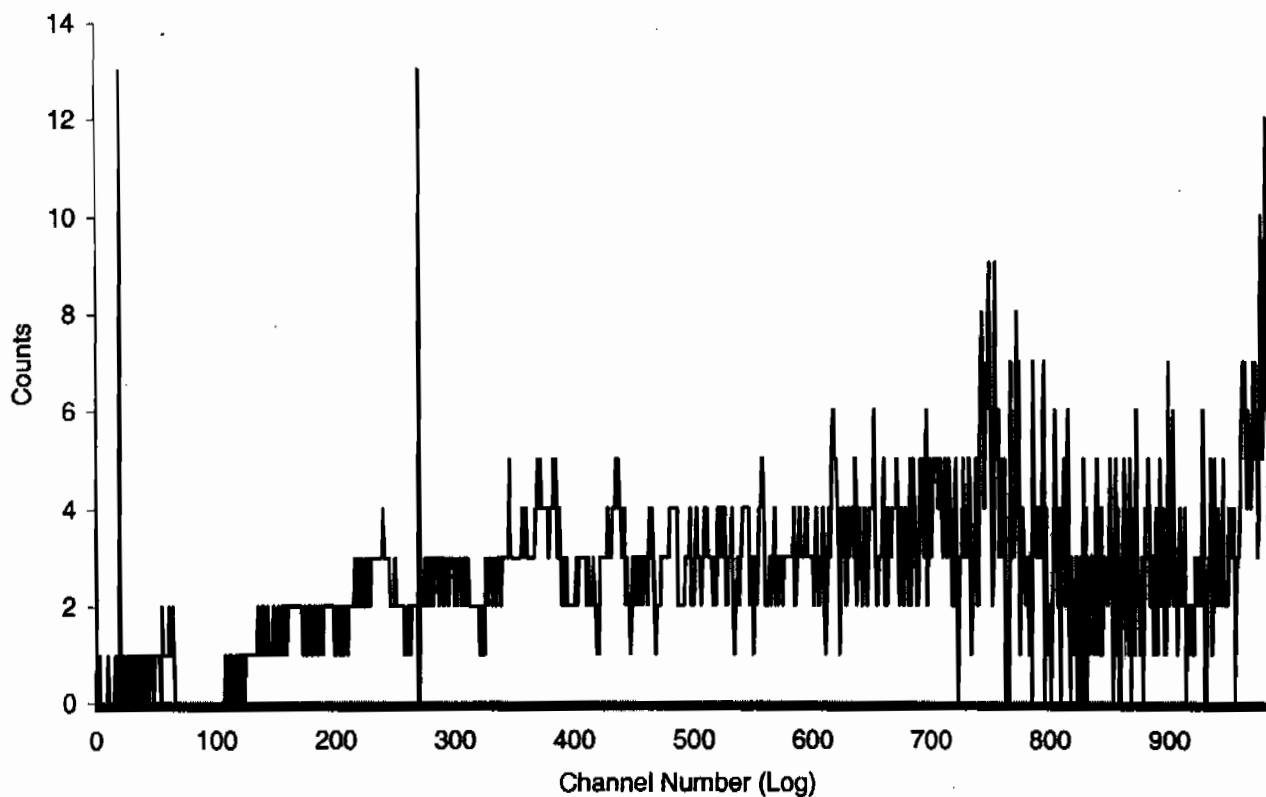
USER 04 - TRITIUM



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

SPECTRUM PLOT

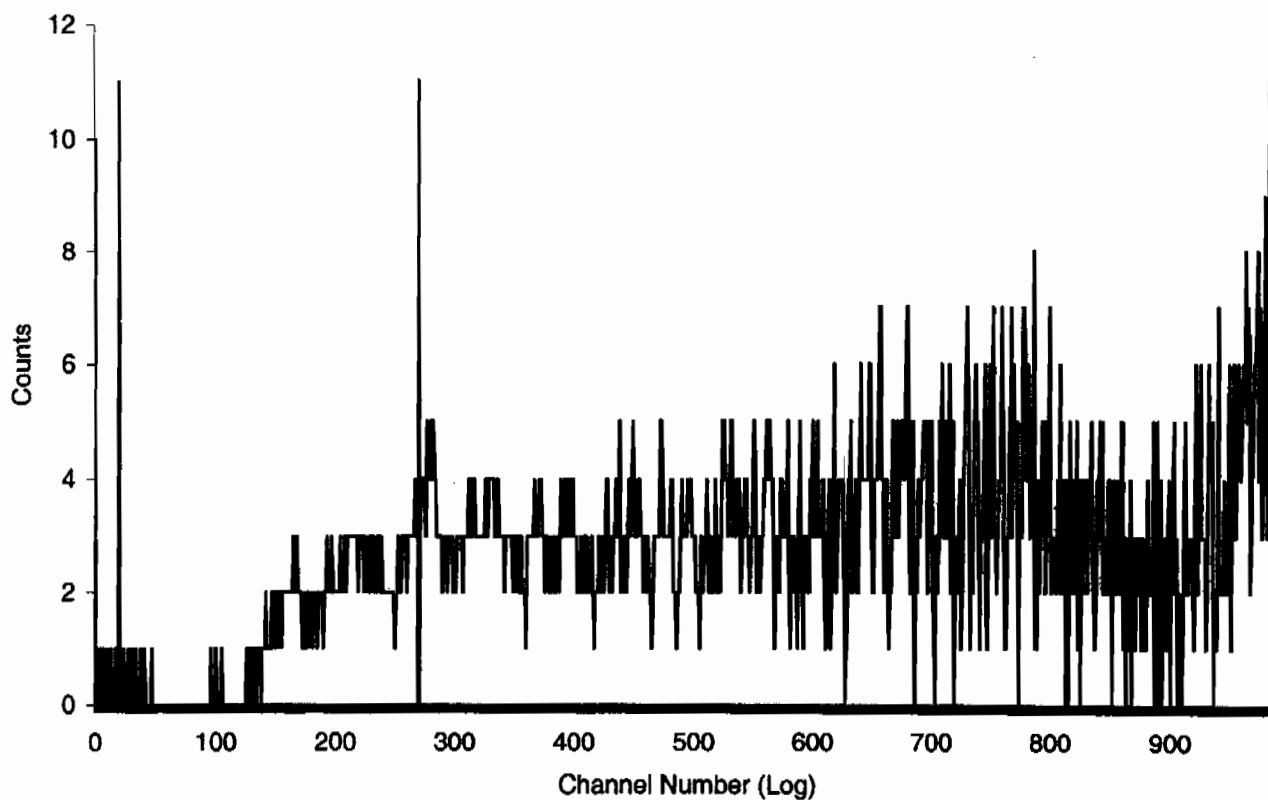
USER 04 - TRITIUM



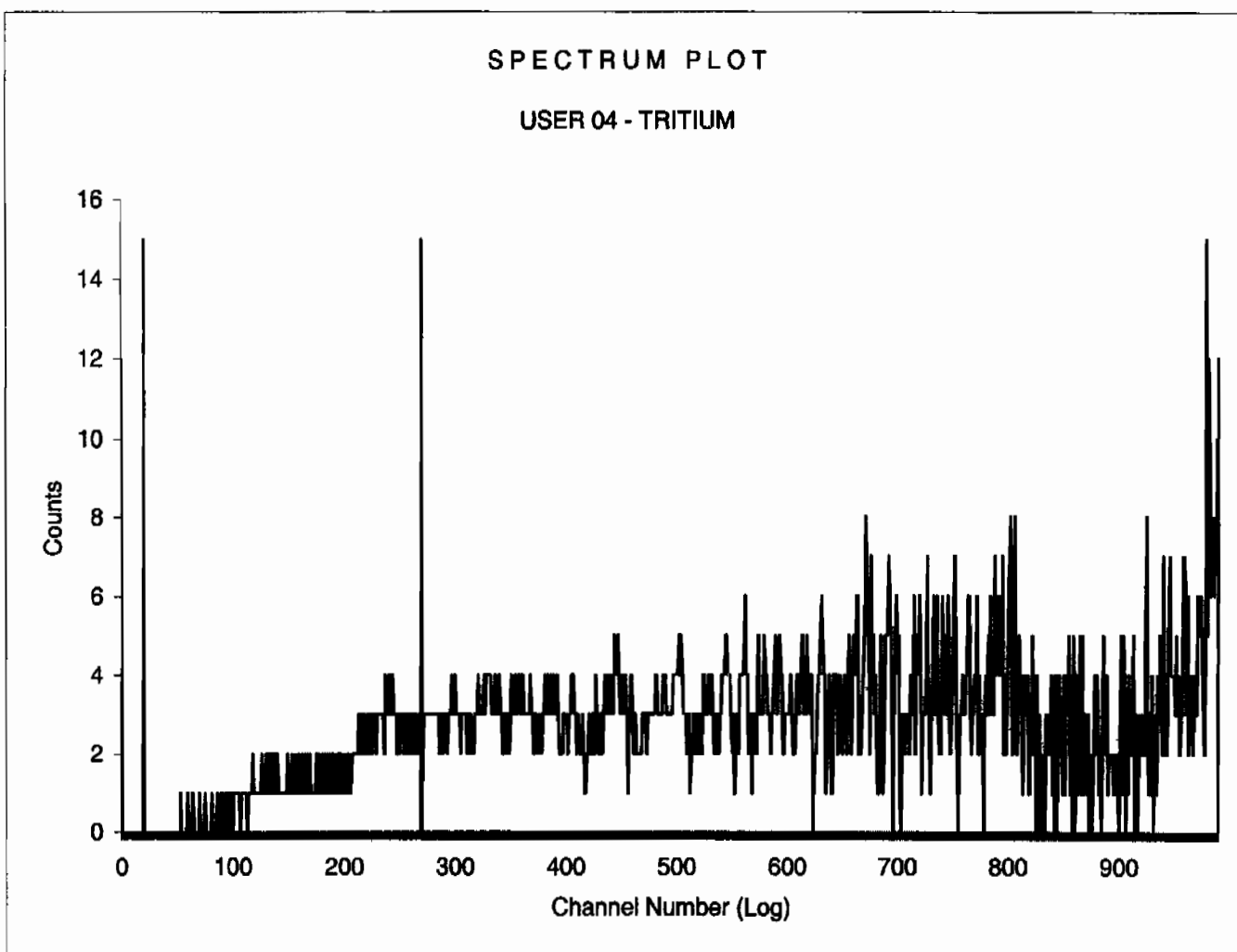
Sample Count Start Time:	19 Mar 2010 12:09:33		
Data Capture Date	19 Mar 2010 13:15:00		
User Filename	S040319---5A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	**5	65.00
H#, Total Counts:	128.8	3115	
Win1: Tritium - Start, End, Counts:	20	270	310
Win2: - Start, End, Counts:	0	990	2704

SPECTRUM PLOT

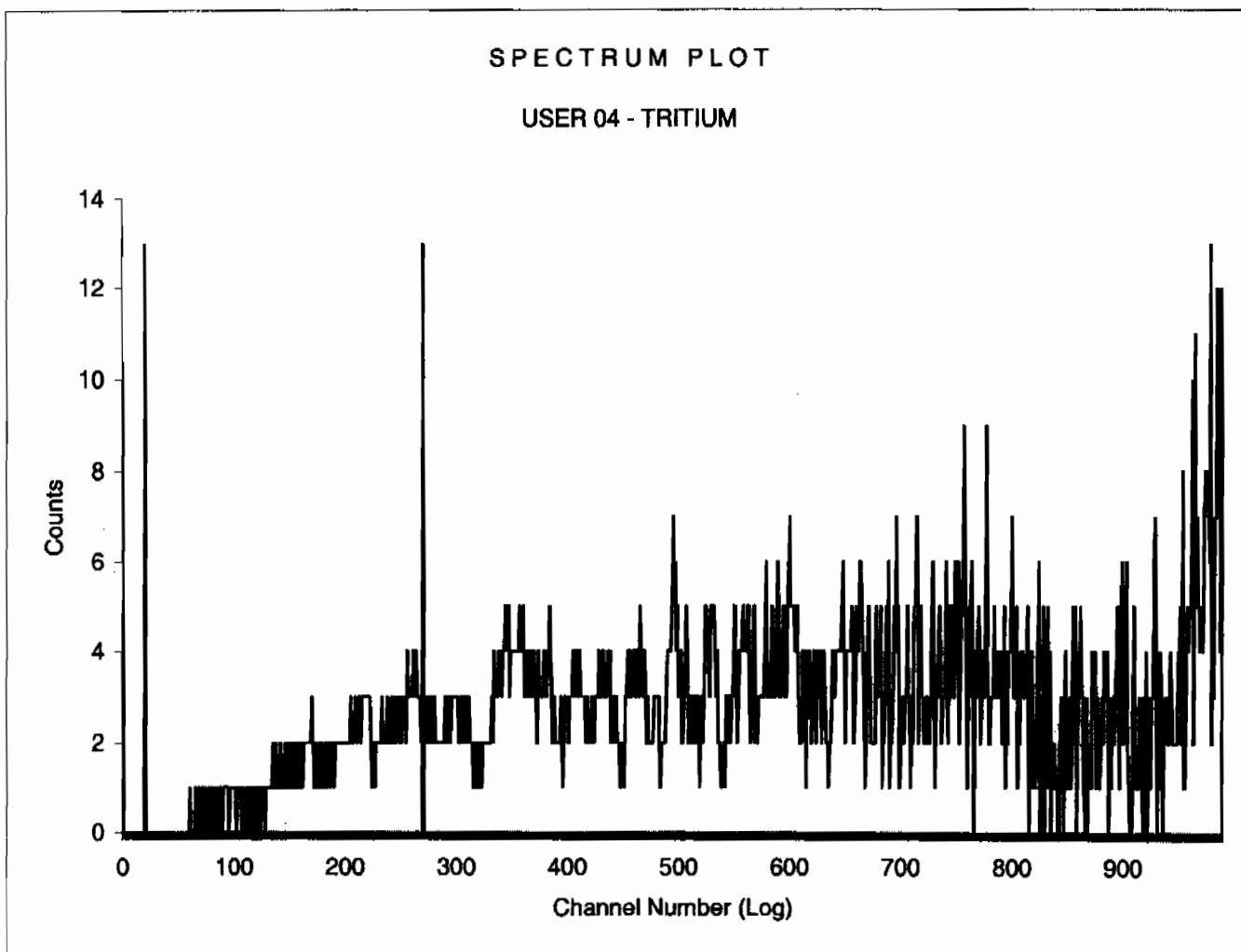
USER 04 - TRITIUM



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



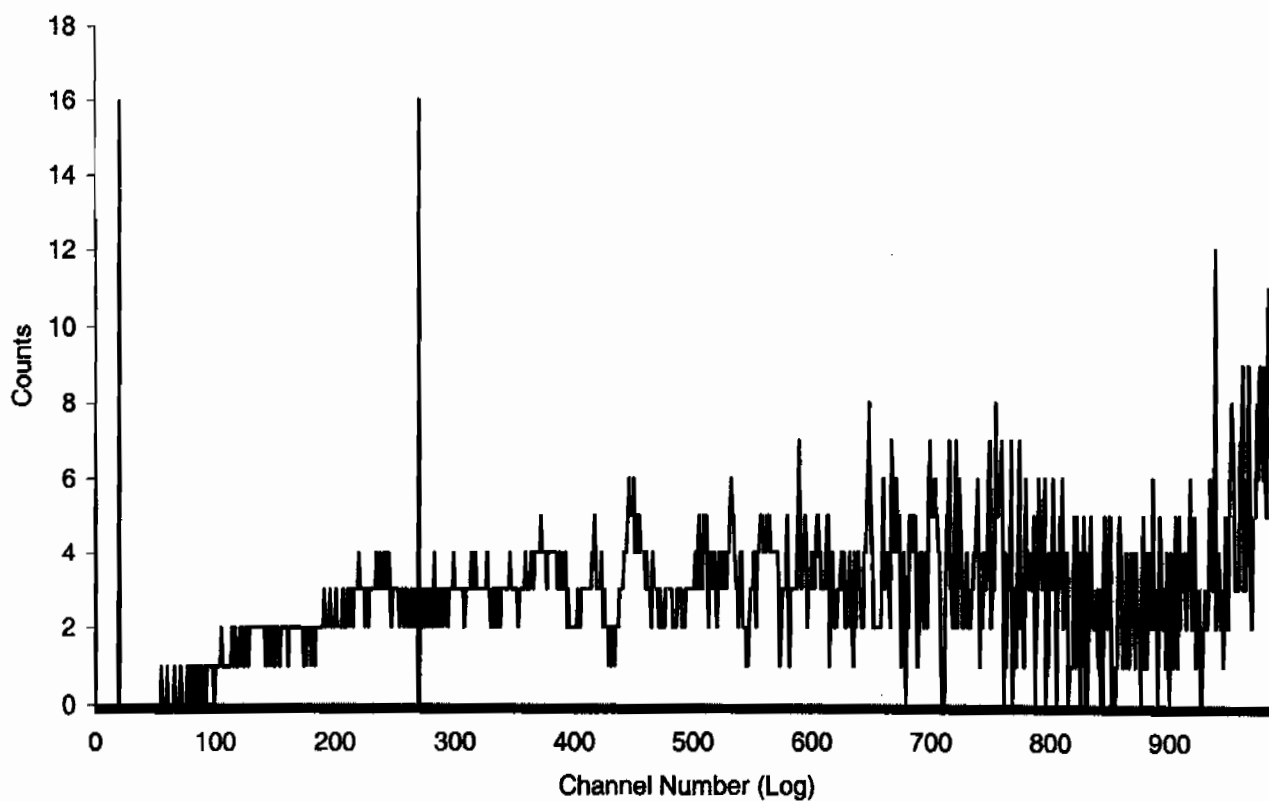
Sample Count Start Time:	19 Mar 2010 14:24:38		
Data Capture Date	19 Mar 2010 15:30:04		
User Filename	S040319---7A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	7	**7	65.00
H#, Total Counts:	125.5	3107	
Win1: Tritium - Start, End, Counts:	20	270	330
Win2: - Start, End, Counts:	0	990	2696



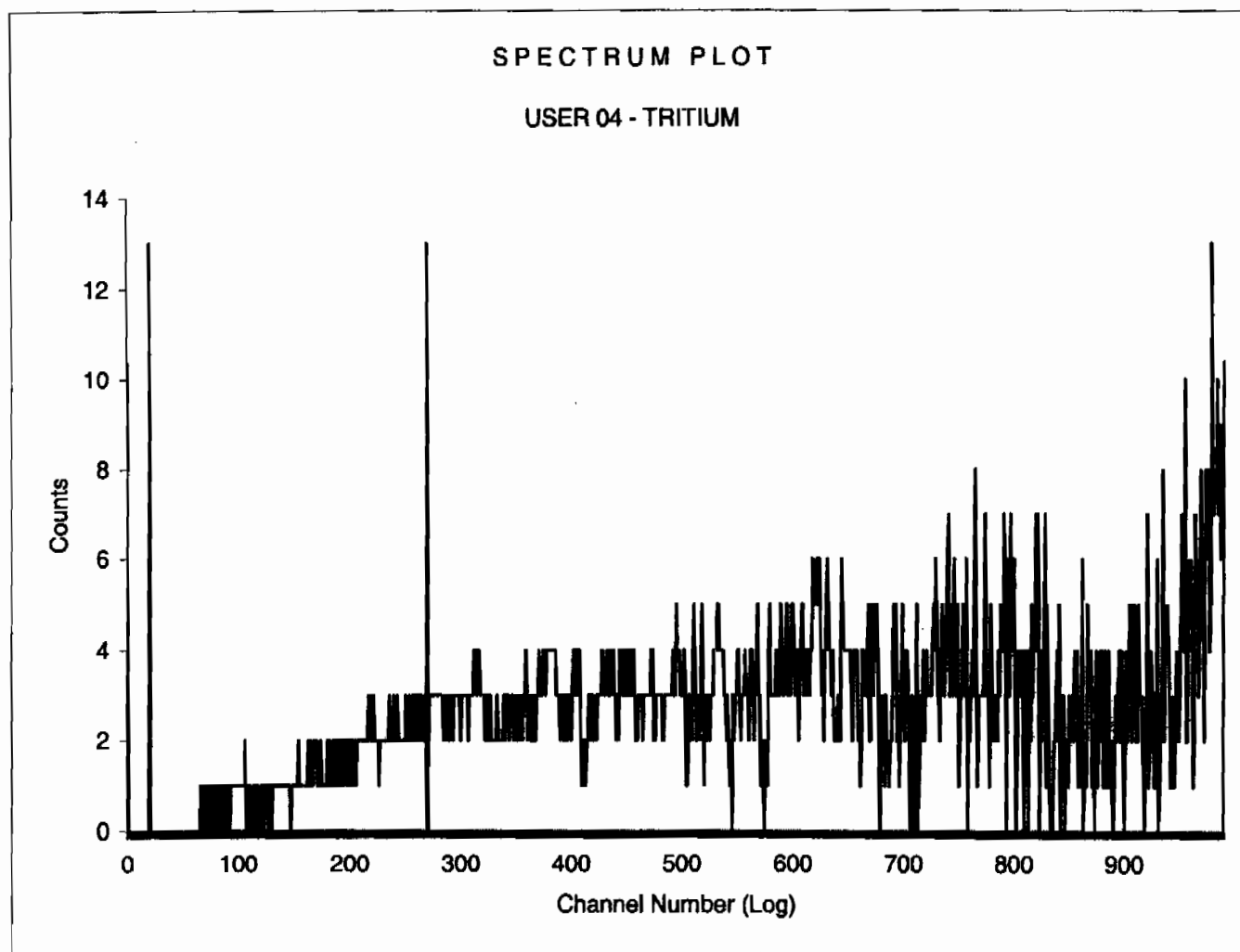
Sample Count Start Time:	19 Mar 2010 15:32:09
Data Capture Date	19 Mar 2010 16:38:06
User Filename	S040319---8A.XLS
	U040319---1A.XLS
Spectrum Type	Log Counts
User Number	04
User Id	TRITIUM
User Comment	BLUE
Scintillator	LIQUID
Sample, Rack-Pos, Time:	8 ** -8 65.00
H#, Total Counts:	124.4 3249
Win1: Tritium - Start, End, Counts:	20 270 386
Win2: - Start, End, Counts:	0 990 2838

SPECTRUM PLOT

USER 04 - TRITIUM



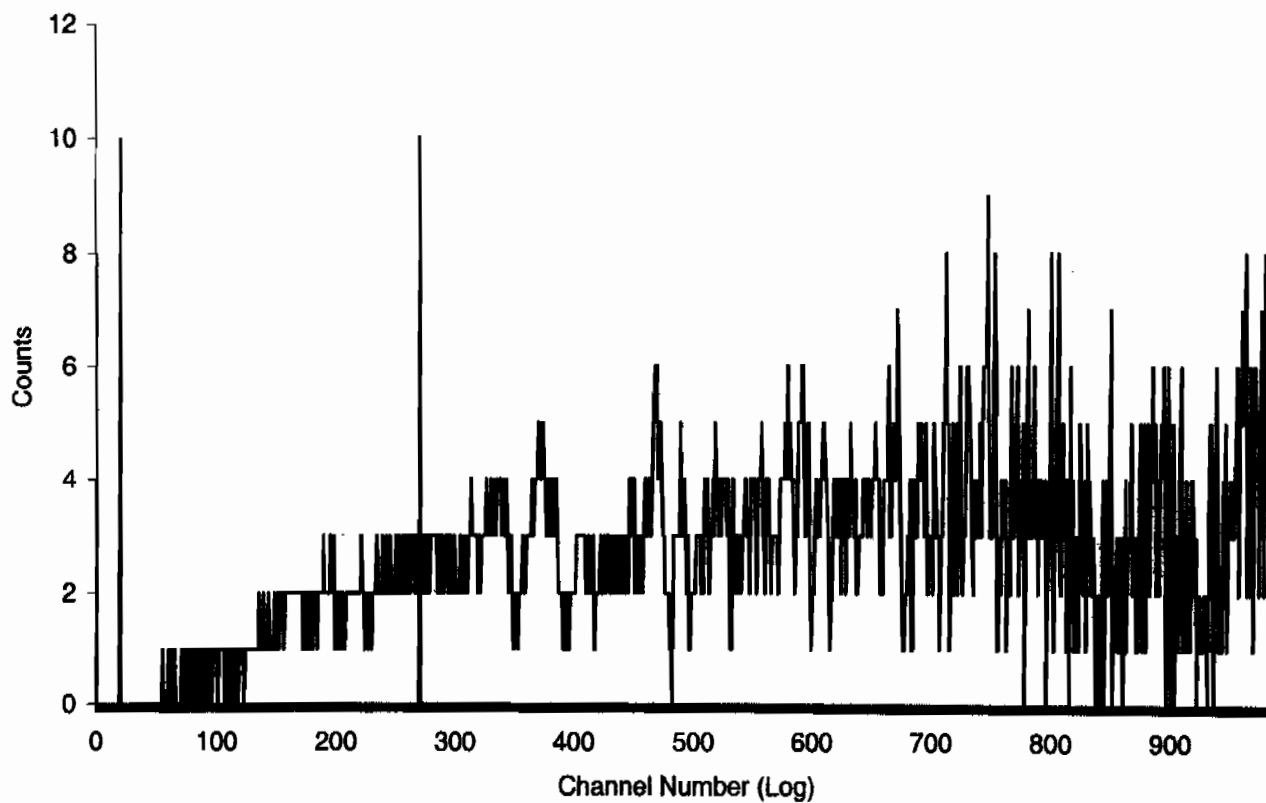
Sample Count Start Time:	19 Mar 2010 16:39:40		
Data Capture Date	19 Mar 2010 17:45:07		
User Filename	S040319---9A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	9	**9	65.00
H#, Total Counts:	124.3	2960	
Win1: Tritium - Start, End, Counts:	20	270	281
Win2: - Start, End, Counts:	0	990	2610



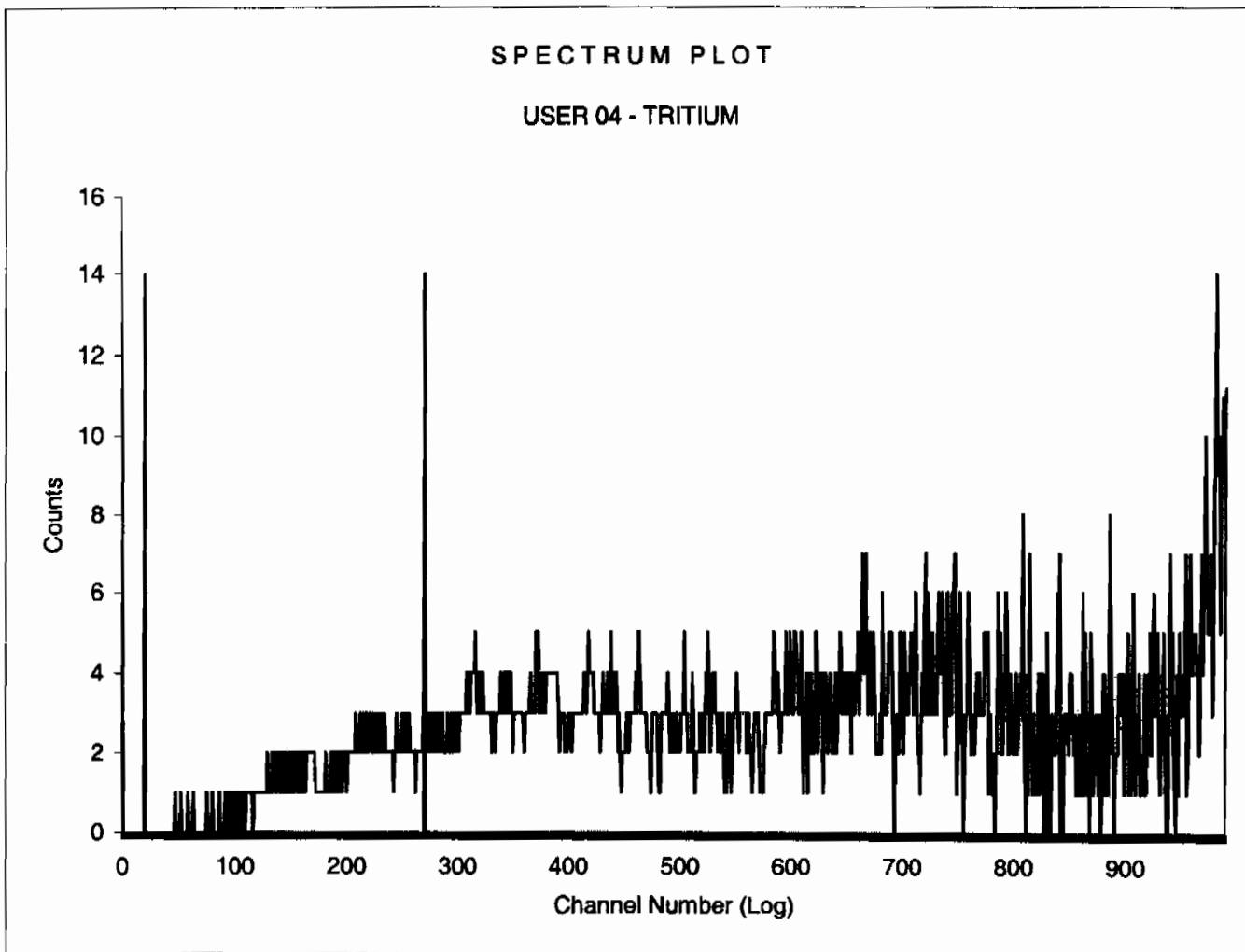
Sample Count Start Time:	19 Mar 2010 17:47:11		
Data Capture Date	19 Mar 2010 18:52:39		
User Filename	S040319---10A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	10	** -10	65.00
H#, Total Counts:	127.7	3046	
Win1: Tritium - Start, End, Counts:	20	270	312
Win2: - Start, End, Counts:	0	990	2639

SPECTRUM PLOT

USER 04 - TRITIUM



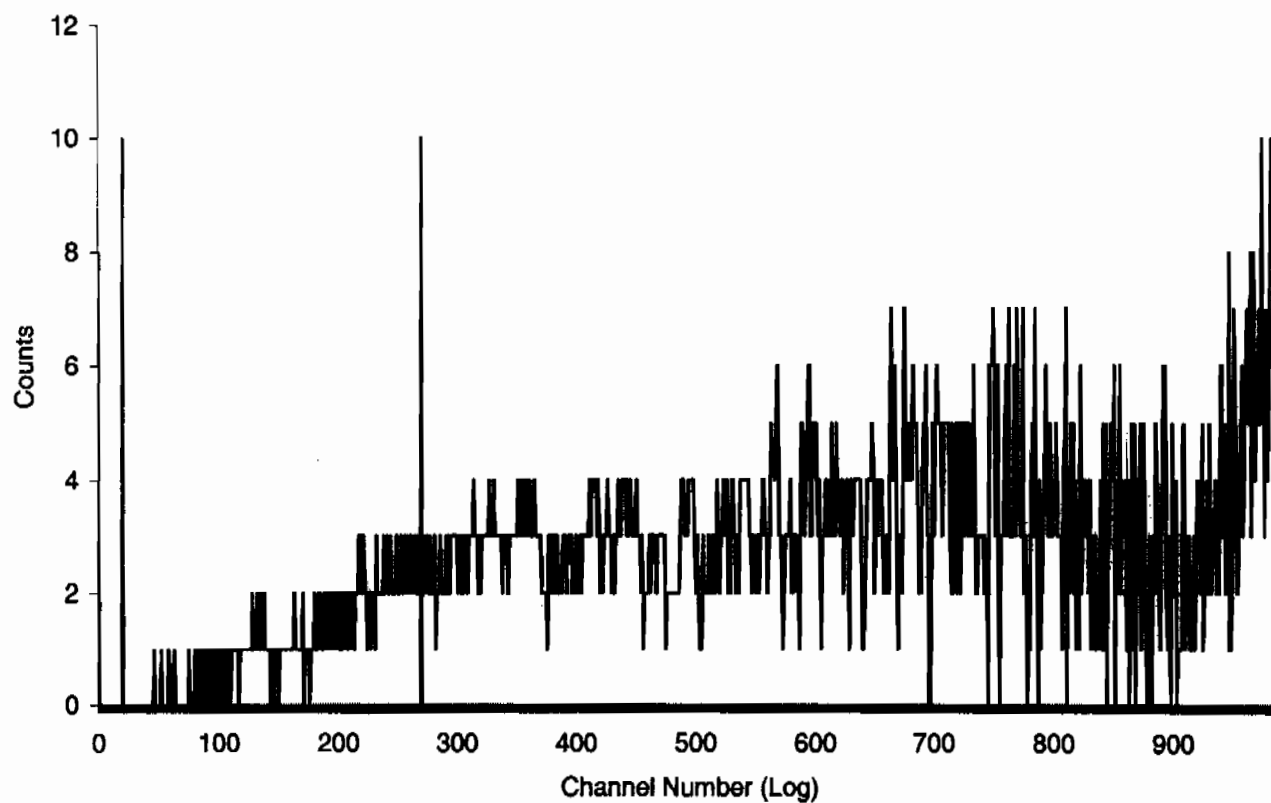
Sample Count Start Time:	19 Mar 2010 18:54:43		
Data Capture Date	19 Mar 2010 20:00:10		
User Filename	S040319---11A.XLS		
	U040319---1A.XLS		
Spectrum Type	Log Counts		
User Number	04		
User Id	TRITIUM		
User Comment	BLUE		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	11	**11	65.00
H#, Total Counts:	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

SPECTRUM PLOT

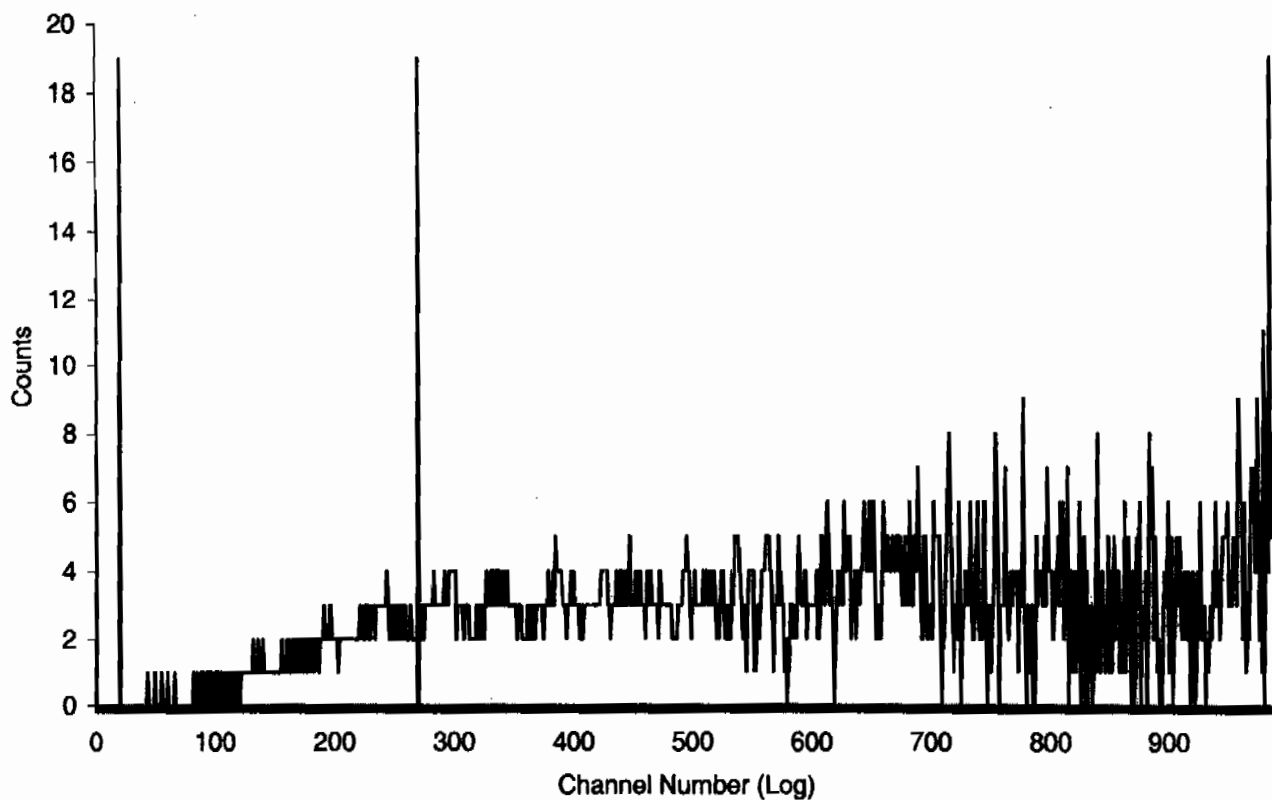
USER 04 - TRITIUM



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

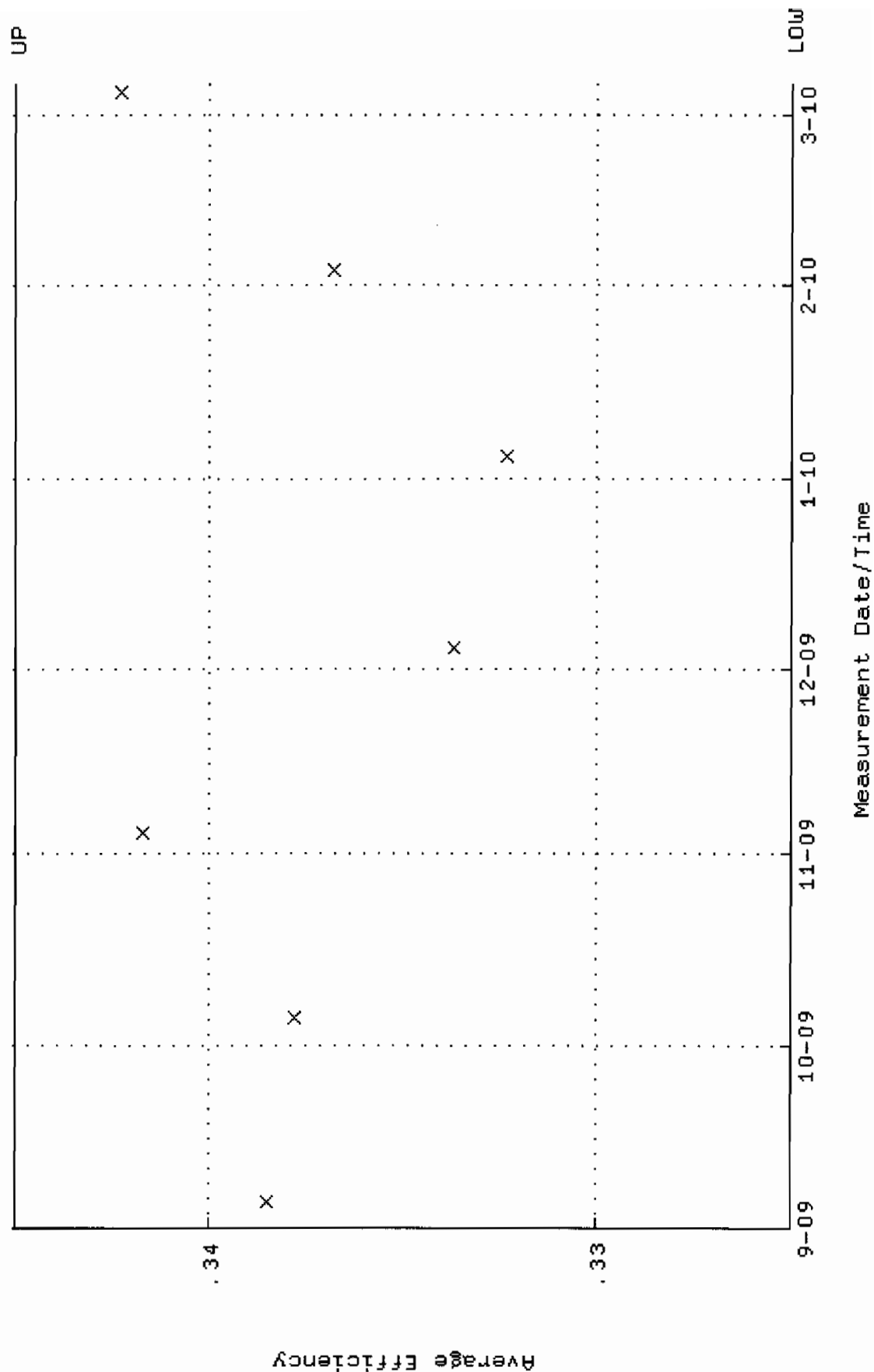
SPECTRUM PLOT

USER 04 - TRITIUM

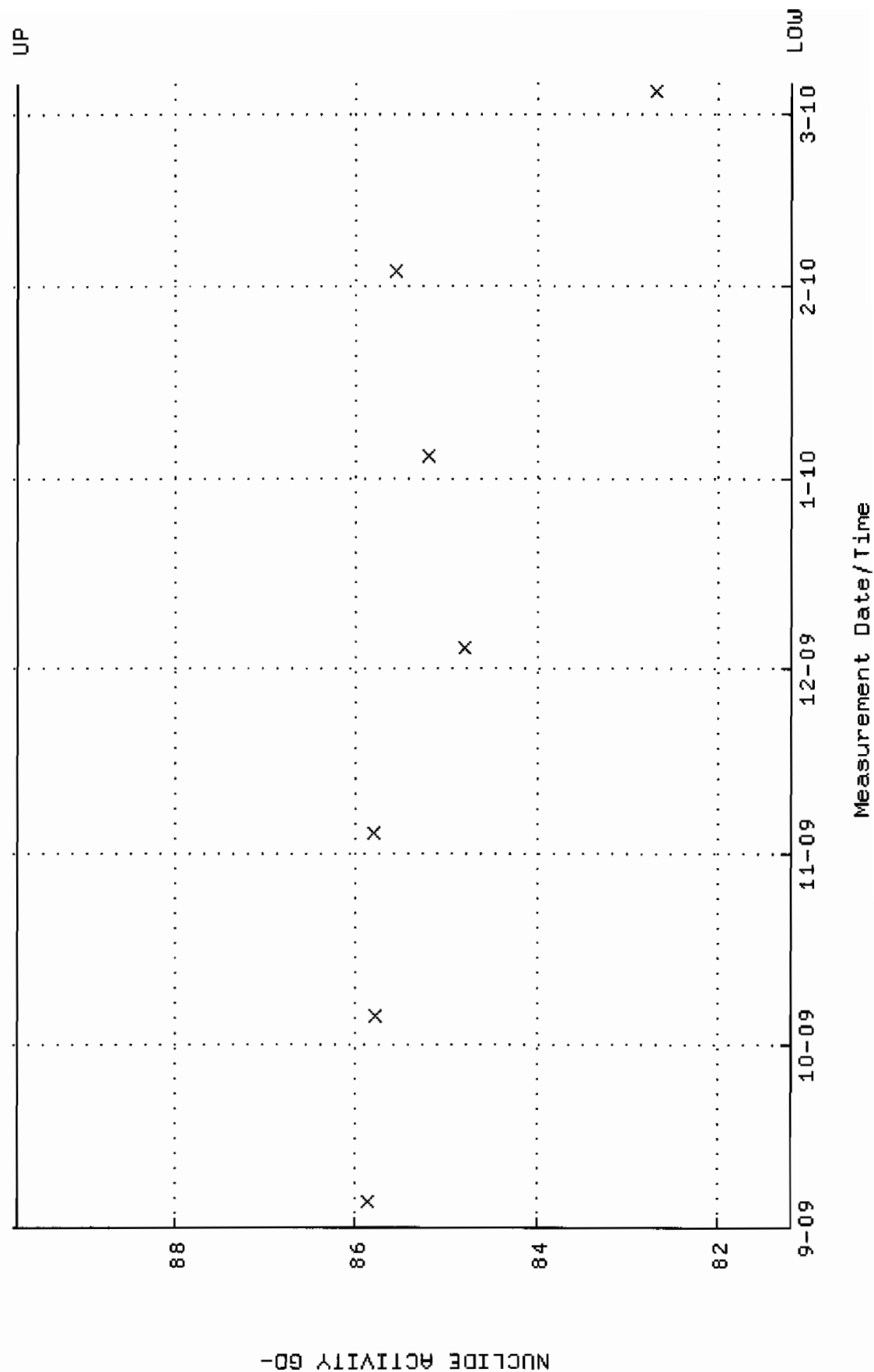


BACKGROUND AND EFFICIENCY DATA

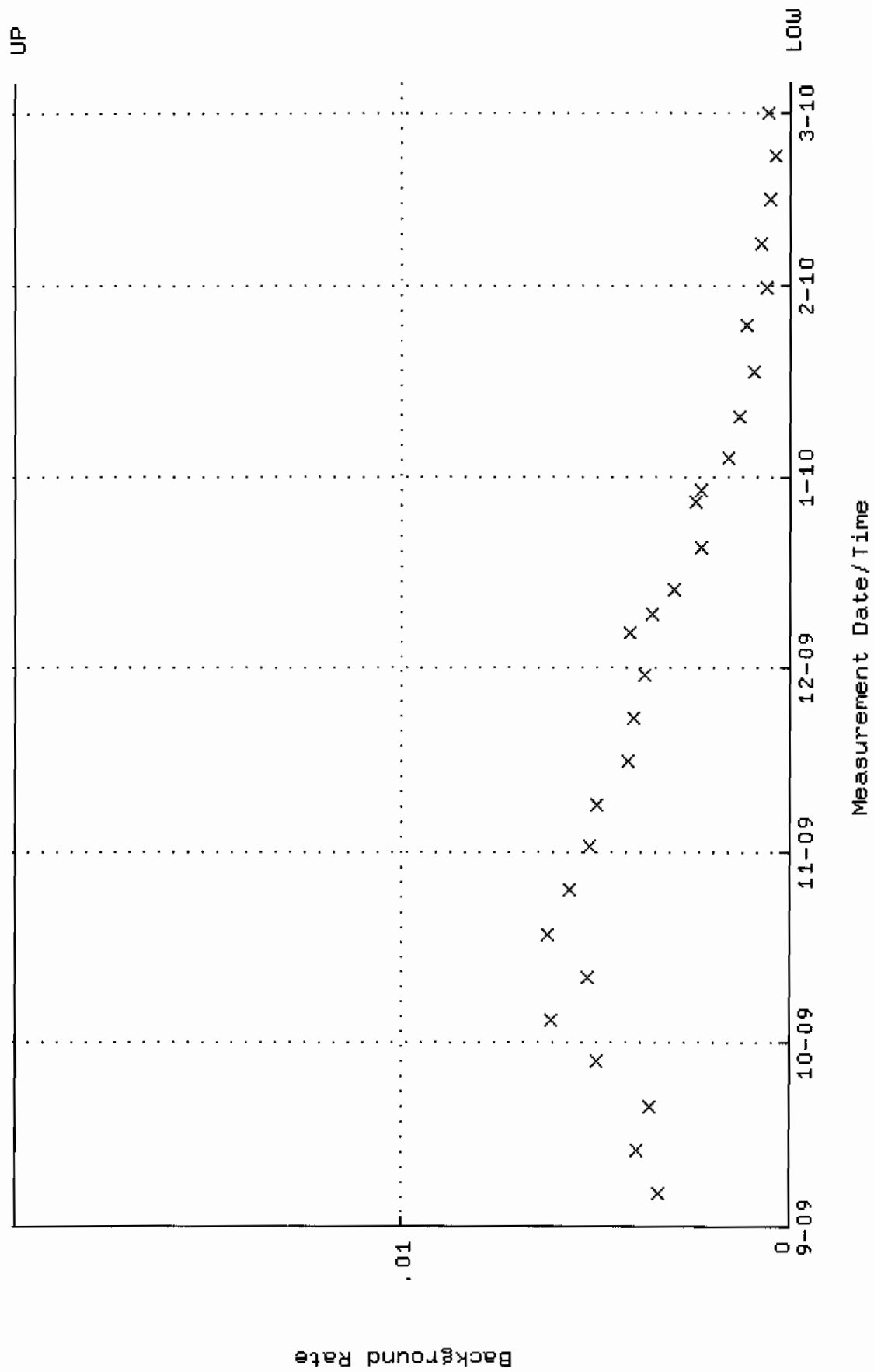
QA filename : DKA100:[ENV_ALPHA.QA.W]W027.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.324980 through 0.344980



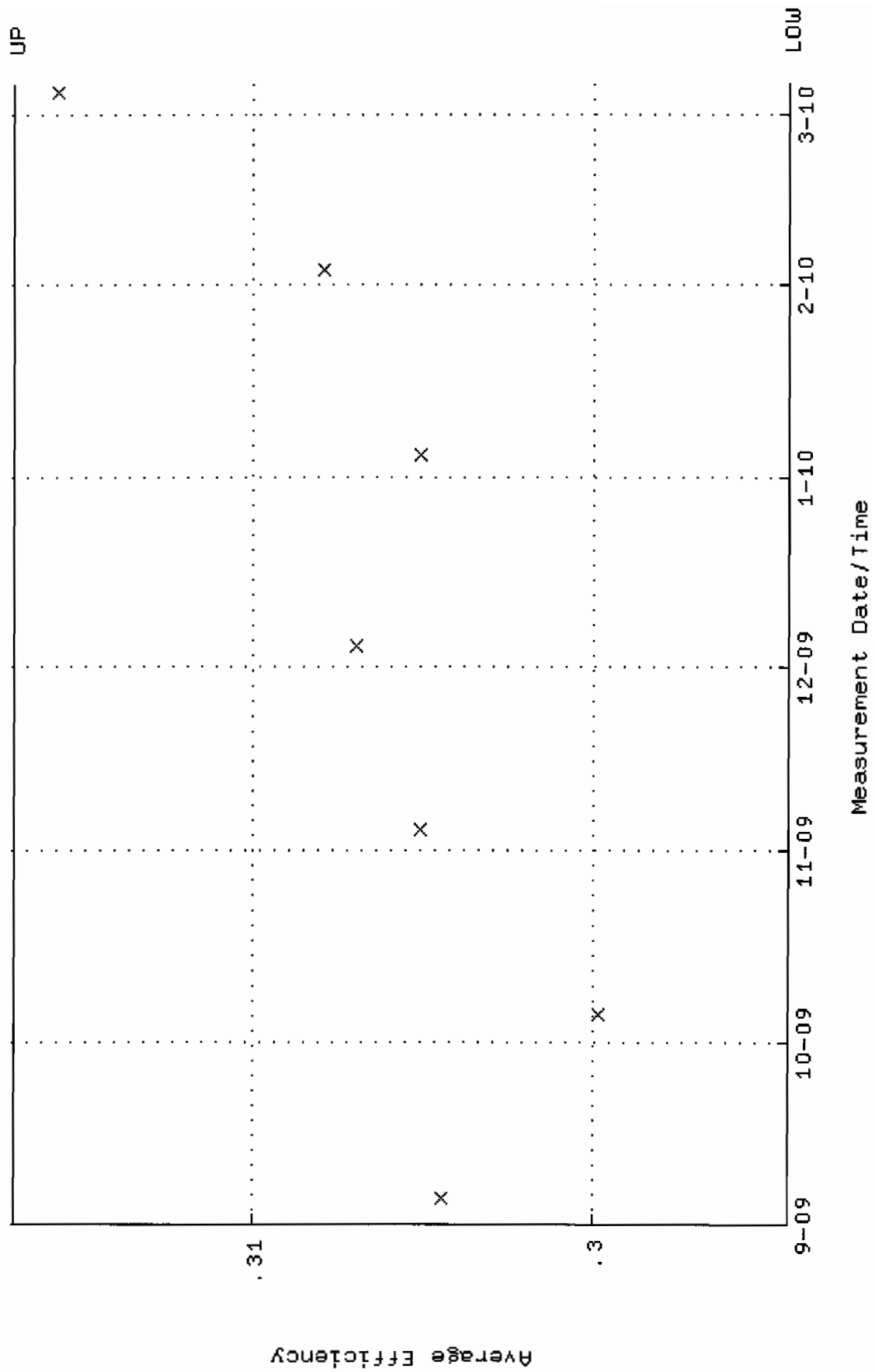
QA filename : DKA100:[ENV_ALPHA.QA.W]W027.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.2030 through 89.7506



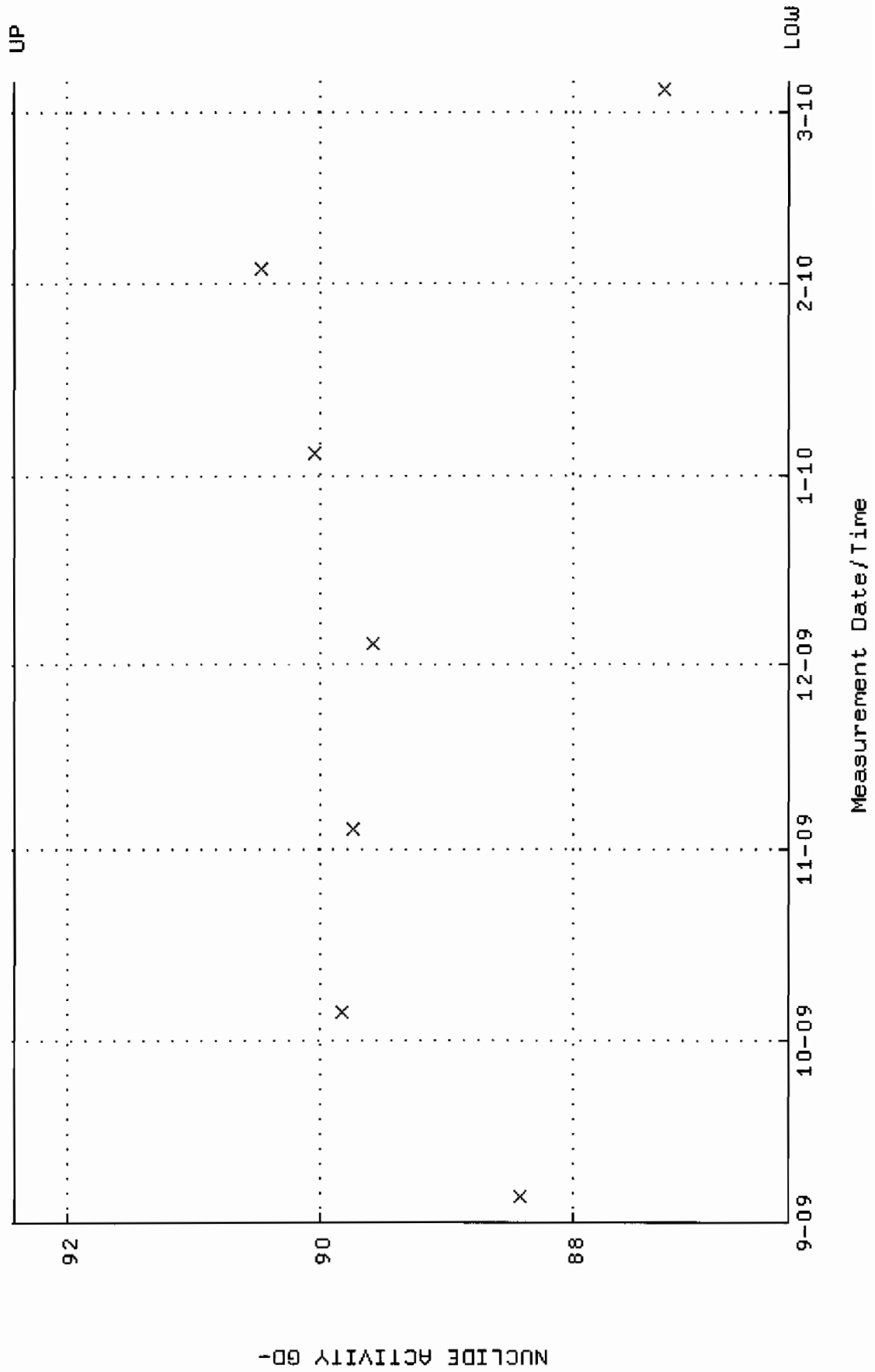
QA filename : DKA100:[ENV_ALPHA.QA.B]B027.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:03 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



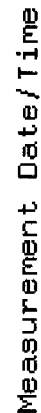
QA filename : DKA100:[ENV_ALPHA.QA.W]W028.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.294270 through 0.317026



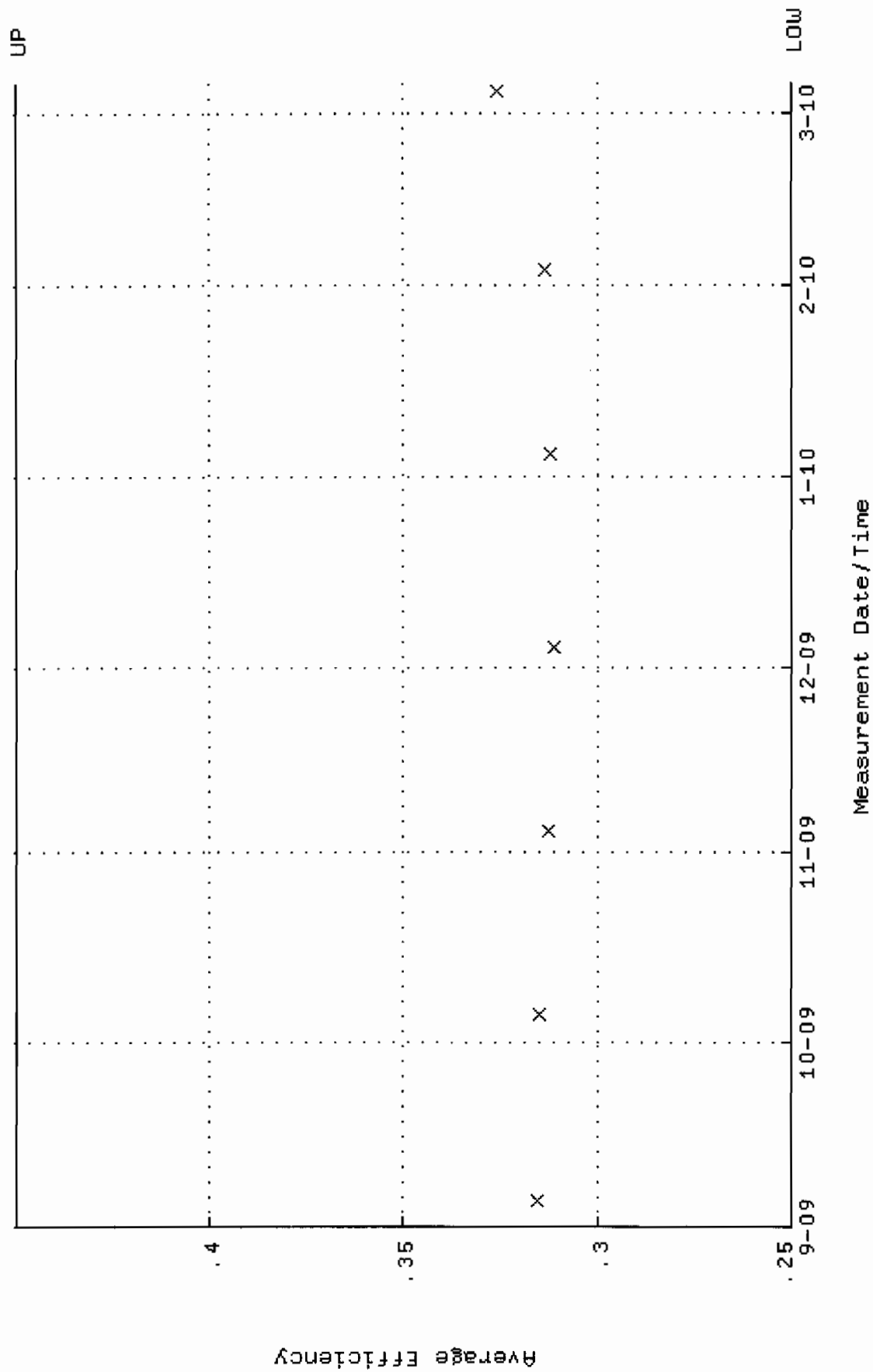
QA filename : DKA100:[ENV_ALPHA.QA.W]W028.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.3036 through 92.4168



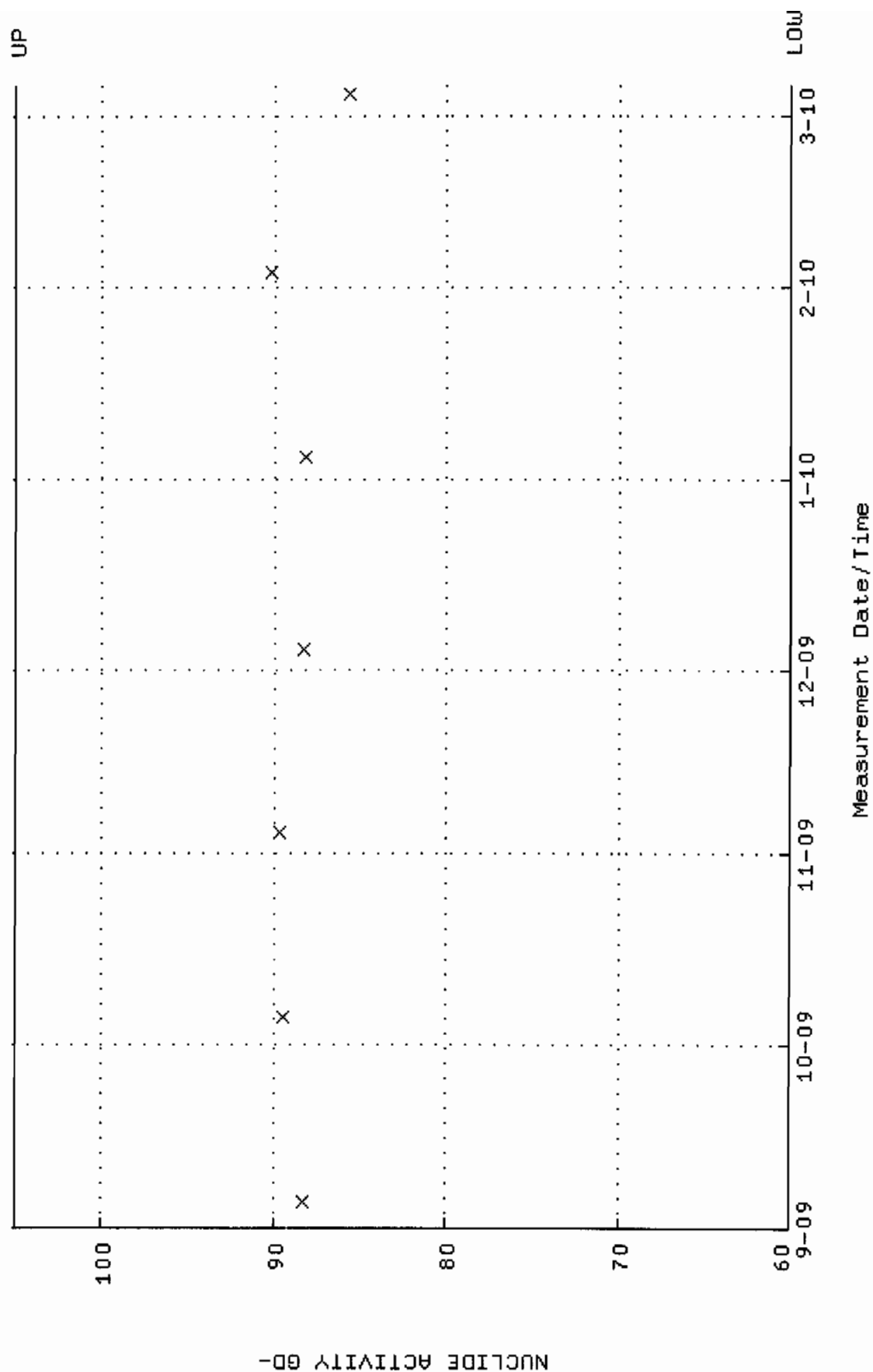
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W029.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



QA filename : DKA100:[ENV_ALPHA.QA.W]W029.QAF;6
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.000

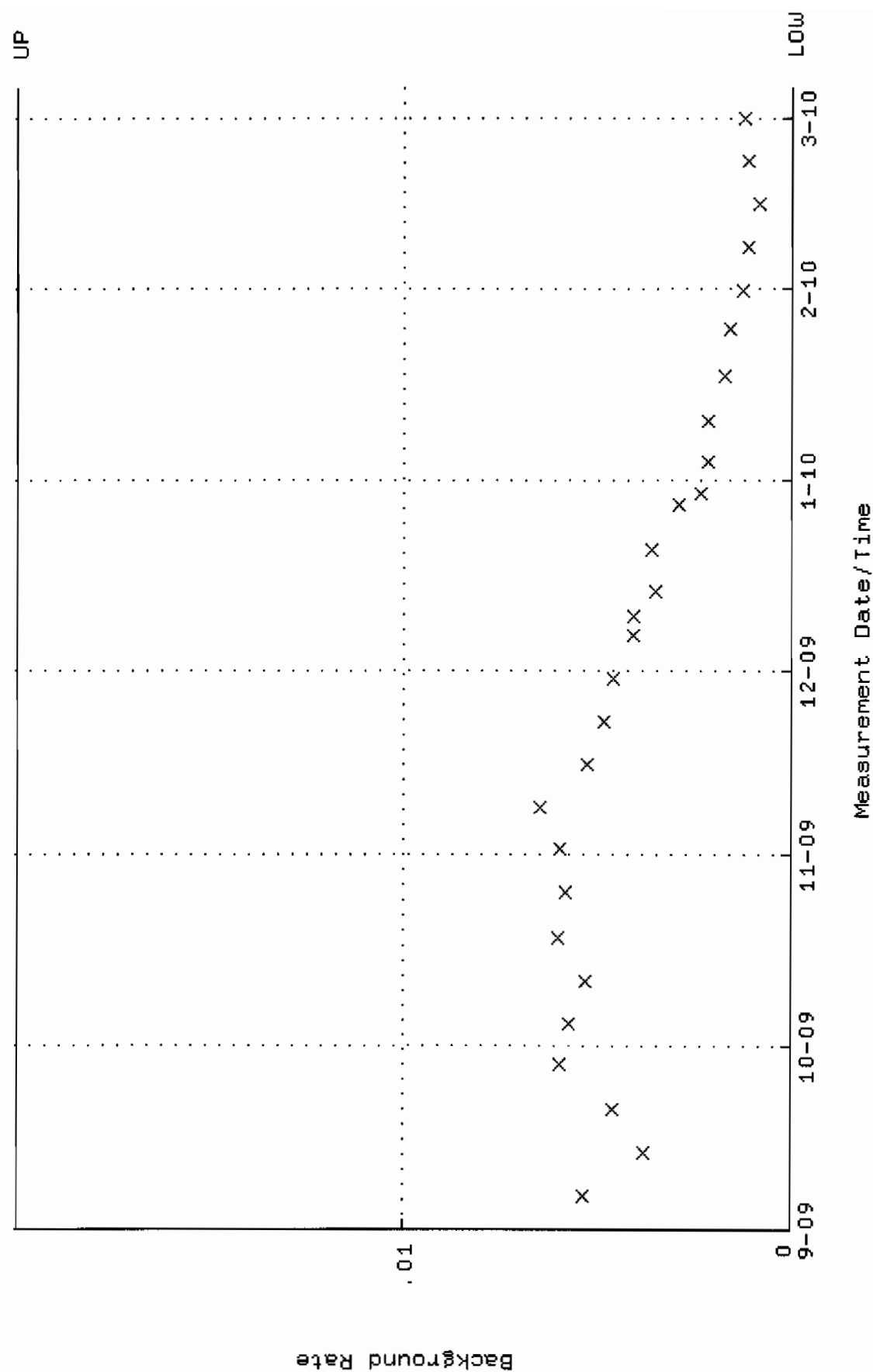


QA filename : DKA100:[ENV_ALPHA.QA.B]B029.QAF;1

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:03 through 5-MAR-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

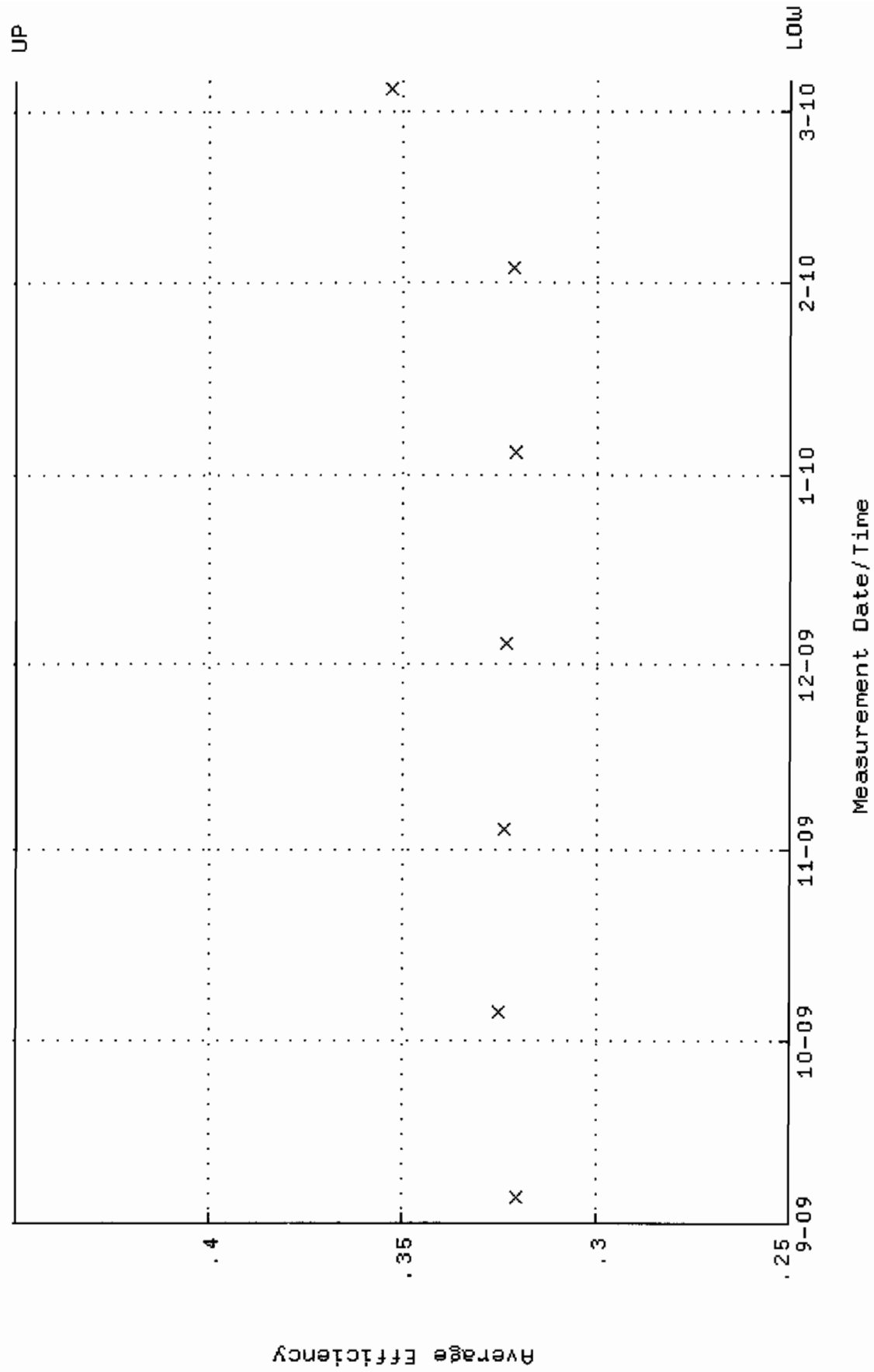


QA filename : DKA100:[ENV_ALPHA.QA.W]W030.QAF;3

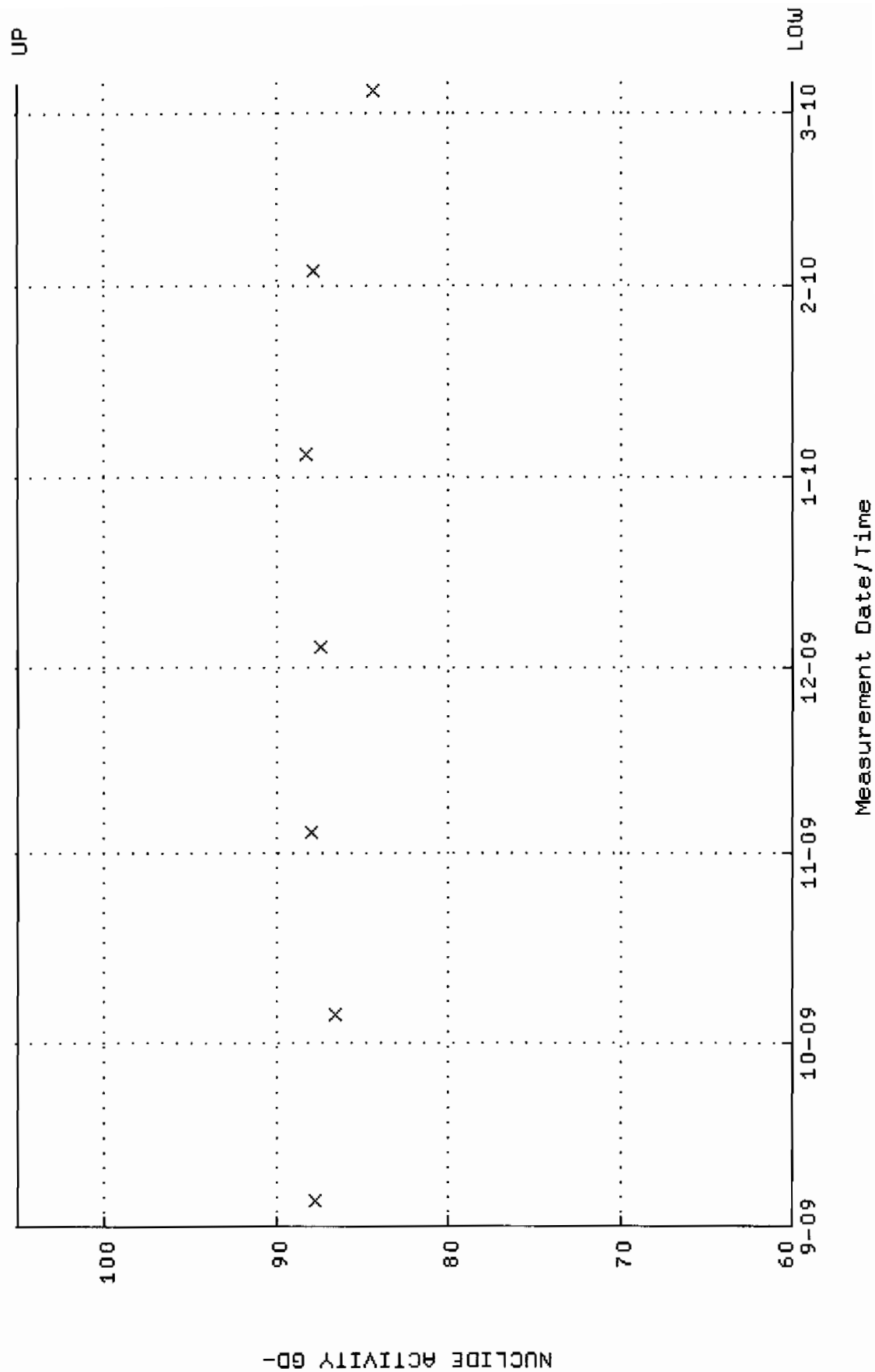
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00

Lower/Upper Lmts: 0.250000 through 0.450000



QA filename : DKA100:[ENV_ALPHA.QA.W]W030.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:08 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.0000

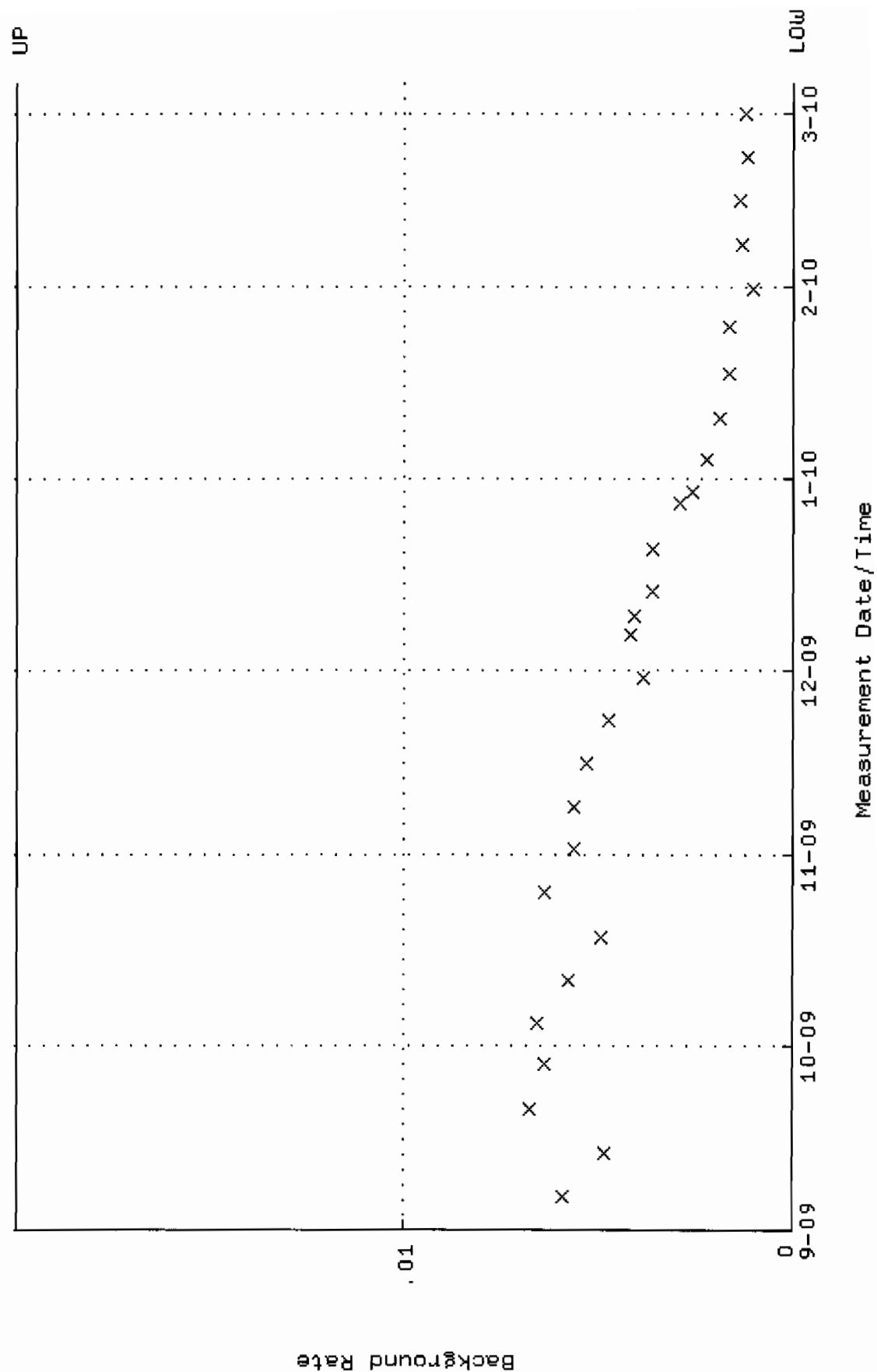


QA filename : DKA100:[ENV_ALPHA.QA.B]B030.QAF;1

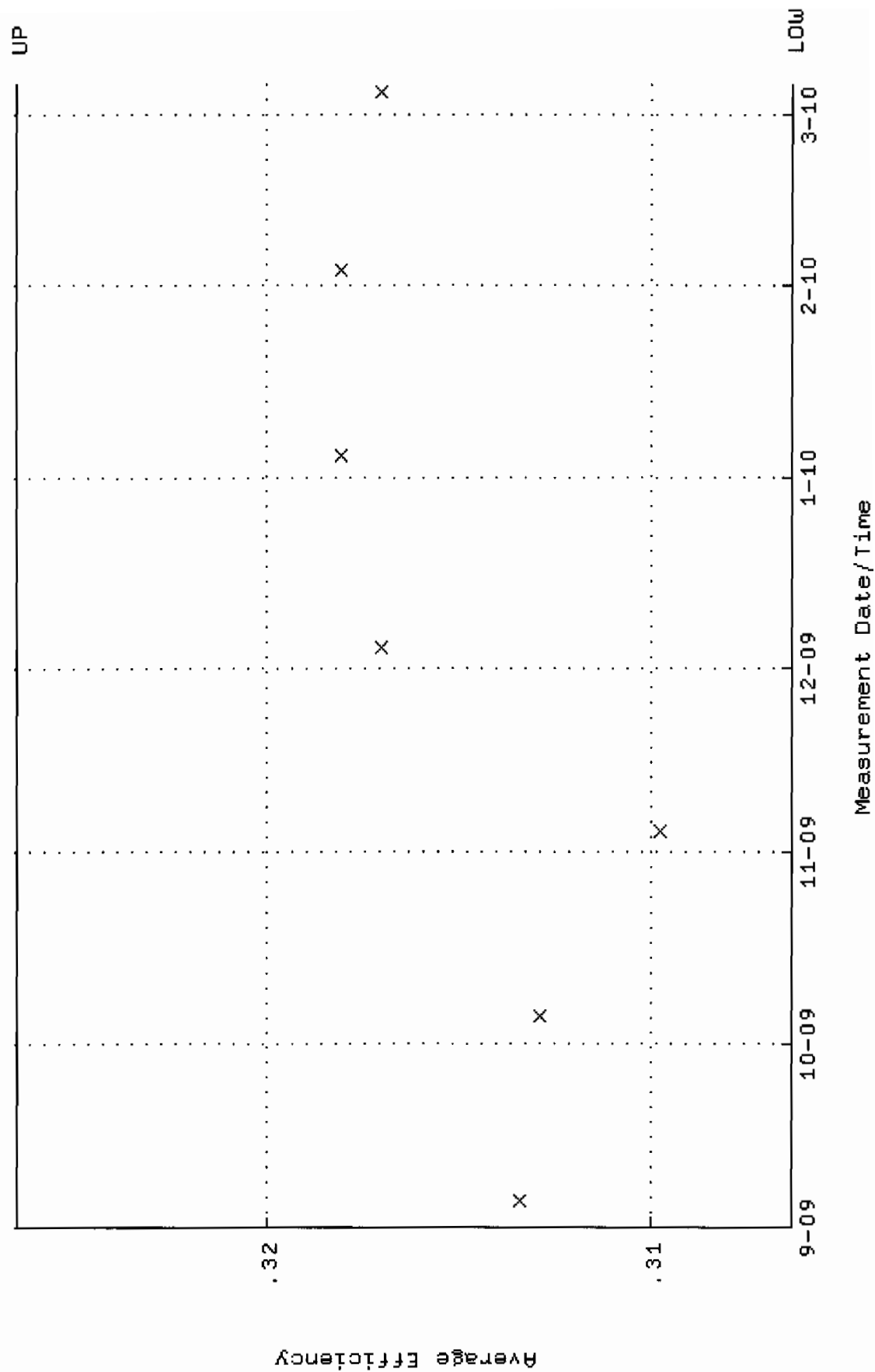
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:03 through 5-MAR-2010 12:00:00

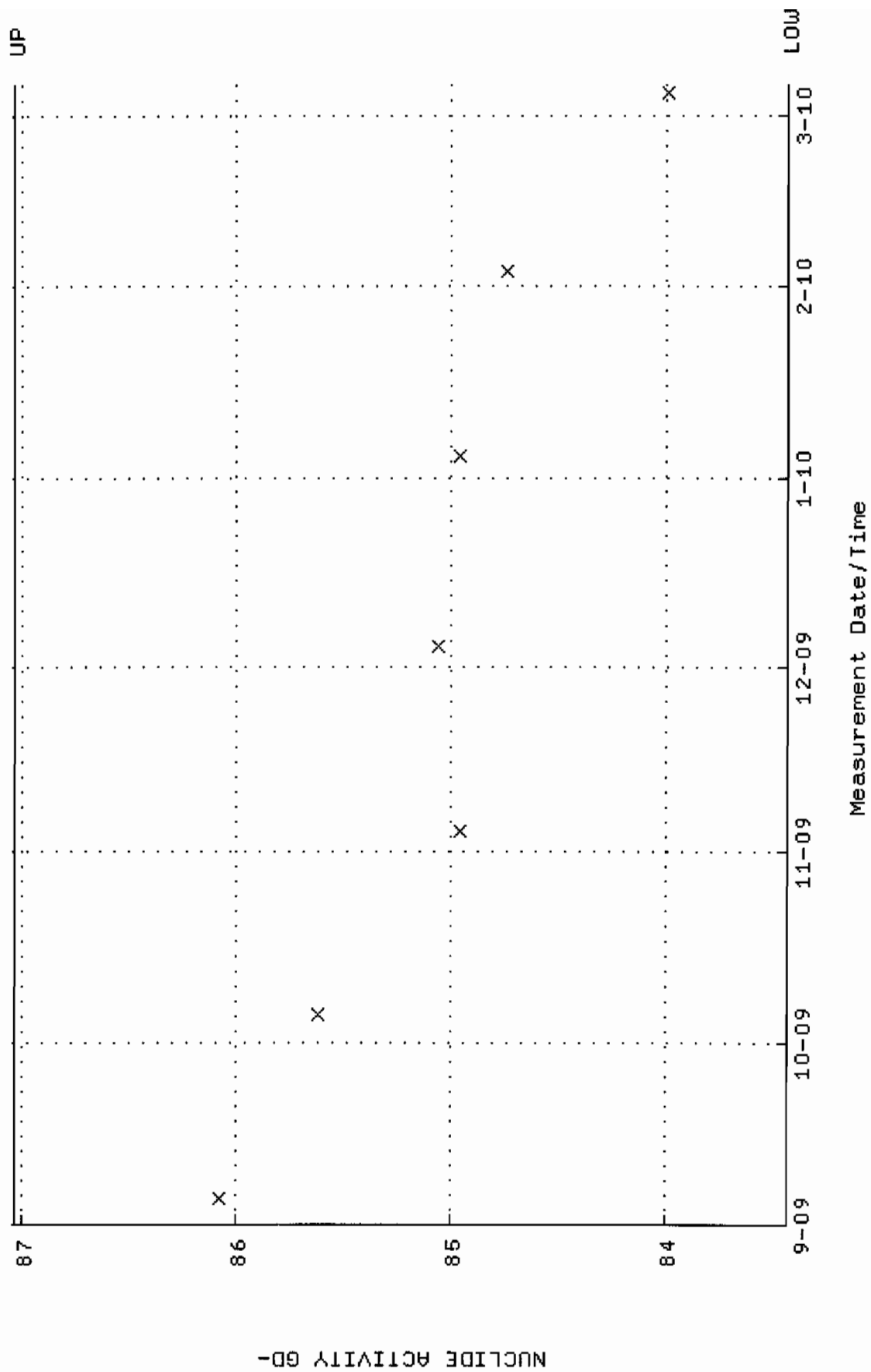
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W033.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:09 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.306364 through 0.326480



QA filename : DKA100:[ENV_ALPHA.QA.W]W033.QAF;3
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:09 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.4328 through 87.0310

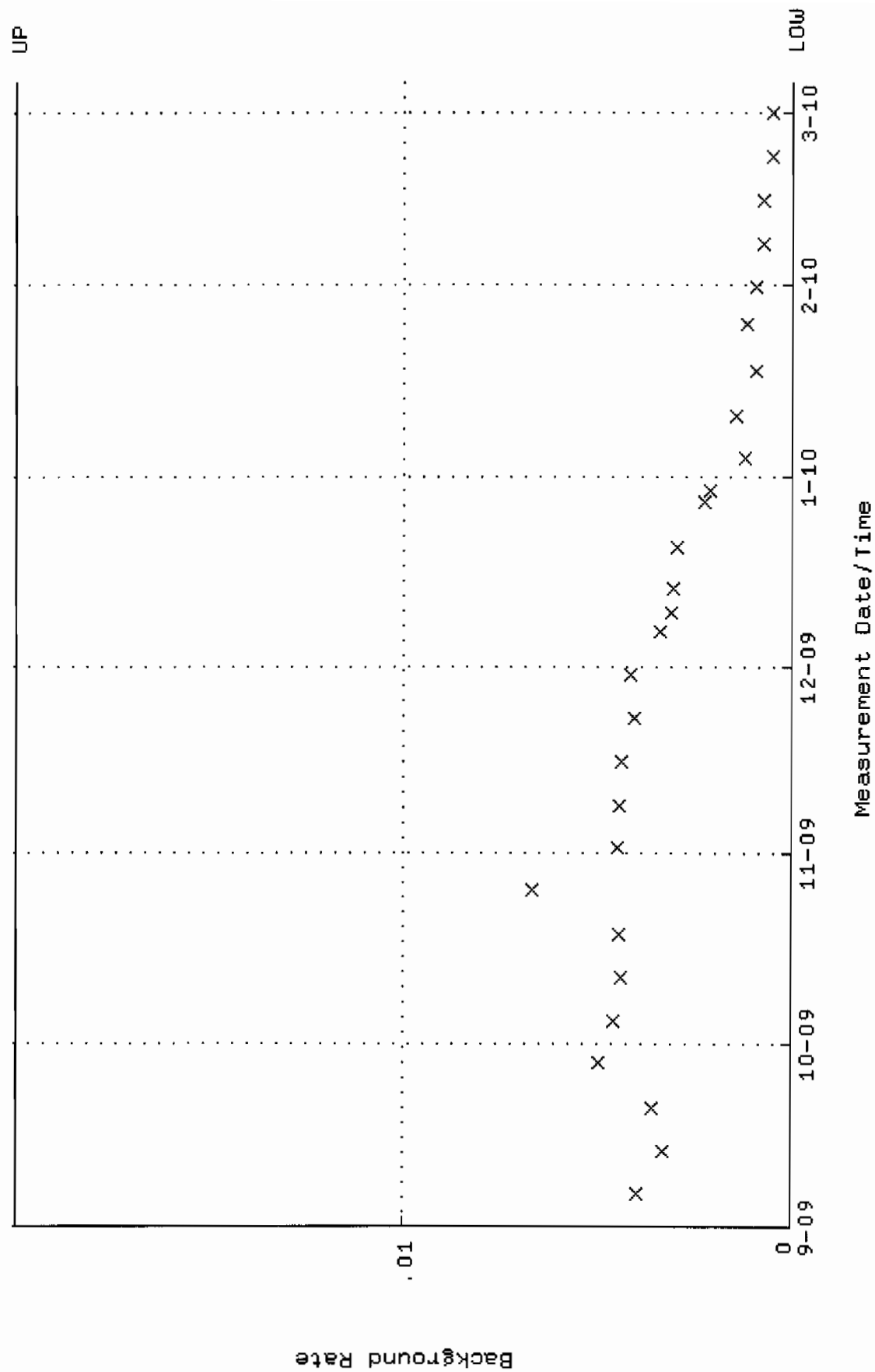


QA filename : DKA100:[ENV_ALPHA.QA.B]B033.QAF;1

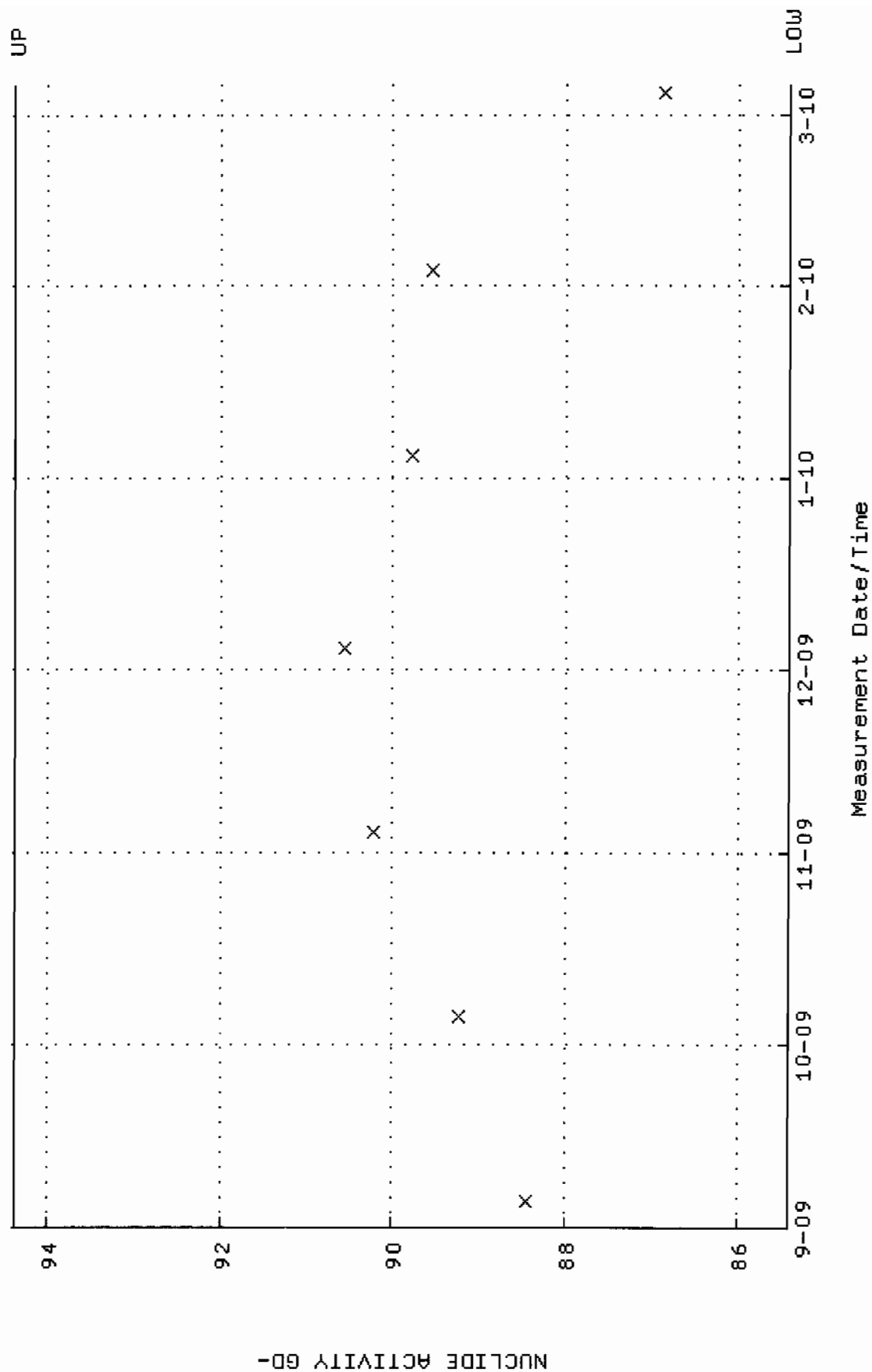
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:04 through 5-MAR-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W035.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:09 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.3984 through 94.3878

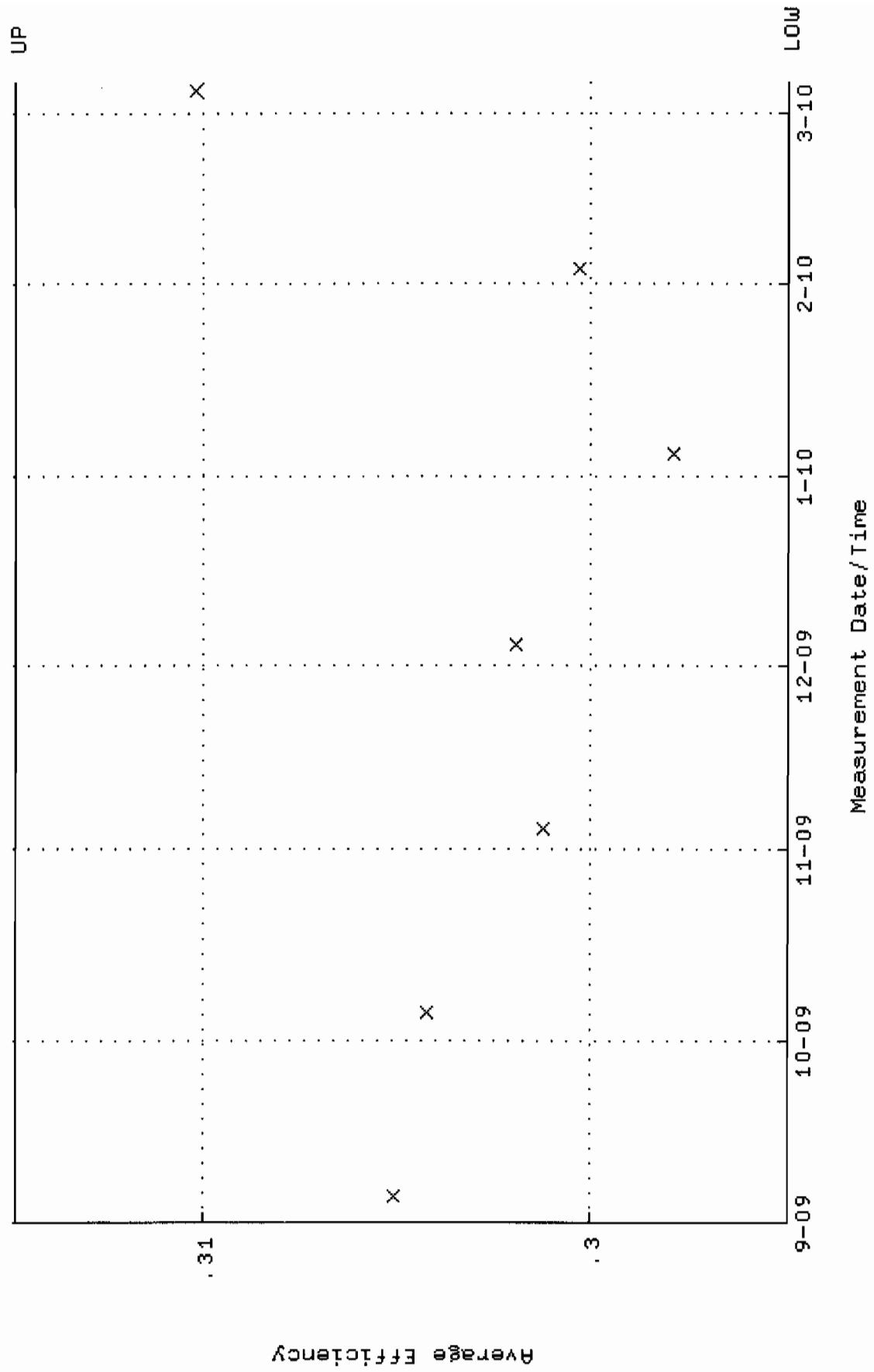


QA filename : DKA100:[ENV_ALPHA.QA.W]W035.QAF;3

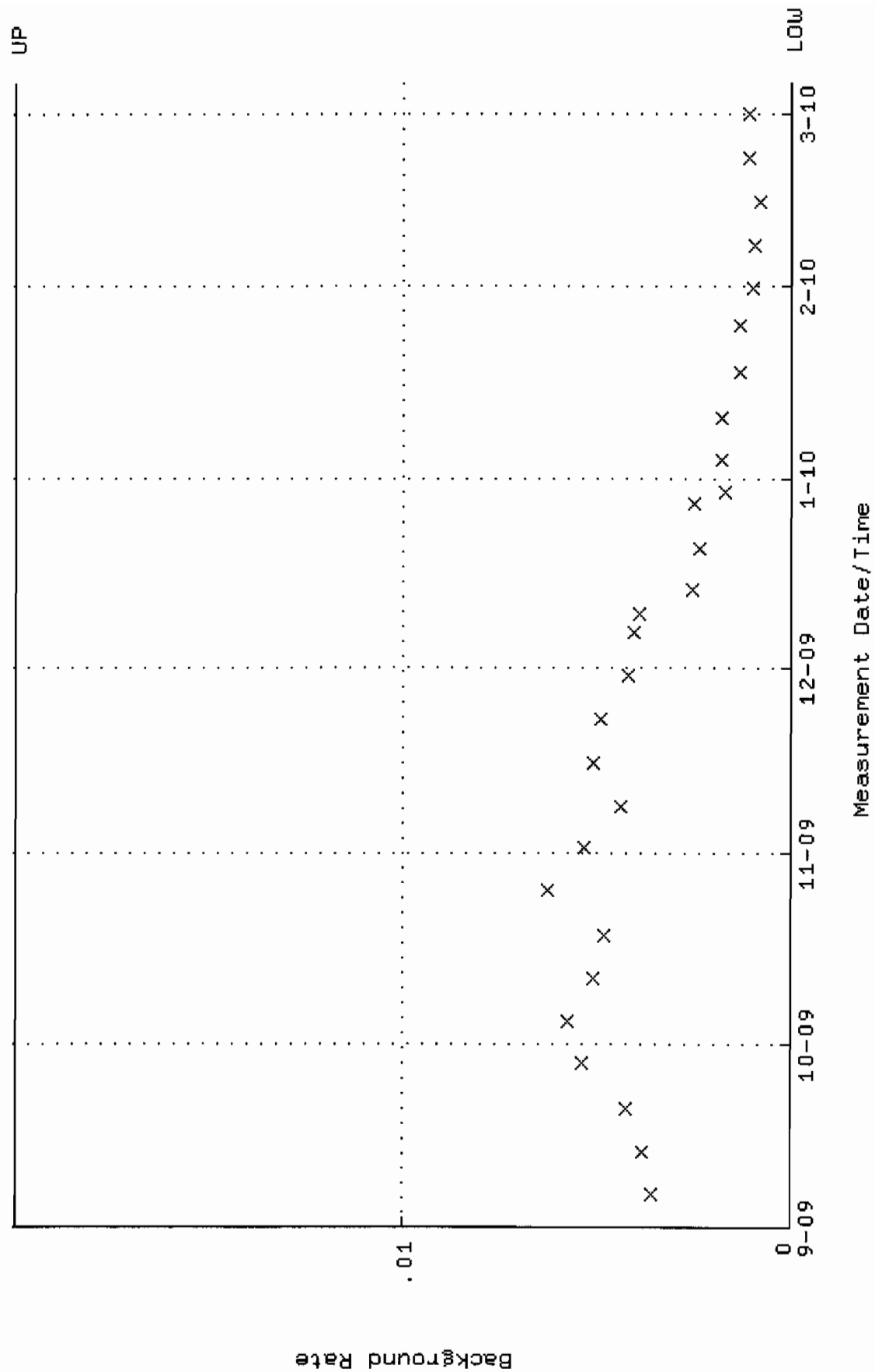
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 5-SEP-2009 09:03:09 through 5-MAR-2010 12:00:00

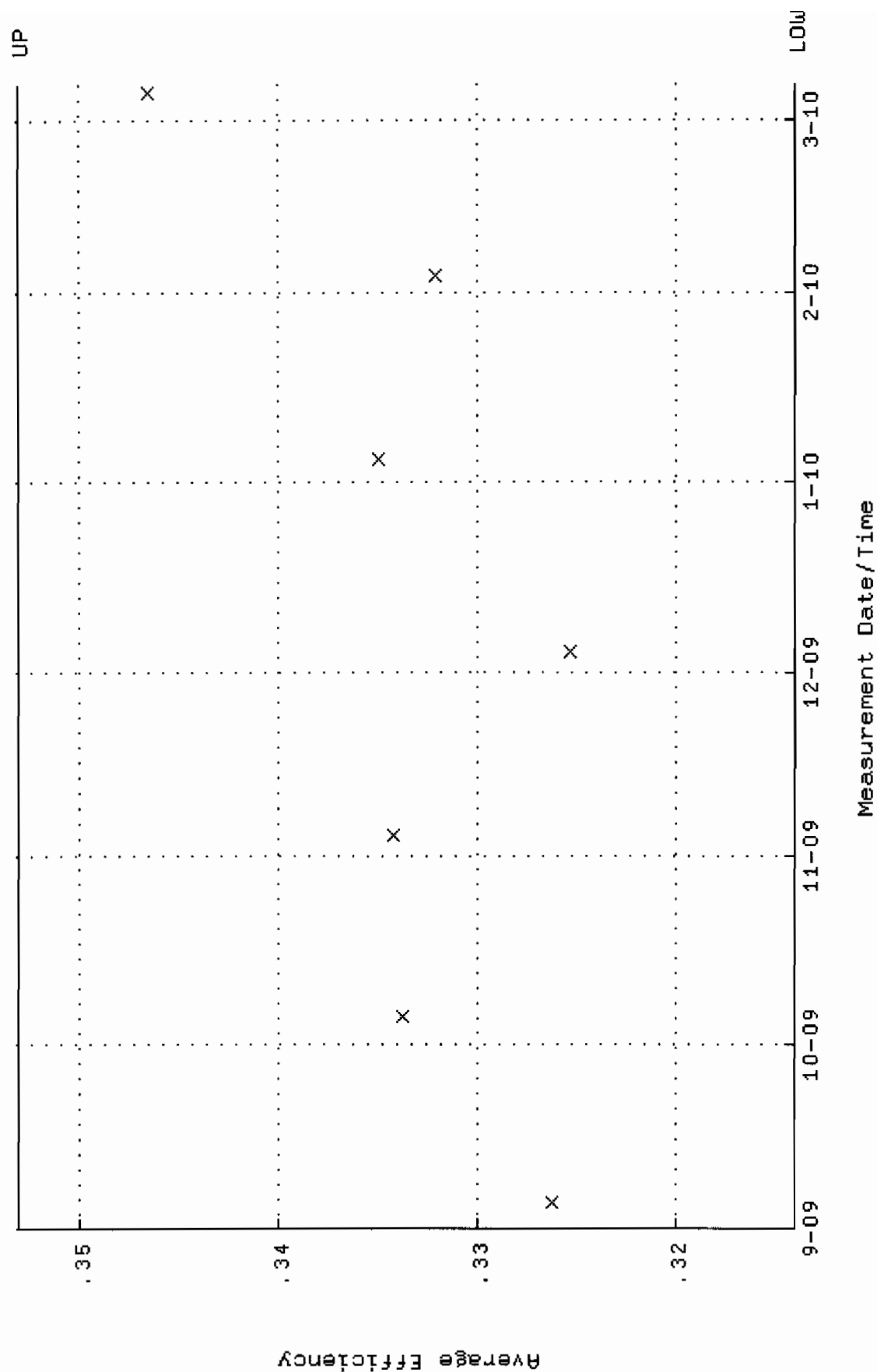
Lower/Upper Lmts: 0.294859 through 0.314859



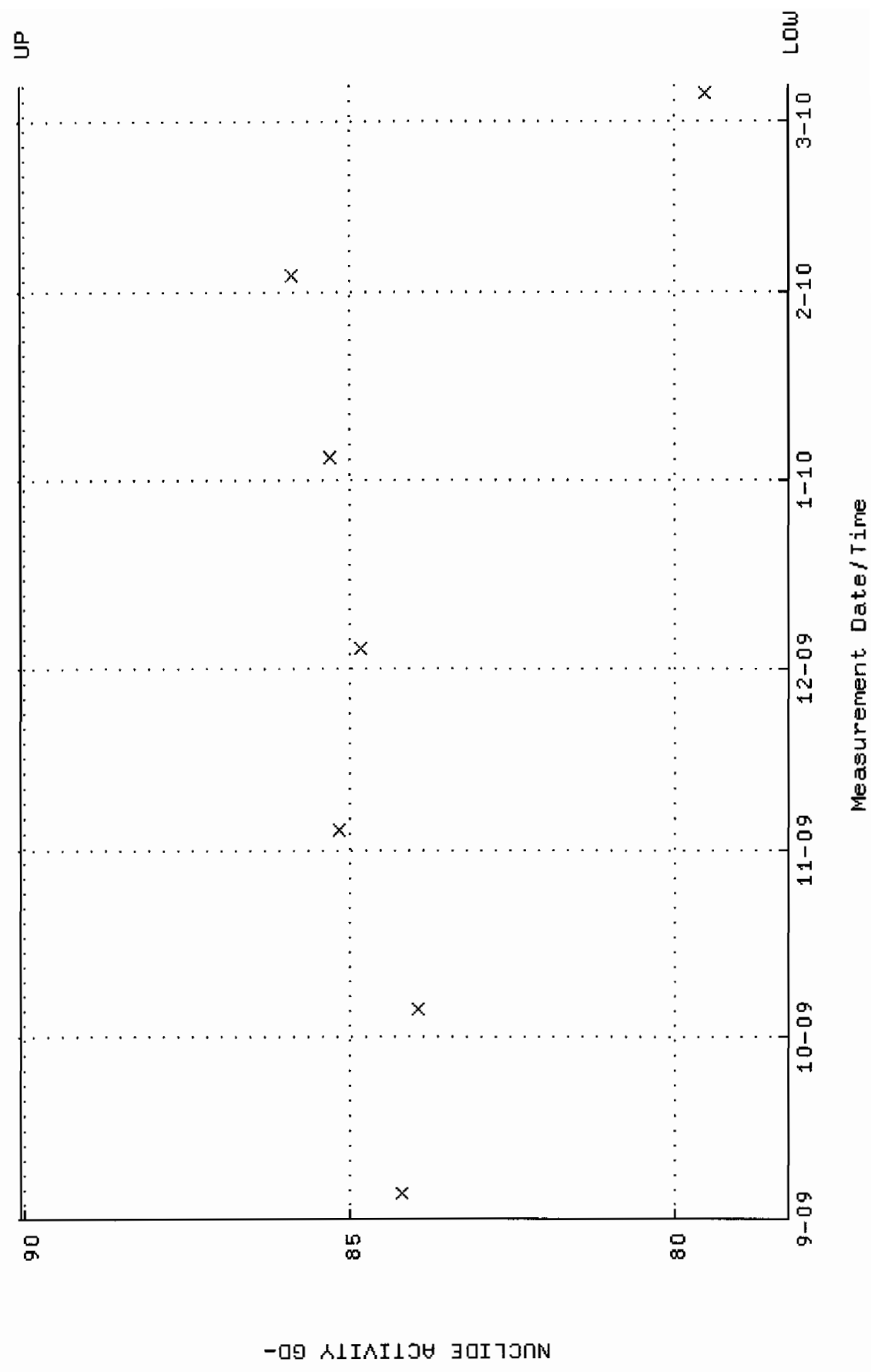
QA filename : DKA100:[ENV_ALPHA.QA.B]B035.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:04 through 5-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



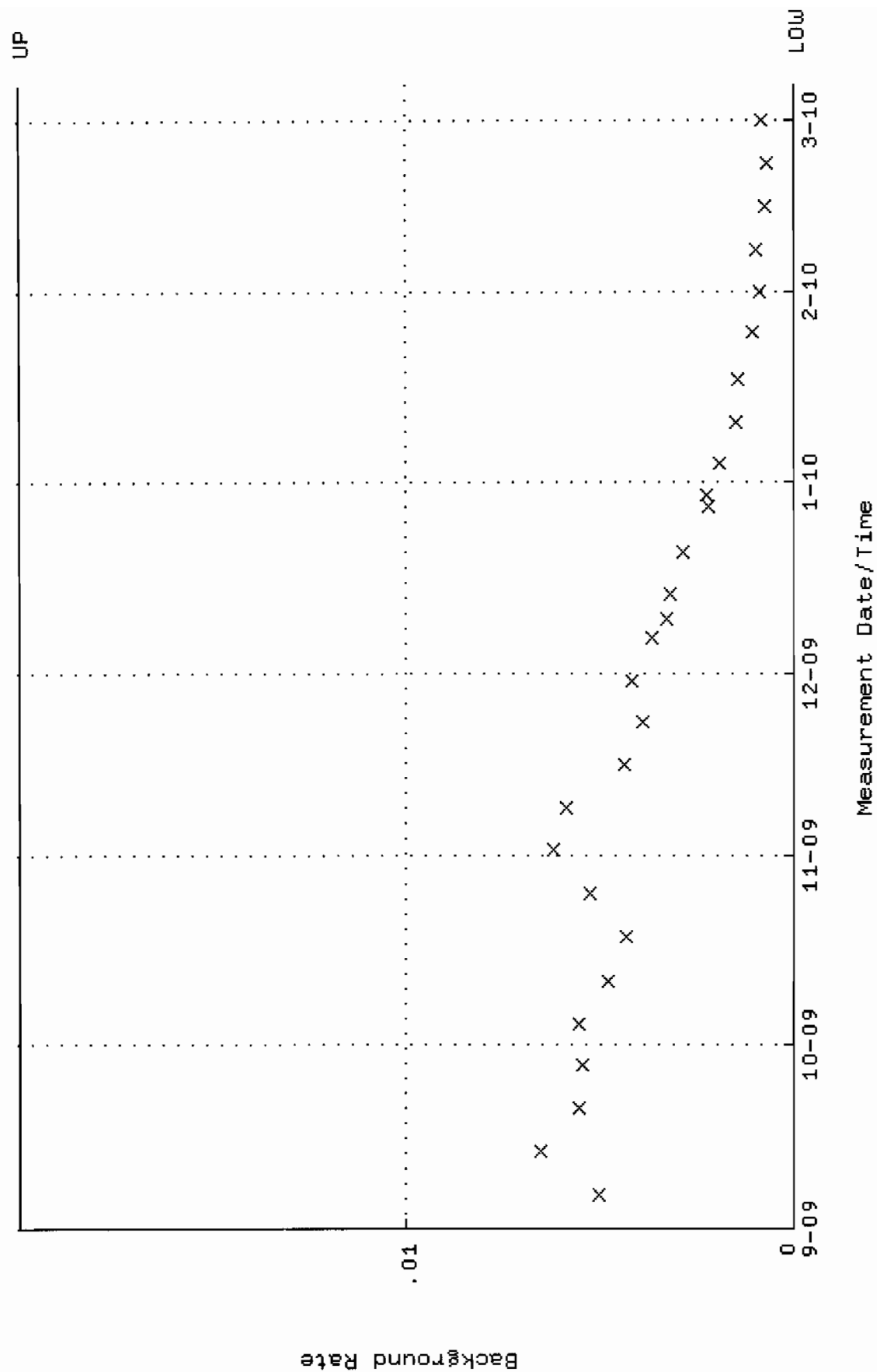
QA filename : DKA100:[ENV_ALPHA.QA.W]W042.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:11 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.314079 through 0.353023



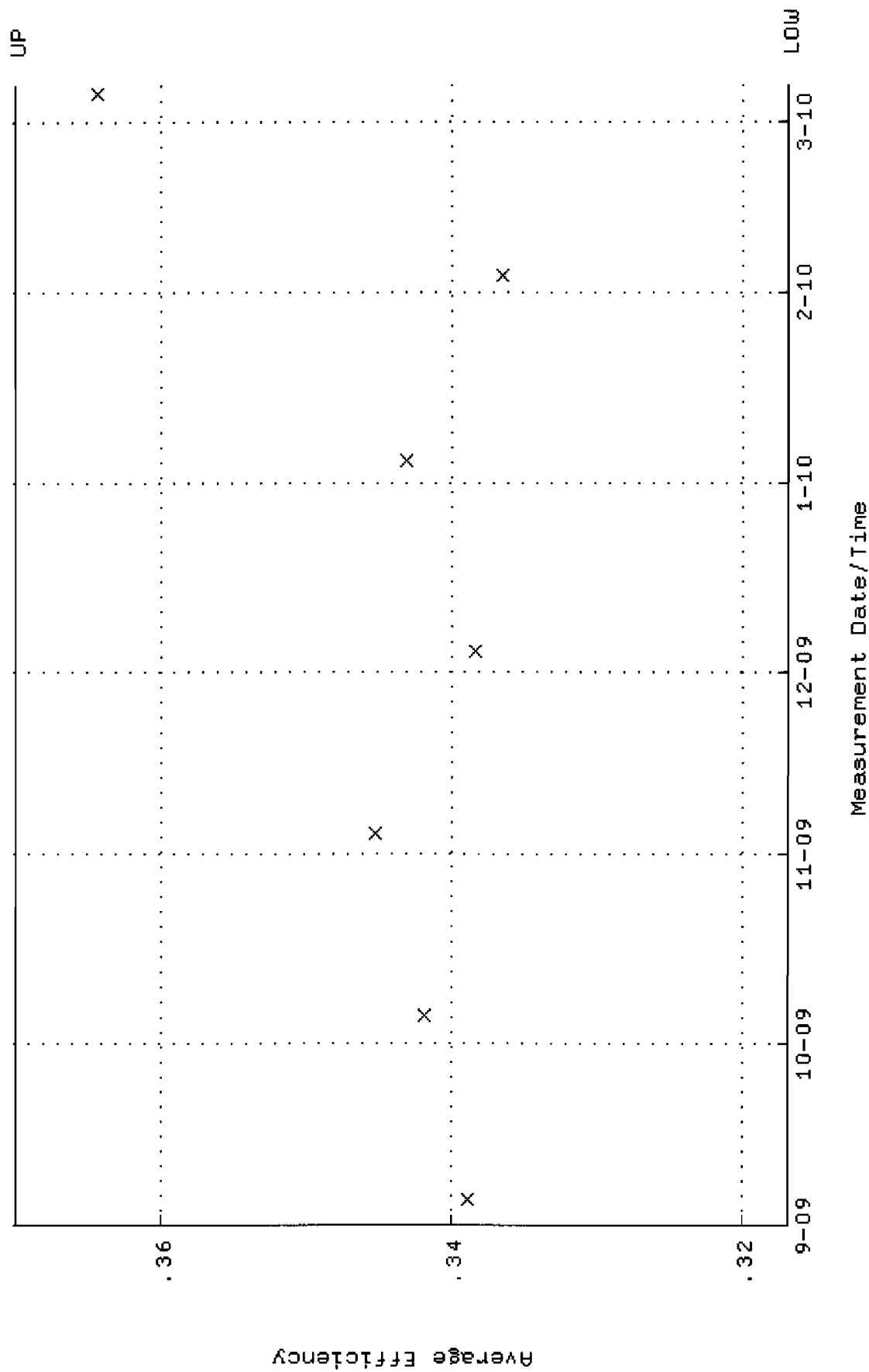
QA filename : DKA100:[ENVY_ALPHA.QA.W]W042.QAF;3
Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 5-SEP-2009 09:03:11 through 6-MAR-2010 12:00:00
Lower/Upper Lmts: 78.2587 through 90.0439



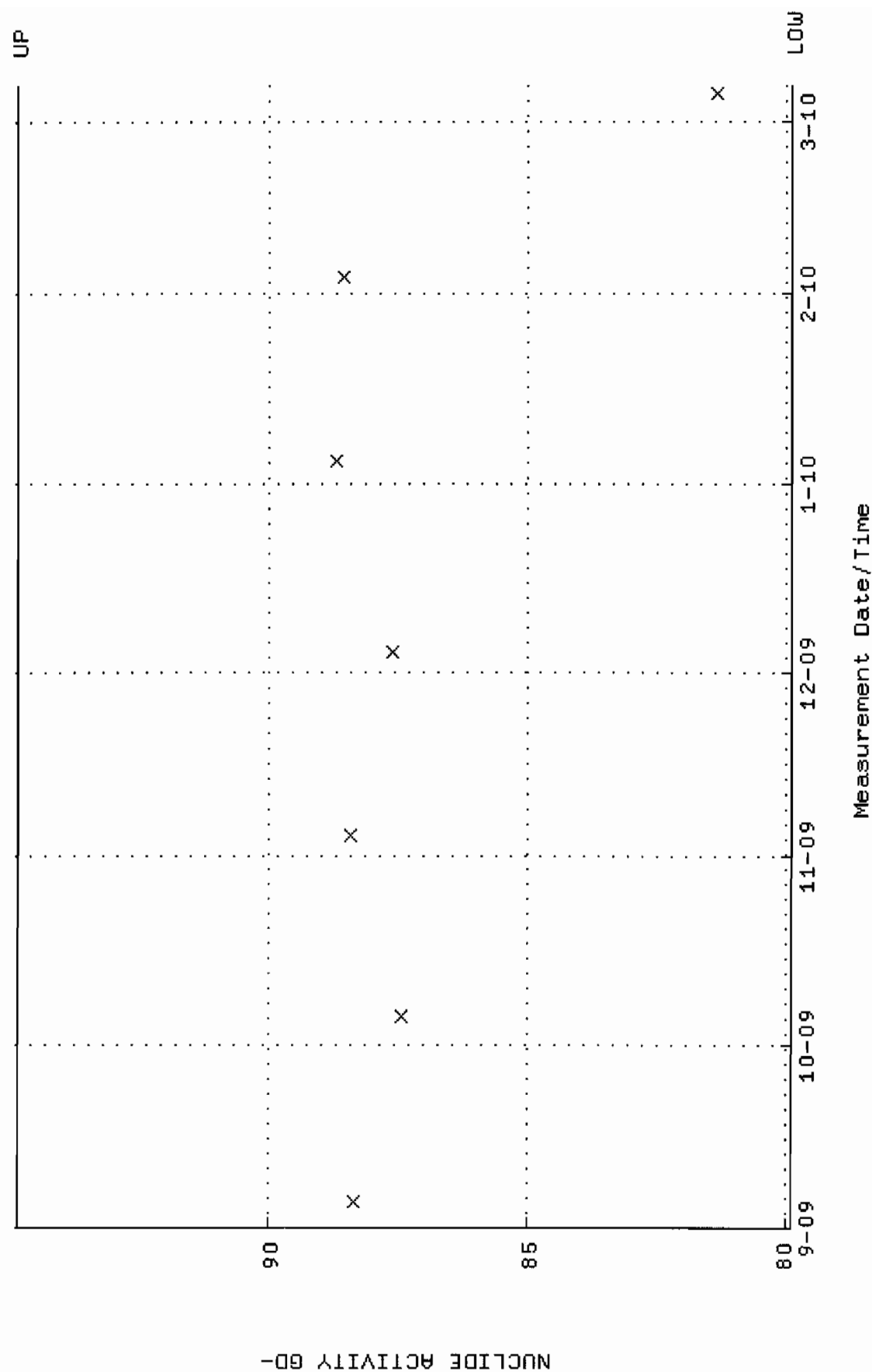
QA filename : DKA100:[ENV_ALPHA.QA.B]B042.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:05 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W043.QAF;102
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:12 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.316853 through 0.369991



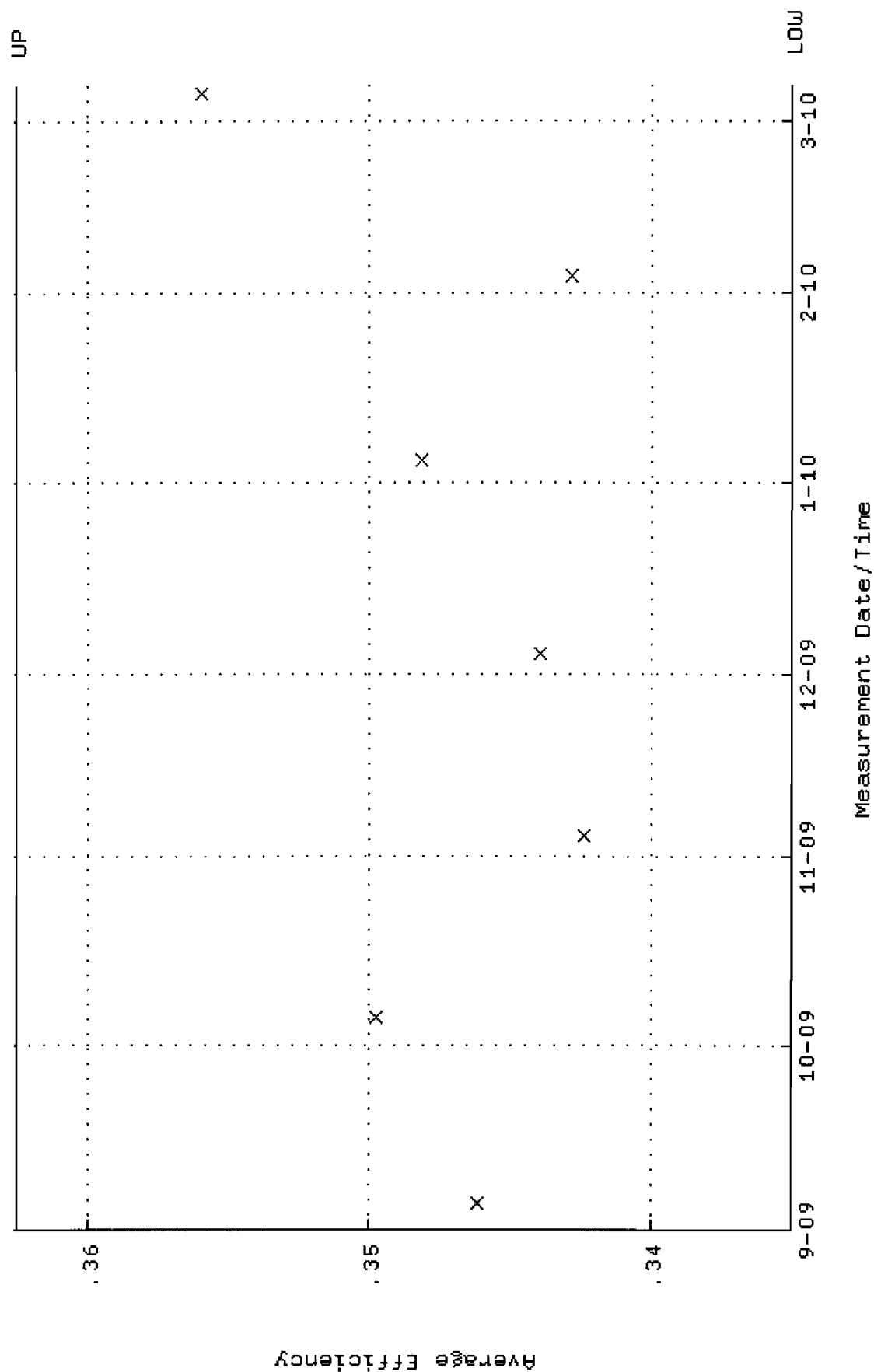
QA filename : DKA100:[ENV_ALPHA.QA.W]W043.QAF;102
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:12 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 79.8821 through 94.8741



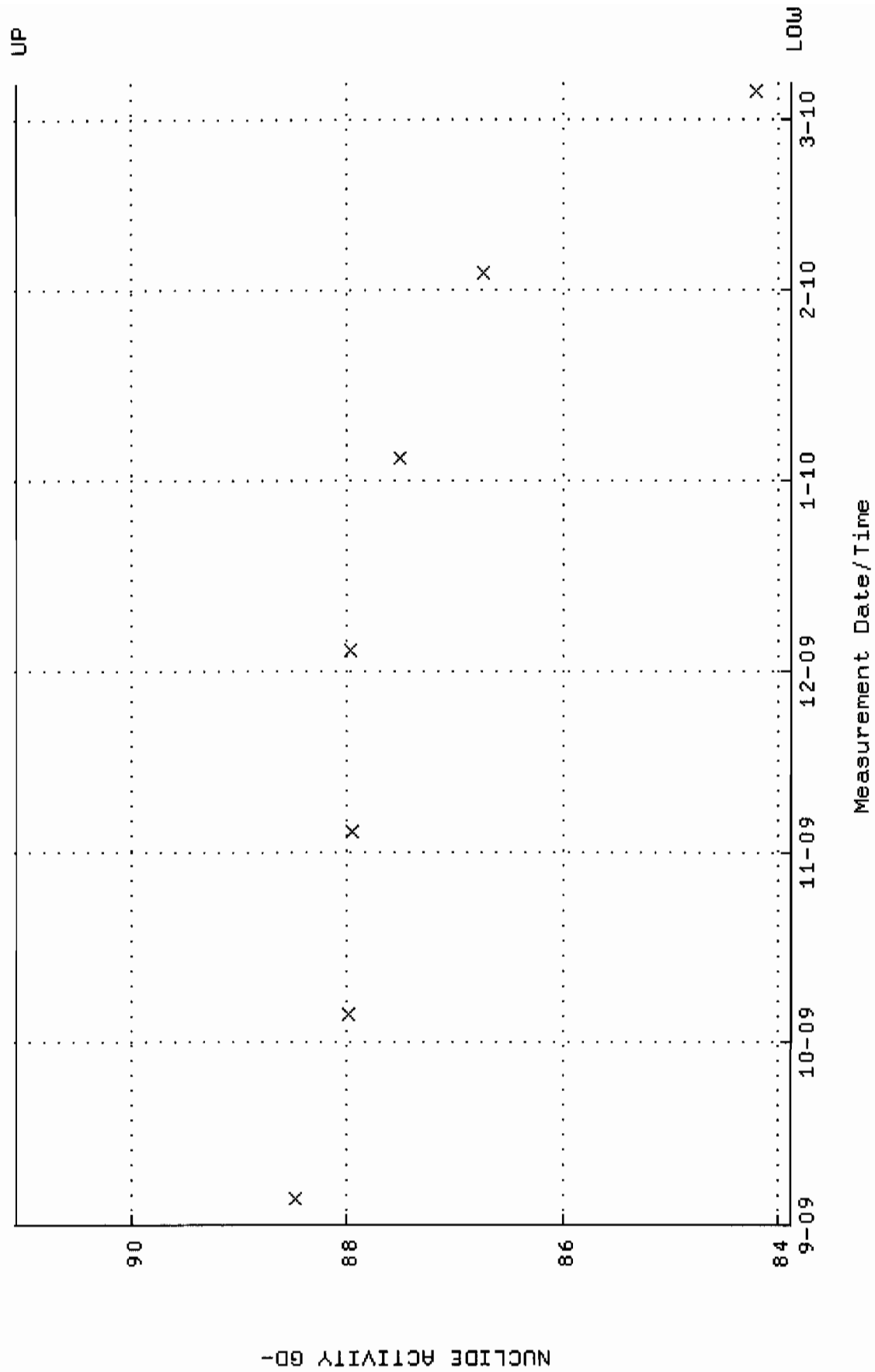
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W044.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 5-SEP-2009 09:03:12 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.335013 through 0.362525



QA filename : DKA100:[ENV_ALPHA.QA.W]W044.QAF;5
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:12 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.8858 through 91.0588

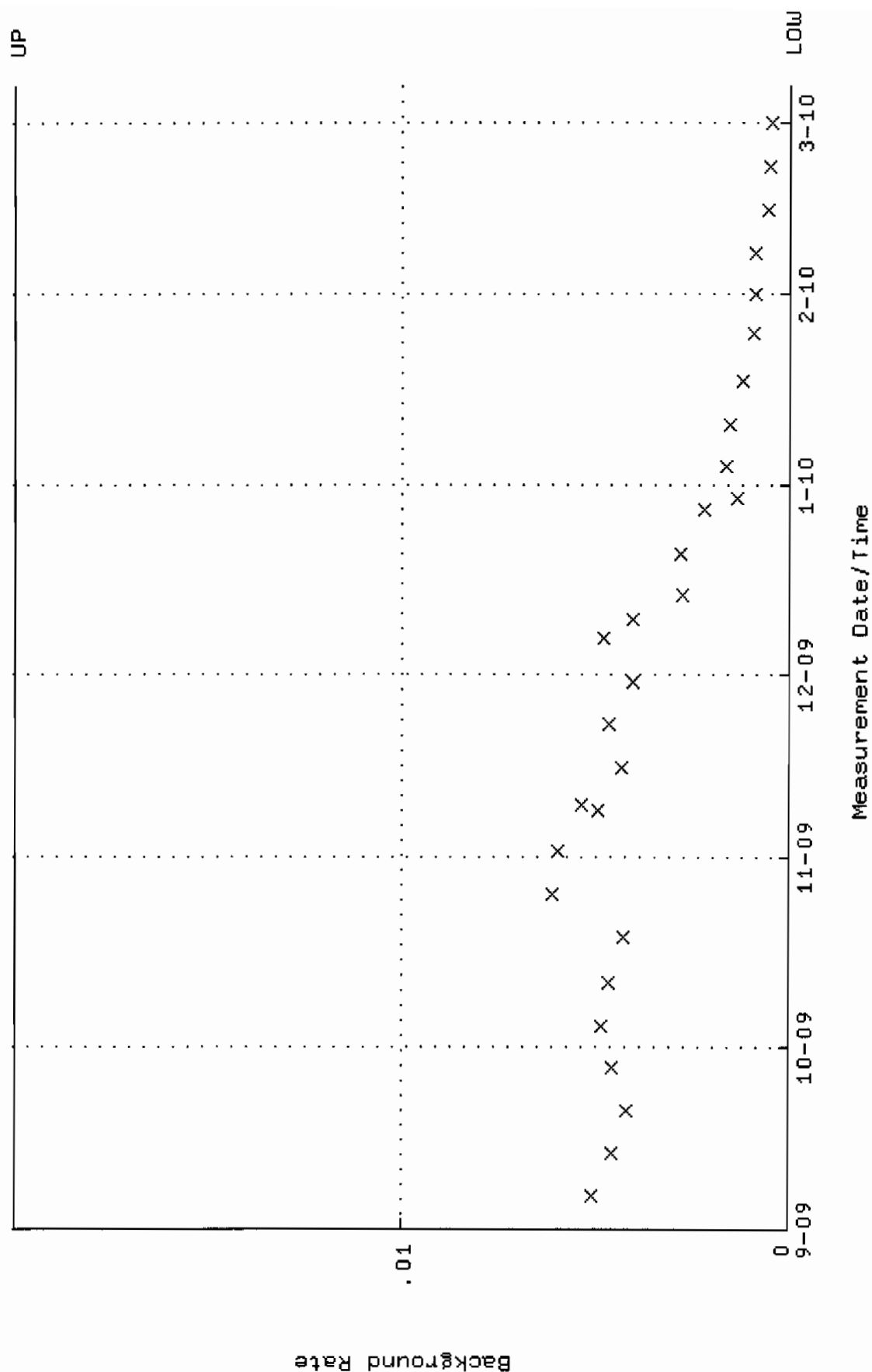


QA filename : DKA100:[ENV_ALPHA.QA.B]B044.QAF;2

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 14:27:06 through 6-MAR-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

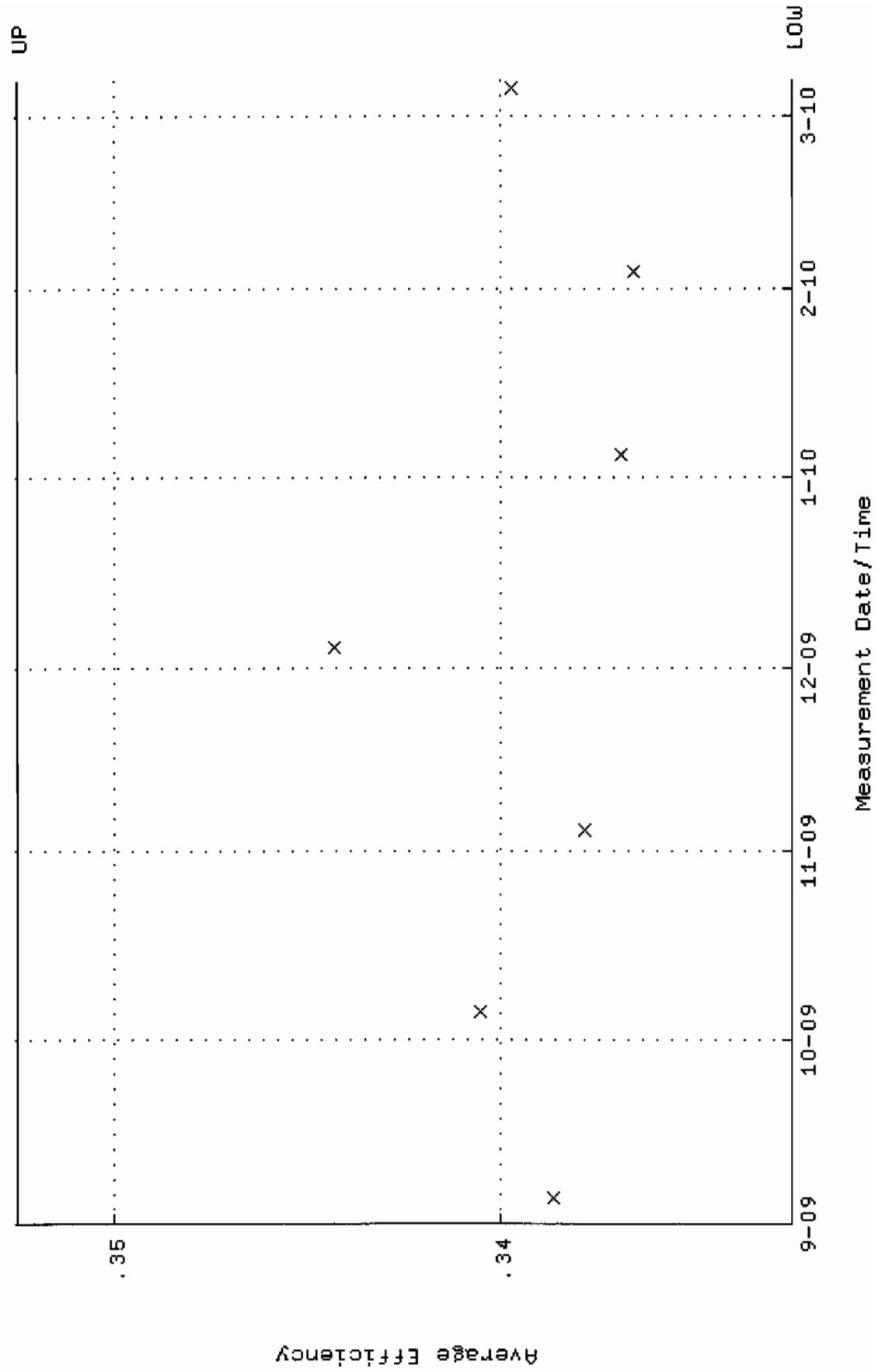


QA filename : DKA100:[ENV_ALPHA.QA.W]W045.QAF;5

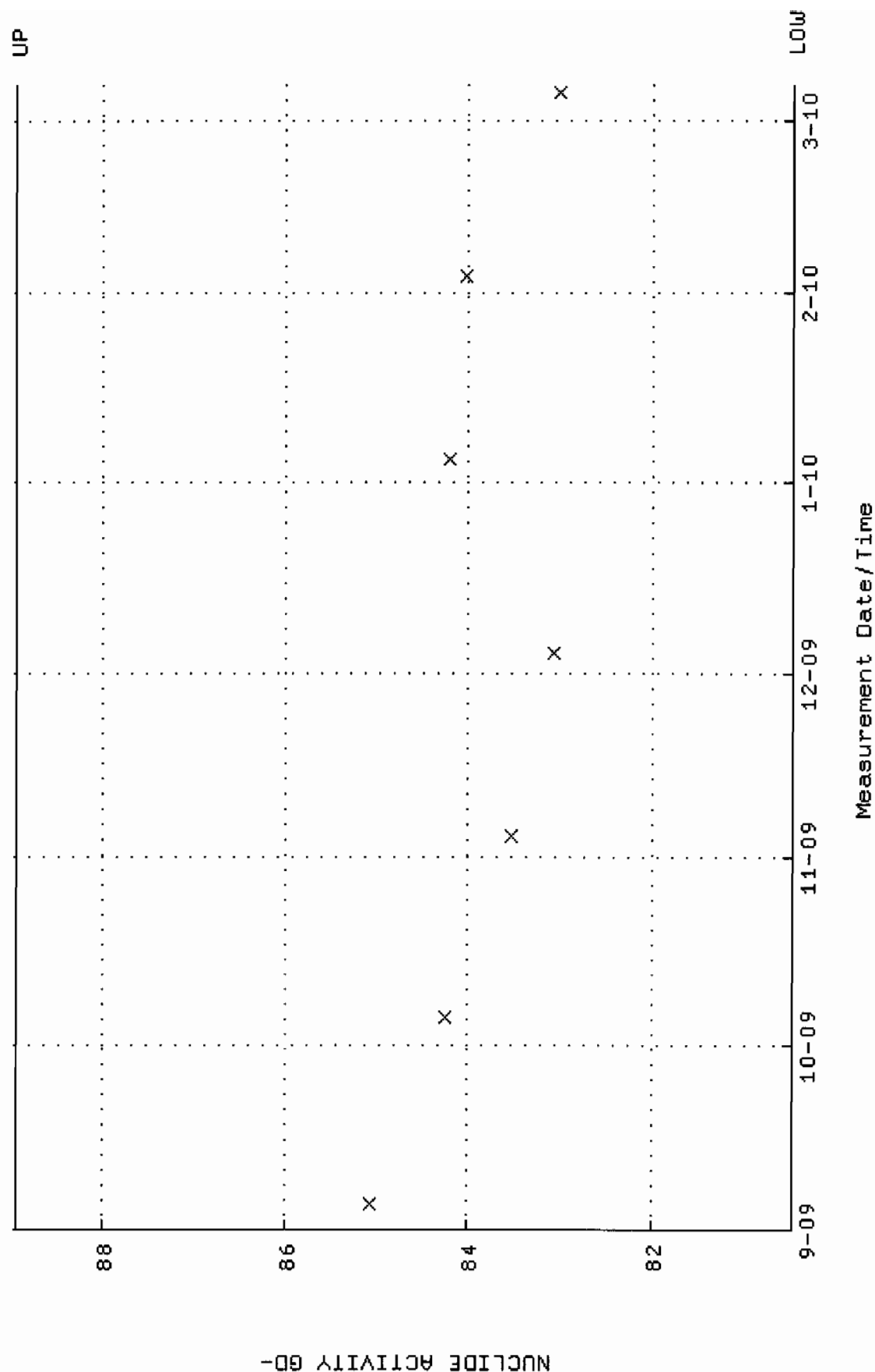
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 5-SEP-2009 09:03:12 through 6-MAR-2010 12:00:00

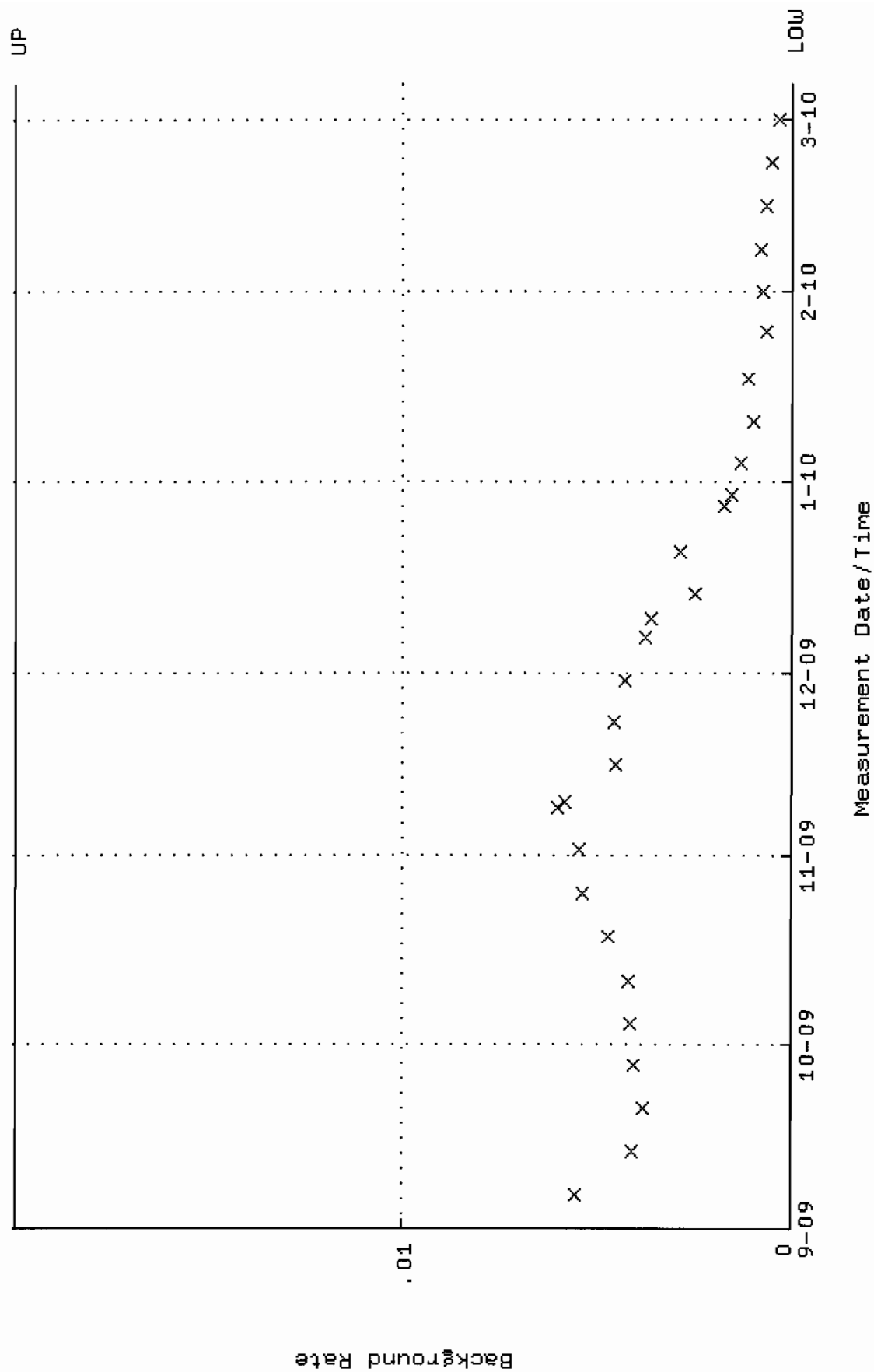
Lower/Upper Lmts: 0.332472 through 0.352472



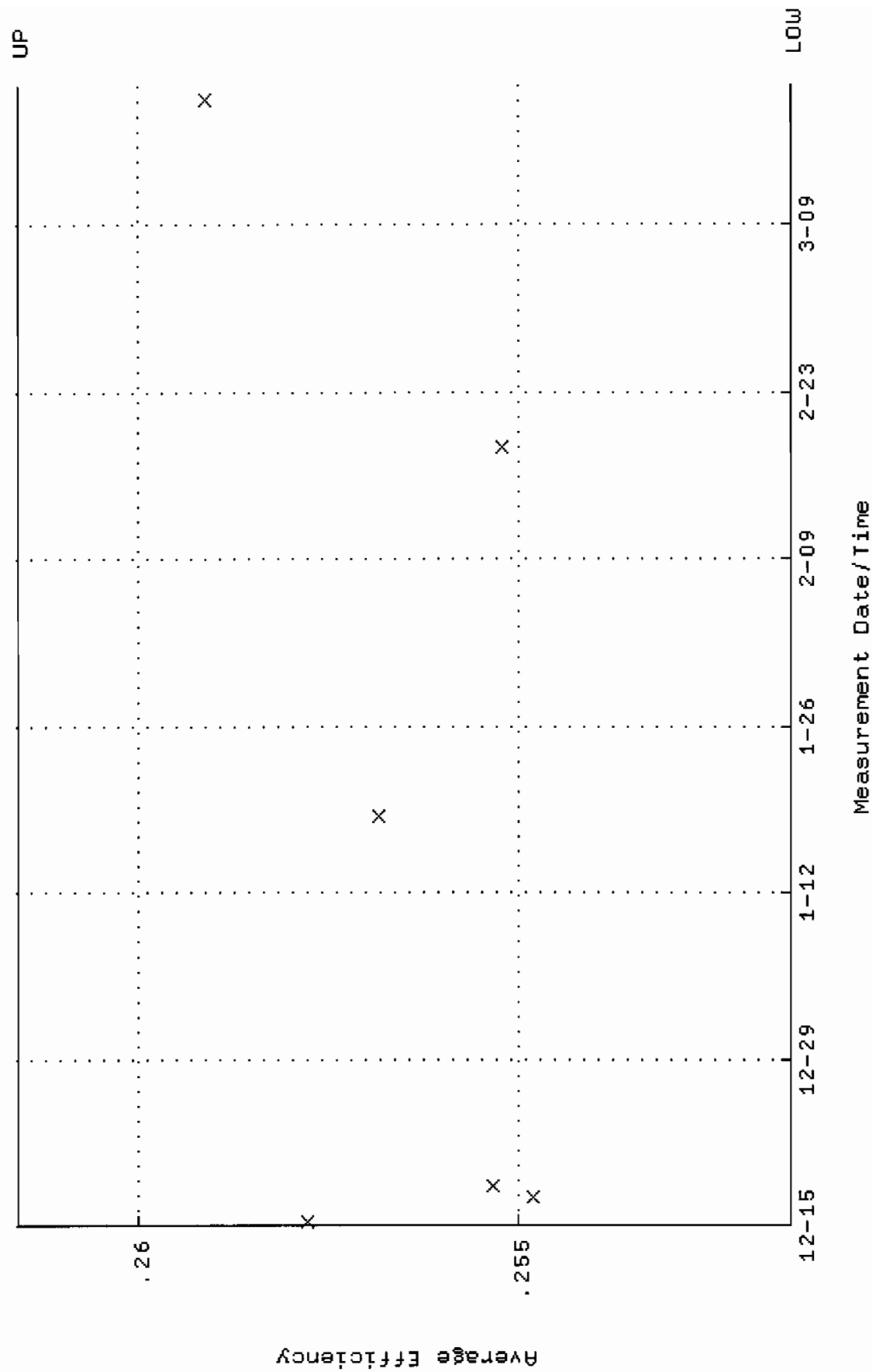
QA filename : DKA100:[ENV_ALPHA.QA.W]W045.QAF;5
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 5-SEP-2009 09:03:12 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 80.4622 through 88.9320



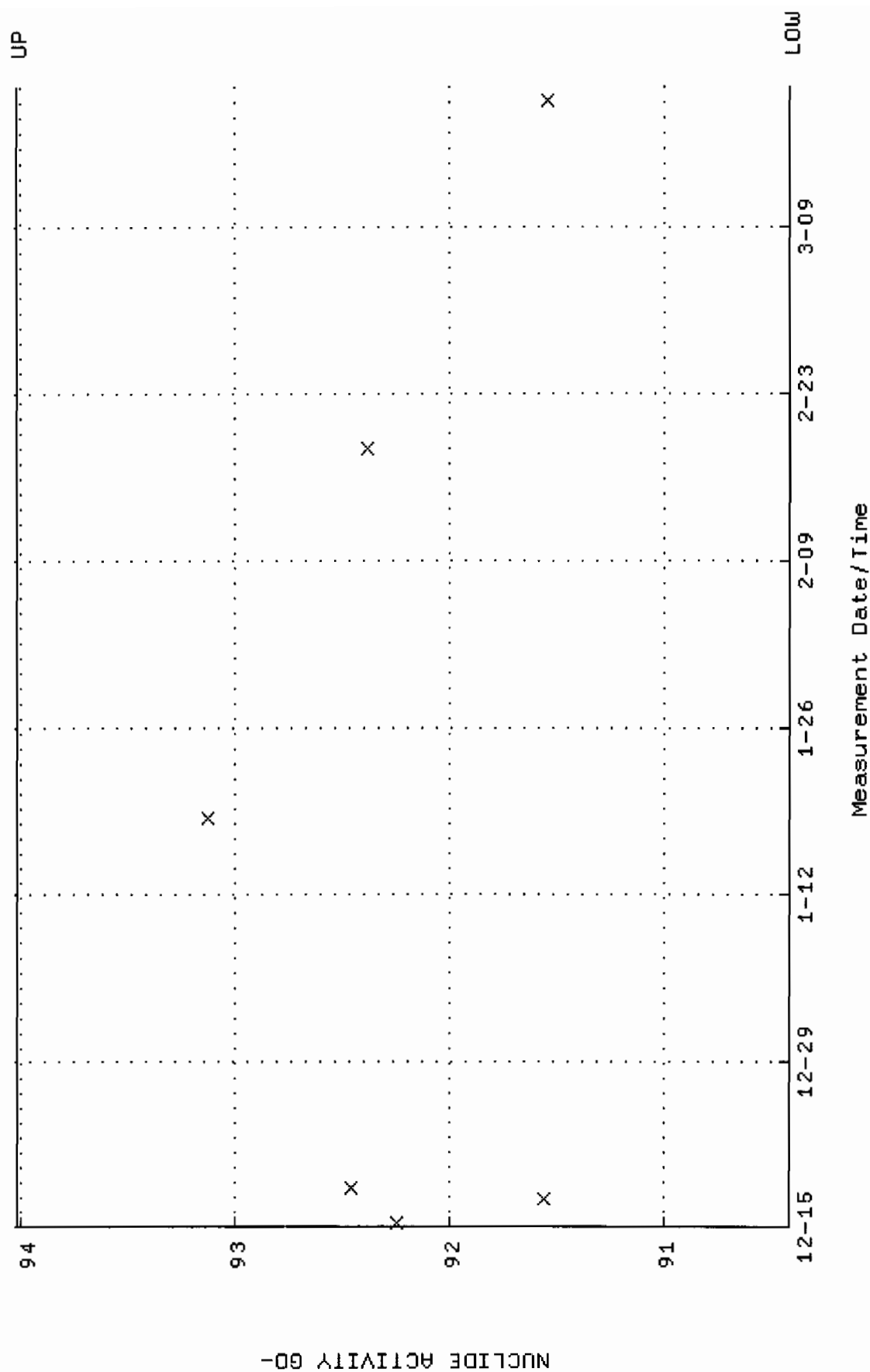
QA filename : DKA100:[ENV_ALPHA.QA.B]B045.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 14:27:06 through 6-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



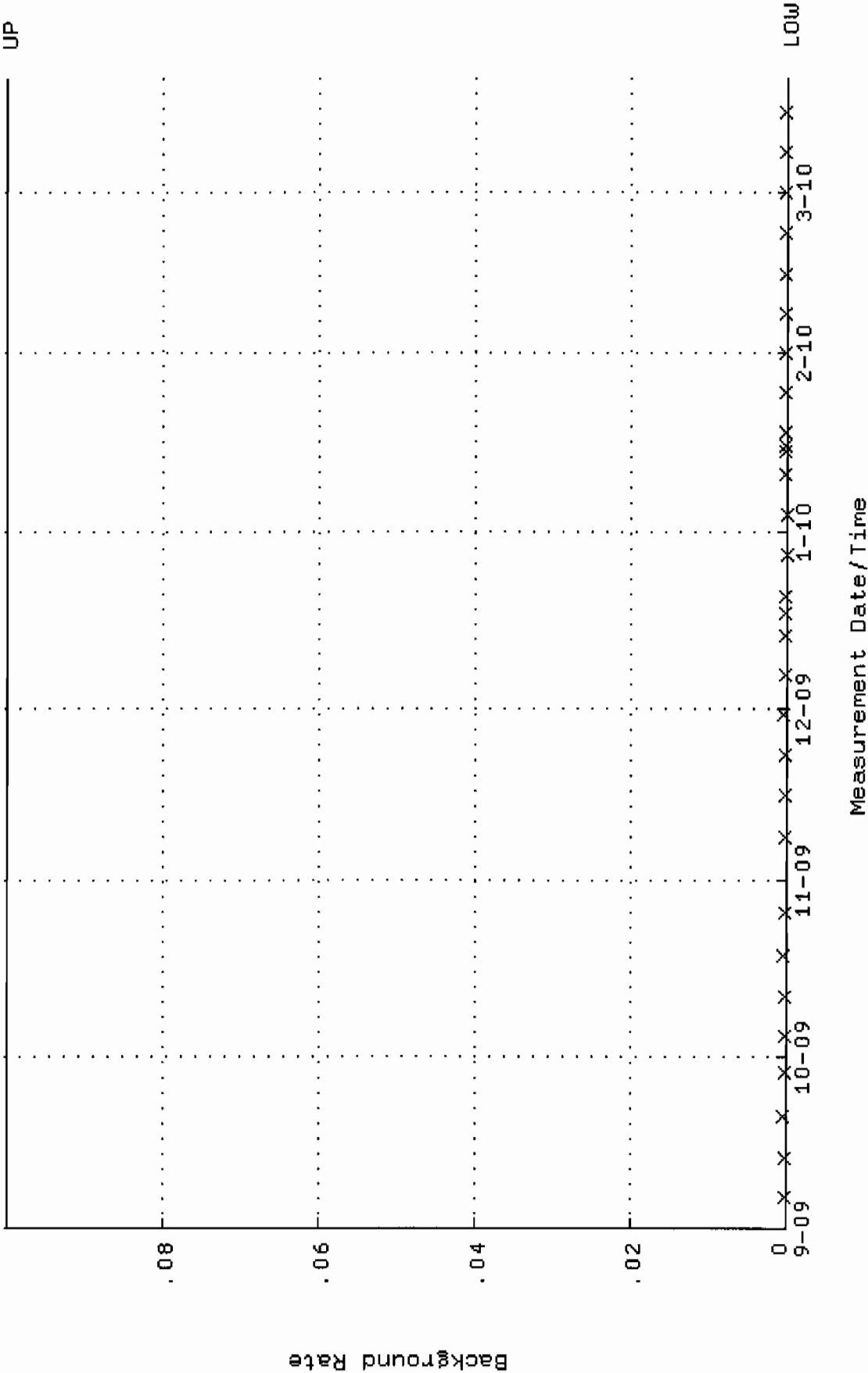
QA filename : DKA100:[ENV_ALPHA.QA.W]W119.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 06:21:52 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.251416 through 0.261570



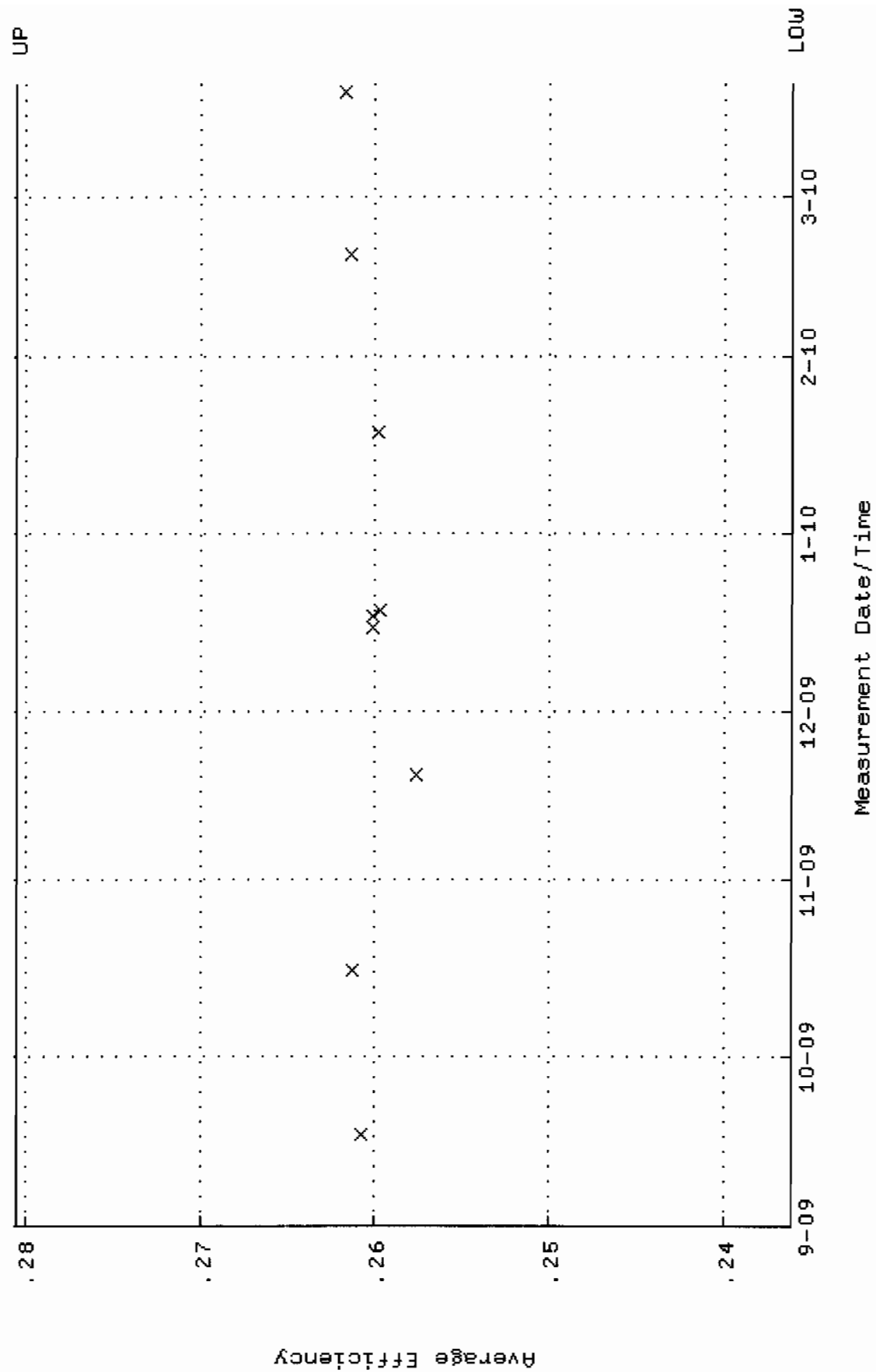
QA filename : DKA100:[ENV_ALPHA.QA.W]W119.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 06:21:52 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 90.4178 through 94.0134



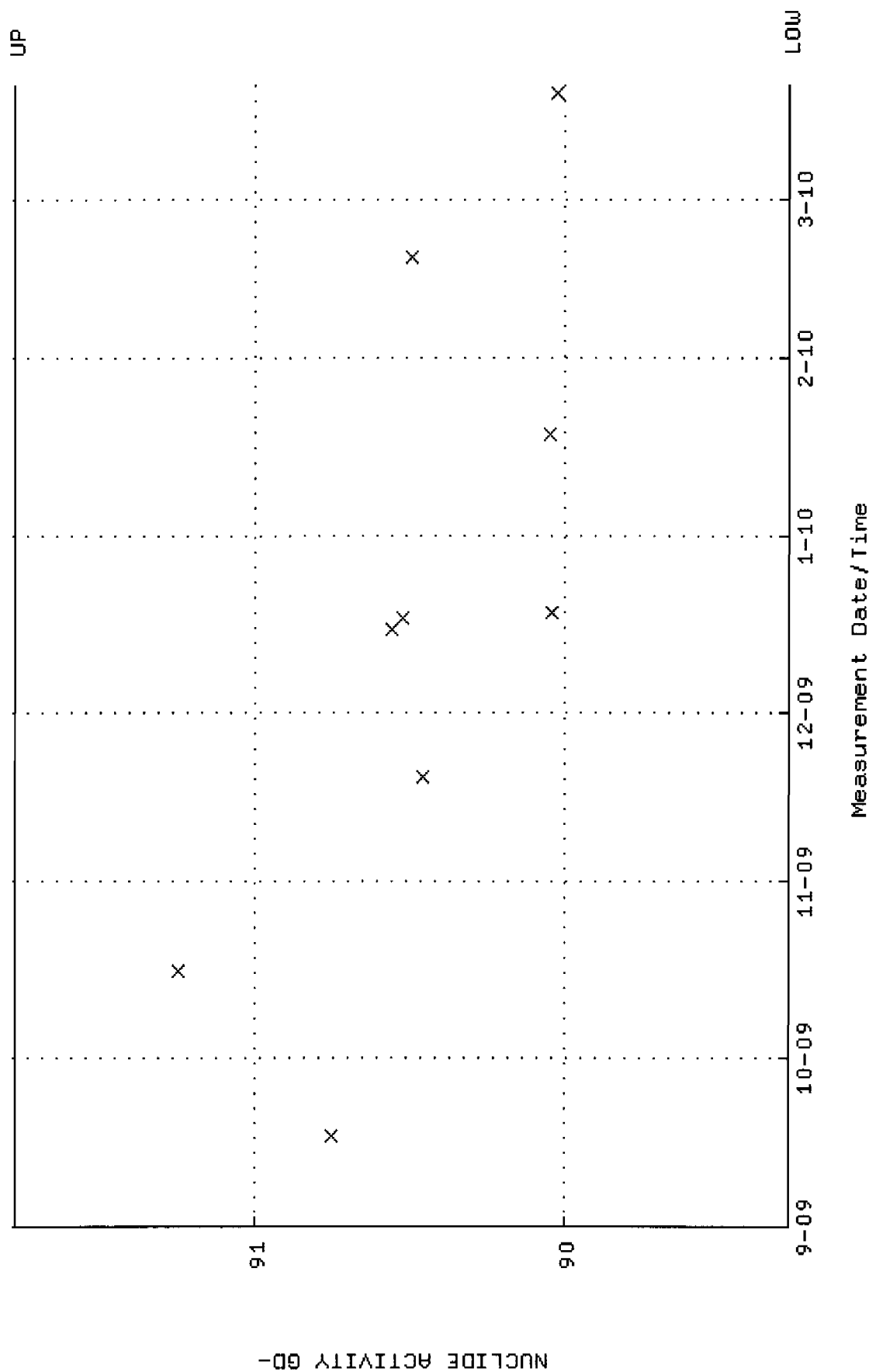
QA filename : DKA100:[ENV_ALPHA.QA.B]B119.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 6-SEP-2009 15:40:34 through 20-MAR-2010 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



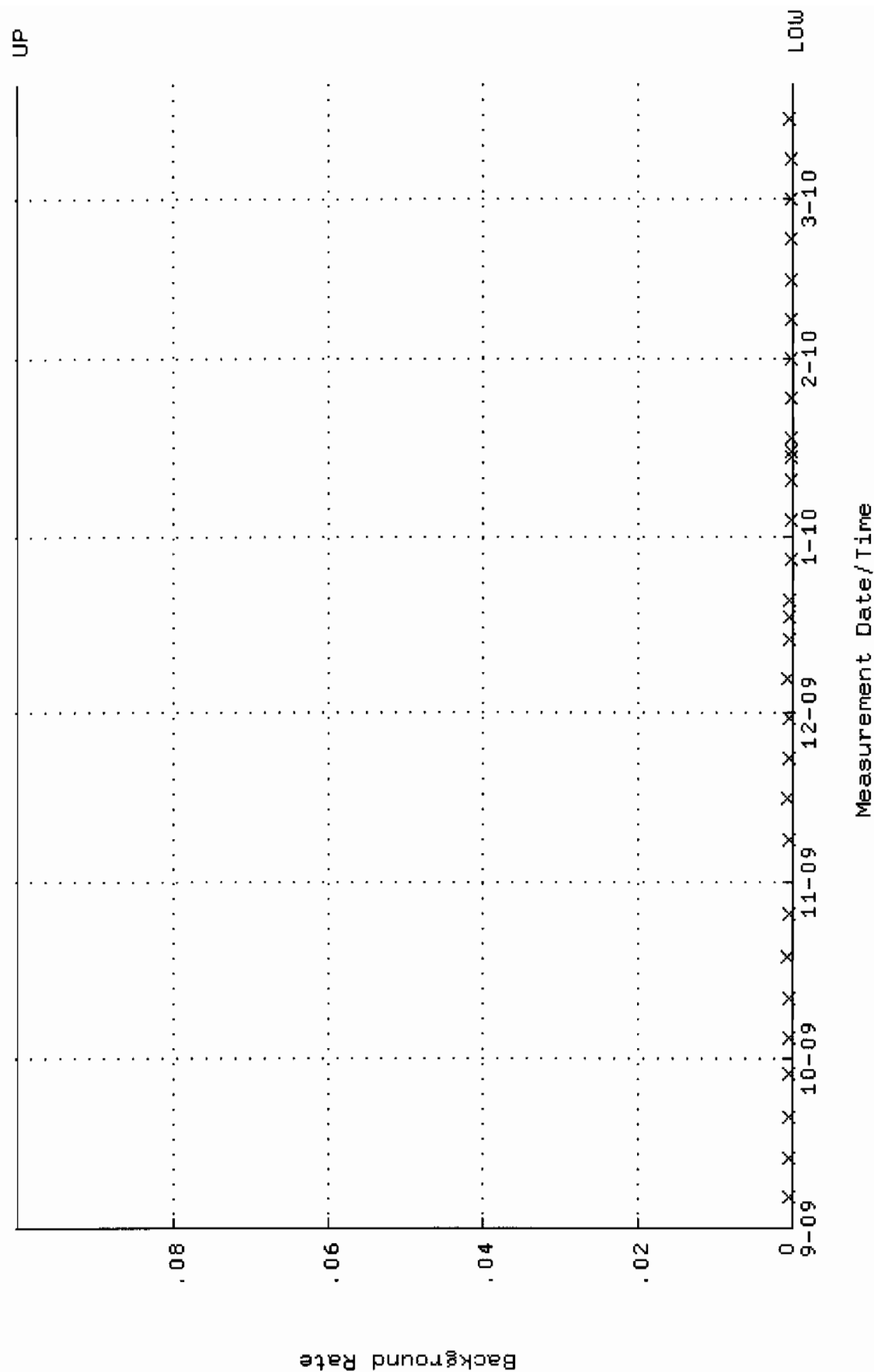
QA filename : DKA100:[ENV_ALPHA.QA.W]W120.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:19 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.236163 through 0.280493



QA filename : DKA100:[ENV-ALPHA.QA.W]W120.QAF;1
 Parameter Name : NLAIVITY-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

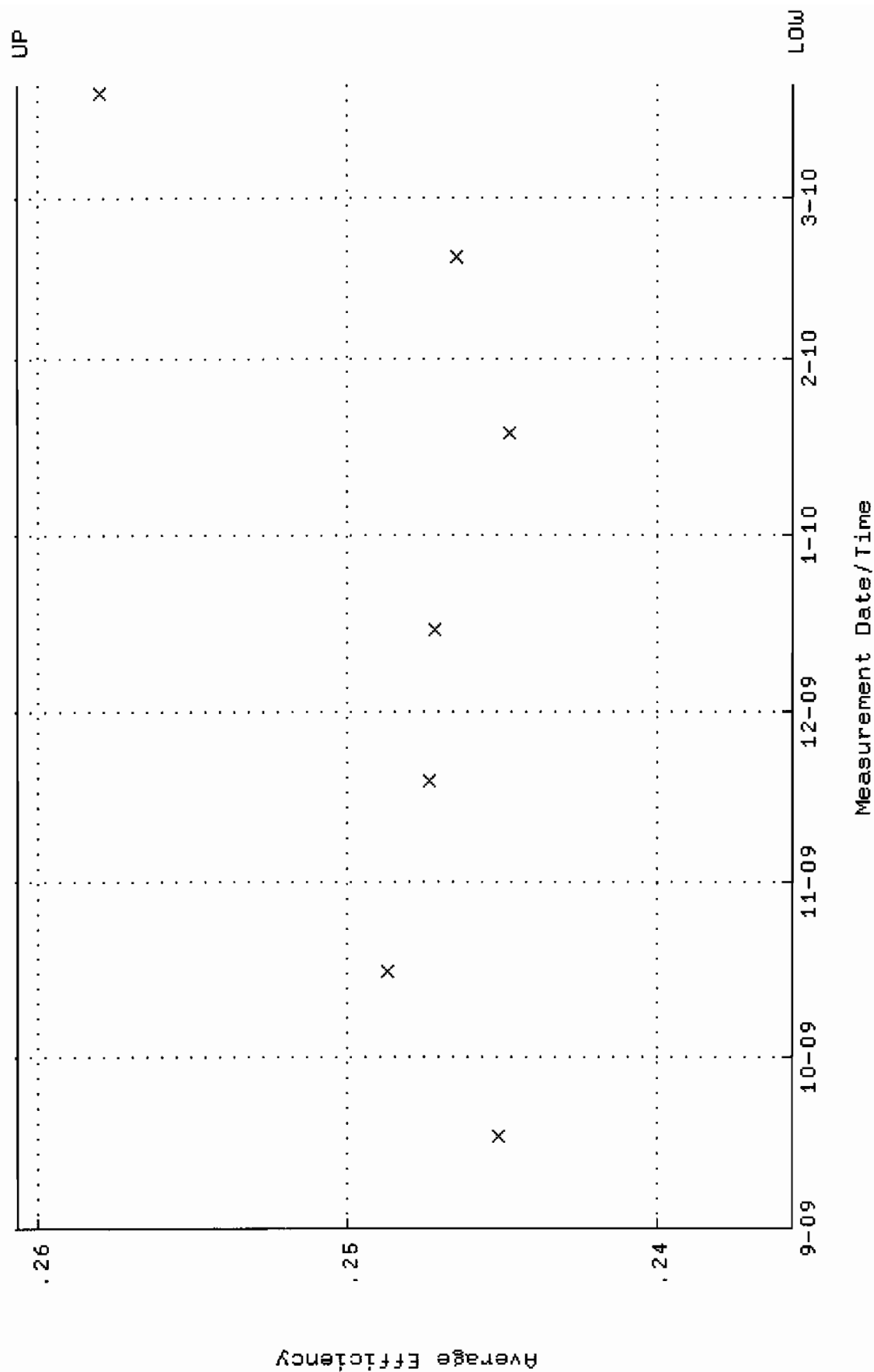


QA filename : DKA100:[ENV_ALPHA.QA.W]W121.QAF;1

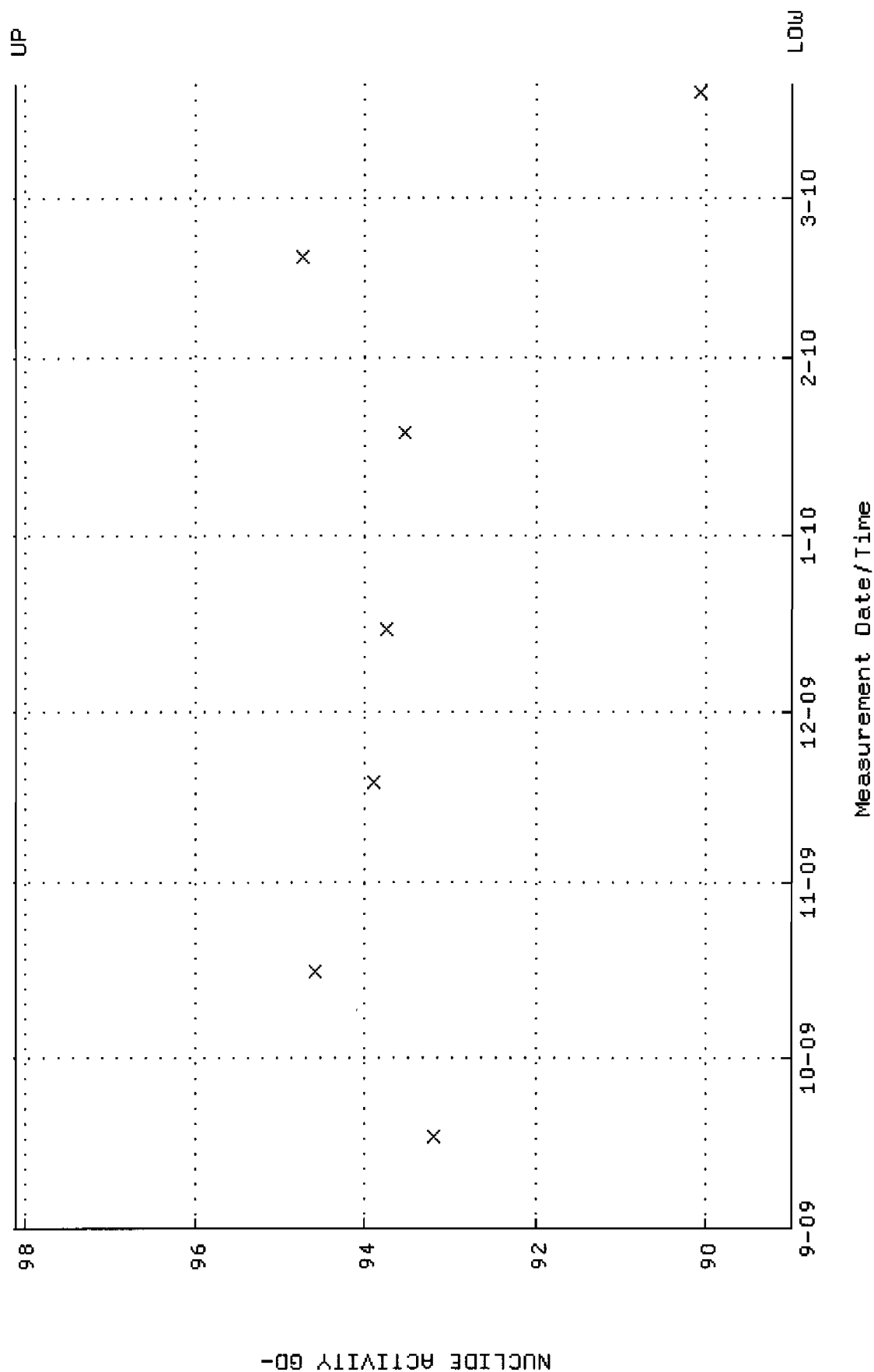
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-SEP-2009 07:23:26 through 20-MAR-2010 12:00:00

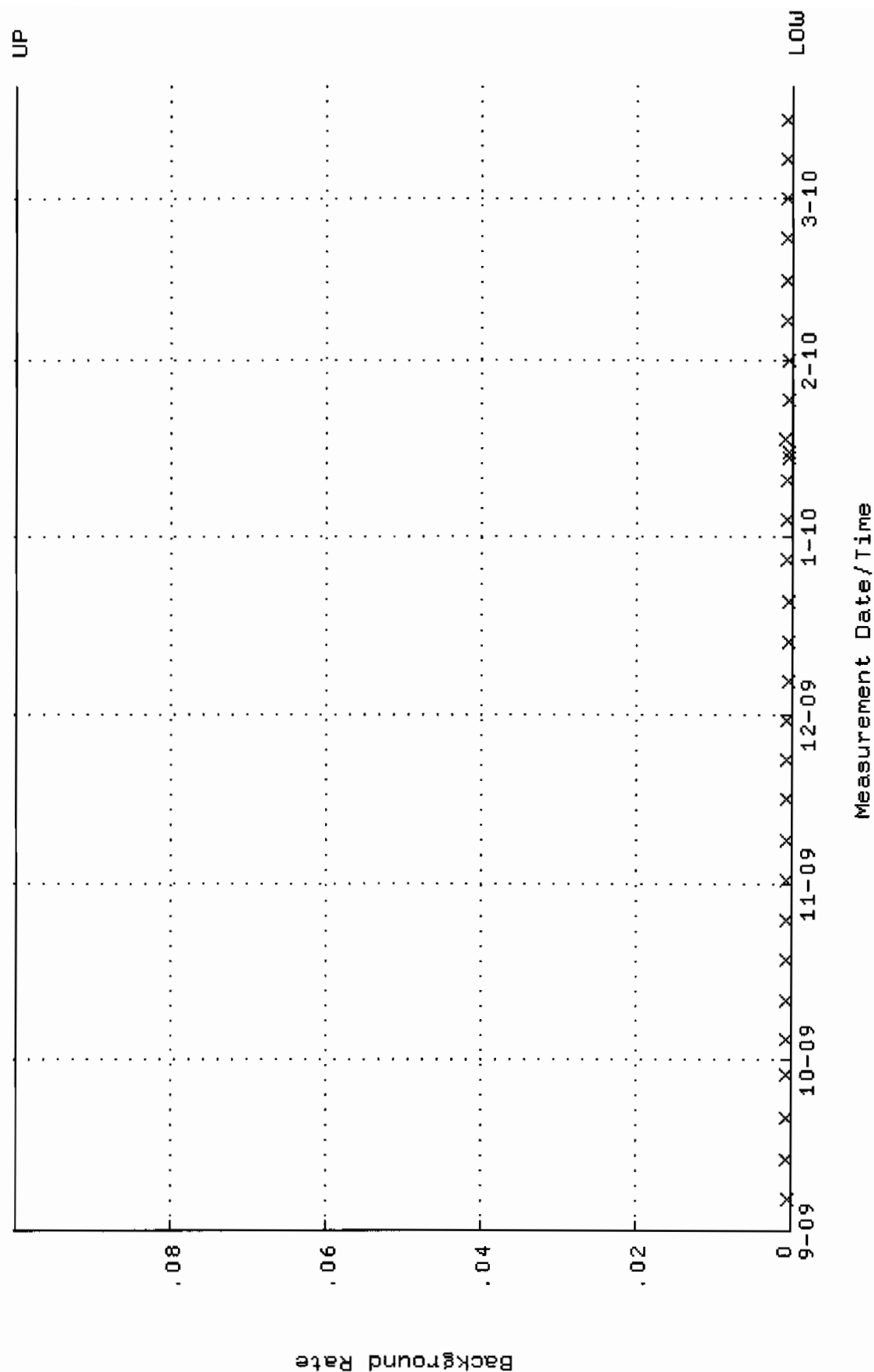
Lower/Upper Lmts: 0.235679 through 0.260639



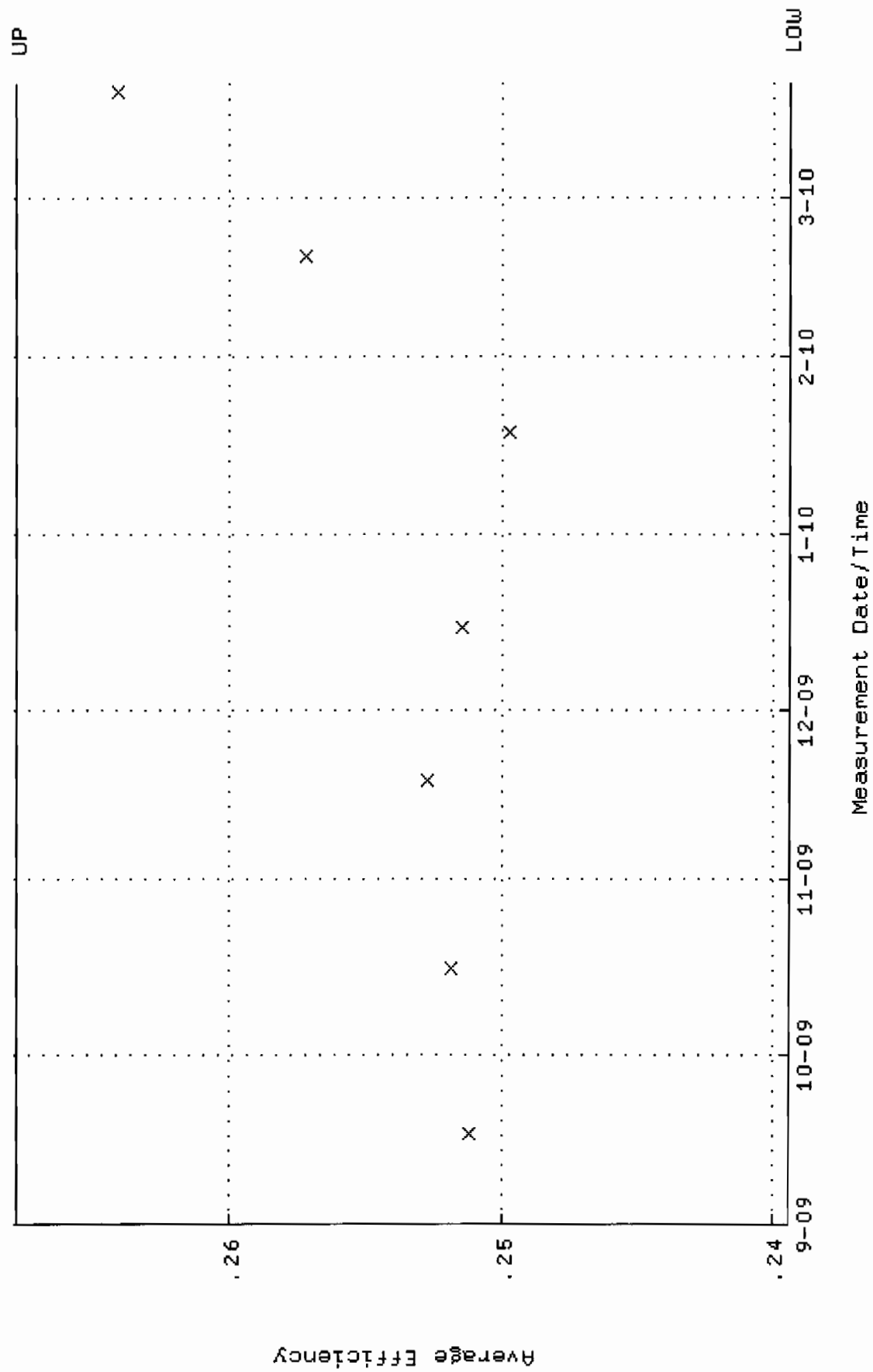
QA filename : DKA100:[ENV_ALPHA.QA.W]w121.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:26 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.9962 through 98.1012



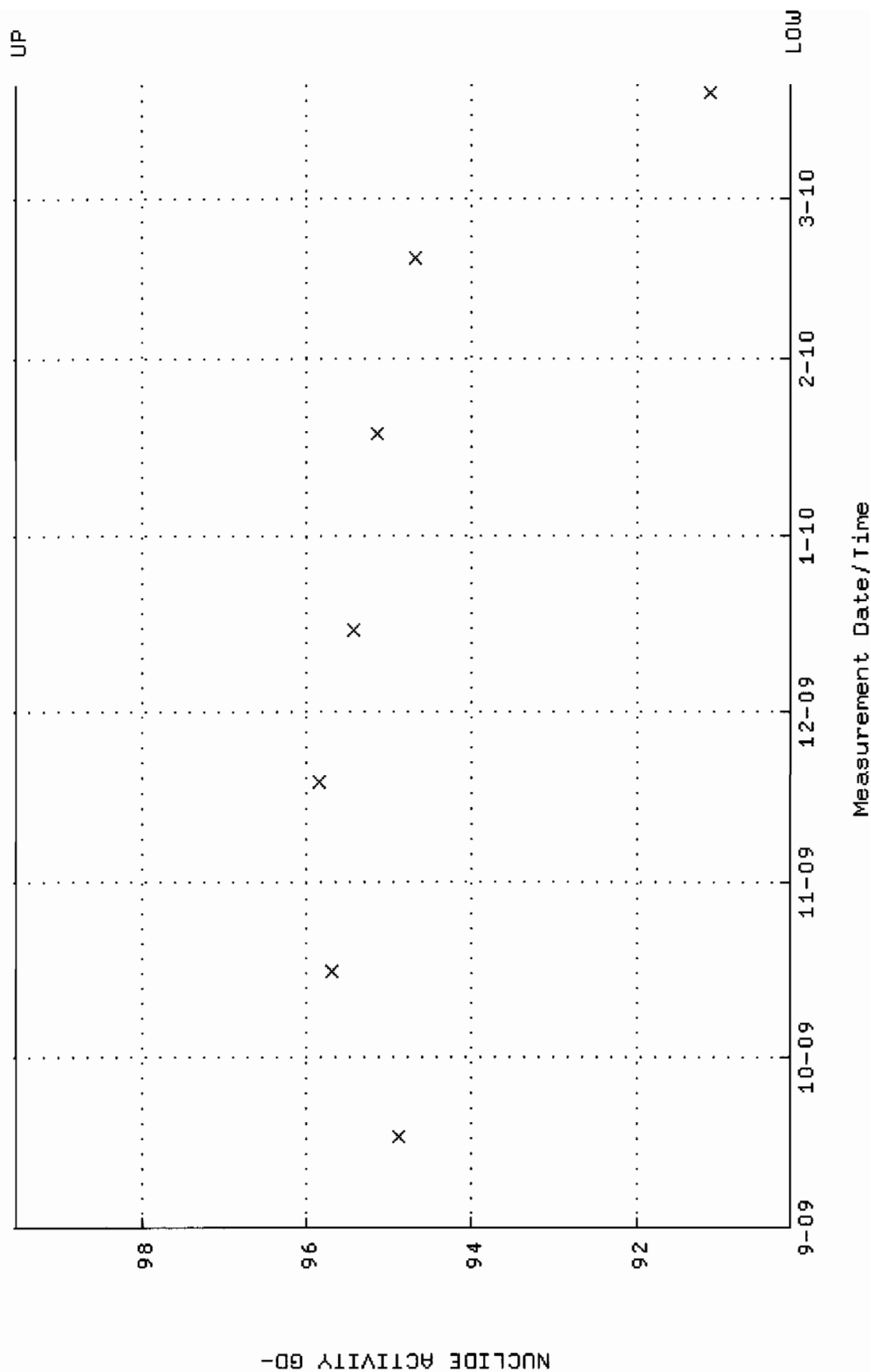
QA filename : DKA100:[ENV_ALPHA.QA.B]B121.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:43 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



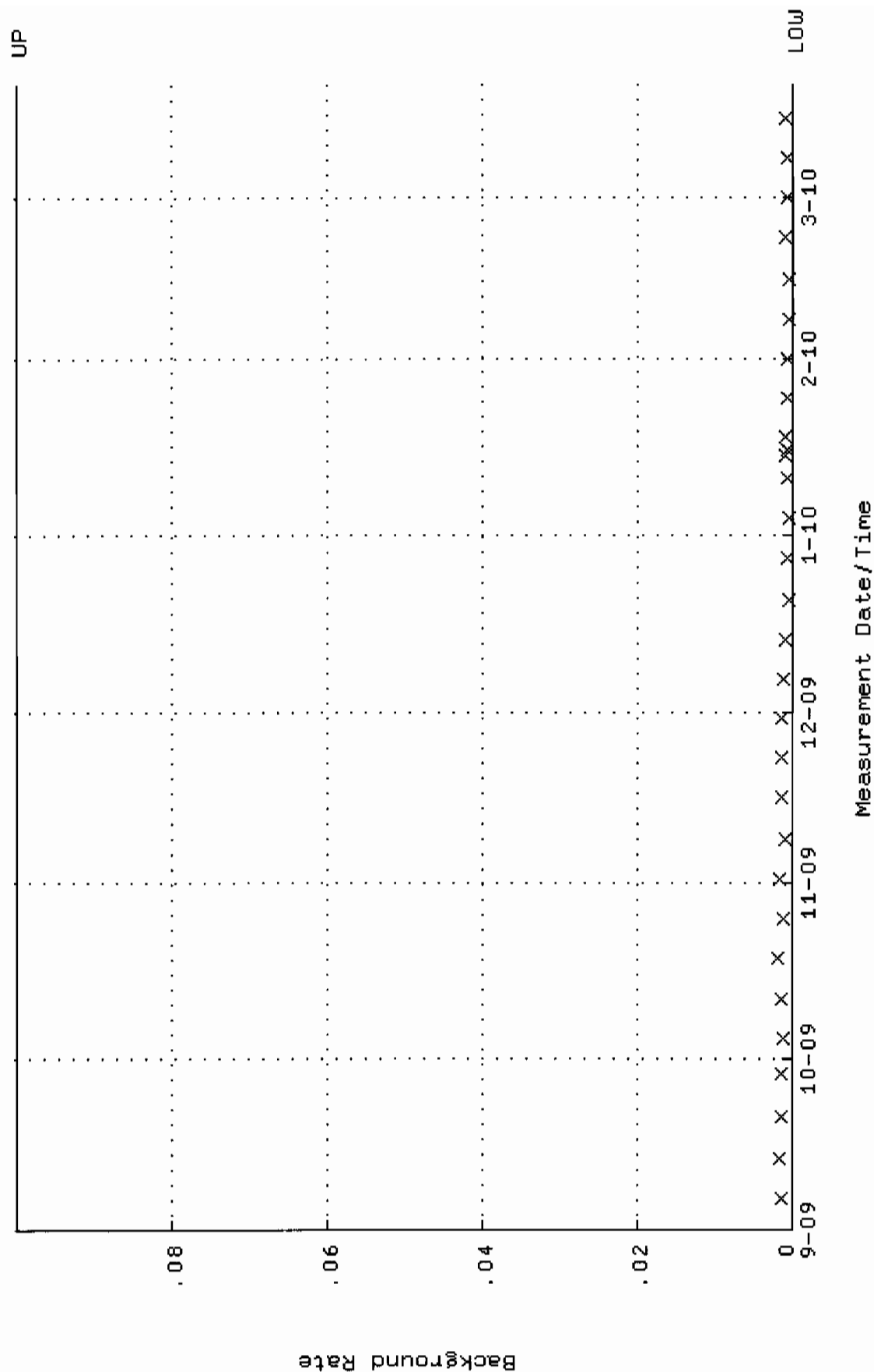
QA filename : DKA100:[ENV_ALPHA.QA.W]w122.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:33 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.239412 through 0.267828



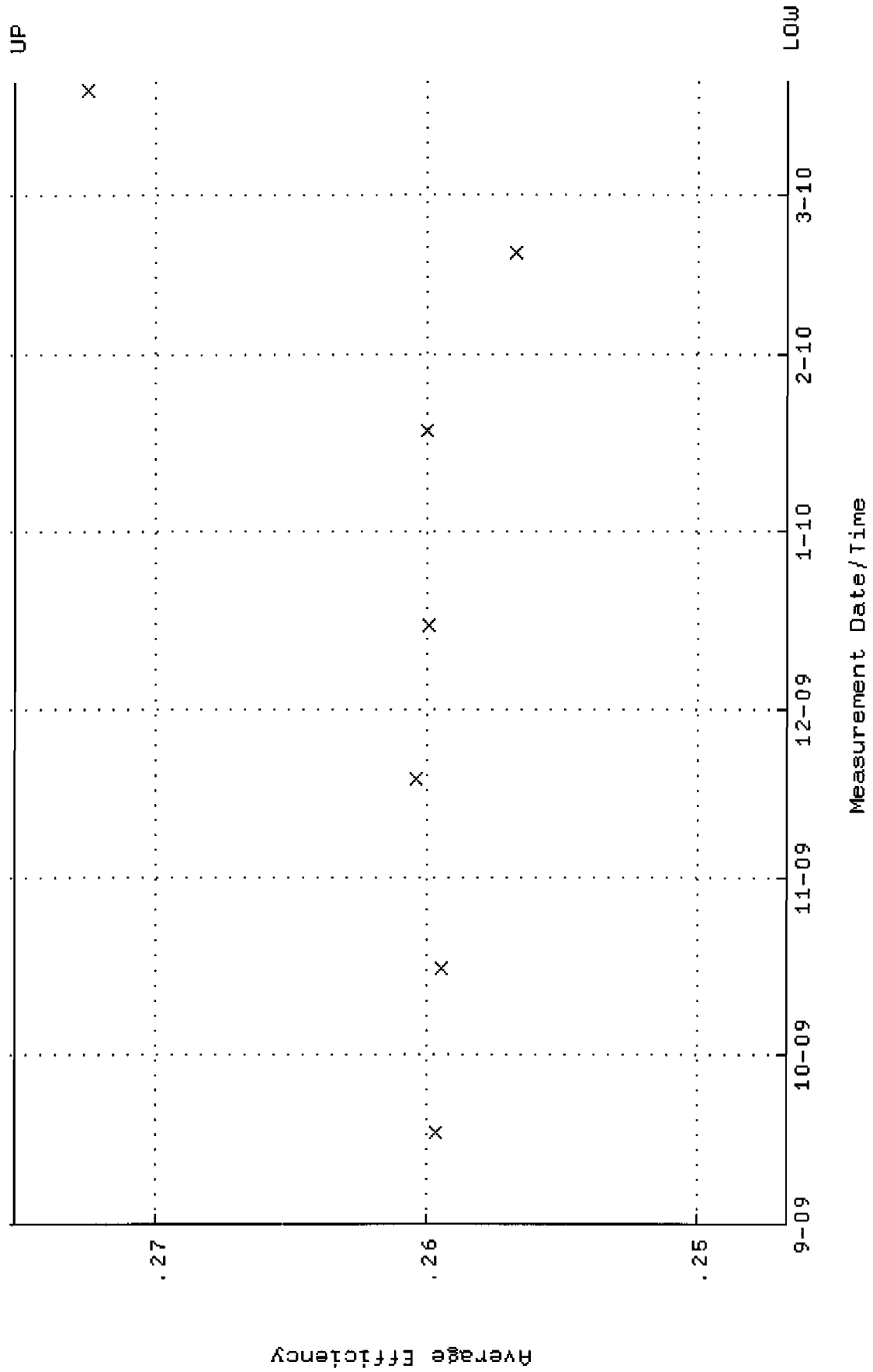
QA filename : DKA100:[ENV-ALPHA.QA.W]W122.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:33 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 90.1506 through 99.5122



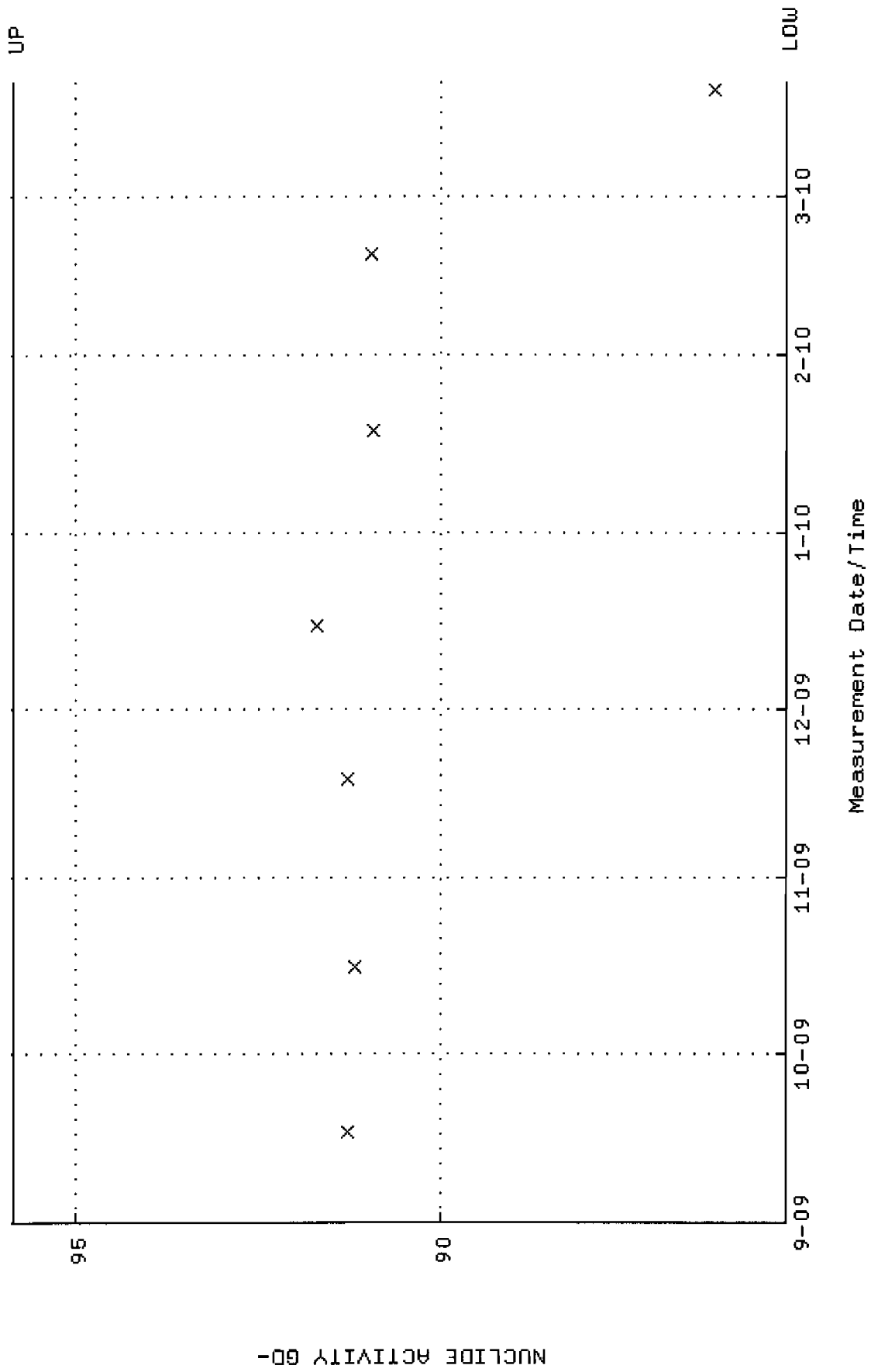
QA filename : DKA100:[ENV_ALPHA.QA.B]B122.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:48 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



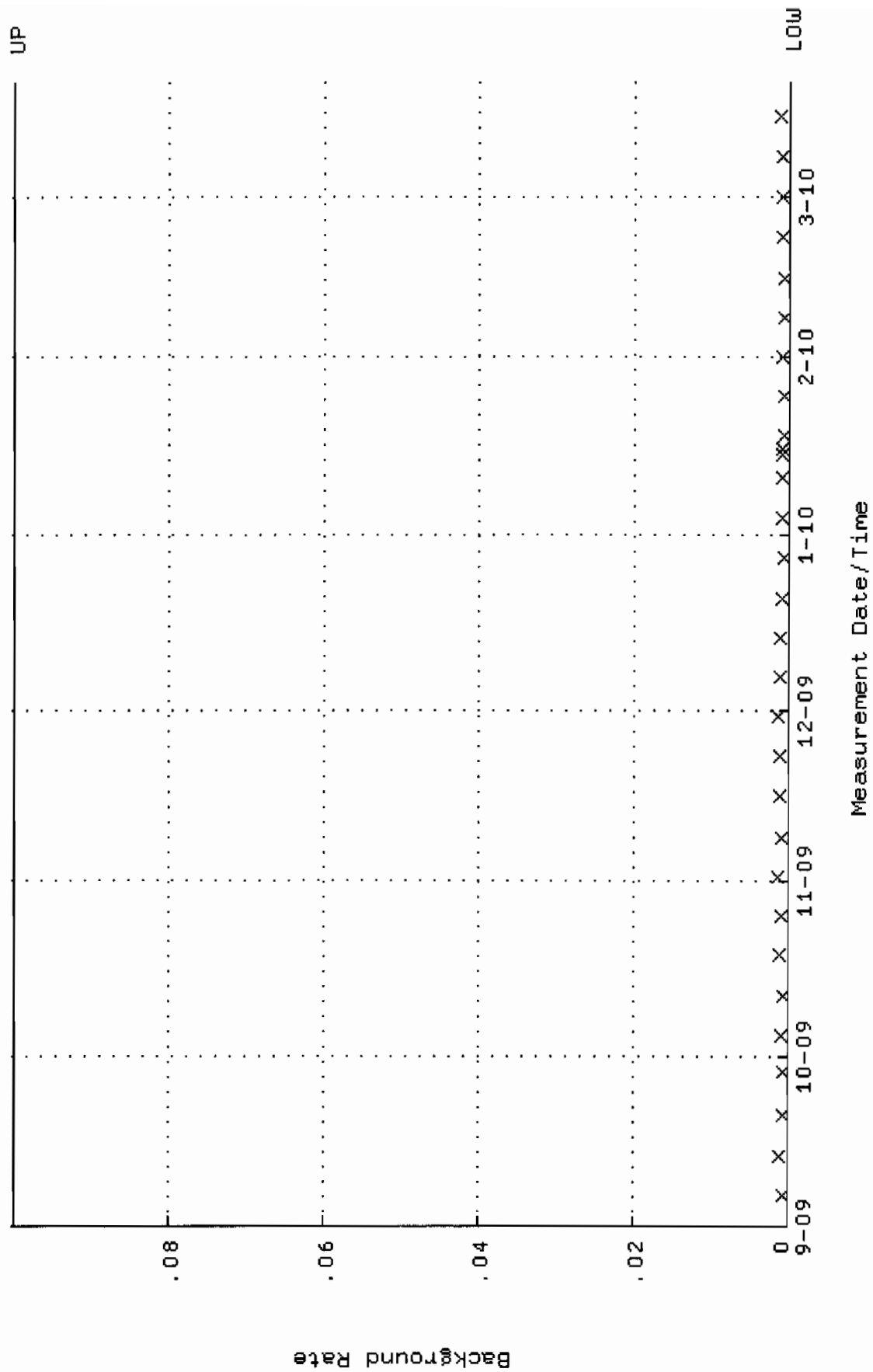
QA filename : DKA100:[ENV_ALPHA.QA.W]W123.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:40 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.246718 through 0.275204



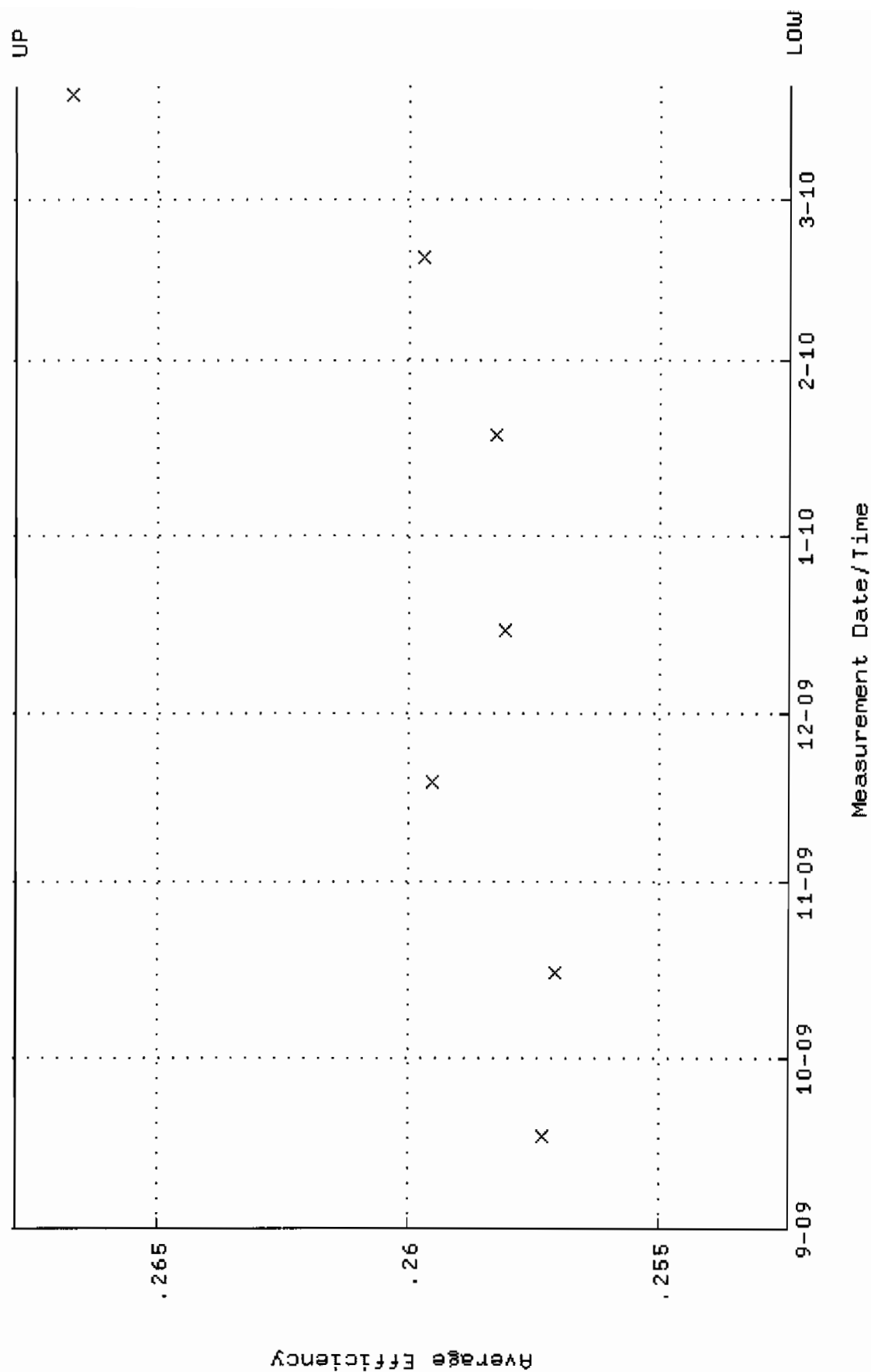
QA filename : DKA100:[ENV_ALPHA.QA.W]W123.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:40 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.2791 through 95.8339



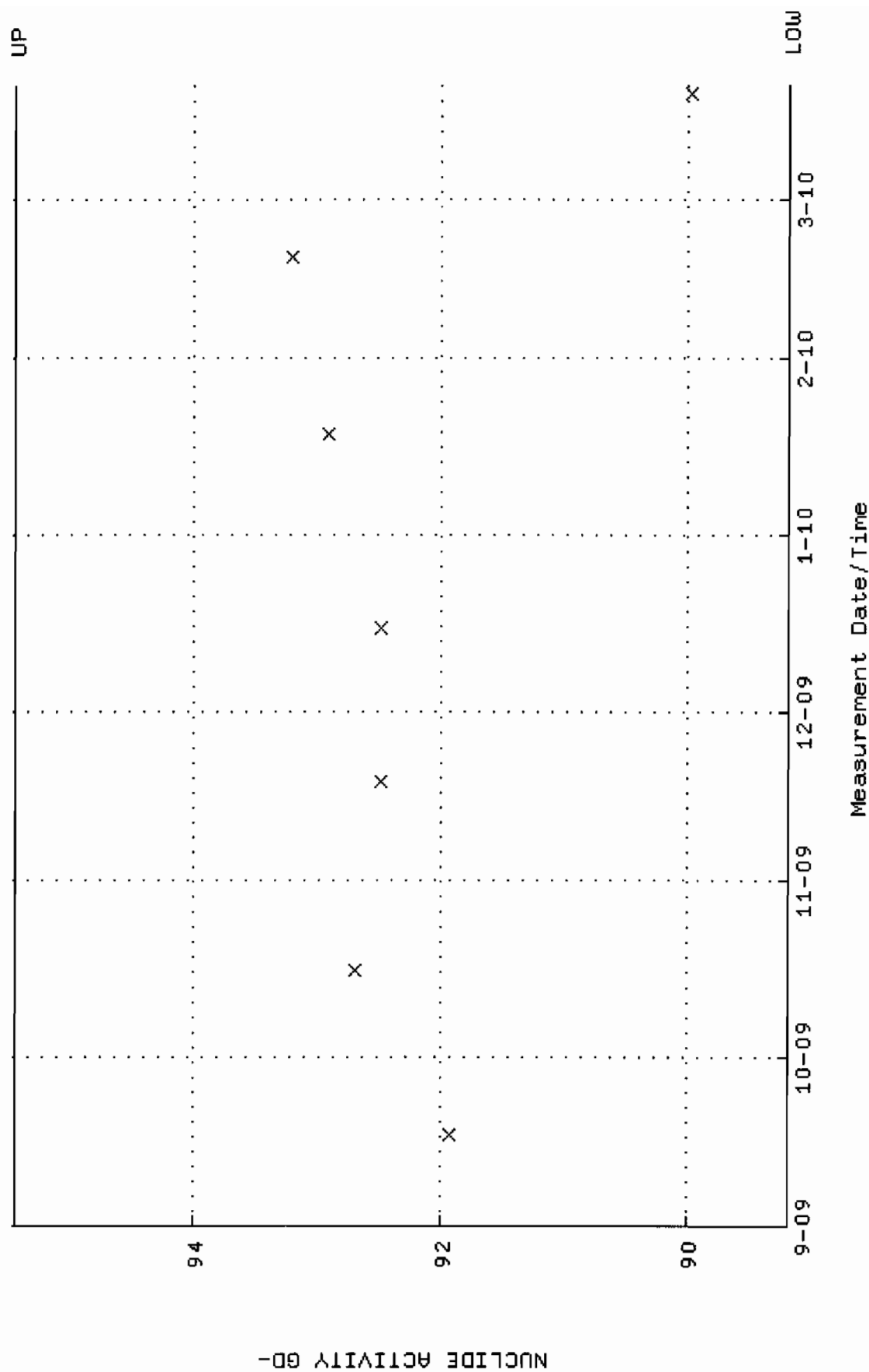
QA filename : DKA100:[ENV_ALPHA.QA.B]B123.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:52 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



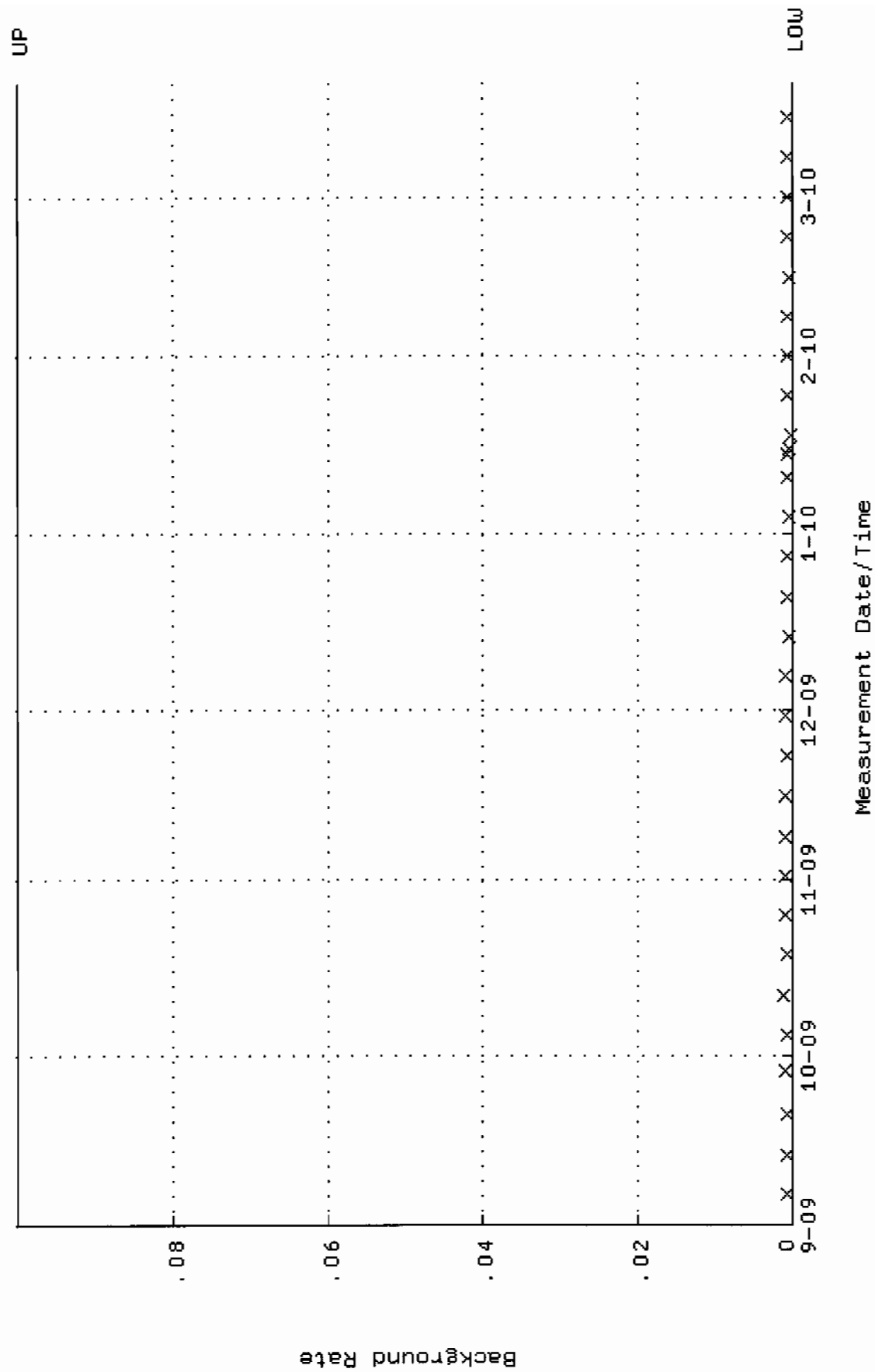
QA filename : DKA100:[ENV-ALPHA.QA.W]W124.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:47 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.252448 through 0.267830



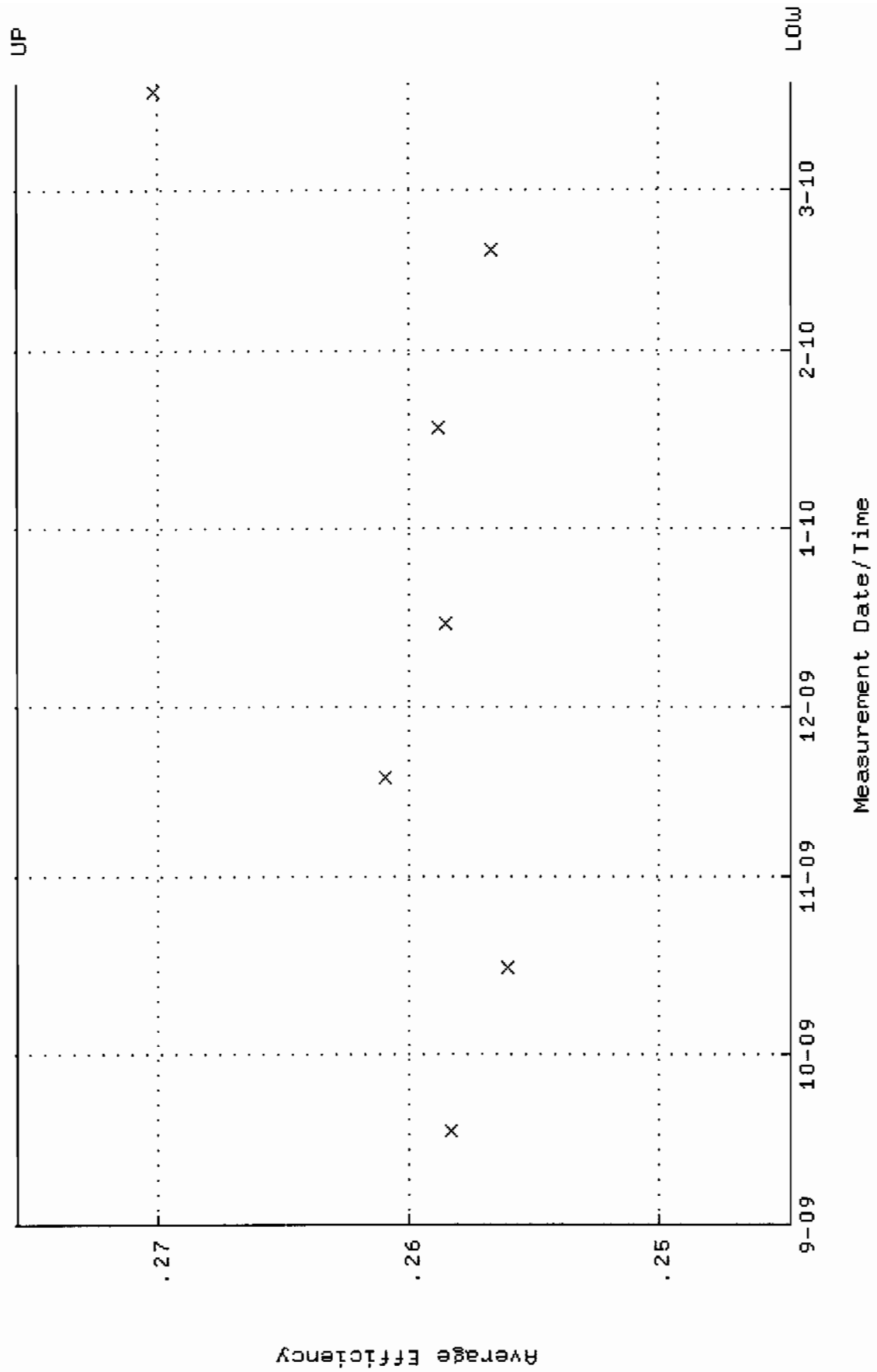
QA filename : DKA100:[ENV_ALPHA.QA.W]W124.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:47 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 89.1805 through 95.4483



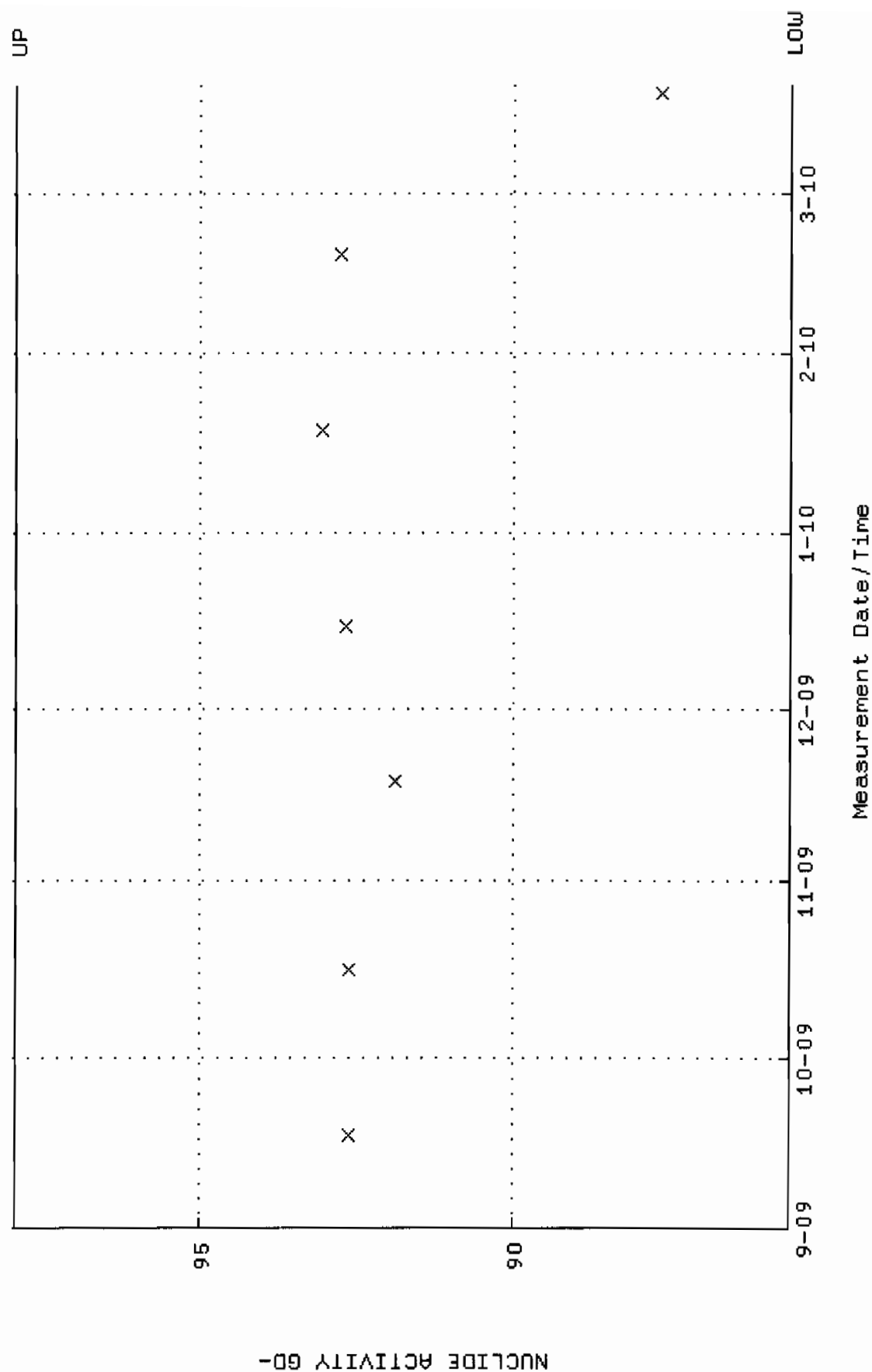
QA filename : DKA100:[ENV_ALPHA.QA.B]B124.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:40:56 through 20-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



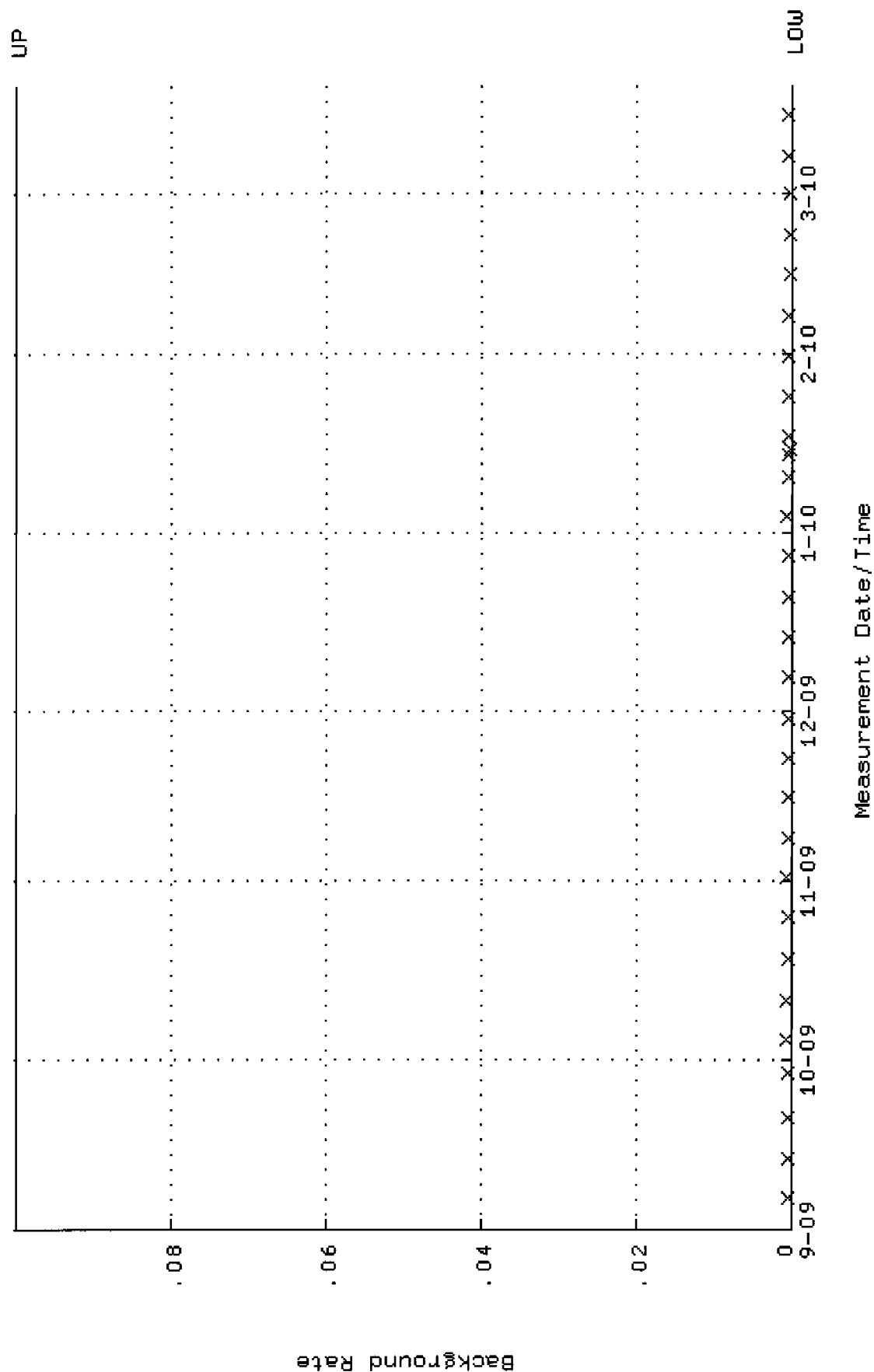
QA filename : DKA100:[ENV_ALPHA.QA.W]W125.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:23:54 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.244676 through 0.275622



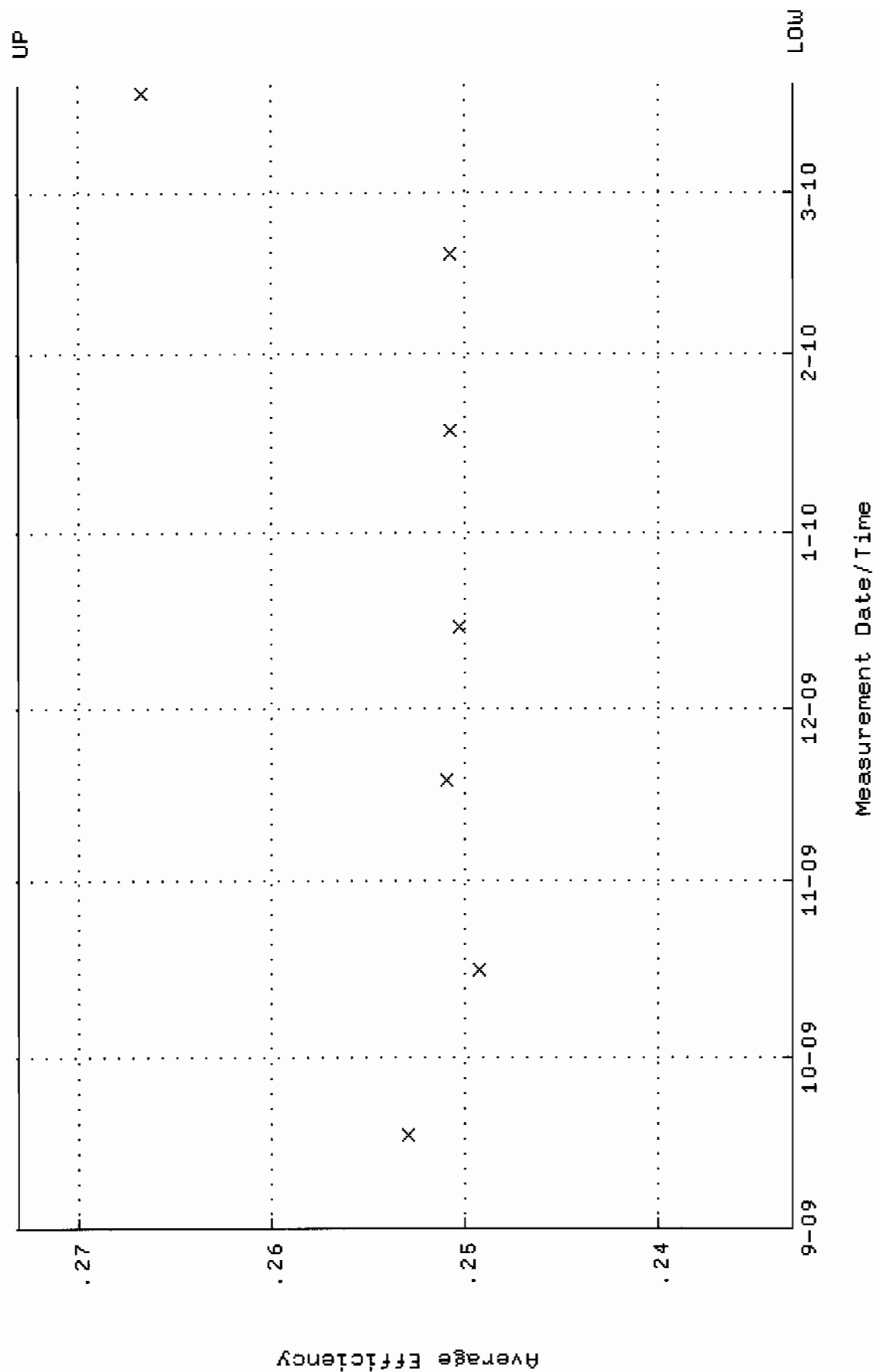
QA filename : DKA100:[ENV_ALPHA.QA.W]W125.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:23:54 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.5532 through 97.9632



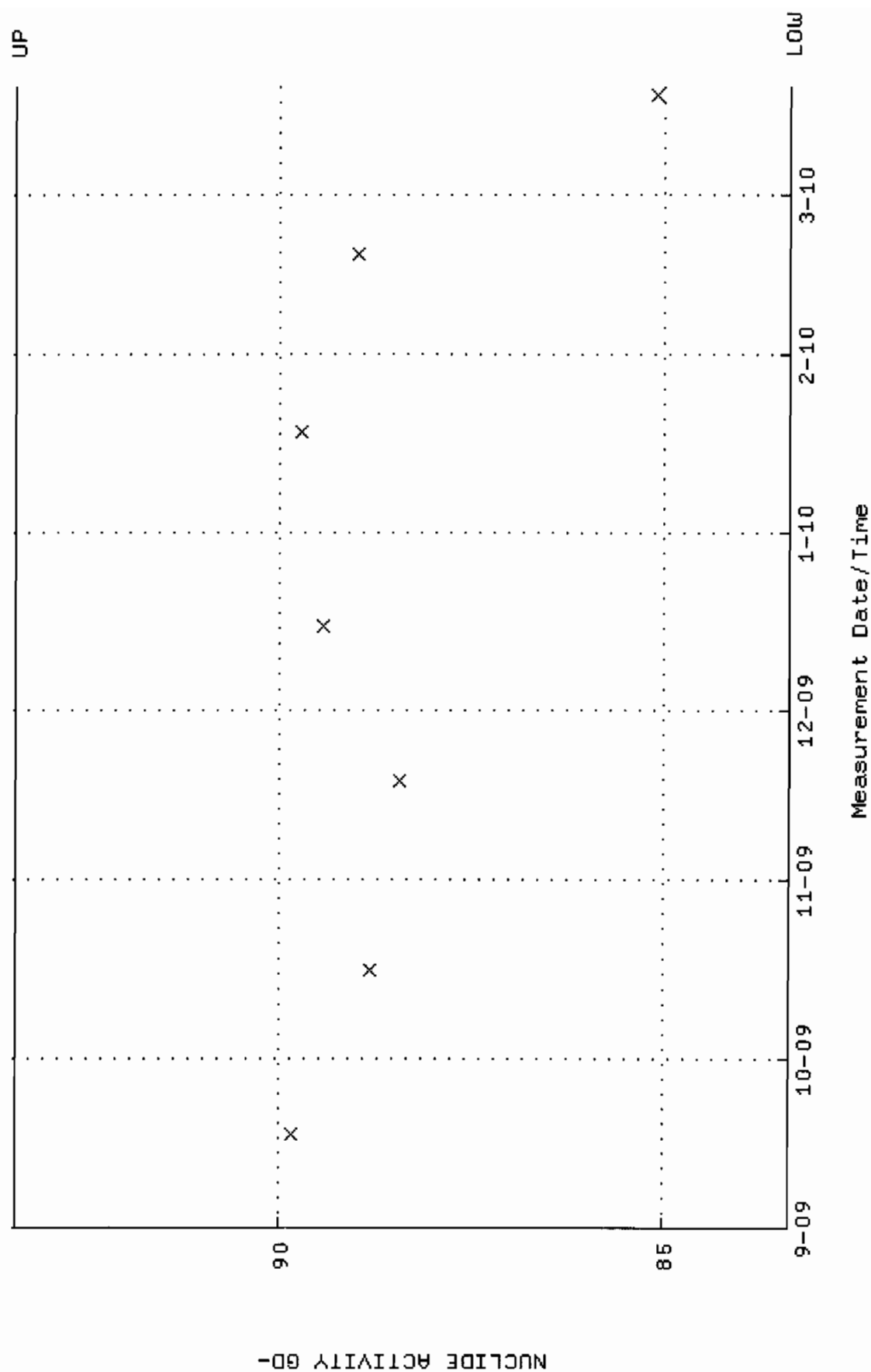
QA filename : DKA100:[ENV_ALPHA.QA.B]B125.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:01 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W126.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:24:03 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.233045 through 0.273065



QA filename : DKA100:[ENV_ALPHA.QA.W]w126.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:03 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.3533 through 93.4269

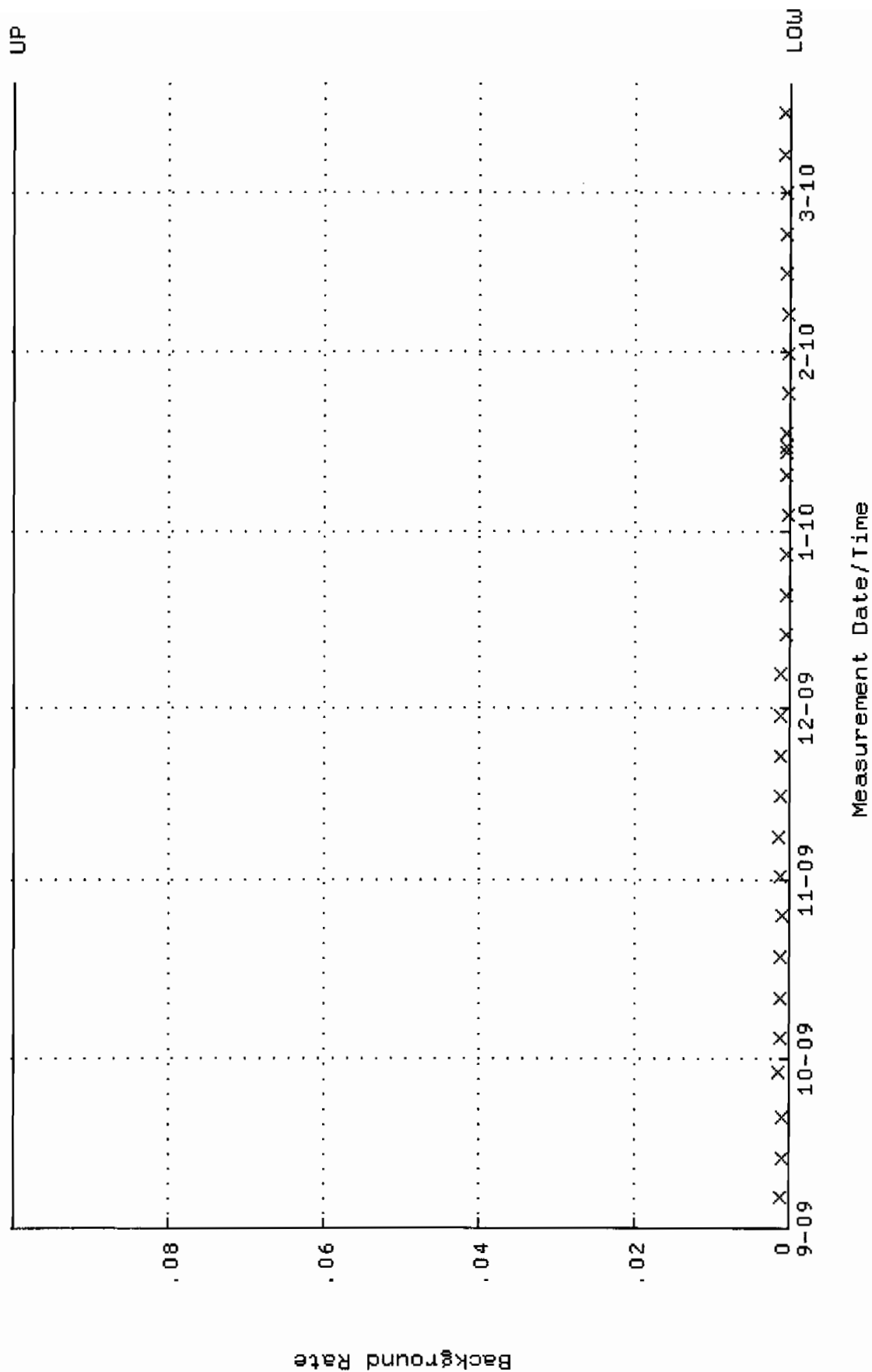


QA filename : DKA100:[ENV_ALPHA.QA.B]B126.QAF;1

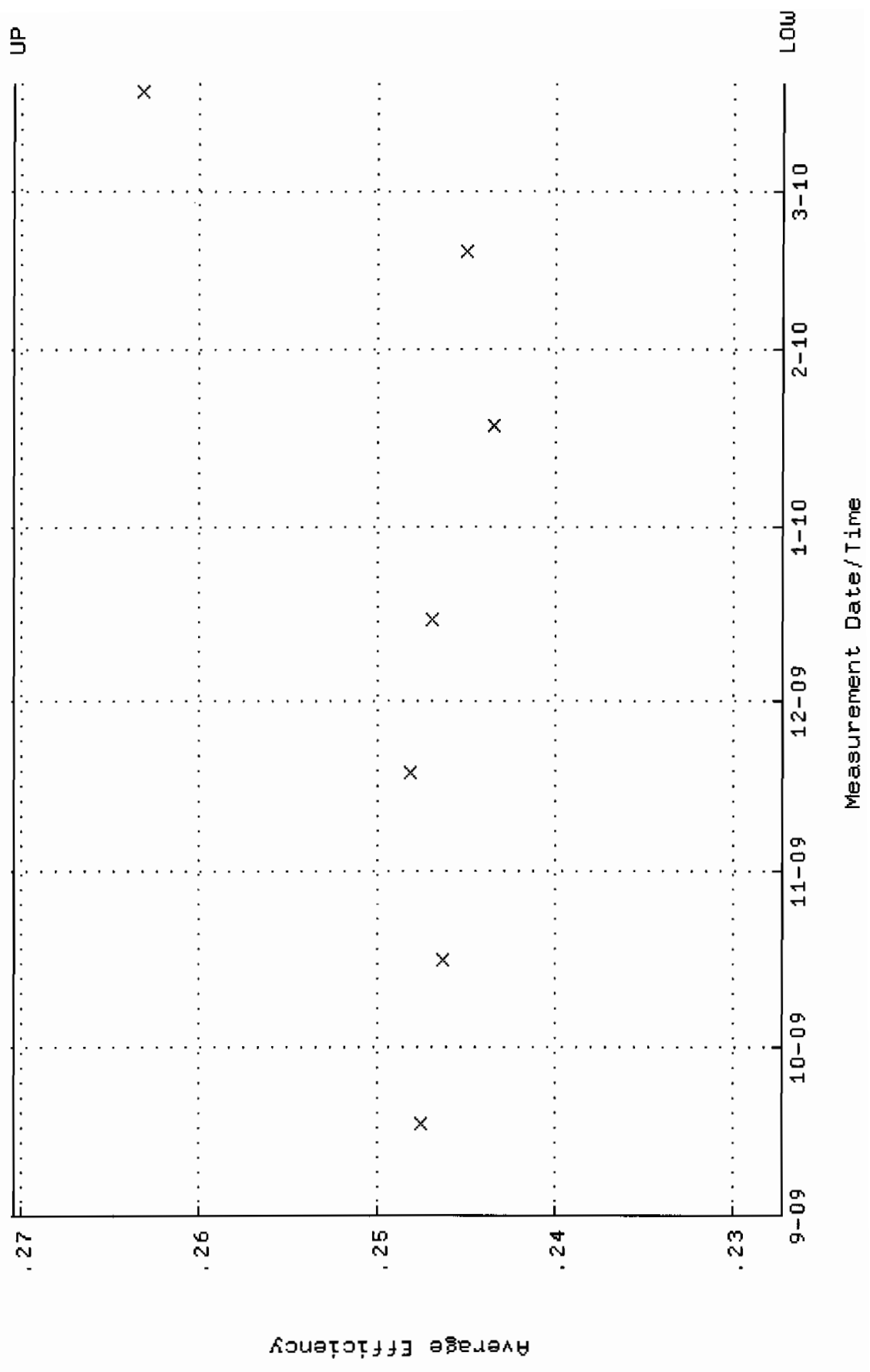
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 6-SEP-2009 15:41:05 through 19-MAR-2010 12:00:00

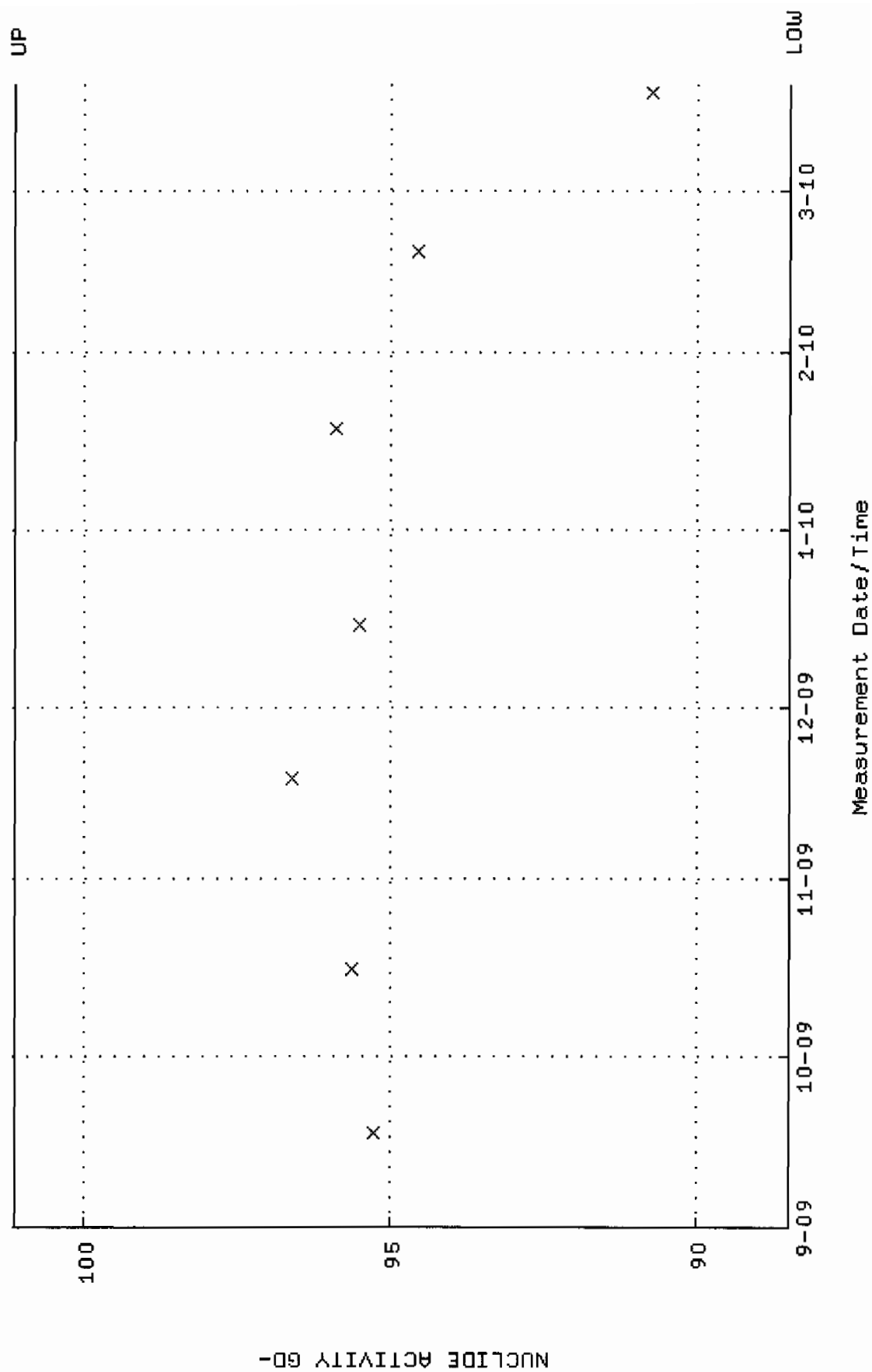
Lower/Upper Lmts: 0.000000E+00 through 0.100000



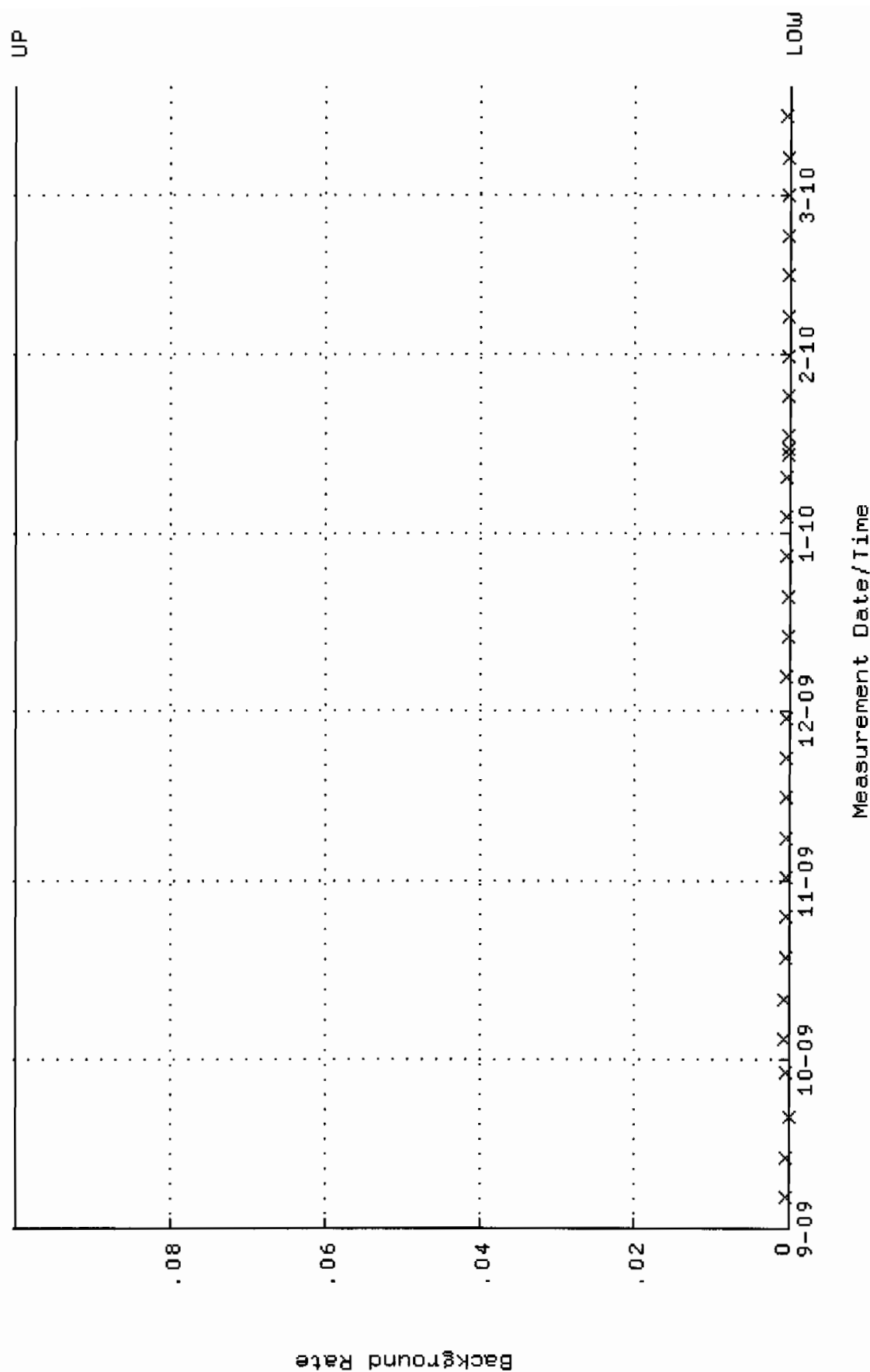
QA filename : DKA100:[ENV_ALPHA.QA.w]w127.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-SEP-2009 07:24:09 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.227212 through 0.270396



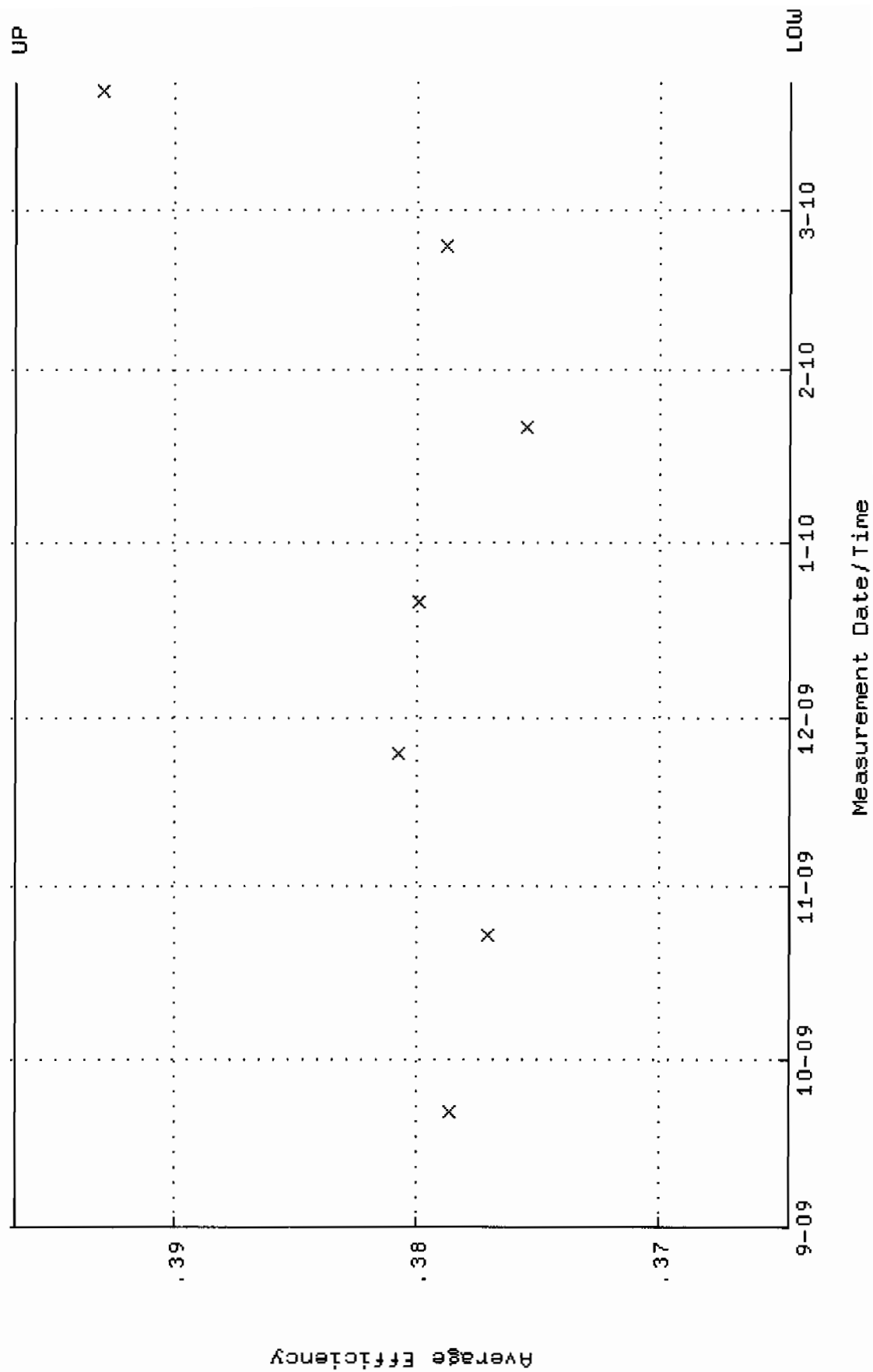
QA filename : DKA100:[ENV_ALPHA.QA.W]W127.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-SEP-2009 07:24:09 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.4641 through 101.145



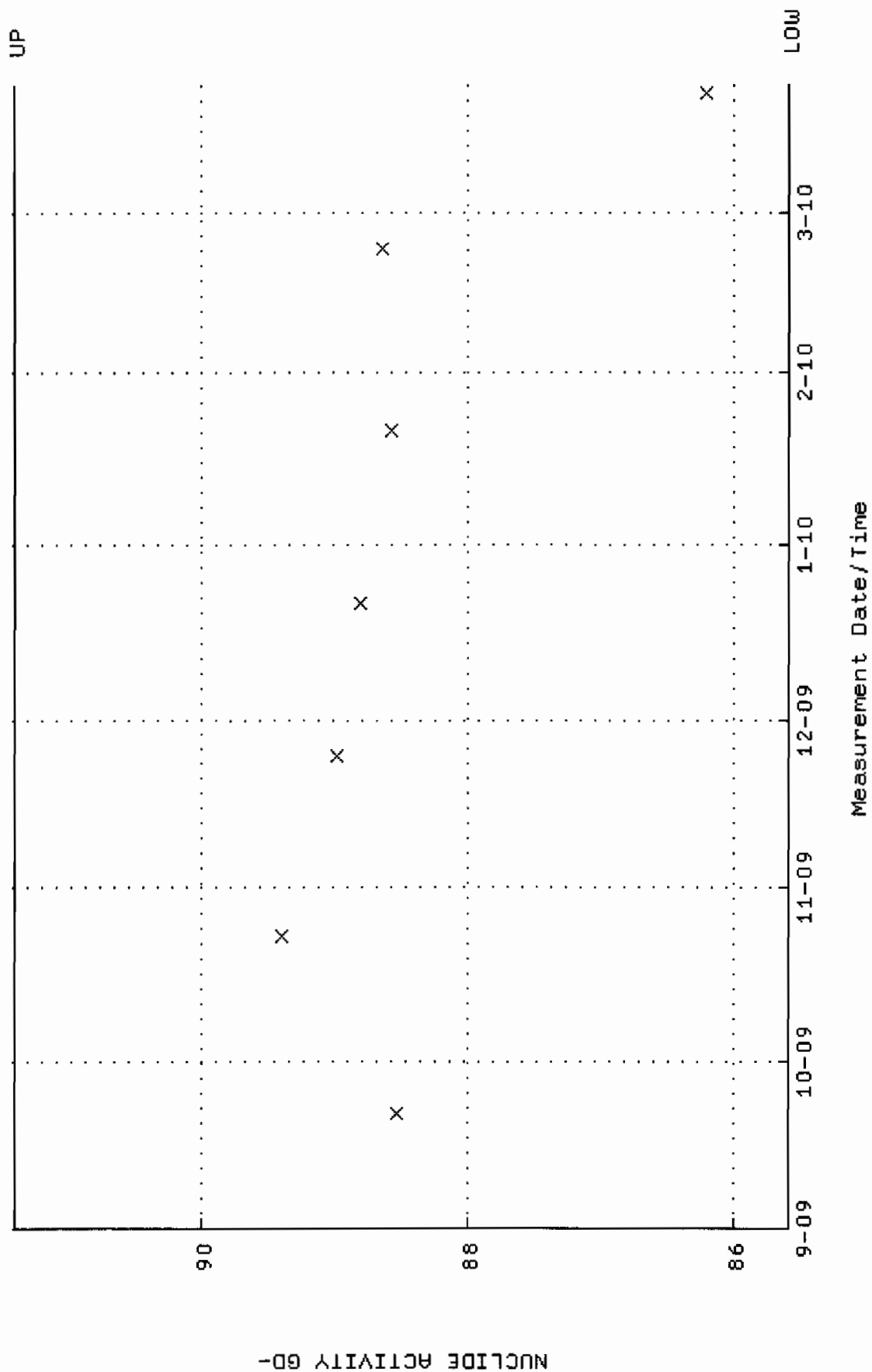
QA filename : DKA100:[ENV_ALPHA.QA.B]B127.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:41:09 through 19-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



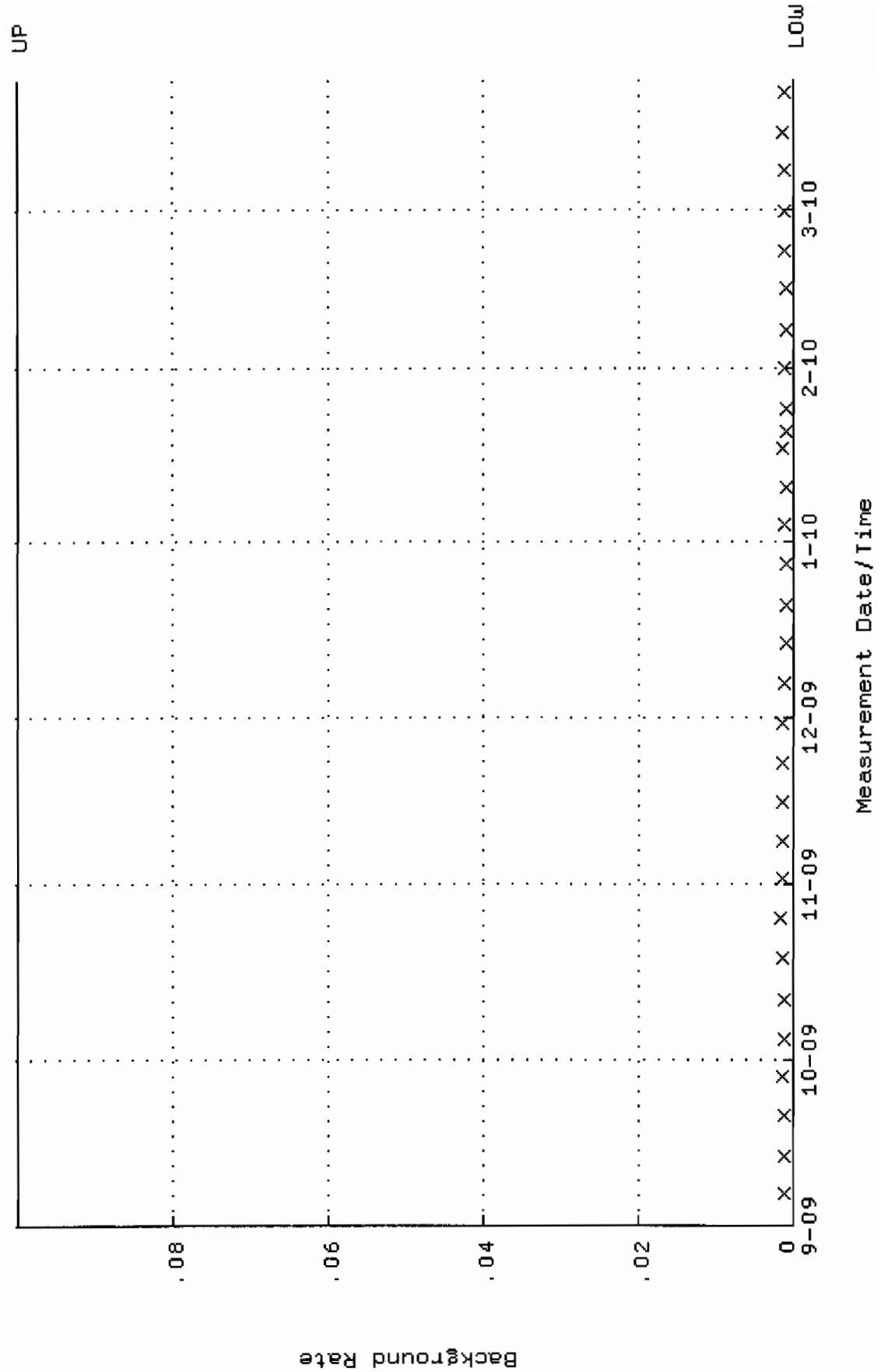
QA filename : DKA100:[ENV_ALPHA.QA.W]W165.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 21-SEP-2009 09:28:46 through 23-MAR-2010 12:00:00
Lower/Upper Lmts: 0.364660 through 0.396652



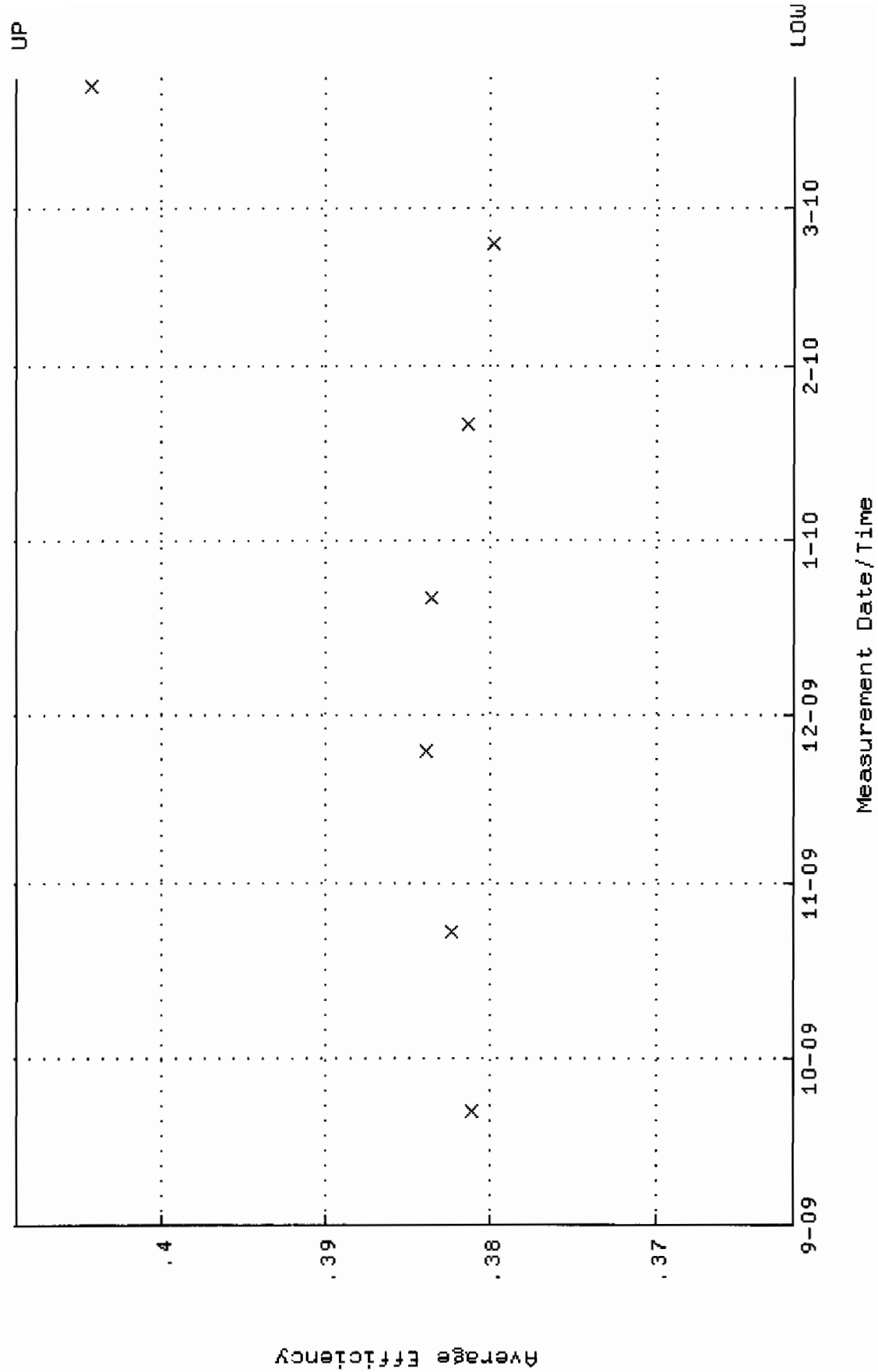
QA filename : DKA100:[ENV_ALPHA.QA.W]W165.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:28:46 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.5935 through 91.4009



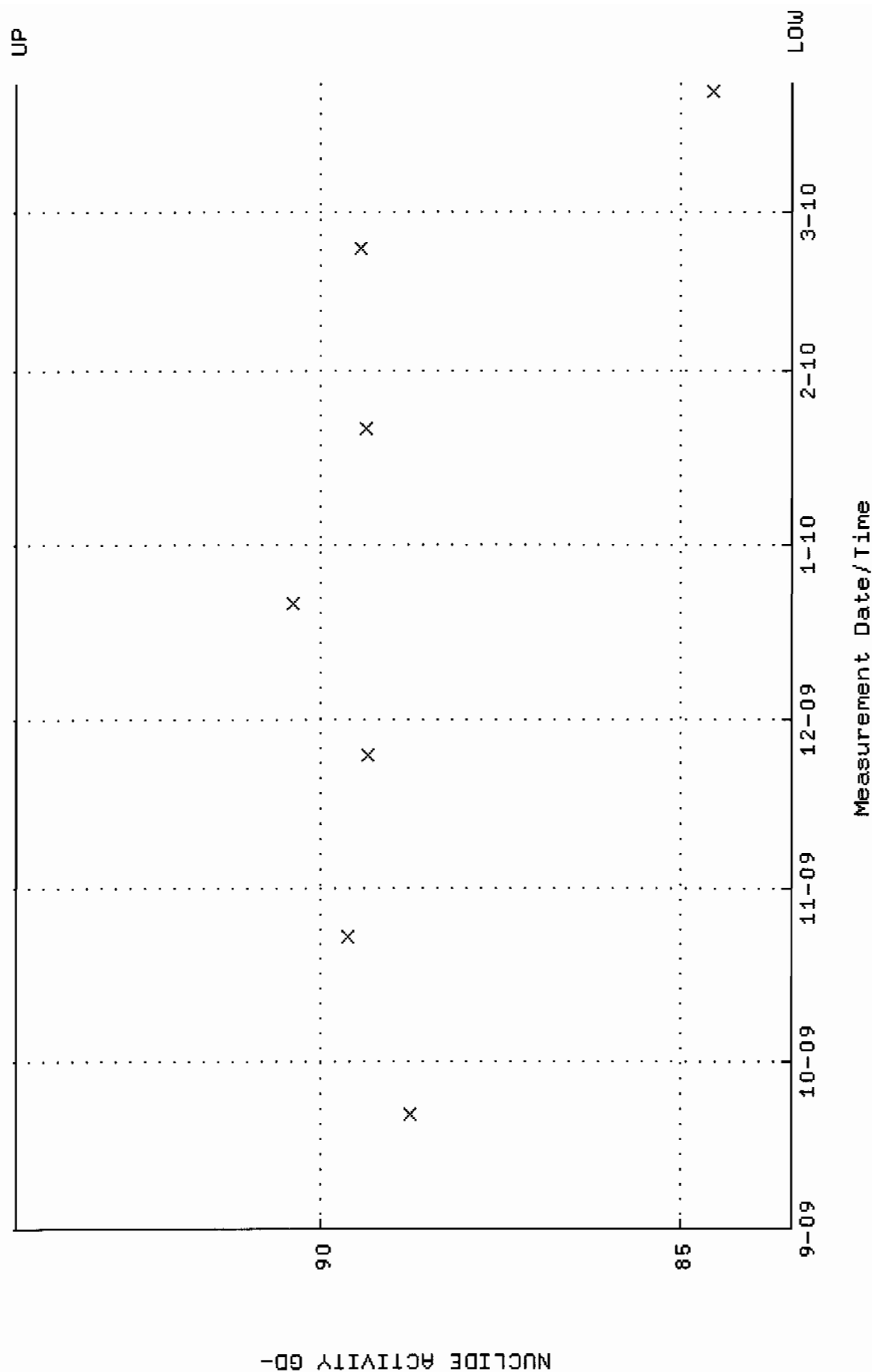
QA filename : DKA100:[ENV_ALPHA.QA.B]B165.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:31 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



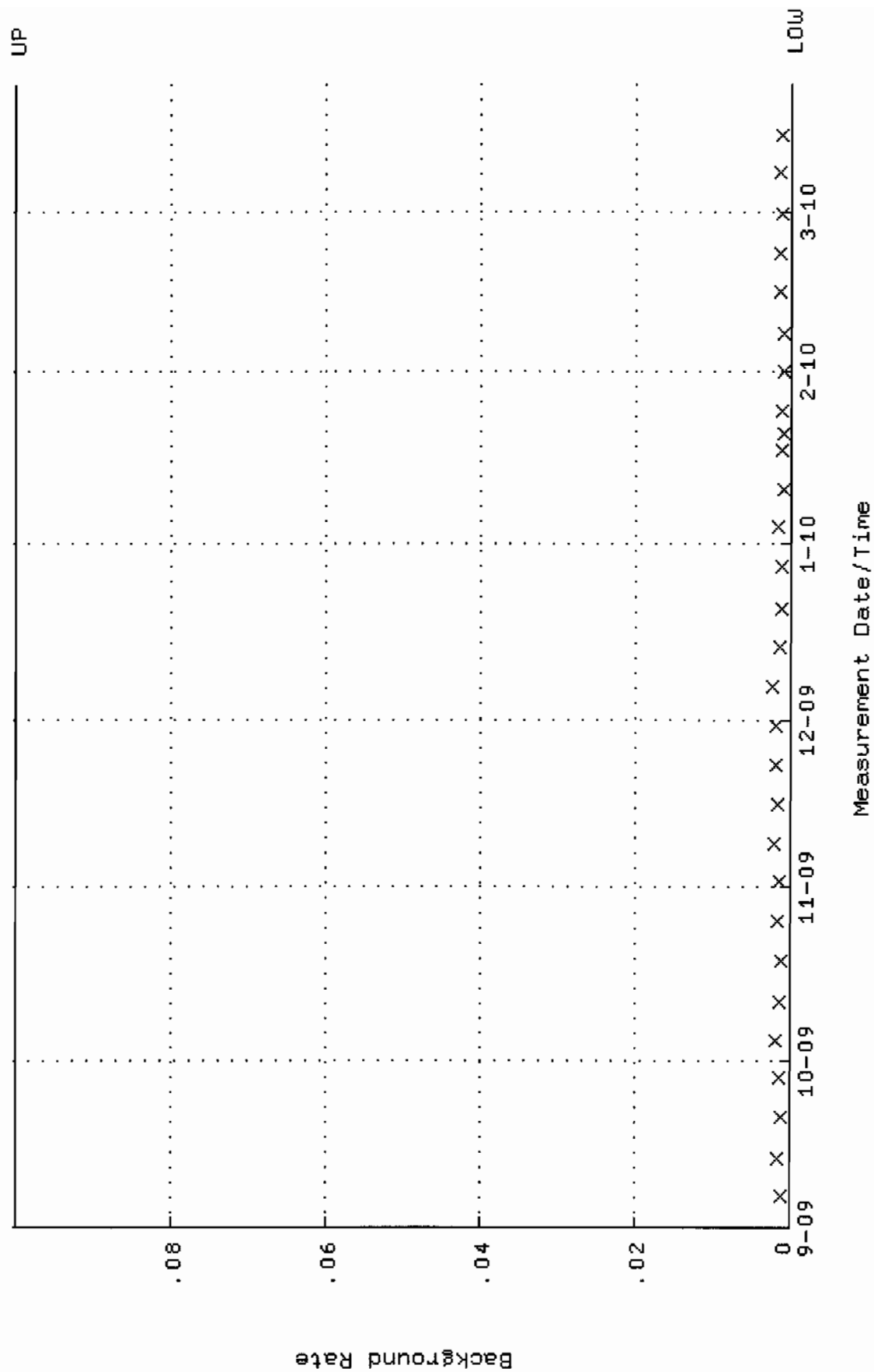
QA filename : DKA100:[ENV_ALPHA.QA.W]W171.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:26 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.361650 through 0.408748



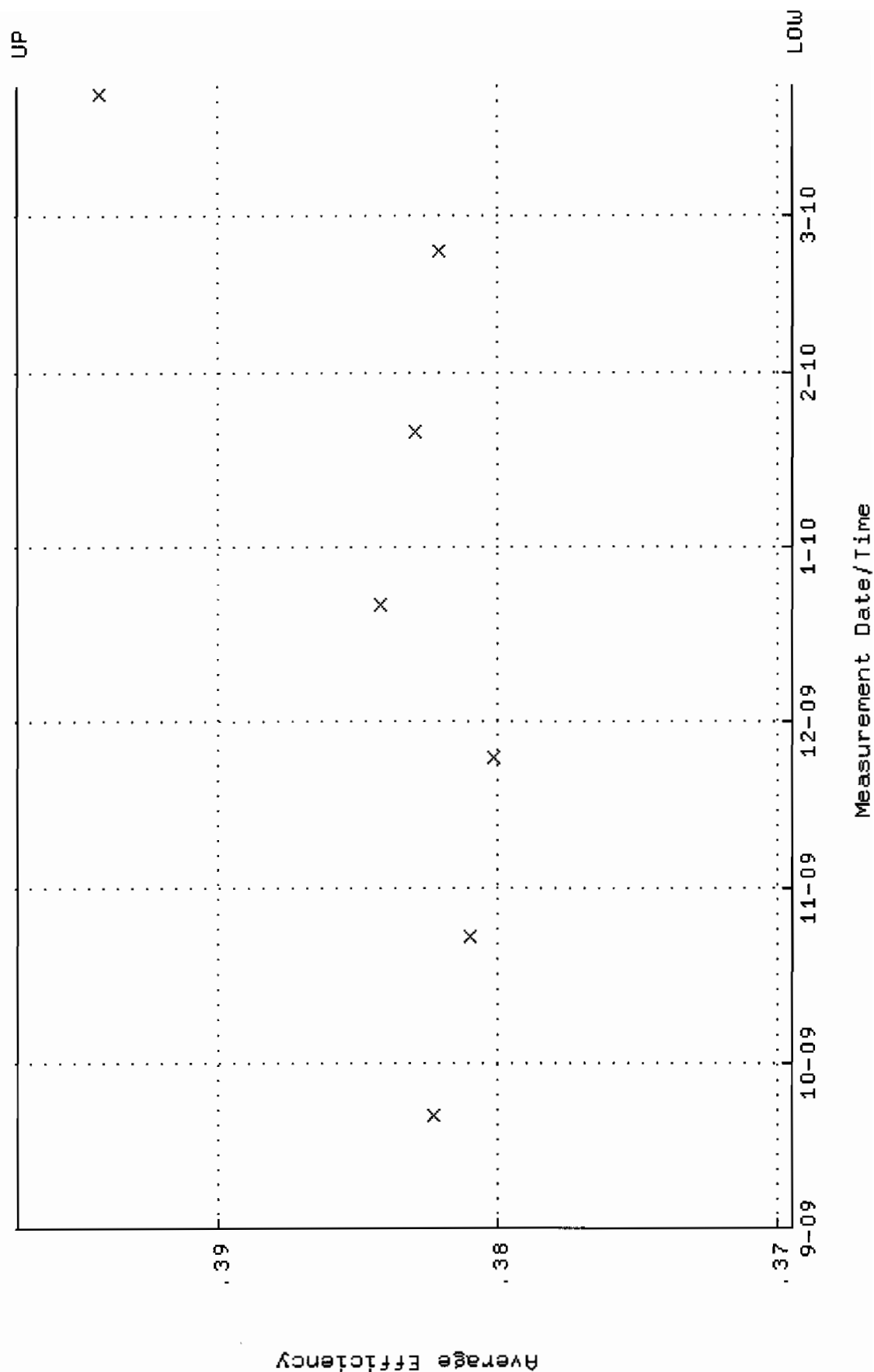
QA filename : DKA100:[ENV_ALPHA.QA.W]w171.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:26 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.4334 through 94.2602



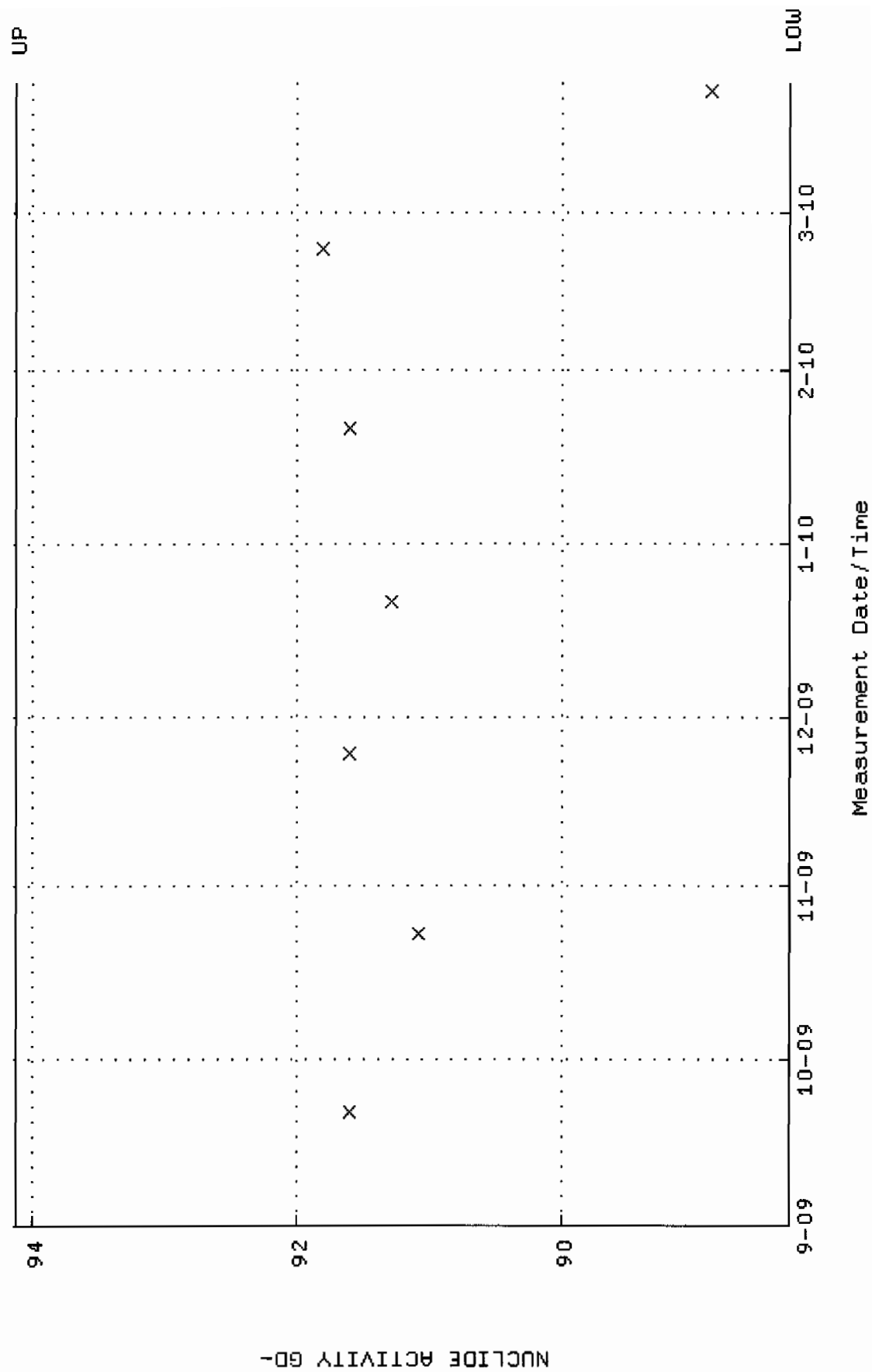
QA filename : DKA100:[ENV_ALPHA.QA.B]B171.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:44:58 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



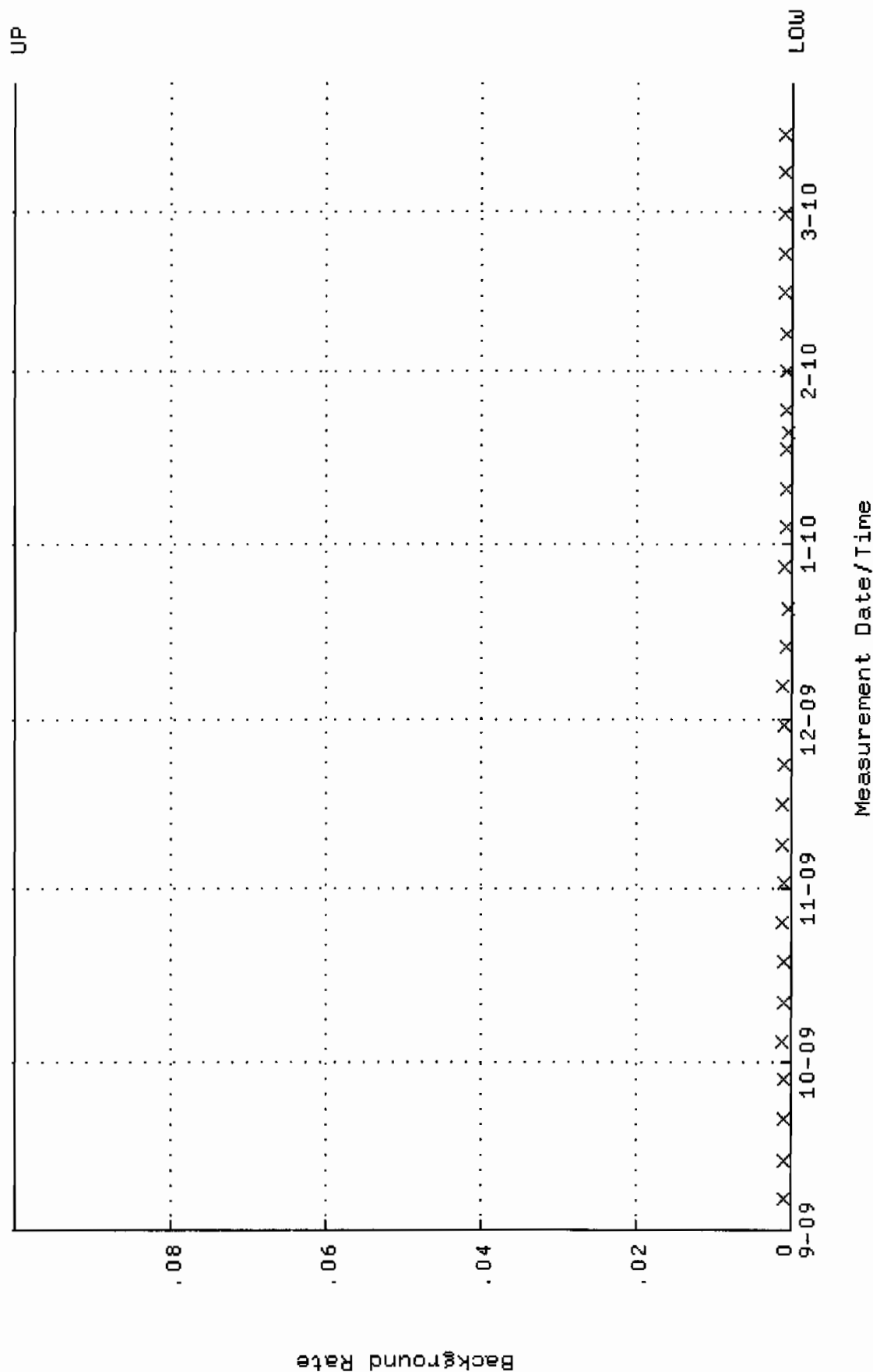
QA filename : DKA100:[ENV_ALPHA.QA.W]W172.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 21-SEP-2009 09:29:32 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.369454 through 0.397138



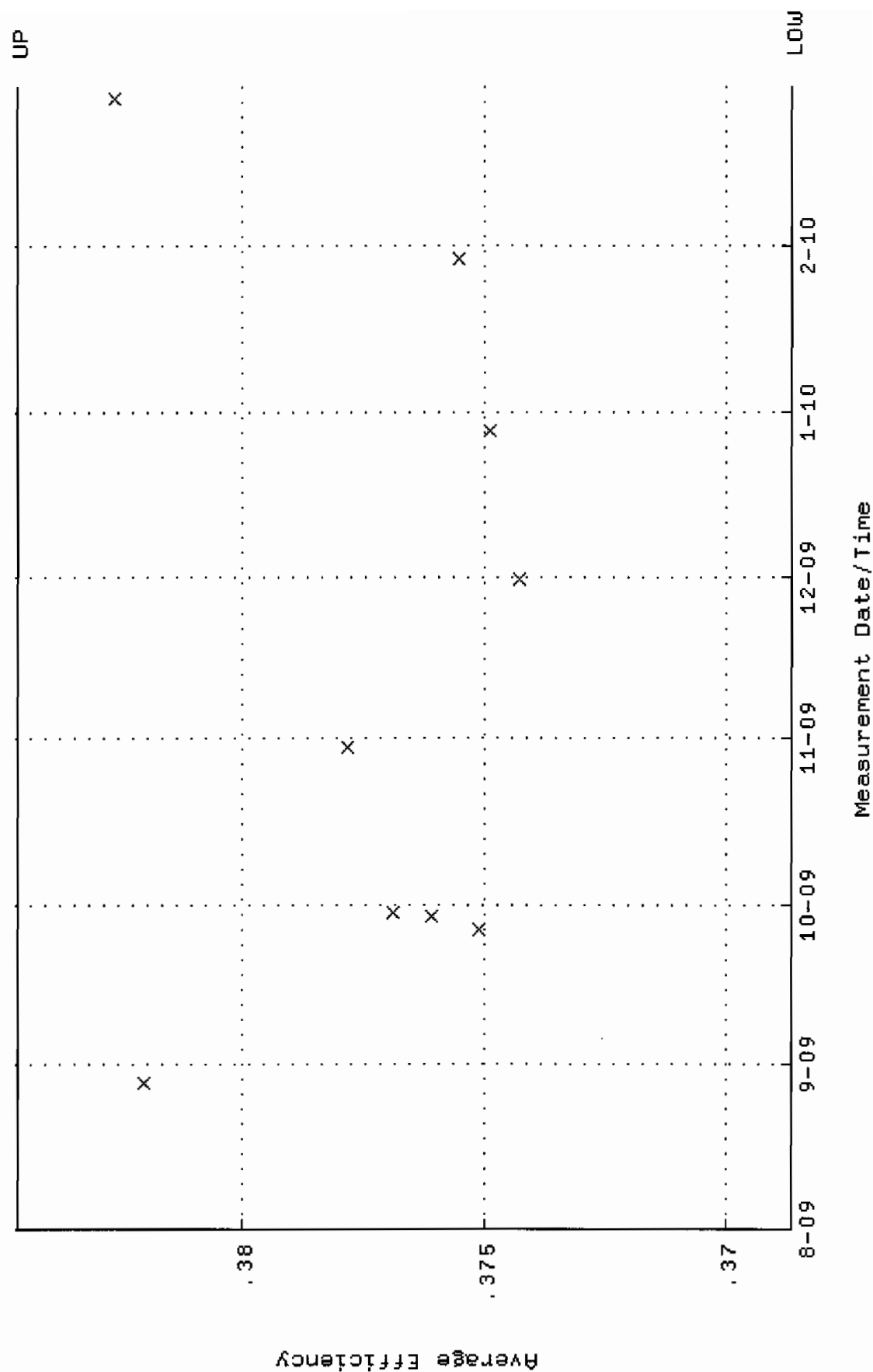
QA filename : DKA100:[ENV_ALPHA.QA.W]W172.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 21-SEP-2009 09:29:32 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.2917 through 94.1169



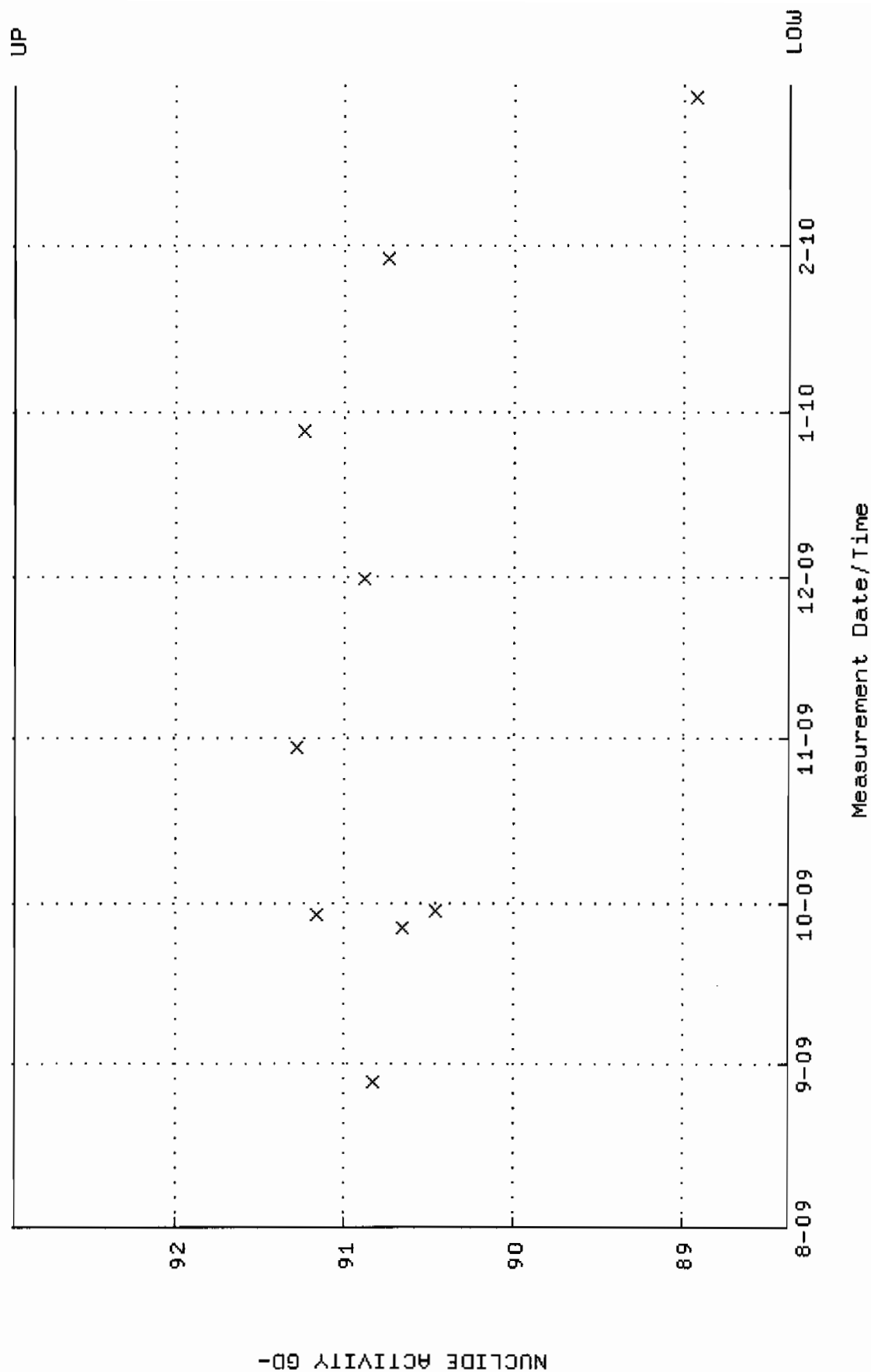
QA filename : DKA100:[ENV_ALPHA.QA.B]B172.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 6-SEP-2009 15:45:02 through 23-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



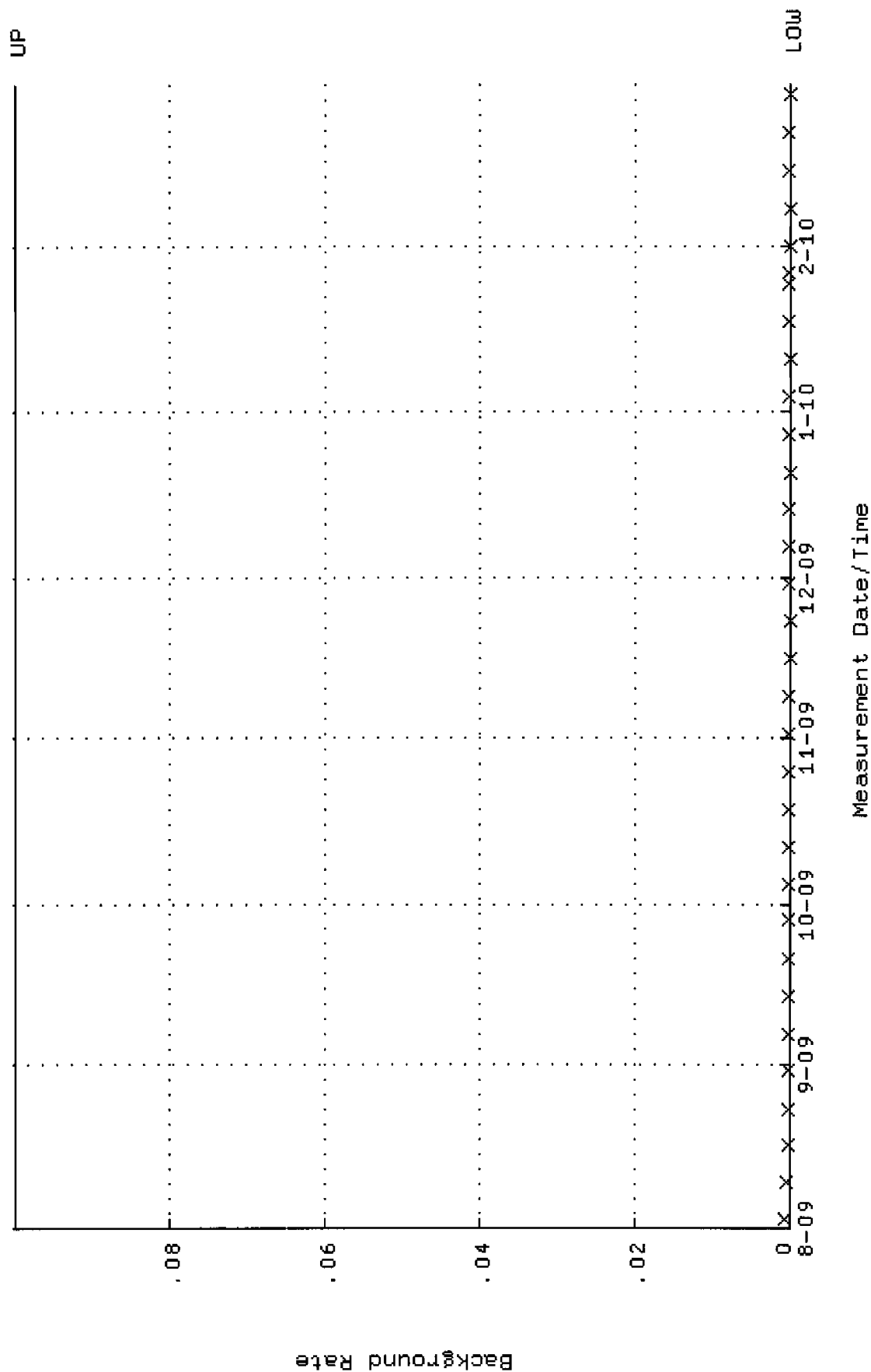
QA filename : DKA100:[ENV_ALPHA.QA.W]W215.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:06:59 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.368657 through 0.384643



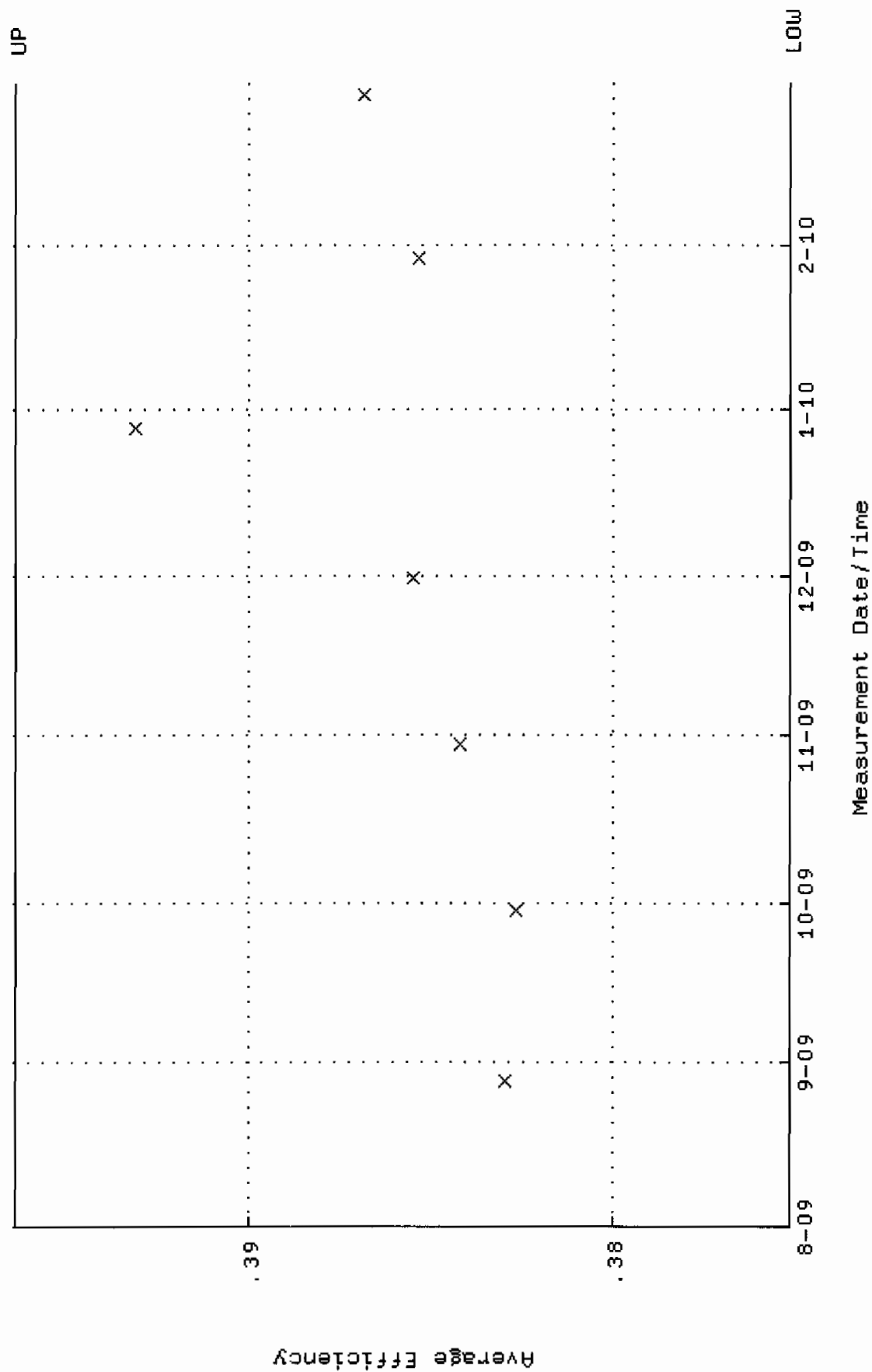
QA filename : DKA100:[ENV_ALPHA.QA.W]W215.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:06:59 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 88.3773 through 92.9481



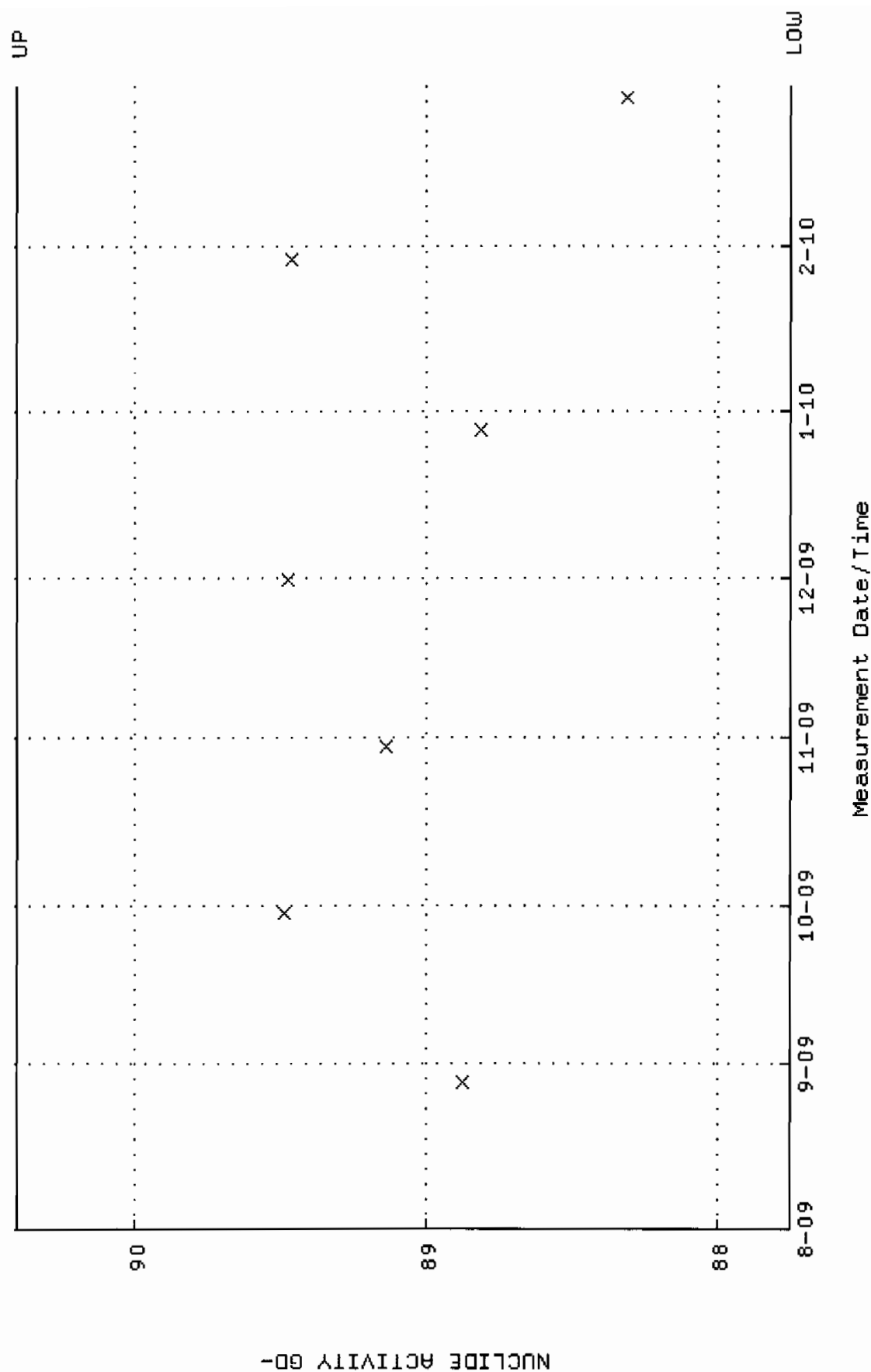
QA filename : DKA100:[ENV_ALPHA.QA.B]B215.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:25:35 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



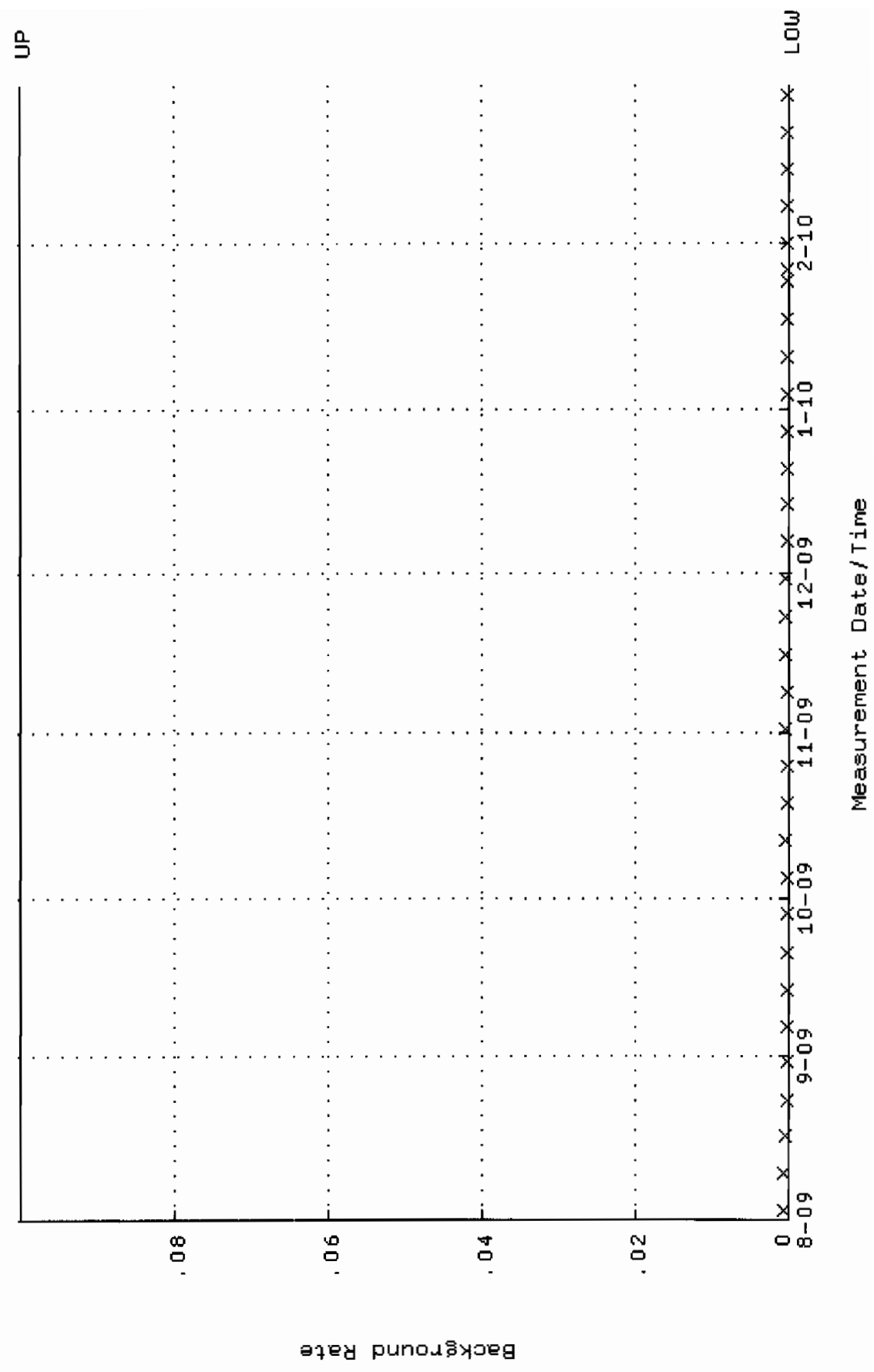
QA filename : DKA100:[ENV_ALPHA.QA.W]W216.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:04 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.375142 through 0.396434



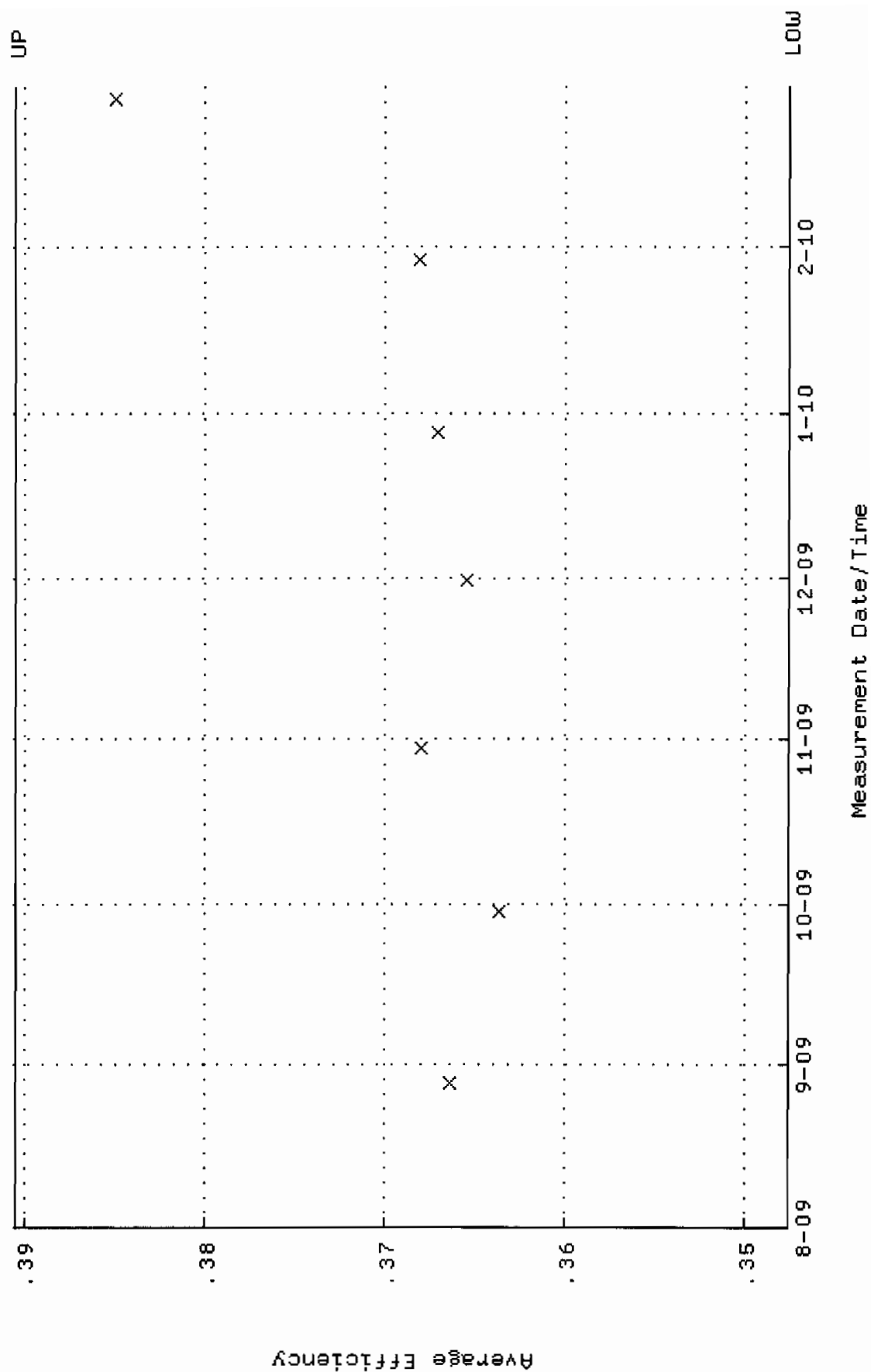
QA filename : DKA100:[ENV_ALPHA.QA.W]w216.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:04 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.7466 through 90.4082



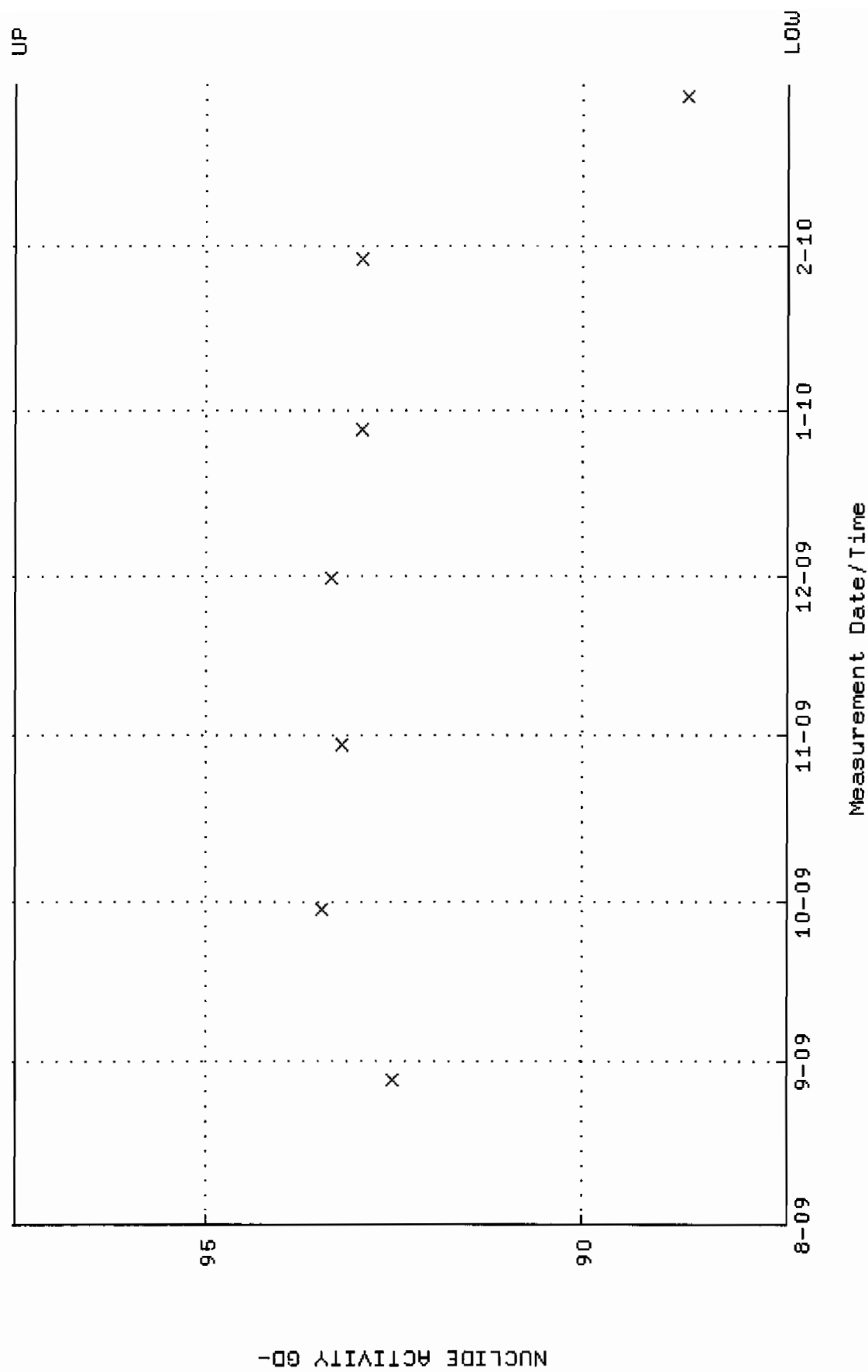
QA filename : DKA100:[ENV_ALPHA.QA.B]B216.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:25:40 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W217.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:09 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.347554 through 0.390494



QA filename : DKA100:[ENV_ALPHA.QA.W]W217.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:09 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.2610 through 97.5406

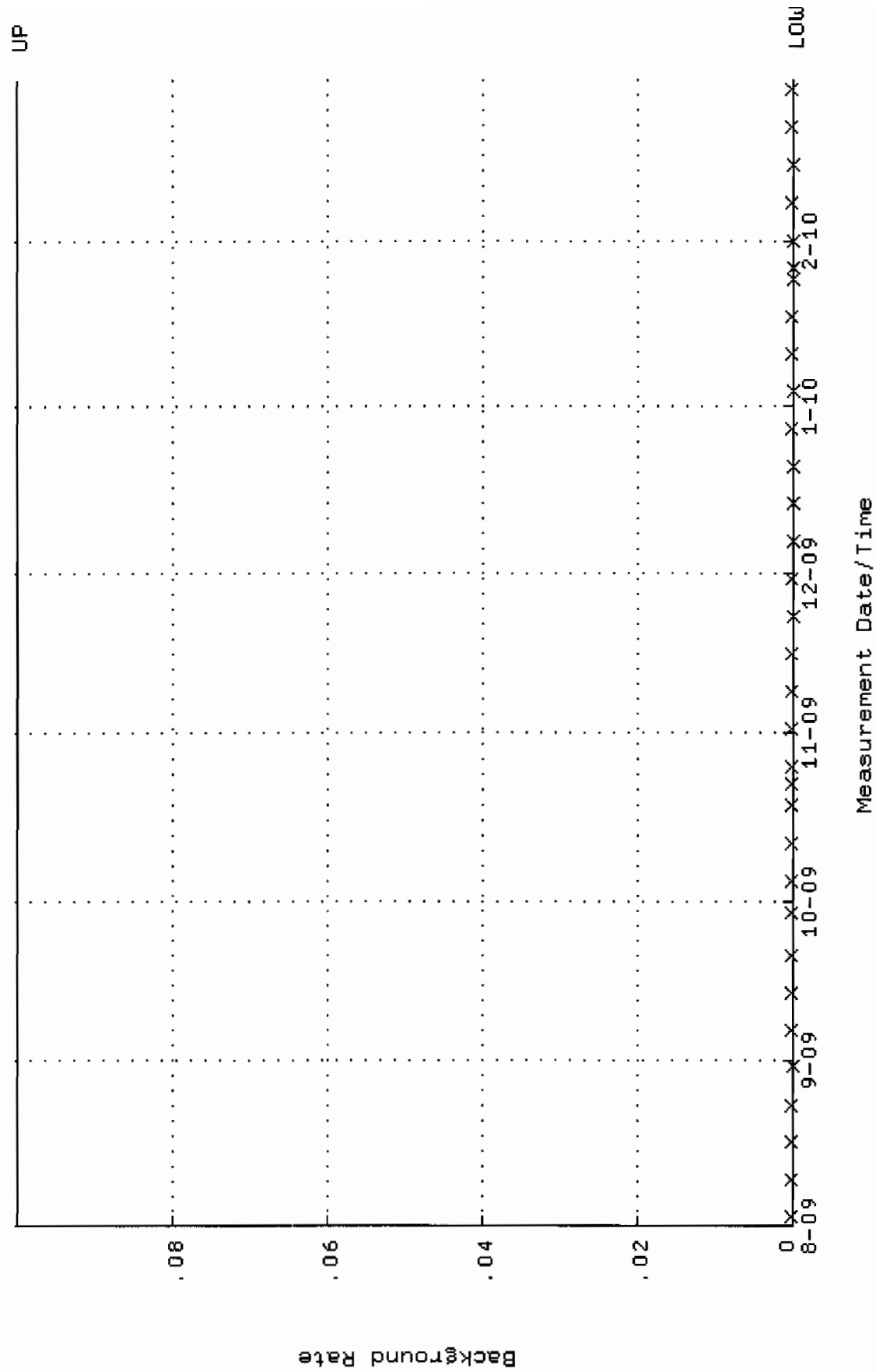


QA filename : DKA100:[ENV_ALPHA.QA.B]B217.QAF;1

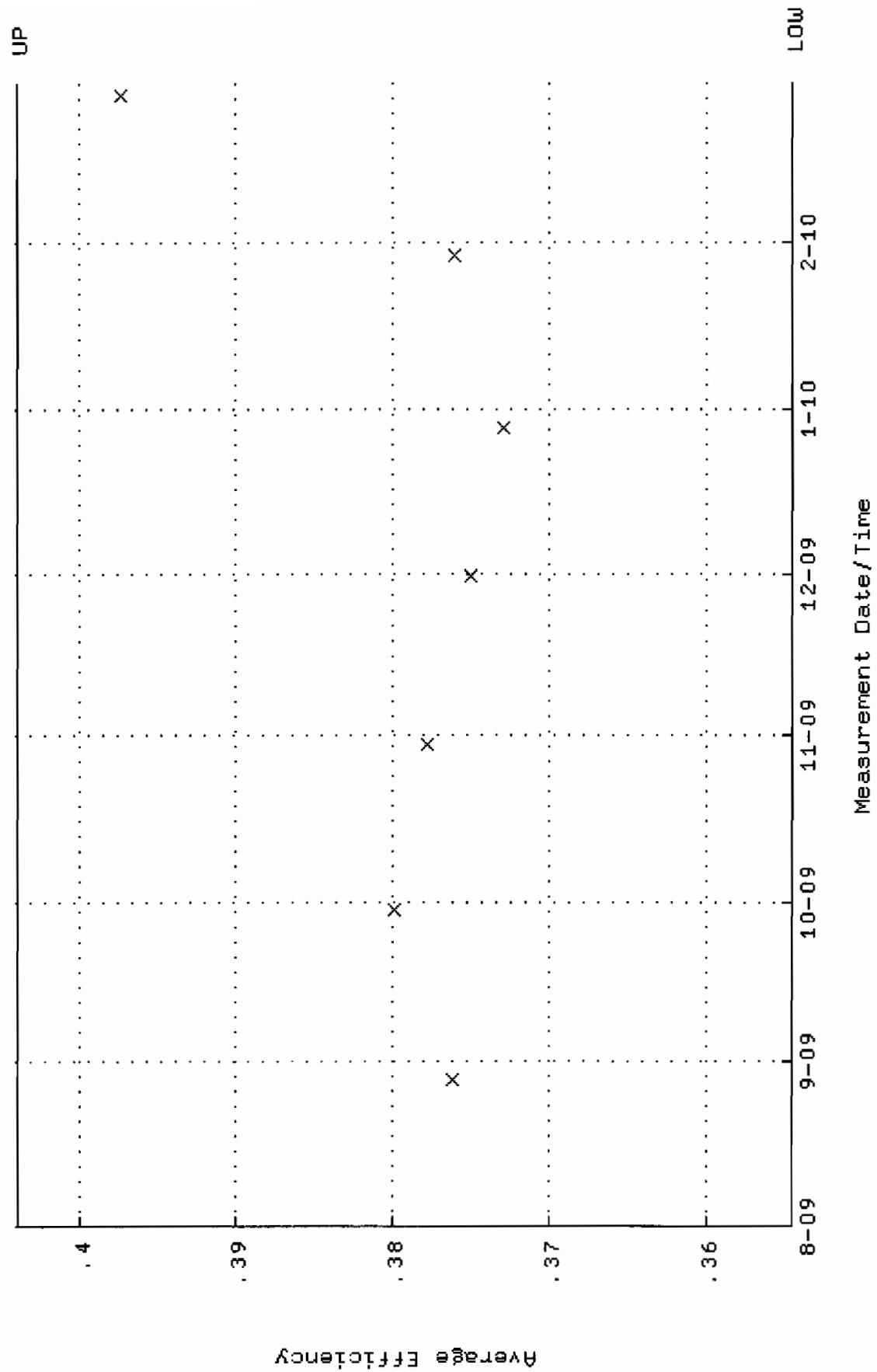
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:25:44 through 2-MAR-2010 12:00:00

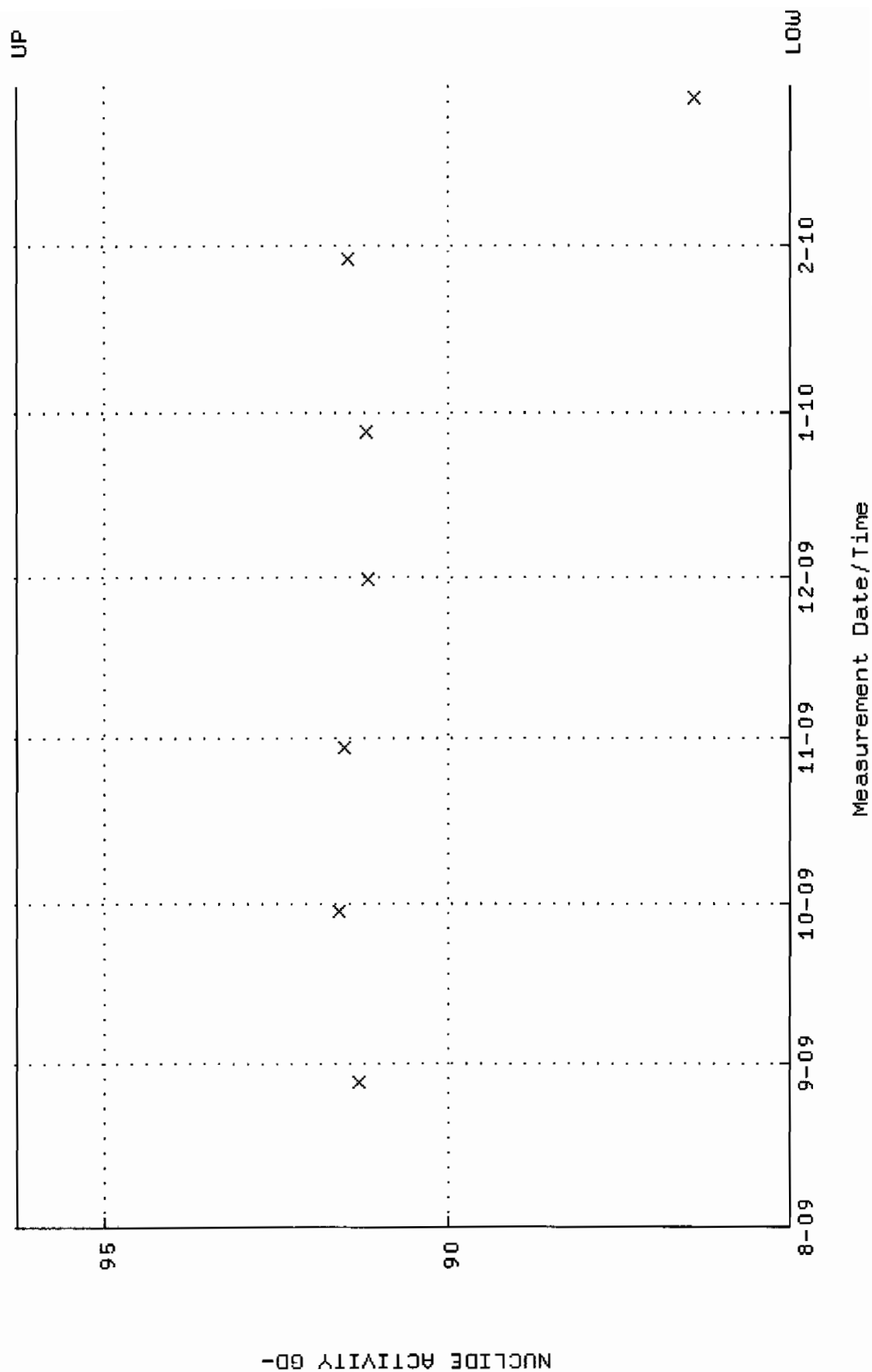
Lower/Upper Lmts: 0.000000E+00 through 0.100000



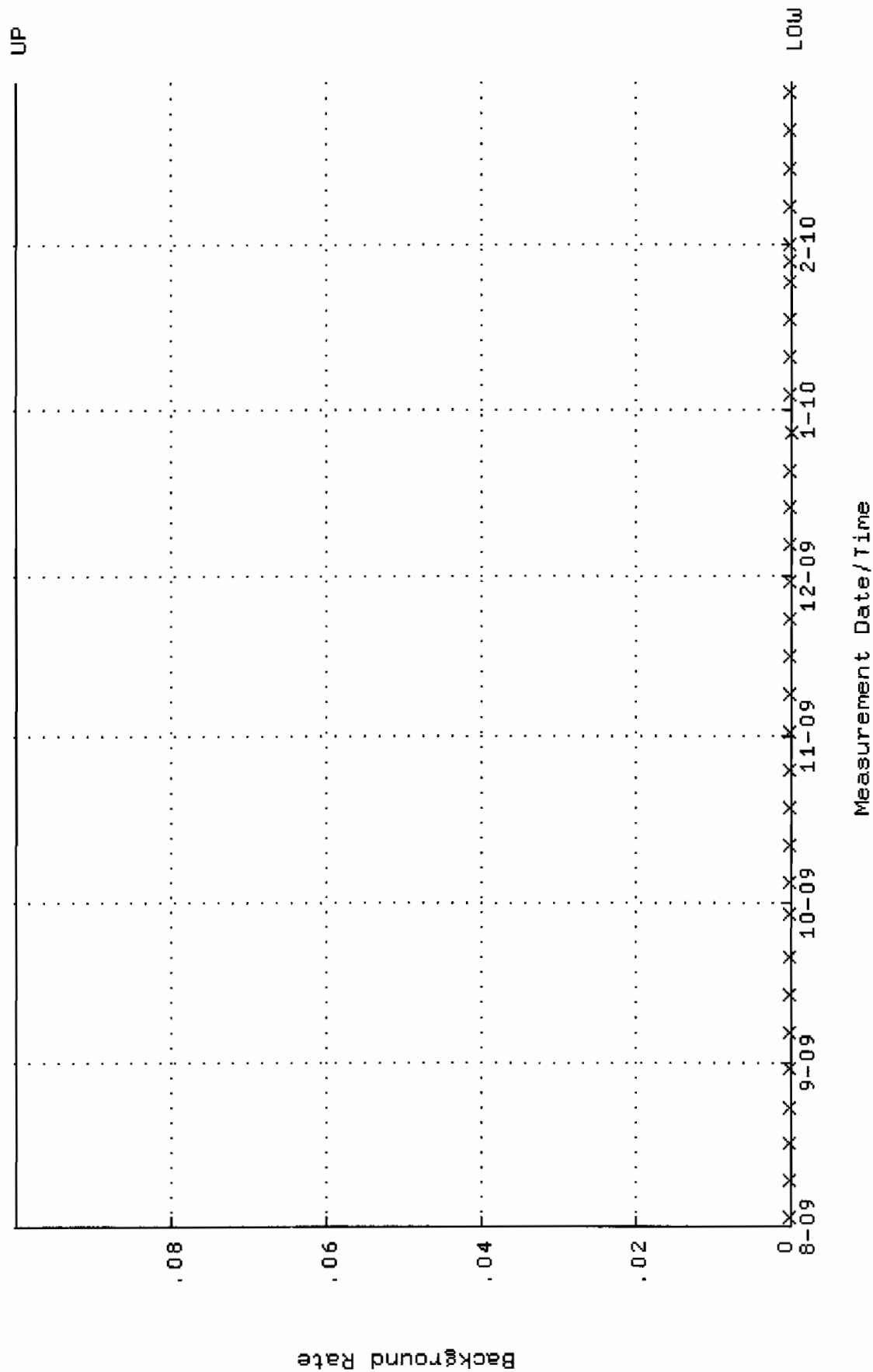
QA filename : DKA100:[ENV_ALPHA.QA.W]W221.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:27 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.354487 through 0.403989



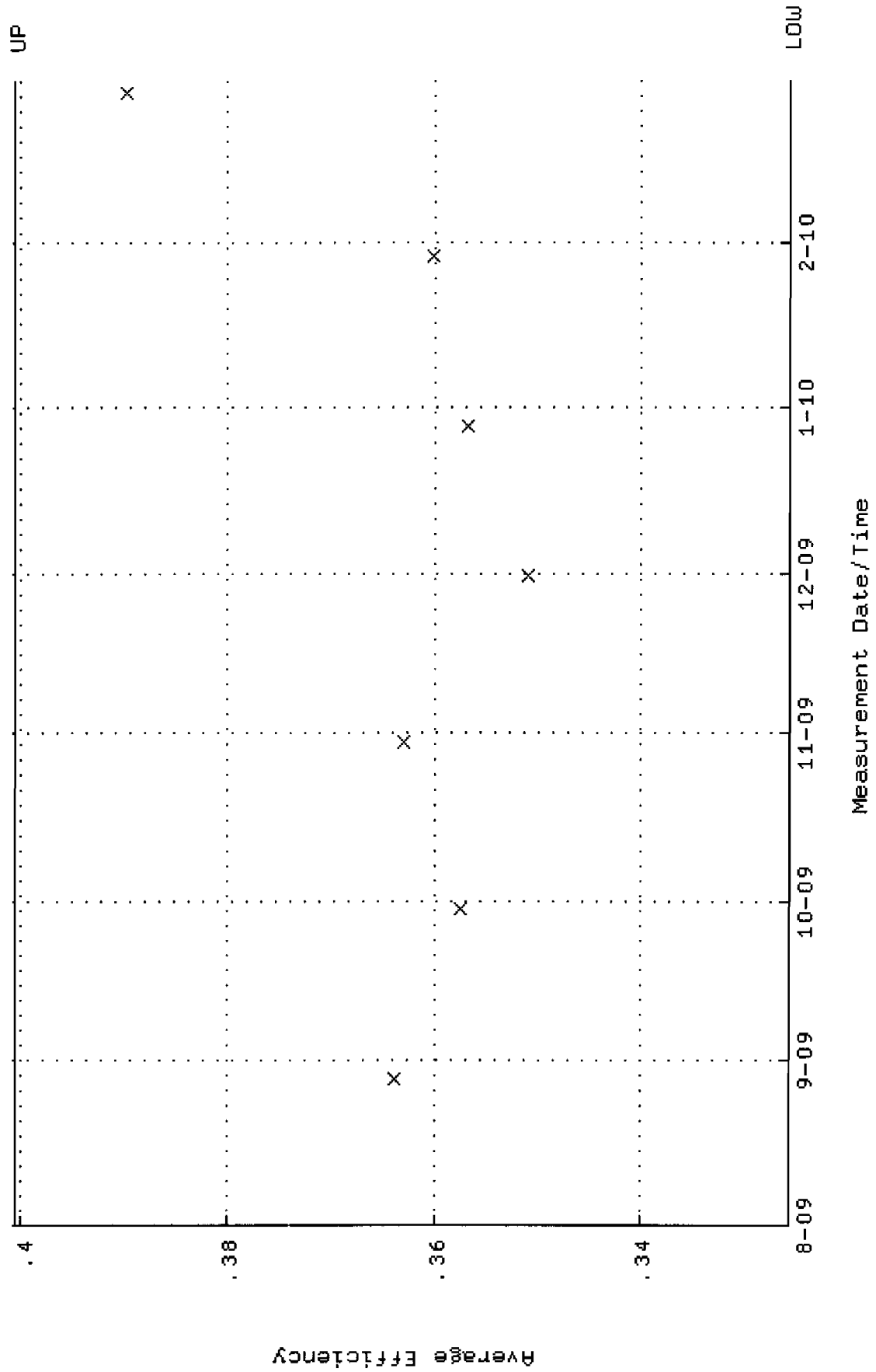
QA filename : DKA100:[ENV_ALPHA.QA.W]W221.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:27 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.0275 through 96.2669



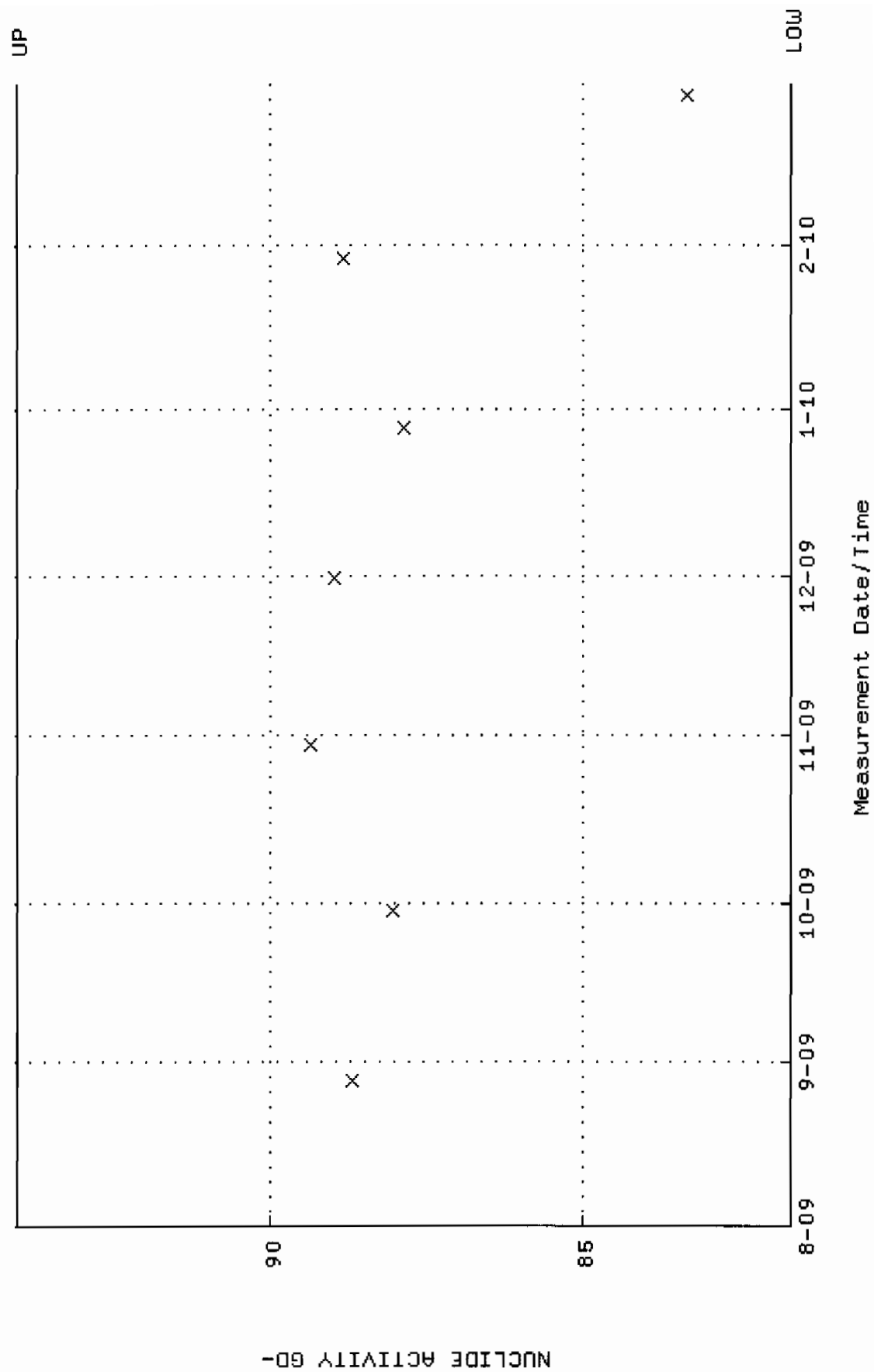
QA filename : DKA100:[ENV_ALPHA.QA.B]B221.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:01 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



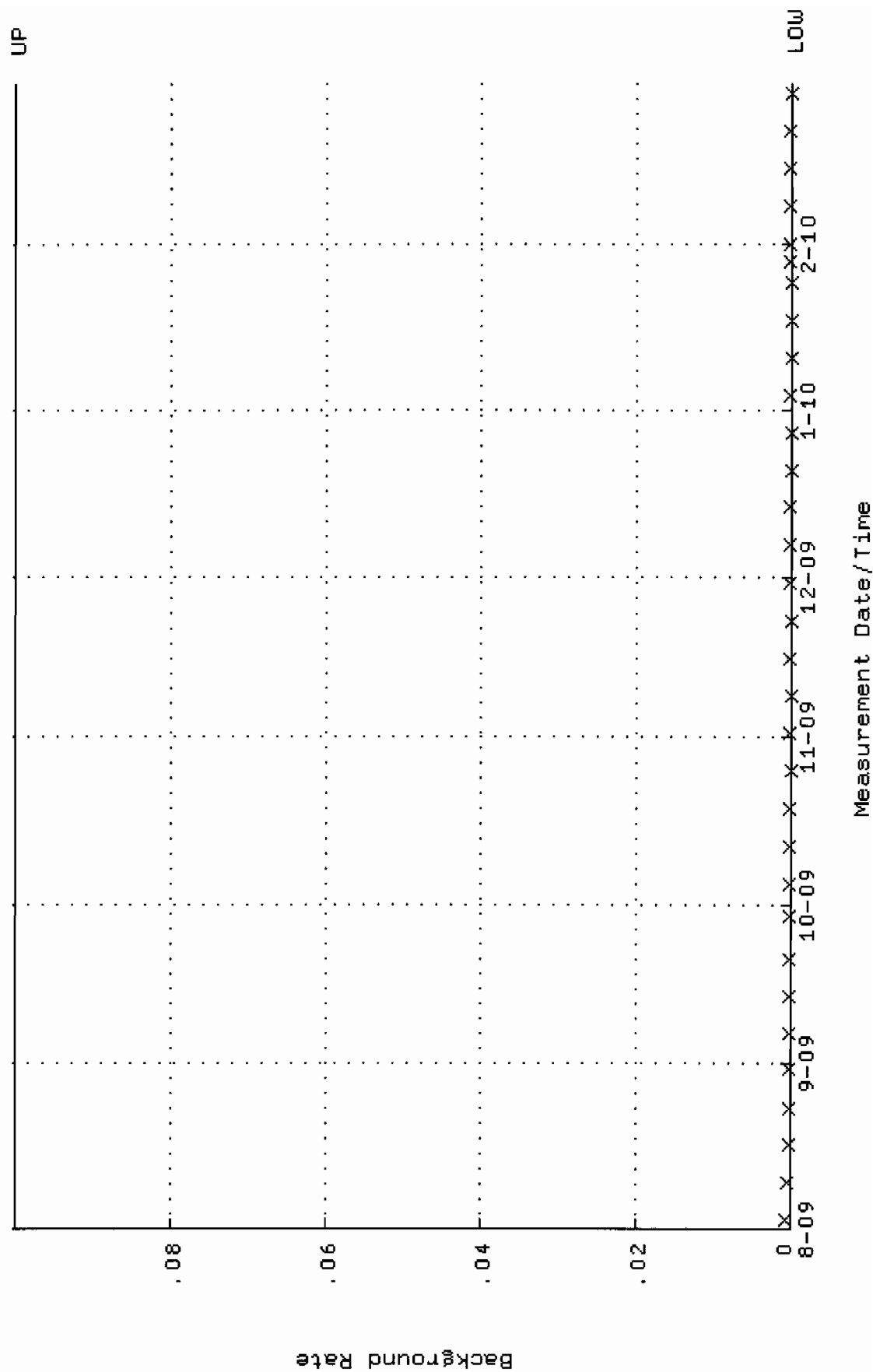
QA filename : DKA100:[ENV_ALPHA.QA.W]W222.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:32 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.325585 through 0.400497



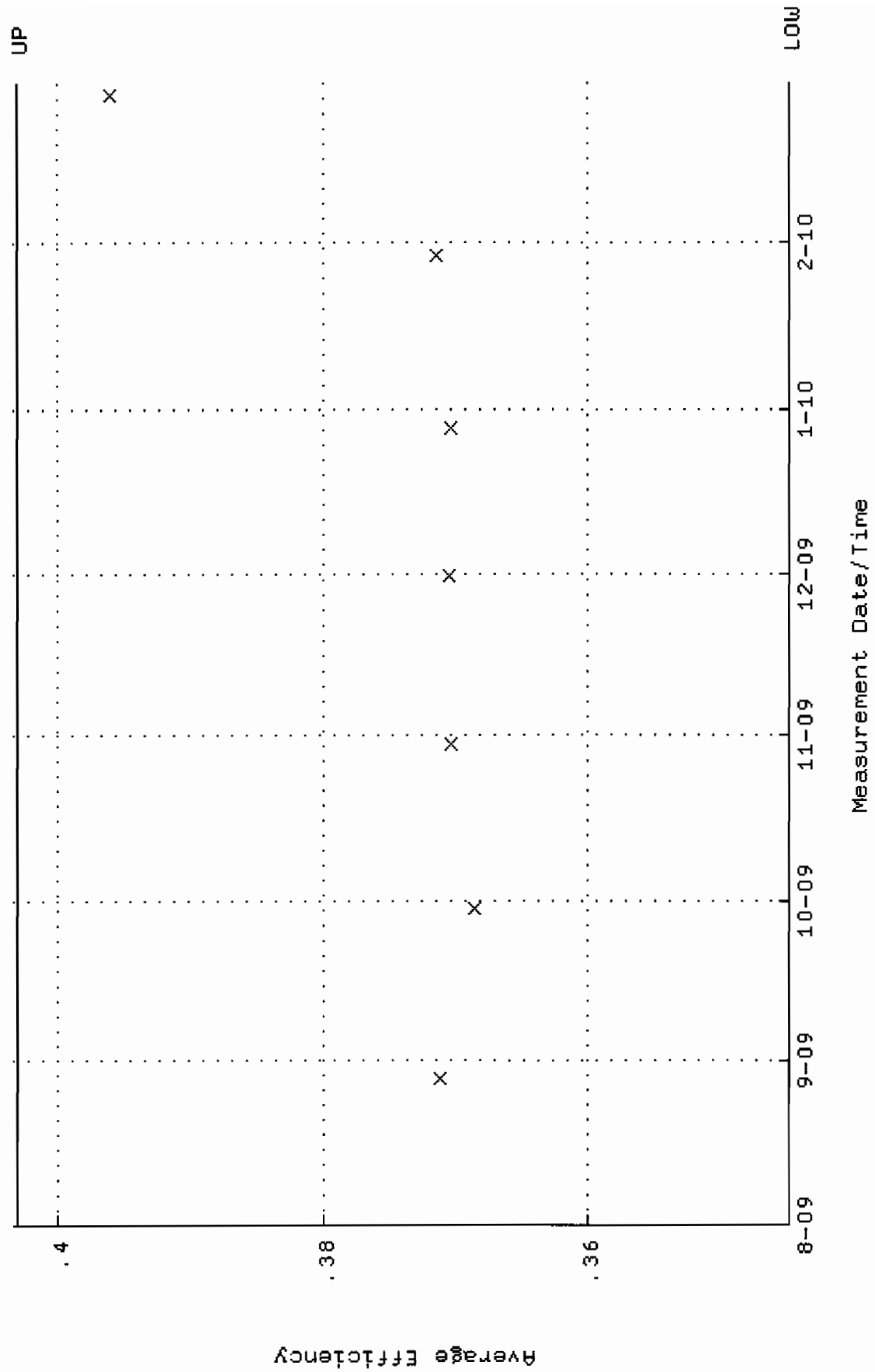
QA filename : DKA100:[ENV_ALPHA.QA.W]W222.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:32 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 81.6821 through 94.0551



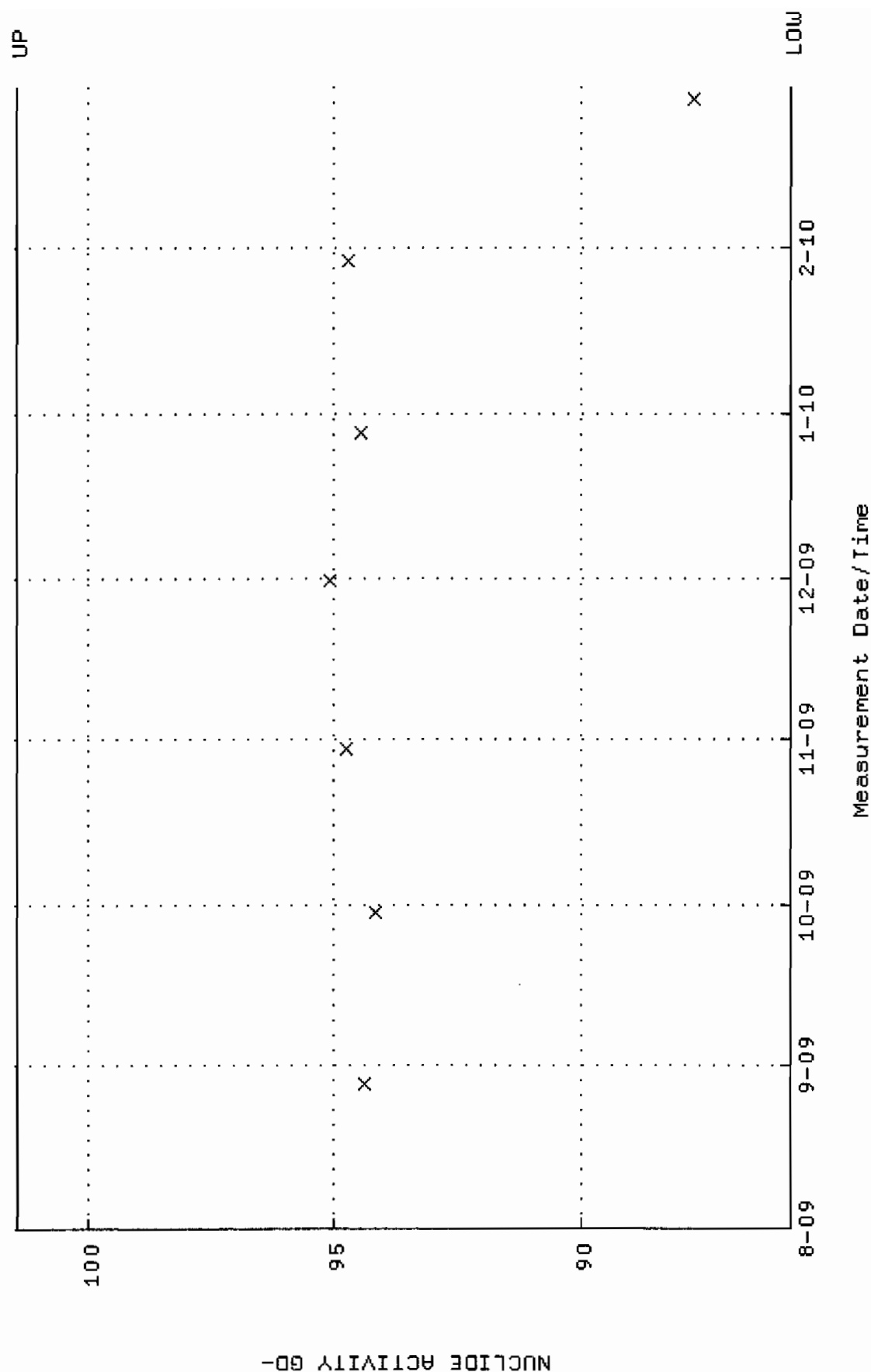
QA filename : DKA100:[ENV_ALPHA.QA.B]B222.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:05 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



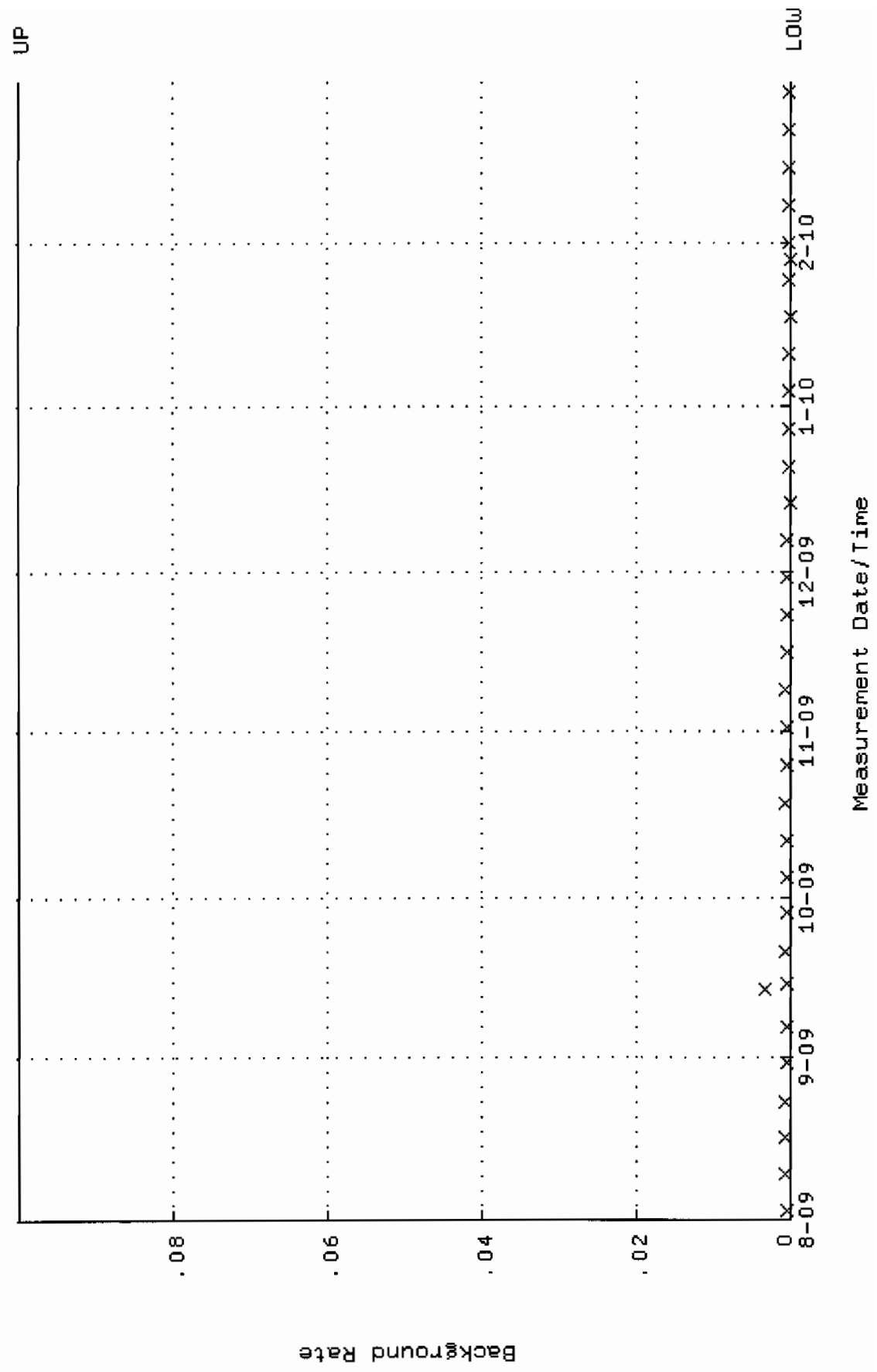
QA filename : DKA100:[ENV_ALPHA.QA.W]W223.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:38 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.344809 through 0.403131



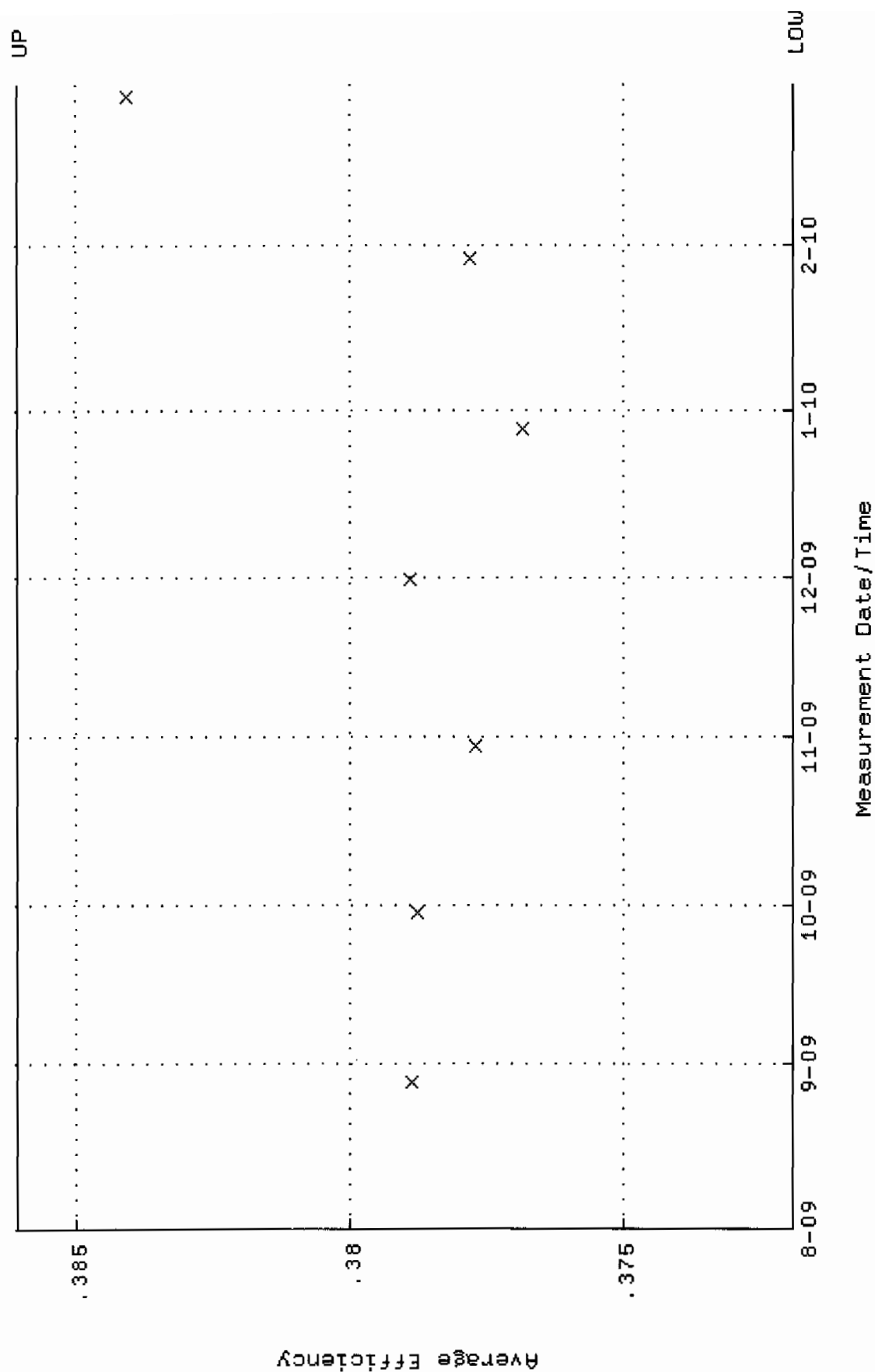
QA filename : DKA100:[ENV_ALPHA.QA.W]W223.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:38 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 85.7275 through 101.456



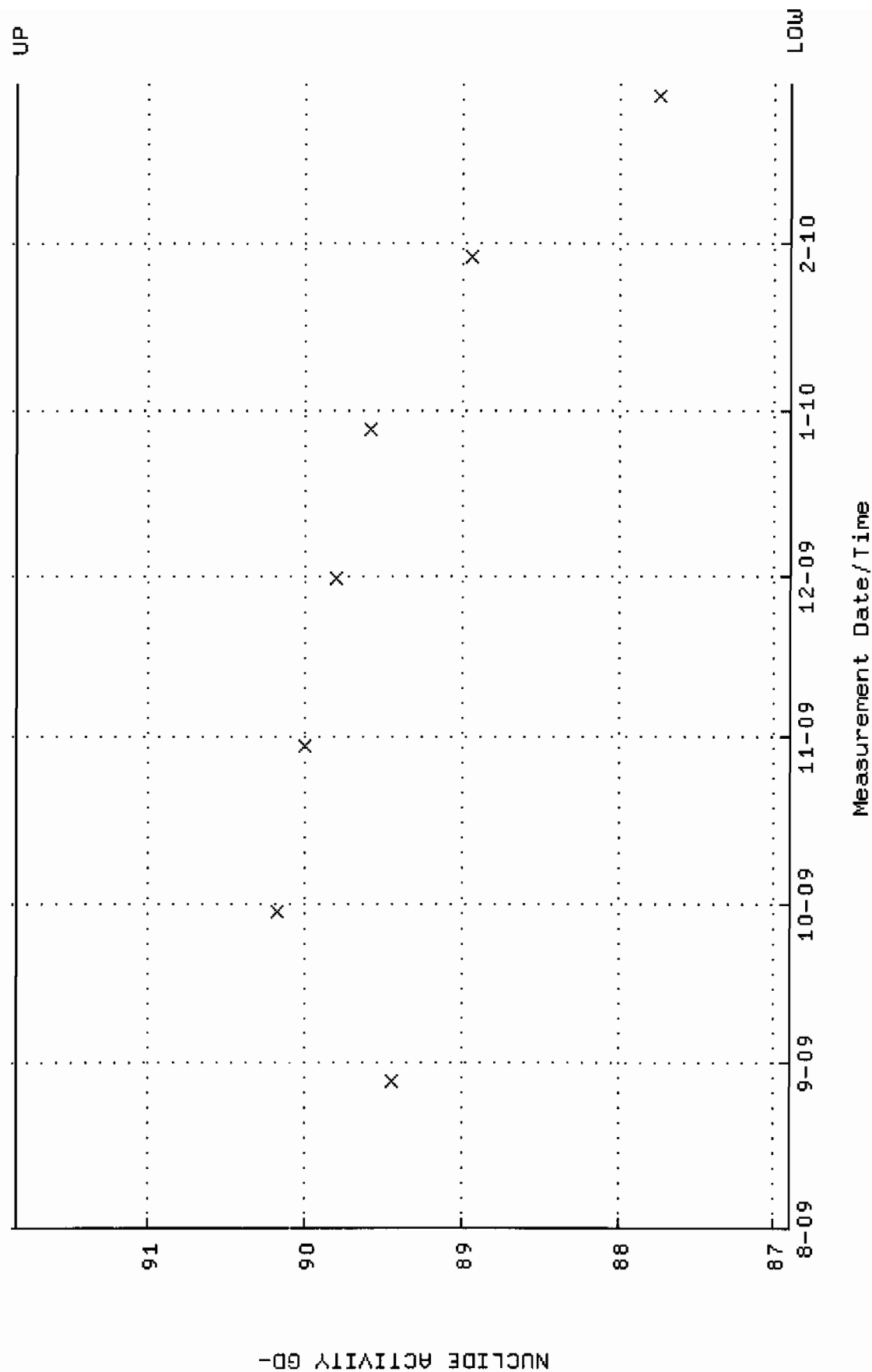
QA filename : DKA100:[ENV_ALPHA.QA.B]B223.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:08 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



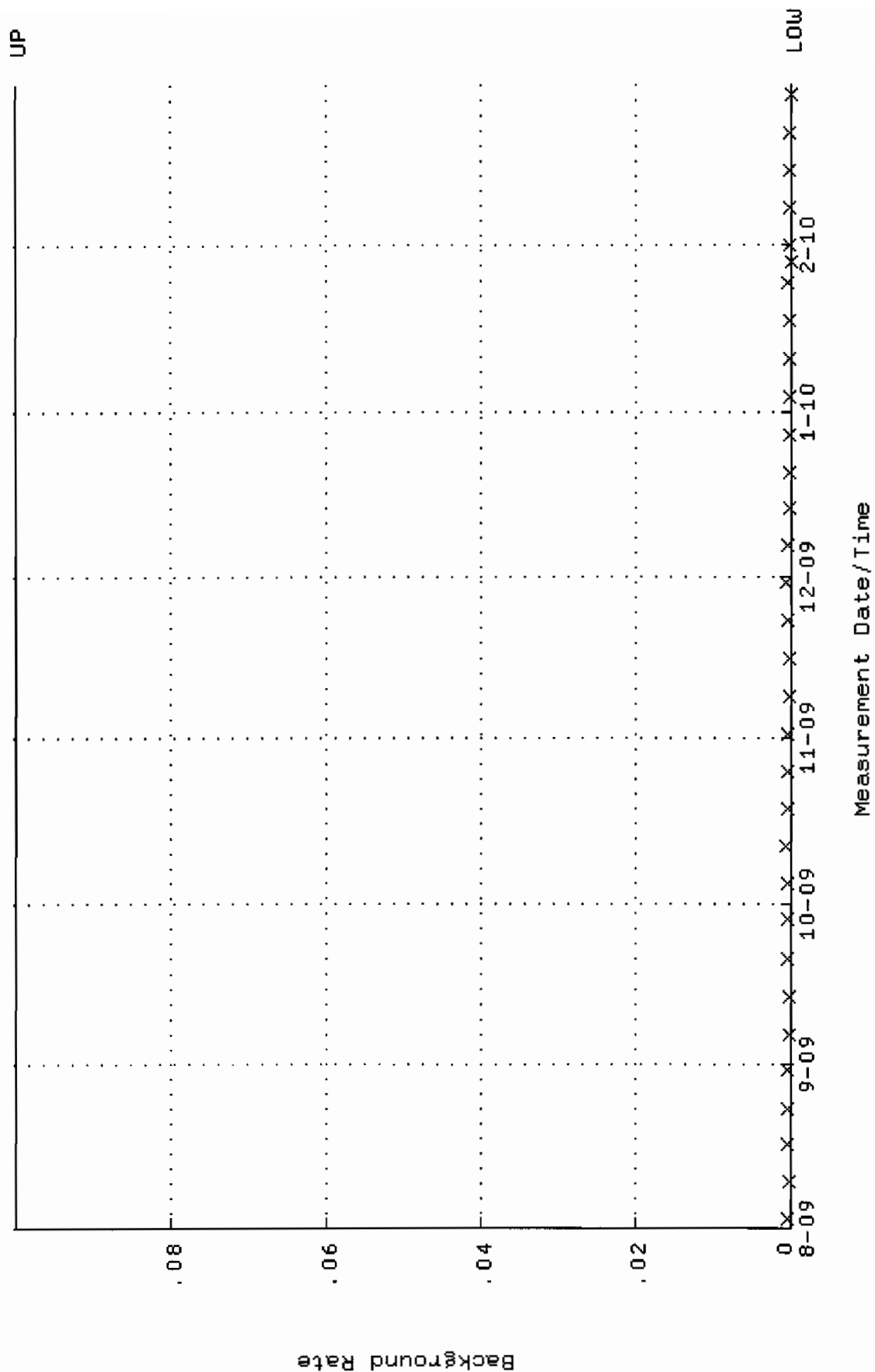
QA filename : DKA100:[ENV-ALPHA.QA.W]W224.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:44 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.371921 through 0.386057



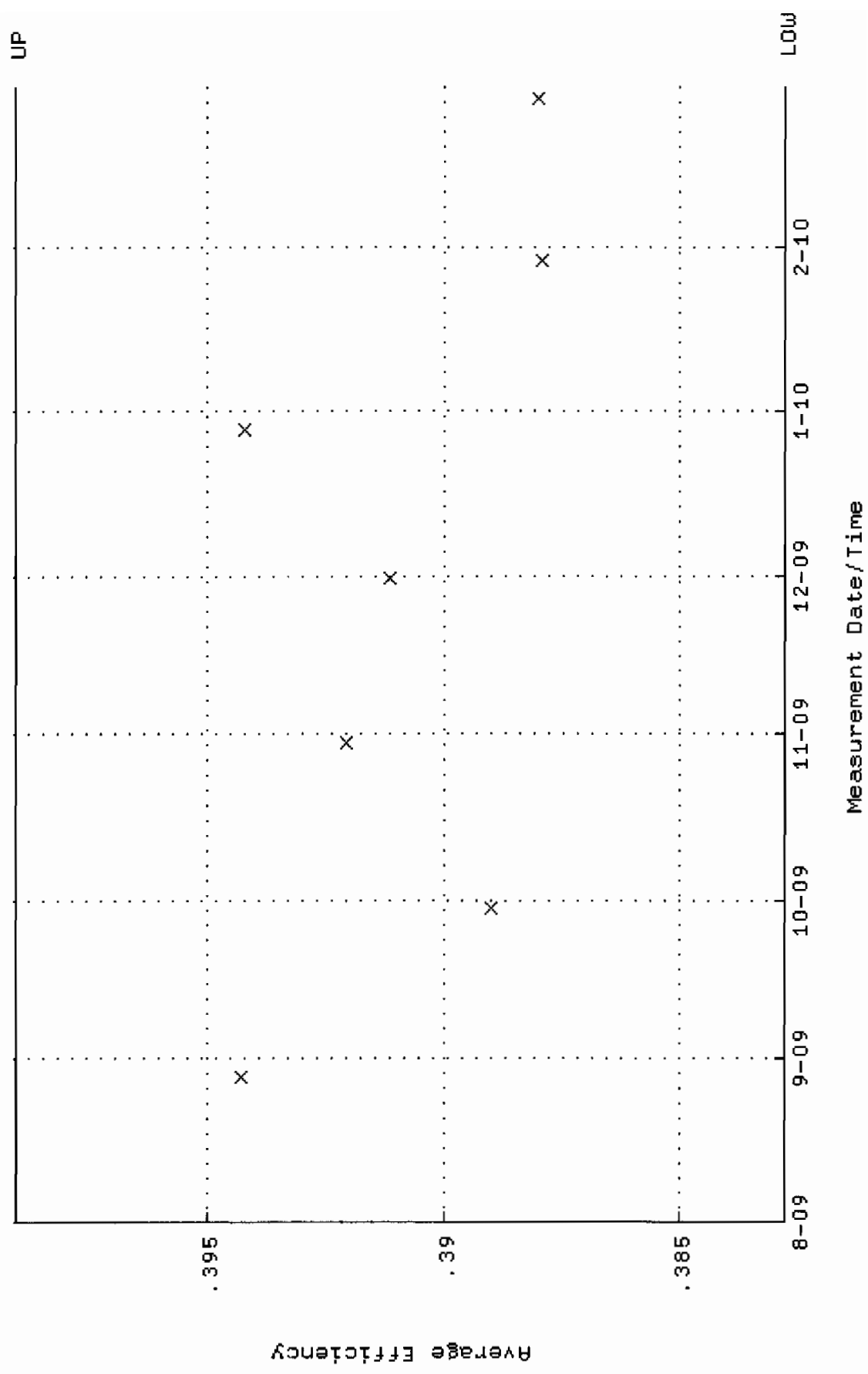
QA filename : OKA100:[ENV_ALPHA.QA.W]W224.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:44 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.9006 through 91.8482



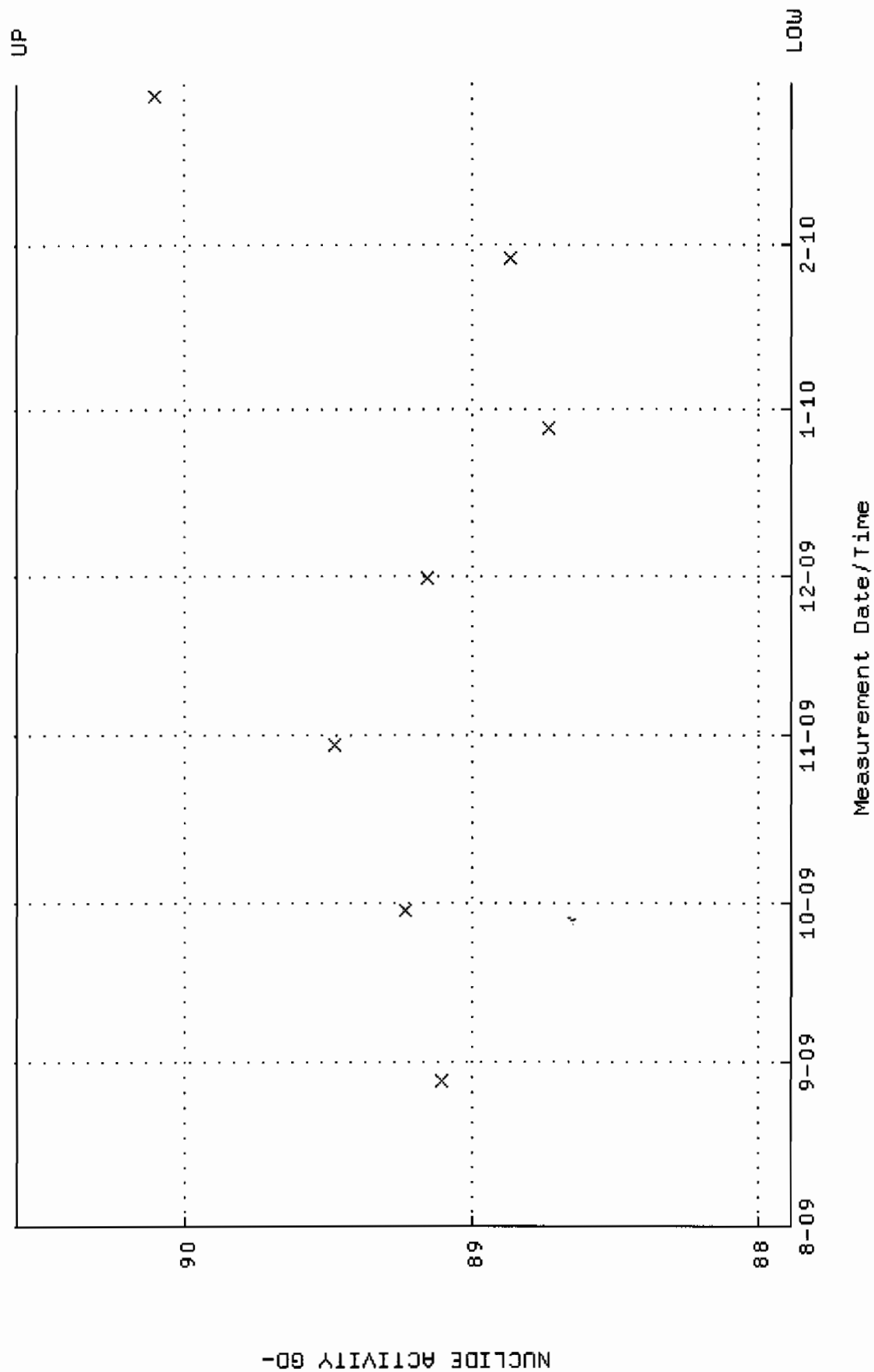
QA filename : DKA100:[ENV_ALPHA.QA.B]B224.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:12 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



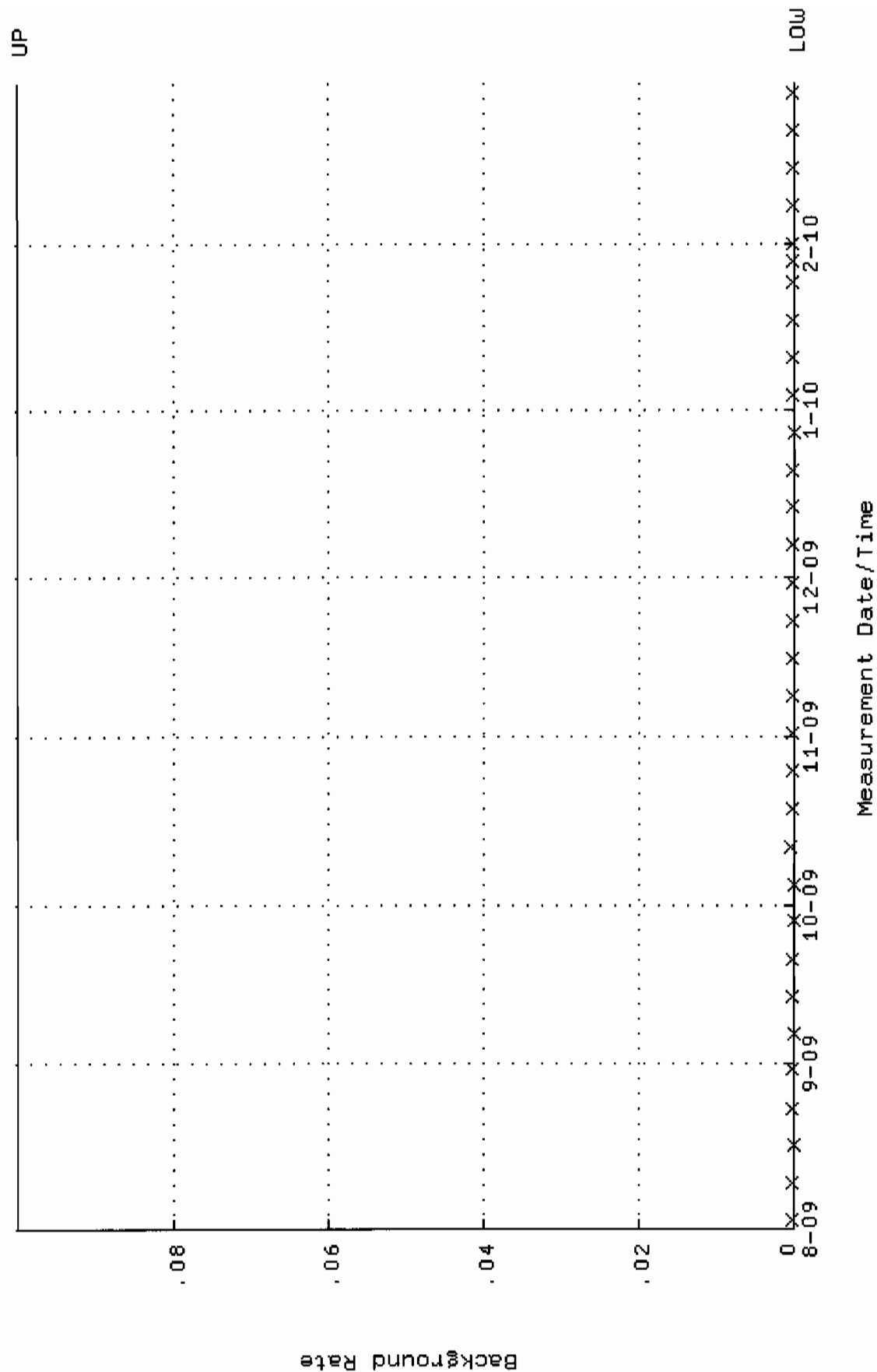
QA filename : DKA100:[ENV_ALPHA.QA.W]W225.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 28-AUG-2009 07:07:50 through 2-MAR-2010 12:00:00
Lower/Upper Lmts: 0.382792 through 0.399070



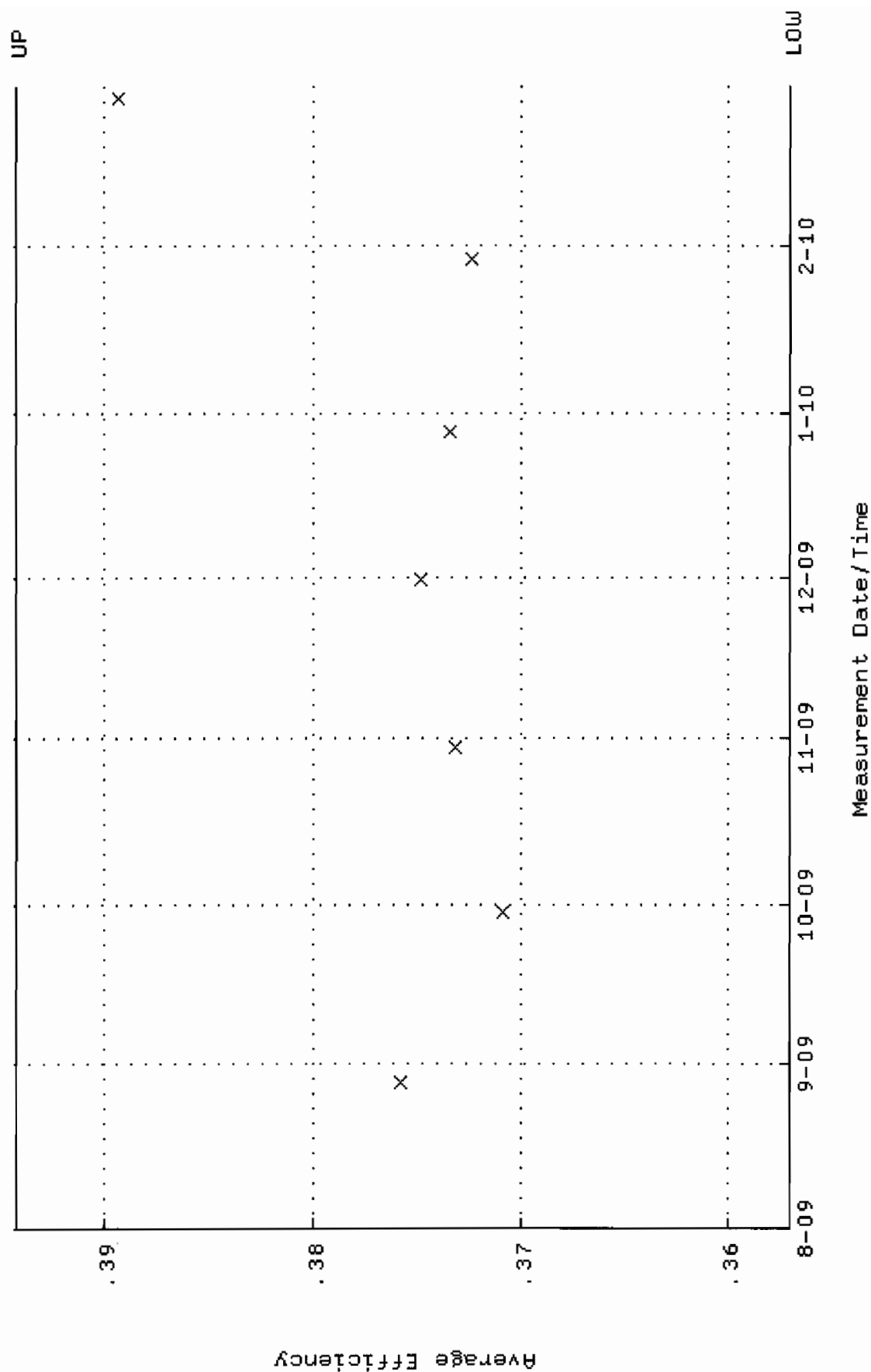
QA filename : DKA100:[ENV_ALPHA.QA.W]W225.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:50 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 87.8853 through 90.5875



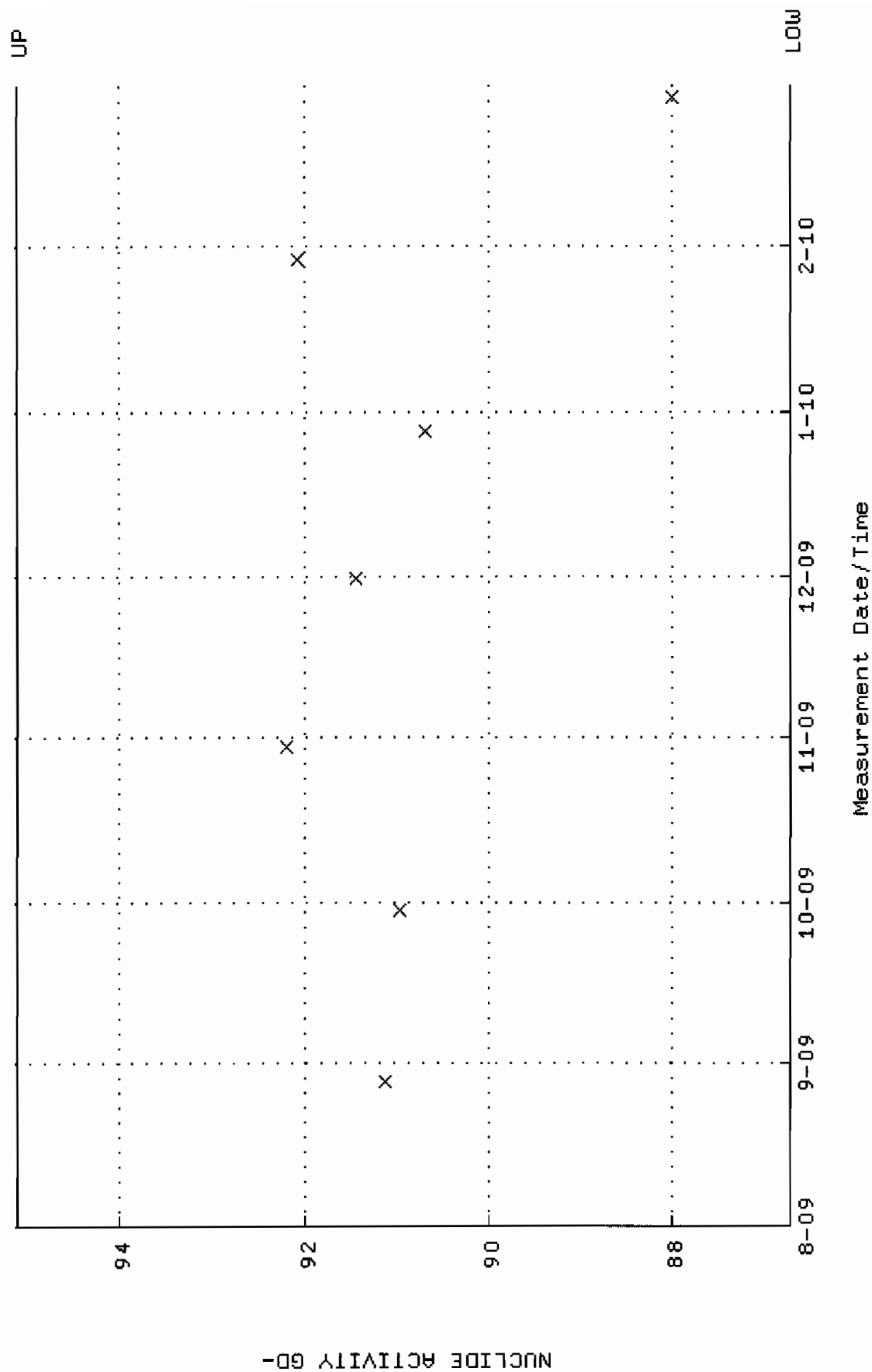
QA filename : DKA100:[ENV_ALPHA.QA.B]B225.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:16 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



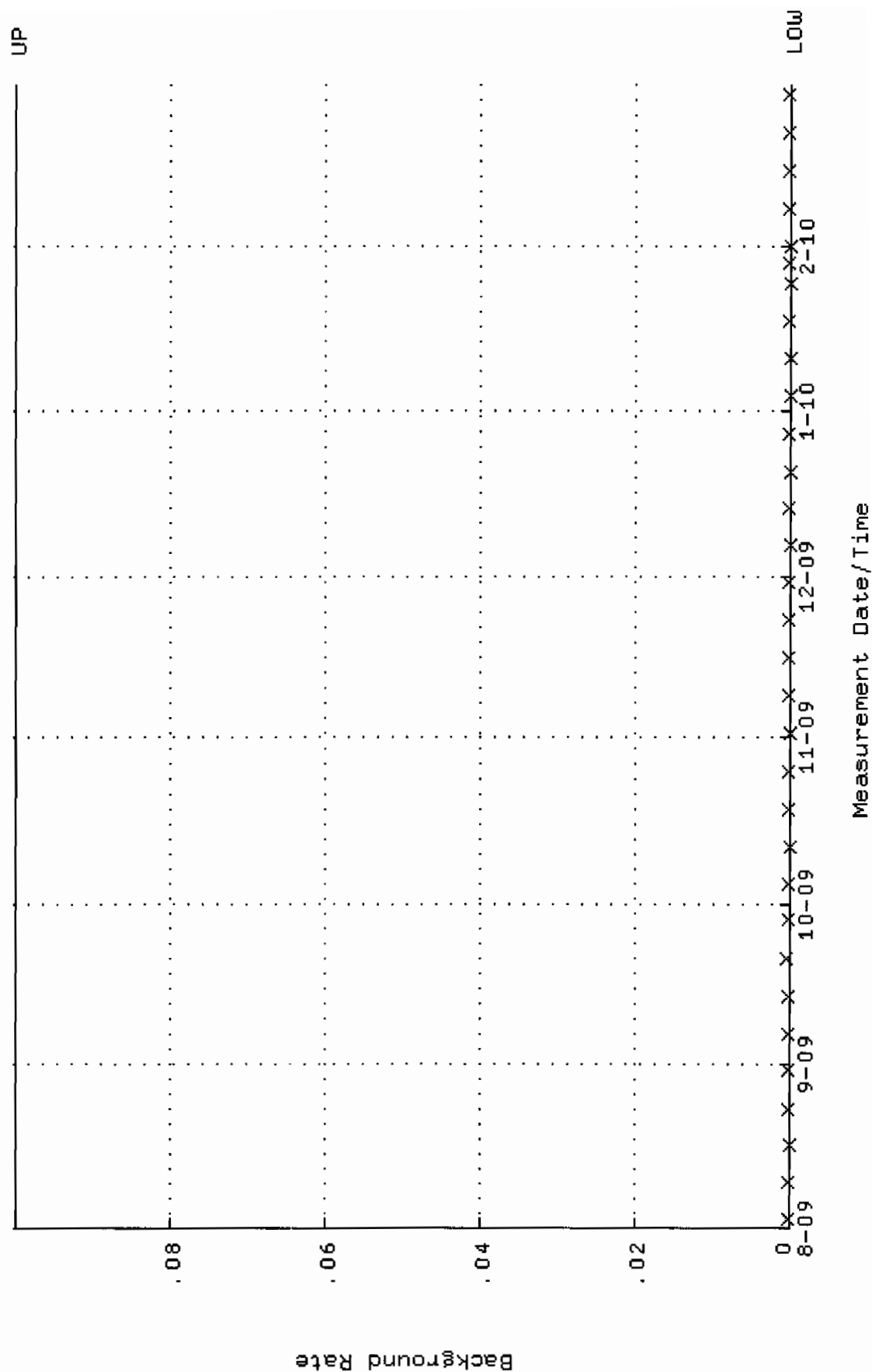
QA filename : DKA100:[ENV_ALPHA.QA.W]w226.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:07:57 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.357039 through 0.394215



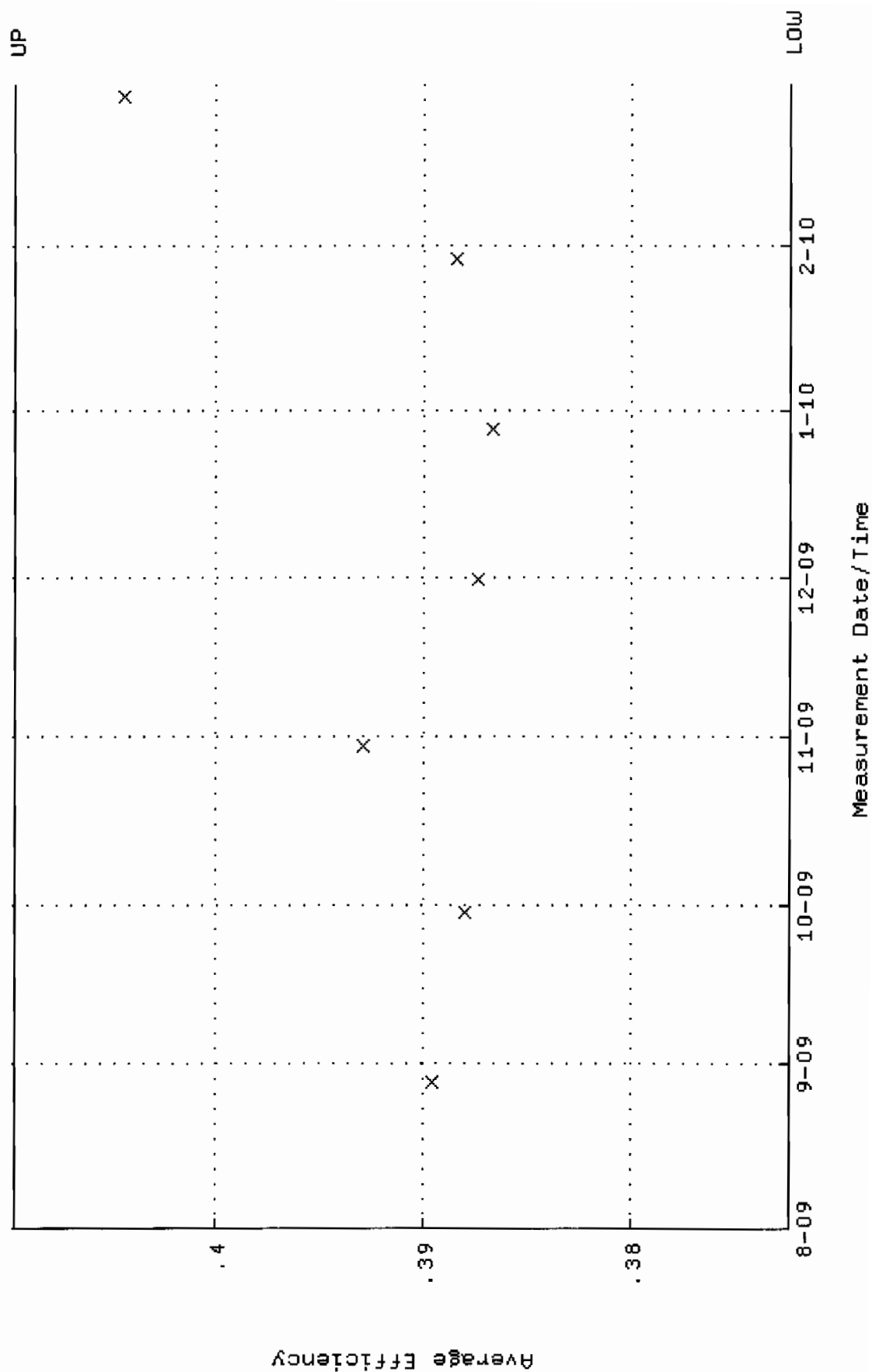
QA filename : DKA100:[ENV_ALPHA.QA.W]W226.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:07:57 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 86.7273 through 95.1093



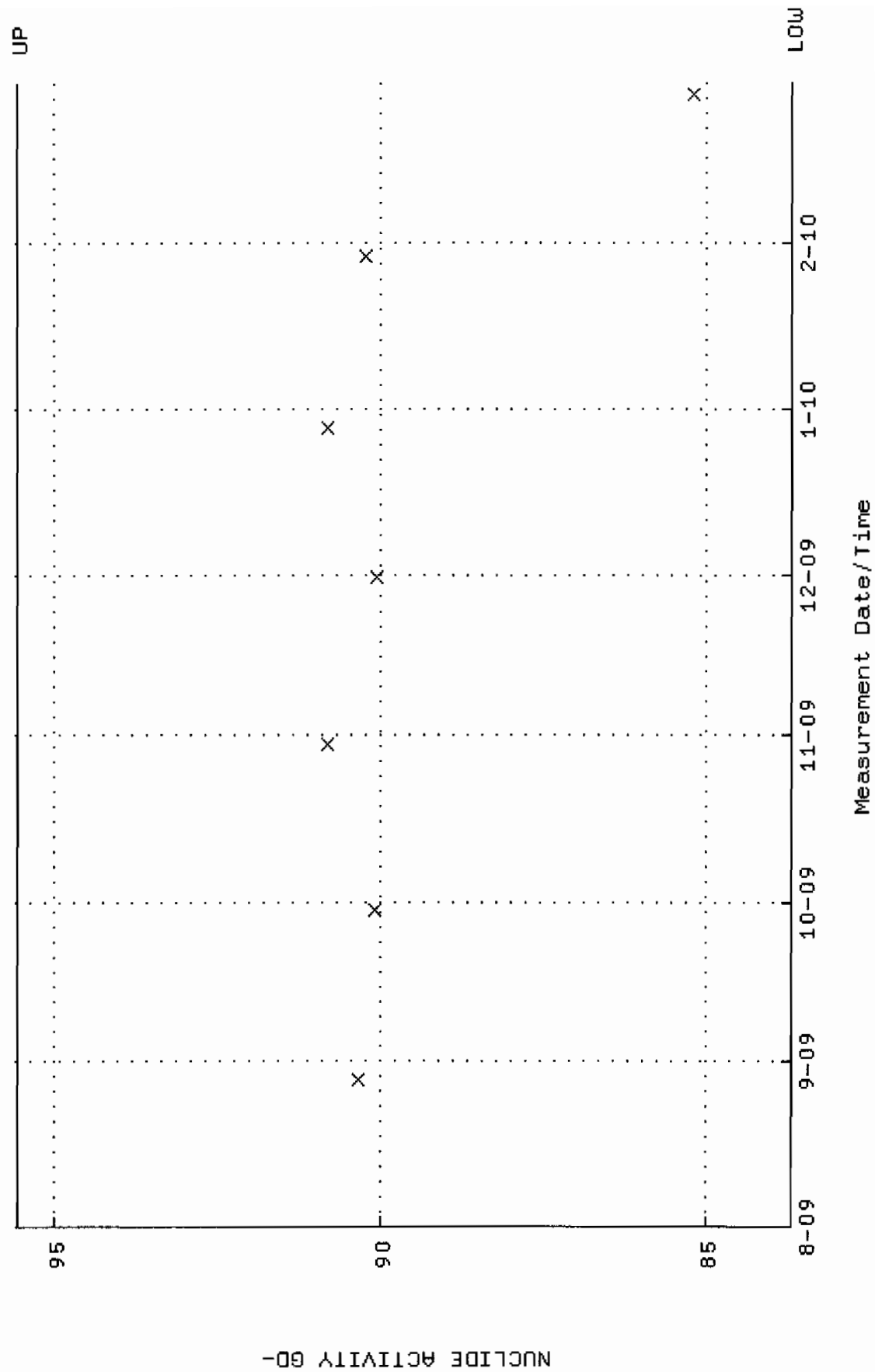
QA filename : DKA100:[ENV_ALPHA.QA.B]B226.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:20 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



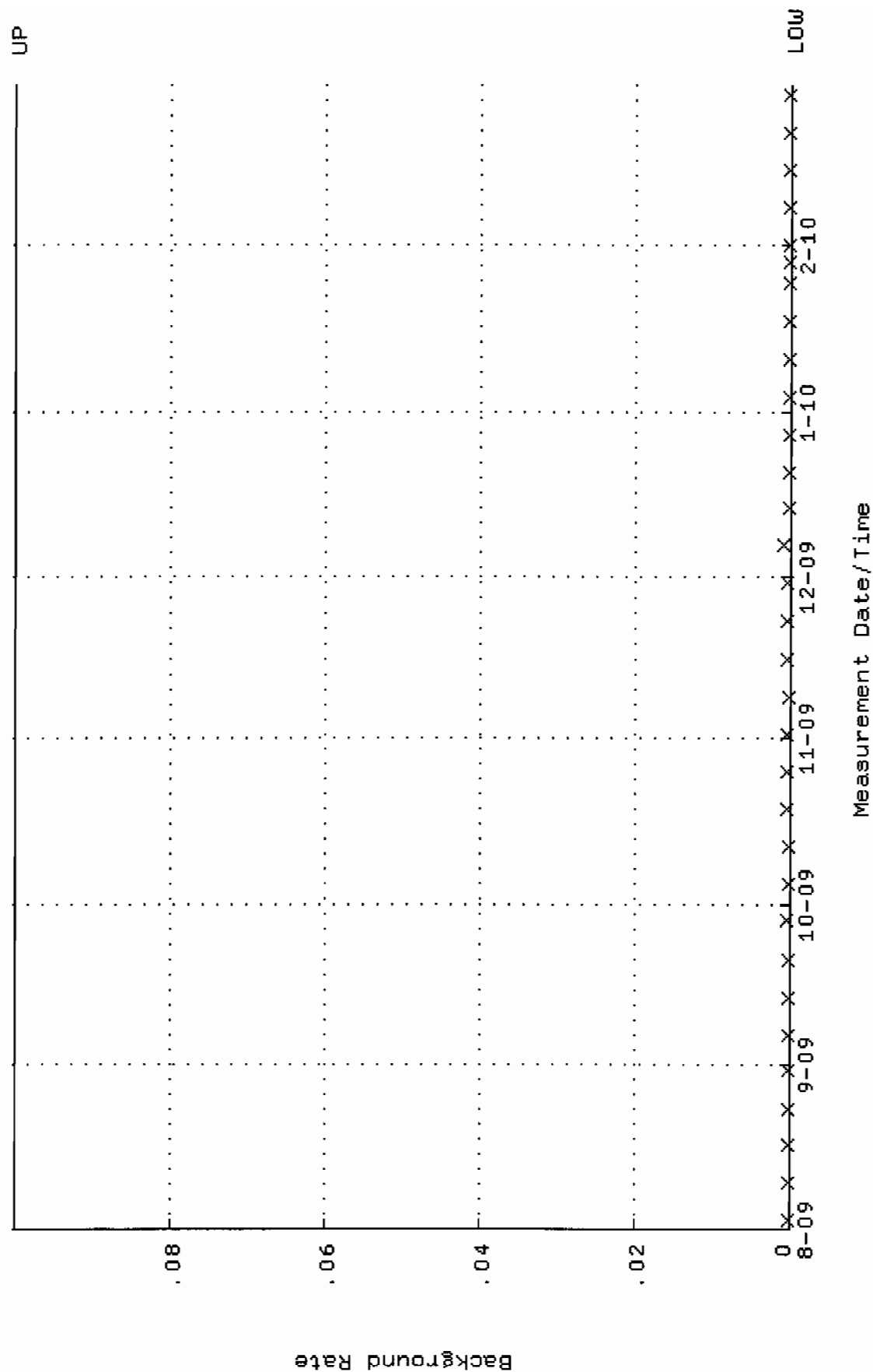
QA filename : DKA100:[ENV_ALPHA.QA.W]W231.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:24 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.372352 through 0.409678



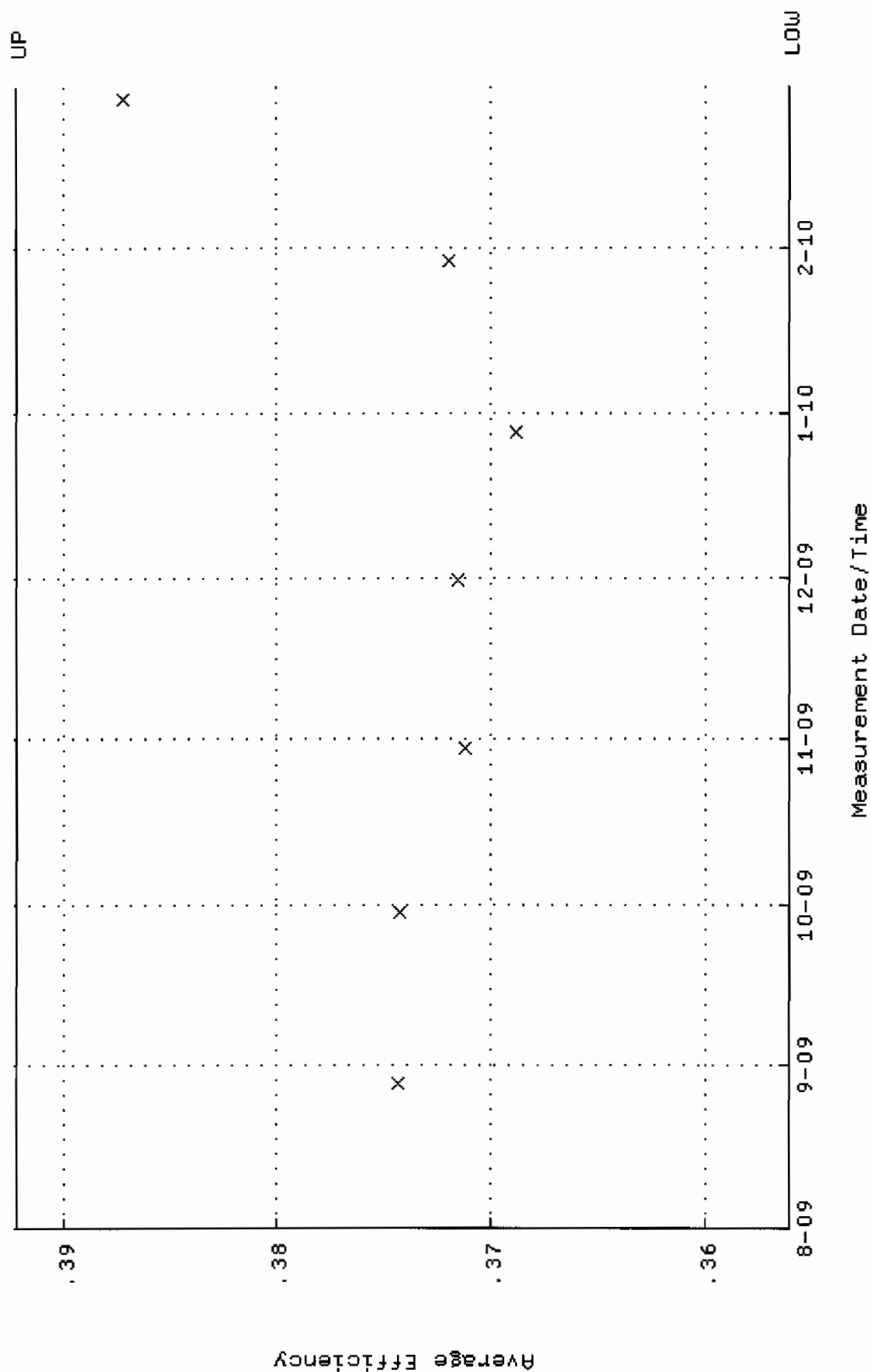
QA filename : DKA100:[ENV_ALPHA.QA.W]W231.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:24 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.6949 through 95.5595



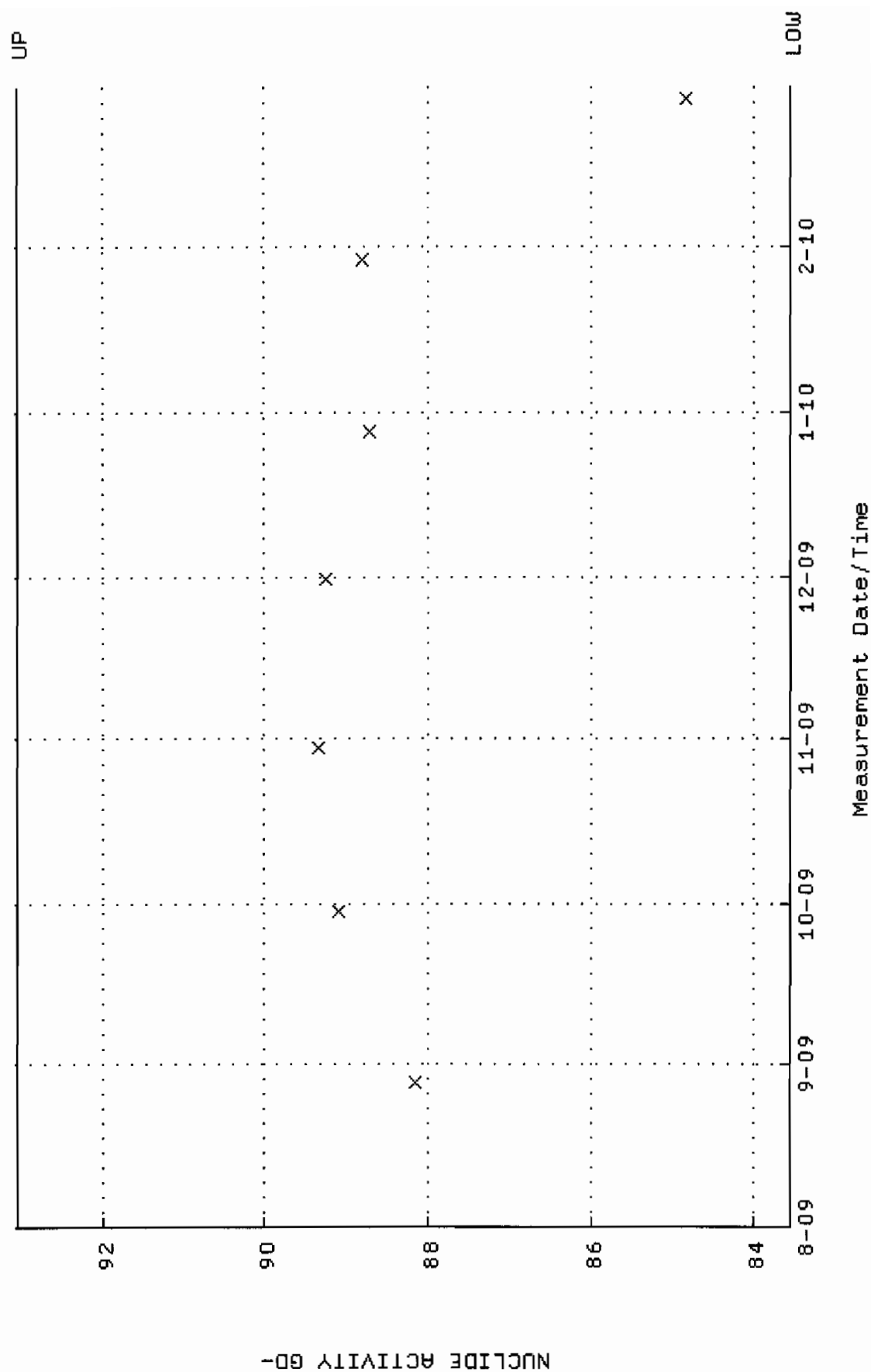
QA filename : DKA100:[ENV_ALPHA.QA.B]B231.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:43 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



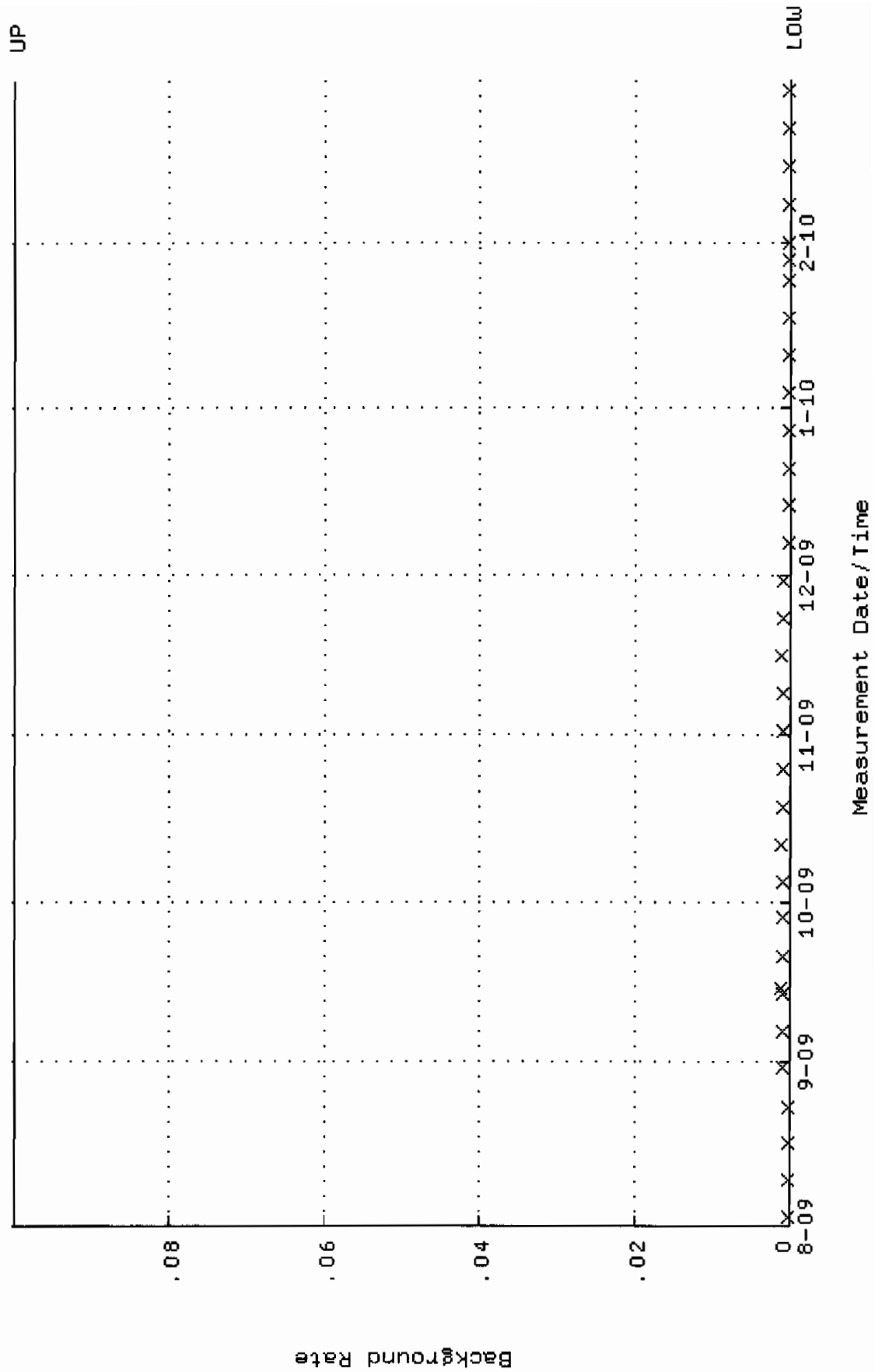
QA filename : DKA100:[ENV_ALPHA.QA.W]W232.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:08:30 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.356063 through 0.392181



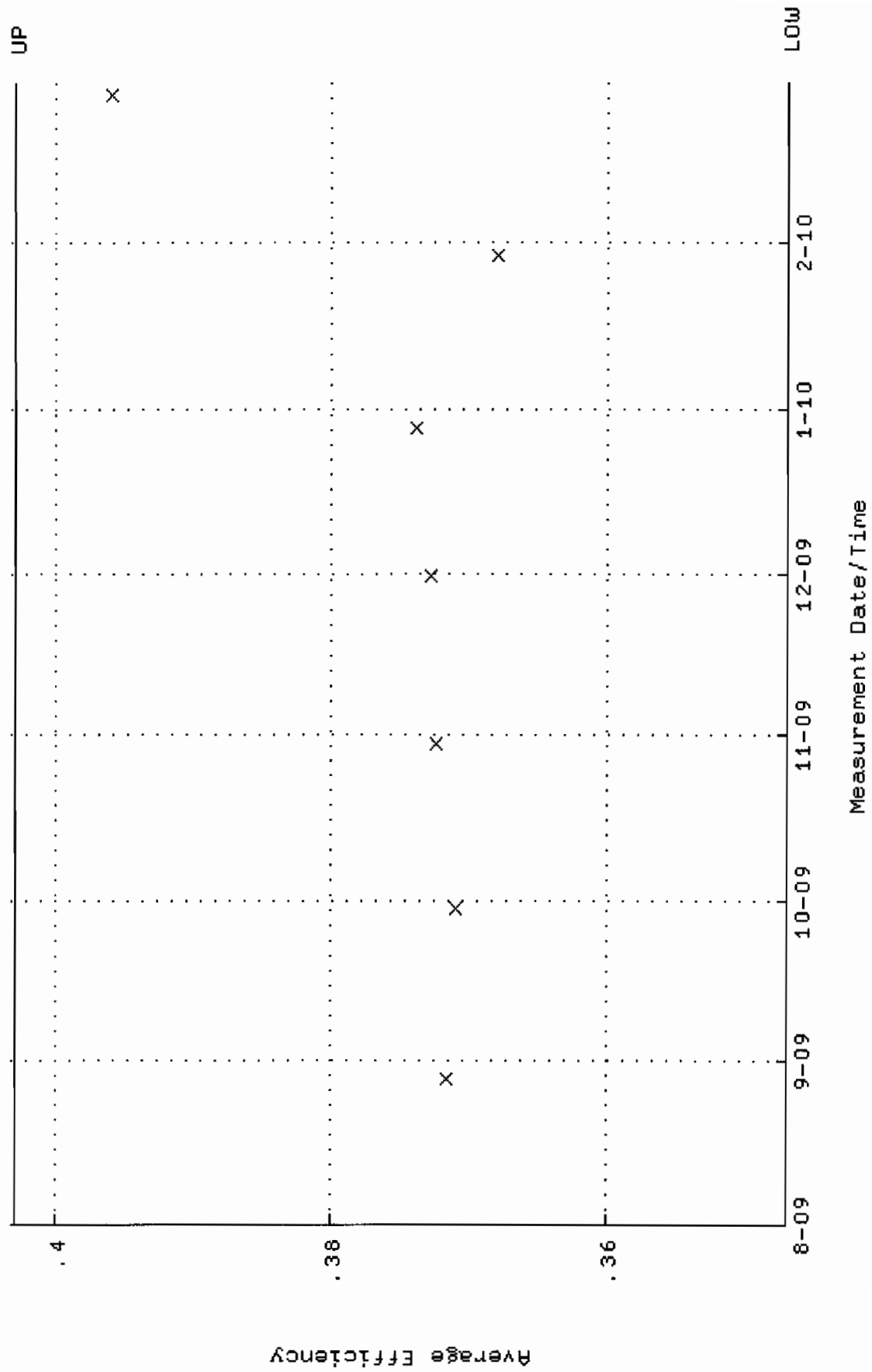
QA filename : DKA100:[ENV_ALPHA.QA.W]W232.QAF;1
 Parameter Name : NLACTVY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:08:30 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 83.5615 through 93.0435



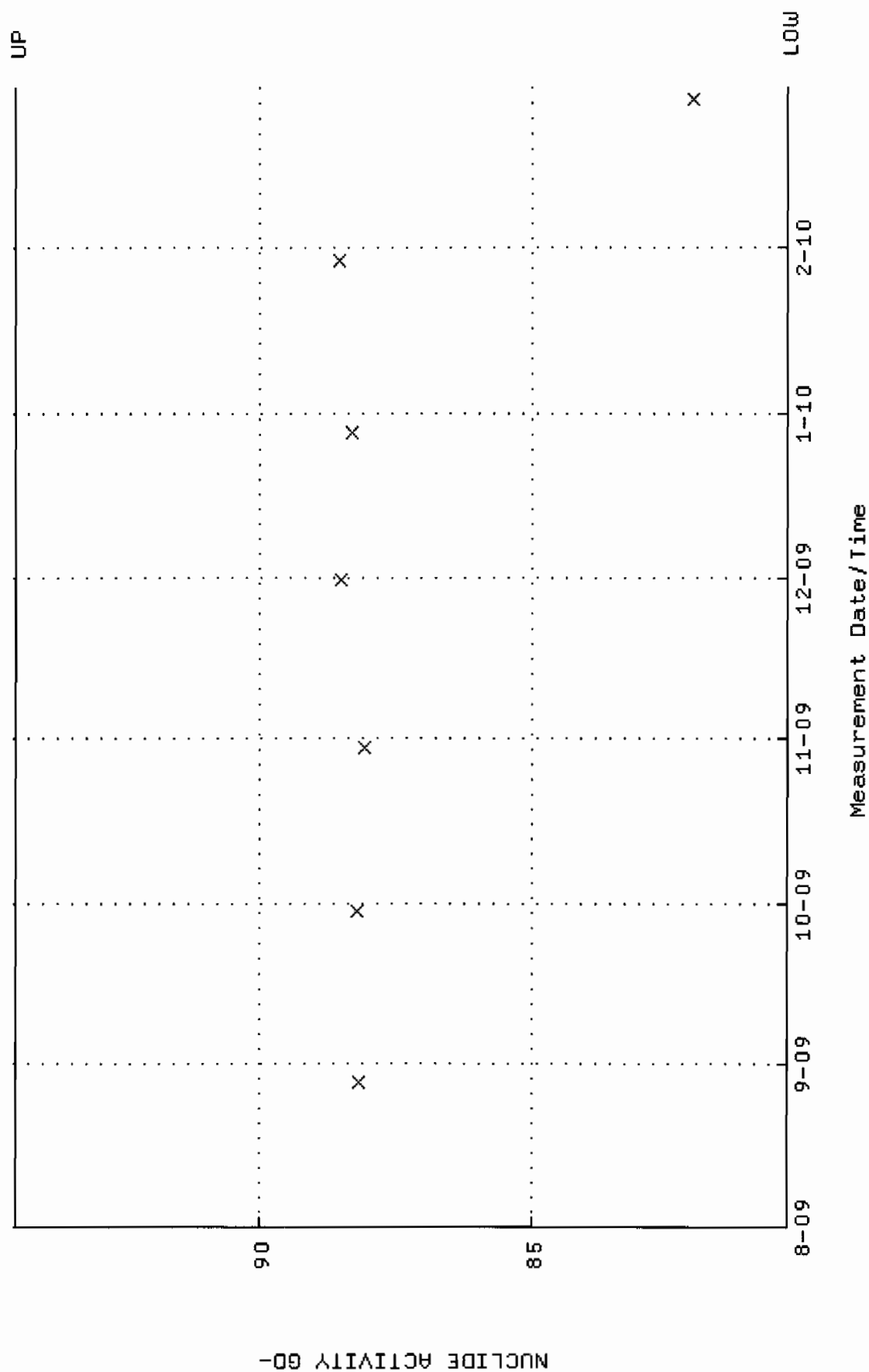
QA filename : DKA100:[ENV_ALPHA.QA.B]B232.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:26:47 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



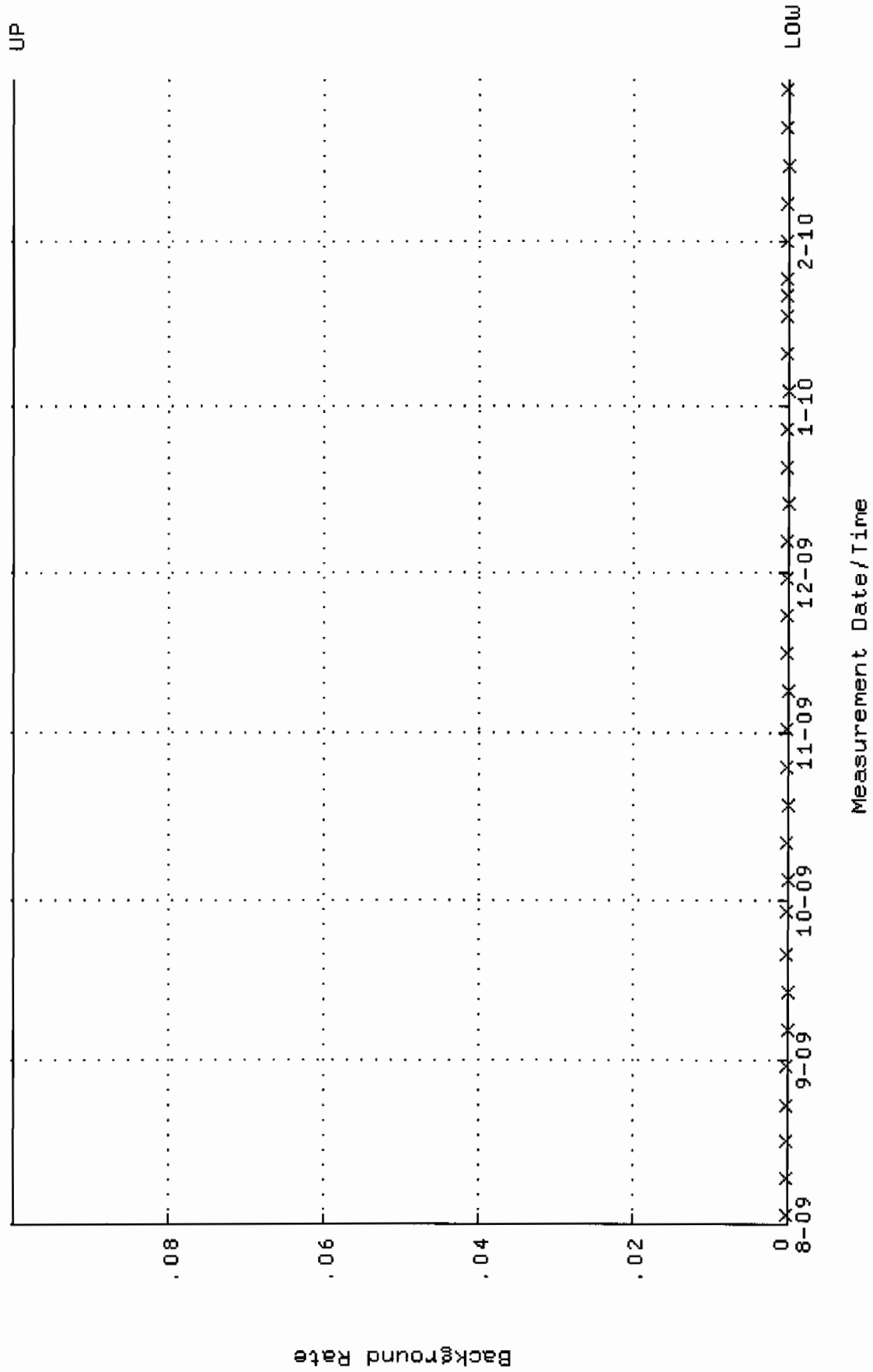
QA filename : DKA100:[ENV_ALPHA.QA.W]W244.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 28-AUG-2009 07:09:32 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.346871 through 0.403035



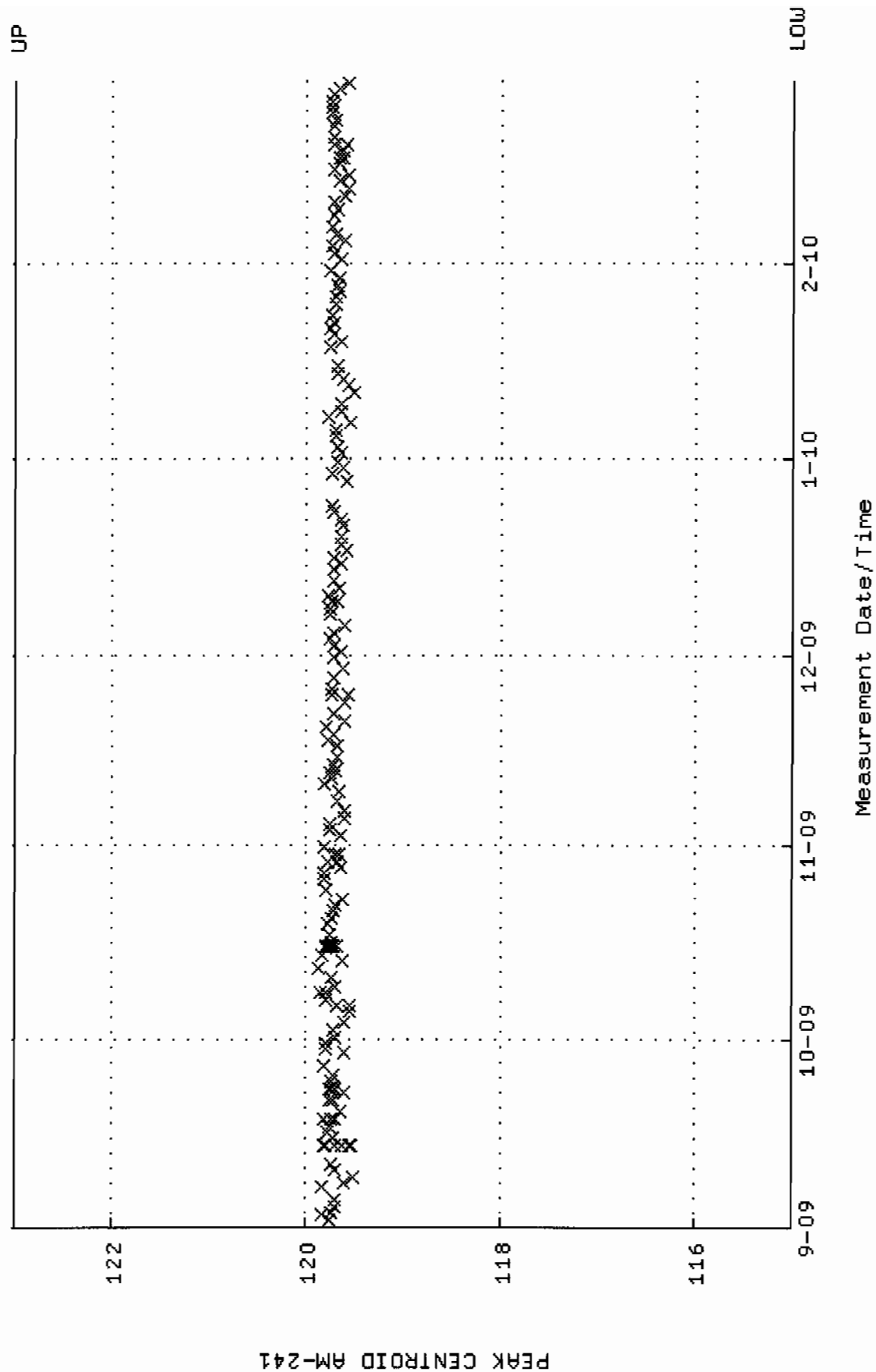
QA filename : DKA100:[ENV_ALPHA.QA.W]W244.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 28-AUG-2009 07:09:32 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 80.2814 through 94.4734



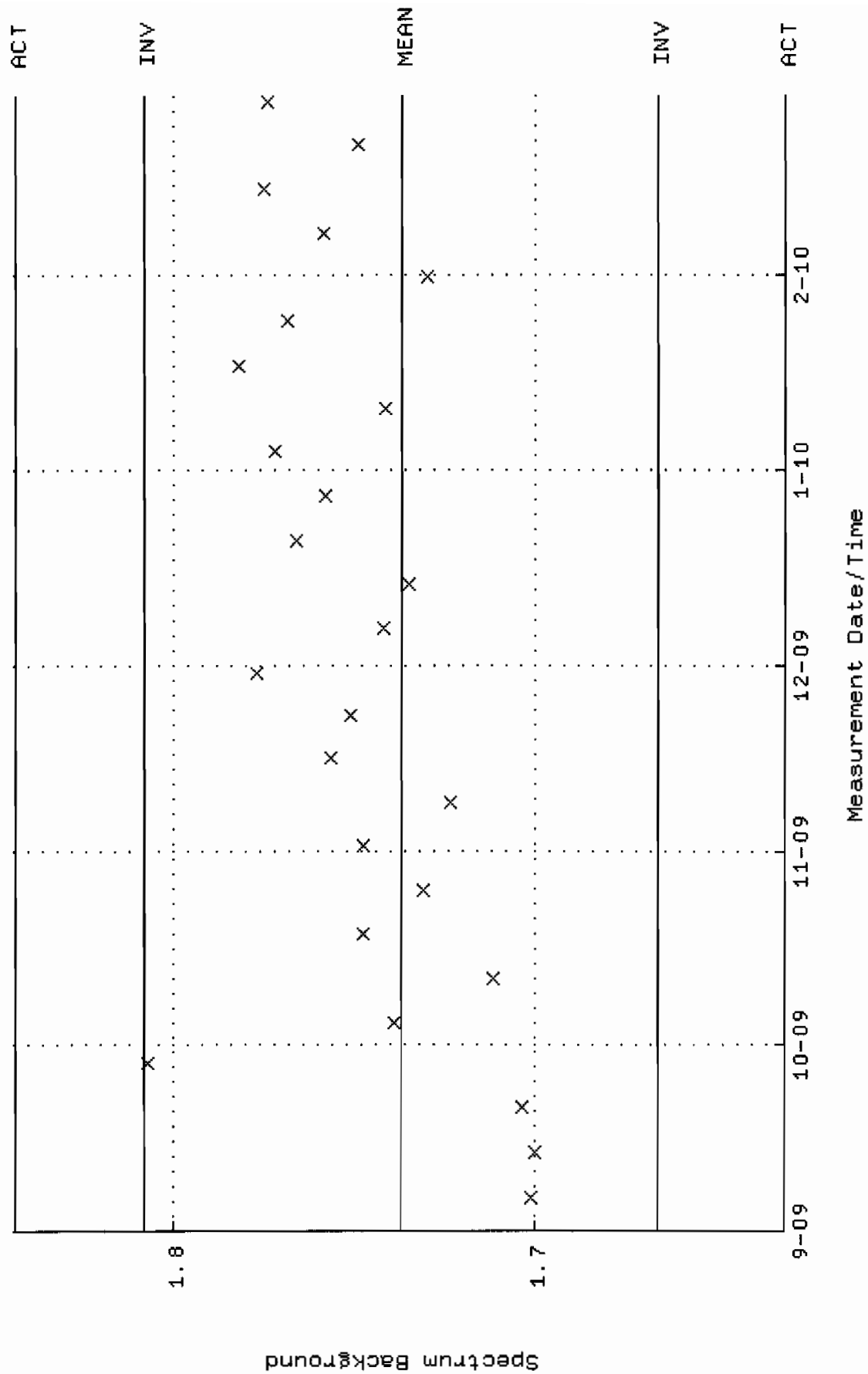
QA filename : DKA100:[ENV_ALPHA.QA.B]B244.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:27:40 through 2-MAR-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



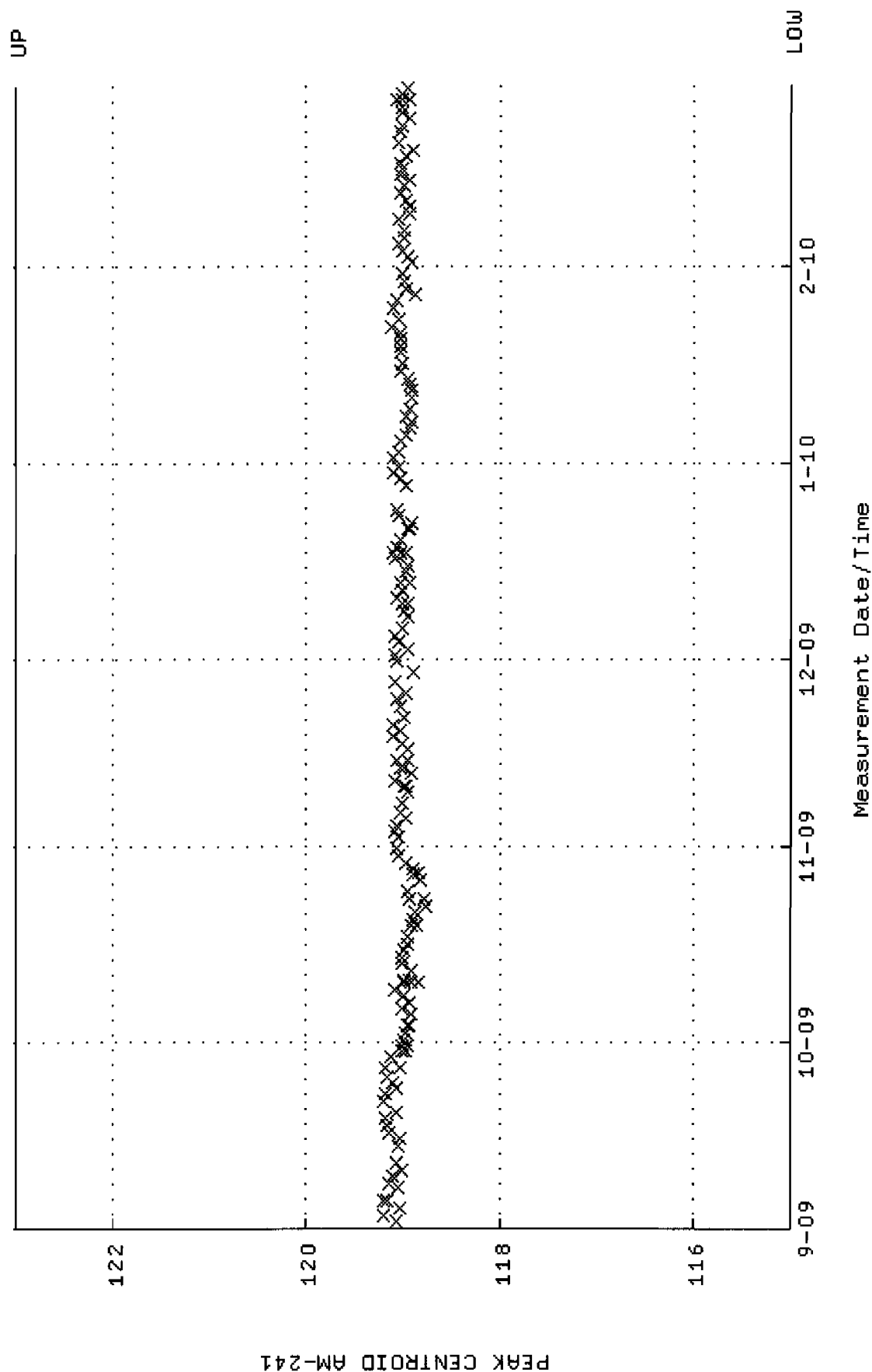
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM01_500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:39:53 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



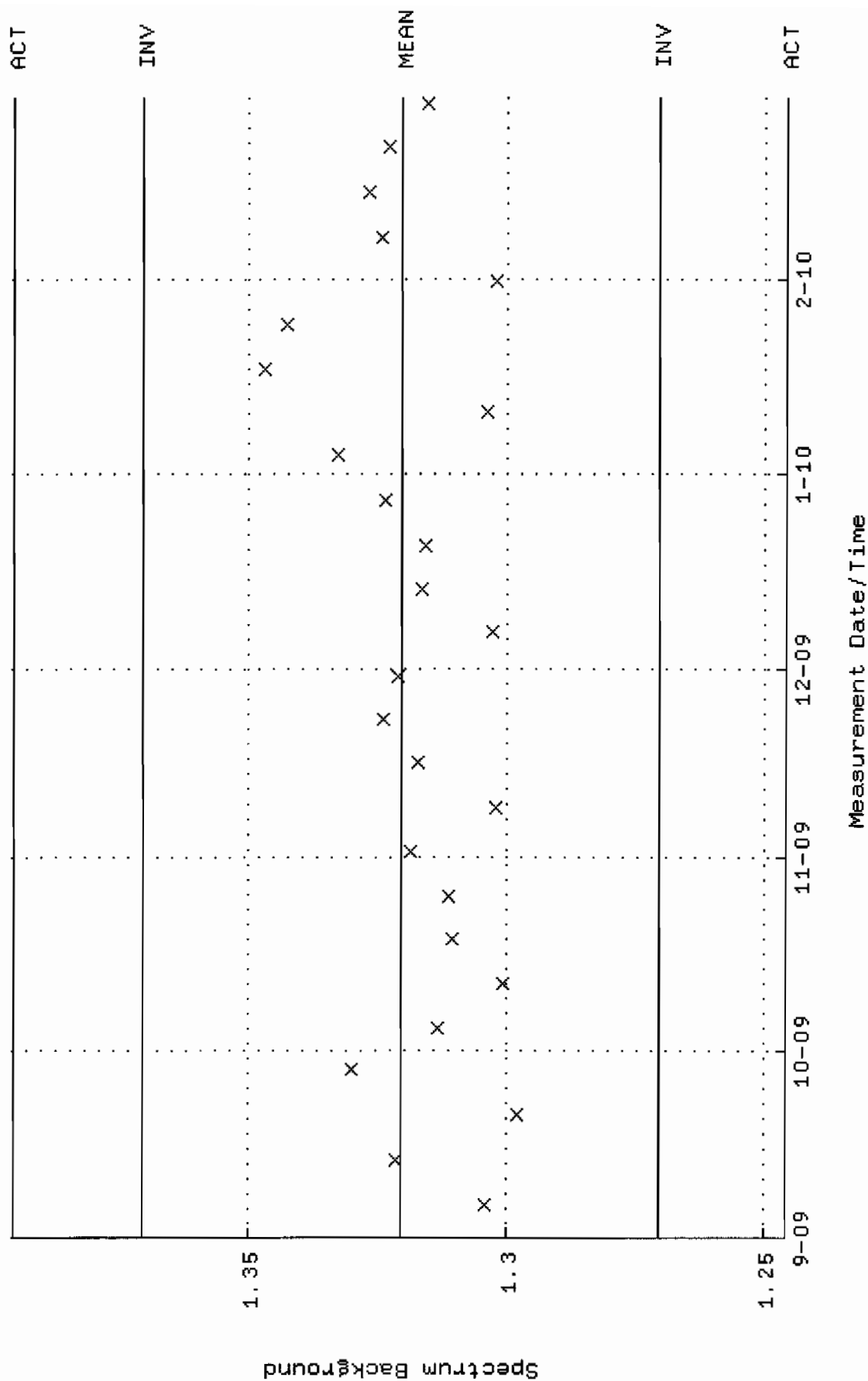
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM01.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:36:28 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.73723 +- 3.552524E-02 (2.04 %)



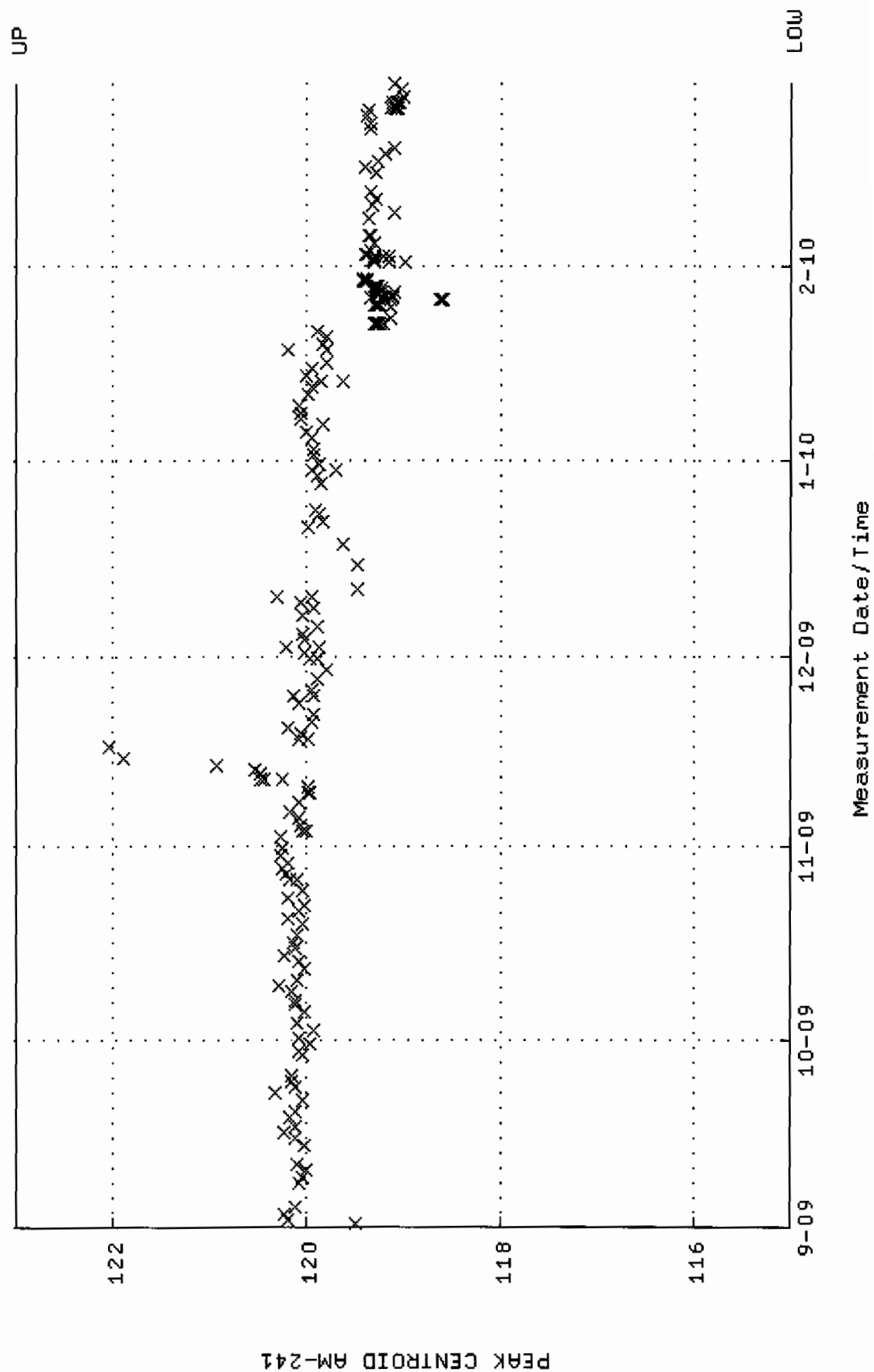
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM04-CAN.QAF;1
 Parameter Name : PSCENTROD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 05:22:58 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



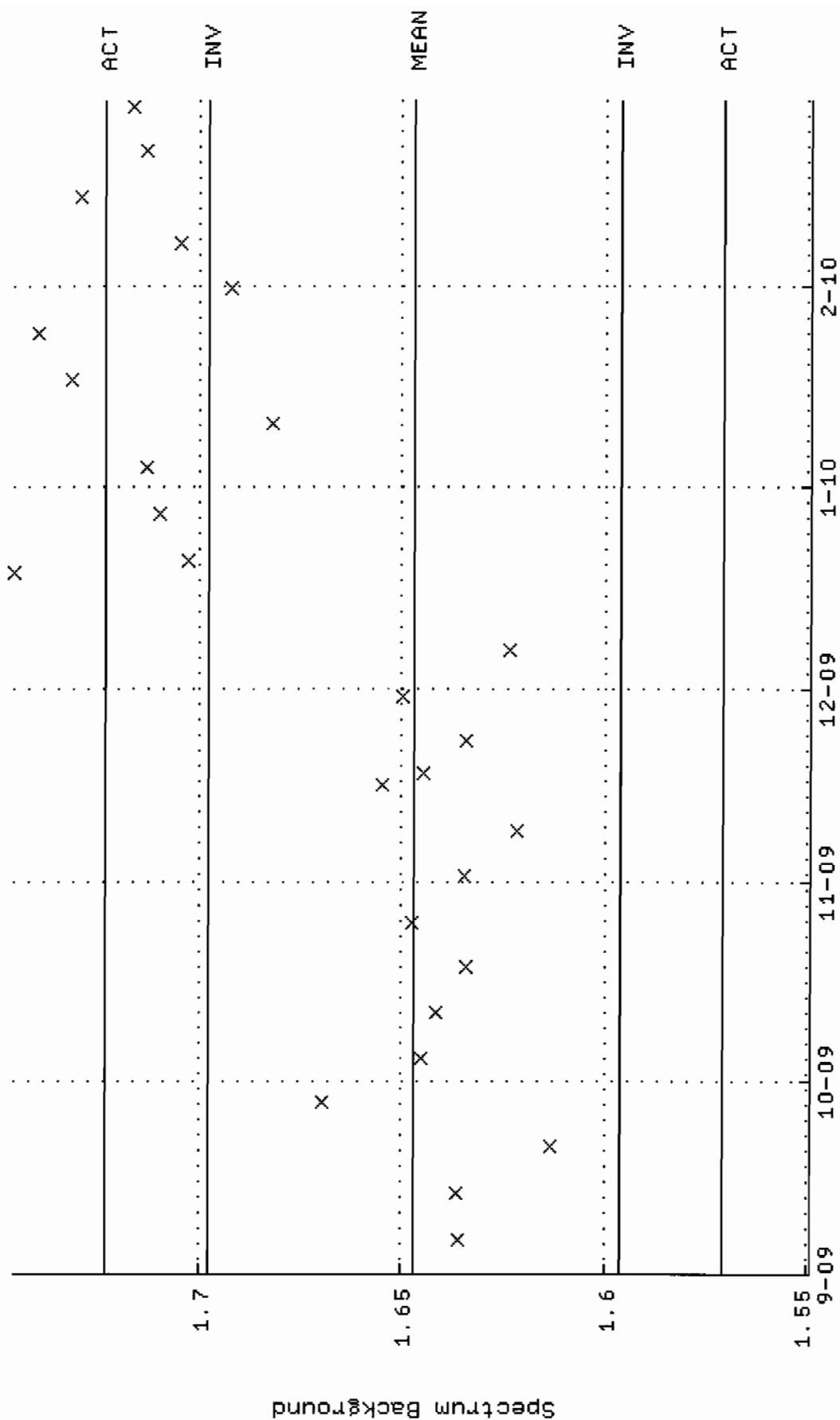
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM04.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:38:33 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.32050 +- 2.495234E-02 (1.89 %)



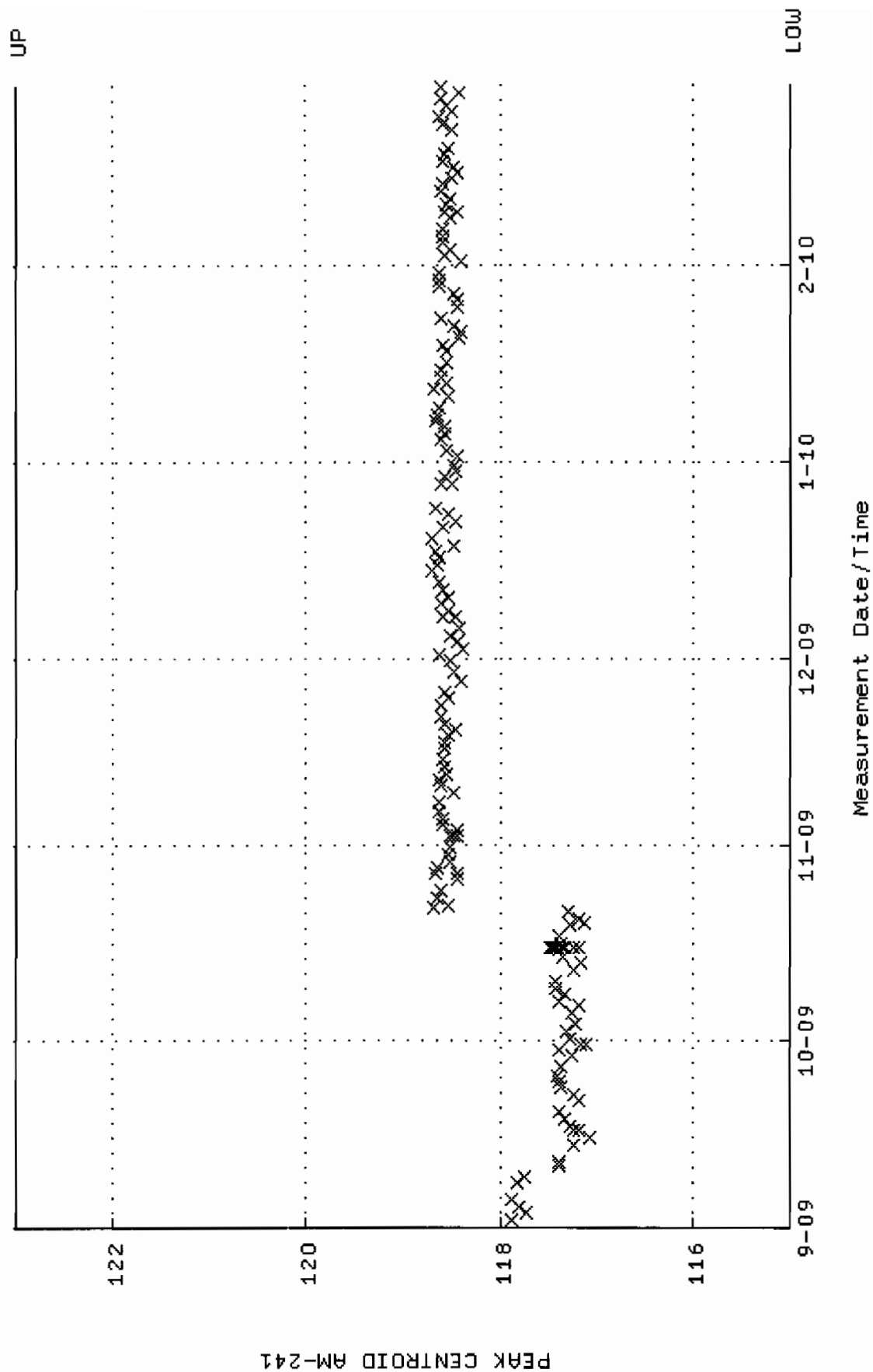
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM05-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 1-SEP-2009 14:54:46 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



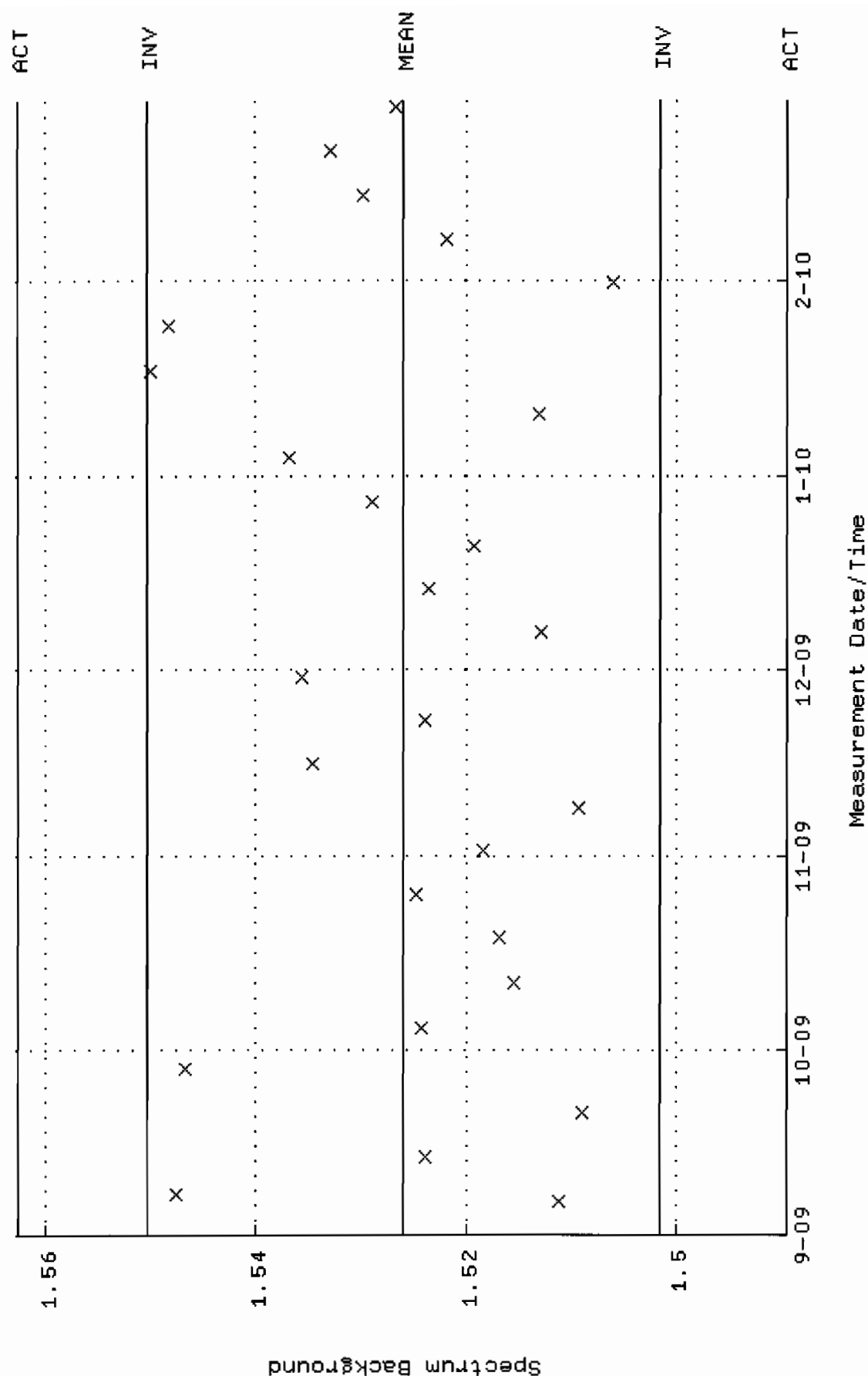
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM05.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:39:04 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.64719 +- 2.547087E-02 (1.55 %)



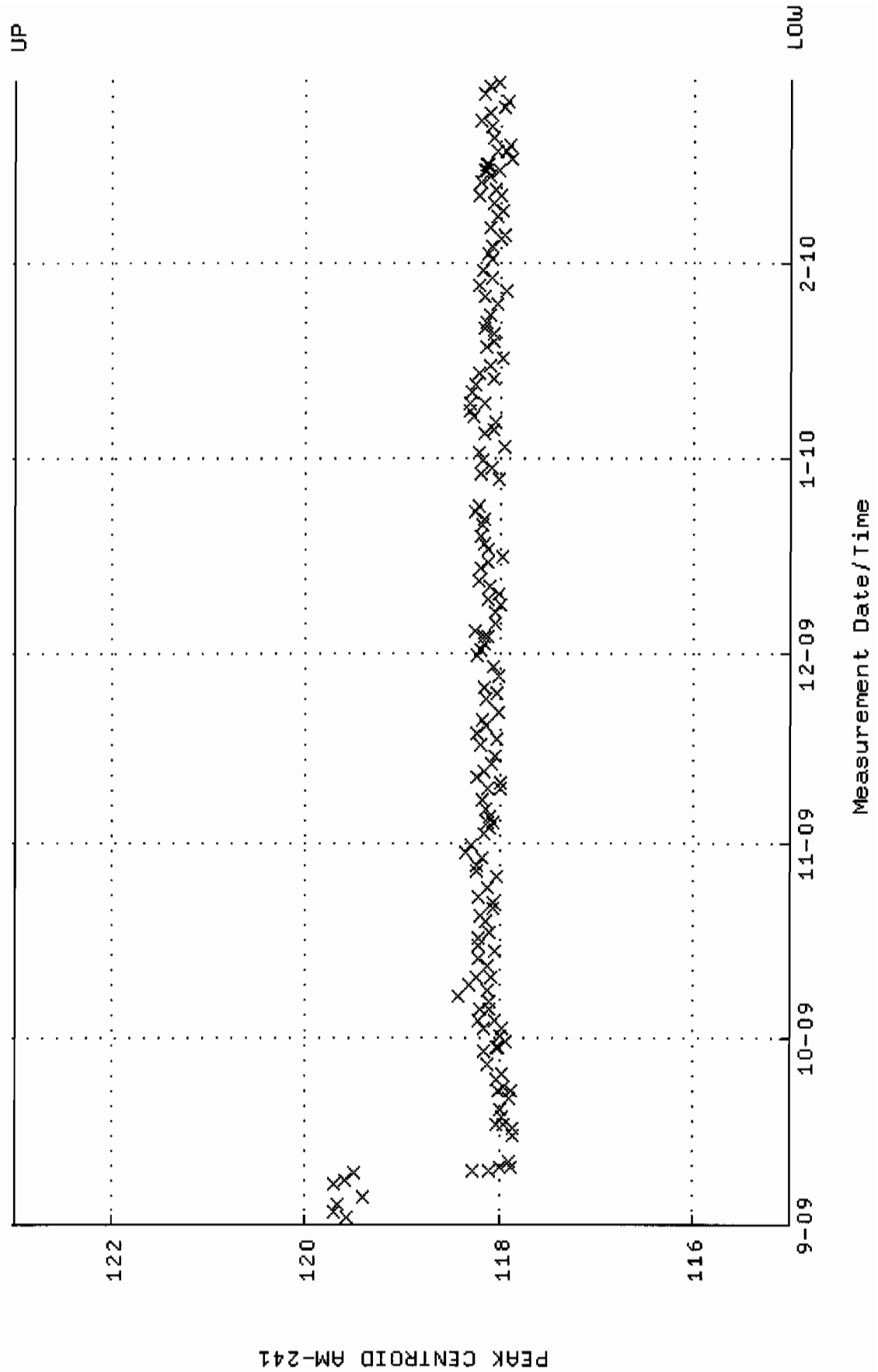
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM06_500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 04:40:19 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM06.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 6-SEP-2009 11:39:28 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 1.52603 +- 1.215987E-02 (0.80 %)



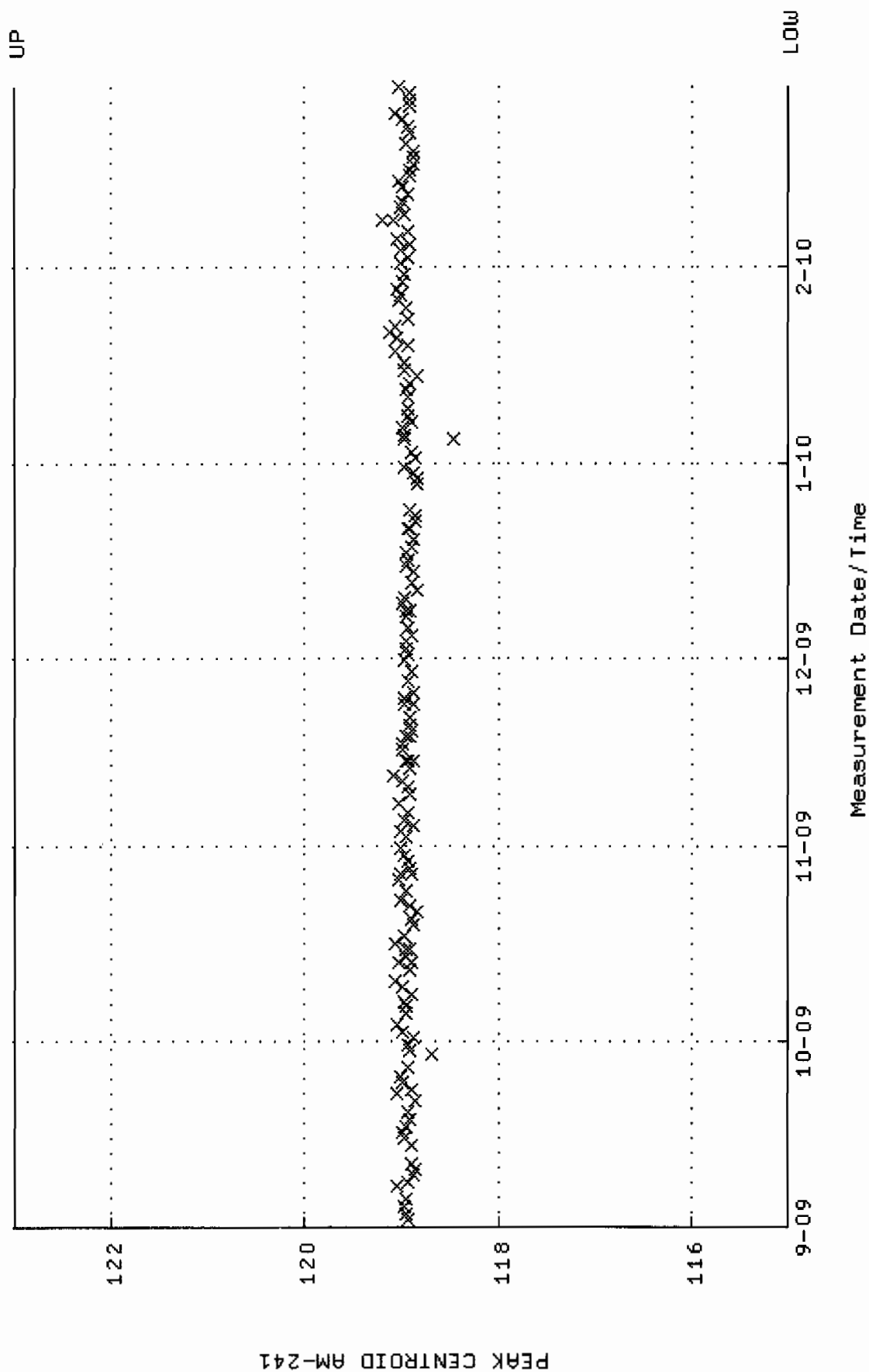
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM15-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 06:32:23 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



The figure displays a time series of spectrum background measurements. The y-axis, labeled 'Spectrum Background', ranges from 1.7 to 1.75. The x-axis, labeled 'Measurement Date/Time', spans from 9-09 to 2-10. The plot is divided into four horizontal sections: ACT (top), INV, MEAN, and INV (bottom). Data points are marked with 'x' and show a general upward trend over time, with a notable spike in the MEAN section around 1-10.

Measurement Date/Time	ACT	INV	MEAN	INV
9-09			1.700	1.700
10-09		1.735	1.705	1.705
11-09			1.710	1.710
12-09			1.715	1.715
1-10		1.740	1.720	1.720
2-10			1.725	1.725

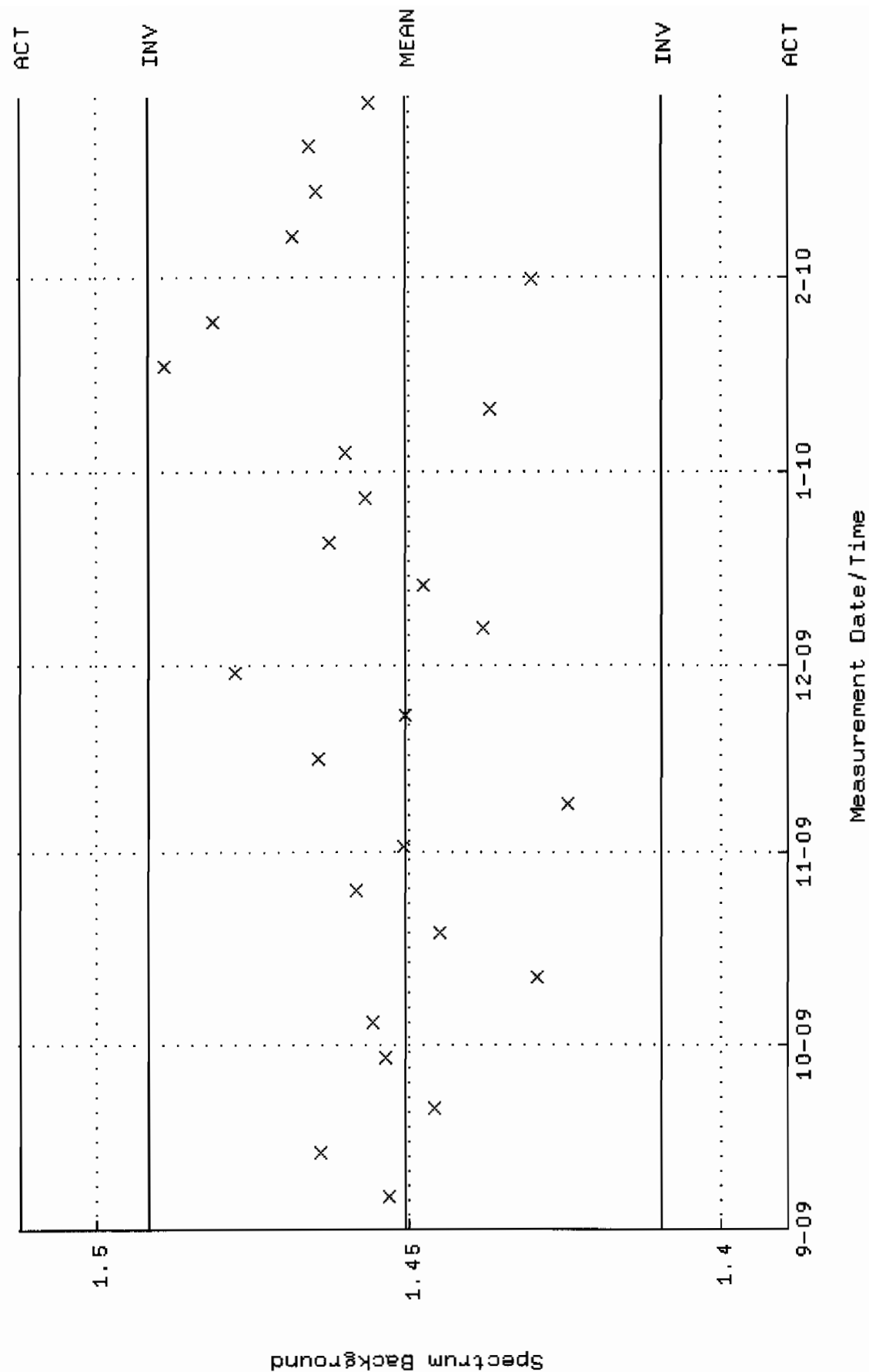
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM19_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-SEP-2009 05:06:58 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



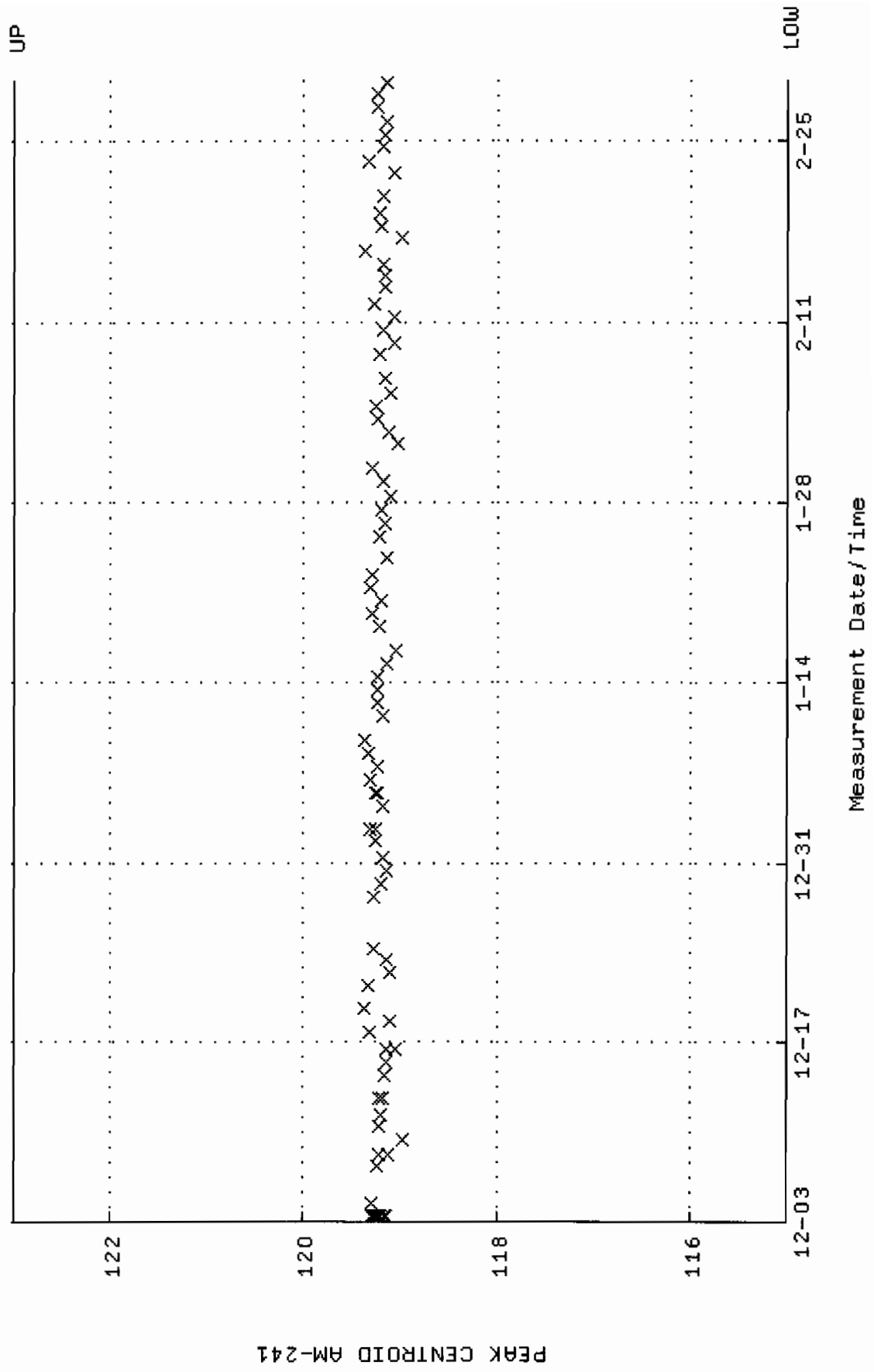

```

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 %)

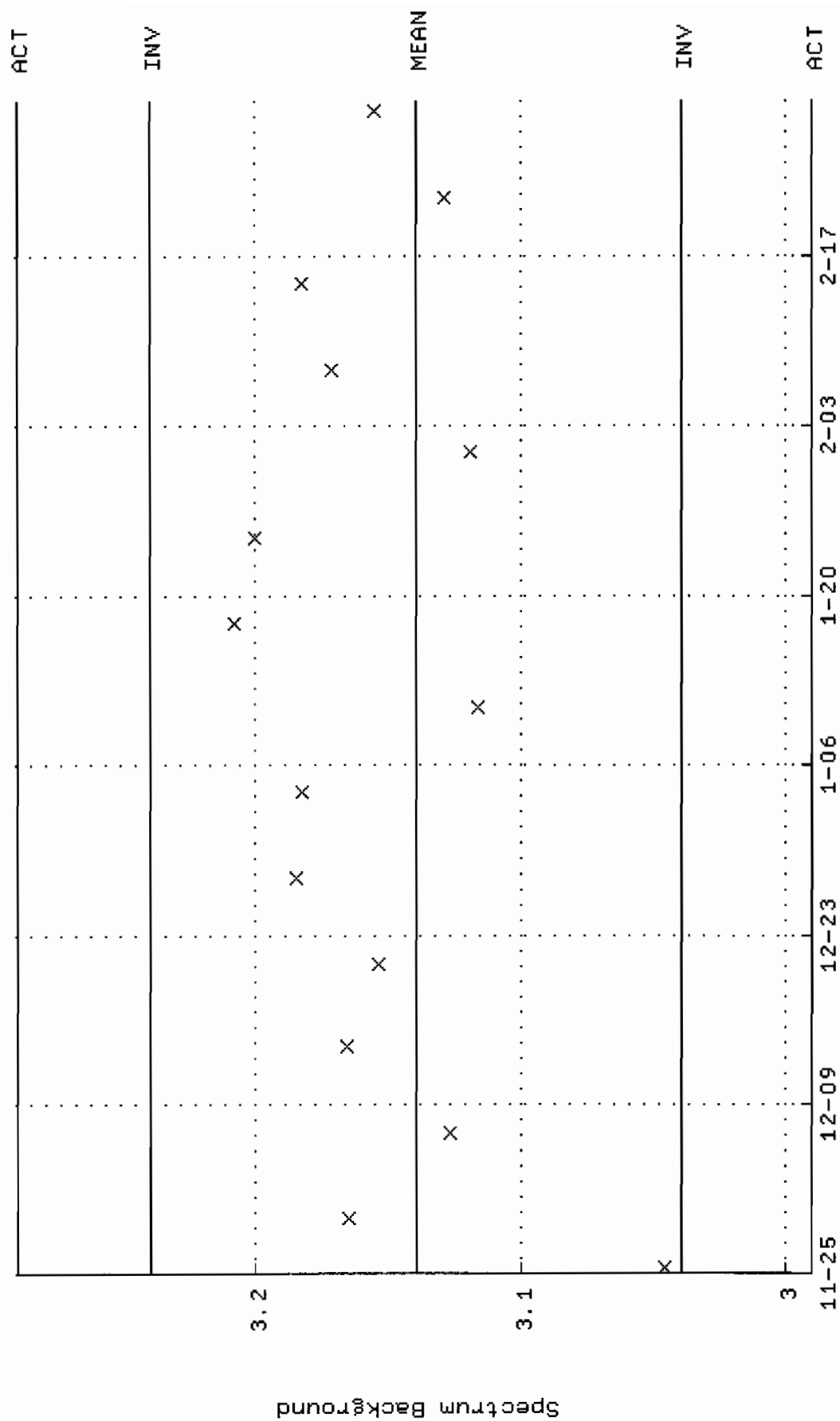
```



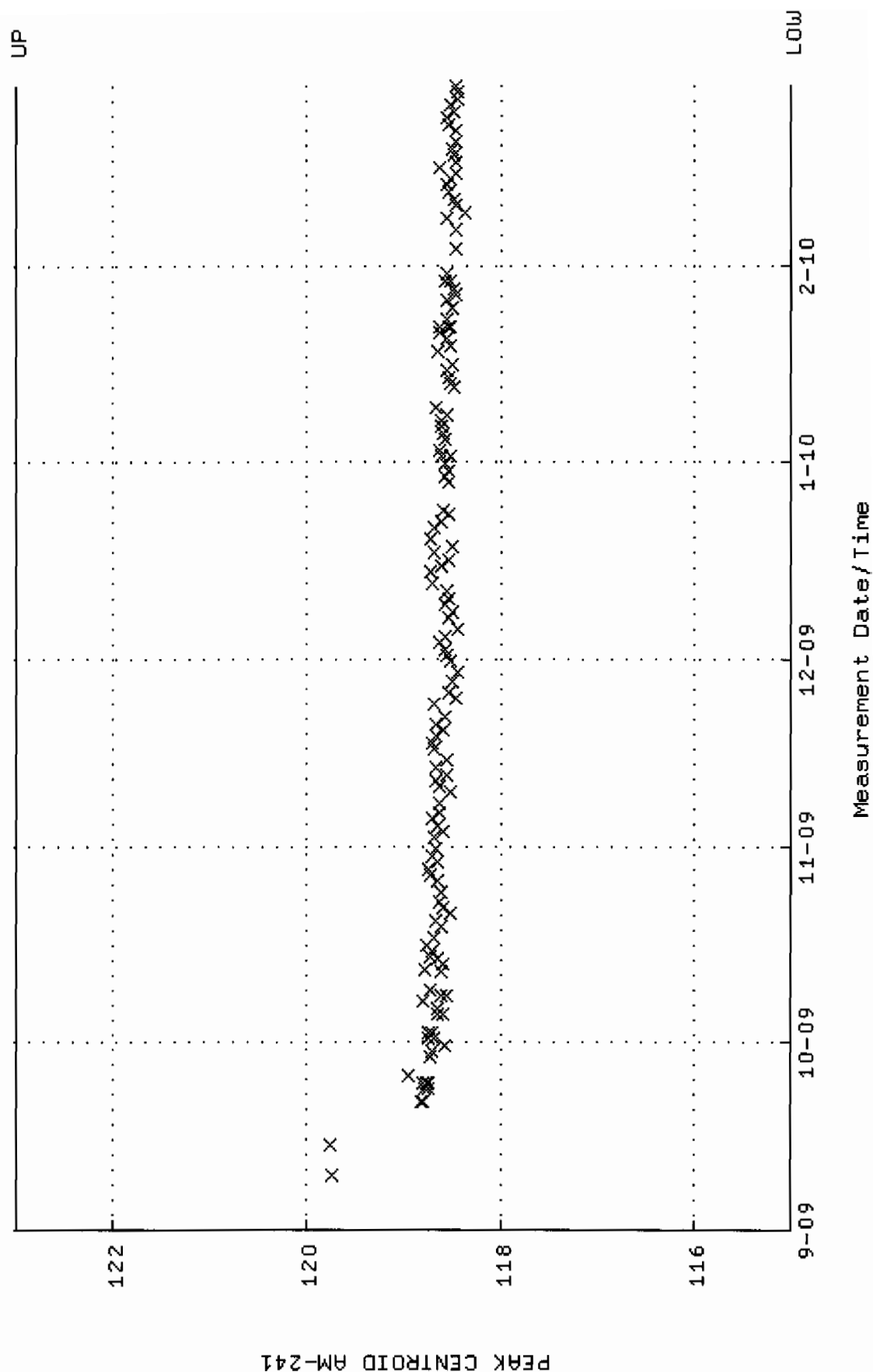
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM22_CAN.QAF;1
Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)
Start/End Dates : 3-DEC-2009 09:11:39 through 1-MAR-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



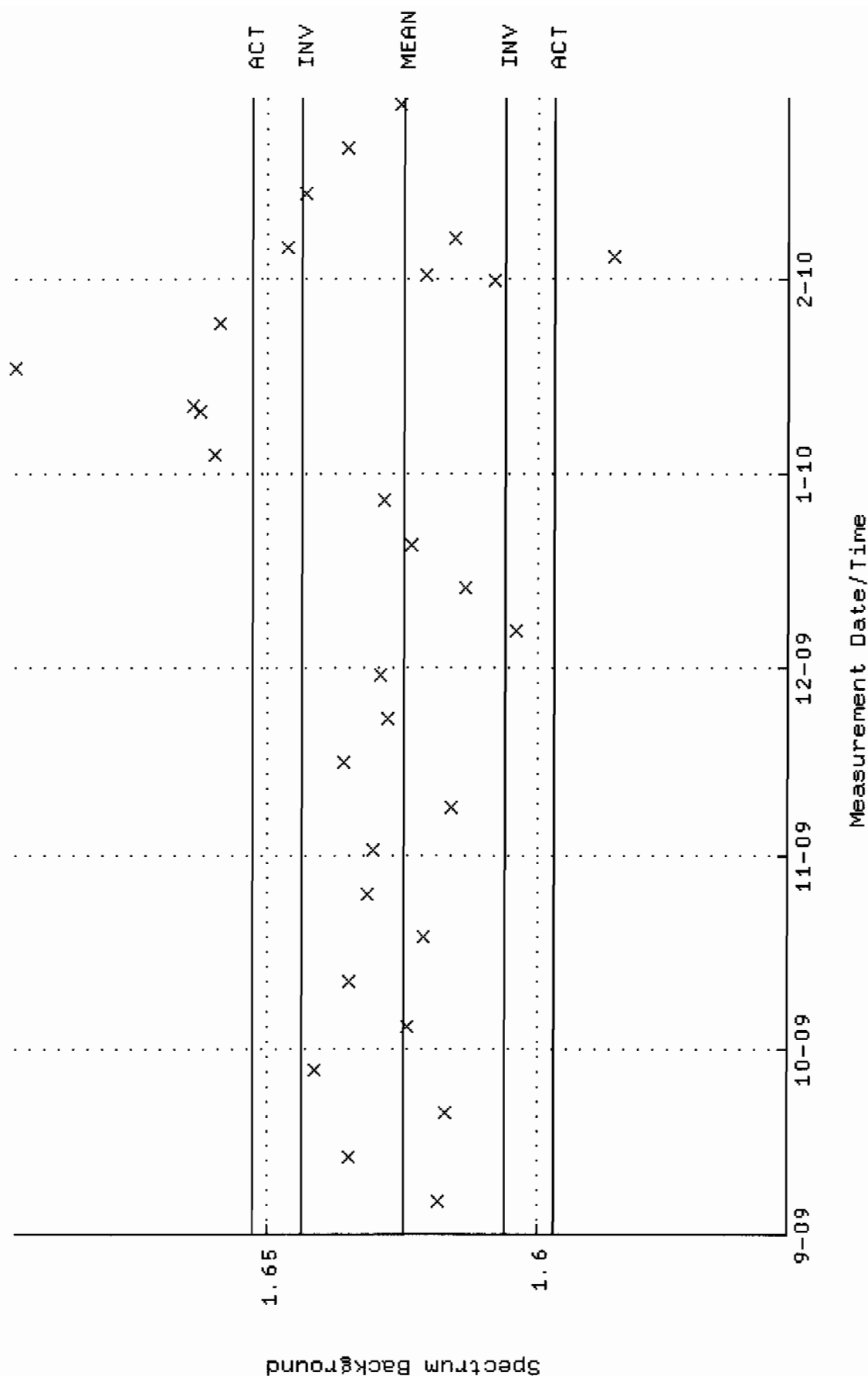
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM22.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 25-NOV-2009 10:28:37 through 1-MAR-2010 12:00:00
 Mean +- Std Dev : 3.13961 +- 4.985064E-02 (1.59 %)

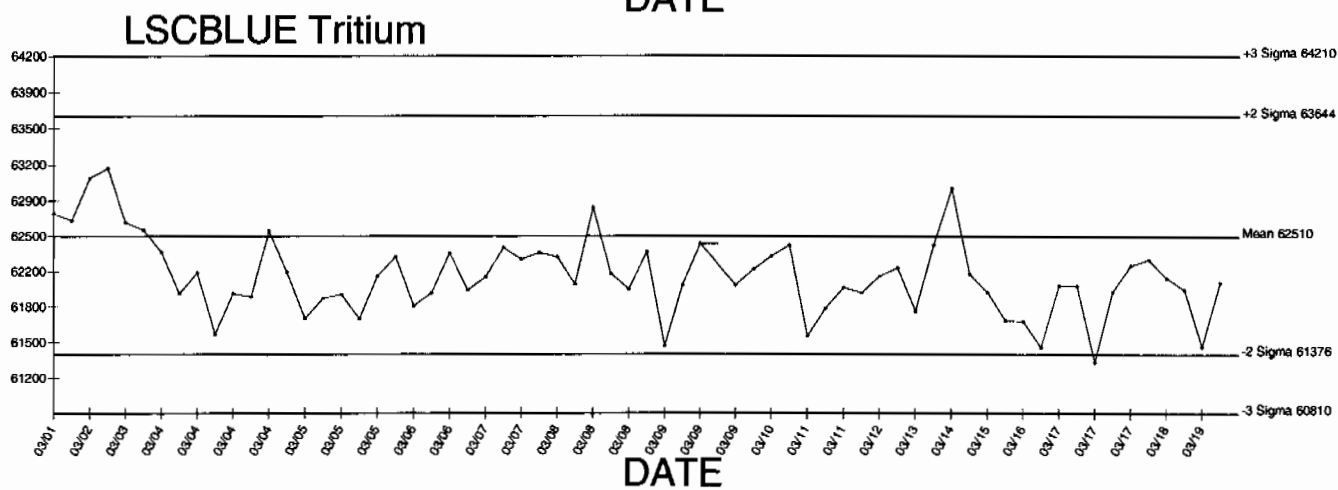
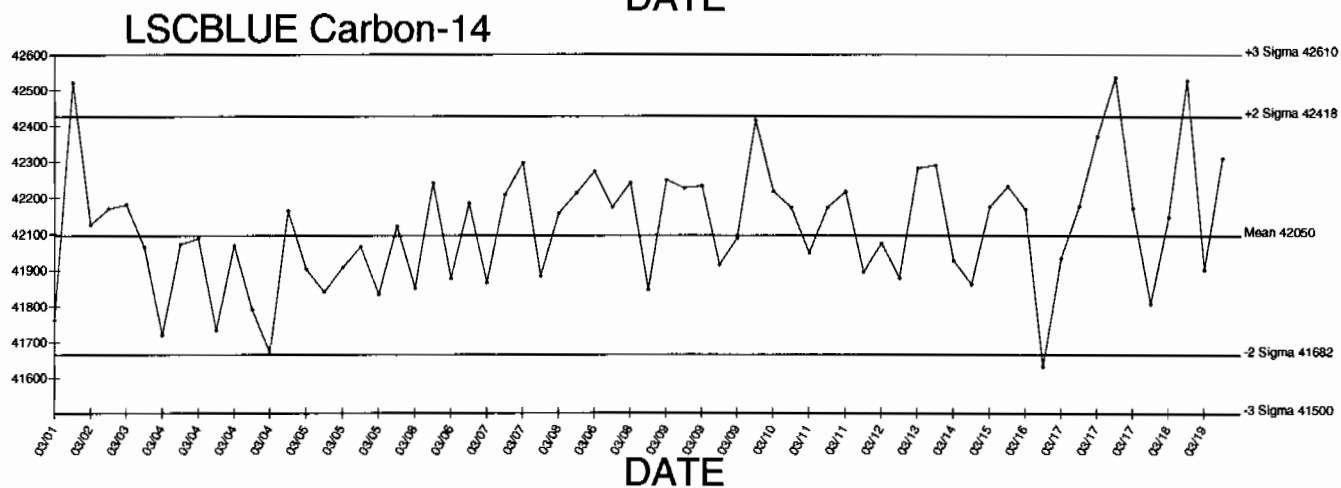
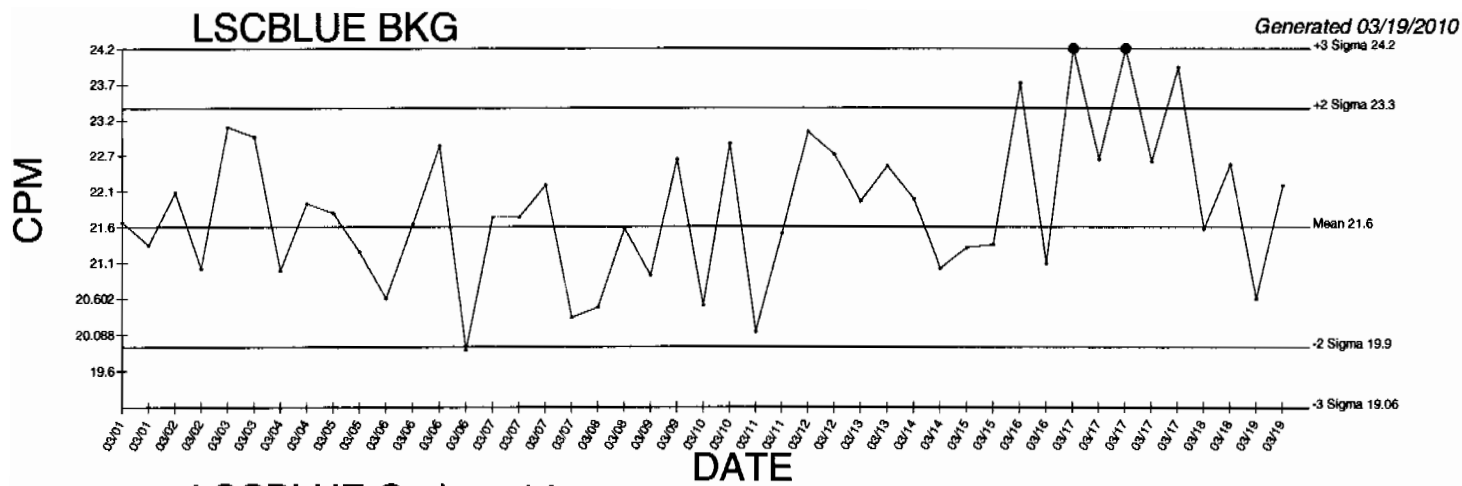


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM25_2LMB.QAF;1
 Parameter Name : PSCENTRD-59 (PEAK CENTROID AM-241)
 Start/End Dates : 9-SEP-2009 16:18:34 through 1-MAR-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



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
Page 634 of 669
W.F. Case

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0134
Prepared By:	Angela Johnson
Carrier Conc:	DI WATER
Reference Date:	03/01/1996
Ampoule Mass (g):	5 g
Uncertainty:	+/- 2.5 %
LogBook No:	RC S 023 061

A Solution Material Info	
Isotope:	Tritium
Prepared By:	Angela Johnson
Prep Date:	02/21/2001
Verification Date:	09/10/2008
Expiration Date:	03/27/2010
Primary Code:	0134-A
Dilution(mL):	100 mL
Mass of Parent(g):	3.3659 g
Density(g/mL):	1.0004
Balance ID:	38080204

Calculations Converting parent activity to dpm/mL/dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (100 \text{ mL}) = 985535.5200 \text{ dpm/mL}$
$(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (1.0004 \text{ g/mL}) / (100 \text{ mL}) = 985180.3116 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
07/20/2004	Amanda Fehr	5.86	1000	0134-H	5773.1566 dpm/mL	07/25/2006	07/25/2007
12/20/2005	Amanda Fehr	5.5451	1000	0134-I	5462.92 dpm/mL	12/20/2006	12/20/2007
07/11/2007	Daniel Roy	5.5863	1000	0134-J	5503.5128 dpm/ml	07/29/2008	07/29/2009
03/25/2009	Mary Aders	5.4917	1000	0134-K	5410.3147 dpm/ml	03/27/2009	03/27/2010

GEL Laboratories LLC

Version 1.0 9/18/2000

Verification for H-3 Standard 0134-K

M. Aders	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff Mass. Used (mL)	Source DPM/mL
4/9/2009	0134-K N1	1097.2000	54.0000	1043.2000	1.0000	2741.3098
	0134-K N2	1073.2000	54.0000	1019.2000	1.0000	2678.242955
	0134-K N3	1085.2000	54.0000	1031.2000	1.0000	2708.776428
					Average =	2709.776428

Mean Value (Counting) = 2709.776428
 Stdev = 31.53347278

Certificate Value = 2581.86 dpm/mL
 Lower Limit = 2646.709482 dpm/mL
 Upper Limit = 2772.843373 dpm/mL
 Rule 1 Pass/Fail Fail
 Two sigma = 63.06694556 dpm/mL
 10 % of Mean = 270.9776428 dpm/mL
 Rule 2 (Pass/Fail) Pass

*exception taken due to full recovery of standard

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for H-3 source 0134-K by transferring 0.1 mL portions of the standard into glass liquid scintillation vials. Ten mL of 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

Handwritten signature: Amanda J. Lehn 4/9/09

1032

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

74047-278

5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytisc maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: October 1, 2006 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE	GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432 y	3339	3.0
Cd-109	88	462.6 d	4815	3.3
Co-57	122	271.79 d	2409	3.0
Ce-139	166	137.6 d	3408	2.8
Hg-203	279	46.61 d	7522	2.7
Sn-113	392	115.1 d	4728	2.6
Cs-137	662	30.07 y	2973	3.0
Y-88	898	106.6 d	11600	2.6
Co-60	1173	5.2714 y	5780	2.7
Co-60	1332	5.2714 y	5783	2.6
Y-88	1836	106.6 d	12260	2.6

5.31725 grams 4M HCl solution.

P O NUMBER 2734RD, Item 1

SOURCE PREPARED BY:

M. Dimitrova
M. Dimitrova, Radiochemist

Q A APPROVED:

Don. My 11-28-06

This standard will expire one year after the calibration date.

rec'd 11/30/06
RC-S-045-073-0

1380 Seaboard Industrial Blvd.
 Atlanta, Georgia 30318

Tel 404-352-8677

Fax 404-352-2837

www.analytiscinc.com

ANALYSIS OF UNCERTAINTY FOR MIXED GAMMA STANDARDS BATCH 127

CALIBRATION DATE: October 1, 2006 12:00 EST

Isotope	Energy (keV)	Calibration Method 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

$(\text{Mass of parent(g)}) * (\text{Parent Activity (dpm)}) * (\text{conversion dpm to dpm}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parent Activity (dpm)}) * (\text{conversion dpm to dpm}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2163.7461 \text{ dpm/mL}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (1.0611 \text{ g/mL}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2039.2400 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
-----------	----------	--------------	---------------	------	-------------	-------------------	-----------------

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Am-241	Isotope	Result	pCi/L - Ver. Jar. 1
	Mixed Gamma N1	2534	pCi/L
	Mixed Gamma N2	2510	pCi/L
	Mixed Gamma N3	2413	pCi/L

Mean Value (Counting) = 2485.67
Stdev = 64.065
Rule 3 (Pass/Fail) Pass

Certificate Value = 2485.68018
Lower Limit = 2357.536524
Upper Limit = 2613.796808
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	
Mixed Gamma N1	854.2	pCi/L - Ver-TAB.1
Mixed Gamma N2	907.6	pCi/L - Ver-TAB.3
Mixed Gamma N3	898.9	pCi/L - Ver-TAB.2

Mean Value (Counting) =
Stdev =

886.90
28.651

95.01

Pass
Rule 3 (Pass/Fail)

Certificate Value =

Lower Limit =

Upper Limit =

Rule 1 (Pass/Fail)

Two sigma =

10 % of Mean =

Rule 2 (Pass/Fail)

933.44144

829.597644

944.202356

Pass

57.30235597

88.69000000

Pass

12/2/09
12/2/09
12/2/09

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Co-60 (1332.5)

Isotope	Result	pCi/L - Ver-Tab-5
Mixed Gamma N1	1572	pCi/L - Ver-Tab-2
Mixed Gamma N2	1495	pCi/L - Ver-Tab-3
Mixed Gamma N3	1501	

Mean Value (Counting) = 1522.67 Pass
Stdev = 42.829 Rule 3 (Pass/Fail)

Certificate Value = 1545.8378
Lower Limit = 1437.008431
Upper Limit = 1608.324902
Rule 1 (Pass/Fail) Pass
Two sigma = 85.65823564
10 % of Mean = 152.26666667
Rule 2 (Pass/Fail) Pass

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

M. Stamps issued 12/2/09

0244-A Characterization

Sample #	Uranium-233/234 Result (pCi/g)	Uranium-238 Result (pCi/g)	Thorium-230 Result (pCi/g)
0244-A 1	6.59	6.12	25.3
0244-A 2	6.36	6.07	28.5
0244-A 3	5.78	5.53	26.5
0244-A 4	6.48	5.97	25.5
0244-A 5	5.65	5.59	26.2
0244-A 6	6.96	5.78	27.0
0244-A 7	5.95	5.75	24.2
0244-A 8	5.29	5.67	27.2
0244-A 9	5.51	6.05	24.3
0244-A 10	6.37	5.57	25.6
0244-A 11	6.50	5.80	25.8
0244-A 12	6.13	5.42	22.4
0244-A 13	5.49	5.24	24.7
0244-A 14	6.19	5.21	26.9
0244-A 15	6.50	6.27	27.6
0244-A 16	6.50	5.24	24.9
0244-A 17	6.25	6.05	24.7
0244-A 18	6.14	6.00	25.4
0244-A 19	6.19	6.14	26.4
0244-A 20	5.67	5.61	23.2
Mean Value	6.13	5.75	25.62
1 sigma	0.439	0.325	1.493
2 sigma	0.878	0.650	2.986
75% Limit	4.60	4.31	19.22
125% Limit	7.66	7.19	32.03
Expected Result	6.2 +/- 4.0	6.0 +/- 4.0	24.5 +/- 0.6
Achieved Results	6.13 +/- 0.439	5.75 +/- 0.325	25.62 +/- 1.493

REFERENCE DATA 4/14/2000 *lett c held 12/1/04*

angela d. johnson 12/13/04

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

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. Feby 4/30/04
lett & dated 5/1/04

PREPARATION AND CHARACTERIZATION OF THE PERFORMANCE EVALUATION SOIL SAMPLE PEM-1

INTRODUCTION

Rust Geotech (Rust) was contracted by Los Alamos National Laboratory (LANL) to prepare and characterize a soil performance evaluation sample designated PEM-1. This report describes sample preparation, homogeneity assessment, and determination of the concentrations of 28 elements and radioactive isotopes in the sample.

SAMPLE PREPARATION

Rust received nine five-gallon buckets of soil from LANL. The soils were dried overnight in ovens at 103 °C. The large pieces of leaves and sticks were removed and the soils were ground with ceramic-plate grinders to a particle size that passed through a 325 mesh screen. The samples were blended at the proportions specified by LANL for 48 hours in a 3-cubic-foot cross-flow blender. The sample identifications and the amounts used are listed in Table 1.

Table 1. Sample Identifications and Amounts Used to Prepare PEM-1

LANL Sample ID	Amount Used (kg)
AAA 1592	1.7
AAA 2505-1	10.9
AAA 2505-2	12.8
AAA 2750-1	8.4
AAA 2750-2	8.4
AAA 3205	12.6
AAA 8581	4.2
AAB 3417	12.8
AAB 3475	12.6

The blended sample was transferred to three five-gallon plastic containers. While the sample was being transferred, 10 samples were taken at pre-determined time intervals to be used for homogeneity assessment and sample characterization. These samples are believed to be representative of the bulk material.

CERTIFICATE OF CALIBRATION

ALPHA STANDARD SOLUTION

Radionuclide: Am-243
Half Life: 7380 \pm 40 years
Catalog No.: 7243
Source No.: 445-96-2

Customer: GENERAL ENGINEERING LABS
P.O.No.: 9290-RAD
Reference Date: January 1 1994 12:00 PST.
Contained Radioactivity: (Am-243) 101.2 μ Ci
Contained Radioactivity: (Am-243) 3750 kBq

Description of Solution

a. Mass of solution: 5.3739 g (in a 5 ml Flame Sealed Ampoule)
b. Chemical form: Am(NO₃)₃ in 2N HNO₃
c. Carrier content: None added
d. Density: 1.0651 g/ml @ 20°C.

Radioimpurities

None detected

Radioactive Daughters

Np-239 (beta active) in equilibrium

Radionuclide Concentration

(Am-243) 18.84 μ Ci/g

Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry for Np-239:

Energy peak(s) intergrated under: 228, 278 keV.
Branching ratio(s) used: 0.108, 0.1420 gamma rays per decay.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration: $\pm 3.0\%$
b. Random uncertainty in assay: $\pm 0.4\%$
c. Random uncertainty in weighing(s): $\pm 0.0\%$
d. Total uncertainty at the 99% confidence level: $\pm 3.0\%$

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES
1800 North Keystone Street
Burbank, California 91504
(818) 843 - 7000

Anna H. Khan
QUALITY CONTROL

Jan 3, 1994
Date Signed

THE LEAK TEST(S) INDICATED BY THE CHECKED BOX(ES) WAS(WERE) APPLIED TO
DETERMINE THE INTEGRITY OF THE SOURCE DESCRIBED ON THE FRONT SIDE



1. STANDARD WIPE TEST

The source is wiped over its entire surface with a moistened filter paper disk. After drying, the disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



2. SOAK TEST

The source is immersed in distilled water and maintained at $50 \pm 10^\circ \text{C}$ for a minimum of four hours. After removal of the source, the liquid is a) checked for activity using a liquid scintillation counter, or b) evaporated in a planchet and the residue is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



3. SOAK TEST -- BERYLLIUM WINDOW

The source is immersed in distilled water and maintained at $50 \pm 10^\circ \text{C}$ for 20 minutes. The entire surface of the source is then wiped with a moistened cotton swab or filter paper disk. After drying, the swab or disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



4. GAS SOURCE TEST (Radioactive Gas)

The source is placed in a vacuum desiccator and maintained at a pressure of less than 1 mm Hg for not less than 12 hours. The activity is checked by introducing air into the desiccator and monitoring the air with an end-window G.M. tube. Activity levels exceeding 1000 cpm are cause for rejection of the source.



5. OTHER LEAK TEST

The ampoule is kept in an inverted position on a filter paper disk for a minimum of 16 hours. The filter paper disk is then checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.



6. LEAK TEST NOT APPLICABLE

The active area of this source is uncovered or is protected by a very thin coating. Although the deposit is adherent, it is not designed or certified to pass a standard leak test. The inactive portions of the source have been checked using the standard wipe test. Levels of removable activity did not exceed 0.001 μCi beta-gamma or 0.0001 μCi alpha at the time of shipment.

Standard Traceability Log Rad

Source Material Info	
Parent Code:	445-96-2
Prepared By:	Genie Bost
Carrier Conc:	2M HNO3
Reference Date:	01/01/1994
Ampoule Mass (g):	5.3739 g
Uncertainty:	+/- 3 %
LogBook No:	RC S 005 032

A Solution Material Info	
Isotope:	Americium-243
Prepared By:	Angela Johnson
Prep Date:	01/05/1994
Verification Date:	03/09/2010
Expiration Date:	03/09/2011
Primary Code:	445-96-2-A
Dilution(mL):	100 mL
Mass of Parent(g):	5.3419 g
Density(g/mL):	1.0785
Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (100 \text{ mL}) = 2234238.9912 \text{ dpm/mL}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (1.0785 \text{ g/mL}) / (100 \text{ mL}) = 2071617.0528 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/05/1994	Genie Bost	.0058	100	445-96-2-B	120.1 dpm/ml	01/05/1995	01/05/1996
09/10/2004	Amanda Fehr	.0325	1000	445-96-2-BB	67.328 dpm/mL	09/10/2005	09/10/2006
01/05/1994	Genie Bost	.0025	100	445-96-2-C	51.77 dpm/ml	01/05/1995	01/05/1996
05/27/2005	Brenda Burke	.000246	100	445-96-2-CC	5.10613 dpm/mL	05/31/2005	05/31/2006
03/25/1994	Genie Bost	.0064	100	445-96-2-D	132.53 dpm/ml	01/05/1995	01/05/1996
08/16/2005	Brenda Burke	.001224	500	445-96-2-DD	5.07144 dpm/mL	08/18/2007	08/18/2008
08/04/1994	Genie Bost	.0094	100	445-96-2-E	194.65 dpm/ml	01/05/1995	01/05/1996
10/13/2005	Brenda Burke	.0017	500	445-96-2-EE	7.0435 dpm/mL	11/15/2005	11/15/2006
08/04/1994	Genie Bost	.0046	100	445-96-2-F	95.25 dpm/ml	01/05/1995	01/05/1996
10/14/2005	Mary Aders	.0141	500	445-96-2-FF	58.4196 dpm/mL	10/14/2005	10/14/2006
09/01/1994	Genie Bost	.0031	100	445-96-2-G	64.19 dpm/ml	01/05/1995	01/05/1996
05/10/2006	Mary Aders	2.0753	1000	445-96-2-GG	4299.227 dpm/mL	09/30/2008	09/30/2009
10/17/1994	Genie Bost	.0969	100	445-96-2-H	2006.52 dpm/ml	01/05/1995	01/05/1996
06/07/2006	Mary Aders	.0365	1000	445-96-2-HH	75.614 dpm/mL	06/19/2006	06/19/2007
02/06/1995	Genie Bost	.0043	100	445-96-2-I	89.04 dpm/ml	01/05/1995	01/05/1996
05/11/2006	Brenda Burke	.000009739	100	445-96-2-II	.201761 dpm/mL	07/26/2006	07/26/2007
07/20/1995	Theresa Austin	.0041	100	445-96-2-J	84.9 dpm/ml	01/05/1995	01/05/1996
05/01/2007	Daniel Roy	.0352	1000	445-96-2-JJ	72.9209 dpm/ml	04/30/2008	04/30/2009
08/10/1995	Garret Ray	.0952	100	445-96-2-K	1971.32 dpm/ml	01/05/1995	01/05/1996
06/12/2007	Julie Strock	.01038	250	445-96-2-KK	22.1496 dpm/mL	05/28/2008	05/28/2009

09/11/1995	Theresa Austin	1.0525	100	445-96-2-L	21794.23 dpm/ml	01/05/1995	01/05/1996
09/11/1995	Theresa Austin	.5107	100	445-96-2-L-1	111.3 dpm/ml	01/05/1995	01/05/1996
04/28/1998	Richard Kinney	.1264	100	445-96-2-M	2617.4 dpm/ml	04/28/1998	04/28/1999
11/01/2007	Eric Williamson	.001274	500	445-96-2-MM	5.27945 dpm/mL	04/06/2008	04/06/2010
10/12/1998	Gregory Smith	.1348	100	445-96-2-N	2791.32 dpm/mL	01/05/1995	01/05/1996
01/25/1999	Gregory Smith	1.9382	100	445-96-2-N-1	50.16 dpm/ml	01/05/1995	01/05/1996
04/19/2008	Daniel Roy	.0424	1000	445-96-2-NN	87.8366 dpm/ml	04/16/2009	04/16/2010
04/21/1999	Greg Smith	.1645	100	445-96-2-O	3406.32 dpm/mL	04/21/1999	04/21/2000
07/27/1999	Gregory Smith	1.567	100	445-96-2-O-2	50.56 dpm/ml	05/13/1999	05/13/2000
10/12/1999	Richard Kinney	1.5589	100	445-96-2-O-3	50.31 dpm/mL	05/13/1999	05/13/2000
04/21/1999	Greg Smith	1.5309	100	445-96-2-O-1	49.4 dpm/mL	04/21/1999	04/21/2000
11/10/1999	Joe Davis	.1809	100	445-96-2-P	3745.92 dpm/mL	05/13/1999	05/13/2000
01/04/2008	Julie Strock	.00001005	100	445-96-2-PP	.20819 dpm/mL	12/29/2008	12/29/2009
01/28/2000	Angela Johnson	.0354	1000	445-96-2-Q	73.3 dpm/mL	02/08/2001	02/08/2002
09/29/2008	Tara Sides	.0025219	250	445-96-2-QQ	20.8977 dpm/mL	09/14/2009	09/14/2010
04/18/2000	Robert Timm	.429	250	445-96-2-R	3553.34 dpm/mL	04/18/2000	04/18/2001
04/23/2009	Tina Schoneman	.001251	500	445-96-2-RR	4.8075 dpm/mL	04/23/2009	04/23/2010
04/13/2001	Angela Johnson	.1869	100	445-96-2-S	3870.16 dpm/mL	04/13/2001	04/13/2002
05/08/2009	Mary Aders	.0141	1000	445-96-2-SS	29.2098 dpm/ml	05/11/2009	05/11/2010
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-103	4153.225 dpm/mL	07/03/2002	07/03/2003
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-203	4153.225 dpm/mL	07/03/2002	07/03/2003

07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-303	4153.225 dpm/mL	07/03/2002	07/03/2003
06/03/2009	Julie Strock	.00000927	100	445-96-2-TT	.1923 dpm/mL	06/05/2009	06/03/2010
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-103	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-203	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-303	80.34 dpm/ml	08/23/2001	08/23/2002
06/02/2009	Mary Aders	2.1177	1000	445-96-2-UU	4385.1449 dpm/ml	06/04/2009	06/04/2010
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-103	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-203	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-303	81.586 dpm/mL	08/27/2002	08/27/2003
03/09/2010	Ashley Drochter	.011	1000	445-96-2-VV	22.7878 dpm/mL	03/09/2010	03/09/2011
03/17/2003	Angela Johnson	2.1108	1000	445-96-2-W	4370.857 dpm/mL	03/14/2006	03/14/2007
03/23/2010	Ashley Drochter	.0163	1000	445-96-2-WW	33.7674 dpm/mL	03/23/2010	03/23/2011
04/14/2003	Lonnie Morris	.0315	1000	445-96-2-X	65.2559 dpm/mL	04/14/2004	04/14/2005
05/03/2003	Tim Chandler	.0103	1000	445-96-2-Y	21.3376 dpm/mL	05/05/2003	05/05/2004
05/05/2003	Eric Williamson	.011	1000	445-96-2-Z	22.7877 dpm/mL	04/03/2007	04/03/2008

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Am-243 Standard 445-96-2-SS

M. Aders 5/15/2009	Isotope	Value	Uncertainty
	445-96-2-SS #1	1.360	0.1690
	445-96-2-SS #2	1.370	0.1690
	445-96-2-SS #3	1.290	0.1590
Mean Value (Counting) =	1.340	101.99	Pass
Stdev =	0.043588989	Rule 3 (Pass/Fail)	
Target =	1.314		
Lower Limit =	1.252822021		
Upper Limit =	1.427177979		
Rule 1 Pass/Fail	Pass		
Two sigma =	0.087177979		
10 % of Mean =	0.134		
Rule 2 (Pass/Fail)	Pass		

The analyst prepared three standard verification sources for standard **445-96-2-SS** using 0.1 mL for each source. Each standard was combined with 0.1 mL of **Cm-244** standard **0533-O** and 50 micrograms of neodymium carrier in a disposable centrifuge tube. Each standard was diluted with 4 mL of 2 M HCl and 6 mL of DI Water. Two mL of 48% HF was added to precipitate Nd (and Americium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Am-243 were calculated by comparison to Am-241 certified values.

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 5% of the certificate value.

Mary G. Aders 5/15/09
Rahm 07509



NATIONAL PHYSICAL LABORATORY

Teddington Middlesex UK TW11 0LW Telephone +44 20 8977 3222

Certificate of Calibration



0478

PLUTONIUM-236 SOLUTION R37-02

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

FOR: GEL Laboratories LLC
2040 Savage Road
Charleston, SC 29407
USA

FOR THE ATTENTION OF: Mr Tim Winters

NPL PRODUCT CODE: R37-02

IDENTIFICATION: A09881

DESCRIPTION: An aqueous solution of ^{236}Pu also containing 2 mol dm^{-3} of nitric acid. The solution is contained in a flame sealed ampoule of type Q and nominal volume 5 ml (squat) as defined in BS 795:1983.

DATE(S) OF CALIBRATION: 26 June 2009 to 1 July 2009

INTENDED USE: Calibration of instruments for response to ^{236}Pu

STORAGE: The material may be stored at room temperature in a suitably sealed container. Flame-sealed glass ampoules are recommended for long-term storage. Regulatory conditions may apply to the manner in which this material is stored.

MEASUREMENTS

The samples were prepared by gravimetric dilution of a ^{236}Pu solution, which had been previously standardised using liquid scintillation counting. The accuracy of the dilution factor was checked using liquid scintillation counting.

Reference: 2009100356

Date of Issue: 4 November 2009

Checked by: *Ch Ali*
Page 656 of 669

Signed: *Arvic Harms*

Name: Dr Arvic Harms

Page 1 of 3

(Authorised Signatory)

for Managing Director

RESULTS

Principal radionuclide:	^{236}Pu
Reference time:	2009-07-01 12:00 UTC
Activity concentration of principal radionuclide:	170.8 Bq g^{-1}
Expanded uncertainty:	$\pm 0.6 \text{ Bq g}^{-1} (\pm 0.36 \%)$
Contaminants present:	$^{226}\text{Ra}, ^{232}\text{U}, ^{228}\text{Th}, ^{237}\text{Np}$
Activity concentration of ^{226}Ra :	11.0 mBq g^{-1}
Expanded uncertainty:	$\pm 4.0 \text{ mBq g}^{-1} (\pm 36 \%)$
Activity concentration of ^{232}U :	0.67 Bq g^{-1}
Expanded uncertainty:	$\pm 0.12 \text{ Bq g}^{-1} (\pm 18 \%)$
Activity concentration of ^{228}Th :	11.38 mBq g^{-1}
Expanded uncertainty:	$\pm 0.46 \text{ mBq g}^{-1} (\pm 4 \%)$
Activity concentration of ^{237}Np :	5.00 mBq g^{-1}
Expanded uncertainty:	$\pm 0.34 \text{ mBq g}^{-1} (\pm 8 \%)$
Sample Mass:	$4.97 \text{ g} \pm 0.02 \text{ g}$

UNCERTAINTIES

The reported uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95 %. The uncertainty evaluations have been carried out in accordance with UKAS requirements.

NOTES

- [1]. The reported reference time is stated consistent with the format given in ISO 8601:2004. UTC is the abbreviation for Universal Time, Coordinated. The date is stated in the format YYYY-MM-DD such that 2008-09-01 represents 1 September 2008.
- [2]. The recommended half life of ^{236}Pu is 1044 (6) days and is taken from the evaluations published in *Nuclear Data Sheets*.
- [3]. The recommended half life of ^{226}Ra is $5.844 (50) \times 10^5$ days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [4]. The recommended half life of ^{232}U is 25800 (800) days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [5]. The recommended half life of ^{237}Np is $7.83 (6) \times 10^8$ days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.
- [6]. The recommended half life of ^{228}Th is 698.60 (46) days and is taken from the evaluations of the *Decay Data Evaluation Project*, see for example www.nucleide.org/DDEP.htm.

UNCERTAINTIES

The reported uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95 %. The uncertainty evaluations have been carried out in accordance with UKAS requirements.

Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1430	Isotope:	Plutonium-236
Prepared By:	Ashley Drochter	Prepared By:	Ashley Drochter
Carrier Conc:	2 M HNO3	Prep Date:	01/27/2010
Reference Date:	07/01/2009	Verification Date:	01/27/2010
Ampoule Mass (g):	4.97 g	Expiration Date:	01/27/2011
Uncertainty:	+/- .36 %	Primary Code:	1430-A
LogBook No:	RC-S-051-149	Dilution(mL):	100 mL
		Mass of Parent(g):	4.8051 g
		Density(g/mL):	1.0610
		Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(4.8051 \text{ g}) * (170.8 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (100 \text{ mL}) = 492.4266 \text{ dpm/mL}$
$(4.8051 \text{ g}) * (170.8 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (1.0610 \text{ g/mL}) / (100 \text{ mL}) = 464.1156 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/27/2010	Bethany Fiem	33.0429	200	1430-B	76.6786262 dpm/mL	01/27/2010	01/27/2011
03/01/2010	Ashley Drochter	15.2331	200	1430-C	35.3496 dpm/mL	03/01/2010	03/01/2011

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Plutonium-236 Standard 1430-C

	Isotope	Value	Uncertainty
A. Drochter 3/4/2010	1430-C	2.760	0.4480
	1430-C	2.770	0.4520
	1430-C	2.950	0.4850
Mean Value (Counting) =	2.827	104.54659 % of Known Value	
Stdev =	0.106926766		
Target =	2.70		
Lower Limit =	2.612813134		
Upper Limit =	3.040520199		
Rule 1 Pass/Fail	Pass	Pass	Pass
Two sigma =	0.213853532		
10 % of Mean =	0.282666667		
Rule 2 (Pass/Fail)	Pass		

The analyst prepared three standard verification sources for standard 1430-B using 0.1 mL for each source. Each standard was combined with 0.1 mL of Pu 239 standard 0338-BB and 50 micrograms of neodymium carrier in a disposable centrifuge tube containing 4 mL of 2 M HCl and 6 mL of DI water. Four drops of 25% Hydrazine dihydrochloride were added to each centrifuge tube and swirled. After approximately ten minutes, two mL of 49% HF was added to precipitate neodymium (and plutonium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Pu-236 were calculated by comparison to Pu-239 certified values.

flu 3/5/10
L 3/5/10



Eckert & Ziegler

Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404-352-8677
Fax 404-352-2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

78747-278

1283

U-232 5 mL Liquid in Flame Sealed Vial

Customer: GEL Laboratories, LLC
P.O. No.: 7319 RD, Item 1

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

Isotope:	U-232
Activity (Bq):	3.754 E3
Half-Life:	68.9 years
Calibration Date:	December 9, 2008 12:00 EST
Relative Expanded Uncertainty (k=2):	5.0%

Comments:

Impurities: U-233 <0.3%, Am-241 <0.15%
5.20453 grams 1M HNO₃ solution.

Source Prepared By:

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

$(\text{Mass of parent(g)}) * (\text{Parent Activity (Bq)}) * (\text{conversion dpm to Bq}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parent Activity (Bq)}) * (\text{conversion dpm to Bq}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2174.4872 \text{ dpm/mL}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (1.0285 \text{ g/mL}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2114.1700 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
12/16/2008	Daniel Roy	25.1813	1000	1283-B	53.2375 dpm/ml	12/16/2008	12/16/2009
12/30/2008	Tina Schoneman	2.05	250	1283-C	17.336 dpm/mL	12/02/2009	12/02/2010
12/30/2008	Tina Schoneman	.49	250	1283-D	4.1438 dpm/mL	01/09/2009	01/09/2010
01/14/2009	Mary Aders	25.0528	1000	1283-E	52.9659 dpm/ml	01/15/2009	01/15/2010
12/02/2009	Julie Strock	2.076	250	1283-F	17.5561 dpm/mL	01/09/2009	12/30/2009
12/02/2009	Julie Strock	.517	250	1283-G	4.3721 dpm/mL	01/08/2010	12/02/2010
12/09/2009	Ashley Drochter	21.56	1000	1283-H	45.58 dpm/mL	12/09/2009	12/09/2010

Verification for Uranium-232 Standard 1283-H

Analyst: A. Drochter

Date: 12/10/09

Analyst: A. Drochter	Serial #	Value	Uncertainty		
Date: 12/10/09	1283-H N1	2.020	pCi/L	0.238	pCi/L
	1283-H N2	2.000	pCi/L	0.234	pCi/L
	1283-H N3	2.060	pCi/L	0.242	pCi/L
Mean Value (Counting) =	2.027	pCi/L	99.66904	Pass	
Stdev =	0.030550505	pCi/L	Rule 3 (Pass/Fail)		
Target =	2.033	pCi/L			
Lower Limit =	1.965565657	pCi/L			
Upper Limit =	2.087767676	pCi/L			
Rule 1 Pass/Fail	Pass				
Two sigma =	0.061101009				
10 % of Mean =	0.202666667				
Rule 2 (Pass/Fail)	Pass				

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for standard 1283-H using 0.1 mL for each source. Each standard was combined with 0.1 mL of U-238 standard 1163-G and was diluted to 10 mL with DI water. 50 micrograms of neodymium carrier and 1ml of Titanium Chloride were added. The solution was allowed to sit for 30 seconds. One mL of 49% HF was then added to precipitate neodymium (and uranium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for U-238 were calculated by comparison to U-232 certified values.

A. Drochter
12/14/09

RUNLOGS

Instrument Run Log

Instrument Type: GAMMA SPECTROMETER

Batch ID:959270

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248112001	SAMPLE	MXR1	GAM01	10-MAR-10 12:37	DONE	CAN	12-JAN-10 00:00
248112002	SAMPLE	MXR1	GAM04	10-MAR-10 13:20	DONE	CAN	05-MAY-09 00:00
248112003	SAMPLE	MXR1	GAM06	10-MAR-10 13:20	DONE	CAN	16-FEB-10 00:00
248112004	SAMPLE	MXR1	GAM15	10-MAR-10 13:21	DONE	CAN	03-FEB-10 00:00
248112005	SAMPLE	MXR1	GAM19	10-MAR-10 13:22	DONE	CAN	12-MAR-09 00:00
248112006	SAMPLE	MXR1	GAM22	10-MAR-10 13:23	DONE	CAN	02-DEC-09 00:00
248112007	SAMPLE	MXR1	GAM25	10-MAR-10 13:25	DONE	CAN	07-OCT-09 00:00
248112008	SAMPLE	MXR1	GAM05	10-MAR-10 13:42	DONE	CAN	11-JUN-09 00:00
248115001	SAMPLE	MXR1	GAM20	10-MAR-10 13:42	DONE	CAN	26-AUG-09 00:00
248115002	SAMPLE	MXR1	GAM21	10-MAR-10 13:43	DONE	CAN	28-JUL-09 00:00
248115003	SAMPLE	MXR1	GAM11	10-MAR-10 14:03	DONE	CAN	18-NOV-09 00:00
248115004	SAMPLE	MXR1	GAM12	10-MAR-10 14:52	DONE	CAN	25-FEB-10 00:00
248115006	SAMPLE	MXR1	GAM16	10-MAR-10 14:54	DONE	CAN	16-NOV-09 00:00
248115007	SAMPLE	MXR1	GAM23	10-MAR-10 14:55	DONE	CAN	02-JUN-09 00:00
248137001	SAMPLE	MXR1	GAM01	10-MAR-10 14:58	DONE	CAN	12-JAN-10 00:00
248137002	SAMPLE	MXR1	GAM18	10-MAR-10 14:59	DONE	CAN	23-APR-09 00:00
248137003	SAMPLE	MXR1	GAM06	10-MAR-10 15:38	DONE	CAN	16-FEB-10 00:00
248137004	SAMPLE	MXR1	GAM15	10-MAR-10 15:39	DONE	CAN	03-FEB-10 00:00
1202057335	MB	MXR1	GAM19	10-MAR-10 15:41	DONE	CAN	12-MAR-09 00:00
1202057336	DUP	MXR1	GAM22	10-MAR-10 15:42	DONE	CAN	02-DEC-09 00:00
1202057337	LCS	MXR1	GAM25	10-MAR-10 15:44	DONE	CAN	07-OCT-09 00:00

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 962684

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248112001	SAMPLE	MXE1	1244	24-MAR-10 08:00	DONE		
248112002	SAMPLE	MXE1	1221	24-MAR-10 16:12	DONE		
248112003	SAMPLE	MXE1	1222	24-MAR-10 16:12	DONE		
248112004	SAMPLE	MXE1	1223	24-MAR-10 16:12	DONE		
248112005	SAMPLE	MXE1	1224	24-MAR-10 16:12	DONE		
248112006	SAMPLE	MXE1	1225	24-MAR-10 16:12	DONE		
248112007	SAMPLE	MXE1	1226	24-MAR-10 16:12	DONE		
248112008	SAMPLE	MXE1	1231	24-MAR-10 16:12	DONE		
248115001	SAMPLE	MXE1	1232	24-MAR-10 16:12	DONE		
248115002	SAMPLE	MXE1	1233	24-MAR-10 16:12	DONE		
248115003	SAMPLE	MXE1	1234	24-MAR-10 16:12	DONE		
248115004	SAMPLE	MXE1	1211	24-MAR-10 20:55	DONE		
248115005	SAMPLE	MXE1	1212	24-MAR-10 20:55	DONE		
248115006	SAMPLE	MXE1	1213	24-MAR-10 20:55	DONE		
248115007	SAMPLE	MXE1	1214	24-MAR-10 20:55	DONE		
1202065298	MB	MXE1	1215	24-MAR-10 20:55	DONE		
1202065299	DUP	MXE1	1216	24-MAR-10 20:55	DONE		
1202065300	LCS	MXE1	1217	24-MAR-10 20:55	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 962685

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
248112001	SAMPLE	MXE1	1025	24-MAR-10 17:07	DUSE		
248112002	SAMPLE	MXE1	1026	24-MAR-10 17:07	DUSE		
248112003	SAMPLE	MXE1	1027	24-MAR-10 17:07	DONE		
248112004	SAMPLE	MXE1	1028	24-MAR-10 17:07	DONE		
248112005	SAMPLE	MXE1	1029	24-MAR-10 17:07	DONE		
248112006	SAMPLE	MXE1	1030	24-MAR-10 17:07	DONE		
248112007	SAMPLE	MXE1	1031	24-MAR-10 21:09	DUSE		
248112008	SAMPLE	MXE1	1033	24-MAR-10 21:09	DONE		
248115001	SAMPLE	MXE1	1035	24-MAR-10 21:09	DONE		
248115002	SAMPLE	MXE1	1036	24-MAR-10 21:09	DUSE		
248115003	SAMPLE	MXE1	1037	24-MAR-10 21:09	DUSE		
248115004	SAMPLE	MXE1	1038	24-MAR-10 21:09	DUSE		
248115005	SAMPLE	MXE1	1039	24-MAR-10 21:09	DUSE		
248115006	SAMPLE	MXE1	1040	24-MAR-10 21:09	DONE		
248115007	SAMPLE	MXE1	1041	24-MAR-10 21:09	DONE		
1202075072	MB	MXE1	1042	24-MAR-10 21:09	DONE		
1202075073	DUP	MXE1	1043	24-MAR-10 21:09	DONE		
1202075074	LCS	MXE1	1044	24-MAR-10 21:09	DONE		
248112001	SAMPLE	MXE1	1043	25-MAR-10 20:23	DONE		
248112002	SAMPLE	MXE1	1044	25-MAR-10 20:23	DONE		
248112007	SAMPLE	MXE1	1045	25-MAR-10 20:23	DONE		
248115002	SAMPLE	MXE1	1046	25-MAR-10 20:23	DONE		
248115003	SAMPLE	MXE1	1065	25-MAR-10 20:23	DONE		
248115004	SAMPLE	MXE1	1066	25-MAR-10 20:23	DONE		
248115005	SAMPLE	MXE1	1067	25-MAR-10 20:23	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 962688

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1202065309	LCS	MXE1	1165	24-MAR-10 08:14	DONE		
248115007	SAMPLE	MXE1	1166	24-MAR-10 08:14	DONE		
1202065307	MB	MXE1	1171	24-MAR-10 08:14	DONE		
1202065308	DUP	MXE1	1172	24-MAR-10 08:14	DONE		
248112001	SAMPLE	MXE1	1119	24-MAR-10 15:51	DONE		
248112002	SAMPLE	MXE1	1120	24-MAR-10 15:52	DONE		
248112003	SAMPLE	MXE1	1121	24-MAR-10 15:52	DONE		
248112004	SAMPLE	MXE1	1122	24-MAR-10 15:52	DONE		
248112005	SAMPLE	MXE1	1123	24-MAR-10 15:52	DONE		
248112006	SAMPLE	MXE1	1124	24-MAR-10 15:52	DONE		
248112007	SAMPLE	MXE1	1125	24-MAR-10 15:52	DONE		
248112008	SAMPLE	MXE1	1126	24-MAR-10 15:52	DONE		
248115001	SAMPLE	MXE1	1127	24-MAR-10 15:52	DONE		
248115002	SAMPLE	MXE1	1128	24-MAR-10 15:52	DONE		
248115003	SAMPLE	MXE1	1129	24-MAR-10 15:52	DONE		
248115004	SAMPLE	MXE1	1130	24-MAR-10 15:52	DONE		
248115005	SAMPLE	MXE1	1131	24-MAR-10 15:52	DONE		
248115006	SAMPLE	MXE1	1132	24-MAR-10 15:52	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		