

AUXIER & ASSOCIATES, INC.

PAP-KAN

**STANDARD LEVEL IV
REPORT OF ANALYSIS**

WORK ORDER #15-10087-OR

November 16, 2015

**Eberline Analytical
Oak Ridge Laboratory
OAK RIDGE, TN**

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**Eberline Services – Oak Ridge Laboratory
LABORATORY DATA SUPPORT CHECKLIST**

MP-001-3

15 - 10087

Eberline Services Work Order # _____

The checklist items listed below are to be initialed by appropriate staff upon completion/verification.

Date for Partial	Initials	Date	Initials	Checklist Items
		10-14-15	JEB	Sample Log-In
		11/9/15	JG	Data Compilation
		11-10-15	WLT	First Technical Data Review
		11/10/15	WLT	Second Technical Data Review
		11/11/15		Data Entry/Electronic Deliverable
		11/11/15	B	Case Narrative
		11/16/15	RBS	Electronic Deliverable Proof
		11/16/15	WLT	Samples Analyzed within Holding Time Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/>
		11/16/15	WLT	QA/QC Review
				Client in Possession of Data Electronic or Hard Copy
				Invoiced by Laboratory

Technical/Clerical Corrections, Signatures Needed, Problems, Etc	Date/Initials

Date package approved by:

Laboratory Manager

11/16/15

Date

Copy No. _____

Radiochemistry Services

SECTION I
CHAIN OF CUSTODY

Chain of Custody Record

No 7125

Eberline Services
601 Scarboro Road
Oak Ridge, TN 37830
(865) 481-0683 Phone • (865) 483-4621 Fax



Project Name: PAPPANAW		Project Number:		Page ___ of ___		
Send Report To: Cecilia Greene		Sampler (Print Name): Penley Jahr		REC'D OCT 14 2015		
Address:		Sampler (Print Name):		15-10087		
9821 Coaghill Rd, Suite 1		Shipment Method: FedEx		Purchase Order #:		
Knoxville, TN 37992		Airbill Number:				
Phone: 865-675-3669		Laboratory Receiving: Eberline				
Fax: cgreene@auxier.com				Comments, Special Instructions, etc.		
Field Sample ID	Sample Date	Sample Time	Sample Matrix	Number of Containers	Analysis Requested	Lab Sample ID (to be completed by lab)
CP5004S01-02	10/7/15	1010	S	1	Isotope Uranium	21 Day Growth
CP5004S04-05	10/7/15	1020	S	1	Isotope Thorium	
CP5004S07-08	10/7/15	1030	S	1	Gamma Spec	
CP5004S09-10	10/7/15	1040	S	1		
CP5004S11-12	10/7/15	1050	S	1		
CP5004S14-15	10/7/15	1100	S	1		
CP5004S16-17	10/7/15	1110	S	1		
CP4106S05-04	10/7/15	1300	S	1		
CP4106S05-06	10/7/15	1310	S	1		
CP4106S08-09	10/7/15	1320	S	1		
CP4106S10-11	10/7/15	1330	S	1		
CP4106S13-14	10/7/15	1340	S	1		
CP4106S15-16	10/7/15	1350	S	1		
CP4106S18-19	10/7/15	1400	S	1		21 Day Growth

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	Sample Custodian Remarks (Completed By Laboratory):	Sample Receipt
	1500	10/10/15	1400		Total # Containers Received?
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	QA/QC Level	COC Seals Present?
				Level I <input type="checkbox"/>	COC Seals Intact?
				Level II <input type="checkbox"/>	Received Containers Intact?
				Level III <input type="checkbox"/>	Temperature?
				Other <input type="checkbox"/>	
				Turnaround	
				Routine <input type="checkbox"/>	
				24 Hour <input type="checkbox"/>	
				1 Week <input type="checkbox"/>	
				Other <input type="checkbox"/>	



EBERLINE
SERVICES
Oak Ridge Laboratory

Internal Chain of Custody

Work Order #

15-10087

Lab Deadline

11/6/2015

Analysis

UISO - Level 4

Sample Matrix

Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	37	K1.2
	05	41	K1.2
	06	35	K1.2
	07	38	K1.2
	08	32	K1.2
	09	37	K1.2
	10	40	K1.2
	11	37	K1.2
	12	35	K1.2
	13	35	K1.2
	14	33	K1.2
	15	32	K1.2
	16	38	K1.2
	17	39	K1.2

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1150	Kemp scj	10-16-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room 0840	Kemp scj	10-18-14
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 840	J. Pacheco	10-19-14
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	J. Pacheco	10-20-14
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	J. Pacheco	10-21-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	J. Pacheco	10-21-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	J. Pacheco	10-22-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	J. Pacheco	10-26-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		



EBERLINE
SERVICES
Oak Ridge Laboratory

Internal Chain of Custody

Work Order #

15-10087

Lab Deadline

11/6/2015

Analysis

THISO - Level 4

Sample Matrix

Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	37	K1.2
	05	41	K1.2
	06	35	K1.2
	07	38	K1.2
	08	32	K1.2
	09	37	K1.2
	10	40	K1.2
	11	37	K1.2
	12	35	K1.2
	13	35	K1.2
	14	33	K1.2
	15	32	K1.2
	16	38	K1.2
	17	39	K1.2

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	<u>Rough Prep</u>	Prep	Separations	Count Room 1150	Kerry scj	10-18-15
Relinquished by	Sample Storage	<u>Rough Prep</u>	Prep	Separations	Count Room 0840	Kerry scj	10-18-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 840	J. Pacheco	10-18-15
Relinquished by	Sample Storage	Rough Prep	<u>Prep</u>	Separations	Count Room	W. [unclear]	10/21/15 0400
Received by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	[unclear]	10/21/15 0400
Relinquished by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	[unclear]	11/3/15 0757
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	[unclear]	11/2-0757
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	KS	11/3/15 1131
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		



EBERLINE
SERVICES
Oak Ridge Laboratory

Internal Chain of Custody

Work Order #

15-10087

Lab Deadline

11/6/2015

Analysis

Gamma - Level 4

Sample Matrix


Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location	
21 day ingrowth: Report Ac228, Bi214, Pb212/214, Ra226 from Bi214, Ra228 from Ac228, Tl208, Th234 & positives.	04	37	K1.2	
	05	41	K1.2	
	06	35	K1.2	
	07	38	K1.2	
	08	32	K1.2	
	09	37	K1.2	
	10	40	K1.2	
	11	37	K1.2	
	12	35	K1.2	
	13	35	K1.2	
	14	33	K1.2	
	15	32	K1.2	
	16	38	K1.2	
	17	39	K1.2	

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1/50 Kary Seay	10-16-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1/25 Kary Seay	10-19-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB 10/19/15	1227
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB 11/9/15	1224
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

SECTION II
SAMPLE ACKNOWLEDGEMENT

Client Name		Contract/PO		Project Type		Date Received		Required Turnaround Days		Eberline Services Work Order		
Auxier & Associates, Inc.		PAP-KAN		Environmental		10/14/2015		28		15-10087		
Project Name		Client WO		Sample Disp		Lab Deadline		Internal Deadline		Client Deadline		
PAP-KAN		PAP-KAN		H		11/06/2015		11/10/2015		11/11/2015		
Internal ID	Client ID	Sample Date	Matrix	Storage	Gamma	ThiSO	UISO					
01	LCS	10/14/15	SO	K1.2	X	X	X				3	
02	BLANK	10/14/15	SO	K1.2	X	X	X				3	
03	DUP	10/14/15	SO	K1.2	X	X	X				3	
04	CP5004S01-02	10/07/15 10:10	SO	K1.2	X	X	X				3	
05	CP5004S04-05	10/07/15 10:20	SO	K1.2	X	X	X				3	
06	CP5004S07-08	10/07/15 10:30	SO	K1.2	X	X	X				3	
07	CP5004S09-10	10/07/15 10:40	SO	K1.2	X	X	X				3	
08	CP5004S11-12	10/07/15 10:50	SO	K1.2	X	X	X				3	
09	CP5004S14-15	10/07/15 11:00	SO	K1.2	X	X	X				3	
10	CP5004S16-17	10/07/15 11:10	SO	K1.2	X	X	X				3	
11	CP4106S03-04	10/07/15 13:00	SO	K1.2	X	X	X				3	
12	CP4106S05-06	10/07/15 13:10	SO	K1.2	X	X	X				3	
13	CP4106S08-09	10/07/15 13:20	SO	K1.2	X	X	X				3	
14	CP4106S10-11	10/07/15 13:30	SO	K1.2	X	X	X				3	
15	CP4106S13-14	10/07/15 13:40	SO	K1.2	X	X	X				3	
16	CP4106S15-16	10/07/15 13:50	SO	K1.2	X	X	X				3	
17	CP4106S18-19	10/07/15 14:00	SO	K1.2	X	X	X				3	
											0	
											0	
											0	
Totals Per Analysis (non QA samples)					14	14	14	0	0	0	0	0

 EBERLINE SERVICES Sample Log In Report	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: (865) 481-0683 Fax: (865) 483-4621	Invoice Accounts Payable Auxier & Associates, Inc. 9821 Cogdill Drive #1 Knoxville, TN 37932 Voice: 865-676-3669 Fax: 865-675-3677	Report Data Cecilia Greene Auxier & Associates, Inc. 9821 Cogdill Road, Suite 1 Knoxville, TN 37930 Voice: 865-675-3669 Fax: 865-675-3677
	Contact Harvey Cohen 301-718-8900 Voice 301-718-8909 Fax		



STANDARD OPERATING PROCEDURE

Sample Receiving

MP-001, Rev. 15
Effective: 2/2/15
Page 13 of 15

Eberline Services -- Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST

MP-001-2

WORK ORDER # 15-10087

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

(CIRCLE EITHER YES, NO, OR N/A)

WERE SAMPLES:

Received in good condition?	<u>Y</u>	N	
If aqueous, properly preserved	Y	N	<u>N/A</u>

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<u>Y</u>	N
Unbroken on outside of package?	<u>Y</u>	N
Present on samples?	<u>Y</u>	N
Unbroken on samples?	<u>Y</u>	N
Was chain of custody present upon sample receipt?	<u>Y</u>	N

IF THE RESPONSE TO ANY OF THE ABOVE IS NO, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: _____

SIGNATURE: *James E. Bailey* DATE: 10-14-15

SECTION III
CASE NARRATIVE



EBERLINE ANALYTICAL CORPORATION
601 SCARBORO ROAD
OAK RIDGE, TENNESSEE 37830
PHONE (865) 481-0683
FAX (865) 483-4621

EBS-OR-39962

November 16, 2015

Cecilia Greene
Auxier & Associates, Inc.
9821 Cogdill Road #1
Knoxville, TN 37932

CASE NARRATIVE
Work Order # 15-10087-OR

SAMPLE RECEIPT

This work order contains fourteen soil samples received 10/14/2015. These samples were analyzed for Isotopic Uranium, Isotopic Thorium and by Gamma Spectroscopy.

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>CLIENT ID</u>	<u>LAB ID</u>
CP5004S01-02	15-10087-04	CP4106S03-04	15-10087-11
CP5004S04-05	15-10087-05	CP4106S05-06	15-10087-12
CP5004S07-08	15-10087-06	CP4106S08-09	15-10087-13
CP5004S09-10	15-10087-07	CP4106S10-11	15-10087-14
CP5004S11-12	15-10087-08	CP4106S13-14	15-10087-15
CP5004S14-15	15-10087-09	CP4106S15-16	15-10087-16
CP5004S16-17	15-10087-10	CP4106S18-19	15-10087-17

ANALYTICAL METHODS

Isotopic Uranium was analyzed using Method EML U-02 Modified. Isotopic Thorium was analyzed using Method EML Th-01 Modified. Gamma Spectroscopy was performed using Method LANL ER-130 Modified.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 2-sigma value.

Minimum Detectable Activity (MDA) values for data represented in this report are sample-specific. MDA measurements are determined based on factors and conditions including instrument settings, aliquot size and matrix type.

ANALYTICAL RESULTS CONTINUED

ISOTOPIC URANIUM

Samples were prepared by removing a representative aliquot followed by mixed acid digestions as appropriate. Uranium was selectively extracted by ion exchange. Uranium was eluted, micro-precipitated and mounted on micro-porous filter media. Sample activities were then determined by alpha spectroscopy using energy specific regions of interest for Uranium-234, Uranium-235 and Uranium-238. Chemical recovery was determined by the use of a Uranium-232 tracer. Activity of the Uranium-232 tracer was determined by alpha spectroscopy using an energy specific region of interest.

Samples demonstrated acceptable results for all Uranium analyses. Chemical recovery was acceptable for all samples. The Uranium-234, Uranium-235 and Uranium-238 method blank demonstrated acceptable results. Results for the Uranium-234, Uranium-235 and Uranium-238 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Uranium-234 and Uranium-238 laboratory control sample demonstrated an acceptable percent recovery.

ISOTOPIC THORIUM

Samples were prepared by removing representative aliquots followed by mixed acid digestions as appropriate. Thorium was selectively extracted by ion exchange. Thorium was eluted, micro-precipitated and mounted on micro-porous filter media. Sample activities were then determined by alpha spectroscopy using energy specific regions of interest for Thorium-228, Thorium-230 and Thorium-232. Chemical recovery was determined by the use of a Thorium-229 tracer. Activity of the Thorium-229 tracer was determined by alpha spectroscopy using an energy specific region of interest.

Samples demonstrated acceptable results for all Thorium analyses. Chemical recovery was acceptable for all samples. The Thorium-228, Thorium-230 and Thorium-232 method blank demonstrated acceptable results. Results for the Thorium-228, Thorium-230 and Thorium-232 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Thorium-228, Thorium-230 and Thorium-232 laboratory control sample demonstrated an acceptable percent recovery.

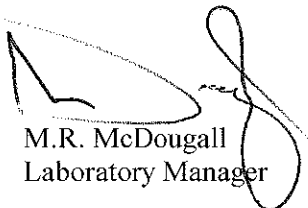
GAMMA SPECTROSCOPY

Samples were dried, homogenized and placed into appropriate gamma spectroscopy geometry containers. Samples were then sealed for 21 days to allow for ingrowth of Radon-222 and progeny. Samples were counted on High Purity Germanium (HPGe) gamma ray detectors. Energy lines from Lead-214 and Bismuth-214 were analyzed for determinations of Radium-226 activity.

Samples demonstrated acceptable results for all gamma-emitting radionuclides as reported. The method blank demonstrated acceptable results for all radionuclides as reported. Results for the Actinium-228, Bismuth-214 and Potassium-40 replicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Cobalt-60 and Cesium-137 laboratory control sample demonstrated an acceptable percent recovery.

CERTIFICATION OF ACCURACY

I certify that this data report is in compliance with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.



M.R. McDougall
Laboratory Manager

Date: 11/16/2015

Eberline Analytical wants and encourages your feedback regarding our performance providing radioanalytical services. Please visit <http://www.eberlineservices.com/client.htm> to provide us with feedback on our services.

SECTION IV
ANALYTICAL RESULTS SUMMARY

Eberline Analytical

Final Report of Analysis

Cecilia Greene
Auxier & Associates, Inc.
9821 Cogdill Road, Suite 1
Knoxville, TN 37932

SDG: 15-10087
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Work Order Details:

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10087-01	LCS	KNOWN	10/14/15 00:00	10/14/2015	11/9/2015	15-10087	Cobalt-60	LANL ER-130 Modified	1.37E+02	5.48E+00				pCi/g
15-10087-01	LCS	KNOWN	10/14/15 00:00	10/14/2015	11/9/2015	15-10087	Cesium-137	LANL ER-130 Modified	8.69E+01	3.48E+00				pCi/g
15-10087-01	LCS	SPIKE	10/14/15 00:00	10/14/2015	11/9/2015	15-10087	Cobalt-60	LANL ER-130 Modified	1.42E+02	8.31E+00	1.11E+01	7.10E-01	6.35E-01	pCi/g
15-10087-01	LCS	SPIKE	10/14/15 00:00	10/14/2015	11/9/2015	15-10087	Cesium-137	LANL ER-130 Modified	9.05E+01	8.12E+00	9.36E+00	9.27E-01	4.60E-01	pCi/g
15-10087-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL ER-130 Modified	2.46E-02	6.24E-02	6.24E-02	1.12E-01	4.92E-02	pCi/g
15-10087-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL ER-130 Modified	2.91E-02	4.73E-02	4.73E-02	7.95E-02	3.67E-02	pCi/g
15-10087-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL ER-130 Modified	1.57E-01	2.17E-01	2.17E-01	4.21E-01	1.84E-01	pCi/g
15-10087-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/9/2015	15-10087	Lead-212	LANL ER-130 Modified	3.37E-02	3.35E-02	3.35E-02	5.20E-02	2.44E-02	pCi/g
15-10087-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/9/2015	15-10087	Lead-214	LANL ER-130 Modified	3.46E-02	4.09E-02	4.09E-02	6.37E-02	2.99E-02	pCi/g
15-10087-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/9/2015	15-10087	Radium-226	LANL ER-130 Modified	2.91E-02	4.73E-02	4.73E-02	7.95E-02	3.50E-01	pCi/g
15-10087-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/9/2015	15-10087	Radium-228	LANL ER-130 Modified	2.46E-02	6.24E-02	6.24E-02	1.12E-01	4.92E-02	pCi/g
15-10087-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL ER-130 Modified	3.31E-01	2.67E-01	2.68E-01	4.74E-01	2.22E-01	pCi/g
15-10087-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL ER-130 Modified	5.03E-02	5.00E-02	5.00E-02	8.65E-02	4.29E-02	pCi/g
15-10087-03	DUP	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL ER-130 Modified	1.46E+00	2.19E-01	2.32E-01	4.63E-01	2.23E-01	pCi/g
15-10087-03	DUP	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL ER-130 Modified	1.35E+00	1.92E-01	2.04E-01	1.82E-01	1.67E-01	pCi/g
15-10087-03	DUP	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL ER-130 Modified	2.16E+01	2.37E+00	2.52E+00	7.94E-01	3.63E-01	pCi/g
15-10087-03	DUP	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Lead-212	LANL ER-130 Modified	1.45E+00	1.77E-01	1.92E-01	2.05E-01	1.00E-01	pCi/g
15-10087-03	DUP	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Lead-214	LANL ER-130 Modified	1.34E+00	1.61E-01	1.75E-01	2.58E-01	1.26E-01	pCi/g
15-10087-03	DUP	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Radium-226	LANL ER-130 Modified	1.35E+00	1.92E-01	2.04E-01	1.82E-01	1.36E+00	pCi/g
15-10087-03	DUP	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Radium-228	LANL ER-130 Modified	1.46E+00	2.19E-01	2.32E-01	4.63E-01	2.23E-01	pCi/g
15-10087-03	DUP	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL ER-130 Modified	1.05E+01	1.49E+00	1.58E+00	2.61E+00	1.29E+00	pCi/g
15-10087-03	DUP	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL ER-130 Modified	1.22E+00	1.70E-01	1.82E-01	1.39E-01	1.45E-01	pCi/g
15-10087-04	DO	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL ER-130 Modified	1.33E+00	2.26E-01	2.36E-01	4.16E-01	1.99E-01	pCi/g
15-10087-04	DO	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL ER-130 Modified	1.19E+00	1.53E-01	1.65E-01	1.82E-01	9.23E-02	pCi/g
15-10087-04	DO	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL ER-130 Modified	1.96E+01	2.18E+00	2.40E+00	7.92E-01	3.62E-01	pCi/g
15-10087-04	DO	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Lead-212	LANL ER-130 Modified	1.38E+00	1.67E-01	1.82E-01	2.50E-01	1.23E-01	pCi/g
15-10087-04	DO	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Lead-214	LANL ER-130 Modified	1.25E+00	1.49E-01	1.62E-01	2.24E-01	1.09E-01	pCi/g
15-10087-04	DO	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Radium-226	LANL ER-130 Modified	1.19E+00	1.53E-01	1.65E-01	1.82E-01	1.27E+00	pCi/g
15-10087-04	DO	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Radium-228	LANL ER-130 Modified	1.33E+00	2.26E-01	2.36E-01	4.16E-01	1.99E-01	pCi/g
15-10087-04	DO	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL ER-130 Modified	1.08E+01	1.90E+00	1.98E+00	2.62E+00	1.29E+00	pCi/g
15-10087-04	DO	CP5004S01-02	10/07/15 10:10	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL ER-130 Modified	1.25E+00	1.83E-01	1.94E-01	1.47E-01	1.85E-01	pCi/g

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original; CV=Critical Value



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Eberline Analytical

Final Report of Analysis

Cecilia Greene
Auxier & Associates, Inc.
9821 Cogdill Road, Suite 1
Knoxville, TN 37932

SDG: 15-10087
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Report To:

Work Order Details:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10087-05	TRG	CP5004S04-05	10/07/15 10:20	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL_ER-130 Modified	1.26E+00	2.09E-01	2.19E-01	3.31E-01	1.57E-01	pCi/g
15-10087-05	TRG	CP5004S04-05	10/07/15 10:20	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL_ER-130 Modified	1.23E+00	1.52E-01	1.64E-01	1.80E-01	8.62E-02	pCi/g
15-10087-05	TRG	CP5004S04-05	10/07/15 10:20	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL_ER-130 Modified	1.73E+01	2.24E+00	2.41E+00	1.00E+00	4.69E-01	pCi/g
15-10087-05	TRG	CP5004S04-05	10/07/15 10:20	10/14/2015	11/9/2015	15-10087	Lead-212	LANL_ER-130 Modified	1.33E+00	1.67E-01	1.80E-01	2.21E-01	1.09E-01	pCi/g
15-10087-05	TRG	CP5004S04-05	10/07/15 10:20	10/14/2015	11/9/2015	15-10087	Lead-214	LANL_ER-130 Modified	1.44E+00	1.61E-01	1.77E-01	2.08E-01	1.01E-01	pCi/g
15-10087-05	TRG	CP5004S04-05	10/07/15 10:20	10/14/2015	11/9/2015	15-10087	Radium-226	LANL_ER-130 Modified	1.23E+00	1.52E-01	1.64E-01	1.80E-01	1.13E+00	pCi/g
15-10087-05	TRG	CP5004S04-05	10/07/15 10:20	10/14/2015	11/9/2015	15-10087	Radium-228	LANL_ER-130 Modified	1.26E+00	2.09E-01	2.19E-01	3.31E-01	1.57E-01	pCi/g
15-10087-05	TRG	CP5004S04-05	10/07/15 10:20	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL_ER-130 Modified	7.92E+00	1.95E+00	2.00E+00	2.92E+00	1.44E+00	pCi/g
15-10087-05	TRG	CP5004S04-05	10/07/15 10:20	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL_ER-130 Modified	9.48E-01	1.48E-01	1.56E-01	1.43E-01	1.39E-01	pCi/g
15-10087-06	TRG	CP5004S07-08	10/07/15 10:30	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL_ER-130 Modified	9.06E-01	4.58E-01	4.60E-01	8.57E-01	4.06E-01	pCi/g
15-10087-06	TRG	CP5004S07-08	10/07/15 10:30	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL_ER-130 Modified	1.45E+00	2.95E-01	3.05E-01	2.49E-01	2.43E-01	pCi/g
15-10087-06	TRG	CP5004S07-08	10/07/15 10:30	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL_ER-130 Modified	1.78E+01	3.11E+00	3.24E+00	1.95E+00	8.82E-01	pCi/g
15-10087-06	TRG	CP5004S07-08	10/07/15 10:30	10/14/2015	11/9/2015	15-10087	Lead-212	LANL_ER-130 Modified	1.86E+00	3.38E-01	3.51E-01	4.07E-01	1.99E-01	pCi/g
15-10087-06	TRG	CP5004S07-08	10/07/15 10:30	10/14/2015	11/9/2015	15-10087	Lead-214	LANL_ER-130 Modified	1.28E+00	3.04E-01	3.11E-01	5.33E-01	2.60E-01	pCi/g
15-10087-06	TRG	CP5004S07-08	10/07/15 10:30	10/14/2015	11/9/2015	15-10087	Radium-226	LANL_ER-130 Modified	1.45E+00	2.95E-01	3.05E-01	2.49E-01	2.27E+00	pCi/g
15-10087-06	TRG	CP5004S07-08	10/07/15 10:30	10/14/2015	11/9/2015	15-10087	Radium-228	LANL_ER-130 Modified	9.06E-01	4.58E-01	4.60E-01	8.57E-01	4.06E-01	pCi/g
15-10087-06	TRG	CP5004S07-08	10/07/15 10:30	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL_ER-130 Modified	4.36E+00	1.81E+00	1.82E+00	2.92E+00	1.44E+00	pCi/g
15-10087-06	TRG	CP5004S07-08	10/07/15 10:30	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL_ER-130 Modified	1.07E+00	2.94E-01	2.99E-01	3.95E-01	2.90E-01	pCi/g
15-10087-07	TRG	CP5004S09-10	10/07/15 10:40	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL_ER-130 Modified	1.51E+00	2.07E-01	2.21E-01	6.37E-01	3.60E-01	pCi/g
15-10087-07	TRG	CP5004S09-10	10/07/15 10:40	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL_ER-130 Modified	1.05E+00	1.57E-01	1.66E-01	1.89E-01	9.02E-02	pCi/g
15-10087-07	TRG	CP5004S09-10	10/07/15 10:40	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL_ER-130 Modified	1.97E+01	2.51E+00	2.71E+00	9.41E-01	4.34E-01	pCi/g
15-10087-07	TRG	CP5004S09-10	10/07/15 10:40	10/14/2015	11/9/2015	15-10087	Lead-212	LANL_ER-130 Modified	1.27E+00	1.60E-01	1.73E-01	3.27E-01	1.61E-01	pCi/g
15-10087-07	TRG	CP5004S09-10	10/07/15 10:40	10/14/2015	11/9/2015	15-10087	Lead-214	LANL_ER-130 Modified	1.08E+00	1.60E-01	1.70E-01	2.07E-01	1.00E-01	pCi/g
15-10087-07	TRG	CP5004S09-10	10/07/15 10:40	10/14/2015	11/9/2015	15-10087	Radium-226	LANL_ER-130 Modified	1.05E+00	1.57E-01	1.66E-01	1.89E-01	1.26E+00	pCi/g
15-10087-07	TRG	CP5004S09-10	10/07/15 10:40	10/14/2015	11/9/2015	15-10087	Radium-228	LANL_ER-130 Modified	1.51E+00	2.07E-01	2.21E-01	6.37E-01	3.60E-01	pCi/g
15-10087-07	TRG	CP5004S09-10	10/07/15 10:40	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL_ER-130 Modified	1.10E+00	9.26E-01	9.28E-01	1.47E+00	7.15E-01	pCi/g
15-10087-07	TRG	CP5004S09-10	10/07/15 10:40	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL_ER-130 Modified	1.04E+00	1.58E-01	1.66E-01	1.11E-01	1.56E-01	pCi/g

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Eberline Analytical

Final Report of Analysis

Cecilia Greene
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9821 Cogdill Road, Suite 1
Knoxville, TN 37932

Work Order Details:

SDG: 15-10087
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10087-08	TRG	CP5004S11-12	10/07/15 10:50	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL ER-130 Modified	1.38E+00	4.28E-01	4.34E-01	6.86E-01	3.18E-01	pC/g
15-10087-08	TRG	CP5004S11-12	10/07/15 10:50	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL ER-130 Modified	1.49E+00	3.29E-01	3.37E-01	5.19E-01	2.50E-01	pC/g
15-10087-08	TRG	CP5004S11-12	10/07/15 10:50	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL ER-130 Modified	1.84E+01	3.42E+00	3.55E+00	2.74E+00	1.27E+00	pC/g
15-10087-08	TRG	CP5004S11-12	10/07/15 10:50	10/14/2015	11/9/2015	15-10087	Lead-212	LANL ER-130 Modified	1.87E+00	3.38E-01	3.51E-01	4.01E-01	1.96E-01	pC/g
15-10087-08	TRG	CP5004S11-12	10/07/15 10:50	10/14/2015	11/9/2015	15-10087	Lead-214	LANL ER-130 Modified	1.85E+00	3.27E-01	3.41E-01	4.41E-01	2.13E-01	pC/g
15-10087-08	TRG	CP5004S11-12	10/07/15 10:50	10/14/2015	11/9/2015	15-10087	Radium-228	LANL ER-130 Modified	1.49E+00	3.28E-01	3.37E-01	5.19E-01	1.99E+00	pC/g
15-10087-08	TRG	CP5004S11-12	10/07/15 10:50	10/14/2015	11/9/2015	15-10087	Radium-226	LANL ER-130 Modified	1.38E+00	4.28E-01	4.34E-01	6.86E-01	3.18E-01	pC/g
15-10087-08	TRG	CP5004S11-12	10/07/15 10:50	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL ER-130 Modified	1.03E+00	1.42E+00	1.42E+00	2.20E+00	1.08E+00	pC/g
15-10087-08	TRG	CP5004S11-12	10/07/15 10:50	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL ER-130 Modified	1.32E+00	3.41E-01	3.48E-01	9.29E-02	4.18E-01	pC/g
15-10087-09	TRG	CP5004S14-15	10/07/15 11:00	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL ER-130 Modified	1.39E+00	2.19E-01	2.24E-01	3.62E-01	1.71E-01	pC/g
15-10087-09	TRG	CP5004S14-15	10/07/15 11:00	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL ER-130 Modified	1.15E+00	1.67E-01	1.77E-01	2.68E-01	1.28E-01	pC/g
15-10087-09	TRG	CP5004S14-15	10/07/15 11:00	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL ER-130 Modified	2.12E+01	2.39E+00	2.62E+00	8.64E-01	3.98E-01	pC/g
15-10087-09	TRG	CP5004S14-15	10/07/15 11:00	10/14/2015	11/9/2015	15-10087	Lead-212	LANL ER-130 Modified	1.51E+00	1.76E-01	1.95E-01	2.68E-01	1.32E-01	pC/g
15-10087-09	TRG	CP5004S14-15	10/07/15 11:00	10/14/2015	11/9/2015	15-10087	Lead-214	LANL ER-130 Modified	1.44E+00	1.64E-01	1.80E-01	2.45E-01	1.19E-01	pC/g
15-10087-09	TRG	CP5004S14-15	10/07/15 11:00	10/14/2015	11/9/2015	15-10087	Radium-226	LANL ER-130 Modified	1.15E+00	1.67E-01	1.77E-01	2.68E-01	1.29E+00	pC/g
15-10087-09	TRG	CP5004S14-15	10/07/15 11:00	10/14/2015	11/9/2015	15-10087	Radium-228	LANL ER-130 Modified	1.39E+00	2.13E-01	2.24E-01	3.62E-01	1.71E-01	pC/g
15-10087-09	TRG	CP5004S14-15	10/07/15 11:00	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL ER-130 Modified	2.34E+00	1.47E+00	1.48E+00	2.42E+00	1.19E+00	pC/g
15-10087-09	TRG	CP5004S14-15	10/07/15 11:00	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL ER-130 Modified	1.30E+00	1.81E-01	1.93E-01	9.71E-02	1.70E-01	pC/g
15-10087-10	TRG	CP5004S16-17	10/07/15 11:10	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL ER-130 Modified	1.47E+00	2.13E-01	2.26E-01	3.28E-01	1.54E-01	pC/g
15-10087-10	TRG	CP5004S16-17	10/07/15 11:10	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL ER-130 Modified	1.08E+00	1.68E-01	1.75E-01	2.39E-01	1.15E-01	pC/g
15-10087-10	TRG	CP5004S16-17	10/07/15 11:10	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL ER-130 Modified	1.87E+01	2.38E+00	2.57E+00	1.10E+00	5.14E-01	pC/g
15-10087-10	TRG	CP5004S16-17	10/07/15 11:10	10/14/2015	11/9/2015	15-10087	Lead-212	LANL ER-130 Modified	1.37E+00	1.71E-01	1.85E-01	3.96E-01	1.96E-01	pC/g
15-10087-10	TRG	CP5004S16-17	10/07/15 11:10	10/14/2015	11/9/2015	15-10087	Lead-214	LANL ER-130 Modified	1.31E+00	1.54E-01	1.68E-01	1.98E-01	9.59E-02	pC/g
15-10087-10	TRG	CP5004S16-17	10/07/15 11:10	10/14/2015	11/9/2015	15-10087	Radium-226	LANL ER-130 Modified	1.08E+00	1.66E-01	1.75E-01	2.39E-01	8.12E-01	pC/g
15-10087-10	TRG	CP5004S16-17	10/07/15 11:10	10/14/2015	11/9/2015	15-10087	Radium-228	LANL ER-130 Modified	1.47E+00	2.13E-01	2.26E-01	3.28E-01	1.54E-01	pC/g
15-10087-10	TRG	CP5004S16-17	10/07/15 11:10	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL ER-130 Modified	9.28E-01	1.09E+00	1.09E+00	1.82E+00	8.91E-01	pC/g
15-10087-10	TRG	CP5004S16-17	10/07/15 11:10	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL ER-130 Modified	1.08E+00	1.67E-01	1.76E-01	1.85E-01	1.58E-01	pC/g

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SDG: 15-10087
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Work Order Details:

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10087-11	TRG	CP4106S03-04	10/07/15 13:00	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL ER-130 Modified	1.46E+00	5.14E-01	5.19E-01	9.67E-01	4.58E-01	pCi/g
15-10087-11	TRG	CP4106S03-04	10/07/15 13:00	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL ER-130 Modified	1.64E+00	3.73E-01	3.83E-01	5.14E-01	2.47E-01	pCi/g
15-10087-11	TRG	CP4106S03-04	10/07/15 13:00	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL ER-130 Modified	1.92E+01	3.25E+00	3.40E+00	1.32E+00	5.61E-01	pCi/g
15-10087-11	TRG	CP4106S03-04	10/07/15 13:00	10/14/2015	11/9/2015	15-10087	Lead-212	LANL ER-130 Modified	1.84E+00	3.64E-01	3.76E-01	4.65E-01	2.28E-01	pCi/g
15-10087-11	TRG	CP4106S03-04	10/07/15 13:00	10/14/2015	11/9/2015	15-10087	Lead-214	LANL ER-130 Modified	9.65E-01	3.09E-01	3.13E-01	5.25E-01	2.55E-01	pCi/g
15-10087-11	TRG	CP4106S03-04	10/07/15 13:00	10/14/2015	11/9/2015	15-10087	Radium-226	LANL ER-130 Modified	1.64E+00	3.73E-01	3.83E-01	5.14E-01	2.21E+00	pCi/g
15-10087-11	TRG	CP4106S03-04	10/07/15 13:00	10/14/2015	11/9/2015	15-10087	Radium-228	LANL ER-130 Modified	1.46E+00	5.14E-01	5.19E-01	9.67E-01	4.58E-01	pCi/g
15-10087-11	TRG	CP4106S03-04	10/07/15 13:00	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL ER-130 Modified	3.15E-01	5.11E-01	5.11E-01	2.28E+00	1.11E+00	pCi/g
15-10087-11	TRG	CP4106S03-04	10/07/15 13:00	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL ER-130 Modified	1.06E+00	3.28E-01	3.32E-01	5.98E-01	3.19E-01	pCi/g
15-10087-12	TRG	CP4106S05-06	10/07/15 13:10	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL ER-130 Modified	1.53E+00	2.44E-01	2.56E-01	3.42E-01	1.61E-01	pCi/g
15-10087-12	TRG	CP4106S05-06	10/07/15 13:10	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL ER-130 Modified	1.41E+00	1.76E-01	1.90E-01	2.12E-01	1.02E-01	pCi/g
15-10087-12	TRG	CP4106S05-06	10/07/15 13:10	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL ER-130 Modified	2.14E+01	2.37E+00	2.61E+00	1.08E+00	5.04E-01	pCi/g
15-10087-12	TRG	CP4106S05-06	10/07/15 13:10	10/14/2015	11/9/2015	15-10087	Lead-212	LANL ER-130 Modified	1.62E+00	1.82E-01	2.00E-01	2.37E-01	1.16E-01	pCi/g
15-10087-12	TRG	CP4106S05-06	10/07/15 13:10	10/14/2015	11/9/2015	15-10087	Lead-214	LANL ER-130 Modified	1.49E+00	1.61E-01	1.78E-01	2.10E-01	1.01E-01	pCi/g
15-10087-12	TRG	CP4106S05-06	10/07/15 13:10	10/14/2015	11/9/2015	15-10087	Radium-226	LANL ER-130 Modified	1.41E+00	1.76E-01	1.90E-01	2.12E-01	1.33E+00	pCi/g
15-10087-12	TRG	CP4106S05-06	10/07/15 13:10	10/14/2015	11/9/2015	15-10087	Radium-228	LANL ER-130 Modified	1.53E+00	2.44E-01	2.56E-01	3.42E-01	1.61E-01	pCi/g
15-10087-12	TRG	CP4106S05-06	10/07/15 13:10	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL ER-130 Modified	2.03E+00	1.58E+00	1.59E+00	2.62E+00	1.29E+00	pCi/g
15-10087-12	TRG	CP4106S05-06	10/07/15 13:10	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL ER-130 Modified	1.51E+00	1.93E-01	2.08E-01	9.67E-02	1.58E-01	pCi/g
15-10087-13	TRG	CP4106S08-09	10/07/15 13:20	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL ER-130 Modified	1.54E+00	1.95E-01	2.10E-01	2.40E-01	1.10E-01	pCi/g
15-10087-13	TRG	CP4106S08-09	10/07/15 13:20	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL ER-130 Modified	1.24E+00	1.95E-01	2.05E-01	2.87E-01	1.39E-01	pCi/g
15-10087-13	TRG	CP4106S08-09	10/07/15 13:20	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL ER-130 Modified	2.12E+01	2.65E+00	2.87E+00	7.50E-01	3.38E-01	pCi/g
15-10087-13	TRG	CP4106S08-09	10/07/15 13:20	10/14/2015	11/9/2015	15-10087	Lead-212	LANL ER-130 Modified	1.50E+00	1.77E-01	1.93E-01	3.41E-01	1.66E-01	pCi/g
15-10087-13	TRG	CP4106S08-09	10/07/15 13:20	10/14/2015	11/9/2015	15-10087	Lead-214	LANL ER-130 Modified	1.25E+00	1.68E-01	1.80E-01	2.87E-01	1.40E-01	pCi/g
15-10087-13	TRG	CP4106S08-09	10/07/15 13:20	10/14/2015	11/9/2015	15-10087	Radium-226	LANL ER-130 Modified	1.24E+00	1.95E-01	2.05E-01	2.87E-01	1.39E+00	pCi/g
15-10087-13	TRG	CP4106S08-09	10/07/15 13:20	10/14/2015	11/9/2015	15-10087	Radium-228	LANL ER-130 Modified	1.54E+00	1.95E-01	2.10E-01	2.40E-01	1.10E-01	pCi/g
15-10087-13	TRG	CP4106S08-09	10/07/15 13:20	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL ER-130 Modified	1.49E+00	9.50E-01	9.53E-01	1.54E+00	7.47E-01	pCi/g
15-10087-13	TRG	CP4106S08-09	10/07/15 13:20	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL ER-130 Modified	1.09E+00	1.71E-01	1.80E-01	1.60E-01	1.82E-01	pCi/g

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original; CV=Critical Value



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Eberline Analytical

Final Report of Analysis

Cecilia Greene
Auxier & Associates, Inc.
9821 Cogdill Road, Suite 1
Knoxville, TN 37932

SDG: 15-10087
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Report To:

Work Order Details:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10087-14	TRG	CP4106S10-11	10/07/15 13:30	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL ER-130 Modified	1.29E+00	5.15E-01	5.19E-01	1.00E+00	4.74E-01	pCi/g
15-10087-14	TRG	CP4106S10-11	10/07/15 13:30	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL ER-130 Modified	1.42E+00	3.47E-01	3.55E-01	6.26E-01	3.03E-01	pCi/g
15-10087-14	TRG	CP4106S10-11	10/07/15 13:30	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL ER-130 Modified	2.11E+01	3.68E+00	3.83E+00	2.37E+00	1.08E+00	pCi/g
15-10087-14	TRG	CP4106S10-11	10/07/15 13:30	10/14/2015	11/9/2015	15-10087	Lead-212	LANL ER-130 Modified	1.80E+00	3.77E-01	3.98E-01	4.99E-01	2.45E-01	pCi/g
15-10087-14	TRG	CP4106S10-11	10/07/15 13:30	10/14/2015	11/9/2015	15-10087	Lead-214	LANL ER-130 Modified	1.20E+00	3.36E-01	3.41E-01	4.50E-01	2.18E-01	pCi/g
15-10087-14	TRG	CP4106S10-11	10/07/15 13:30	10/14/2015	11/9/2015	15-10087	Radium-226	LANL ER-130 Modified	1.42E+00	3.47E-01	3.55E-01	6.26E-01	1.93E+00	pCi/g
15-10087-14	TRG	CP4106S10-11	10/07/15 13:30	10/14/2015	11/9/2015	15-10087	Radium-228	LANL ER-130 Modified	1.29E+00	5.15E-01	5.19E-01	1.00E+00	4.74E-01	pCi/g
15-10087-14	TRG	CP4106S10-11	10/07/15 13:30	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL ER-130 Modified	1.11E+00	1.45E+00	1.45E+00	2.25E+00	1.10E+00	pCi/g
15-10087-14	TRG	CP4106S10-11	10/07/15 13:30	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL ER-130 Modified	1.42E+00	3.28E-01	3.36E-01	2.43E-01	3.00E-01	pCi/g
15-10087-15	TRG	CP4106S13-14	10/07/15 13:40	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL ER-130 Modified	1.31E+00	2.01E-01	2.12E-01	4.23E-01	2.03E-01	pCi/g
15-10087-15	TRG	CP4106S13-14	10/07/15 13:40	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL ER-130 Modified	1.03E+00	1.49E-01	1.58E-01	1.74E-01	8.33E-02	pCi/g
15-10087-15	TRG	CP4106S13-14	10/07/15 13:40	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL ER-130 Modified	1.96E+01	2.19E+00	2.41E+00	9.33E-01	4.35E-01	pCi/g
15-10087-15	TRG	CP4106S13-14	10/07/15 13:40	10/14/2015	11/9/2015	15-10087	Lead-212	LANL ER-130 Modified	1.57E+00	1.71E-01	1.89E-01	2.25E-01	1.10E-01	pCi/g
15-10087-15	TRG	CP4106S13-14	10/07/15 13:40	10/14/2015	11/9/2015	15-10087	Lead-214	LANL ER-130 Modified	1.09E+00	1.37E-01	1.48E-01	2.24E-01	1.09E-01	pCi/g
15-10087-15	TRG	CP4106S13-14	10/07/15 13:40	10/14/2015	11/9/2015	15-10087	Radium-226	LANL ER-130 Modified	1.03E+00	1.49E-01	1.58E-01	1.74E-01	1.10E+00	pCi/g
15-10087-15	TRG	CP4106S13-14	10/07/15 13:40	10/14/2015	11/9/2015	15-10087	Radium-228	LANL ER-130 Modified	1.31E+00	2.01E-01	2.12E-01	4.23E-01	2.03E-01	pCi/g
15-10087-15	TRG	CP4106S13-14	10/07/15 13:40	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL ER-130 Modified	1.80E+00	1.33E+00	1.33E+00	1.80E+00	8.84E-01	pCi/g
15-10087-15	TRG	CP4106S13-14	10/07/15 13:40	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL ER-130 Modified	1.14E+00	1.64E-01	1.74E-01	1.23E-01	1.35E-01	pCi/g
15-10087-16	TRG	CP4106S15-16	10/07/15 13:50	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL ER-130 Modified	1.55E+00	2.16E-01	2.30E-01	2.99E-01	1.40E-01	pCi/g
15-10087-16	TRG	CP4106S15-16	10/07/15 13:50	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL ER-130 Modified	8.75E-01	1.45E-01	1.52E-01	2.27E-01	1.09E-01	pCi/g
15-10087-16	TRG	CP4106S15-16	10/07/15 13:50	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL ER-130 Modified	2.13E+01	2.66E+00	2.88E+00	8.80E-01	4.03E-01	pCi/g
15-10087-16	TRG	CP4106S15-16	10/07/15 13:50	10/14/2015	11/9/2015	15-10087	Lead-212	LANL ER-130 Modified	1.24E+00	1.61E-01	1.73E-01	2.46E-01	1.21E-01	pCi/g
15-10087-16	TRG	CP4106S15-16	10/07/15 13:50	10/14/2015	11/9/2015	15-10087	Lead-214	LANL ER-130 Modified	1.06E+00	1.50E-01	1.60E-01	2.39E-01	1.16E-01	pCi/g
15-10087-16	TRG	CP4106S15-16	10/07/15 13:50	10/14/2015	11/9/2015	15-10087	Radium-226	LANL ER-130 Modified	8.75E-01	1.45E-01	1.52E-01	2.27E-01	1.13E+00	pCi/g
15-10087-16	TRG	CP4106S15-16	10/07/15 13:50	10/14/2015	11/9/2015	15-10087	Radium-228	LANL ER-130 Modified	1.55E+00	2.16E-01	2.30E-01	2.99E-01	1.40E-01	pCi/g
15-10087-16	TRG	CP4106S15-16	10/07/15 13:50	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL ER-130 Modified	1.39E+00	9.02E-01	9.05E-01	1.47E+00	7.13E-01	pCi/g
15-10087-16	TRG	CP4106S15-16	10/07/15 13:50	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL ER-130 Modified	1.13E+00	1.57E-01	1.67E-01	1.11E-01	1.27E-01	pCi/g

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Eberline Analytical

Final Report of Analysis

Cecilia Greene
Auxier & Associates, Inc.
9821 Cogdill Road, Suite 1
Knoxville, TN 37932

SDG: 15-10087
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Work Order Details:

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10087-17	TRG	CP4106S18-19	10/07/15 14:00	10/14/2015	11/9/2015	15-10087	Actinium-228	LANL ER-130 Modified	1.53E+00	5.25E-01	5.31E-01	1.04E+00	4.95E-01	pCi/g
15-10087-17	TRG	CP4106S18-19	10/07/15 14:00	10/14/2015	11/9/2015	15-10087	Bismuth-214	LANL ER-130 Modified	1.19E+00	2.83E-01	2.89E-01	4.12E-01	1.95E-01	pCi/g
15-10087-17	TRG	CP4106S18-19	10/07/15 14:00	10/14/2015	11/9/2015	15-10087	Potassium-40	LANL ER-130 Modified	2.28E+01	3.78E+00	3.98E+00	3.21E+00	1.50E+00	pCi/g
15-10087-17	TRG	CP4106S18-19	10/07/15 14:00	10/14/2015	11/9/2015	15-10087	Lead-212	LANL ER-130 Modified	1.88E+00	3.43E-01	3.56E-01	4.10E-01	2.00E-01	pCi/g
15-10087-17	TRG	CP4106S18-19	10/07/15 14:00	10/14/2015	11/9/2015	15-10087	Lead-214	LANL ER-130 Modified	9.57E-01	3.21E-01	3.25E-01	5.68E-01	2.76E-01	pCi/g
15-10087-17	TRG	CP4106S18-19	10/07/15 14:00	10/14/2015	11/9/2015	15-10087	Radium-226	LANL ER-130 Modified	1.19E+00	2.83E-01	2.89E-01	4.12E-01	2.38E+00	pCi/g
15-10087-17	TRG	CP4106S18-19	10/07/15 14:00	10/14/2015	11/9/2015	15-10087	Radium-228	LANL ER-130 Modified	1.53E+00	5.25E-01	5.31E-01	1.04E+00	4.95E-01	pCi/g
15-10087-17	TRG	CP4106S18-19	10/07/15 14:00	10/14/2015	11/9/2015	15-10087	Thorium-234	LANL ER-130 Modified	3.03E+00	1.48E+00	1.49E+00	2.36E+00	1.16E+00	pCi/g
15-10087-17	TRG	CP4106S18-19	10/07/15 14:00	10/14/2015	11/9/2015	15-10087	Thallium-208	LANL ER-130 Modified	1.43E+00	3.21E-01	3.29E-01	1.01E-01	2.75E-01	pCi/g
15-10087-01	LCS	KNOWN	10/14/15 00:00	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	4.91E+00	1.77E-01				pCi/g
15-10087-01	LCS	SPIKE	10/14/15 00:00	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	5.66E+00	8.65E-01	1.02E+00	7.27E-02	9.79E-03	pCi/g
15-10087-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	-9.04E-03	2.23E-02	2.24E-02	6.36E-02	9.88E-03	pCi/g
15-10087-03	DUP	CP5004S01-02	10/07/15 10:10	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	1.18E+00	2.69E-01	2.91E-01	7.14E-02	2.36E-02	pCi/g
15-10087-04	DO	CP5004S01-02	10/07/15 10:10	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	1.30E+00	3.09E-01	3.32E-01	8.73E-02	3.19E-02	pCi/g
15-10087-05	TRG	CP5004S04-05	10/07/15 10:30	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	1.17E+00	2.63E-01	2.86E-01	5.29E-02	9.89E-03	pCi/g
15-10087-06	TRG	CP5004S07-08	10/07/15 10:30	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	1.32E+00	3.40E-01	3.62E-01	1.08E-01	4.31E-02	pCi/g
15-10087-07	TRG	CP5004S09-10	10/07/15 10:40	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	1.22E+00	2.98E-01	2.93E-01	4.97E-02	1.01E-02	pCi/g
15-10087-08	TRG	CP5004S11-12	10/07/15 10:50	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	1.24E+00	3.08E-01	3.30E-01	7.01E-02	1.44E-02	pCi/g
15-10087-09	TRG	CP5004S14-15	10/07/15 11:00	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	1.23E+00	2.92E-01	3.14E-01	5.57E-02	8.41E-03	pCi/g
15-10087-10	TRG	CP5004S16-17	10/07/15 11:10	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	1.17E+00	2.75E-01	2.97E-01	5.82E-02	1.09E-02	pCi/g
15-10087-11	TRG	CP4106S03-04	10/07/15 13:00	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	1.23E+00	2.80E-01	3.03E-01	5.60E-02	1.05E-02	pCi/g
15-10087-12	TRG	CP4106S05-06	10/07/15 13:10	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	1.24E+00	2.81E-01	3.04E-01	5.07E-02	7.65E-03	pCi/g
15-10087-13	TRG	CP4106S08-09	10/07/15 13:20	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	1.31E+00	3.79E-01	3.98E-01	6.97E-02	5.93E-03	pCi/g
15-10087-14	TRG	CP4106S10-11	10/07/15 13:30	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	1.17E+00	2.95E-01	3.15E-01	9.60E-02	3.73E-02	pCi/g
15-10087-15	TRG	CP4106S13-14	10/07/15 13:40	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	1.50E+00	3.67E-01	3.93E-01	7.65E-02	1.43E-02	pCi/g
15-10087-16	TRG	CP4106S15-16	10/07/15 13:50	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	1.15E+00	2.62E-01	2.84E-01	4.90E-02	7.41E-03	pCi/g
15-10087-17	TRG	CP4106S18-19	10/07/15 14:00	10/14/2015	11/3/2015	15-10087	Thorium-228	EML Th-01 Modified	1.43E+00	3.40E-01	3.65E-01	6.63E-02	1.24E-02	pCi/g

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original; CV=Critical Value



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Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10087-01	LCS	KNOWN	10/14/15 00:00	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	5.35E+00	1.44E-01	1.27E+00	8.13E-02	7.93E-02	pCi/g
15-10087-01	LCS	SPIKE	10/14/15 00:00	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	6.58E+00	9.78E-01	1.27E+00	8.13E-02	7.93E-02	pCi/g
15-10087-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	9.01E-02	6.87E-02	6.96E-02	7.56E-02	7.08E-02	pCi/g
15-10087-03	DUP	CP5004S01-02	10/07/15 10:10	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	1.33E+00	2.91E-01	3.35E-01	6.36E-02	5.83E-02	pCi/g
15-10087-04	DO	CP5004S01-02	10/07/15 10:10	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	1.41E+00	3.23E-01	3.66E-01	5.49E-02	5.49E-02	pCi/g
15-10087-05	TRG	CP5004S04-05	10/07/15 10:20	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	1.32E+00	2.87E-01	3.30E-01	4.93E-02	4.79E-02	pCi/g
15-10087-06	TRG	CP5004S07-08	10/07/15 10:30	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	1.75E+00	4.17E-01	4.70E-01	8.42E-02	7.74E-02	pCi/g
15-10087-07	TRG	CP5004S09-10	10/07/15 10:40	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	1.29E+00	2.68E-01	3.12E-01	3.98E-02	4.09E-02	pCi/g
15-10087-08	TRG	CP5004S11-12	10/07/15 10:50	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	1.35E+00	3.25E-01	3.65E-01	5.23E-02	5.63E-02	pCi/g
15-10087-09	TRG	CP5004S14-15	10/07/15 11:00	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	1.23E+00	2.90E-01	3.28E-01	3.79E-02	4.80E-02	pCi/g
15-10087-10	TRG	CP5004S16-17	10/07/15 11:10	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	1.07E+00	2.96E-01	2.88E-01	3.59E-02	4.55E-02	pCi/g
15-10087-11	TRG	CP4106S03-04	10/07/15 13:00	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	9.99E-01	2.38E-01	2.68E-01	3.96E-02	4.51E-02	pCi/g
15-10087-12	TRG	CP4106S05-06	10/07/15 13:10	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	1.35E+00	2.98E-01	3.41E-01	4.66E-02	4.79E-02	pCi/g
15-10087-13	TRG	CP4106S08-09	10/07/15 13:20	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	1.50E+00	4.17E-01	4.56E-01	8.01E-02	8.21E-02	pCi/g
15-10087-14	TRG	CP4106S10-11	10/07/15 13:30	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	1.22E+00	3.01E-01	3.37E-01	6.55E-02	7.83E-02	pCi/g
15-10087-15	TRG	CP4106S13-14	10/07/15 13:40	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	1.35E+00	3.38E-01	3.77E-01	6.38E-02	6.55E-02	pCi/g
15-10087-16	TRG	CP4106S15-16	10/07/15 13:50	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	9.94E-01	2.34E-01	2.64E-01	5.47E-02	5.17E-02	pCi/g
15-10087-17	TRG	CP4106S18-19	10/07/15 14:00	10/14/2015	11/3/2015	15-10087	Thorium-230	EML Th-01 Modified	1.49E+00	3.48E-01	3.94E-01	4.69E-02	5.35E-02	pCi/g

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original; CV=Critical Value



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EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

Eberline Analytical

Final Report of Analysis

Cecilia Greene
Auxier & Associates, Inc.
9821 Cogdill Road, Suite 1
Knoxville, TN 37932

SDG: 15-10087

Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Work Order Details:

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10087-01	LCS	KNOWN	10/14/15 00:00	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	4.91E+00	1.77E-01				pC/g
15-10087-01	LCS	SPIKE	10/14/15 00:00	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	5.79E+00	8.81E-01	1.02E+00	5.38E-02	3.08E-03	pC/g
15-10087-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	1.58E-02	3.02E-02	3.02E-02	5.57E-02	6.14E-03	pC/g
15-10087-03	DUP	CP5004S01-02	10/07/15 10:10	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	1.13E+00	2.66E-01	2.75E-01	5.23E-02	9.98E-03	pC/g
15-10087-04	DO	CP5004S01-02	10/07/15 10:10	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	1.09E+00	2.66E-01	2.83E-01	4.38E-02	3.74E-03	pC/g
15-10087-05	TRG	CP5004S04-05	10/07/15 10:20	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	1.10E+00	2.49E-01	2.67E-01	3.73E-02	3.17E-03	pC/g
15-10087-06	TRG	CP5004S07-08	10/07/15 10:30	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	1.13E+00	2.99E-01	3.15E-01	6.46E-02	9.90E-03	pC/g
15-10087-07	TRG	CP5004S09-10	10/07/15 10:40	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	1.15E+00	2.45E-01	2.65E-01	4.23E-02	4.74E-04	pC/g
15-10087-08	TRG	CP5004S11-12	10/07/15 10:50	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	1.33E+00	3.22E-01	3.43E-01	5.97E-02	6.72E-04	pC/g
15-10087-09	TRG	CP5004S14-15	10/07/15 11:00	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	1.25E+00	2.93E-01	3.13E-01	5.43E-02	6.09E-04	pC/g
15-10087-10	TRG	CP5004S16-17	10/07/15 11:10	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	1.19E+00	2.76E-01	2.95E-01	4.51E-02	4.95E-03	pC/g
15-10087-11	TRG	CP4106S03-04	10/07/15 13:00	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	1.02E+00	2.43E-01	2.59E-01	4.96E-02	5.55E-04	pC/g
15-10087-12	TRG	CP4106S05-06	10/07/15 13:10	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	1.26E+00	2.83E-01	3.04E-01	4.94E-02	5.55E-04	pC/g
15-10087-13	TRG	CP4106S08-09	10/07/15 13:20	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	1.47E+00	4.11E-01	4.31E-01	7.44E-02	8.16E-03	pC/g
15-10087-14	TRG	CP4106S10-11	10/07/15 13:30	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	1.08E+00	2.75E-01	2.91E-01	8.70E-02	3.05E-02	pC/g
15-10087-15	TRG	CP4106S13-14	10/07/15 13:40	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	1.24E+00	3.17E-01	3.35E-01	5.40E-02	4.59E-03	pC/g
15-10087-16	TRG	CP4106S15-16	10/07/15 13:50	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	9.08E-01	2.20E-01	2.34E-01	6.97E-02	2.36E-02	pC/g
15-10087-17	TRG	CP4106S18-19	10/07/15 14:00	10/14/2015	11/3/2015	15-10087	Thorium-232	EML Th-01 Modified	1.39E+00	3.31E-01	3.53E-01	5.53E-02	7.31E-03	pC/g

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); WDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original; CV=Critical Value



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Eberline Analytical

Final Report of Analysis

Cecilia Greene

Auxier & Associates, Inc.
 9821 Cogdill Road, Suite 1
 Knoxville, TN 37932

Report To:

Work Order Details:

SDG: 15-10087
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10087-01	LCS	KNOWN	10/14/2015 00:00	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	8.04E+00	2.89E-01	1.11E+00	9.14E-02	1.56E-02	pCi/g
15-10087-01	LCS	SPIKE	10/14/15 00:00	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	6.83E+00	9.99E-01	1.11E+00	9.14E-02	1.56E-02	pCi/g
15-10087-02	MBL	BLANK	10/14/15 00:00	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	4.30E-02	4.74E-02	4.75E-02	6.83E-02	1.63E-02	pCi/g
15-10087-03	DUP	CP5004S01-02	10/07/15 10:10	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	3.44E+00	5.83E-01	6.32E-01	5.09E-02	4.18E-03	pCi/g
15-10087-04	DO	CP5004S01-02	10/07/15 10:10	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	3.26E+00	5.55E-01	6.02E-01	7.87E-02	1.62E-02	pCi/g
15-10087-05	TRG	CP5004S04-05	10/07/15 10:20	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	2.87E+00	4.60E-01	5.04E-01	6.42E-02	1.32E-02	pCi/g
15-10087-06	TRG	CP5004S07-08	10/07/15 10:30	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	2.38E+00	4.21E-01	4.54E-01	5.73E-02	7.40E-03	pCi/g
15-10087-07	TRG	CP5004S09-10	10/07/15 10:40	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	9.64E-01	2.22E-01	2.32E-01	4.20E-02	3.42E-03	pCi/g
15-10087-08	TRG	CP5004S11-12	10/07/15 10:50	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	1.13E+00	2.57E-01	2.69E-01	5.79E-02	7.48E-03	pCi/g
15-10087-09	TRG	CP5004S14-15	10/07/15 11:00	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	8.09E-01	2.02E-01	2.10E-01	6.68E-02	1.38E-02	pCi/g
15-10087-10	TRG	CP5004S16-17	10/07/15 11:10	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	1.20E+00	2.57E-01	2.71E-01	5.39E-02	6.99E-03	pCi/g
15-10087-11	TRG	CP4106S03-04	10/07/15 13:00	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	1.02E+00	2.19E-01	2.31E-01	4.75E-02	6.15E-03	pCi/g
15-10087-12	TRG	CP4106S05-06	10/07/15 13:10	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	1.04E+00	2.25E-01	2.37E-01	3.93E-02	3.19E-03	pCi/g
15-10087-13	TRG	CP4106S08-09	10/07/15 13:20	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	9.57E-01	2.19E-01	2.30E-01	5.92E-02	1.67E-03	pCi/g
15-10087-14	TRG	CP4106S10-11	10/07/15 13:30	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	1.20E+00	2.53E-01	2.67E-01	5.18E-02	6.70E-03	pCi/g
15-10087-15	TRG	CP4106S13-14	10/07/15 13:40	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	9.36E-01	2.23E-01	2.33E-01	5.91E-02	8.88E-03	pCi/g
15-10087-16	TRG	CP4106S15-16	10/07/15 13:50	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	9.08E-01	1.98E-01	2.09E-01	6.00E-02	1.44E-02	pCi/g
15-10087-17	TRG	CP4106S18-19	10/07/15 14:00	10/14/2015	10/26/2015	15-10087	Uranium-234	EML U-02 Modified	8.37E-01	2.04E-01	2.13E-01	4.22E-02	3.43E-03	pCi/g

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original; CV=Critical Value



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EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

Eberline Analytical

Final Report of Analysis

Client ID: Cecelia Greene
Project: Auxier & Associates, Inc.
Address: 9821 Cogdill Road, Suite 1
 Knoxville, TN 37932

SDG: 15-10087
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Work Order Details:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10087-01	LCS	SPIKE	10/14/15 00:00	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	4.96E-01	2.00E-01	2.03E-01	1.06E-01	1.14E-02	pCi/g
15-10087-02	MBL	BLANK	10/14/15 00:00	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	4.14E-02	4.72E-02	4.73E-02	6.22E-02	5.56E-03	pCi/g
15-10087-03	DUP	CP5004S01-02	10/07/15 10:10	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	4.34E-01	1.68E-01	1.70E-01	6.28E-02	2.94E-03	pCi/g
15-10087-04	DO	CP5004S01-02	10/07/15 10:10	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	3.88E-01	1.58E-01	1.60E-01	8.31E-02	8.97E-03	pCi/g
15-10087-05	TRG	CP5004S04-05	10/07/15 10:20	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	3.26E-01	1.30E-01	1.32E-01	7.19E-02	8.96E-03	pCi/g
15-10087-06	TRG	CP5004S07-08	10/07/15 10:30	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	2.51E-01	1.19E-01	1.20E-01	6.44E-02	4.48E-03	pCi/g
15-10087-07	TRG	CP5004S09-10	10/07/15 10:40	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	8.69E-02	6.95E-02	6.98E-02	7.44E-02	7.16E-04	pCi/g
15-10087-08	TRG	CP5004S11-12	10/07/15 10:50	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	9.97E-02	7.69E-02	7.73E-02	7.68E-02	8.26E-03	pCi/g
15-10087-09	TRG	CP5004S14-15	10/07/15 11:00	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	1.23E-01	7.89E-02	7.94E-02	5.22E-02	2.45E-03	pCi/g
15-10087-10	TRG	CP5004S16-17	10/07/15 11:10	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	1.25E-01	7.99E-02	8.04E-02	5.29E-02	2.48E-03	pCi/g
15-10087-11	TRG	CP4106S03-04	10/07/15 13:00	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	1.10E-01	7.04E-02	7.08E-02	4.66E-02	2.18E-03	pCi/g
15-10087-12	TRG	CP4106S05-06	10/07/15 13:10	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	1.02E-01	6.93E-02	6.97E-02	4.84E-02	2.26E-03	pCi/g
15-10087-13	TRG	CP4106S08-09	10/07/15 13:20	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	6.89E-02	5.92E-02	5.94E-02	5.82E-02	4.04E-03	pCi/g
15-10087-14	TRG	CP4106S10-11	10/07/15 13:30	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	4.46E-02	4.84E-02	4.85E-02	5.82E-02	4.05E-03	pCi/g
15-10087-15	TRG	CP4106S13-14	10/07/15 13:40	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	1.29E-01	8.53E-02	8.58E-02	7.75E-02	7.43E-04	pCi/g
15-10087-16	TRG	CP4106S15-16	10/07/15 13:50	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	6.90E-02	6.31E-02	6.33E-02	8.54E-02	2.07E-02	pCi/g
15-10087-17	TRG	CP4106S18-19	10/07/15 14:00	10/14/2015	10/26/2015	15-10087	Uranium-235	EML U-02 Modified	8.52E-02	6.55E-02	6.58E-02	5.20E-02	2.43E-03	pCi/g

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original; CV=Critical Value



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Eberline Analytical

Final Report of Analysis

Cecilia Greene
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9821 Cogdill Road, Suite 1
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SDG: 15-10087
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Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10087-01	LCS	KNOWN	10/14/15 00:00	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	7.83E+00	2.82E-01				pCi/g
15-10087-01	LCS	SPIKE	10/14/15 00:00	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	7.16E+00	1.04E+00	1.16E+00	9.12E-02	1.21E-03	pCi/g
15-10087-02	MBL	BLANK	10/14/15 00:00	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	5.58E-02	4.65E-02	4.67E-02	4.00E-02	2.38E-03	pCi/g
15-10087-03	DUP	CP5004S01-02	10/07/15 10:10	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	9.68E+00	1.37E+00	1.53E+00	7.26E-02	9.66E-04	pCi/g
15-10087-04	DO	CP5004S01-02	10/07/15 10:10	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	9.93E+00	1.39E+00	1.56E+00	5.68E-02	5.01E-03	pCi/g
15-10087-05	TRG	CP5004S04-05	10/07/15 10:20	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	7.12E+00	9.50E-01	1.08E+00	5.09E-02	5.73E-03	pCi/g
15-10087-06	TRG	CP5004S07-08	10/07/15 10:30	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	7.02E+00	9.83E-01	1.10E+00	5.20E-02	4.56E-03	pCi/g
15-10087-07	TRG	CP5004S09-10	10/07/15 10:40	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	1.24E+00	2.61E-01	2.75E-01	6.87E-02	1.45E-02	pCi/g
15-10087-08	TRG	CP5004S11-12	10/07/15 10:50	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	1.15E+00	2.59E-01	2.72E-01	5.26E-02	4.61E-03	pCi/g
15-10087-09	TRG	CP5004S14-15	10/07/15 11:00	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	9.57E-01	2.22E-01	2.32E-01	4.21E-02	2.53E-03	pCi/g
15-10087-10	TRG	CP5004S16-17	10/07/15 11:10	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	1.19E+00	2.56E-01	2.70E-01	4.27E-02	2.56E-03	pCi/g
15-10087-11	TRG	CP4106S03-04	10/07/15 13:00	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	9.50E-01	2.09E-01	2.20E-01	5.09E-02	6.88E-03	pCi/g
15-10087-12	TRG	CP4106S05-06	10/07/15 13:10	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	1.07E+00	2.29E-01	2.41E-01	5.62E-02	7.43E-04	pCi/g
15-10087-13	TRG	CP4106S08-09	10/07/15 13:20	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	1.13E+00	2.43E-01	2.56E-01	5.89E-02	7.78E-04	pCi/g
15-10087-14	TRG	CP4106S10-11	10/07/15 13:30	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	1.00E+00	2.26E-01	2.37E-01	5.90E-02	7.80E-04	pCi/g
15-10087-15	TRG	CP4106S13-14	10/07/15 13:40	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	9.60E-01	2.26E-01	2.36E-01	6.25E-02	8.28E-04	pCi/g
15-10087-16	TRG	CP4106S15-16	10/07/15 13:50	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	7.90E-01	1.82E-01	1.91E-01	6.55E-02	1.79E-02	pCi/g
15-10087-17	TRG	CP4106S18-19	10/07/15 14:00	10/14/2015	10/26/2015	15-10087	Uranium-238	EML U-02 Modified	1.22E+00	2.57E-01	2.72E-01	4.20E-02	2.51E-03	pCi/g

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original; CV=Critical Value



EBERLINE
SERVICES

EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37850 865/481-0683 FAX 865/483-4621

SECTION V
ANALYTICAL STANDARD

U-8

QA/QC REVIEWED
Date 1/16/95 Initials [initials]

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Radionuclide: U-238NAT
Half Life: $(4.468 \pm 0.005) \times 10^9$ years
Catalog No.: 7338
Source No.: 479-50

Customer: TMA EBERLINE
P.O.No.: OR2778
Reference Date: January 1 1995 12:00 PST.
Contained Radioactivity: (Total U) 8.016 μ Ci
Contained Radioactivity: (Total U) 297 kBq

Description of Solution
a. Mass of solution: 65.2896 g in a 50 ml flame sealed ampoule
b. Chemical form: Uranyl Nitrate in H₂O
c. Carrier content: None
d. Density: Approximately 1.3202 g/ml @ 20°C.

Radioimpurities Refer to attached technical data sheet

Radioactive Daughters Refer to attached technical data sheet

Radionuclide Concentration (Total U) 0.1228 μ Ci/g.

Method of Calibration

Activity calculations are based upon known specific activity and mass.

Uncertainty of Measurement
a. Systematic uncertainty in instrument calibration: $\pm 3.0\%$
b. Random uncertainty in assay: $\pm 0.0\%$
c. Random uncertainty in weighing(s): $\pm 2.0\%$
d. Total uncertainty at the 99% confidence level: $\pm 3.6\%$

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).

[Signature]
ERIC ALLAS
QUALITY CONTROL

29 DECEMBER 1994
Date Signed



ISOTOPE PRODUCTS LABORATORIES
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QUALITY CONTROL PROGRAM
MP-009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

SOLUTION REFERENCE # IPL 479-50 CURRENT DATE 10/1/2015 0:00
SOLUTION # U-8

Principal Radionuclide ^{234, 235, 238}U Half Life, Years 4.468E+09 Half Life, Days 1.632E+12

Radionuclide ^{234, 235, 238}U Reference Date 1/1/1995 0:00
Certified Activity 8.016E+00 μCi
Certified Concentration $\mu\text{Ci per gram}$

Ampoule /Solution Gross 97.6400 Weight, Grams
Empty Ampoule 32.5020 Weight, Grams
Solution Net 65.1380 Weight, Grams
Total Activity in Ampoule 8.0160 μCi

Chemical Composition of Standard Solution
Uranyl nitrate in dilute HNO₃

Dilution Instructions: Dilution Solvent Used 1M HNO₃

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 8.0160 μCi Which Equals 1.780E+07 dpm at the date listed above

And after dilution the activity of this solution is 1.77955E+04 dpm/ml
This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: July 27, 2016

Verified & Approved By [Signature]

Date: 10/1/2015 0:00

QC Approval [Signature]

Date: 10/1/15



QUALITY CONTROL PROGRAM
MP-009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

Solution Reference # MP-009 Date 10/1/2015 0:00
IPL 479-50 Solution # U-8a

Principal Radionuclide ^{234, 235, 238}U Half Life, Years 4.468E+09 Half Life, Days 1.632E+12

Radionuclide of Interest ^{234, 235, 238}U Reference Date 1/1/1995 0:00
Parent Solution Conc. 1.7796E+04 dpm/ml

Chemical Composition of Standard Solution
Uranly Nitrate in 1M HNO₃

Dilution Instructions: Dilution Solvent Used 1M HNO₃

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 4.0000 ml
Total Activity: 7.1182E+04 dpm Final Activity Concentration: 7.1182E+01 dpm/ml
Final Volume: 1000.00 ml

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Isotopic Distribution as:
U-238 Atom % = 48.239 U-238 = 71.182 dpm/ml X 0.48249 = 34.345 dpm/ml
U-235 Atom % = 2.25 U-235 = 71.182 dpm/ml X 0.0225 = 1.602 dpm/ml
U-234 Atom % = 49.501 U-238 = 71.182 dpm/ml X 0.49501 = 35.236 dpm/ml
All values +/- 3.6%

Isotopic ratios from manufacturer's data sheet

Expiration Date: July 27, 2016

Verified & Approved By [Signature]

Date: 10/1/2015 0:00

QC Approval [Signature]

Date: 10/1/15

RECORD COPY

Tracer Solution for Environmental Analysis & Disequilibrium Studies

Product Description & Measurement Certificate

Description Principal radionuclide: uranium 232 (U-232) Product code: UDP10050
Daughter Nuclide: Th-228 Batch Number: 92/232/67

Measurement Reference date: 01 March 2000
Radioactive concentration U-232 6.739E+03 becquerels per gram of solution
which is equivalent to 1.821E-01 microcuries per gram of solution
Mass of solution 5.356 grams
Volume of solution 5.035 millilitres
Total activity of U-232 3.61E+04 becquerels
which is equivalent to 9.76E-01 microcuries

Accuracy Method of measurement (see reverse of this certificate)
Random uncertainty is: $\pm 0.7\%$ Systematic uncertainty: $\pm 0.5\%$
Overall uncertainty in the radioactive concentration quoted above: $\pm 1.7\%$
Overall uncertainty is defined on the reverse of this certificate.

Radiometric Purity Any radioactive impurities measured are listed below, expressed as percentages of the activity of the principle radionuclide at the reference date .

Th-228 and daughter activity removed 2 Feb 2000
U-232 daughters activity will increase with time. By alpha 88% U-232, 12% daughters on 1/3/00

Isotopic Purity The isotopic composition, expressed as atom per cent at the reference date .

Not measured

Chemical Composition Calculated weight of U-232, 4.42E-08 grams, as 2M HNO₃ solution in a flame sealed glass vial.
This Tracer solution has been produced 'carrier free'.

Physical Data Recommended half life of uranium 232: 6.980E+01 years
Principle energies of alpha emissions (MeV): 5.263 31.7%, 5.320 68.0%
Branching ratio for alpha emission: 100%
Calculated specific activity of uranium 232: 8.167E+05 Bq per microgram U-232.

Remarks For safety information and notes to ensure correct usage by all persons handling this radioactive Tracer solution please read the instructions accompanying the package.

AEA Technology operates a quality management system which has been independently audited and approved to ISO 9001.

Approved
Signatory



Roger Wiltshire

Project Ref. AE2315

Prepared and characterised in the UK, for world wide distribution by Isotrak, AEA Technology, QSA.



QUALITY CONTROL PROGRAM
MP-009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

CURRENT DATE 10/27/2015 0:00

SOLUTION REFERENCE # AEA/Amersham 92/232/67

SOLUTION # U-10

Principal Radionuclide

Half Life, Years

Half Life, Days

²³²U

7.200E+01

2.630E+04

Radionuclide ²³²U

Reference Date 3/1/2000 0:00

Certified Activity 9.760E-01 μCi

Certified Concentration μCi per gram

Ampoule /Solution Gross		Weight, Grams
Empty Ampoule		Weight, Grams
Solution Net		Weight, Grams
Total Activity in Ampoule	0.9760	μCi

Chemical Composition of Standard Solution

²³²U(NO₃)₆ in 2M HNO₃

Dilution Instructions:

Dilution Solvent Used

2M HNO₃

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 0.9760 μCi

Which Equals 2.167E+06 dpm at the date listed above

And after dilution the activity of this solution is 2.167E+03 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: October 26, 2016

Verified & Approved By 

Date: 10/27/2015 0:00

QC Approval 

Date: 10/28/15




QUALITY CONTROL PROGRAM
MP-009

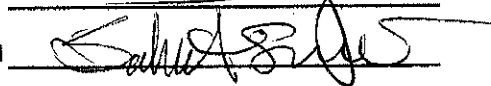
Rev.B; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

Solution Reference #		MP-009	Date	10/27/2015 0:00
AEA/Amersham 92/232/67		Solution #	U-10a	
Principal Radionuclide	Half Life, Years	Half Life, Days		
²³² U	7.200E+01	2.630E+04		
Radionuclide of Interest	Parent Solution Conc.	Reference Date		
²³² U	2.167E+03 dpm/ml	3/1/2000 0:00		
Chemical Composition of Standard Solution				
²³² U(NO ₃) ₆ in 2M HNO ₃				

Dilution Instructions:	Dilution Solvent Used	2M HNO ₃	
SECONDARY VOLUMETRIC DILUTION			
Vol. Parent Solution:	10.0000 ml	Final Activity Concentration:	2.1670E+01 dpm/ml
Total Activity:	2.1670E+04 dpm		
Final Volume:	1000.00 ml		
NOTES:	This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.		
		Expiration Date:	October 26, 2016

Verified & Approved By:  Date: 10/27/2015 0:00

QC Approval:  Date: 10/28/15

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Radionuclide:	Th-232	Customer:	TMA EBERLINE
Half Life:	$(1.405 \pm 0.006) \times 10^{10}$ years	P.O.No.:	VH1632
Catalog No.:	7232	Reference Date:	November 1 1993 12:00 PST.
Source No.:	435-104-2	Contained Radioactivity:	(Th-232) 0.0933 μ Ci.
		Contained Radioactivity:	(Th-232) 3.45 kBq.

Description of Solution

- | | |
|----------------------|---|
| a. Mass of solution: | 11.9712 g (in a 10 ml flame sealed ampoule) |
| b. Chemical form: | Th(NO ₃) ₄ in water |
| c. Carrier content: | None added |
| d. Density: | Approx. 1.21 g/ml @ 20°C. |

Radioimpurities: None detected (other than daughters).

Radioactive Daughters

Ra-228, Ac-228, Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Po-212, Tl-208

Radionuclide Concentration

(Th-232) 0.00779 μ Ci/g.

Method of Calibration

Activity calculations are based upon known specific activity and mass.

Uncertainty of Measurement

- | | |
|--|-------------|
| a. Systematic uncertainty in instrument calibration: | $\pm 3.0\%$ |
| b. Random uncertainty in assay: | $\pm 0.0\%$ |
| c. Random uncertainty in weighing(s): | $\pm 2.0\%$ |
| d. Total uncertainty at the 99% confidence level: | $\pm 3.6\%$ |

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

- Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
- 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).



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Anna U. Khan
QUALITY CONTROL

Nov. 8, 1993
Date Signed



QUALITY CONTROL PROGRAM
MP-009

Rev.8; 1/10/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

SOLUTION REFERENCE # IPL 435-104-2 **CURRENT DATE** 9/29/2015 0:00
SOLUTION # Th-8

Principal Radionuclide ²³²Th, ²²⁸Th **Half Life, Years** 1.405E+10 **Half Life, Days** 5.132E+12

Radionuclide ²³² & ²²⁸Th **Reference Date** 11/1/1993 0:00
Certified Activity 9.330E-02 μ Ci
Certified Concentration μ Ci per gram

Ampoule /Solution Gross	18.8415	Weight, Grams
Empty Ampoule	6.9296	Weight, Grams
Solution Net	11.9119	Weight, Grams
Total Activity in Ampoule	0.0933	μ Ci

Chemical Composition of Standard Solution
Th(NO₃)₄ in H₂O

Dilution Instructions: **Dilution Solvent Used** 1% Nitric Acid

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 0.0933 μ Ci **Which Equals** 2.071E+05 dpm at the date listed above

And after dilution the activity of this solution is 2.071E+02 dpm/ml This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: August 25, 2016

Verified & Approved By 

Date: 9/29/2015 0:00

QC Approval 

Date: 9/30/15



QUALITY CONTROL PROGRAM
MP-009

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Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

Solution Reference #		MP-009	Date	9/29/2015 0:00
IPL 435-104-2		Solution #	Th-8b	
Principal Radionuclide	Half Life, Years	Half Life, Days		
²²⁸ & ²³² Th	1.405E+10	5.132E+12		
Radionuclide of Interest	Parent Solution Conc.	Reference Date		
²²⁸ & ²³² Th	2.07E+02 dpm/ml	11/1/1993 0:00		
Chemical Composition of Standard Solution				
Th(NO ₃) ₄ in 1% HNO ₃				

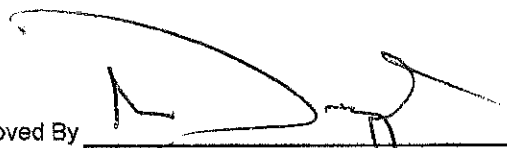
Dilution Instructions: Dilution Solvent Used 1% Nitric Acid

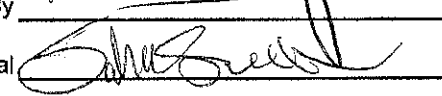
SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution:	500.0000 ml	Final Activity Concentration:	1.0355E+02 dpm/ml
Total Activity:	1.0355E+05 dpm		
Final Volume:	1000.00 ml		

NOTES: This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: August 25, 2016

Verified & Approved By  Date: 9/29/2015 0:00

QC Approval  Date: 9/30/15

Received
OCT 14 1991
TMA/Eberline
Oak Ridge Lab

QA/QC REVIEWED
Date 10/14/91 Initials ut

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Radionuclide: Th-230
Half Life: $(7.54 \pm 0.03) \times 10^4$ years
Catalog No.: 7230
Source No.: 388-116
Customer: TMA EBERLINE
P.O.No.: TT4944
Reference Date: November 1 1991
Contained Radioactivity: 1.036 μ Ci

Description of Solution
a. Mass of solution: 5.0042 grams
b. Chemical form: Th(NO₃)₄ in 0.1N HNO₃
c. Carrier content: None added
d. Density: 1.0016 gram/ml @ 20°C

Radioimpurities
See attached technical data sheet

Radioactive Daughters
See attached technical data sheet

Radionuclide Concentration
0.207 μ Ci/gram

Method of Calibration
Weighed aliquots of the solution were assayed using a liquid scintillation counter.

Uncertainty of Measurement
a. Systematic uncertainty in instrument calibration: $\pm 2.0\%$
b. Random uncertainty in assay: $\pm 0.5\%$
c. Random uncertainty in weighing(s): $\pm 0.2\%$
d. Total uncertainty at the 99% confidence level: $\pm 2.7\%$

NIST Traceability
This calibration is implicitly traceable to the National Institute of Standards and Technology.

Notes
1. Nuclear data were taken from "Table of Isotopes", Seventh Edition, edited by Virginia S. Shirley.
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)



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[Signature]
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QUALITY CONTROL PROGRAM
MP-009

Rev.14; 10/10/2012
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

SOLUTION REFERENCE # IPL 388-116 CURRENT DATE 4/15/2015 0:00
SOLUTION # Th-1

Principal Radionuclide ²³⁰Th Half Life, Years 7.540E+04 Half Life, Days 2.754E+07

Radionuclide ²³⁰Thorium Reference Date 11/1/1991 0:00
Certified Activity 1.036E+00 μCi
Certified Concentration $\mu\text{Ci per gram}$

Ampoule /Solution Gross	<u>9.2660</u>	Weight, Grams
Empty Ampoule	<u>4.6218</u>	Weight, Grams
Solution Net	<u>4.6442</u>	Weight, Grams
Total Activity in Ampoule	<u>1.0360</u>	μCi

Chemical Composition of Standard Solution
²³⁰Th(NO₃)₄ in 0.1N HNO₃



Dilution Instructions: Dilution Solvent Used 0.1N HNO₃
Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 1.0360 μCi Which Equals 2.300E+06 dpm at the date listed above

And after dilution the activity of this solution is 2.300E+03 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: February 12, 2016

Recertified By 
QC Approval 

Date: 4/15/2015 0:00
Date: 4/15/15



QUALITY CONTROL PROGRAM
MP-009

Rev.14; 10/10/2012
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

Solution Reference # MP-009 IPL 388-116 Date 4/15/2015 0:00
Solution # Th-1b

Principal Radionuclide	Half Life, Years	Half Life, Days
²³⁰ Th	7.540E+04	2.754E+07

Radionuclide of Interest ²³⁰Thorium Reference Date 11/1/1991 0:00
Parent Solution Conc. 2.30E+03 dpm/ml

Chemical Composition of Standard Solution
²³⁰Th(NO₃)₄ in 0.1N HNO₃

Dilution Instructions: Dilution Solvent Used 0.1N HNO₃

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 10.0000 ml
Total Activity: 2.2999E+04 dpm Final Activity Concentration: 2.2999E+01 dpm/ml
Final Volume: 1000.00 ml

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: February 12, 2016

Recertified By [Signature]

Date: 4/15/2015 0:00

QC Approval [Signature]

Date: 4/5/15



**Isotope Products
Laboratories**

An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

Th-18

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Radionuclide: Th-229	Customer: EBERLINE SERVICES
Half-life: 7340 ± 160 years	P.O. No.: 00009633
Catalog No.: 7229	Reference Date: 15-Jan-02 12:00 PST
Source No.: 867-54	Contained Radioactivity: 1.013 μCi 37.48 kBq (Th-229 only)

Physical Description:

A. Mass of solution:	5.0147 g in 5 mL flame-sealed ampoule
B. Chemical form:	Th(NO ₃) ₄ in 0.1M HNO ₃
C. Carrier content:	10μg Th/mL
D. Density:	1.0016 g/mL @ 20°C.

Radioimpurities:

None detected (daughters in equilibrium)

Radionuclide Concentration: 0.2020 μCi/g, 7.474 kBq/g

Method of Calibration:

This source was prepared from a weighed aliquot of solution whose activity in μCi/g was determined using gamma ray spectrometry.

Peak energy used for integration:	193.5 keV
Branching ratio used:	0.0441 gammas per decay

Uncertainty of Measurement:

A. Type A (random) uncertainty:	± 0.7 %
B. Type B (systematic) uncertainty:	± 3.0 %
C. Uncertainty in aliquot weighing:	± 0.0 %
D. Total uncertainty at the 99% confidence level:	± 3.1 %

Notes:

- See reverse side for leak test(s) performed on this source.
- IPL participates in a 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).
- Nuclear data was taken from IAEA Technical Report Series No. 261.
- This solution has a working life of 5 years.

Ann U Khan

Quality Control

9-Jan-02

Date Signed

IPL Ref. No.: 867-54

ISO 9001 CERTIFIED

Medical Imaging Laboratory
24937 Avenue Tibbitts Valencia, California 91355

Industrial Gauging Laboratory
1800 North Keystone Street Burbank, California 91504

: 00041



QUALITY CONTROL PROGRAM
MP-009

Rev.8; 1/10/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

SOLUTION REFERENCE # IPL 867-54 **CURRENT DATE** 9/29/2015 0:00
SOLUTION # Th-18

Principal Radionuclide ²²⁸Th **Half Life, Years** 7.340E+03 **Half Life, Days** 2.681E+06

Radionuclide ²²⁹Th **Reference Date** 1/15/2002 0:00
Certified Activity 1.013E+00 μ Ci
Certified Concentration μ Ci per gram

Ampoule /Solution Gross 8.7752 **Weight, Grams**
Empty Ampoule 3.7591 **Weight, Grams**
Solution Net 5.0161 **Weight, Grams**
Total Activity in Ampoule 1.0130 μ Ci

Chemical Composition of Standard Solution
²²⁹Th(NO₃)₄ in 0.1M HNO₃

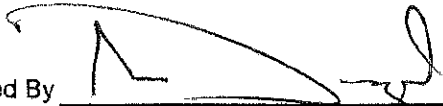

Dilution Instructions: **Dilution Solvent Used** 0.1 M HNO₃

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 1.0130 μ Ci **Which Equals** 2.249E+06 dpm at the date listed above

And after dilution the activity of this solution is 2.249E+03 dpm/ml
This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: August 24, 2016

Verified & Approved By 
QC Approval 

Date: 9/29/2015 0:00
Date: 9/30/15



QUALITY CONTROL PROGRAM
MP-009

Rev.7; 9/29/99
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

Solution Reference # MP-009 Date 9/29/2015 0:00
PL 867.54 Solution # Th-18a

Principal Radionuclide ²²⁹Th Half Life, Years 7.340E+03 Half Life, Days 2.681E+06

Radionuclide of Interest ²²⁹Th Reference Date 1/15/2002 0:00
Parent Solution Conc. 2.25E+03 dpm/ml

Chemical Composition of Standard Solution
Th(NO₃)₄ in 0.1M HNO₃

Dilution Instructions: Dilution Solvent Used 0.1M HNO₃

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 10.0000 ml
Total Activity: 2.2490E+04 dpm Final Activity Concentration: 2.2490E+01 dpm/ml
Final Volume: 1000.00 ml

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: August 24, 2016

Verified & Approved By [Signature]

Date: 9/29/2015 0:00

QC Approval [Signature]

Date: 9/30/15

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

GAS-1402

98503

Sand in 16 Ounce PP Taral Jar Filled to Capacity

Customer: Eberline Analytical Corporation
P.O. No.: OR-1405030, Item 6 **Product Code:** 8401-EG-SAN
Reference Date: 01-Oct-2014 12:00 PM EST **Grams of Master Source:** 0.017608

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solutions. Additional radionuclides were added gravimetrically from solutions calibrated by gamma-ray spectrometry, ionization chamber, or liquid scintillation counting. 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. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Nuclide	Gamma-Ray Energy (keV)	Half-Life, Days	Master Source* γ ps/gram	This Source γ ps	Uncertainty* , %			Calibration Method*
					u_A	u_B	U	
Am-241	59.5	1.580E+05	—	2.030E+03	0.1	1.8	3.6	4 π LS
Cd-109	88.0	4.614E+02	1.663E+05	2.929E+03	0.5	2.0	4.1	HPGe
Co-57	122.1	2.717E+02	8.913E+04	1.569E+03	0.4	1.7	3.5	HPGe
Ce-139	165.9	1.376E+02	1.241E+05	2.185E+03	0.4	1.7	3.5	HPGe
Hg-203	279.2	4.659E+01	2.675E+05	4.710E+03	0.3	1.7	3.5	HPGe
Sn-113	391.7	1.151E+02	1.796E+05	3.163E+03	0.4	1.9	3.9	HPGe
Cs-137	661.7	1.099E+04	1.111E+05	1.956E+03	0.7	1.9	4.0	HPGe
Y-88	898.0	1.066E+02	4.223E+05	7.435E+03	0.7	1.7	3.7	HPGe
Co-60	1173.2	1.925E+03	2.091E+05	3.683E+03	0.7	1.8	3.9	HPGe
Co-60	1332.5	1.925E+03	2.094E+05	3.687E+03	0.7	1.8	3.9	HPGe
Y-88	1836.1	1.066E+02	4.471E+05	7.872E+03	0.7	1.7	3.7	HPGe

* Master Source refers to Analytics' 8-isotope mixture which is calibrated quarterly.

Calibration Methods: 4 π LS - 4 pi Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber. **Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)



SECTION VI
QUALITY CONTROL SAMPLE RESULTS SUMMARY

Analysis	Run	Activity Units	Aliquot Units	Client Name
UUIISO	1	pCi	g	Auxier & Associates, Inc.
15-10087				

Laboratory Control Sample

Analyte	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
U-234	84.99%	16.28%	100.00%	3.60%	8.04E+00	2.89E-01	6.83E+00	1.11E+00	U-8a	3.52E+01	3.60E+00	5.06E-01
U-238	91.45%	16.14%	100.00%	3.60%	7.83E+00	2.82E-01	7.16E+00	1.16E+00	U-8a	3.44E+01	3.60E+00	5.06E-01

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

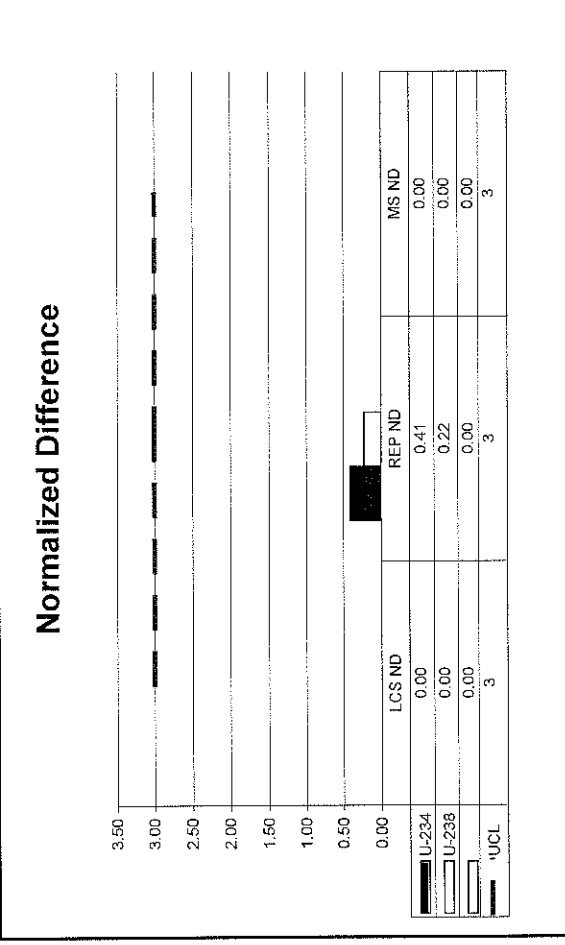
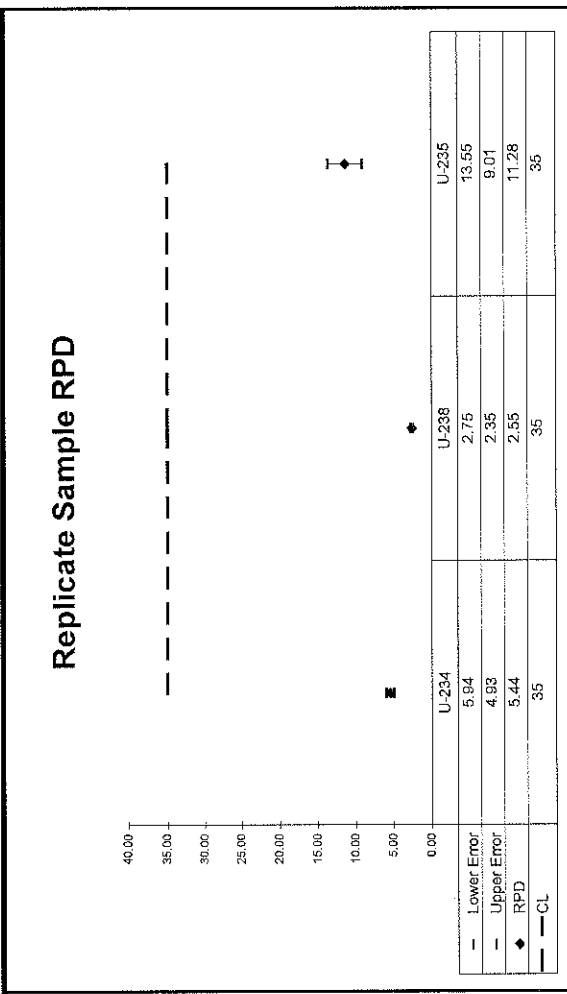
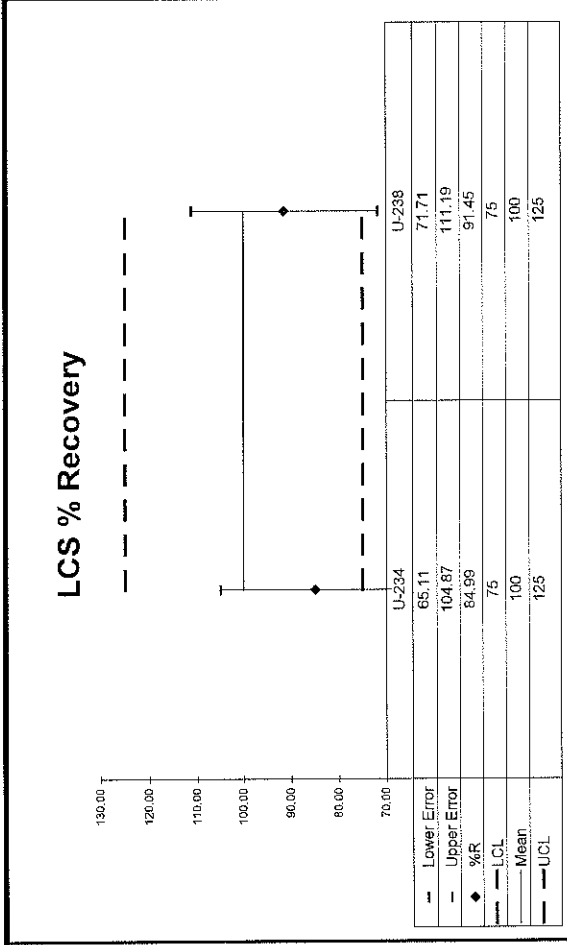
Replicate Sample

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
U-234	0.41	5.44	3.26E+00	6.02E-01	3.44E+00	6.32E-01	0.85	OK			OK	OK
U-238	0.22	2.55	9.93E+00	1.56E+00	9.68E+00	1.53E+00	0.91	OK			OK	OK
U-235	0.39	11.28	3.88E-01	1.60E-01	4.34E-01	1.70E-01		OK			NA	OK

QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
U-234	0.41	5.44	3.26E+00	6.02E-01	3.44E+00	6.32E-01	0.85	OK			OK	OK
U-238	0.22	2.55	9.93E+00	1.56E+00	9.68E+00	1.53E+00	0.91	OK			OK	OK
U-235	0.39	11.28	3.88E-01	1.60E-01	4.34E-01	1.70E-01		OK			NA	OK

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10087	UUIISO	1	pCi	g	Auxier & Associates, Inc.



No Matrix Spike

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10087	ThISO	1	pCi	g	Auxier & Associates, Inc.

Laboratory Control Sample

Analyte	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
TH-228	115.40%	17.94%	100.00%	3.60%	4.91E+00	1.77E-01	5.66E+00	1.02E+00	Th-8b	1.04E+02	3.60E+00	1.05E-01
TH-230	123.06%	19.34%	100.00%	2.70%	5.35E+00	1.44E-01	6.58E+00	1.27E+00	Th-1b	2.35E+01	2.70E+00	5.05E-01
TH-232	118.08%	17.57%	100.00%	3.60%	4.91E+00	1.77E-01	5.79E+00	1.02E+00	Th-8b	1.04E+02	3.60E+00	1.05E-01

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

Replicate Sample

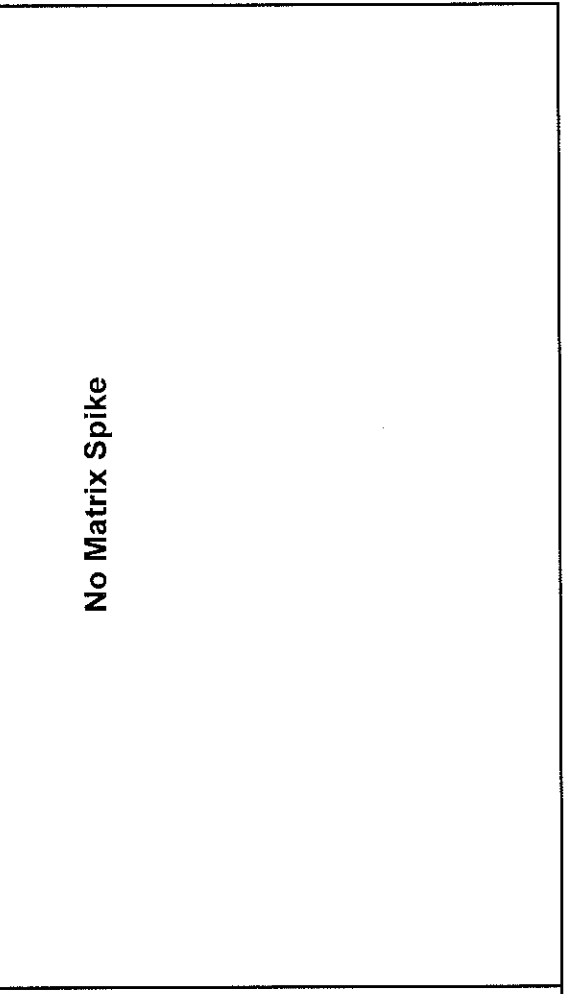
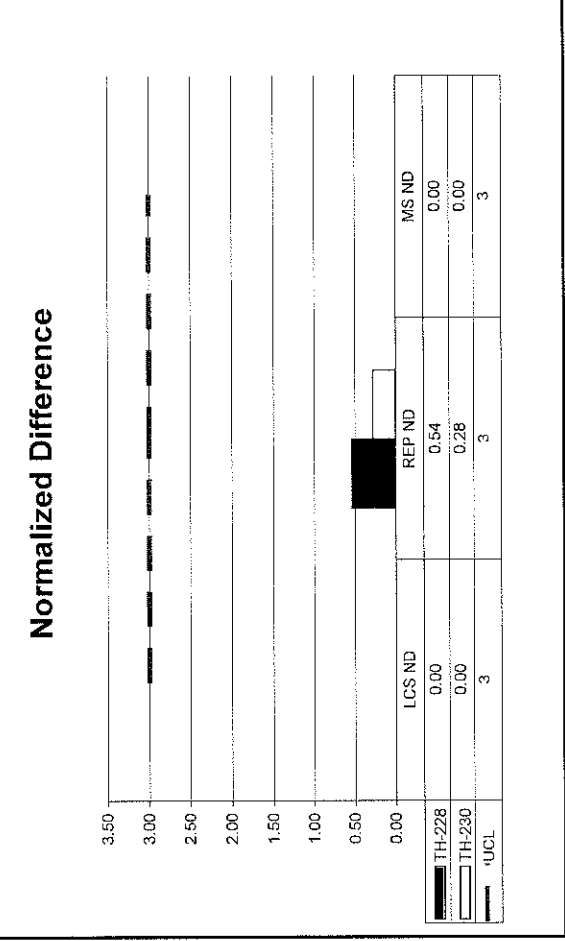
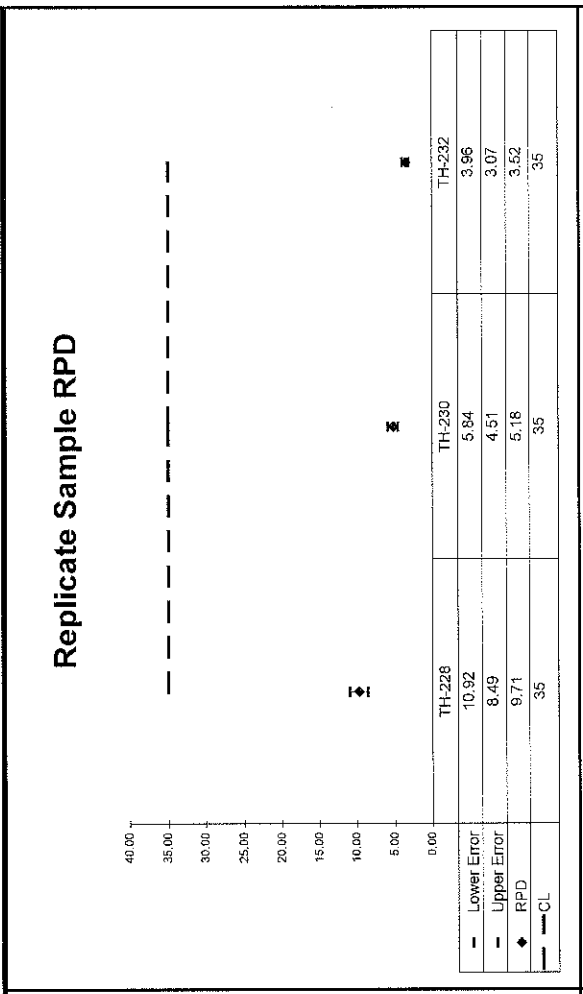
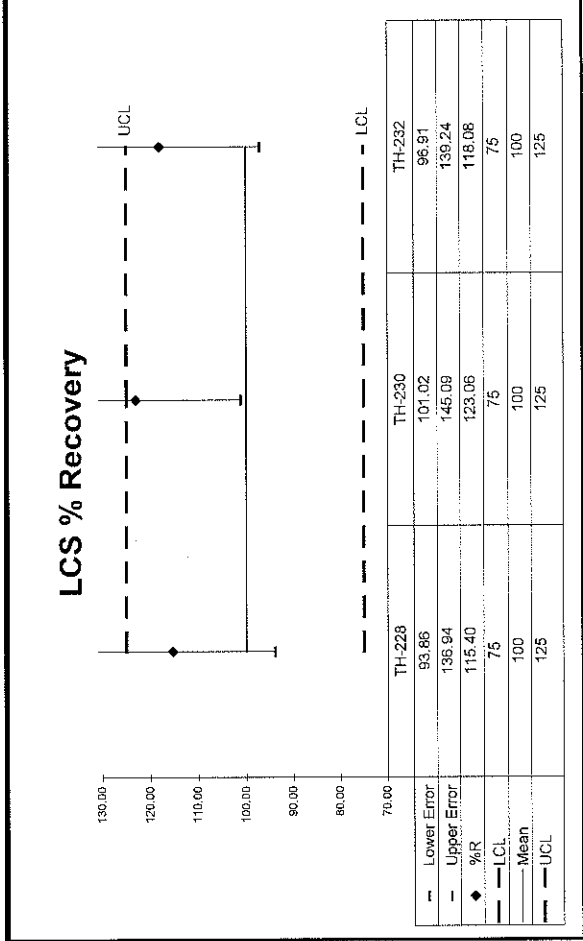
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
TH-228	0.54	9.71	1.30E+00	3.32E-01	1.18E+00	2.91E-01	1.15	OK			OK	OK
TH-230	0.28	5.18	1.41E+00	3.66E-01	1.33E+00	3.35E-01	1.23	OK			OK	OK
TH-232	0.19	3.52	1.09E+00	2.83E-01	1.13E+00	2.75E-01	1.18	OK			OK	OK

QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
TH-228	0.54	9.71	1.30E+00	3.32E-01	1.18E+00	2.91E-01	1.15	OK			OK	OK
TH-230	0.28	5.18	1.41E+00	3.66E-01	1.33E+00	3.35E-01	1.23	OK			OK	OK
TH-232	0.19	3.52	1.09E+00	2.83E-01	1.13E+00	2.75E-01	1.18	OK			OK	OK



WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10087	ThISO	1	pCi	g	Auxier & Associates, Inc.



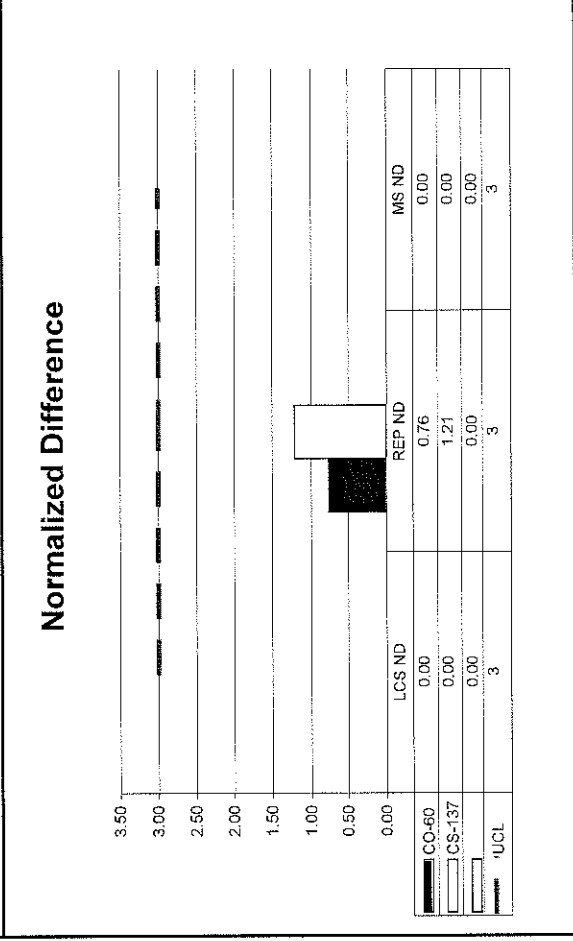
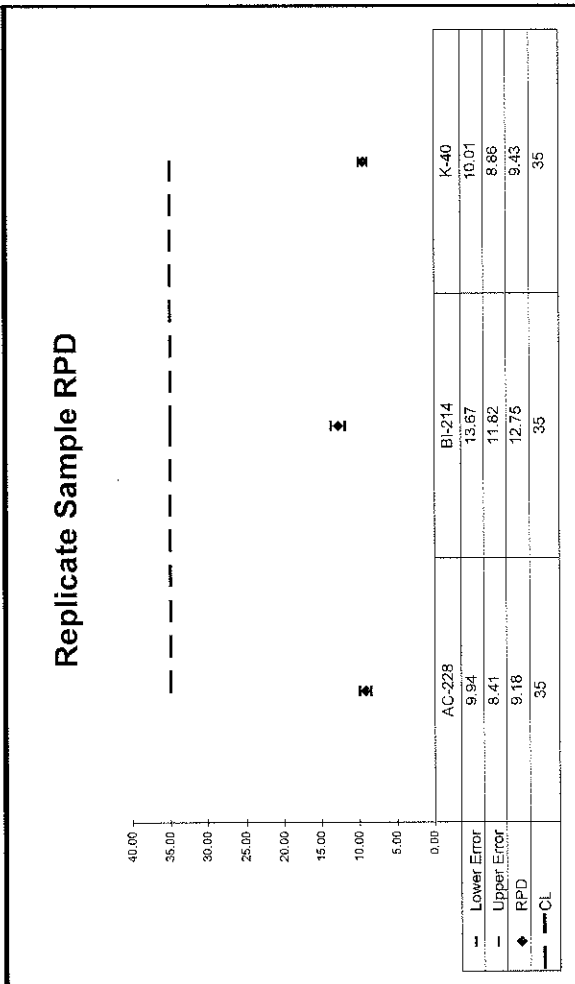
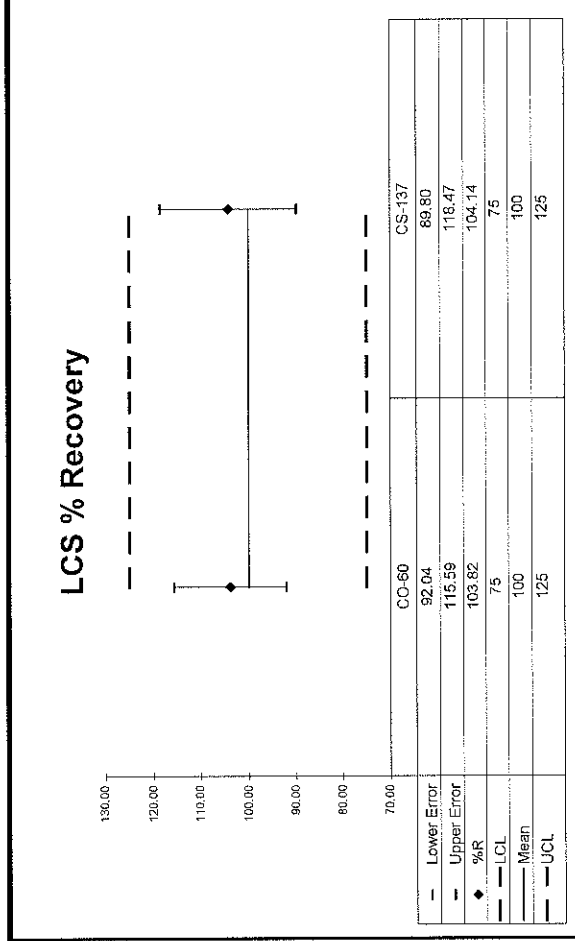
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10087	Gamma	1	pCi	g	Auxier & Associates, Inc.

Laboratory Control Sample												
Analyte	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
CO-60	103.82%	7.78%	100.00%	4.00%	1.37E+02	5.48E+00	1.42E+02	1.11E+01	GAS-1302	1.37E+02	5.48E+00	7.36E+02
CS-137	104.14%	10.34%	100.00%	4.00%	8.69E+01	3.48E+00	9.05E+01	9.36E+00	GAS-1302	8.69E+01	3.48E+00	7.36E+02

Matrix Spike													
Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

Replicate Sample										QC Summary			
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND	
AC-228	0.76	9.18	1.33E+00	2.36E-01	1.46E+00	2.32E-01	1.04	OK	<CS-137	AC-228>	OK		
BI-214	1.21	12.75	1.19E+00	1.65E-01	1.35E+00	2.04E-01	1.04	OK	<CO-60	BI-214>	OK	OK	
K-40	1.07	9.43	1.96E+01	2.40E+00	2.16E+01	2.62E+00				K-40>	OK	OK	

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10087	Gamma	1	pCi	g	Auxier & Associates, Inc.



No Matrix Spike

SECTION VII
LABORATORY TECHNICIAN'S NOTES
& RUN LOGS

ISO U NOTES

 EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	15-10087
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	10/19/15 10:34	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested with HF till dry. Samples were further digested in a mixed acid digestion till dry. Samples were submitted to separations.

10-19-15 JPachella

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	15-10087
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	10/19/15 10:34	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested with HF till dry. Samples were further digested in a mixed acid digestion till dry. Samples were submitted to separations.
2	10/23/15 17:08	CHEM	JDEMELAS	Added concentrated HCl to sample beakers and heated to dryness; Added 20 ml 8N HCL to samples and transferred to new, labeled C-Tubes, rinsing with 8N HCl to bring volume to ~35 ml; Preconditioned resin columns with 35 ml 8N HCl; Centrifuged samples and loaded onto columns; Rinsed C-Tubes with 20 ml 8N HCl, centrifuged as needed and loaded onto columns; Rinsed columns with 35 ml 8N HCl - 0.1N NH4I, 35 ml of 6.5N HCl - 0.04N HF, and 10 ml of 6.5N HCl; Eluted Uranium with 50 ml of 0.5N HCl into clean, labeled 100 ml beakers; Dried-down samples on hotplate; Dissolved samples in ~10 ml of concentrated HCl; Transferred to new, labeled C-Tubes with DI H2O. Set samples aside for later precipitation and filtering.


John Demelas
 10/23/15

 EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	15-10087
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	10/19/15 10:34	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested with HF till dry. Samples were further digested in a mixed acid digestion till dry. Samples were submitted to separations.
2	10/23/15 17:08	CHEM	JDEMELAS	Added concentrated HCl to sample beakers and heated to dryness; Added 20 ml 8N HCL to samples and transferred to new, labeled C-Tubes, rinsing with 8N HCl to bring volume to ~35 ml; Preconditioned resin columns with 35 ml 8N HCl; Centrifuged samples and loaded onto columns; Rinsed C-Tubes with 20 ml 8N HCl, centrifuged as needed and loaded onto columns; Rinsed columns with 35 ml 8N HCl - 0.1N NH4I, 35 ml of 6.5N HCl - 0.04N HF, and 10 ml of 6.5N HCl; Eluted Uranium with 50 ml of 0.5N HCl into clean, labeled 100 ml beakers; Dried-down samples on hotplate; Dissolved samples in ~10 ml of concentrated HCl; Transferred to new, labeled C-Tubes with DI H2O. Set samples aside for later precipitation and filtering.
3	10/26/15 04:58	CHEM	TSMITH	Followed steps 12.1.7 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Uranium)

*10/26/15
TSM*

0055A

 EBERLINE SERVICES		Internal Work Order		
		15-10087		
Reagents Used in an Analysis		Analysis Code		Run
		UUISO		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
016569P	Hydrofluoric Acid	Reagent Grade	JPACHELLA	10/19/2015
016519P	Nitric Acid	Reagent Grade	JPACHELLA	10/19/2015
016158P	Perchloric Acid	Reagent Grade	JPACHELLA	10/19/2015
016679P	Sulfuric Acid	Reagent Grade	JPACHELLA	10/19/2015
016862P	Anion Exchange Resin	Reagent Grade	JDEMELAS	10/23/2015
016919S	HCl - HF	6.5N - 0.04N	JDEMELAS	10/23/2015
016745D03	Hydrochloric Acid	0.5N	JDEMELAS	10/23/2015
016803S	Hydrochloric Acid	6.5N	JDEMELAS	10/23/2015
016874P	Hydrochloric Acid	Reagent Grade	JDEMELAS	10/23/2015
016934S	HCl - NH4I	8N - 0.1M	JDEMELAS	10/23/2015
016928S	Hydrochloric Acid	8N	JDEMELAS	10/23/2015
016909S	Carbon substrate	Solution	TSMITH	10/26/2015
016569P	Hydrofluoric Acid	Reagent Grade	TSMITH	10/26/2015
016583S	Neodymium Carrier	1 mg/ml	TSMITH	10/26/2015
016514P	Reagent Alcohol	Reagent Grade	TSMITH	10/26/2015
016606P	Titanous Chloride	Reagent Grade	TSMITH	10/26/2015


Alphabet 3

Date	Amplifier	Client	Location	CTTime	Analysis	Test
10/23	1510104A(3-6)	Elk	0821	2hr	UUTSO	-
10/23	15100703A(1-4)	ucon	0821	2hr	Putso	-
10/23	1510068A(1-4)	ucon	0822	2hr	Am-241	-
10/23	1510068A(1-4)	ucon	0822	2hr	Am-243	-
10/23/15	1510084A(1-12)	Auxier	1030	2hr50 =	ISO-TH	KB
10/23/15	1510084A(13-20)	Auxier	1120	2hr50 =	ISO-TH	KB
10/23/15	1510067A(1-4)	ucon	1121	2hr50 =	Np	KB
10/23/15	1510068A(1-4)	ucon	1122	2hr50 =	Np	KB
10/23/15	1510121A(1-4)	ND	1722	2hr50 =	Rate	KB
10/23/15	1510082A(1-4)	ucon	1722	2hr50 =	Rate	KB
10/23/15	System Bksch	Lab	1620	16.40hrs	-	KB
10/24/15	Daily Pulsar	Lab	0951	10min	NA	AG
10/24/15	1510050A(1-11)	TN Dept Health	1025	16hr40min	ISO-4	AG
10/26	Daily Pulsar	Lab	0576	1hr	NA	-
10/26	1510082A(4)	ucon	0907	2hr50	Am-247	-
10/26	1510068A(1-49)	ucon	0907	2hr50	Putso	-
10/26	1510082A(1-416)	ucon	0904	2hr50	Putso	-
10/26	1510068A(1-4)	ucon	0904	2hr50	Putso	-
10/26	1510082A(1-4)	ucon	0904	2hr50	Putso	-
10/26	1510087A(1-9)	Auxier	0905	2hr50	UUTSO	-

Alphabet 3

Date	Amplifier	Client	Location	CTTime	Analysis	Tech
10/23	1510104A(1-3,6)	ELP	0821	2hr	UUTSO	-
10/23	15100703A(1-4)	UCON	0821	2hr	Putso	-
10/23	1510068A(1-4)	UCON	0822	2hr	Am 241	-
10/23	1510068A(1-4)	UCON	0822	2hr	Am 243	-
10/23/15	1510084A(1-12)	Auxin	1030	2hr50-	ISO-TH	KB
10/23/15	1510084A(13-20)	Auxin	1120	2hr50-	ISO-TH	KB
10/23/15	1510067A(1-4)	UCON	1121	2hr50-	Np	KB
10/23/15	1510068A(1-4)	UCON	1122	2hr50-	Np	KB
10/23/15	1510121A(1-4)	NA	1722	2hr50-	Rel	KB
10/23/15	1510082A(1-4)	UCON	1722	2hr50-	Rel	KB
10/23/15	System Bkscd	Lab	1620	16.40hr	-	KB
10/24/15	Daily Pulse	Lab	0951	10min	NA	AG
10/24/15	1510050A(1-11)	TN Dept Health	1025	16hr40min	ISO-U	AG
10/26	Daily Pulse	Lab	0516	1hr	NA	-
10/26	1510082A(4)	UCON	0907	2hr	Am 247	-
10/26	1510068A(1-4,9)	UCON	0907	2hr	Putso	-
10/26	1510082A(1-4,16)	UCON	0904	2hr	Putso	-
10/26	1510068A(1-4)	UCON	0904	2hr	Putso	-
10/26	1510082A(1-4)	UCON	0904	2hr50-	Putso	-
10/26	1510087A(1-9)	Auxin	0905	2hr	UUTSO	-
10/26/15	1510087A(10-17)	Auxin	1203	2hr50-	UU	KB
10/26/15	1510082A(1-4)	UCON	1204	2hr50-	Np	KB
10/26/15	1510058A(1-3,5)	Unitech	1206	2hr50-	UU	KB
10/26/15	1510058A(4,3,5,6)	Unitech	1207	2hr50-	ISO-P4	KB

ISO-TH NOTES

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	15-10087
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	10/19/15 10:34	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested with HF till dry. Samples were further digested in a mixed acid digestion till dry. Samples were submitted to separations.

10-19-15 JPachella

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	15-10087
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	10/19/15 10:34	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested with HF till dry. Samples were further digested in a mixed acid digestion till dry. Samples were submitted to separations.
2	11/02/15 10:29	CHEM	TSMITH	Followed steps 12.2.1 to 12.2.5 in AP-005 . (Column separation for Thorium by Eichrom Anion resin)
3	11/03/15 04:52	CHEM	TSMITH	Followed steps 12.2.5 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Thorium)

*11-3-15
TMC*



EBERLINE
SERVICES

Reagents Used in an Analysis

Internal Work Order

15-10087

Analysis Code

Run

THISO

1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
016569P	Hydrofluoric Acid	Reagent Grade	JPACHELLA	10/19/2015
016519P	Nitric Acid	Reagent Grade	JPACHELLA	10/19/2015
016679P	Sulfuric Acid	Reagent Grade	JPACHELLA	10/19/2015
016158P	Perchloric Acid	Reagent Grade	JPACHELLA	10/19/2015
016952S	Nitric Acid	8N	TSMITH	11/2/2015
016961S	Nitric Acid	8N	TSMITH	11/2/2015
016951S	Hydrochloric Acid	8N	TSMITH	11/2/2015
016862P	Anion Exchange Resin	Reagent Grade	TSMITH	11/2/2015
016796P	Hydrochloric Acid	Reagent Grade	TSMITH	11/2/2015
016869S	Cerrium Carrier	0.1mg/ml	TSMITH	11/3/2015
016569P	Hydrofluoric Acid	Reagent Grade	TSMITH	11/3/2015
016514P	Reagent Alcohol	Reagent Grade	TSMITH	11/3/2015
016955S	Carbon substrate	Solution	TSMITH	11/3/2015

Alpha # 3

Date	Sample #	Client	Sample Time	CT Time	Analysis	Test
10/30/15	1510091A(6-19)	Auxier	1430	2hr50-	UU	KB
10/30/15	System Bkgd	Lab	1725	16:40 hr	-	KB
11/2	Philly Pulse	UPS	0510	1-	nt	-
11/2	1510086A(1-18)	Auxier	0828	2hr	U1750	-
11/2	1510086A(1-40)	Auxier	0829	2hr	7hr50	-
11/2/15	1510086A(15)	Auxier	1124	2hr50-	ISO-TH	KB
11/2/15	1510145A(1-4)	Washington	1125	2hr00-	ISO-P4	KB
11/2/15	1510091A(4-19)	Auxier	1128	2hr50-	UU	KB
11/2/15	1510155A(1-4)	ND	1625	2hr50-	Pack	KB
11/7	Philly Pulse	UPS	0512	1-	nt	-
11/7	1510087A(6-19)	Auxier	0821	2hr	7hr50	-
11/7	1510092A(1-14)	Auxier	0824	2hr	7hr50	-
11/7	1510122A(1-4)	UCOR	0825	2hr	7hr50	-

Alpha # 1

Date	Project #	Client	Lead Time	CT Time	Allocation	Pre
10/17/15	56004 (U-15)	USA	1032	2hr	MT	C
10/20	1510122AU-4)	UCON	0876	2hr	MT	C
10/20	1510122AU-7)	UCON	0876	2hr	MT	C
10/30/15	1510091A (U-9)	STP America	1057	2hr	ISO Th	C
10/30/15	1510104AU-6)	ERT	1072	2hr	Rob	C
10/30/15	1510100A (U-7)	USACE Army	1413	2hr	Rob	KB
10/30/15	System Bkgd	Lab	1725	1hr	2	KB
11/1/15	Daily Pulse	USA	0510	1hr	MT	-
11/1/15	1510105A (U-5)	Test America	0571	2hr	Rob	C
11/1/15	1510086A (U-17)	America	0871	2hr	Also	-
11/2/15	1510161A (U-5)	USA	1229	2hr	ISO Th	KB
11/3/15	Daily Pulse	USA	0519	1hr	MT	-
11/3/15	1510087A (U-7)	America	0821	2hr	Also	-

GAMMA NOTES

DATE	SAMPLE #	Client	Load Time	CTeTime	Analysis	Tech
11/5	CAF-14	UA	0514	15	✓	✓
11/5	DailyA	UA	0545	15	✓	✓
11/5	15100202	Unitek	0602	2L	✓	✓
11/5	1511018-03	UCON	0837	4L	✓	✓
11/5/16	1511018-01	UCON	1234	30mins	✓	KB
11/5	1511018-04	UCON	1306	4L	✓	✓
11/6	CAF-14	UA	0517	15	✓	✓
11/6	DailyA	UA	0549	15	✓	✓
11/6	1510085-03	Auxier	0608	2L	✓	✓
11/6	1510085-04	Auxier	0711	2L	✓	✓
11/6	1510085-11	Auxier	0817	2L	✓	✓
11/6	1510085-15	Auxier	0920	2L	✓	✓
11/6	1510085-19	Auxier	1021	2L	✓	✓
11/6	1510086-06	Auxier	1123	2L	✓	✓
11/6/15	1510086-09	Auxier	1224	1hr	✓	KB
11/6/15	1510086-13	Auxier	1337	1hr	✓	KB
11/6/15	1510086-17	Auxier	1440	1hr	✓	KB
11/6/15	1511026-05	Toxicology Cons.	1547	1hr	✓	KB
11/6/15	1511026-07	Toxicology Cons.	1649	1hr	✓	KB
11/6/15	1511026-10	Toxicology Cons.	1750	1hr	✓	KB
11/7/15	System B Cgel	Lab	0909	24hr	✓	KB
11/9	CAF-14	UA	0520	15	✓	✓
11/9	DailyA	UA	0550	15	✓	✓
11/9	1510087-03	Auxier	0608	2L	✓	✓
11/9	1510087-04	Auxier	0713	2L	✓	✓
11/9	1510087-09	Auxier	0816	2L	✓	✓
11/9	1510087-12	Auxier	0919	2L	✓	✓
11/9	1510087-15	Auxier	1021	2L	✓	✓
11/9	1510087-01	Auxier	1123	2L	✓	✓

DATE	Sample #	Client	LoadTime	CT-Time	Analysis	Tech
11/5/15	1511021-02	Republic Secur.	1701	2hr	✓	KB
11/6	6481401	LAD	0517	1R	✓	S
11/6	Dulyn	LD	0545	1R	✓	S
11/6	1510085-05	Auxier	0608	2L	✓	C
11/6	1510085-08	Auxier	0711	2L	✓	C
11/6	1510085-12	Auxier	0817	2L	✓	C
11/6	1510085-16	Auxier	0920	2L	✓	C
11/6	1510085-20	Auxier	1021	2L	✓	C
11/6	1510086-07	Auxier	1127	2L	✓	C
11/6/15	1510086-10	Auxier	1224	1hr	Y	KB
11/6/15	1510086-14	Auxier	1337	1hr	Y	KB
11/6/15	1510086-18	Auxier	1440	1hr	Y	KB
11/6/15	1511026-06	Toxicology Cons.	1547	1hr	Y	KB
11/6/15	1511026-08	Toxicology Cons.	1649	1hr	Y	KB
11/7/15	System Bkcd	Lab	0909	24 hr	Y	KB
11/9	6481201	LAD	0520	1R	✓	S
11/9	Dulyn	LD	0550	1R	✓	S
11/9	1510087-05	Auxier	0608	2L	✓	C
11/9	1510087-07	Auxier	0717	2L	✓	C
11/9	1510087-10	Auxier	0816	2L	✓	C
11/9	1510087-13	Auxier	0918	2L	✓	C
11/9	1512087-16	Auxier	1021	2L	✓	C
11/9	1510087-02	Auxier	1122	2L	✓	C

DATE	SAMPLE #	Client	LoadTime	CT.Time	Analysis	Tech
1119	CHW 14	LAB	0520	18	✓	C
1119	Diana	LAB	0550	18	✓	C
1119	151008706	Audie	0609	20	✓	C
1119	151008708	Audie	0710	20	✓	C
1119	151008711	Audie	0816	20	✓	C
1119	151008714	Audie	0912	20	✓	C
1119	151008717	Audie	1021	20	✓	C

SECTION VIII
ANALYTICAL DATA (ISOTOPIC URANIUM)

Work Order	15-10087
Analysis Code	UUISO
Run	1
Date Received	10/14/2015
Lab Deadline	11/6/2015
Client	Auxier & Associates, Inc.
Project	PAP-KAN
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	EML U-02 Modified
Instrument Type	Alpha Spectroscopy
Radiometric Tracer	U-232
Radiometric Sol#	U-10a
Tracer Act (dpm/g)	18.64
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		10/14/15 00:00	1.0000E+00
02	MBL	BLANK		10/14/15 00:00	1.5000E+00
03	DUP	CP5004S01-02	37	10/07/15 10:10	1.5088E+00
04	DO	CP5004S01-02	37	10/07/15 10:10	1.5156E+00
05	TRG	CP5004S04-05	41	10/07/15 10:20	1.5270E+00
06	TRG	CP5004S07-08	35	10/07/15 10:30	1.5080E+00
07	TRG	CP5004S09-10	38	10/07/15 10:40	1.5131E+00
08	TRG	CP5004S11-12	32	10/07/15 10:50	1.5159E+00
09	TRG	CP5004S14-15	37	10/07/15 11:00	1.5508E+00
10	TRG	CP5004S16-17	40	10/07/15 11:10	1.5353E+00
11	TRG	CP4106S03-04	37	10/07/15 13:00	1.5215E+00
12	TRG	CP4106S05-06	35	10/07/15 13:10	1.5113E+00
13	TRG	CP4106S08-09	35	10/07/15 13:20	1.5130E+00
14	TRG	CP4106S10-11	33	10/07/15 13:30	1.5070E+00
15	TRG	CP4106S13-14	32	10/07/15 13:40	1.5230E+00
16	TRG	CP4106S15-16	38	10/07/15 13:50	1.5429E+00
17	TRG	CP4106S18-19	39	10/07/15 14:00	1.5225E+00

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			10/19/15 10:53	JPACHELLA				
02	MBL			10/19/15 10:53	JPACHELLA				
03	DUP			10/19/15 10:53	JPACHELLA				
04	DO	10/19/15 07:21	KSALLINGS	10/19/15 10:53	JPACHELLA				
05	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:53	JPACHELLA				
06	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:53	JPACHELLA				
07	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:53	JPACHELLA				
08	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:53	JPACHELLA				
09	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:53	JPACHELLA				
10	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:53	JPACHELLA				
11	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:53	JPACHELLA				
12	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:53	JPACHELLA				
13	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:53	JPACHELLA				
14	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:53	JPACHELLA				
15	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:53	JPACHELLA				
16	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:53	JPACHELLA				
17	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:53	JPACHELLA				

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Client	Auxier & Associates, Inc.
Eberline Services Work Order	15-10087
Analysis Code	UUISO
Run	1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-234	LCS	LCS	pCi/g	6.83E+00	9.99E-01	9.14E-02	8.04E+00	84.99	OK		OK	
02	U-234	MBL	BLANK	pCi/g	4.30E-02	4.74E-02	6.83E-02				OK	OK	OK
03	U-234	DUP	CP5004S01-02	pCi/g	3.44E+00	5.83E-01	5.09E-02					OK	
04	U-234	DO	CP5004S01-02	pCi/g	3.26E+00	5.55E-01	7.87E-02					OK	
05	U-234	TRG	CP5004S04-05	pCi/g	2.87E+00	4.60E-01	6.42E-02					OK	
06	U-234	TRG	CP5004S07-08	pCi/g	2.38E+00	4.21E-01	6.73E-02					OK	
07	U-234	TRG	CP5004S09-10	pCi/g	9.64E-01	2.22E-01	4.20E-02					OK	
08	U-234	TRG	CP5004S11-12	pCi/g	1.13E+00	2.57E-01	5.79E-02					OK	
09	U-234	TRG	CP5004S14-15	pCi/g	8.09E-01	2.02E-01	6.68E-02					OK	
10	U-234	TRG	CP5004S16-17	pCi/g	1.20E+00	2.57E-01	5.39E-02					OK	
11	U-234	TRG	CP4106S03-04	pCi/g	1.02E+00	2.19E-01	4.75E-02					OK	
12	U-234	TRG	CP4106S05-06	pCi/g	1.04E+00	2.25E-01	3.93E-02					OK	
13	U-234	TRG	CP4106S08-09	pCi/g	9.57E-01	2.19E-01	5.92E-02					OK	
14	U-234	TRG	CP4106S10-11	pCi/g	1.20E+00	2.53E-01	5.18E-02					OK	
15	U-234	TRG	CP4106S13-14	pCi/g	9.36E-01	2.23E-01	5.91E-02					OK	
16	U-234	TRG	CP4106S15-16	pCi/g	9.08E-01	1.98E-01	6.00E-02					OK	
17	U-234	TRG	CP4106S18-19	pCi/g	8.37E-01	2.04E-01	4.22E-02					OK	

010000

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-234	LCS	10/26/15 09:05		A_Spec	Alpha_052	170	4.47 E+02	5.00 E-03	16.1
02	U-234	MBL	10/26/15 09:05		A_Spec	Alpha_053	170	4.47 E+03	9.00 E-03	14.6
03	U-234	DUP	10/26/15 09:05		A_Spec	Alpha_054	170	2.82 E+02	1.00 E-03	14.5
04	U-234	DO	10/26/15 09:05		A_Spec	Alpha_055	170	2.73 E+02	7.00 E-03	15.6
05	U-234	TRG	10/26/15 09:05		A_Spec	Alpha_056	170	2.95 E+02	7.00 E-03	16
06	U-234	TRG	10/26/15 09:05		A_Spec	Alpha_057	170	2.17 E+02	3.00 E-03	15.8
07	U-234	TRG	10/26/15 09:05		A_Spec	Alpha_058	170	9.58 E+01	1.00 E-03	16.4
08	U-234	TRG	10/26/15 09:05		A_Spec	Alpha_059	170	1.02 E+02	3.00 E-03	17.2
09	U-234	TRG	10/26/15 09:05		A_Spec	Alpha_060	170	7.98 E+01	7.00 E-03	15.4
10	U-234	TRG	10/26/15 12:03		A_Spec	Alpha_033	170	1.16 E+02	3.00 E-03	18
11	U-234	TRG	10/26/15 12:03		A_Spec	Alpha_034	170	1.12 E+02	3.00 E-03	17.9
12	U-234	TRG	10/26/15 12:03		A_Spec	Alpha_035	170	1.11 E+02	1.00 E-03	16.5
13	U-234	TRG	10/26/15 12:03		A_Spec	Alpha_036	170	9.70 E+01	0.00 E+00	18.1
14	U-234	TRG	10/26/15 12:03		A_Spec	Alpha_037	170	1.21 E+02	3.00 E-03	17.1
15	U-234	TRG	10/26/15 12:03		A_Spec	Alpha_038	170	8.93 E+01	4.00 E-03	16.2
16	U-234	TRG	10/26/15 12:03		A_Spec	Alpha_039	170	1.07 E+02	9.00 E-03	19.3
17	U-234	TRG	10/26/15 12:03		A_Spec	Alpha_040	170	8.28 E+01	1.00 E-03	18.6

	1 Run	UUISO Analysis Code	15-10087 Eberline Services Work Order	Auxier & Associates, Inc. Client
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Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-238	LCS	LCS	pCi/g	7.16E+00	1.04E+00	9.12E-02	7.83E+00	91.45	OK		OK	
02	U-238	MBL	BLANK	pCi/g	5.58E-02	4.65E-02	4.00E-02					OK	OK
03	U-238	DUP	CP5004S01-02	pCi/g	9.68E+00	1.37E+00	7.28E-02				OK	OK	
04	U-238	DO	CP5004S01-02	pCi/g	9.93E+00	1.39E+00	5.68E-02					OK	
05	U-238	TRG	CP5004S04-05	pCi/g	7.12E+00	9.50E-01	5.09E-02					OK	
06	U-238	TRG	CP5004S07-08	pCi/g	7.02E+00	9.83E-01	5.20E-02					OK	
07	U-238	TRG	CP5004S09-10	pCi/g	1.24E+00	2.61E-01	6.87E-02					OK	
08	U-238	TRG	CP5004S11-12	pCi/g	1.15E+00	2.59E-01	5.26E-02					OK	
09	U-238	TRG	CP5004S14-15	pCi/g	9.57E-01	2.22E-01	4.21E-02					OK	
10	U-238	TRG	CP5004S16-17	pCi/g	1.19E+00	2.56E-01	4.27E-02					OK	
11	U-238	TRG	CP4106S03-04	pCi/g	9.50E-01	2.09E-01	5.09E-02					OK	
12	U-238	TRG	CP4106S05-06	pCi/g	1.07E+00	2.29E-01	5.62E-02					OK	
13	U-238	TRG	CP4106S08-09	pCi/g	1.13E+00	2.43E-01	5.89E-02					OK	
14	U-238	TRG	CP4106S10-11	pCi/g	1.00E+00	2.26E-01	5.90E-02					OK	
15	U-238	TRG	CP4106S13-14	pCi/g	9.60E-01	2.26E-01	6.25E-02					OK	
16	U-238	TRG	CP4106S15-16	pCi/g	7.90E-01	1.82E-01	6.55E-02					OK	
17	U-238	TRG	CP4106S18-19	pCi/g	1.22E+00	2.57E-01	4.20E-02					OK	

Client	Auxier & Associates, Inc.
Eberline Services Work Order	15-10087
Analysis Code	UUISO
Run	1

	Run	1
	Analysis Code	UUISO
Eberline Services Work Order	15-10087	
Client	Auxier & Associates, Inc.	

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-238	LCS	10/26/15 09:05		A_Spec	Alpha_052	170	4.71 E+02	0.00 E+00	16.1
02	U-238	MBL	10/26/15 09:05		A_Spec	Alpha_053	170	5.83 E+00	1.00 E-03	14.6
03	U-238	DUP	10/26/15 09:05		A_Spec	Alpha_054	170	7.97 E+02	0.00 E+00	14.5
04	U-238	DO	10/26/15 09:05		A_Spec	Alpha_055	170	8.36 E+02	2.00 E-03	15.6
05	U-238	TRG	10/26/15 09:05		A_Spec	Alpha_056	170	7.34 E+02	3.00 E-03	16
06	U-238	TRG	10/26/15 09:05		A_Spec	Alpha_057	170	6.46 E+02	2.00 E-03	15.8
07	U-238	TRG	10/26/15 09:05		A_Spec	Alpha_058	170	1.24 E+02	8.00 E-03	16.4
08	U-238	TRG	10/26/15 09:05		A_Spec	Alpha_059	170	1.05 E+02	2.00 E-03	17.2
09	U-238	TRG	10/26/15 09:05		A_Spec	Alpha_060	170	9.48 E+01	1.00 E-03	15.4
10	U-238	TRG	10/26/15 12:03		A_Spec	Alpha_033	170	1.17 E+02	1.00 E-03	18
11	U-238	TRG	10/26/15 12:03		A_Spec	Alpha_034	170	1.05 E+02	4.00 E-03	17.9
12	U-238	TRG	10/26/15 12:03		A_Spec	Alpha_035	170	1.14 E+02	0.00 E+00	16.5
13	U-238	TRG	10/26/15 12:03		A_Spec	Alpha_036	170	1.15 E+02	0.00 E+00	18.1
14	U-238	TRG	10/26/15 12:03		A_Spec	Alpha_037	170	1.02 E+02	0.00 E+00	17.1
15	U-238	TRG	10/26/15 12:03		A_Spec	Alpha_038	170	9.20 E+01	0.00 E+00	16.2
16	U-238	TRG	10/26/15 12:03		A_Spec	Alpha_039	170	9.40 E+01	1.20 E-02	19.3
17	U-238	TRG	10/26/15 12:03		A_Spec	Alpha_040	170	1.21 E+02	1.00 E-03	18.6

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-235	LCS	LCS	pCi/g	4.96E-01	2.00E-01	1.06E-01					OK	
02	U-235	MBL	BLANK	pCi/g	4.14E-02	4.72E-02	6.22E-02					OK	OK
03	U-235	DUP	CP5004S01-02	pCi/g	4.34E-01	1.68E-01	6.28E-02				NA	OK	
04	U-235	DO	CP5004S01-02	pCi/g	3.88E-01	1.58E-01	8.31E-02					OK	
05	U-235	TRG	CP5004S04-05	pCi/g	3.26E-01	1.30E-01	7.19E-02					OK	
06	U-235	TRG	CP5004S07-08	pCi/g	2.51E-01	1.19E-01	6.44E-02					OK	
07	U-235	TRG	CP5004S09-10	pCi/g	8.69E-02	6.95E-02	7.44E-02					OK	
08	U-235	TRG	CP5004S11-12	pCi/g	9.97E-02	7.69E-02	7.68E-02					OK	
09	U-235	TRG	CP5004S14-15	pCi/g	1.23E-01	7.89E-02	5.22E-02					OK	
10	U-235	TRG	CP5004S16-17	pCi/g	1.25E-01	7.99E-02	5.29E-02					OK	
11	U-235	TRG	CP4106S03-04	pCi/g	1.10E-01	7.04E-02	4.66E-02					OK	
12	U-235	TRG	CP4106S05-06	pCi/g	1.02E-01	6.93E-02	4.84E-02					OK	
13	U-235	TRG	CP4106S08-09	pCi/g	6.89E-02	5.92E-02	5.82E-02					OK	
14	U-235	TRG	CP4106S10-11	pCi/g	4.46E-02	4.84E-02	5.82E-02					OK	
15	U-235	TRG	CP4106S13-14	pCi/g	1.29E-01	8.53E-02	7.75E-02					OK	
16	U-235	TRG	CP4106S15-16	pCi/g	6.90E-02	6.31E-02	8.54E-02					OK	
17	U-235	TRG	CP4106S18-19	pCi/g	8.52E-02	6.55E-02	5.20E-02					OK	

	Run	1
	Analysis Code	UISO
Eberline Services Work Order	15-10087	
Client	Auxier & Associates, Inc.	

67000

Count Room Report
Client: Auxier Associates, Inc.
15-10087-UUISO-1 (pCi/g) in SO
Tracer ID: U-10a

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	10/14/15 00:00	1.0000	0.6537	12.1850		0.00		
02	MBL	BLANK	10/14/15 00:00	1.5000	0.6512	12.1384		0.00		
03	DUP	CP5004S01-02	10/07/15 10:10	1.5088	0.6510	12.1346		0.00		
04	DO	CP5004S01-02	10/07/15 10:10	1.5156	0.6499	12.1141		0.00		
05	TRG	CP5004S04-05	10/07/15 10:20	1.5270	0.6513	12.1402		0.00		
06	TRG	CP5004S07-08	10/07/15 10:30	1.5080	0.6521	12.1551		0.00		
07	TRG	CP5004S09-10	10/07/15 10:40	1.5131	0.6498	12.1123		0.00		
08	TRG	CP5004S11-12	10/07/15 10:50	1.5159	0.6525	12.1626		0.00		
09	TRG	CP5004S14-15	10/07/15 11:00	1.5508	0.6517	12.1477		0.00		
10	TRG	CP5004S16-17	10/07/15 11:10	1.5353	0.6517	12.1477		0.00		
11	TRG	CP4106S03-04	10/07/15 13:00	1.5215	0.6508	12.1309		0.00		
12	TRG	CP4106S05-06	10/07/15 13:10	1.5113	0.6594	12.2912		0.00		
13	TRG	CP4106S08-09	10/07/15 13:20	1.5130	0.6518	12.1496		0.00		
14	TRG	CP4106S10-11	10/07/15 13:30	1.5070	0.6521	12.1551		0.00		
15	TRG	CP4106S13-14	10/07/15 13:40	1.5230	0.6520	12.1533		0.00		
16	TRG	CP4106S15-16	10/07/15 13:50	1.5429	0.6511	12.1365		0.00		
17	TRG	CP4106S18-19	10/07/15 14:00	1.5225	0.6513	12.1402		0.00		

Handwritten notes and signatures at the bottom of the page, including "0920" and "10/26/15".

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
15-10087	1	UUISO	grams	11/6/2015	JPACHELLA

Lab Fraction	Auxier & Associates, Inc.		Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID			Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS		LCS						1.0000E+00	1.0000E+00				
02	BLANK		MBL						1.5000E+00	1.5000E+00				
03	CP5004S01-02		DUP						1.5088E+00	1.5088E+00				
04	CP5004S01-02		DO						1.5156E+00	1.5156E+00				
05	CP5004S04-05		TRG						1.5270E+00	1.5270E+00				
06	CP5004S07-08		TRG						1.5080E+00	1.5080E+00				
07	CP5004S09-10		TRG						1.5131E+00	1.5131E+00				
08	CP5004S11-12		TRG						1.5159E+00	1.5159E+00				
09	CP5004S14-15		TRG						1.5508E+00	1.5508E+00				
10	CP5004S16-17		TRG						1.5353E+00	1.5353E+00				
11	CP4106S03-04		TRG						1.5215E+00	1.5215E+00				
12	CP4106S05-06		TRG						1.5113E+00	1.5113E+00				
13	CP4106S08-09		TRG						1.5130E+00	1.5130E+00				
14	CP4106S10-11		TRG						1.5070E+00	1.5070E+00				
15	CP4106S13-14		TRG						1.5230E+00	1.5230E+00				
16	CP4106S15-16		TRG						1.5429E+00	1.5429E+00				
17	CP4106S18-19		TRG						1.5225E+00	1.5225E+00				

Comments

Technician: *JPachella* Date: 10/19/15

**Rough Sample Preparation
 Log Book**

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
15-10087	11/6/2015	10/18/2015	10/19/2015	10/20/2015	KSALLINGS

Eberline Fraction	Auxier & Associates, Inc. Client ID	Tare (g)		Gross (g)		Net (g)		Percent		Gamma		Special Info
		Pan Wt	Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.		LEPS Wt.
04	CP5004S01-02	14.2900	1303.9800	1084.5800	1289.6900	1070.2900	17.01%	82.99%	0.0000	0.0000		
05	CP5004S04-05	14.3300	1172.3800	960.6600	1158.0500	946.3300	18.28%	81.72%	0.0000	0.0000		
06	CP5004S07-08	14.3700	858.9600	702.8900	844.5900	688.5200	18.48%	81.52%	0.0000	0.0000		
07	CP5004S09-10	14.3500	1066.6600	842.4200	1052.3100	828.0700	21.31%	78.69%	0.0000	0.0000		
08	CP5004S11-12	14.3400	996.3800	779.4800	982.0400	765.1400	22.09%	77.91%	0.0000	0.0000		
09	CP5004S14-15	14.3600	1096.9600	863.1200	1082.6000	848.7600	21.60%	78.40%	0.0000	0.0000		
10	CP5004S16-17	14.3900	1017.7600	788.4400	1003.3700	774.0500	22.85%	77.15%	0.0000	0.0000		
11	CP4106S03-04	14.4200	971.9800	808.5000	957.5600	794.0800	17.07%	82.93%	0.0000	0.0000		
12	CP4106S05-06	14.3100	894.4400	729.8400	880.1300	715.5300	18.70%	81.30%	0.0000	0.0000		
13	CP4106S08-09	14.3200	899.6200	736.1400	885.3000	721.8200	18.47%	81.53%	0.0000	0.0000		
14	CP4106S10-11	14.3400	935.3600	742.3400	921.0200	728.0000	20.96%	79.04%	0.0000	0.0000		
15	CP4106S13-14	14.2800	876.5600	690.1200	862.2800	675.8400	21.62%	78.38%	0.0000	0.0000		
16	CP4106S15-16	14.3400	1004.0600	767.3400	989.7200	753.0000	23.92%	76.08%	0.0000	0.0000		
17	CP4106S18-19	14.3900	1016.0800	786.1200	1001.6900	771.7300	22.96%	77.04%	0.0000	0.0000		

Comments
Special Codes
H: Hot, O: Organic Hazard, P: PCB Hazard, R: Rush, T: Other (see comments)

Technician: *Kerry Sigs*

00085

LB
10/26/15

Apex-Alpha™

Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001322
 Batch Identification: 1510087A-UU
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_052
 Chamber Serial Number: 10006123B
 Detector Serial Number: 52
 Env. Background: System Bkgd 132597
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/26/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 9:05:24 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.654 mL
 Effective Efficiency: 0.1738 +/- 0.0100
 Counting Efficiency: 0.1607 +/- 0.0029 on 12/13/2014 2:40:57 PM
 Chem. Recovery Factor: 1.0820 +/- 0.0653

Control Certificate Name: NatU_U-8A
 Chem. Recov. of Control: U-238 0.891465 +/- 0.071075
 Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.267	357.66	10.37	0.34	0.00E+000	8.8
U-234	4.727	447.15	9.28	0.85	0.00E+000	46.8
U-235	4.393	26.32	38.78	0.68	0.00E+000	3.7
U-238	4.147	471.00	9.04	0.00	0.00E+000	13.8

T = Tracer Peak used for Effective Efficiency

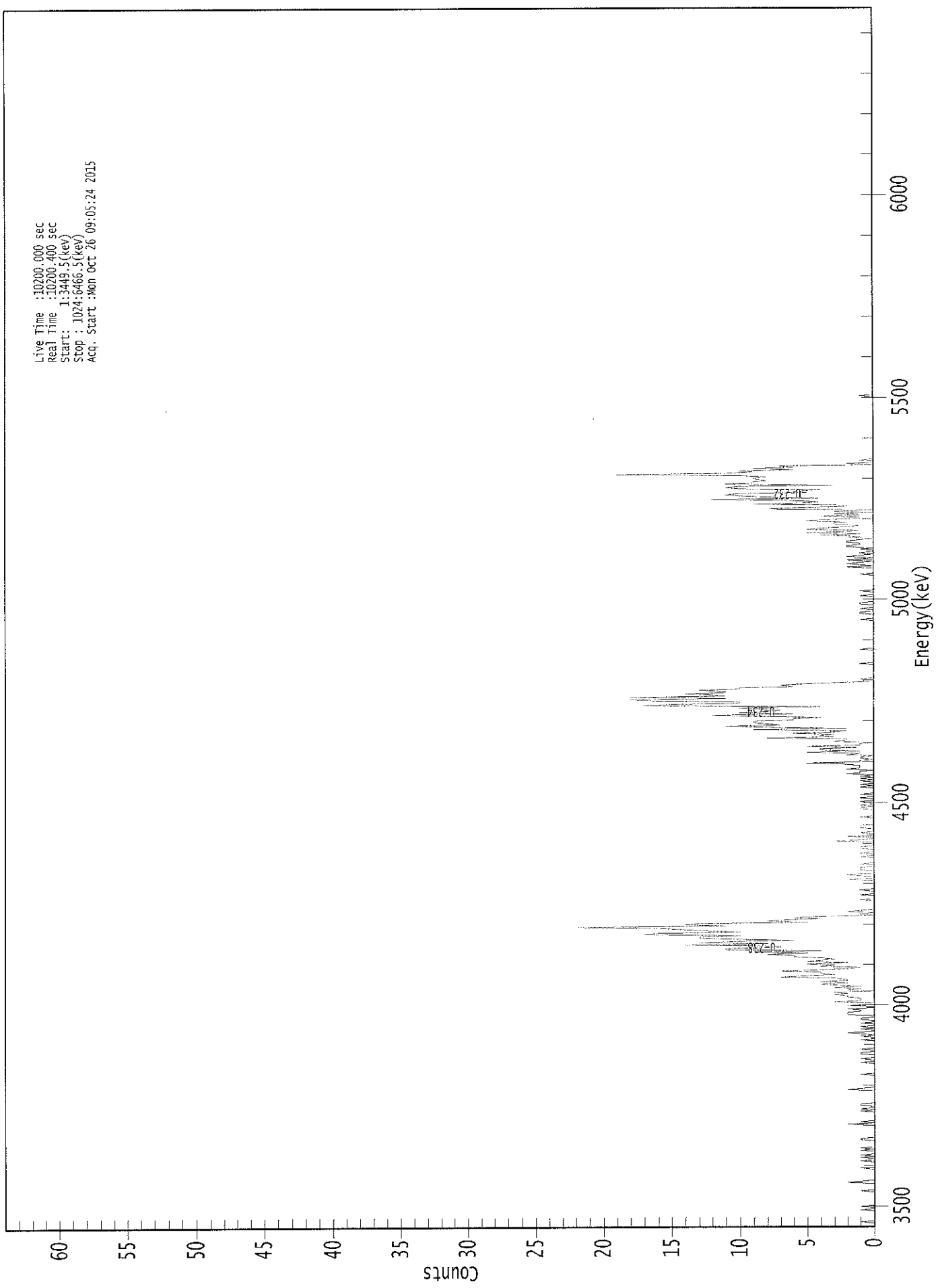
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.991	5302.50*	5.46E+000 +/- 6.18E-001	7.30E-002 +/- 8.26E-003
U-234	0.991	4761.50*	6.83E+000 +/- 9.99E-001	9.14E-002 +/- 1.03E-002
U-235	1.000	4385.50*	4.96E-001 +/- 2.00E-001	1.06E-001 +/- 1.20E-002
U-238	0.990	4184.40*	7.16E+000 +/- 1.04E+000	9.12E-002 +/- 1.03E-002

AG
10/27/15

0000132272.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:3449.5(keV)
Stop : 1024:6466.5(keV)
Acq. Start : Mon Oct 26 09:05:24 2015



: 00087

ROI Type: 1 ROI Type: 3

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 01

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	9	17	25	33	41	49	57	65	73	81	89	97	105	113	121	129	137	145	153	161	169	177	185	193	201	209	217	225	233	241	249	257	265	273	281	289	297	305	313	321	329	337	345	353	361									
1:	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
9:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
17:	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
25:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
33:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
41:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
49:	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
57:	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
65:	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
73:	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
81:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
89:	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
97:	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
105:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
113:	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
121:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
129:	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
137:	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
145:	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
153:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
161:	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
169:	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
177:	0	0	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
185:	0	0	2	0	0	0	0	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
193:	1	2	2	3	2	3	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
201:	1	3	1	3	4	2	4	2	4	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	
209:	2	3	7	5	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
217:	4	2	1	4	3	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	
225:	4	3	4	6	6	8	5	9	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
233:	4	11	11	7	7	14	8	13	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
241:	10	6	11	13	13	10	17	16	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
249:	10	13	14	16	22	11	14	13	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
257:	5	8	7	4	6	4	0	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
265:	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
273:	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
281:	0	0	0	1	0</																																																		

369: 0 1 0 1 / 0 0 1 0

Sample Title: 01

Channel	1	2	3	4	5	6	7	8	9
377:	1	0	1	0	2	1	1	0	
385:	2	1	1	1	2	5	1	1	
393:	0	1	1	0	2	1	5	1	
401:	4	4	1	5	1	1	0	3	
409:	2	2	8	3	4	3	6	3	
417:	2	9	2	8	11	7	8	9	
425:	9	6	6	4	9	12	6	10	
433:	8	7	8	10	4	17	15	10	
441:	10	16	18	11	18	11	12	14	
449:	11	11	13	10	10	6	7	6	
457:	3	0	0	1	0	0	0	0	
465:	0	0	0	0	0	0	0	0	
473:	1	0	0	0	0	0	0	0	
481:	0	0	0	0	1	0	0	0	
489:	0	0	0	0	0	0	0	0	
497:	0	0	0	0	0	0	0	0	
505:	0	0	0	0	0	1	0	0	
513:	0	0	1	1	0	0	1	0	
521:	0	0	1	1	0	0	0	0	
529:	0	1	0	0	0	1	0	0	
537:	0	0	0	0	0	0	0	0	
545:	0	0	0	1	0	0	0	0	
553:	0	2	0	1	2	1	0	2	
561:	1	0	2	1	0	1	0	0	
569:	1	0	2	2	1	1	2	2	
577:	1	0	2	1	4	1	5	2	
585:	1	5	4	2	1	3	3	2	
593:	5	4	1	1	4	1	3	0	
601:	3	0	8	6	2	2	9	5	
609:	4	6	12	4	8	10	11	10	
617:	5	6	4	10	11	10	3	11	
625:	9	9	8	9	9	8	10	19	
633:	11	9	10	6	9	6	7	0	
641:	2	0	0	1	0	0	0	0	
649:	0	0	0	0	0	0	0	0	
657:	0	0	0	0	0	0	0	0	
665:	0	0	0	0	0	0	0	0	
673:	0	0	0	0	0	0	0	0	
681:	0	0	0	0	0	0	0	0	
689:	0	0	0	0	0	0	0	0	
697:	0	1	0	0	0	0	0	0	
705:	0	0	0	0	0	0	0	0	
713:	0	0	0	0	0	0	0	0	
721:	0	0	0	0	0	0	0	0	
729:	0	0	0	0	0	0	0	0	
737:	0	0	0	0	0	0	0	0	
745:	0	0	0	0	0	0	0	0	
753:	0	0	0	0	0	0	0	0	
761:	0	0	0	0	0	0	0	0	
769:	0	0	0	0	0	0	0	0	
777:	0	0	0	0	0	0	0	0	
785:	0	0	0	0	0	0	0	0	
793:	0	0	0	0	0	0	0	0	

801: 0 0 0 0 0 0 0 0

Sample Title: 01

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



165
10/26/15

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001322
 Batch Identification: 1510087A-UU
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_053
 Chamber Serial Number: 10006122A
 Detector Serial Number: 53
 Env. Background: System Bkgd 132598
 Reagent Blank: <not performed>

Sample Size: 1.500E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/26/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 9:05:26 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.651 mL
 Effective Efficiency: 0.1841 +/- 0.0104
 Counting Efficiency: 0.1455 +/- 0.0026 on 12/13/2014 2:39:33 PM
 Chem. Recovery Factor: 1.2652 +/- 0.0750

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.283	377.32	10.10	0.68	0.00E+000	19.5
U-234	4.701	4.47	109.71	1.53	0.00E+000	5.9
U-235	4.393	3.49	113.53	0.51	0.00E+000	3.0
U-238	4.096	5.83	82.55	0.17	0.00E+000	3.0

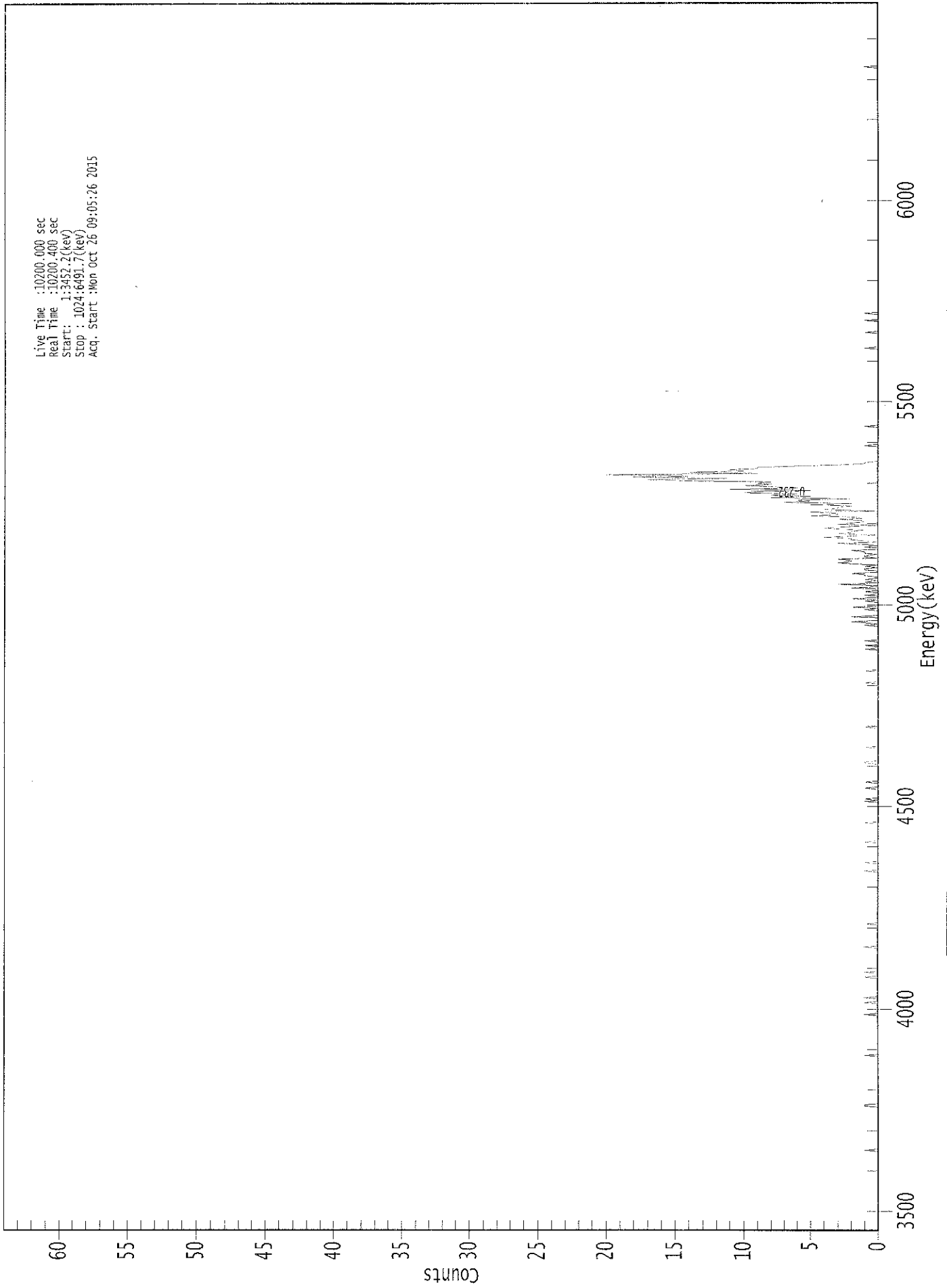
T = Tracer Peak used for Effective Efficiency

 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	3.63E+000 +/- 4.01E-001	5.42E-002 +/- 6.00E-003
U-234	0.974	4761.50*	4.30E-002 +/- 4.74E-002	6.83E-002 +/- 7.56E-003
U-235	1.000	4385.50*	4.14E-002 +/- 4.72E-002	6.22E-002 +/- 6.89E-003
U-238	0.946	4184.40*	5.58E-002 +/- 4.65E-002	4.00E-002 +/- 4.42E-003

AG
 10/27/15

0000132273.CNF



Live Time :10200.000 sec
Real Time :10200.400 sec
Start: 1:3452.2(keV)
Stop : 1024:6491.7(keV)
Acq. Start :Mon Oct 26 09:05:26 2015

000092

ROI Type: 3

ROI Type: 1

***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 02

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	1	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	1	1	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	0	0	1	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	0
177:	0	0	0	0	1	0	0	0	0
185:	0	0	0	0	0	0	1	0	0
193:	0	0	1	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	1	0	0	0	0	1
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	1	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0	1
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	1	0	0	0	0	0
305:	0	0	1	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	1	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	1	0	0	0	0	0
345:	0	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	1	0	0	1
361:	0	0	0	0	0	0	0	0	0

369: 1 0 0 0 0 1 0 0

Sample Title: 02

Channel	1	2	3	4	5	6	7	8
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	1	1	0
393:	0	0	0	0	0	0	0	0
401:	0	0	1	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	1	0	0	0	0
425:	0	0	0	0	0	0	0	0
433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	1	0	0	0	0	0	0	0
465:	0	0	1	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	1	0	0	1
489:	0	0	0	1	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	1	0	1	2	0	0	0	2
513:	0	0	0	0	0	1	0	2
521:	0	0	0	0	1	0	2	0
529:	0	1	0	0	1	0	0	2
537:	0	0	3	0	1	0	1	0
545:	0	1	1	2	0	0	1	1
553:	0	1	0	2	3	2	2	3
561:	0	1	1	0	1	1	2	0
569:	0	1	0	1	3	0	1	2
577:	2	4	2	0	3	2	2	1
585:	3	4	2	0	3	2	1	1
593:	3	1	2	5	3	3	5	0
601:	4	3	3	2	5	2	7	5
609:	6	2	8	5	8	6	10	9
617:	5	11	6	8	10	8	9	8
625:	14	17	11	18	14	20	9	14
633:	10	11	9	9	6	3	1	1
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	1	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	1	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	1	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	1	0	0	0	0
753:	0	0	0	0	0	1	0	0
761:	0	0	0	1	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 02

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	1	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KB
20/22/15

Apex-Alpha™

Sample Description: CP5004S01-02-DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001322
 Batch Identification: 1510087A-UU
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_054
 Chamber Serial Number: 10006122B
 Detector Serial Number: 54
 Env. Background: System Bkgd 132599
 Reagent Blank: <not performed>

Sample Size: 1.509E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 9:05:29 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.651 mL
 Effective Efficiency: 0.1442 +/- 0.0090
 Counting Efficiency: 0.1452 +/- 0.0026 on 12/13/2014 2:38:19 PM
 Chem. Recovery Factor: 0.9933 +/- 0.0647

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.268	295.49	11.41	0.51	0.00E+000	9.3
U-234	4.715	281.83	11.68	0.17	0.00E+000	5.0
U-235	4.402	28.83	36.63	0.17	0.00E+000	3.7
U-238	4.132	797.00	6.95	0.00	0.00E+000	10.4

T = Tracer Peak used for Effective Efficiency

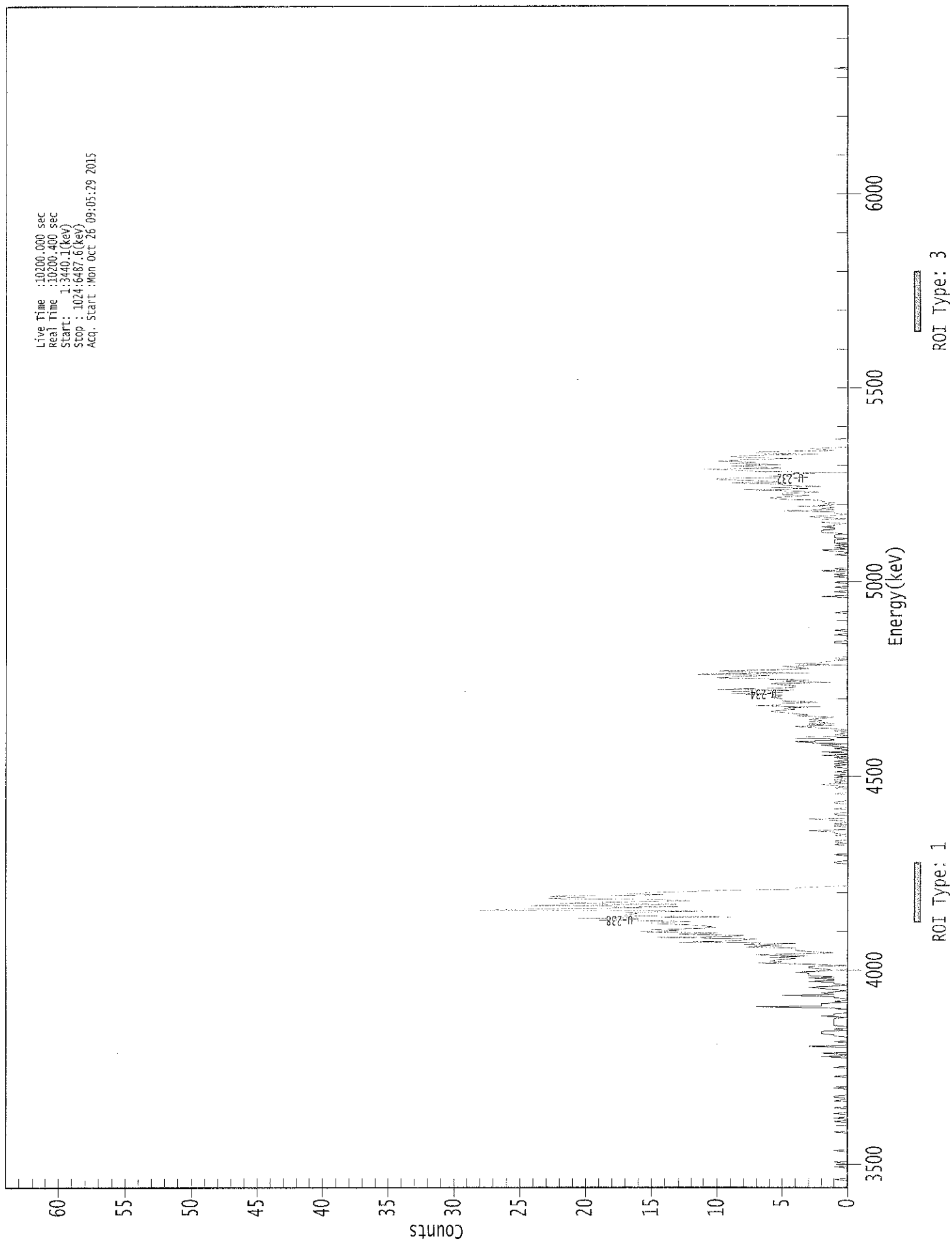
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.992	5302.50*	3.61E+000 +/- 4.43E-001	6.41E-002 +/- 7.86E-003
U-234	0.985	4761.50*	3.44E+000 +/- 5.83E-001	5.09E-002 +/- 6.25E-003
U-235	0.998	4385.50*	4.34E-001 +/- 1.68E-001	6.28E-002 +/- 7.71E-003
U-238	0.981	4184.40*	9.68E+000 +/- 1.37E+000	7.28E-002 +/- 8.94E-003

AG
10/27/15

0000132274.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:3440.1(keV)
Stop : 1024:6487.6(keV)
Acq. Start : Mon Oct 26 09:05:29 2015



: 00097

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 03

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	1	0	0	0	0	0	0	0	1
9:	0	0	0	0	0	0	0	0	0
17:	0	0	1	0	0	0	1	0	0
25:	0	0	0	0	0	0	0	0	0
33:	1	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	1	0	0	0	0	0	0	0	0
57:	0	1	0	0	1	0	0	0	0
65:	1	0	0	0	0	1	0	0	0
73:	0	0	0	1	0	0	1	1	1
81:	0	0	0	0	0	0	1	0	0
89:	0	0	0	0	0	0	0	0	0
97:	1	0	0	0	0	0	0	0	0
105:	1	0	0	0	0	0	0	0	0
113:	0	2	0	0	2	0	0	0	0
121:	0	0	3	0	0	0	1	0	0
129:	0	0	0	1	1	2	2	2	2
137:	0	1	0	0	1	1	1	1	1
145:	1	1	1	0	2	1	1	0	0
153:	0	0	0	1	7	2	2	2	2
161:	0	1	0	0	1	1	5	1	1
169:	2	1	0	1	2	3	1	0	0
177:	1	1	3	1	1	3	1	3	3
185:	3	3	4	2	1	2	3	3	3
193:	0	3	7	5	6	5	4	6	6
201:	3	7	4	1	3	4	4	4	4
209:	8	5	8	4	13	9	8	7	7
217:	15	9	8	13	10	16	13	15	15
225:	11	10	11	12	15	15	12	19	19
233:	16	21	9	17	17	16	17	11	11
241:	28	24	16	13	25	13	22	17	17
249:	12	15	23	20	23	14	17	15	15
257:	12	10	4	4	3	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	1	1	0	0	0	0	0	0
289:	1	0	0	0	0	0	0	0	0
297:	0	1	0	1	1	0	0	0	0
305:	0	1	0	1	1	3	0	0	0
313:	0	1	0	1	0	0	1	3	3
321:	0	0	0	1	1	0	0	0	0
329:	1	0	0	0	0	1	1	0	0
337:	0	0	0	0	0	1	0	0	0
345:	0	0	1	0	1	2	0	1	1
353:	0	1	0	1	0	1	0	0	0
361:	1	0	0	0	1	1	0	1	1

369: 0 1 0 0 1 0 2 0

Sample Title: 03

Channel	1	2	3	4	5	6	7	8
377:	0	2	0	0	1	0	1	2
385:	0	3	4	1	1	4	3	0
393:	1	0	0	1	0	1	3	4
401:	1	3	1	3	2	3	2	1
409:	4	3	4	5	6	5	4	5
417:	2	7	5	5	2	5	5	5
425:	6	5	5	9	5	9	4	10
433:	5	4	4	5	6	1	5	3
441:	7	10	8	6	12	3	9	10
449:	5	3	4	5	0	4	2	2
457:	0	0	1	0	0	0	0	0
465:	0	0	0	0	0	0	0	1
473:	1	0	0	0	0	0	1	0
481:	0	0	1	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	1	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	2
513:	0	0	0	1	0	0	0	1
521:	0	0	0	1	0	0	0	0
529:	1	0	1	0	0	2	0	1
537:	0	0	0	0	0	0	0	0
545:	0	0	0	1	0	0	1	2
553:	0	1	0	1	0	1	1	1
561:	1	0	1	1	1	0	2	2
569:	2	1	1	2	1	1	0	2
577:	2	2	0	2	3	1	0	1
585:	1	5	1	2	1	4	1	2
593:	1	2	2	5	6	5	3	5
601:	5	2	4	8	3	6	2	5
609:	5	9	5	7	10	10	3	6
617:	4	5	0	7	8	11	5	7
625:	9	5	9	7	10	8	4	8
633:	9	7	2	7	7	1	2	3
641:	0	0	0	0	0	0	0	1
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 03

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	1	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



KB
10/26/15

Sample Description: CP5004S01-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001322
 Batch Identification: 1510087A-UU
 Sample Identification: 04
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_055
 Chamber Serial Number: 10006124A
 Detector Serial Number: 55
 Env. Background: System Bkgd 132600
 Reagent Blank: <not performed>

Sample Size: 1.516E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 9:05:31 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.650 mL
 Effective Efficiency: 0.1467 +/- 0.0091
 Counting Efficiency: 0.1564 +/- 0.0028 on 12/13/2014 2:35:48 PM
 Chem. Recovery Factor: 0.9382 +/- 0.0607

Peak Match Tolerance: 0.150 MeV

 ----- PEAK AREA REPORT -----

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.271	300.15	11.33	0.85	0.00E+000	5.7
U-234	4.729	272.81	11.90	1.19	0.00E+000	4.9
U-235	4.404	26.32	38.78	0.68	0.00E+000	5.9
U-238	4.147	835.66	6.78	0.34	0.00E+000	38.9

T = Tracer Peak used for Effective Efficiency

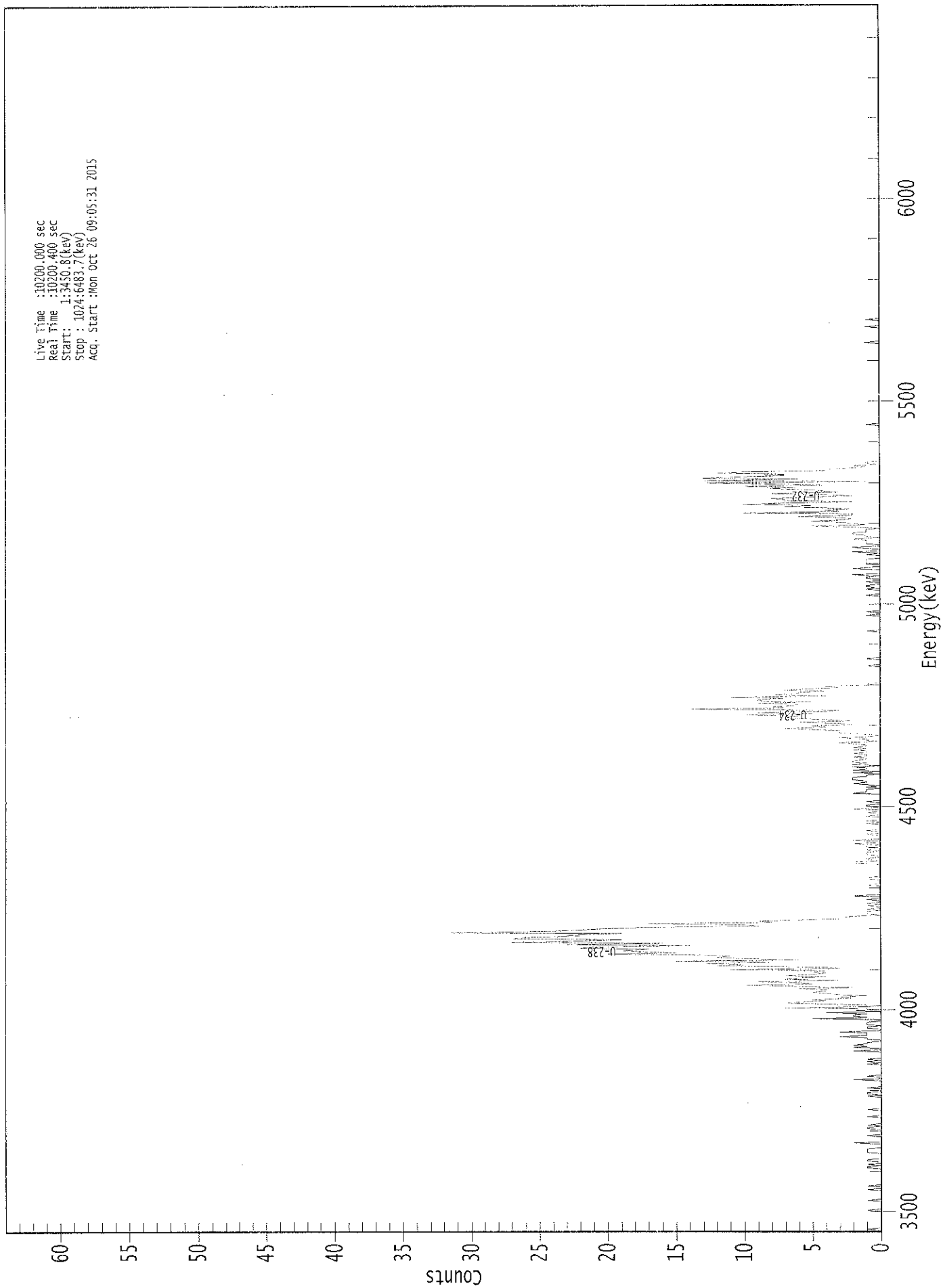
 ----- NUCLIDE ANALYSIS RESULTS -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.993	5302.50*	3.59E+000 +/- 4.37E-001	7.15E-002 +/- 8.72E-003
U-234	0.992	4761.50*	3.26E+000 +/- 5.55E-001	7.87E-002 +/- 9.59E-003
U-235	0.998	4385.50*	3.88E-001 +/- 1.58E-001	8.31E-002 +/- 1.01E-002
U-238	0.990	4184.40*	9.93E+000 +/- 1.39E+000	5.68E-002 +/- 6.93E-003

KB
10/27/15

0000132275.CNF

Live Time : 10200.060 sec
Real Time : 10200.460 sec
Start : 1:3450.8(keV)
Stop : 1024:6483.7(keV)
Acq. Start : Mon Oct 26 09:05:31 2015



: 00102

ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 04

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	1	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	1	0	0	0	0	0	0
25:	0	0	1	0	0	0	0	0	0
33:	0	0	0	1	0	0	1	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	1	1	0	0
57:	1	0	0	1	1	0	0	0	0
65:	0	0	1	1	1	1	0	0	0
73:	0	0	2	0	0	0	0	0	0
81:	1	0	0	0	0	0	1	1	0
89:	0	1	0	0	0	0	0	0	0
97:	1	0	0	0	0	0	1	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	1	0	1	1	0	0	0	0
121:	1	0	0	0	0	0	0	0	2
129:	0	0	1	0	0	0	0	0	0
137:	0	0	0	0	1	0	1	0	0
145:	1	0	0	0	0	0	0	0	2
153:	0	0	2	1	2	1	1	0	0
161:	0	1	1	3	1	1	1	3	0
169:	0	0	1	1	0	1	1	1	1
177:	0	0	5	1	2	2	1	4	0
185:	0	2	0	7	1	0	3	7	0
193:	6	4	5	2	3	1	3	4	0
201:	5	4	4	6	2	6	10	5	0
209:	6	9	3	7	6	4	7	5	0
217:	4	5	4	11	3	4	12	10	0
225:	13	8	15	6	10	12	11	13	0
233:	20	15	18	19	17	22	21	14	0
241:	23	16	27	22	19	27	26	22	0
249:	23	19	32	24	22	20	17	9	0
257:	10	17	8	9	6	3	3	2	0
265:	0	1	1	1	0	1	0	0	0
273:	1	0	1	0	0	1	0	0	0
281:	2	0	0	0	0	0	0	0	0
289:	0	1	0	0	0	0	1	1	0
297:	0	0	0	0	0	0	0	0	0
305:	0	0	0	2	2	0	1	1	0
313:	0	0	1	1	1	0	1	0	0
321:	1	1	0	2	0	0	2	0	0
329:	0	0	0	1	0	0	1	0	0
337:	0	0	0	0	1	0	1	0	0
345:	0	0	1	0	0	1	0	0	0
353:	2	0	1	1	0	0	1	0	0
361:	0	0	0	0	0	2	1	1	0

359: 1 0 1 0 1 2 1 1

Sample Title: 04

Channel	1	2	3	4	5	6	7	8
377:	2	2	2	1	1	0	2	0
385:	2	1	1	2	0	2	1	2
393:	2	1	1	2	1	1	2	1
401:	1	2	1	2	1	1	2	3
409:	0	1	1	3	1	0	1	3
417:	3	3	5	7	4	5	2	3
425:	6	2	4	6	7	6	10	5
433:	9	4	3	14	7	8	6	6
441:	9	5	9	9	7	11	4	8
449:	6	6	4	7	5	3	4	0
457:	1	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	1
473:	0	0	0	0	0	1	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	1	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	1	0	0	1	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	1	0	0	0	0	1
537:	0	1	1	0	0	1	0	0
545:	1	1	0	2	0	0	0	0
553:	2	1	0	0	1	1	1	1
561:	1	0	0	0	1	0	2	0
569:	0	1	2	0	0	1	1	1
577:	1	2	0	1	1	2	2	1
585:	1	1	0	2	5	1	2	3
593:	5	3	2	3	6	2	2	10
601:	3	4	2	4	7	5	10	7
609:	2	7	7	8	5	2	4	8
617:	3	4	5	8	6	10	4	8
625:	13	1	13	6	13	10	7	7
633:	12	10	4	4	2	1	2	0
641:	1	1	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	1	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	1	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	1	0	0	0	0	0	1
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 04

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



Apex-Alpha™

KB
10/26/15

Sample Description: CP5004S04-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001322
 Batch Identification: 1510087A-UU
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_056
 Chamber Serial Number: 10006124B
 Detector Serial Number: 56
 Env. Background: System Bkgd 132601
 Reagent Blank: <not performed>

Sample Size: 1.527E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 9:05:33 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.651 mL
 Effective Efficiency: 0.1785 +/- 0.0102
 Counting Efficiency: 0.1600 +/- 0.0028 on 12/13/2014 2:30:22 PM
 Chem. Recovery Factor: 1.1155 +/- 0.0668

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.271	365.98	10.26	1.02	0.00E+000	16.3
U-234	4.721	294.81	11.44	1.19	0.00E+000	11.1
U-235	4.392	27.15	38.30	0.85	0.00E+000	3.0
U-238	4.146	734.49	7.24	0.51	0.00E+000	31.4

T = Tracer Peak used for Effective Efficiency

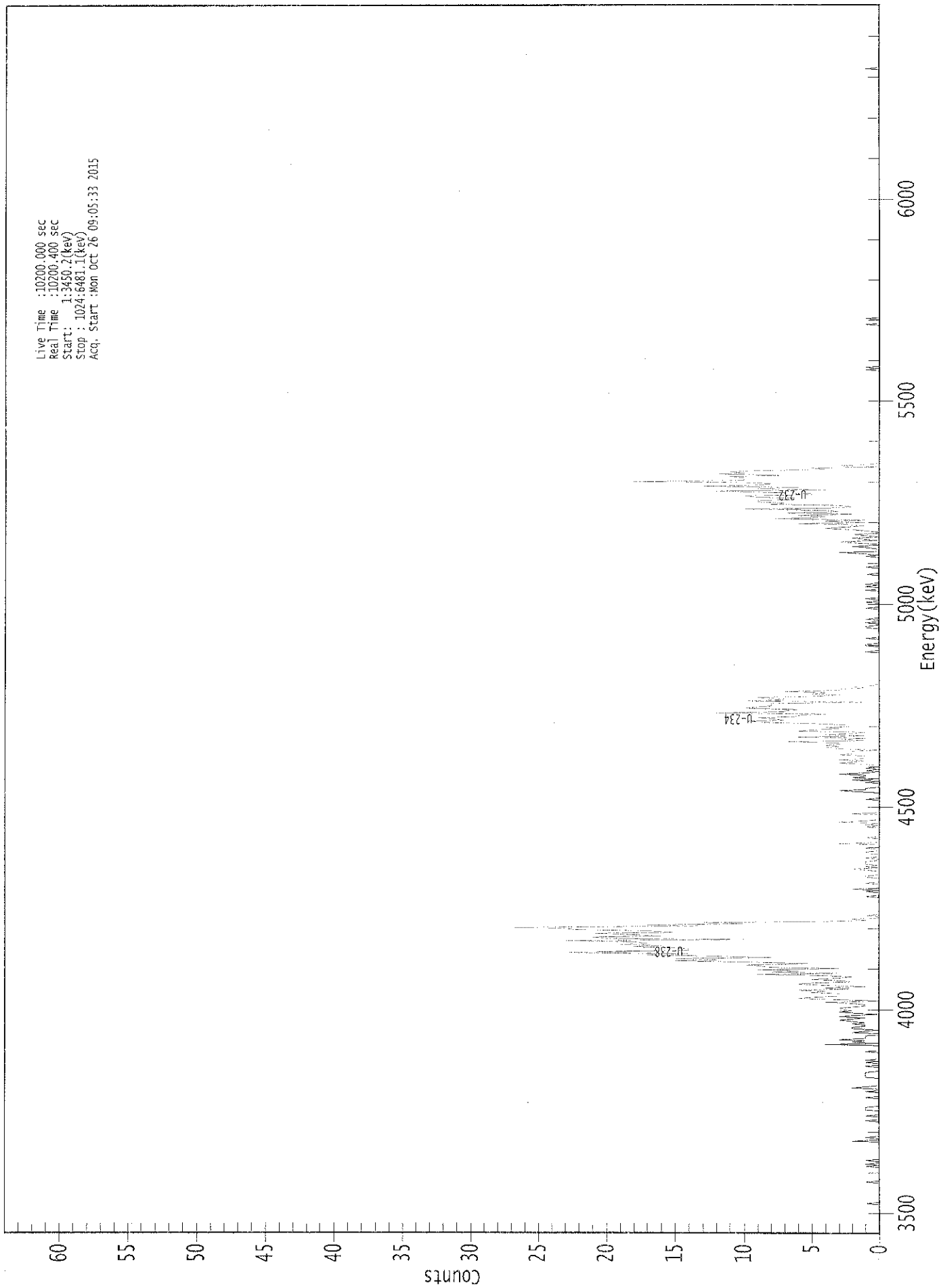
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.993	5302.50*	3.57E+000 +/- 4.00E-001	6.14E-002 +/- 6.88E-003
U-234	0.988	4761.50*	2.87E+000 +/- 4.60E-001	6.42E-002 +/- 7.19E-003
U-235	1.000	4385.50*	3.26E-001 +/- 1.30E-001	7.19E-002 +/- 8.06E-003
U-238	0.990	4184.40*	7.12E+000 +/- 9.50E-001	5.09E-002 +/- 5.70E-003

AG
10/27/15

0000132276.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:3450.2(kev)
Stop : 1024.6481.1(kev)
Acq. Start : Mon Oct 26 09:05:33 2015



10100 :

ROI Type: 1 ROI Type: 3

369: 3 1 1 0 0 0 0 1

Sample Title: 05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	2	0	2	1	1	3	1
385:	0	1	0	1	0	0	1	3
393:	2	1	3	1	1	1	3	2
401:	2	2	0	3	4	3	4	3
409:	3	7	1	3	1	6	1	4
417:	2	1	6	5	3	4	2	2
425:	5	8	10	7	8	9	6	6
433:	4	12	7	7	6	10	9	8
441:	8	8	1	10	7	7	9	5
449:	3	5	4	7	3	3	1	2
457:	1	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	1	0	0	0
489:	0	1	1	0	0	0	0	1
497:	0	0	0	0	0	0	0	0
505:	1	1	0	0	1	0	0	1
513:	0	0	0	0	0	0	0	0
521:	1	0	0	0	0	1	0	0
529:	1	0	0	0	0	0	0	1
537:	0	0	1	0	1	0	0	0
545:	0	0	0	0	1	0	0	0
553:	0	0	1	0	0	0	0	0
561:	0	0	0	1	0	1	3	0
569:	0	0	1	2	0	0	2	3
577:	0	1	2	0	1	2	0	0
585:	1	2	4	3	1	2	6	1
593:	4	1	8	5	4	6	2	7
601:	3	4	10	3	2	3	8	7
609:	9	9	6	6	9	10	5	5
617:	9	12	4	9	6	13	9	8
625:	9	18	10	10	10	11	7	12
633:	10	11	9	4	5	0	3	1
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	1	0
721:	1	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	1	0	0	0
761:	0	1	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	1	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



KCB
10/26/15

Sample Description: CP5004S07-08
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001322
 Batch Identification: 1510087A-UU
 Sample Identification: 06
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_057
 Chamber Serial Number: 01017326A
 Detector Serial Number: 57
 Env. Background: System Bkgd 132602
 Reagent Blank: <not performed>

Sample Size: 1.508E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 9:05:21 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.652 mL
 Effective Efficiency: 0.1612 +/- 0.0096
 Counting Efficiency: 0.1577 +/- 0.0028 on 12/13/2014 2:27:38 PM
 Chem. Recovery Factor: 1.0221 +/- 0.0636

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.276	330.83	10.78	0.17	0.00E+000	6.7
U-234	4.725	217.49	13.31	0.51	0.00E+000	19.9
U-235	4.388	18.66	45.85	0.34	0.00E+000	3.0
U-238	4.145	645.66	7.72	0.34	0.00E+000	38.2

T = Tracer Peak used for Effective Efficiency

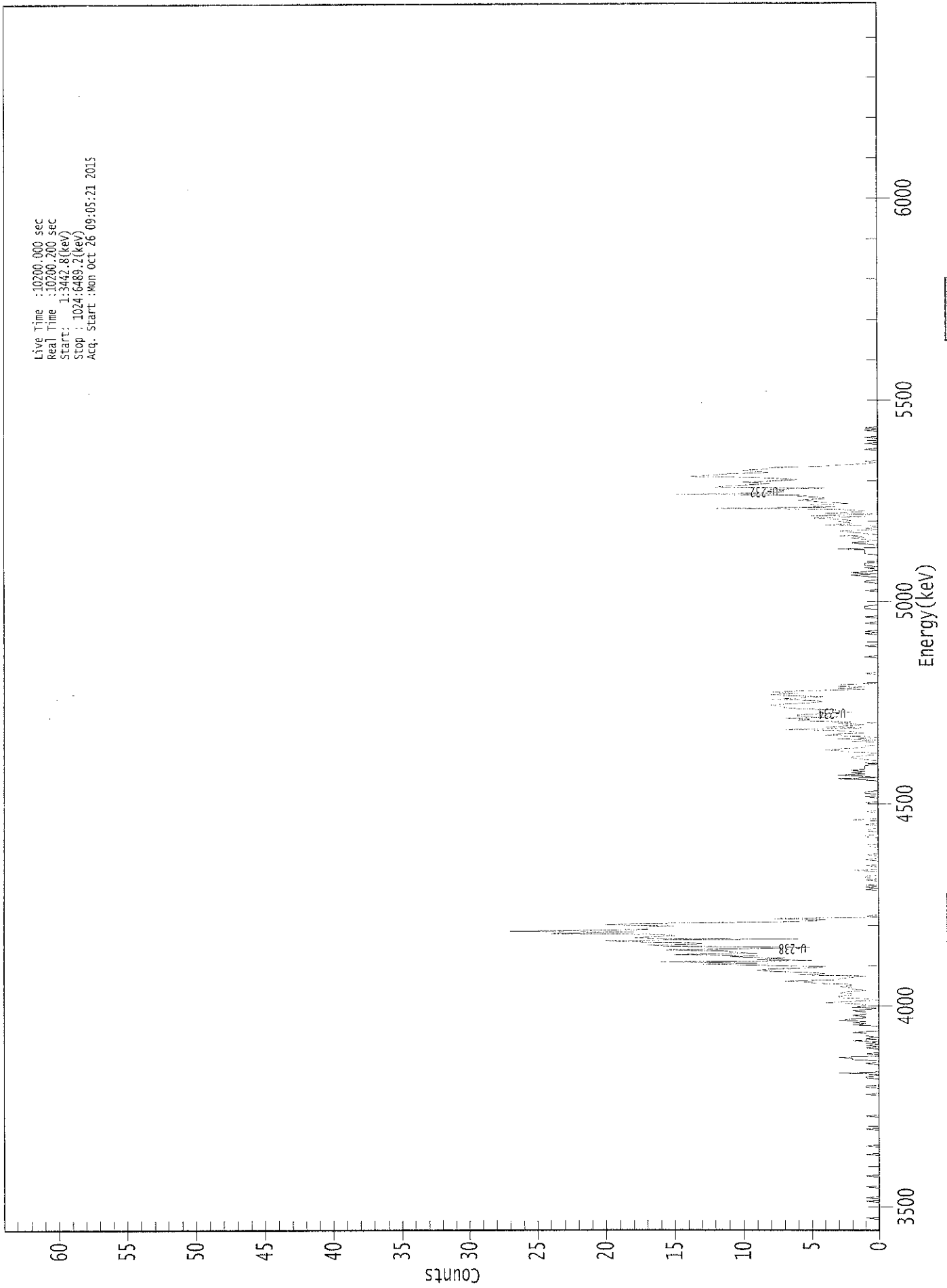
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	3.62E+000 +/- 4.22E-001	4.56E-002 +/- 5.33E-003
U-234	0.991	4761.50*	2.38E+000 +/- 4.21E-001	5.73E-002 +/- 6.70E-003
U-235	1.000	4385.50*	2.51E-001 +/- 1.19E-001	6.44E-002 +/- 7.53E-003
U-238	0.989	4184.40*	7.02E+000 +/- 9.83E-001	5.20E-002 +/- 6.08E-003

AG
10/27/15

0000132277.CNF

Live Time : 10200.000 sec
Real Time : 10200.200 sec
Start : 1:3442.8(keV)
Stop : 1024:6489.2(keV)
Acq. Start : Mon Oct 26 09:05:21 2015



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 06

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	1	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	1	0	0	1	0	0	0	0	0
33:	0	0	0	0	1	0	0	0	0
41:	0	0	0	0	0	1	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	1
65:	0	0	0	0	0	0	1	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	1	0	0	0	0
89:	0	0	0	0	0	0	0	0	1
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	1	0	0	0	0	0	0	1
121:	1	0	0	0	0	0	0	0	1
129:	1	0	0	3	0	0	0	0	0
137:	0	0	0	1	0	0	2	2	2
145:	3	0	0	1	0	0	0	0	0
153:	1	0	1	0	1	0	2	0	0
161:	1	0	1	1	1	2	0	0	0
169:	0	0	0	2	1	2	1	3	3
177:	2	1	1	2	1	1	1	2	2
185:	1	0	2	1	1	2	4	2	2
193:	0	1	3	3	2	2	3	2	2
201:	1	2	2	3	2	2	5	5	5
209:	7	3	3	2	1	6	4	5	5
217:	8	9	8	5	4	8	13	9	9
225:	16	5	9	7	11	9	15	9	9
233:	11	11	16	10	5	15	17	13	13
241:	14	19	20	6	18	17	15	16	16
249:	24	18	27	17	17	17	15	20	20
257:	18	8	5	4	8	0	1	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	1	0	1	0	0
289:	1	0	0	0	1	0	1	1	1
297:	0	0	0	0	2	0	0	0	0
305:	1	0	0	0	0	1	0	0	0
313:	0	1	0	0	0	0	0	0	0
321:	1	1	0	0	0	0	0	0	0
329:	1	1	0	0	0	1	1	0	0
337:	0	0	1	0	0	0	2	0	0
345:	0	0	0	0	0	1	0	0	0
353:	0	0	0	0	1	0	0	0	0
361:	0	1	0	0	1	1	0	0	0

369: 0 0 0 0 0 0 0 0 1

Sample Title: 06

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	3	0	1	3	1	2	1	2
385:	1	1	1	1	0	1	0	0
393:	1	2	2	1	0	0	2	3
401:	4	2	1	1	0	0	0	2
409:	0	3	0	1	4	3	1	2
417:	3	7	1	4	2	1	3	2
425:	6	5	7	3	6	6	4	2
433:	3	3	6	7	7	8	7	5
441:	4	5	8	6	4	7	8	6
449:	8	6	1	3	1	3	3	0
457:	0	0	0	0	0	0	0	1
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	1	0	0
481:	0	0	0	0	0	0	1	0
489:	0	0	0	0	0	0	0	0
497:	1	0	1	0	0	0	0	0
505:	0	1	0	0	0	0	1	0
513:	0	0	0	0	0	1	1	1
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	1	0	0	0
537:	0	0	0	1	1	0	0	0
545:	1	2	0	2	1	0	0	1
553:	0	1	1	1	0	0	0	0
561:	0	0	0	1	1	1	1	3
569:	0	0	0	1	2	1	0	1
577:	2	1	3	0	1	2	3	0
585:	1	0	0	4	2	2	3	2
593:	3	5	1	5	0	4	1	1
601:	3	12	3	5	5	2	4	5
609:	6	4	4	6	5	15	8	7
617:	7	8	4	12	11	9	8	10
625:	8	6	7	10	14	12	11	8
633:	9	10	8	8	4	3	1	0
641:	1	0	0	0	0	0	0	0
649:	0	0	1	0	0	0	0	1
657:	0	0	0	0	1	0	0	0
665:	0	0	1	0	1	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 06

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KD
10/26/15

Apex-Alpha™

Sample Description: CP5004S09-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001322
 Batch Identification: 1510087A-UU
 Sample Identification: 07
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_058
 Chamber Serial Number: 01017326B
 Detector Serial Number: 58
 Env. Background: System Bkgd 132603
 Reagent Blank: <not performed>

Sample Size: 1.513E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 9:05:22 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.650 mL
 Effective Efficiency: 0.1744 +/- 0.0101
 Counting Efficiency: 0.1640 +/- 0.0029 on 12/13/2014 2:26:06 PM
 Chem. Recovery Factor: 1.0633 +/- 0.0642

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.272	356.66	10.38	0.34	0.00E+000	18.7
U-234	4.719	95.83	20.04	0.17	0.00E+000	6.0
U-235	4.421	7.00	79.20	0.00	0.00E+000	3.0
U-238	4.150	123.64	17.74	1.36	0.00E+000	8.9

T = Tracer Peak used for Effective Efficiency

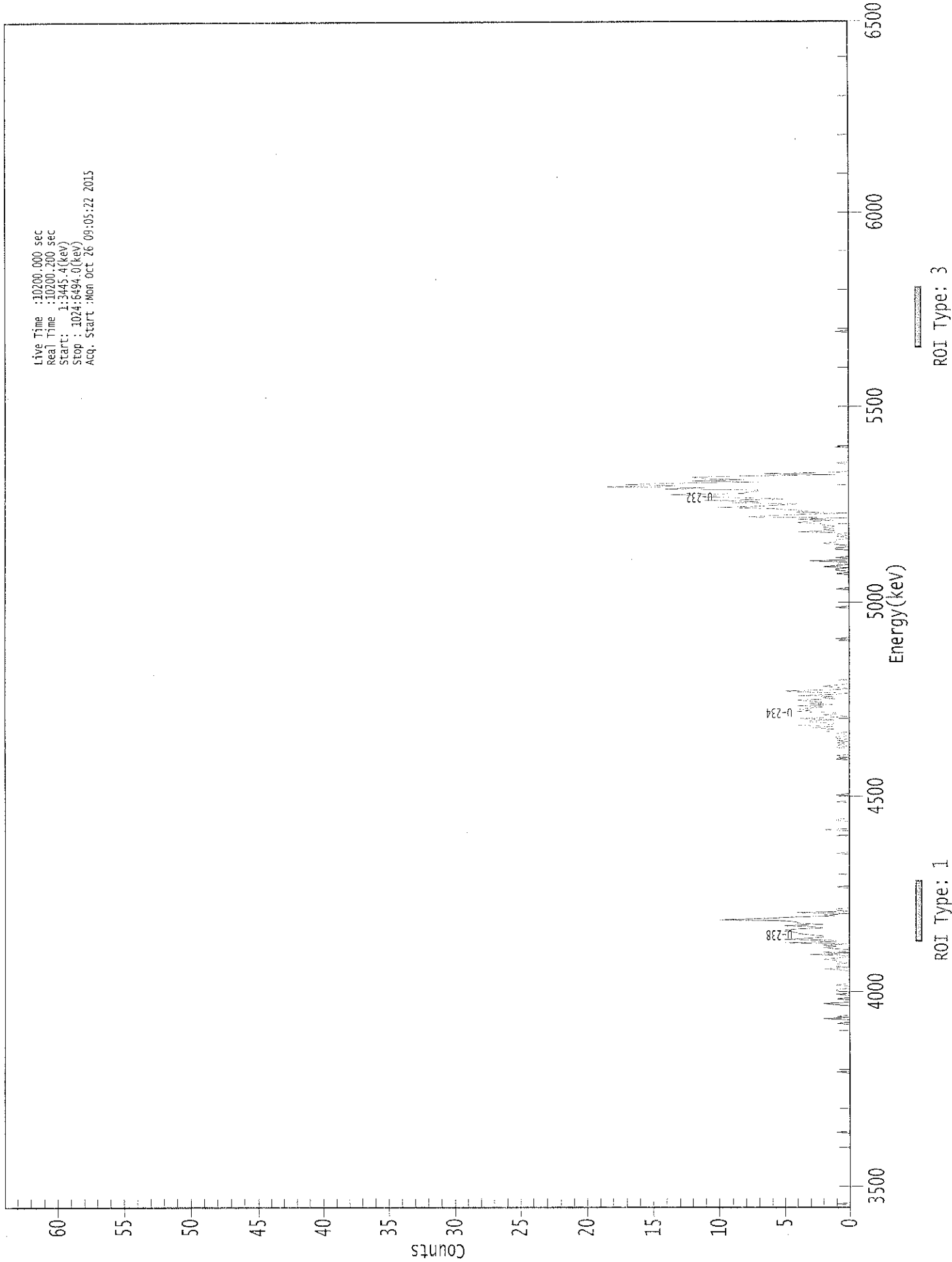
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.993	5302.50*	3.59E+000 +/- 4.07E-001	4.81E-002 +/- 5.45E-003
U-234	0.987	4761.50*	9.64E-001 +/- 2.22E-001	4.20E-002 +/- 4.75E-003
U-235	0.991	4385.50*	8.69E-002 +/- 6.95E-002	7.44E-002 +/- 8.43E-003
U-238	0.991	4184.40*	1.24E+000 +/- 2.61E-001	6.87E-002 +/- 7.78E-003

AG
10/27/15

0000132278.CNF

Live Time : 10200.000 sec
Real Time : 10200.200 sec
Start : 1:3445.4(keV)
Stop : 1024:6494.0(keV)
Acq. Start : Mon Oct 26 09:05:22 2015



: 00117

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 07

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	1	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	1	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	1	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	1
161:	0	0	0	2	0	1	0	0
169:	0	0	0	0	0	0	0	1
177:	2	0	0	0	1	0	0	0
185:	1	0	0	1	1	0	0	0
193:	1	0	0	0	0	0	0	0
201:	0	0	0	0	0	1	2	0
209:	1	1	1	0	1	1	2	1
217:	0	0	3	0	2	0	0	1
225:	2	1	2	0	5	1	1	5
233:	3	2	2	3	4	4	5	5
241:	4	2	3	5	2	4	4	5
249:	10	6	5	1	2	0	4	0
257:	1	1	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	1	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	1	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	1	0	0	0	0	2	0	0
329:	0	0	0	0	0	1	1	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	1	0	0
353:	0	0	0	1	0	0	0	0
361:	0	0	0	0	0	0	0	0

369: 0 0 0 0 0 0 0 0 0

Sample Title: 07

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	0	0
385:	0	0	1	0	0	1	0	0
393:	0	0	0	0	1	0	1	0
401:	1	0	1	0	1	1	0	0
409:	1	0	2	2	1	3	1	4
417:	1	1	3	3	1	4	2	0
425:	2	1	1	4	3	4	3	2
433:	4	1	3	2	3	4	1	2
441:	1	4	1	0	4	5	1	0
449:	1	2	1	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	1	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	1	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	1	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	1	0	0	1	1	0
553:	2	1	0	0	0	3	0	0
561:	1	0	0	0	0	0	0	1
569:	1	0	0	1	2	1	1	1
577:	0	0	1	0	1	0	4	1
585:	2	1	2	1	2	2	4	3
593:	1	4	0	8	6	4	0	4
601:	3	5	6	10	7	5	4	9
609:	7	11	5	7	11	10	14	8
617:	8	7	7	14	11	19	13	17
625:	14	7	12	8	11	12	8	1
633:	7	1	0	0	0	0	0	0
641:	0	1	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	1
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	1	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 07

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

10/26/15

Sample Description: CP5004S11-12
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001322
 Batch Identification: 1510087A-UU
 Sample Identification: 08
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_059
 Chamber Serial Number: 10006125A
 Detector Serial Number: 59
 Env. Background: System Bkgd 132604
 Reagent Blank: <not performed>

Sample Size: 1.516E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 9:05:35 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.652 mL
 Effective Efficiency: 0.1587 +/- 0.0095
 Counting Efficiency: 0.1717 +/- 0.0030 on 12/13/2014 2:24:23 PM
 Chem. Recovery Factor: 0.9240 +/- 0.0578

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.271	325.83	10.86	0.17	0.00E+000	19.9
U-234	4.726	102.49	19.42	0.51	0.00E+000	4.3
U-235	4.375	7.32	76.28	0.68	0.00E+000	3.0
U-238	4.142	104.66	19.20	0.34	0.00E+000	10.5

T = Tracer Peak used for Effective Efficiency

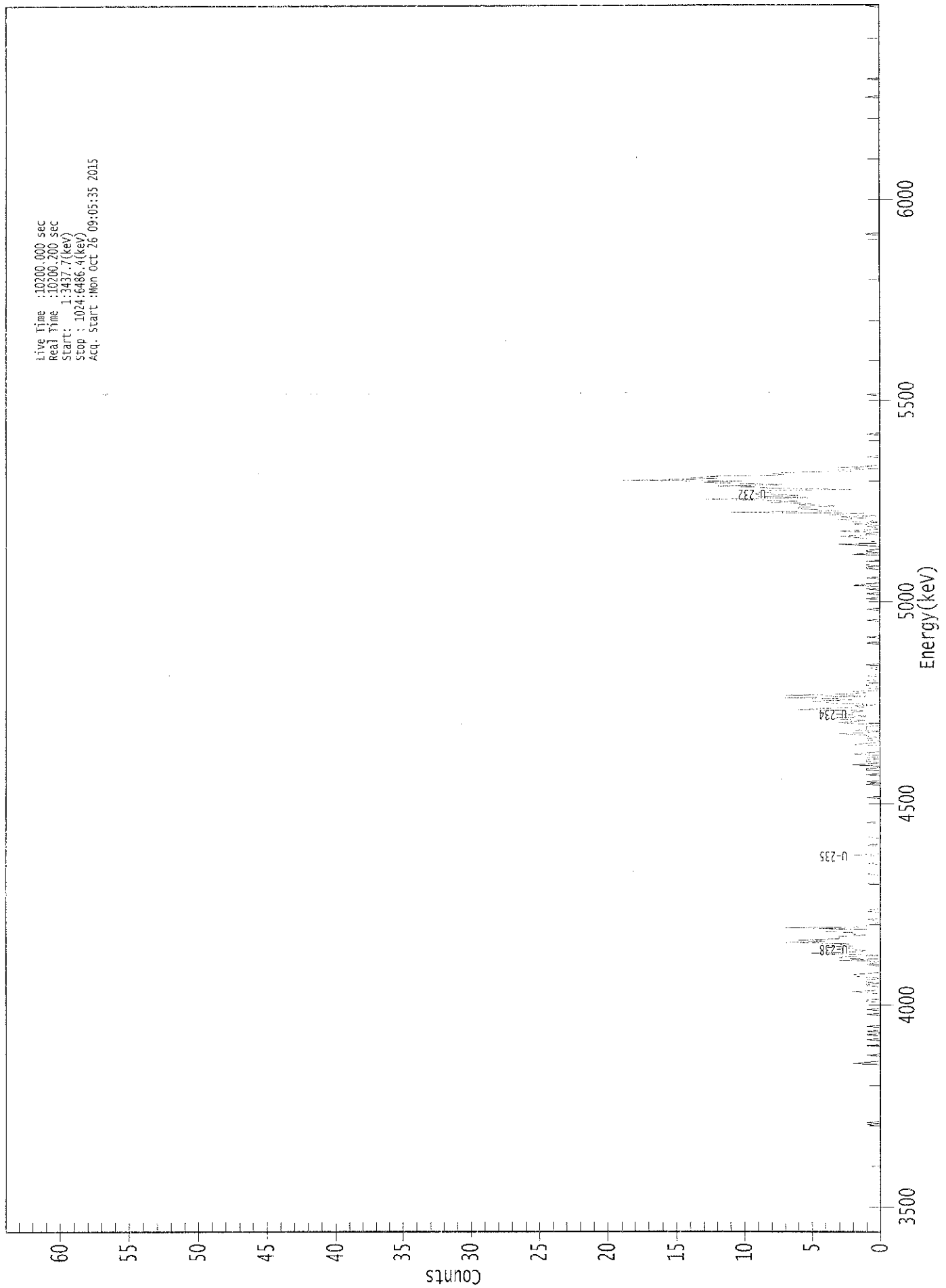
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.993	5302.50*	3.60E+000 +/- 4.23E-001	4.61E-002 +/- 5.42E-003
U-234	0.991	4761.50*	1.13E+000 +/- 2.57E-001	5.79E-002 +/- 6.81E-003
U-235	0.999	4385.50*	9.97E-002 +/- 7.69E-002	7.68E-002 +/- 9.03E-003
U-238	0.988	4184.40*	1.15E+000 +/- 2.59E-001	5.26E-002 +/- 6.18E-003

AG
 10/27/15

0000132279.CNF

Live Time : 10200.000 sec
Real Time : 10200.200 sec
Start : 1:3437.7(keV)
Stop : 1024:6486.4(keV)
Acq. Start : Mon Oct 26 09:05:35 2015



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 08

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	1	0	1	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	2	1	0	0
145:	0	0	0	1	0	0	0	0
153:	0	0	0	1	0	0	0	0
161:	1	0	0	0	1	0	0	1
169:	0	0	0	1	0	0	0	0
177:	0	0	0	0	0	1	0	0
185:	0	1	0	0	0	0	0	0
193:	1	1	0	0	0	0	0	1
201:	2	0	0	0	0	1	1	0
209:	1	1	1	0	1	2	2	1
217:	0	0	0	0	0	0	1	1
225:	0	0	3	0	3	3	0	2
233:	5	2	1	2	2	4	2	3
241:	2	7	4	6	3	3	3	1
249:	2	2	4	4	1	7	1	1
257:	1	0	0	0	1	0	0	0
265:	0	0	0	1	1	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	1	0	0	0	0	0
297:	0	0	1	0	0	0	0	0
305:	0	0	0	1	0	0	0	0
313:	0	0	2	0	0	0	0	0
321:	0	0	1	0	0	0	0	0
329:	0	1	0	0	0	0	0	0
337:	0	0	0	0	0	1	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	1	0	0	0	0	0

369: 0 0 0 0 0 1 0 1

Sample Title: 08

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	1	0	0
385:	0	1	1	0	0	2	1	0
393:	1	1	0	1	0	0	2	1
401:	0	0	0	0	0	0	2	1
409:	0	0	1	1	0	1	1	3
417:	1	0	2	1	1	1	0	1
425:	3	2	1	3	4	1	1	3
433:	2	2	1	6	4	1	2	0
441:	3	4	5	2	3	7	1	7
449:	2	1	2	0	0	1	0	1
457:	1	0	0	1	0	0	0	1
465:	0	0	0	0	0	1	0	0
473:	1	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	1	0	0	0	0	1
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	1	0	0
513:	0	0	0	0	0	0	1	0
521:	0	0	0	0	0	0	0	1
529:	0	0	0	1	0	0	0	1
537:	0	0	2	1	0	0	0	0
545:	1	0	0	0	0	0	0	0
553:	1	1	0	1	1	1	1	0
561:	0	0	0	0	2	0	1	1
569:	0	0	0	1	3	0	0	1
577:	1	1	2	3	0	1	0	3
585:	1	0	0	1	0	2	0	2
593:	2	3	1	3	0	4	1	11
601:	3	5	6	6	3	6	5	8
609:	6	9	13	5	9	6	8	8
617:	9	8	2	8	9	12	7	10
625:	13	10	19	12	14	12	7	8
633:	7	2	3	0	3	1	0	0
641:	0	0	0	0	0	1	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	1	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	1	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 08

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	1
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	1	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	1	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	1	0	0



Apex-Alpha™

*KP
10/26/15*

Sample Description: CP5004S14-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001322
 Batch Identification: 1510087A-UU
 Sample Identification: 09
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_060
 Chamber Serial Number: 10006125B
 Detector Serial Number: 60
 Env. Background: System Bkgd 132605
 Reagent Blank: <not performed>

Sample Size: 1.551E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 9:05:37 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.652 mL
 Effective Efficiency: 0.1688 +/- 0.0099
 Counting Efficiency: 0.1543 +/- 0.0028 on 12/13/2014 2:22:05 PM
 Chem. Recovery Factor: 1.0944 +/- 0.0670

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.281	346.32	10.54	0.68	0.00E+000	15.1
U-234	4.739	79.81	22.13	1.19	0.00E+000	10.7
U-235	4.363	9.83	63.14	0.17	0.00E+000	5.9
U-238	4.167	94.83	20.15	0.17	0.00E+000	4.7

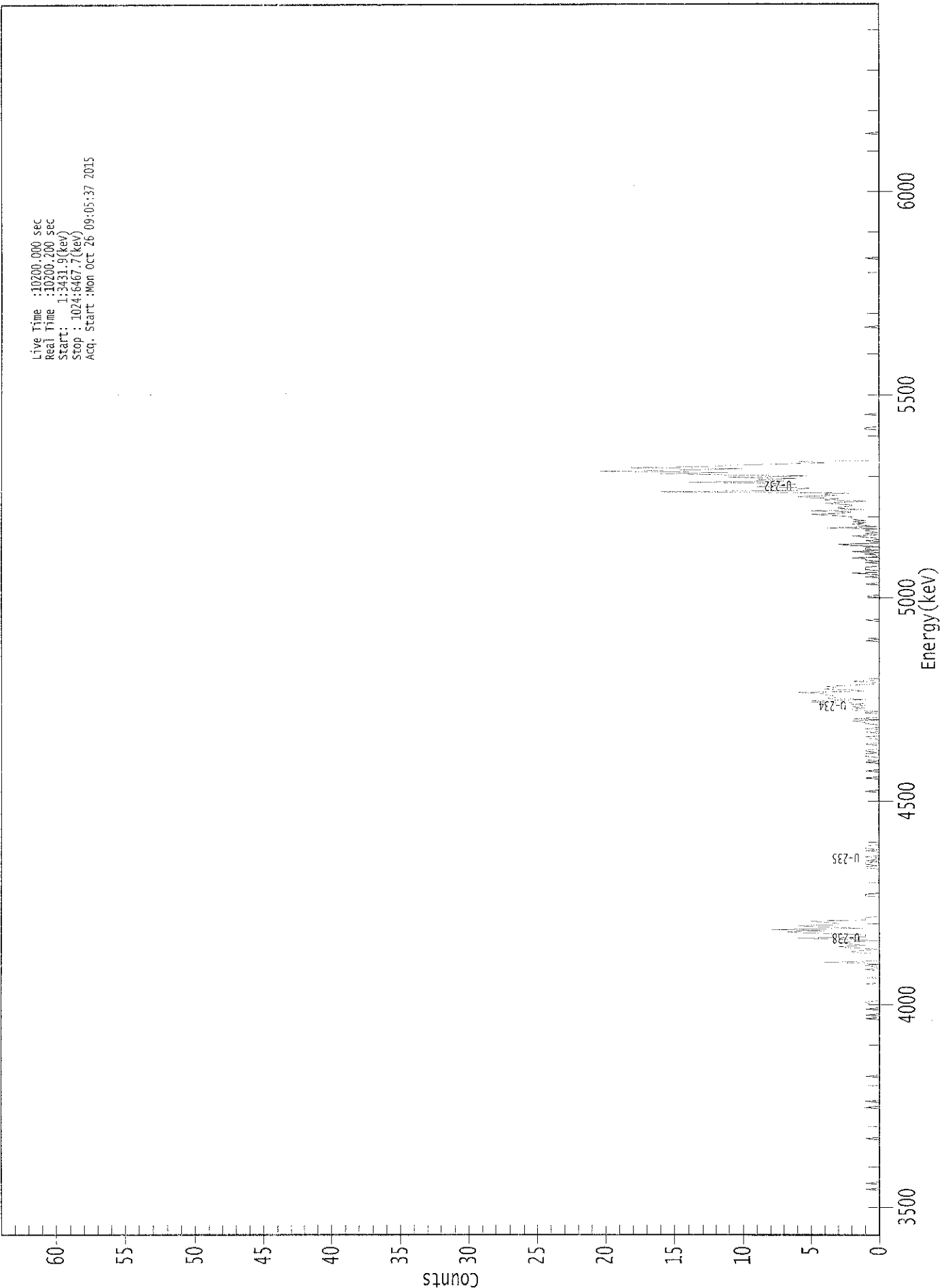
T = Tracer Peak used for Effective Efficiency

 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	3.51E+000 +/- 4.03E-001	5.72E-002 +/- 6.56E-003
U-234	0.996	4761.50*	8.09E-001 +/- 2.02E-001	6.68E-002 +/- 7.66E-003
U-235	0.996	4385.50*	1.23E-001 +/- 7.89E-002	5.22E-002 +/- 5.99E-003
U-238	0.998	4184.40*	9.57E-001 +/- 2.22E-001	4.21E-002 +/- 4.83E-003

*AG
10/27/15*

0000132280.CNF



Live Time :10200.000 sec
Real Time :10200.200 sec
Start : 1:3431.9(keV)
Stop : 1024:6467.7(keV)
Acq. Start :Mon Oct 26 09:05:37 2015

: 00127

ROI Type: 1 ROI Type: 3

369: 1 0 0 0 0 0 0 0 0

Sample Title: 09

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	1	0	0	0	0
385:	0	1	0	0	0	0	0	0
393:	1	0	0	0	0	1	1	1
401:	0	1	1	0	0	0	0	1
409:	0	0	0	0	1	1	0	0
417:	0	1	0	0	1	0	0	0
425:	1	1	2	0	2	0	0	0
433:	0	1	0	2	2	1	2	1
441:	2	1	5	5	1	4	3	3
449:	4	4	6	1	2	4	3	4
457:	2	0	0	2	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	1	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	1	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	1	0	0	0	0	0
537:	0	0	0	0	1	0	0	0
545:	0	0	1	0	0	2	0	0
553:	1	1	1	0	0	0	1	0
561:	1	1	2	0	0	1	0	2
569:	0	1	1	0	2	3	0	0
577:	1	0	0	1	2	0	1	0
585:	1	1	0	4	0	1	2	1
593:	2	1	2	2	2	3	5	3
601:	2	5	1	3	3	2	2	4
609:	3	1	4	3	5	6	3	4
617:	2	17	6	6	5	9	8	6
625:	8	14	7	9	6	11	5	12
633:	16	11	21	14	10	19	12	11
641:	7	4	6	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	1	1	0
673:	0	0	0	0	0	0	0	0
681:	0	1	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	1	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 09

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	1	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	1	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

10B
10/26/15

Sample Description: CP5004S16-17
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001323
 Batch Identification: 1510087A-UU
 Sample Identification: 10
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_033
 Chamber Serial Number: 04026479A
 Detector Serial Number: 91132
 Env. Background: System Bkgd 132578
 Reagent Blank: <not performed>

Sample Size: 1.535E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 12:03:38 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.652 mL
 Effective Efficiency: 0.1684 +/- 0.0099
 Counting Efficiency: 0.1805 +/- 0.0032 on 10/25/2014 2:26:39 PM
 Chem. Recovery Factor: 0.9333 +/- 0.0571

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.295	345.49	10.55	0.51	0.00E+000	28.9
U-234	4.749	116.49	18.21	0.51	0.00E+000	5.0
U-235	4.432	9.83	63.14	0.17	0.00E+000	3.0
U-238	4.174	116.83	18.15	0.17	0.00E+000	12.0

T = Tracer Peak used for Effective Efficiency

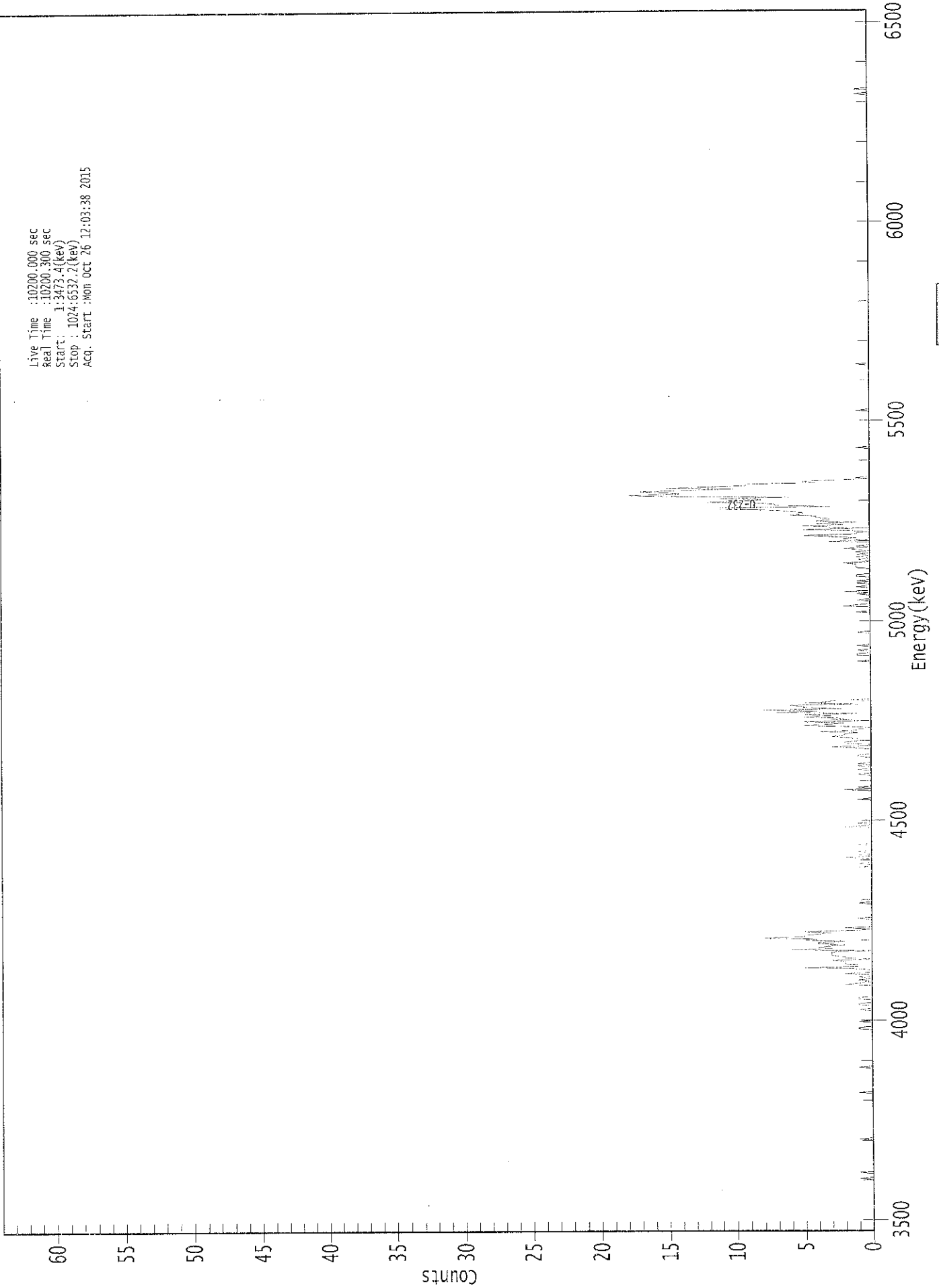
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	1.000	5302.50*	3.55E+000 +/- 4.07E-001	5.39E-002 +/- 6.19E-003
U-234	0.999	4761.50*	1.20E+000 +/- 2.57E-001	5.39E-002 +/- 6.18E-003
U-235	0.985	4385.50*	1.25E-001 +/- 7.99E-002	5.29E-002 +/- 6.07E-003
U-238	0.999	4184.40*	1.19E+000 +/- 2.56E-001	4.27E-002 +/- 4.90E-003

AG
10/27/15

0000132301.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3473.4(kev)
Stop : 1024:6532.2(kev)
Acq. Start : Mon Oct 26 12:03:38 2015



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 10

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	1	0	0	0
49:	0	1	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	1	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	1	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	1	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	1	1	0	0	0	0	1
177:	0	0	0	0	0	0	0	0
185:	0	1	0	0	0	1	1	0
193:	0	0	1	1	0	0	0	0
201:	0	0	0	0	0	0	2	1
209:	0	1	1	0	1	0	0	2
217:	0	0	0	1	5	1	1	2
225:	2	2	3	0	2	2	3	3
233:	3	3	0	6	3	4	3	2
241:	4	4	2	5	4	8	5	5
249:	4	3	5	1	0	2	0	0
257:	0	0	0	0	0	1	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	1	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	1	0	0	1	0	0	0	0
313:	2	0	1	0	0	1	0	0
321:	0	0	0	1	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	2	0	0	1	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	1	0	0	0	0	0	0

369: 0 2 0 1 0 0 0 0

Sample Title: 10

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	0	0	0	0	1	0	
385:	0	0	1	0	0	1	0	1	
393:	0	0	0	0	0	1	1	0	
401:	0	0	0	0	1	3	0	0	
409:	2	2	1	1	1	2	3	2	
417:	2	1	4	1	1	0	1	5	
425:	3	2	5	0	3	2	5	3	
433:	5	1	7	4	8	2	5	5	
441:	6	1	5	3	3	0	0	0	
449:	0	0	0	0	0	0	0	0	
457:	0	0	0	0	0	0	0	0	
465:	0	0	0	0	0	0	0	0	
473:	0	0	0	0	0	1	0	0	
481:	0	0	1	1	0	0	1	0	
489:	0	0	1	0	0	0	0	0	
497:	0	0	0	0	0	1	0	0	
505:	0	0	0	0	0	0	0	0	
513:	0	0	0	0	0	0	1	0	
521:	0	0	0	2	1	0	0	0	
529:	1	0	0	0	0	1	0	2	
537:	0	0	0	1	0	0	1	0	
545:	1	0	0	0	1	1	0	0	
553:	0	0	0	1	1	1	1	2	
561:	0	0	1	0	1	0	1	0	
569:	1	0	1	2	0	1	0	0	
577:	0	3	0	2	1	3	5	1	
585:	1	0	2	5	0	3	5	2	
593:	4	1	4	3	3	4	4	6	
601:	5	5	6	7	11	11	3	7	
609:	7	8	12	9	8	11	6	15	
617:	18	14	15	17	14	10	15	11	
625:	9	9	4	5	3	0	1	0	
633:	0	0	0	0	0	0	0	0	
641:	0	0	0	0	0	0	0	0	
649:	0	0	0	0	0	0	0	1	
657:	0	0	0	0	0	0	0	0	
665:	0	0	0	0	0	0	0	0	
673:	0	0	0	0	0	0	0	0	
681:	0	0	0	0	0	0	1	0	
689:	0	0	0	0	0	0	0	0	
697:	0	0	0	0	0	0	0	0	
705:	0	0	0	0	0	0	0	0	
713:	0	0	0	0	0	0	0	0	
721:	0	0	0	0	0	1	0	0	
729:	0	0	0	0	0	0	0	0	
737:	0	0	0	0	0	0	0	0	
745:	0	0	0	0	0	0	0	0	
753:	0	0	0	0	0	0	0	0	
761:	0	0	0	0	0	0	0	0	
769:	0	0	0	0	0	0	0	0	
777:	0	0	0	0	0	0	0	0	
785:	0	0	0	0	0	0	0	0	
793:	0	0	0	0	0	0	0	0	

801: 0 0 0 0 0 0 0 0

Sample Title: 10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	1	0	0	0	1	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KB
10/26/15

Apex-Alpha™

Sample Description: CP4106S03-04
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001323
 Batch Identification: 1510087A-UU
 Sample Identification: 11
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_034
 Chamber Serial Number: 04026479B
 Detector Serial Number: 91136
 Env. Background: System Bkgd 132579
 Reagent Blank: <not performed>

Sample Size: 1.521E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 12:03:40 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.651 mL
 Effective Efficiency: 0.1926 +/- 0.0107
 Counting Efficiency: 0.1789 +/- 0.0031 on 10/25/2014 2:30:05 PM
 Chem. Recovery Factor: 1.0768 +/- 0.0626

Peak Match Tolerance: 0.150 MeV

 ----- PEAK AREA REPORT -----

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.280	394.49	9.88	0.51	0.00E+000	16.3
U-234	4.735	112.49	18.53	0.51	0.00E+000	6.6
U-235	4.377	9.83	63.14	0.17	0.00E+000	3.0
U-238	4.161	105.32	19.17	0.68	0.00E+000	4.7

T = Tracer Peak used for Effective Efficiency

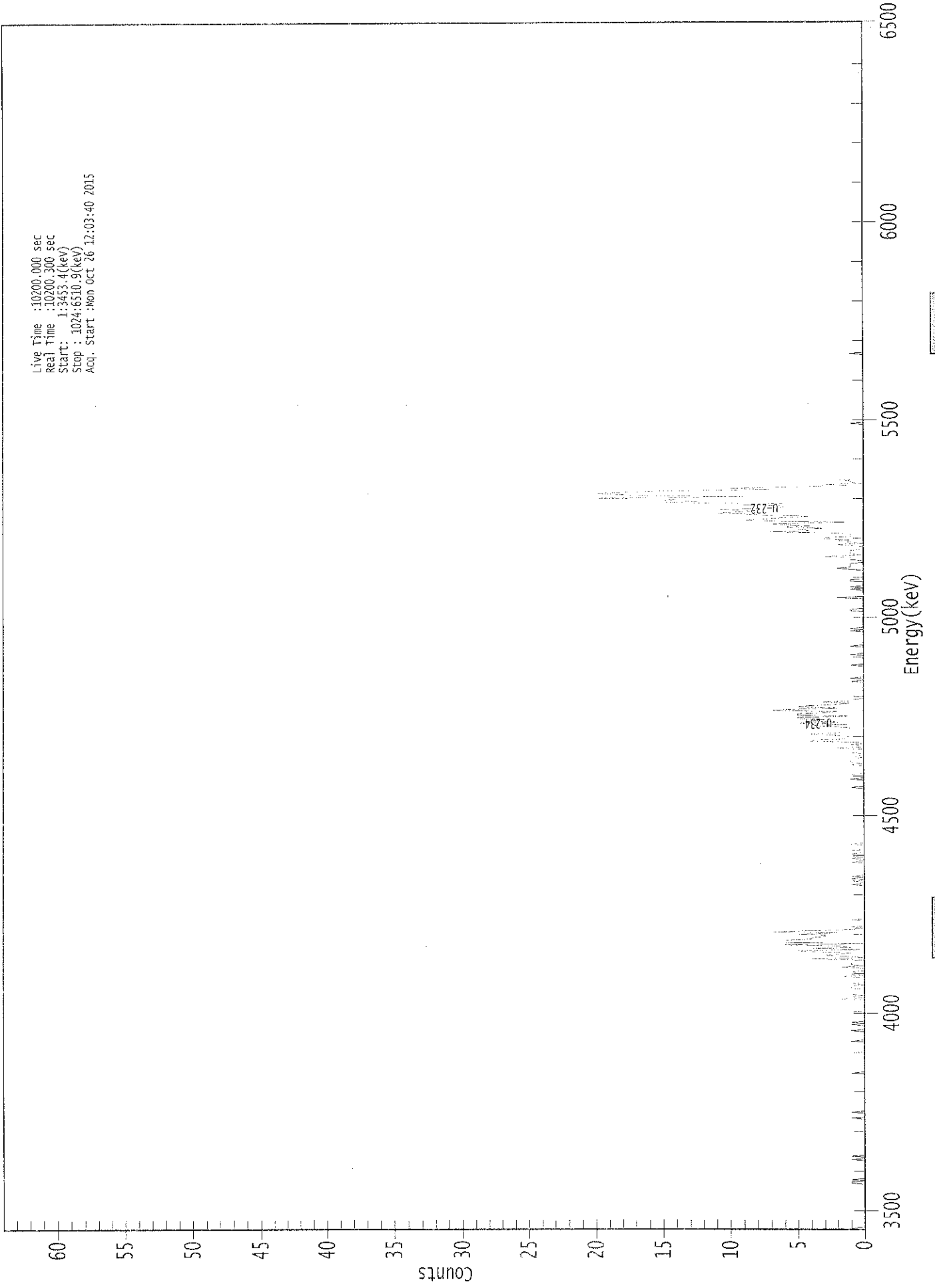
 ----- NUCLIDE ANALYSIS RESULTS -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.58E+000 +/- 3.88E-001	4.76E-002 +/- 5.16E-003
U-234	0.995	4761.50*	1.02E+000 +/- 2.19E-001	4.75E-002 +/- 5.16E-003
U-235	0.999	4385.50*	1.10E-001 +/- 7.04E-002	4.66E-002 +/- 5.06E-003
U-238	0.996	4184.40*	9.50E-001 +/- 2.09E-001	5.09E-002 +/- 5.53E-003

AG
 10/27/15

0000132302.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3453.4(keV)
Stop : 1024:6510.9(keV)
Acq. Start : Mon Oct 26 12:03:40 2015



ROI Type: 1

ROI Type: 3

: 00137

***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 11

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	1	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	1
41:	1	0	1	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	1	0	0	0	1	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	1	0
97:	0	0	0	1	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	1	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	1
161:	0	0	0	0	0	0	0	0	0
169:	1	0	0	0	0	0	1	0	1
177:	0	0	0	0	0	0	0	0	0
185:	1	0	0	0	0	0	0	0	0
193:	0	0	0	2	0	1	0	0	1
201:	1	1	0	0	1	1	1	1	0
209:	1	0	0	0	0	0	0	2	0
217:	1	0	1	0	0	0	0	2	0
225:	1	1	1	1	0	4	0	0	1
233:	3	2	1	4	5	0	4	4	1
241:	2	6	0	6	6	6	4	4	4
249:	3	3	5	2	7	3	1	0	0
257:	1	0	0	0	0	0	1	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	1	0	0	0	1
297:	0	1	0	1	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	1
313:	0	0	1	0	1	0	1	0	0
321:	0	1	0	0	0	0	1	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0	0

369: 0 0 0 0 0 0 1 0

Sample Title: 11

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	0	0	0	1	0	0	0
385:	0	1	0	0	0	0	0	0	0
393:	0	1	0	1	1	1	1	0	0
401:	1	0	0	1	0	0	0	2	0
409:	0	0	1	0	0	4	4	1	0
417:	1	1	2	4	2	1	1	1	0
425:	1	2	4	1	5	2	4	3	0
433:	5	5	1	5	5	3	2	7	0
441:	5	2	5	4	2	1	3	1	0
449:	1	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	1	0
465:	0	0	1	0	0	0	0	0	0
473:	0	0	0	0	0	1	0	0	0
481:	0	0	0	0	0	0	1	0	0
489:	0	0	0	0	0	1	0	0	0
497:	0	0	0	0	0	0	0	0	0
505:	0	0	1	0	1	0	0	0	0
513:	0	0	0	0	0	0	0	0	0
521:	0	0	0	1	1	0	0	0	0
529:	0	0	0	0	0	0	2	0	0
537:	0	0	0	0	0	1	0	1	0
545:	0	0	0	0	1	1	0	0	0
553:	0	0	0	0	0	0	1	2	0
561:	1	1	1	1	0	0	1	1	0
569:	1	3	0	1	1	1	1	0	0
577:	0	0	1	2	0	1	2	1	0
585:	3	3	1	1	1	2	7	4	0
593:	5	3	6	4	6	7	1	6	0
601:	9	7	6	4	7	9	11	9	0
609:	8	11	7	6	6	9	6	15	0
617:	12	15	14	20	9	16	18	20	0
625:	18	15	7	10	7	1	3	0	0
633:	1	1	2	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0
681:	0	0	1	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	1	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 11

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



KCS
10/26/15

Sample Description: CP4106S05-06
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001323
 Batch Identification: 1510087A-UU
 Sample Identification: 12
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_035
 Chamber Serial Number: 04026477A
 Detector Serial Number: 58771
 Env. Background: System Bkgd 132580
 Reagent Blank: <not performed>

Sample Size: 1.511E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 12:03:42 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.659 mL
 Effective Efficiency: 0.1867 +/- 0.0104
 Counting Efficiency: 0.1647 +/- 0.0029 on 10/25/2014 2:34:10 PM
 Chem. Recovery Factor: 1.1333 +/- 0.0664

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.288	387.49	9.96	0.51	0.00E+000	9.4
U-234	4.742	110.83	18.63	0.17	0.00E+000	4.6
U-235	4.416	8.83	66.70	0.17	0.00E+000	3.0
U-238	4.159	114.00	18.44	0.00	0.00E+000	3.6

T = Tracer Peak used for Effective Efficiency

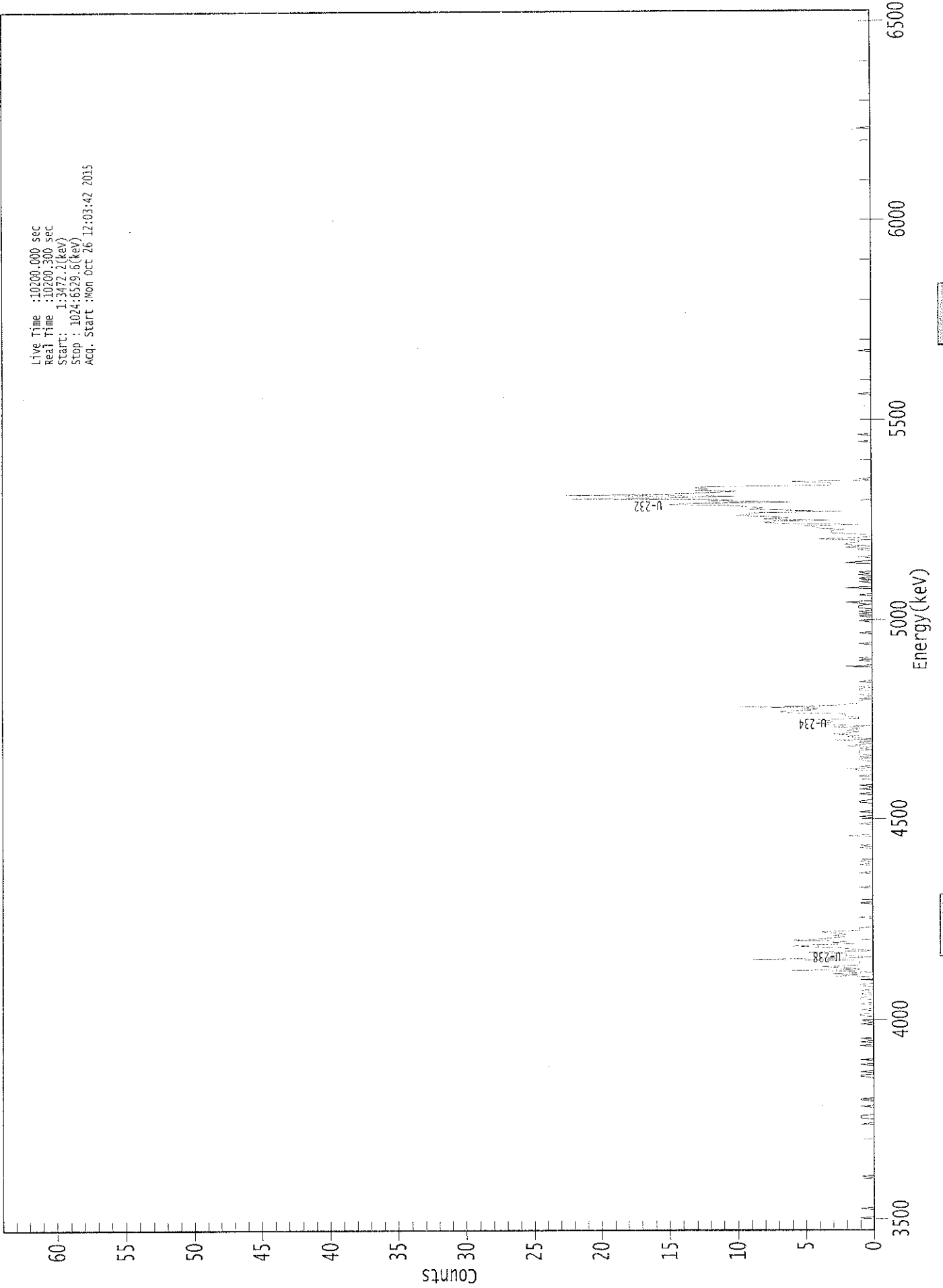
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	3.65E+000 +/- 3.99E-001	4.94E-002 +/- 5.40E-003
U-234	0.997	4761.50*	1.04E+000 +/- 2.25E-001	3.93E-002 +/- 4.30E-003
U-235	0.993	4385.50*	1.02E-001 +/- 6.93E-002	4.84E-002 +/- 5.30E-003
U-238	0.996	4184.40*	1.07E+000 +/- 2.29E-001	5.62E-002 +/- 6.14E-003

AG
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0000132305.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3472.2(keV)
Stop : 1024:6529.6(keV)
Acq. Start : Mon Oct 26 12:03:42 2015



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 12

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	1	0	0	0	0	0	0
17:	0	0	1	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	1	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	1	0	0	0	0	1	1	1
97:	1	0	0	0	0	0	0	0	0
105:	1	0	0	0	0	1	1	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	1	1	0	0	1	0	0	0
137:	0	0	0	1	0	0	0	1	1
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	1	0	0	1	0	0
161:	0	1	0	0	0	0	0	0	0
169:	0	0	0	0	0	1	0	0	0
177:	1	0	0	0	1	1	0	0	0
185:	0	1	0	0	0	0	1	0	0
193:	0	0	1	1	0	0	1	0	0
201:	0	1	0	0	0	1	1	0	0
209:	0	0	1	0	0	3	1	3	3
217:	0	1	6	1	2	4	1	1	1
225:	1	1	1	9	2	0	2	2	2
233:	2	5	0	1	2	3	6	5	5
241:	1	3	2	6	4	3	2	3	3
249:	2	3	4	1	1	1	0	0	0
257:	0	0	0	0	0	0	1	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	1	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	1	1
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	1	0	0	0	0	0
305:	0	0	1	0	0	1	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	1	0	1	0	0	0	0	0	0
329:	0	0	2	0	0	0	0	0	0
337:	0	0	0	0	1	0	0	0	0
345:	0	0	1	0	0	0	1	0	0
353:	0	0	0	0	0	0	1	1	1
361:	0	0	0	0	0	1	0	0	0

369: 0 1 0 0 1 0 0 0

Sample Title: 12

Channel	1	2	3	4	5	6	7	8
377:	0	0	0	0	1	0	0	0
385:	0	1	2	0	1	0	0	0
393:	0	1	1	0	1	0	1	1
401:	1	1	0	1	0	2	1	0
409:	1	0	3	0	1	2	1	3
417:	2	1	2	1	1	3	0	3
425:	4	3	3	4	1	1	2	2
433:	2	6	7	5	4	4	10	3
441:	2	1	1	1	0	1	0	0
449:	1	0	0	0	1	1	0	1
457:	0	0	0	1	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	2	0	0	0	0	1	0	1
481:	0	0	0	0	0	0	0	0
489:	0	0	0	1	0	0	0	0
497:	0	0	0	0	1	0	0	0
505:	0	0	0	0	0	0	1	0
513:	0	0	1	0	1	0	1	0
521:	0	1	1	1	0	1	2	0
529:	0	0	0	0	1	0	0	0
537:	0	0	2	0	0	0	0	1
545:	0	0	1	0	0	1	0	1
553:	0	0	0	0	0	0	0	2
561:	1	0	0	0	1	0	0	0
569:	0	0	1	0	2	0	2	2
577:	1	1	1	4	1	0	0	1
585:	3	3	3	2	4	4	5	1
593:	6	8	8	3	8	6	8	10
601:	9	9	2	6	9	8	9	10
609:	15	13	6	12	10	22	14	10
617:	23	14	12	10	13	12	13	12
625:	3	3	3	6	0	1	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	1	0	0	0
665:	0	0	1	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	1	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	1	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 12

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	1	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

10/26/15

Sample Description: CP4106S08-09
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001323
 Batch Identification: 1510087A-UU
 Sample Identification: 13
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_036
 Chamber Serial Number: 04026477B
 Detector Serial Number: 84167
 Env. Background: System Bkgd 132581
 Reagent Blank: <not performed>

Sample Size: 1.513E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 12:03:44 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.652 mL
 Effective Efficiency: 0.1778 +/- 0.0102
 Counting Efficiency: 0.1806 +/- 0.0032 on 10/25/2014 2:38:17 PM
 Chem. Recovery Factor: 0.9849 +/- 0.0589

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.284	364.83	10.26	0.17	0.00E+000	31.1
U-234	4.739	97.00	20.00	0.00	0.00E+000	3.8
U-235	4.367	5.66	85.23	0.34	0.00E+000	3.0
U-238	4.156	115.00	18.36	0.00	0.00E+000	7.5

T = Tracer Peak used for Effective Efficiency

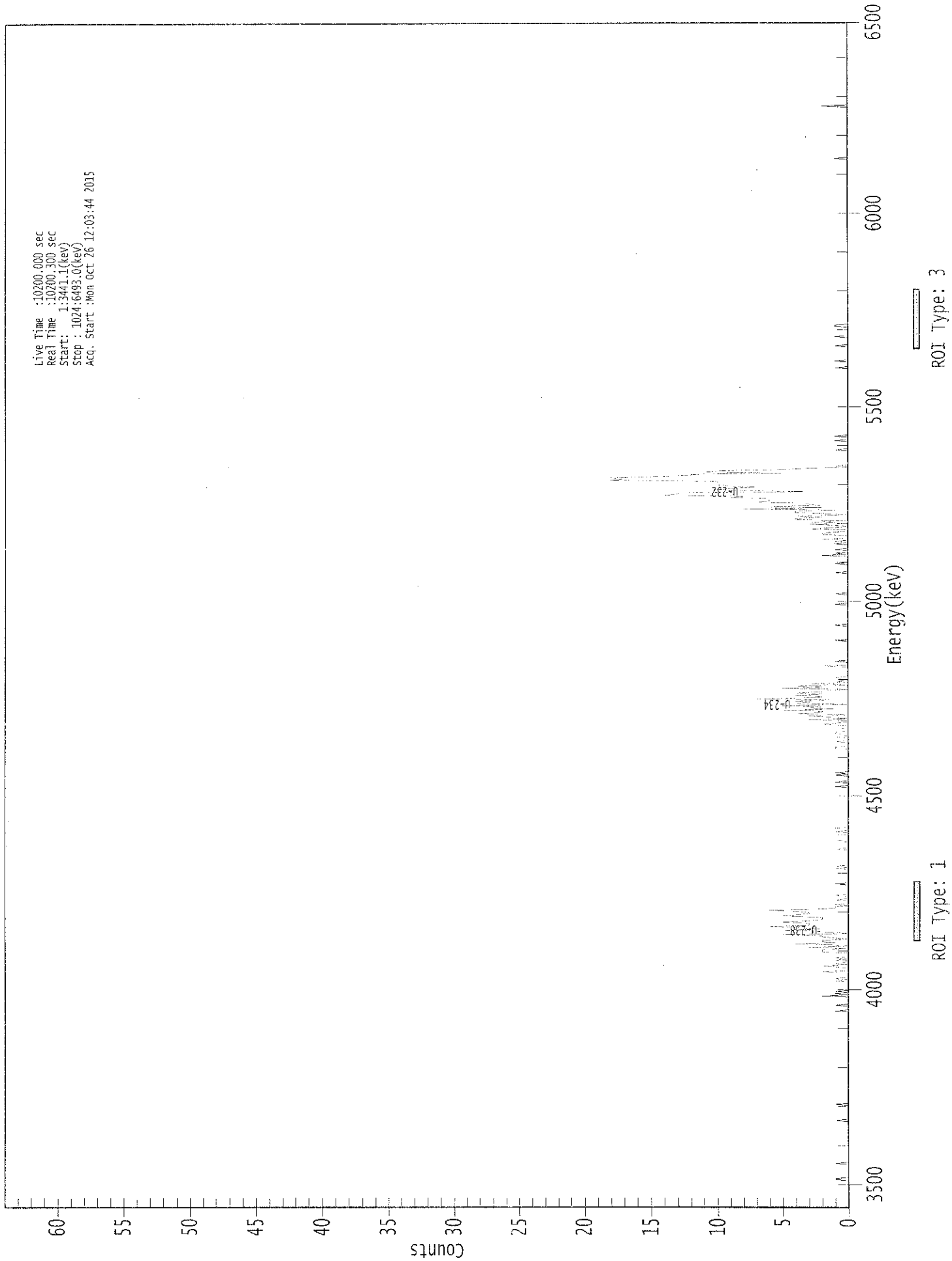
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.998	5302.50*	3.60E+000 +/- 4.04E-001	4.12E-002 +/- 4.62E-003
U-234	0.996	4761.50*	9.57E-001 +/- 2.19E-001	5.92E-002 +/- 6.63E-003
U-235	0.998	4385.50*	6.89E-002 +/- 5.92E-002	5.82E-002 +/- 6.53E-003
U-238	0.994	4184.40*	1.13E+000 +/- 2.43E-001	5.89E-002 +/- 6.61E-003

AG
 10/27/15

0000132306.CNF

Live Time : 10200.000 sec
Real Time : 10260.300 sec
Start : 1:3441.1(keV)
Stop : 1024:6493.0(keV)
Acq. Start : Mon Oct 26 12:03:44 2015



00147

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 13

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	1	1	0	0	0	0	0	0
33:	0	0	0	0	0	0	1	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	1	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	1	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	1	0	0	0	0	1	0
177:	0	0	0	0	0	0	2	0
185:	1	0	1	0	0	0	0	0
193:	0	0	0	1	0	1	0	0
201:	0	0	0	2	0	0	0	1
209:	2	0	1	0	0	1	0	1
217:	0	0	0	0	2	2	2	0
225:	3	0	1	4	1	2	2	0
233:	1	2	2	5	0	1	3	5
241:	2	4	6	3	3	3	5	3
249:	2	2	2	5	4	3	3	4
257:	6	2	1	1	0	1	0	0
265:	0	1	0	0	0	1	0	0
273:	0	0	0	0	0	0	0	1
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	1	0	1	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	1	0	0
313:	0	0	0	0	1	0	0	0
321:	0	0	0	0	1	0	0	1
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	1	0	0	0	1

369: 0 0 0 0 0 1 0 1

Sample Title: 13

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0	0
393:	0	0	0	0	1	1	0	0	0
401:	0	0	1	0	0	0	1	0	0
409:	0	1	1	0	0	0	1	1	1
417:	0	2	1	0	0	3	0	1	1
425:	3	0	4	2	2	5	1	3	3
433:	2	5	0	4	3	4	1	7	7
441:	2	2	4	2	4	2	2	0	0
449:	5	2	4	0	3	0	1	0	0
457:	0	1	0	0	0	0	0	0	0
465:	0	0	0	2	0	0	0	1	1
473:	0	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0	0
489:	0	1	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	1	0	0
505:	0	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0	0
521:	1	0	0	0	0	0	0	0	0
529:	0	1	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0	0
545:	0	0	0	1	0	0	0	0	0
553:	0	0	0	1	0	0	0	0	0
561:	0	0	2	0	1	0	0	1	1
569:	0	0	0	0	1	0	1	0	0
577:	2	0	0	0	2	2	1	0	0
585:	0	3	1	0	1	3	1	3	3
593:	0	4	4	2	4	0	2	4	4
601:	4	1	8	2	6	2	3	3	3
609:	7	6	6	6	9	8	14	13	13
617:	13	3	8	10	9	7	9	10	10
625:	10	10	10	18	17	18	15	12	12
633:	12	5	11	10	5	3	0	1	1
641:	0	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	1	0	0	0
657:	0	0	0	0	0	1	0	0	0
665:	0	1	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0	0
721:	0	0	0	0	1	0	0	0	0
729:	0	0	1	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	1	1
745:	0	0	0	0	0	0	0	1	1
753:	0	0	0	0	0	0	0	0	0
761:	1	1	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 13

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	1	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	2	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KCS
10/26/15

Sample Description: CP4106S10-11
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001323
 Batch Identification: 1510087A-UU
 Sample Identification: 14
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_037
 Chamber Serial Number: 04026478A
 Detector Serial Number: 91133
 Env. Background: System Bkgd 132582
 Reagent Blank: <not performed>

Sample Size: 1.507E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 12:03:46 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.652 mL
 Effective Efficiency: 0.1784 +/- 0.0102
 Counting Efficiency: 0.1709 +/- 0.0030 on 10/25/2014 2:46:09 PM
 Chem. Recovery Factor: 1.0440 +/- 0.0625

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.275	366.15	10.26	0.85	0.00E+000	30.3
U-234	4.730	121.49	17.83	0.51	0.00E+000	5.0
U-235	4.366	3.66	107.87	0.34	0.00E+000	3.0
U-238	4.156	102.00	19.50	0.00	0.00E+000	5.1

T = Tracer Peak used for Effective Efficiency

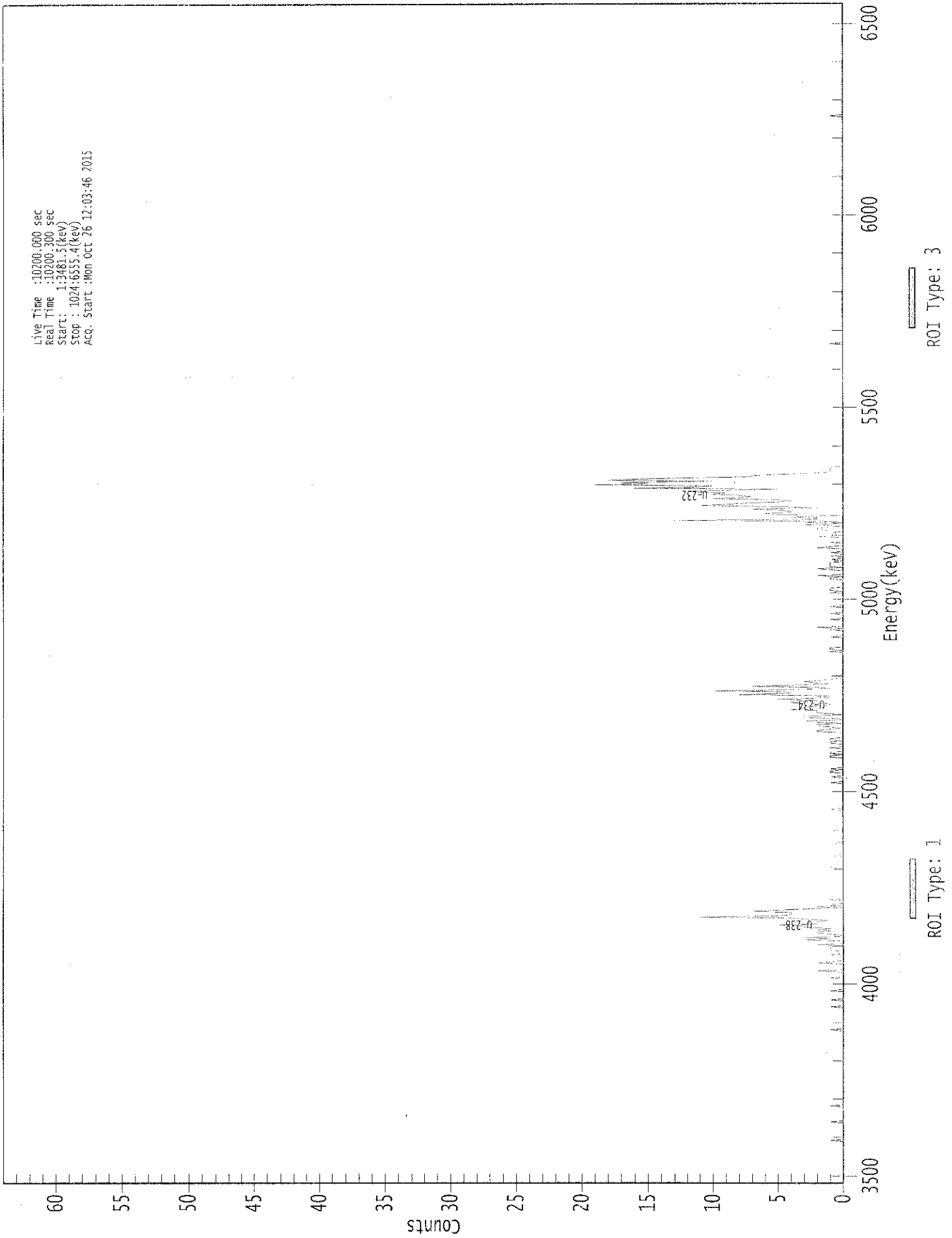
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	3.62E+000 +/- 4.05E-001	5.92E-002 +/- 6.63E-003
U-234	0.993	4761.50*	1.20E+000 +/- 2.53E-001	5.18E-002 +/- 5.81E-003
U-235	0.997	4385.50*	4.46E-002 +/- 4.84E-002	5.82E-002 +/- 6.53E-003
U-238	0.994	4184.40*	1.00E+000 +/- 2.26E-001	5.90E-002 +/- 6.61E-003

AG
10/27/15

0000132303.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3481.5(kev)
Stop : 1024:6555.4(kev)
Acq. Start :Mon Oct 26 12:03:46 2015



 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 14

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	1	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	1	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	1	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	1	0	0
137:	0	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0	0
153:	0	1	0	0	0	0	0	0	1
161:	0	0	0	0	0	0	0	0	1
169:	0	0	0	0	0	0	0	0	0
177:	0	0	1	0	0	0	0	0	0
185:	2	0	0	0	0	0	0	0	2
193:	1	0	0	0	0	0	0	1	0
201:	0	0	1	1	1	1	1	0	2
209:	0	0	0	3	1	3	0	0	0
217:	1	2	2	1	2	1	3	3	3
225:	5	2	2	2	1	3	4	11	
233:	5	4	4	4	7	5	3	1	
241:	2	0	1	0	0	0	1	0	
249:	0	0	0	0	0	0	0	0	
257:	0	0	0	0	0	0	0	0	
265:	0	0	0	0	0	0	0	0	
273:	0	0	1	0	0	0	0	0	
281:	0	0	0	0	1	0	0	0	
289:	0	0	0	0	0	0	0	1	
297:	0	0	0	0	0	0	0	0	
305:	0	0	0	0	0	0	0	0	
313:	0	0	0	0	0	0	0	0	
321:	0	0	0	0	1	0	0	0	
329:	0	0	0	0	0	0	0	0	
337:	0	0	0	0	0	0	0	0	
345:	0	0	0	1	0	0	0	0	
353:	1	0	0	0	1	1	0	1	
361:	0	0	0	0	0	0	0	0	

369: 0 1 1 0 1 1 0 0

Sample Title: 14

Channel	1	2	3	4	5	6	7	8
377:	0	1	0	0	0	1	1	0
385:	1	1	0	0	0	0	0	2
393:	2	1	0	1	2	2	0	2
401:	3	0	0	3	3	1	0	2
409:	2	2	4	3	3	2	1	1
417:	4	4	2	5	1	2	1	8
425:	4	4	10	4	1	2	7	4
433:	1	2	3	2	1	0	0	1
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	1	0	1	1
465:	0	0	0	0	0	0	0	0
473:	0	1	0	0	0	0	0	1
481:	0	2	0	0	0	0	0	0
489:	1	0	0	0	0	1	0	0
497:	0	0	0	1	0	0	0	0
505:	0	0	0	0	0	0	0	1
513:	0	1	1	1	0	0	0	0
521:	0	0	0	1	1	0	2	0
529:	0	0	0	1	2	0	1	1
537:	1	1	0	0	1	0	0	1
545:	0	0	1	0	0	0	2	1
553:	0	0	0	1	0	0	0	0
561:	2	0	1	1	0	1	2	2
569:	1	0	3	0	3	0	13	2
577:	2	4	0	5	6	4	4	5
585:	7	2	5	11	9	8	5	4
593:	5	10	8	7	8	10	9	12
601:	10	5	16	11	10	19	15	17
609:	10	18	16	12	7	7	5	2
617:	1	1	1	1	1	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	1
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 14

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	1	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

*KP
10/20/15*

Sample Description: CP4106S13-14
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001323
 Batch Identification: 1510087A-UU
 Sample Identification: 15
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_038
 Chamber Serial Number: 04026478B
 Detector Serial Number: 91134
 Env. Background: System Bkgd 132583
 Reagent Blank: <not performed>

Sample Size: 1.523E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 12:03:48 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.652 mL
 Effective Efficiency: 0.1664 +/- 0.0098
 Counting Efficiency: 0.1615 +/- 0.0029 on 10/25/2014 2:50:18 PM
 Chem. Recovery Factor: 1.0302 +/- 0.0633

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.290	341.49	10.62	0.51	0.00E+000	16.2
U-234	4.733	89.32	20.83	0.68	0.00E+000	6.4
U-235	4.425	10.00	65.01	0.00	0.00E+000	6.0
U-238	4.169	92.00	20.55	0.00	0.00E+000	6.7

T = Tracer Peak used for Effective Efficiency

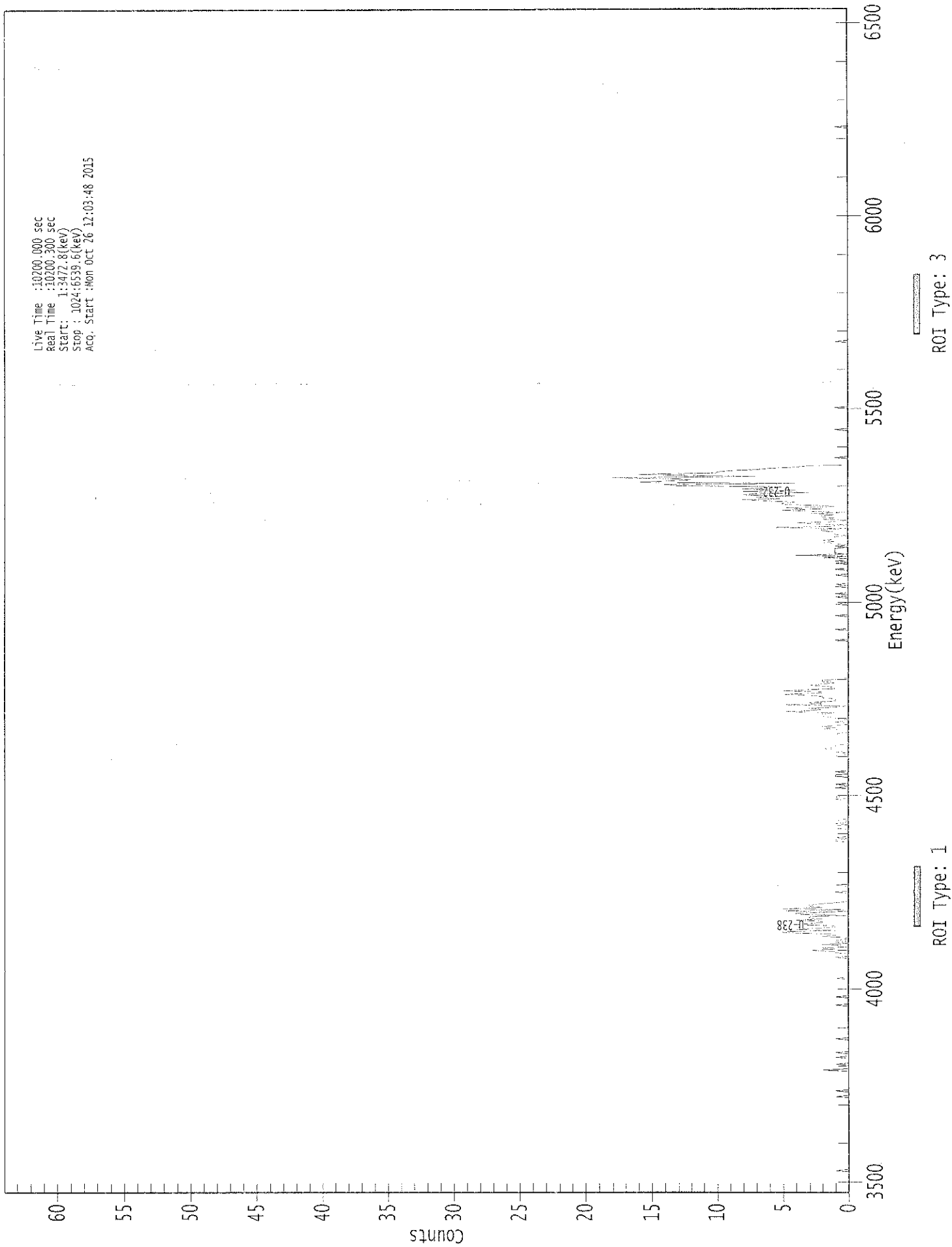
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	3.58E+000 +/- 4.13E-001	5.50E-002 +/- 6.34E-003
U-234	0.994	4761.50*	9.36E-001 +/- 2.23E-001	5.91E-002 +/- 6.82E-003
U-235	0.989	4385.50*	1.29E-001 +/- 8.53E-002	7.75E-002 +/- 8.94E-003
U-238	0.998	4184.40*	9.60E-001 +/- 2.26E-001	6.25E-002 +/- 7.21E-003

*AG
10/27/15*

0000132304.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3472.8(kev)
Stop : 1024:6539.6(kev)
Acq. Start :Mon Oct 26 12:03:48 2015



: 00157

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 15

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	1	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	1	0	0	0	0
89:	1	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	2	0	0	0	0	1
113:	0	0	0	0	0	1	0	0
121:	0	1	0	0	0	0	0	0
129:	0	0	0	0	0	1	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	1	0	0	0	0	0
169:	0	1	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	1	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	1	0	0	0	1
209:	1	3	1	2	0	0	2	0
217:	1	0	1	0	0	2	1	1
225:	5	5	1	4	2	1	1	4
233:	3	2	2	4	2	3	3	0
241:	4	4	1	5	0	5	2	3
249:	3	2	1	0	0	0	0	0
257:	0	0	0	1	0	0	0	0
265:	0	1	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	1
305:	1	0	1	0	0	0	0	0
313:	0	0	1	1	1	0	1	0
321:	0	1	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	1	0	1	0	0
345:	0	0	0	0	0	1	0	0
353:	1	0	0	0	0	0	0	1
361:	1	0	0	1	0	0	0	0

369: 0 0 0 0 0 0 0 0 0

Sample Title: 15

Channel	1	2	3	4	5	6	7	8	9
377:	0	1	0	0	1	0	0	2	
385:	1	1	1	0	0	0	0	0	
393:	0	0	0	0	1	0	0	0	
401:	2	1	2	1	0	0	1	0	
409:	0	1	1	2	2	2	1	5	
417:	3	2	3	1	0	5	2	3	
425:	1	1	1	2	2	3	5	2	
433:	2	5	3	1	1	2	3	2	
441:	1	2	2	1	0	0	0	0	
449:	0	0	0	0	0	0	0	0	
457:	0	0	0	0	0	0	0	0	
465:	0	0	0	0	0	0	0	0	
473:	0	0	0	0	0	1	0	0	
481:	0	0	0	0	0	0	1	0	
489:	0	0	0	0	0	0	0	0	
497:	0	0	1	0	0	0	0	0	
505:	0	0	0	0	1	0	0	0	
513:	0	0	1	0	0	1	0	0	
521:	0	0	0	1	0	1	0	0	
529:	0	0	0	0	0	1	0	0	
537:	0	0	1	0	0	0	0	1	
545:	0	1	0	0	2	0	4	0	
553:	1	1	1	1	1	0	1	0	
561:	1	2	1	2	1	1	1	0	
569:	1	1	1	2	2	0	6	1	
577:	1	2	4	1	0	2	1	2	
585:	2	1	3	0	3	5	2	5	
593:	1	2	5	5	4	6	8	5	
601:	7	4	8	7	3	8	4	8	
609:	6	5	13	14	4	16	14	12	
617:	13	18	7	13	16	10	10	9	
625:	7	6	4	3	0	0	0	0	
633:	0	0	1	0	0	0	0	0	
641:	0	0	0	0	0	0	0	0	
649:	0	0	0	0	0	0	0	0	
657:	0	0	1	0	0	0	0	0	
665:	0	0	0	0	0	0	0	0	
673:	0	0	0	0	0	1	0	0	
681:	0	0	0	0	0	0	0	0	
689:	0	0	0	0	0	0	0	0	
697:	0	0	0	0	0	0	0	0	
705:	0	0	0	0	0	0	0	0	
713:	0	0	0	0	0	0	0	0	
721:	0	0	0	0	0	0	0	0	
729:	0	0	0	0	0	0	1	0	
737:	0	0	0	0	0	0	0	0	
745:	0	0	0	0	0	0	0	0	
753:	0	0	0	0	0	0	0	0	
761:	0	0	0	0	0	0	0	0	
769:	0	0	0	0	0	0	0	0	
777:	0	0	0	0	0	0	0	0	
785:	0	0	0	0	0	0	0	0	
793:	0	0	0	0	0	0	0	0	

801: 0 0 0 0 0 0 0 0 0

Sample Title: 15

Channel									
809:	0	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0	0
921:	1	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0

Apex-Alpha™

ICB
10/26/15

Sample Description: CP4106S15-16
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001323
 Batch Identification: 1510087A-UU
 Sample Identification: 16
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_039
 Chamber Serial Number: 06027396A
 Detector Serial Number: 83109
 Env. Background: System Bkgd 132584
 Reagent Blank: <not performed>

Sample Size: 1.543E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 12:03:51 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.651 mL
 Effective Efficiency: 0.2037 +/- 0.0110
 Counting Efficiency: 0.1934 +/- 0.0034 on 10/25/2014 2:53:34 PM
 Chem. Recovery Factor: 1.0531 +/- 0.0600

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.287	417.45	9.63	2.55	0.00E+000	17.0
U-234	4.740	107.47	19.06	1.53	0.00E+000	10.1
U-235	4.422	6.62	90.80	2.38	0.00E+000	3.0
U-238	4.161	93.96	20.48	2.04	0.00E+000	16.5

T = Tracer Peak used for Effective Efficiency

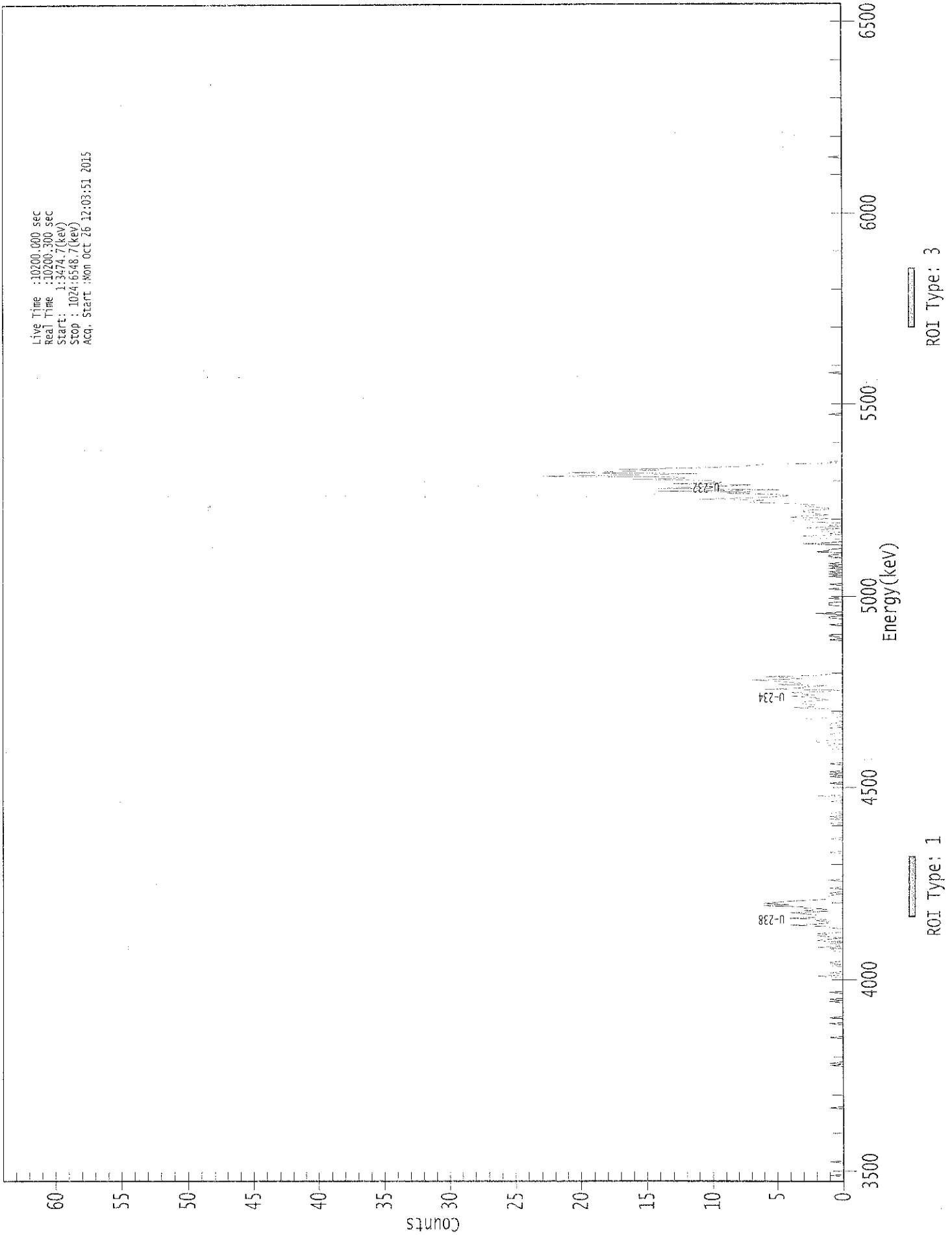
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.998	5302.50*	3.53E+000 +/- 3.75E-001	7.09E-002 +/- 7.54E-003
U-234	0.997	4761.50*	9.08E-001 +/- 1.98E-001	6.00E-002 +/- 6.38E-003
U-235	0.990	4385.50*	6.90E-002 +/- 6.31E-002	8.54E-002 +/- 9.08E-003
U-238	0.996	4184.40*	7.90E-001 +/- 1.82E-001	6.55E-002 +/- 6.97E-003

AG
10/27/15

0000132307.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start: 1:3474.7(keV)
Stop : 1024:6548.7(keV)
Acq. Start :Mon Oct 26 12:03:51 2015



29162

***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 16

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	1	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	1	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	1	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	1	0	1
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	1	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	1	0	0	0	0	0	1	0
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	1	0	1	0
161:	0	0	0	0	0	1	0	0	0
169:	0	0	0	0	0	0	0	0	0
177:	0	0	2	0	0	0	1	0	0
185:	0	0	0	1	0	0	1	1	0
193:	0	0	0	0	0	0	0	0	0
201:	1	1	0	2	0	0	0	1	0
209:	1	2	1	0	1	2	2	1	2
217:	0	0	0	0	0	1	1	4	2
225:	1	1	2	1	4	2	2	2	2
233:	3	4	1	3	1	3	3	3	6
241:	4	6	5	4	2	1	1	1	1
249:	1	0	1	0	0	0	0	1	0
257:	0	0	0	0	0	0	1	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	1	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	1	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	1	0
313:	0	0	1	0	1	0	0	0	1
321:	0	0	0	0	0	0	0	0	0
329:	0	1	0	0	0	0	0	2	0
337:	0	0	0	0	0	0	0	0	0
345:	0	1	0	0	0	0	0	0	1
353:	0	1	0	1	0	0	0	0	0
361:	0	0	1	0	0	0	0	0	0

369: 0 0 0 0 0 0 0 0 0

Sample Title: 16

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	1	1	0	1	2	2	0
385:	0	0	0	0	1	0	0	0
393:	0	1	0	0	1	1	0	0
401:	1	3	1	0	0	0	1	0
409:	0	0	1	4	2	2	3	3
417:	3	2	1	2	2	4	2	3
425:	4	1	0	6	3	3	1	5
433:	3	4	5	7	3	4	6	2
441:	1	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	1	0
473:	0	1	1	0	0	0	0	0
481:	0	0	0	1	0	0	0	0
489:	0	1	1	0	0	2	0	0
497:	0	0	0	0	1	1	1	0
505:	0	0	1	0	0	0	0	0
513:	0	0	1	0	0	0	1	0
521:	0	0	0	0	0	1	0	1
529:	0	1	0	0	1	0	1	0
537:	1	0	0	0	0	0	1	1
545:	0	0	2	1	1	0	0	0
553:	0	3	1	0	0	0	2	2
561:	3	0	1	0	2	2	0	3
569:	0	1	0	0	3	4	2	1
577:	4	3	1	2	2	3	3	1
585:	1	2	3	2	4	7	7	6
593:	11	7	5	4	5	9	7	14
601:	4	14	12	9	7	13	9	10
609:	10	16	12	13	23	16	11	21
617:	17	14	17	11	8	7	6	0
625:	1	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	1	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	1	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 16

Channel									
809:	0	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0	0
889:	0	1	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0

10/26/15

Apex-Alpha™

Sample Description: CP4106S18-19
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001323
 Batch Identification: 1510087A-UU
 Sample Identification: 17
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_040
 Chamber Serial Number: 06027396B
 Detector Serial Number: 91135
 Env. Background: System Bkgd 132585
 Reagent Blank: <not performed>

Sample Size: 1.523E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:28:43 AM
 Acquisition Date/Time: 10/26/2015 12:03:53 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.651 mL
 Effective Efficiency: 0.1725 +/- 0.0100
 Counting Efficiency: 0.1856 +/- 0.0032 on 10/25/2014 2:57:14 PM
 Chem. Recovery Factor: 0.9297 +/- 0.0563

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.282	353.66	10.43	0.34	0.00E+000	28.4
U-234	4.721	82.83	21.56	0.17	0.00E+000	5.2
U-235	4.376	6.83	76.08	0.17	0.00E+000	3.0
U-238	4.162	120.83	17.85	0.17	0.00E+000	5.4

T = Tracer Peak used for Effective Efficiency

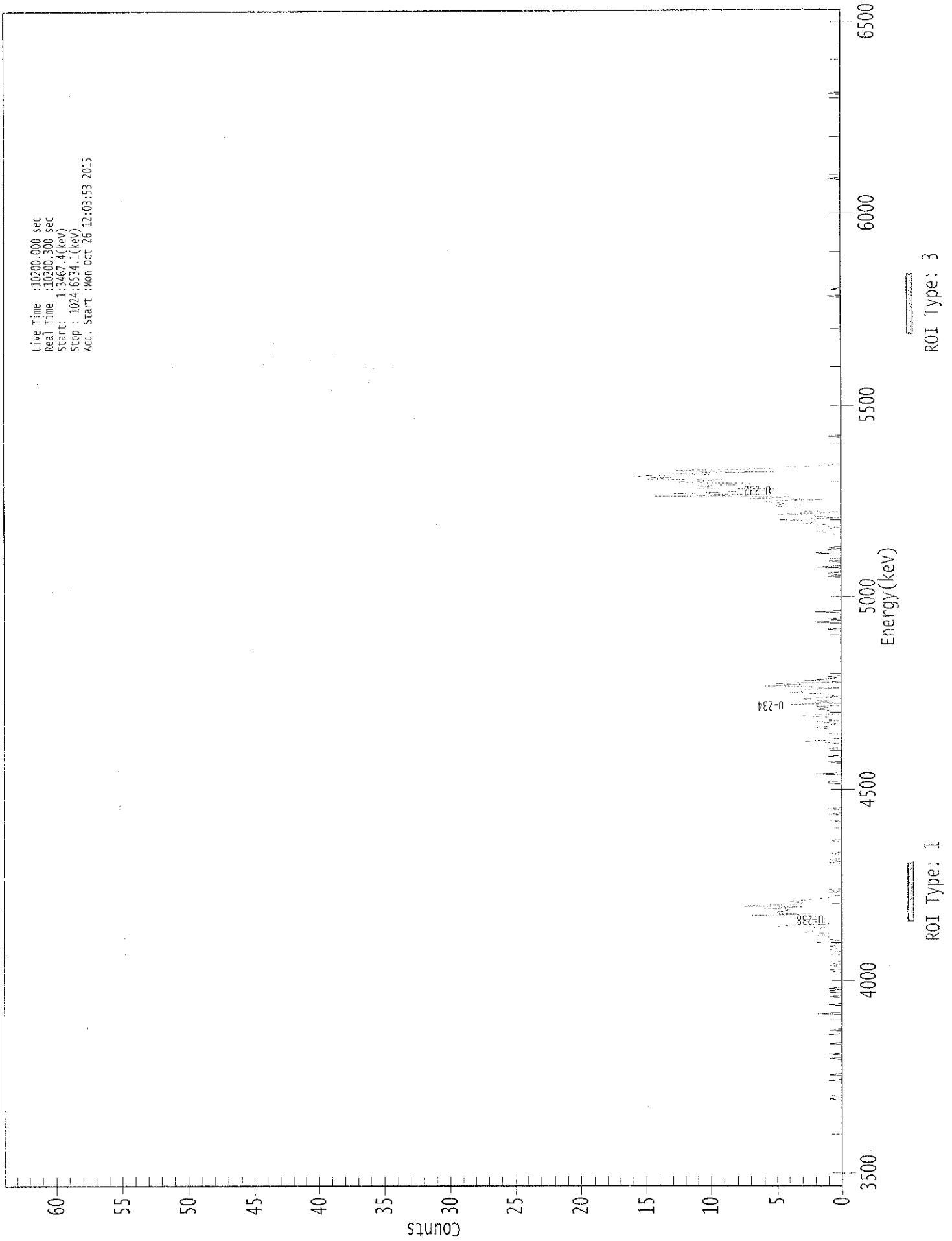
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	3.58E+000 +/- 4.06E-001	4.84E-002 +/- 5.49E-003
U-234	0.989	4761.50*	8.37E-001 +/- 2.04E-001	4.22E-002 +/- 4.79E-003
U-235	0.999	4385.50*	8.52E-002 +/- 6.55E-002	5.20E-002 +/- 5.91E-003
U-238	0.997	4184.40*	1.22E+000 +/- 2.57E-001	4.20E-002 +/- 4.77E-003

AG
 10/27/15

0000132308.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3467.4(keV)
Stop : 1024:6534.1(keV)
Acq. Start : Mon Oct 26 12:03:53 2015



: 00167

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 17

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	1	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	1	0	0	0	0	0
97:	1	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	1	0
113:	0	0	1	0	0	0	0	0	0
121:	0	0	0	1	0	0	0	0	0
129:	0	0	0	1	0	0	0	0	1
137:	0	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	2	0	0
153:	0	0	0	0	0	0	1	0	0
161:	0	0	0	0	1	0	0	0	0
169:	1	1	0	1	0	0	0	0	0
177:	0	0	0	0	0	0	0	0	0
185:	0	0	1	1	0	0	0	0	1
193:	0	1	1	0	0	0	0	0	0
201:	0	1	1	0	1	1	0	0	0
209:	1	0	0	2	1	0	0	1	1
217:	1	2	1	1	3	2	2	2	2
225:	1	5	4	1	1	2	3	3	3
233:	1	1	3	7	2	5	5	4	4
241:	4	6	3	8	4	3	3	4	4
249:	3	2	1	1	0	0	0	0	1
257:	0	1	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	1	0	1	0	0	0	0	0
289:	0	1	0	0	0	0	0	0	0
297:	0	0	0	0	1	0	0	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	1	0	0	0
321:	0	0	0	1	0	0	0	0	0
329:	1	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	1	1	1
353:	0	0	0	0	0	0	2	0	0
361:	0	0	0	0	0	0	0	0	0

369: 1 0 0 0 0 1 0 0

Sample Title: 17

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	0	0	1	0	0	0	0
385:	0	1	3	1	1	0	0	0	0
393:	0	1	1	1	1	1	2	1	1
401:	1	0	1	2	0	1	1	1	1
409:	3	2	0	0	0	1	2	1	1
417:	2	0	4	0	2	1	2	3	3
425:	1	0	1	1	4	3	3	3	3
433:	0	2	6	3	5	0	1	3	3
441:	1	0	1	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0	0
481:	0	0	0	1	0	0	0	0	0
489:	0	2	1	0	1	0	0	0	0
497:	0	0	2	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0	0
529:	0	1	0	1	1	0	0	0	0
537:	0	2	0	0	0	0	1	0	0
545:	0	0	0	0	0	2	1	1	1
553:	1	0	1	0	0	0	0	0	0
561:	0	0	0	0	0	0	1	1	1
569:	2	1	1	0	1	1	1	3	3
577:	2	2	5	2	0	2	2	5	5
585:	3	0	3	3	3	4	5	5	5
593:	4	5	6	5	1	7	4	15	15
601:	5	13	10	7	7	5	11	10	10
609:	11	7	7	13	11	9	15	13	13
617:	16	15	10	13	5	13	10	5	5
625:	5	2	1	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0	0
649:	0	0	0	1	0	0	0	0	0
657:	0	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	1	0	0	0
777:	0	0	0	1	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 17

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	1	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	1	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 10/26/2015

Time : 5:31:47 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	10/26/2015 5:16:35 AM
Alpha 004	21f	ALL	Passed	10/26/2015 5:16:36 AM
Alpha 005	21f	ALL	Not Done	
Alpha 006	21f	ALL	Not Done	
Alpha 007	21f	ALL	Not Done	
Alpha 008	21f	ALL	Not Done	
Alpha 009	21f	ALL	Not Done	
Alpha 010	21f	ALL	Passed	10/26/2015 5:16:37 AM
Alpha 011	21f	ALL	Passed	10/26/2015 5:16:38 AM
Alpha 012	21f	ALL	Passed	10/26/2015 5:16:39 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Passed	10/26/2015 5:16:40 AM
Alpha 015	21f	ALL	Passed	10/26/2015 5:16:40 AM
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:16:42 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:16:43 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:16:45 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:16:47 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:16:49 AM
Alpha 038	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:16:52 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:16:55 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:16:57 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:16:59 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:02 AM
Alpha 043	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:04 AM
Alpha 044	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:07 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:09 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:12 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:14 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:16 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:19 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:22 AM
Alpha 051	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:25 AM
Alpha 052	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:28 AM
Alpha 053	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:30 AM
Alpha 054	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:33 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:35 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:38 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:41 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	10/26/2015 5:17:44 AM

***** LIBRARY LISTING REPORT *****

Nuclide Library Title: Uranium

Nuclide Library Description: U-232, -234, -235, -238

Nuclide Name	Half-Life (Seconds)	Energy (keV)	Energy Uncert. (keV)	Yield (%)	Yield Uncert. (Abs.+)
U-232	2.174E+009	5302.500*	0.000	99.8000	0.0000
U-234	7.731E+012	4761.500*	0.000	99.8000	0.0000
U-235	2.221E+016	4385.500*	0.000	80.9000	0.0000
U-238	1.410E+017	4184.400*	0.000	100.2300	0.0000

* = key line

TOTALS: 4 Nuclides 4 Energy Lines

SECTION IX
ANALYTICAL DATA (ISOTOPIC THORIUM)

Work Order	15-10087
Analysis Code	ThISO
Run	1
Date Received	10/14/2015
Lab Deadline	11/6/2015
Client	Auxier & Associates, Inc.
Project	PAP-KAN
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	EML Th-01 Modified
Instrument Type	Alpha Spectroscopy
Radiometric Tracer	Th-229
Radiometric Sol#	Th-18a
Tracer Act (dpm/g)	22.46
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		10/14/15 00:00	1.0000E+00
02	MBL	BLANK		10/14/15 00:00	1.5000E+00
03	DUP	CP5004S01-02	37	10/07/15 10:10	1.5172E+00
04	DO	CP5004S01-02	37	10/07/15 10:10	1.5054E+00
05	TRG	CP5004S04-05	41	10/07/15 10:20	1.5197E+00
06	TRG	CP5004S07-08	35	10/07/15 10:30	1.5460E+00
07	TRG	CP5004S09-10	38	10/07/15 10:40	1.5031E+00
08	TRG	CP5004S11-12	32	10/07/15 10:50	1.5081E+00
09	TRG	CP5004S14-15	37	10/07/15 11:00	1.5103E+00
10	TRG	CP5004S16-17	40	10/07/15 11:10	1.5068E+00
11	TRG	CP4106S03-04	37	10/07/15 13:00	1.5102E+00
12	TRG	CP4106S05-06	35	10/07/15 13:10	1.5297E+00
13	TRG	CP4106S08-09	35	10/07/15 13:20	1.5368E+00
14	TRG	CP4106S10-11	33	10/07/15 13:30	1.5051E+00
15	TRG	CP4106S13-14	32	10/07/15 13:40	1.5013E+00
16	TRG	CP4106S15-16	38	10/07/15 13:50	1.5113E+00
17	TRG	CP4106S18-19	39	10/07/15 14:00	1.5244E+00

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.


Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.4505	10.1		0.00								
02	MBL	0.2223	5.0		0.00								
03	DUP	0.2247	5.0		0.00								
04	DO	0.2212	5.0		0.00								
05	TRG	0.2218	5.0		0.00								
06	TRG	0.2236	5.0		0.00								
07	TRG	0.2228	5.0		0.00								
08	TRG	0.2230	5.0		0.00								
09	TRG	0.2235	5.0		0.00								
10	TRG	0.2227	5.0		0.00								
11	TRG	0.2239	5.0		0.00								
12	TRG	0.2239	5.0		0.00								
13	TRG	0.2240	5.0		0.00								
14	TRG	0.2248	5.0		0.00								
15	TRG	0.2242	5.0		0.00								
16	TRG	0.2241	5.0		0.00								
17	TRG	0.2231	5.0		0.00								

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			10/19/15 10:32	JPACHELLA				
02	MBL			10/19/15 10:32	JPACHELLA				
03	DUP			10/19/15 10:32	JPACHELLA				
04	DO	10/19/15 07:21	KSALLINGS	10/19/15 10:32	JPACHELLA				
05	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:32	JPACHELLA				
06	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:32	JPACHELLA				
07	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:32	JPACHELLA				
08	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:32	JPACHELLA				
09	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:32	JPACHELLA				
10	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:32	JPACHELLA				
11	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:32	JPACHELLA				
12	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:32	JPACHELLA				
13	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:32	JPACHELLA				
14	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:32	JPACHELLA				
15	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:32	JPACHELLA				
16	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:32	JPACHELLA				
17	TRG	10/19/15 07:21	KSALLINGS	10/19/15 10:32	JPACHELLA				

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Preliminary Data Report & Analytical Calculations
Work Order: 15-10087-THISO-1

	Run	1
	Analysis Code	THISO
Client	Auxier & Associates, Inc.	
Eberline Services Work Order	15-10087	

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	TH-228	LCS	LCS	pCi/g	5.66E+00	8.65E-01	7.27E-02	4.91E+00	115.40	OK		OK	
02	TH-228	MBL	BLANK	pCi/g	-9.04E-03	2.23E-02	6.36E-02					OK	OK
03	TH-228	DUP	CP5004S01-02	pCi/g	1.18E+00	2.69E-01	7.14E-02				OK	OK	
04	TH-228	DO	CP5004S01-02	pCi/g	1.30E+00	3.09E-01	8.73E-02					OK	
05	TH-228	TRG	CP5004S04-05	pCi/g	1.17E+00	2.63E-01	5.29E-02					OK	
06	TH-228	TRG	CP5004S07-08	pCi/g	1.32E+00	3.40E-01	1.08E-01					OK	
07	TH-228	TRG	CP5004S09-10	pCi/g	1.22E+00	2.58E-01	4.97E-02					OK	
08	TH-228	TRG	CP5004S11-12	pCi/g	1.24E+00	3.08E-01	7.01E-02					OK	
09	TH-228	TRG	CP5004S14-15	pCi/g	1.23E+00	2.92E-01	5.57E-02					OK	
10	TH-228	TRG	CP5004S16-17	pCi/g	1.17E+00	2.75E-01	5.82E-02					OK	
11	TH-228	TRG	CP4106S03-04	pCi/g	1.23E+00	2.80E-01	5.60E-02					OK	
12	TH-228	TRG	CP4106S05-06	pCi/g	1.24E+00	2.81E-01	5.07E-02					OK	
13	TH-228	TRG	CP4106S08-09	pCi/g	1.31E+00	3.79E-01	6.97E-02					OK	
14	TH-228	TRG	CP4106S10-11	pCi/g	1.17E+00	2.95E-01	9.60E-02					OK	
15	TH-228	TRG	CP4106S13-14	pCi/g	1.50E+00	3.67E-01	7.66E-02					OK	
16	TH-228	TRG	CP4106S15-16	pCi/g	1.15E+00	2.62E-01	4.90E-02					OK	
17	TH-228	TRG	CP4106S18-19	pCi/g	1.43E+00	3.40E-01	6.63E-02					OK	

Preliminary Data Report & Analytical Calculations
Work Order: 15-10087-THISO-1

Eberline Services
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	TH-228	LCS	10/14/15 00:00	1.00E+00	118.06	0.00	0.00			
02	TH-228	MBL	10/14/15 00:00	1.50E+00	87.88	0.00	0.00			
03	TH-228	DUP	10/07/15 10:10	1.52E+00	114.54	0.00	0.00			
04	TH-228	DO	10/07/15 10:10	1.51E+00	95.88	0.00	0.00			
05	TH-228	TRG	10/07/15 10:20	1.52E+00	115.34	0.00	0.00			
06	TH-228	TRG	10/07/15 10:30	1.55E+00	86.30	0.00	0.00			
07	TH-228	TRG	10/07/15 10:40	1.50E+00	106.53	0.00	0.00			
08	TH-228	TRG	10/07/15 10:50	1.51E+00	97.82	0.00	0.00			
09	TH-228	TRG	10/07/15 11:00	1.51E+00	108.31	0.00	0.00			
10	TH-228	TRG	10/07/15 11:10	1.51E+00	124.20	0.00	0.00			
11	TH-228	TRG	10/07/15 13:00	1.51E+00	117.57	0.00	0.00			
12	TH-228	TRG	10/07/15 13:10	1.53E+00	122.98	0.00	0.00			
13	TH-228	TRG	10/07/15 13:20	1.54E+00	75.28	0.00	0.00			
14	TH-228	TRG	10/07/15 13:30	1.51E+00	93.41	0.00	0.00			
15	TH-228	TRG	10/07/15 13:40	1.50E+00	84.18	0.00	0.00			
16	TH-228	TRG	10/07/15 13:50	1.51E+00	117.60	0.00	0.00			
17	TH-228	TRG	10/07/15 14:00	1.52E+00	102.13	0.00	0.00			

	Run	1
	Analysis Code	THISO
	Eberline Services Work Order	15-10087
Client	Auxier & Associates, Inc.	

621001

Preliminary Data Report & Analytical Calculations
Work Order: 15-10087-THISO-1

Eberline Services
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-228	LCS	11/03/15 08:21		A_Spec	Alpha_003	170.03	4.39 E+02	4.00 E-03	17.4
02	TH-228	MBL	11/03/15 08:21		A_Spec	Alpha_004	170.02	-8.50 E-01	5.00 E-03	18.9
03	TH-228	DUP	11/03/15 08:21		A_Spec	Alpha_010	170.02	1.45 E+02	1.70 E-02	19.2
04	TH-228	DO	11/03/15 08:21		A_Spec	Alpha_011	170.03	1.39 E+02	2.00 E-02	20
05	TH-228	TRG	11/03/15 08:21		A_Spec	Alpha_012	170	1.46 E+02	7.00 E-03	19.4
06	TH-228	TRG	11/03/15 08:21		A_Spec	Alpha_014	170.02	1.19 E+02	2.30 E-02	18.4
07	TH-228	TRG	11/03/15 08:21		A_Spec	Alpha_015	170.02	1.69 E+02	8.00 E-03	23.5
08	TH-228	TRG	11/03/15 08:21		A_Spec	Alpha_033	170	1.22 E+02	8.00 E-03	18
09	TH-228	TRG	11/03/15 08:21		A_Spec	Alpha_034	170	1.32 E+02	5.00 E-03	17.9
10	TH-228	TRG	11/03/15 08:22		A_Spec	Alpha_035	170	1.33 E+02	7.00 E-03	16.5
11	TH-228	TRG	11/03/15 08:22		A_Spec	Alpha_036	170	1.45 E+02	7.00 E-03	18.1
12	TH-228	TRG	11/03/15 08:22		A_Spec	Alpha_037	170	1.46 E+02	5.00 E-03	17.1
13	TH-228	TRG	11/03/15 08:22		A_Spec	Alpha_038	170	8.97 E+01	2.00 E-03	16.2
14	TH-228	TRG	11/03/15 08:22		A_Spec	Alpha_039	170	1.17 E+02	2.20 E-02	19.3
15	TH-228	TRG	11/03/15 08:22		A_Spec	Alpha_040	170	1.29 E+02	7.00 E-03	18.6
16	TH-228	TRG	11/03/15 08:22		A_Spec	Alpha_041	170	1.41 E+02	5.00 E-03	18.7
17	TH-228	TRG	11/03/15 08:22		A_Spec	Alpha_042	170	1.42 E+02	7.00 E-03	17.4

	Run	1
	Analysis Code	THISO
Eberline Services Work Order	15-10087	
Client	Auxier & Associates, Inc.	

Preliminary Data Report & Analytical Calculations
Work Order: 15-10087-THISO-1

Eberline Services
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	TH-230	LCS	LCS	pCi/g	6.58E+00	9.78E-01	8.13E-02	5.35E+00	123.06	OK		OK	
02	TH-230	MBL	BLANK	pCi/g	9.01E-02	6.87E-02	7.56E-02					OK	OK
03	TH-230	DUP	CP5004S01-02	pCi/g	1.33E+00	2.91E-01	6.36E-02				OK	OK	
04	TH-230	DO	CP5004S01-02	pCi/g	1.41E+00	3.23E-01	5.49E-02					OK	
05	TH-230	TRG	CP5004S04-05	pCi/g	1.32E+00	2.87E-01	4.93E-02					OK	
06	TH-230	TRG	CP5004S07-08	pCi/g	1.75E+00	4.17E-01	8.42E-02					OK	
07	TH-230	TRG	CP5004S09-10	pCi/g	1.29E+00	2.68E-01	3.98E-02					OK	
08	TH-230	TRG	CP5004S11-12	pCi/g	1.35E+00	3.25E-01	5.23E-02					OK	
09	TH-230	TRG	CP5004S14-15	pCi/g	1.23E+00	2.90E-01	3.79E-02					OK	
10	TH-230	TRG	CP5004S16-17	pCi/g	1.07E+00	2.56E-01	3.59E-02					OK	
11	TH-230	TRG	CP4106S03-04	pCi/g	9.99E-01	2.38E-01	3.96E-02					OK	
12	TH-230	TRG	CP4106S05-06	pCi/g	1.35E+00	2.98E-01	4.66E-02					OK	
13	TH-230	TRG	CP4106S08-09	pCi/g	1.50E+00	4.17E-01	8.01E-02					OK	
14	TH-230	TRG	CP4106S10-11	pCi/g	1.22E+00	3.01E-01	8.55E-02					OK	
15	TH-230	TRG	CP4106S13-14	pCi/g	1.35E+00	3.38E-01	6.38E-02					OK	
16	TH-230	TRG	CP4106S15-16	pCi/g	9.94E-01	2.34E-01	5.47E-02					OK	
17	TH-230	TRG	CP4106S18-19	pCi/g	1.49E+00	3.48E-01	4.69E-02					OK	

	Run	1
	Analysis Code	THISO
	Eberline Services Work Order	15-10087
Client	Auxier & Associates, Inc.	

Preliminary Data Report & Analytical Calculations
Work Order: 15-10087-THISO-1

Eberline Services
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	TH-230	LCS	10/14/15 00:00	1.00E+00	118.06	0.00	0.00			
02	TH-230	MBL	10/14/15 00:00	1.50E+00	87.88	0.00	0.00			
03	TH-230	DUP	10/07/15 10:10	1.52E+00	114.54	0.00	0.00			
04	TH-230	DO	10/07/15 10:10	1.51E+00	95.88	0.00	0.00			
05	TH-230	TRG	10/07/15 10:20	1.52E+00	115.34	0.00	0.00			
06	TH-230	TRG	10/07/15 10:30	1.55E+00	86.30	0.00	0.00			
07	TH-230	TRG	10/07/15 10:40	1.50E+00	106.53	0.00	0.00			
08	TH-230	TRG	10/07/15 10:50	1.51E+00	97.82	0.00	0.00			
09	TH-230	TRG	10/07/15 11:00	1.51E+00	108.31	0.00	0.00			
10	TH-230	TRG	10/07/15 11:10	1.51E+00	124.20	0.00	0.00			
11	TH-230	TRG	10/07/15 13:00	1.51E+00	117.57	0.00	0.00			
12	TH-230	TRG	10/07/15 13:10	1.53E+00	122.98	0.00	0.00			
13	TH-230	TRG	10/07/15 13:20	1.54E+00	75.28	0.00	0.00			
14	TH-230	TRG	10/07/15 13:30	1.51E+00	93.41	0.00	0.00			
15	TH-230	TRG	10/07/15 13:40	1.50E+00	84.18	0.00	0.00			
16	TH-230	TRG	10/07/15 13:50	1.51E+00	117.60	0.00	0.00			
17	TH-230	TRG	10/07/15 14:00	1.52E+00	102.13	0.00	0.00			

Run	1		Analysis Code	THISO
			Client	Auxier & Associates, Inc.
			Eberline Services Work Order	15-10087

Preliminary Data Report & Analytical Calculations
Work Order: 15-10087-THISO-1

Eberline Services
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-230	LCS	11/03/15 08:21		A_Spec	Alpha_003	170.03	5.10 E+02	6.00 E-03	17.4
02	TH-230	MBL	11/03/15 08:21		A_Spec	Alpha_004	170.02	8.47 E+00	9.00 E-03	18.9
03	TH-230	DUP	11/03/15 08:21		A_Spec	Alpha_010	170.02	1.68 E+02	1.30 E-02	19.2
04	TH-230	DO	11/03/15 08:21		A_Spec	Alpha_011	170.03	1.53 E+02	5.00 E-03	20
05	TH-230	TRG	11/03/15 08:21		A_Spec	Alpha_012	170	1.69 E+02	6.00 E-03	19.4
06	TH-230	TRG	11/03/15 08:21		A_Spec	Alpha_014	170.02	1.62 E+02	1.20 E-02	18.4
07	TH-230	TRG	11/03/15 08:21		A_Spec	Alpha_015	170.02	1.83 E+02	4.00 E-03	23.5
08	TH-230	TRG	11/03/15 08:21		A_Spec	Alpha_033	170	1.35 E+02	3.00 E-03	18
09	TH-230	TRG	11/03/15 08:21		A_Spec	Alpha_034	170	1.36 E+02	1.00 E-03	17.9
10	TH-230	TRG	11/03/15 08:22		A_Spec	Alpha_035	170	1.25 E+02	1.00 E-03	16.5
11	TH-230	TRG	11/03/15 08:22		A_Spec	Alpha_036	170	1.21 E+02	2.00 E-03	18.1
12	TH-230	TRG	11/03/15 08:22		A_Spec	Alpha_037	170	1.63 E+02	4.00 E-03	17.1
13	TH-230	TRG	11/03/15 08:22		A_Spec	Alpha_038	170	1.05 E+02	4.00 E-03	16.2
14	TH-230	TRG	11/03/15 08:22		A_Spec	Alpha_039	170	1.25 E+02	1.70 E-02	19.3
15	TH-230	TRG	11/03/15 08:22		A_Spec	Alpha_040	170	1.19 E+02	4.00 E-03	18.6
16	TH-230	TRG	11/03/15 08:22		A_Spec	Alpha_041	170	1.25 E+02	8.00 E-03	18.7
17	TH-230	TRG	11/03/15 08:22		A_Spec	Alpha_042	170	1.52 E+02	2.00 E-03	17.4

	Run	1
	Analysis Code	THISO
Eberline Services Work Order	15-10087	
Client	Auxier & Associates, Inc.	

Preliminary Data Report & Analytical Calculations
Work Order: 15-10087-THISO-1

Eberline Services
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	TH-232	LCS	LCS	pCi/g	5.79E+00	8.81E-01	5.38E-02	4.91E+00	118.08	OK		OK	
02	TH-232	MBL	BLANK	pCi/g	1.58E-02	3.02E-02	5.57E-02					OK	
03	TH-232	DUP	CP5004S01-02	pCi/g	1.13E+00	2.56E-01	5.23E-02				OK	OK	
04	TH-232	DO	CP5004S01-02	pCi/g	1.09E+00	2.66E-01	4.38E-02					OK	
05	TH-232	TRG	CP5004S04-05	pCi/g	1.10E+00	2.49E-01	3.73E-02					OK	
06	TH-232	TRG	CP5004S07-08	pCi/g	1.13E+00	2.99E-01	6.46E-02					OK	
07	TH-232	TRG	CP5004S09-10	pCi/g	1.15E+00	2.45E-01	4.23E-02					OK	
08	TH-232	TRG	CP5004S11-12	pCi/g	1.33E+00	3.22E-01	5.97E-02					OK	
09	TH-232	TRG	CP5004S14-15	pCi/g	1.25E+00	2.93E-01	5.43E-02					OK	
10	TH-232	TRG	CP5004S16-17	pCi/g	1.19E+00	2.76E-01	4.51E-02					OK	
11	TH-232	TRG	CP4106S03-04	pCi/g	1.02E+00	2.43E-01	4.96E-02					OK	
12	TH-232	TRG	CP4106S05-06	pCi/g	1.26E+00	2.83E-01	4.94E-02					OK	
13	TH-232	TRG	CP4106S08-09	pCi/g	1.47E+00	4.11E-01	7.44E-02					OK	
14	TH-232	TRG	CP4106S10-11	pCi/g	1.08E+00	2.75E-01	8.70E-02					OK	
15	TH-232	TRG	CP4106S13-14	pCi/g	1.24E+00	3.17E-01	5.40E-02					OK	
16	TH-232	TRG	CP4106S15-16	pCi/g	9.08E-01	2.20E-01	6.97E-02					OK	
17	TH-232	TRG	CP4106S18-19	pCi/g	1.39E+00	3.31E-01	5.53E-02					OK	

Run	1		Analysis Code	THISO
			Eberline Services Work Order	15-10087
			Client	Auxier & Associates, Inc.

15-10087

Preliminary Data Report & Analytical Calculations
Work Order: 15-10087-THISO-1

Eberline Services
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	TH-232	LCS	10/14/15 00:00	1.00E+00	118.06	0.00	0.00			
02	TH-232	MBL	10/14/15 00:00	1.50E+00	87.88	0.00	0.00			
03	TH-232	DUP	10/07/15 10:10	1.52E+00	114.54	0.00	0.00			
04	TH-232	DO	10/07/15 10:10	1.51E+00	95.88	0.00	0.00			
05	TH-232	TRG	10/07/15 10:20	1.52E+00	115.34	0.00	0.00			
06	TH-232	TRG	10/07/15 10:30	1.55E+00	86.30	0.00	0.00			
07	TH-232	TRG	10/07/15 10:40	1.50E+00	106.53	0.00	0.00			
08	TH-232	TRG	10/07/15 10:50	1.51E+00	97.82	0.00	0.00			
09	TH-232	TRG	10/07/15 11:00	1.51E+00	108.31	0.00	0.00			
10	TH-232	TRG	10/07/15 11:10	1.51E+00	124.20	0.00	0.00			
11	TH-232	TRG	10/07/15 13:00	1.51E+00	117.57	0.00	0.00			
12	TH-232	TRG	10/07/15 13:10	1.53E+00	122.98	0.00	0.00			
13	TH-232	TRG	10/07/15 13:20	1.54E+00	75.28	0.00	0.00			
14	TH-232	TRG	10/07/15 13:30	1.51E+00	93.41	0.00	0.00			
15	TH-232	TRG	10/07/15 13:40	1.50E+00	84.18	0.00	0.00			
16	TH-232	TRG	10/07/15 13:50	1.51E+00	117.60	0.00	0.00			
17	TH-232	TRG	10/07/15 14:00	1.52E+00	102.13	0.00	0.00			

Run	1		Client	Auxier & Associates, Inc.
			Analysis Code	THISO
			Work Order	15-10087

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Preliminary Data Report & Analytical Calculations
Work Order: 15-10087-THISO-1

Eberline Services
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-232	LCS	11/03/15 08:21		A_Spec	Alpha_003	170.03	4.50 E+02	1.00 E-03	17.4
02	TH-232	MBL	11/03/15 08:21		A_Spec	Alpha_004	170.02	1.49 E+00	3.00 E-03	18.9
03	TH-232	DUP	11/03/15 08:21		A_Spec	Alpha_010	170.02	1.42 E+02	7.00 E-03	19.2
04	TH-232	DO	11/03/15 08:21		A_Spec	Alpha_011	170.03	1.19 E+02	2.00 E-03	20
05	TH-232	TRG	11/03/15 08:21		A_Spec	Alpha_012	170	1.41 E+02	2.00 E-03	19.4
06	TH-232	TRG	11/03/15 08:21		A_Spec	Alpha_014	170.02	1.05 E+02	5.00 E-03	18.4
07	TH-232	TRG	11/03/15 08:21		A_Spec	Alpha_015	170.02	1.63 E+02	0.00 E+00	23.5
08	TH-232	TRG	11/03/15 08:21		A_Spec	Alpha_033	170	1.34 E+02	0.00 E+00	18
09	TH-232	TRG	11/03/15 08:21		A_Spec	Alpha_034	170	1.38 E+02	0.00 E+00	17.9
10	TH-232	TRG	11/03/15 08:22		A_Spec	Alpha_035	170	1.38 E+02	3.00 E-03	16.5
11	TH-232	TRG	11/03/15 08:22		A_Spec	Alpha_036	170	1.24 E+02	0.00 E+00	18.1
12	TH-232	TRG	11/03/15 08:22		A_Spec	Alpha_037	170	1.53 E+02	0.00 E+00	17.1
13	TH-232	TRG	11/03/15 08:22		A_Spec	Alpha_038	170	1.03 E+02	3.00 E-03	16.2
14	TH-232	TRG	11/03/15 08:22		A_Spec	Alpha_039	170	1.11 E+02	1.80 E-02	19.3
15	TH-232	TRG	11/03/15 08:22		A_Spec	Alpha_040	170	1.10 E+02	2.00 E-03	18.6
16	TH-232	TRG	11/03/15 08:22		A_Spec	Alpha_041	170	1.14 E+02	1.70 E-02	18.7
17	TH-232	TRG	11/03/15 08:22		A_Spec	Alpha_042	170	1.42 E+02	4.00 E-03	17.4

	Run	1
	Analysis Code	THISO
	Eberline Services Work Order	15-10087
Client	Auxier & Associates, Inc.	

00100

15-10087-THISO-1 (pCi/g) in SO
Tracer ID: Th-18a

Count Room Report
Client: Auxier Associates, Inc.

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	10/14/15 00:00	1.0000	0.4505	10.1182		0.00		
02	MBL	BLANK	10/14/15 00:00	1.5000	0.2223	4.9929		0.00		
03	DUP	CP5004S01-02	10/07/15 10:10	1.5172	0.2247	5.0468		0.00		
04	DO	CP5004S01-02	10/07/15 10:10	1.5054	0.2212	4.9682		0.00		
05	TRG	CP5004S04-05	10/07/15 10:20	1.5197	0.2218	4.9816		0.00		
06	TRG	CP5004S07-08	10/07/15 10:30	1.5460	0.2236	5.0221		0.00		
07	TRG	CP5004S09-10	10/07/15 10:40	1.5031	0.2228	5.0041		0.00		
08	TRG	CP5004S11-12	10/07/15 10:50	1.5081	0.2230	5.0086		0.00		
09	TRG	CP5004S14-15	10/07/15 11:00	1.5103	0.2235	5.0198		0.00		
10	TRG	CP5004S16-17	10/07/15 11:10	1.5068	0.2227	5.0018		0.00		
11	TRG	CP4106S03-04	10/07/15 13:00	1.5102	0.2239	5.0288		0.00		
12	TRG	CP4106S05-06	10/07/15 13:10	1.5297	0.2239	5.0288		0.00		
13	TRG	CP4106S08-09	10/07/15 13:20	1.5368	0.2240	5.0310		0.00		
14	TRG	CP4106S10-11	10/07/15 13:30	1.5051	0.2248	5.0490		0.00		
15	TRG	CP4106S13-14	10/07/15 13:40	1.5013	0.2242	5.0355		0.00		
16	TRG	CP4106S15-16	10/07/15 13:50	1.5113	0.2241	5.0333		0.00		
17	TRG	CP4106S18-19	10/07/15 14:00	1.5244	0.2231	5.0108		0.00		

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Spike and Tracer Worksheet

Internal Work Order		Run	Analysis Code	Date	Technician	Technician Initials	Witness Initials
15-10087		1	ThISO	10/19/2015 9:52	JPACHELLA	<i>[Signature]</i>	
LCS & Matrix Spikes							
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	MSD Volume Used (g)
Th-228	Th-8b	103.560	10/19/2015	0.100	0.1052		
Th-230	Th-1b	23.520	10/19/2015	0.500	0.5048		
Th-232	Th-8b	103.560	10/19/2015	0.100	0.1052		
TC-99MS	TC-2a	22043.636	7/5/2014	0.1			
Tracers							
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	
01	Th-229	Th-18a	22.460	10/19/2015	0.4505	0.2200	
02	Th-229	Th-18a	22.460	10/19/2015	0.2223	0.2200	
03	Th-229	Th-18a	22.460	10/19/2015	0.2247	0.2200	
04	Th-229	Th-18a	22.460	10/19/2015	0.2212	0.2200	
05	Th-229	Th-18a	22.460	10/19/2015	0.2218	0.2200	
06	Th-229	Th-18a	22.460	10/19/2015	0.2236	0.2200	
07	Th-229	Th-18a	22.460	10/19/2015	0.2228	0.2200	
08	Th-229	Th-18a	22.460	10/19/2015	0.2230	0.2200	
09	Th-229	Th-18a	22.460	10/19/2015	0.2235	0.2200	
10	Th-229	Th-18a	22.460	10/19/2015	0.2227	0.2200	
11	Th-229	Th-18a	22.460	10/19/2015	0.2239	0.2200	
12	Th-229	Th-18a	22.460	10/19/2015	0.2239	0.2200	
13	Th-229	Th-18a	22.460	10/19/2015	0.2240	0.2200	
14	Th-229	Th-18a	22.460	10/19/2015	0.2248	0.2200	
15	Th-229	Th-18a	22.460	10/19/2015	0.2242	0.2200	
16	Th-229	Th-18a	22.460	10/19/2015	0.2241	0.2200	
17	Th-229	Th-18a	22.460	10/19/2015	0.2231	0.2200	
Balance Printer Tapes							
				Tracer			
				LCS			
				Matrix Spike			

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
15-10087	1	THISO	grams	11/6/2015	JPACHELLA

Lab Fraction	Auxier & Associates, Inc.		Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID			Ratio Post/Pre	No. of Dils	Dil. Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS		LCS						1.0000E+00	1.0000E+00				
02	BLANK		MBL						1.5000E+00	1.5000E+00				
03	CP5004S01-02		DUP						1.5172E+00	1.5172E+00				
04	CP5004S01-02		DO						1.5054E+00	1.5054E+00				
05	CP5004S04-05		TRG						1.5197E+00	1.5197E+00				
06	CP5004S07-08		TRG						1.5460E+00	1.5460E+00				
07	CP5004S09-10		TRG						1.5031E+00	1.5031E+00				
08	CP5004S11-12		TRG						1.5081E+00	1.5081E+00				
09	CP5004S14-15		TRG						1.5103E+00	1.5103E+00				
10	CP5004S16-17		TRG						1.5068E+00	1.5068E+00				
11	CP4106S03-04		TRG						1.5102E+00	1.5102E+00				
12	CP4106S05-06		TRG						1.5297E+00	1.5297E+00				
13	CP4106S08-09		TRG						1.5368E+00	1.5368E+00				
14	CP4106S10-11		TRG						1.5051E+00	1.5051E+00				
15	CP4106S13-14		TRG						1.5013E+00	1.5013E+00				
16	CP4106S15-16		TRG						1.5113E+00	1.5113E+00				
17	CP4106S18-19		TRG						1.5244E+00	1.5244E+00				

Comments

Technician: *JPachella* Date: 10/19/15

**Rough Sample Preparation
 Log Book**

Work Order		Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
15-10087		11/6/2015	10/18/2015	10/19/2015	10/20/2015	KSALLINGS

Eberline Fraction	Client ID	Tare (g)		Gross (g)		Net (g)		Percent		Gamma		Special Info
		Pan Wt		Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	
04	CP5004S01-02	14.2900	1303.9800	1084.5800	1070.2900	1289.6900	1070.2900	17.01%	82.99%	0.0000	0.0000	
05	CP5004S04-05	14.3300	1172.3800	960.6600	946.3300	1158.0300	946.3300	18.28%	81.72%	0.0000	0.0000	
06	CP5004S07-08	14.3700	858.9600	702.8900	688.5200	844.5900	688.5200	18.48%	81.52%	0.0000	0.0000	
07	CP5004S09-10	14.3500	1066.6600	842.4200	828.0700	1052.3100	828.0700	21.31%	78.69%	0.0000	0.0000	
08	CP5004S11-12	14.3400	996.3800	779.4800	765.1400	982.0400	765.1400	22.09%	77.91%	0.0000	0.0000	
09	CP5004S14-15	14.3600	1096.9600	863.1200	848.7600	1082.6000	848.7600	21.60%	78.40%	0.0000	0.0000	
10	CP5004S16-17	14.3900	1017.7600	788.4400	774.0500	1003.3700	774.0500	22.85%	77.15%	0.0000	0.0000	
11	CP4106S03-04	14.4200	971.9800	808.5000	794.0800	957.5600	794.0800	17.07%	82.93%	0.0000	0.0000	
12	CP4106S05-06	14.3100	894.4400	729.8400	715.5300	880.1300	715.5300	18.70%	81.30%	0.0000	0.0000	
13	CP4106S08-09	14.3200	899.6200	736.1400	724.8200	885.3000	724.8200	18.47%	81.53%	0.0000	0.0000	
14	CP4106S10-11	14.3400	935.3600	742.3400	728.0000	921.0200	728.0000	20.96%	79.04%	0.0000	0.0000	
15	CP4106S13-14	14.2800	876.5600	690.1200	675.8400	862.2800	675.8400	21.62%	78.38%	0.0000	0.0000	
16	CP4106S15-16	14.3400	1004.0600	767.3400	753.0000	989.7200	753.0000	23.92%	76.08%	0.0000	0.0000	
17	CP4106S18-19	14.3900	1016.0800	786.1200	771.7300	1001.6900	771.7300	22.96%	77.04%	0.0000	0.0000	

Comments
Special Codes
H: Hot, O: Organic Hazard, P: PCB Hazard, R: Rush, T: Other (see comments)

Kerry Saez

00100



Apex-Alpha™

11/3/15

Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_003
 Chamber Serial Number:
 Detector Serial Number: 3
 Env. Background: System Bkgd 133256
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
 Sample Date/Time: 11/3/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:21:49 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.451 mL
 Effective Efficiency: 0.2057 +/- 0.0127
 Counting Efficiency: 0.1742 +/- 0.0031 on 10/25/2014 6:43:48 PM
 Chem. Recovery Factor: 1.1806 +/- 0.0756

Control Certificate Name: NatTh_Th-8
 Chem. Recov. of Control: TH-232 1.180768 +/- 0.098173
 Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.832	14.32	53.21	0.68	0.00E+000	4.5
TH-228	5.356	439.32	9.36	0.68	0.00E+000	19.2
TH-229 T	4.863	353.83	10.42	0.17	0.00E+000	13.5
TH-230	4.612	509.98	8.69	1.02	0.00E+000	18.5
TH-232	3.934	449.83	9.24	0.17	0.00E+000	26.9

T = Tracer Peak used for Effective Efficiency

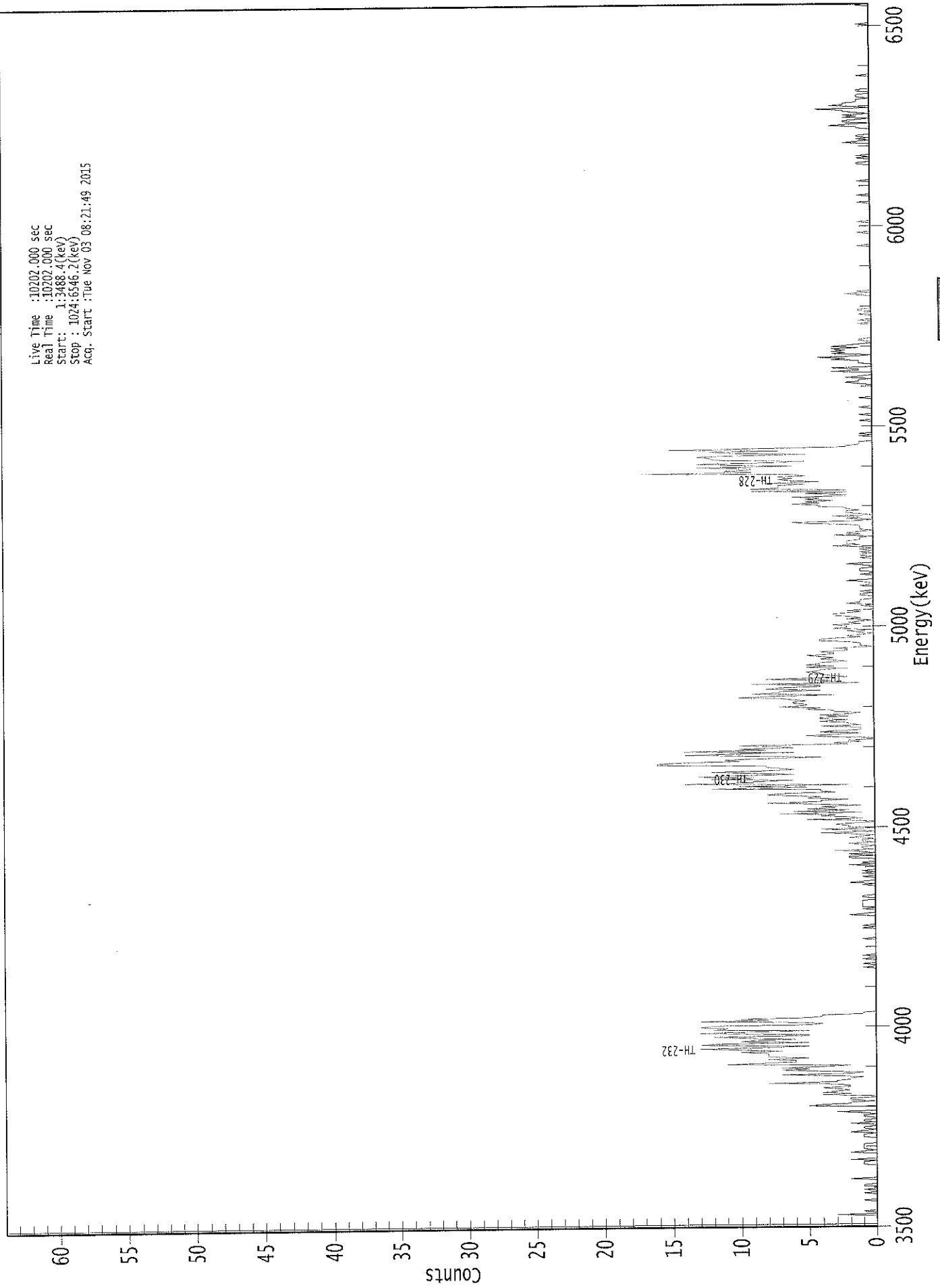
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.998	5850.00*	1.89E-001 +/- 1.03E-001	7.45E-002 +/- 8.99E-003
TH-228	0.990	5400.00*	5.66E+000 +/- 8.65E-001	7.27E-002 +/- 8.77E-003
TH-229	1.000	4872.00*	4.58E+000 +/- 5.53E-001	5.40E-002 +/- 6.52E-003
TH-230	0.981	4672.00*	6.58E+000 +/- 9.78E-001	8.13E-002 +/- 9.81E-003
TH-232	0.980	3997.00*	5.79E+000 +/- 8.81E-001	5.38E-002 +/- 6.49E-003

AG
 11/3/15

0000132976.CNF

Live Time :10202.000 sec
Real Time :10202.000 sec
Start : 1:3488.4(kev)
Stop : 1024:6546.2(kev)
Acq. Start :Tue Nov 03 08:21:49 2015



ROI Type: 1

ROI Type: 3

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 01

Elapsed Live time: 10202

Elapsed Real Time: 10202

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10202	10202	0	0	0	0	0	0
9:	0	0	3	0	0	1	0	0
17:	0	0	0	0	0	0	1	0
25:	0	0	0	0	1	0	0	1
33:	0	0	1	1	0	0	0	0
41:	2	0	0	0	0	0	0	0
49:	0	0	0	0	1	1	1	0
57:	2	0	0	0	0	0	2	1
65:	0	1	1	1	1	1	0	0
73:	0	0	0	1	1	1	0	2
81:	1	0	1	1	0	0	2	0
89:	1	1	0	0	1	1	0	1
97:	3	0	0	0	0	5	4	2
105:	2	0	2	2	0	0	4	2
113:	4	3	2	3	4	2	2	3
121:	8	3	3	2	2	1	3	7
129:	2	1	4	7	5	7	4	2
137:	11	8	6	6	8	5	8	8
145:	8	8	10	7	10	13	8	5
153:	13	12	5	10	9	6	10	12
161:	5	5	13	11	5	12	11	13
169:	12	5	4	6	13	8	10	5
177:	4	4	1	1	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	1	0	0	1	0	0	0
225:	1	0	0	1	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	1	0	0	0	0	0	0
249:	0	0	1	0	1	0	0	0
257:	0	0	0	0	0	2	1	0
265:	0	0	1	0	1	1	1	1
273:	1	1	0	0	1	1	0	0
281:	0	0	0	0	0	0	1	0
289:	2	1	0	0	0	1	0	0
297:	1	0	1	0	0	0	0	2
305:	0	1	0	0	0	2	2	0
313:	2	0	1	3	0	1	1	0
321:	1	2	0	1	1	0	2	1
329:	0	2	4	0	1	4	0	2
337:	2	3	2	0	0	5	1	2
345:	4	3	7	1	6	2	5	3
353:	4	1	5	8	4	4	2	5
361:	4	6	8	7	3	4	4	12

369: 5 10 2 14 9 9 6 12

Sample Title: 01

Channel	1	2	3	4	5	6	7	8
377:	9	13	10	6	9	12	8	6
385:	7	8	8	16	16	14	10	11
393:	9	4	7	14	12	6	14	8
401:	10	6	7	10	2	3	1	2
409:	0	0	3	5	3	1	4	3
417:	1	1	1	4	1	2	2	4
425:	2	4	4	2	4	2	1	3
433:	3	5	4	7	5	5	6	6
441:	5	6	7	10	7	3	9	7
449:	7	4	8	7	4	4	9	1
457:	4	3	8	4	2	3	4	4
465:	5	4	4	2	5	3	5	4
473:	4	2	3	4	3	4	5	3
481:	3	4	2	2	3	0	1	1
489:	1	2	4	4	3	1	2	1
497:	0	1	2	0	3	2	2	3
505:	1	2	1	0	2	1	2	3
513:	3	2	1	2	0	0	0	1
521:	0	2	1	1	1	0	0	0
529:	1	1	0	1	0	0	0	0
537:	1	0	0	1	2	0	0	0
545:	0	1	0	0	1	1	1	0
553:	0	1	2	0	0	0	0	1
561:	0	1	1	0	1	0	1	0
569:	1	3	1	2	2	2	1	1
577:	1	0	3	1	2	1	0	1
585:	1	1	1	2	5	6	1	0
593:	2	1	3	0	1	2	2	1
601:	2	2	4	4	6	4	5	3
609:	5	4	6	2	2	5	2	9
617:	2	9	7	7	7	5	8	4
625:	6	7	6	7	5	6	17	9
633:	11	9	9	13	6	10	13	8
641:	5	11	12	12	13	10	5	10
649:	12	7	15	9	2	2	1	1
657:	1	0	0	0	0	1	0	1
665:	0	0	0	0	0	0	0	0
673:	0	0	1	0	0	0	0	1
681:	0	0	0	0	0	1	0	0
689:	0	0	0	0	0	1	0	0
697:	0	0	0	0	0	0	0	0
705:	0	1	2	1	1	0	2	1
713:	0	0	0	3	1	1	3	0
721:	0	0	1	1	1	3	2	4
729:	1	0	3	2	3	2	3	1
737:	3	2	1	0	0	1	1	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	1	0	0	1	0
761:	0	0	0	1	0	0	1	1
769:	0	0	0	0	0	0	0	0
777:	0	0	0	1	2	0	1	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 01

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	1	0	0	0
825:	0	0	0	0	0	0	0	1
833:	0	0	0	0	0	0	0	0
841:	1	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	1	0	0	0	0	0	1	0
865:	0	0	0	0	0	0	0	0
873:	0	0	1	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	1	1	0	0	0	1	0	1
897:	0	0	0	0	0	0	0	0
905:	0	0	2	1	0	1	0	1
913:	1	0	0	0	0	0	1	1
921:	3	2	0	2	2	1	0	2
929:	1	2	0	1	2	2	4	0
937:	1	3	2	2	1	1	1	0
945:	1	1	1	0	0	1	1	0
953:	0	0	0	0	0	0	0	0
961:	0	0	1	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	1	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	1	0	0

Apex-Alpha™

KS
11/3/15

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_004
 Chamber Serial Number:
 Detector Serial Number: 4
 Env. Background: System Bkgd 133257
 Reagent Blank: <not performed>

Sample Size: 1.500E+000 +/- 0.000E+000 gram
 Sample Date/Time: 11/3/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:21:50 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.222 mL
 Effective Efficiency: 0.1663 +/- 0.0150
 Counting Efficiency: 0.1892 +/- 0.0033 on 10/25/2014 6:43:53 PM
 Chem. Recovery Factor: 0.8788 +/- 0.0805

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.713	1.66	169.38	0.34	0.00E+000	2.9
TH-228	5.300	-0.85	246.67	0.85	0.00E+000	0.0
TH-229 T	4.867	141.15	16.56	0.85	0.00E+000	5.1
TH-230	4.606	8.47	74.12	1.53	0.00E+000	5.9
TH-232	3.994	1.49	190.03	0.51	0.00E+000	2.9

T = Tracer Peak used for Effective Efficiency

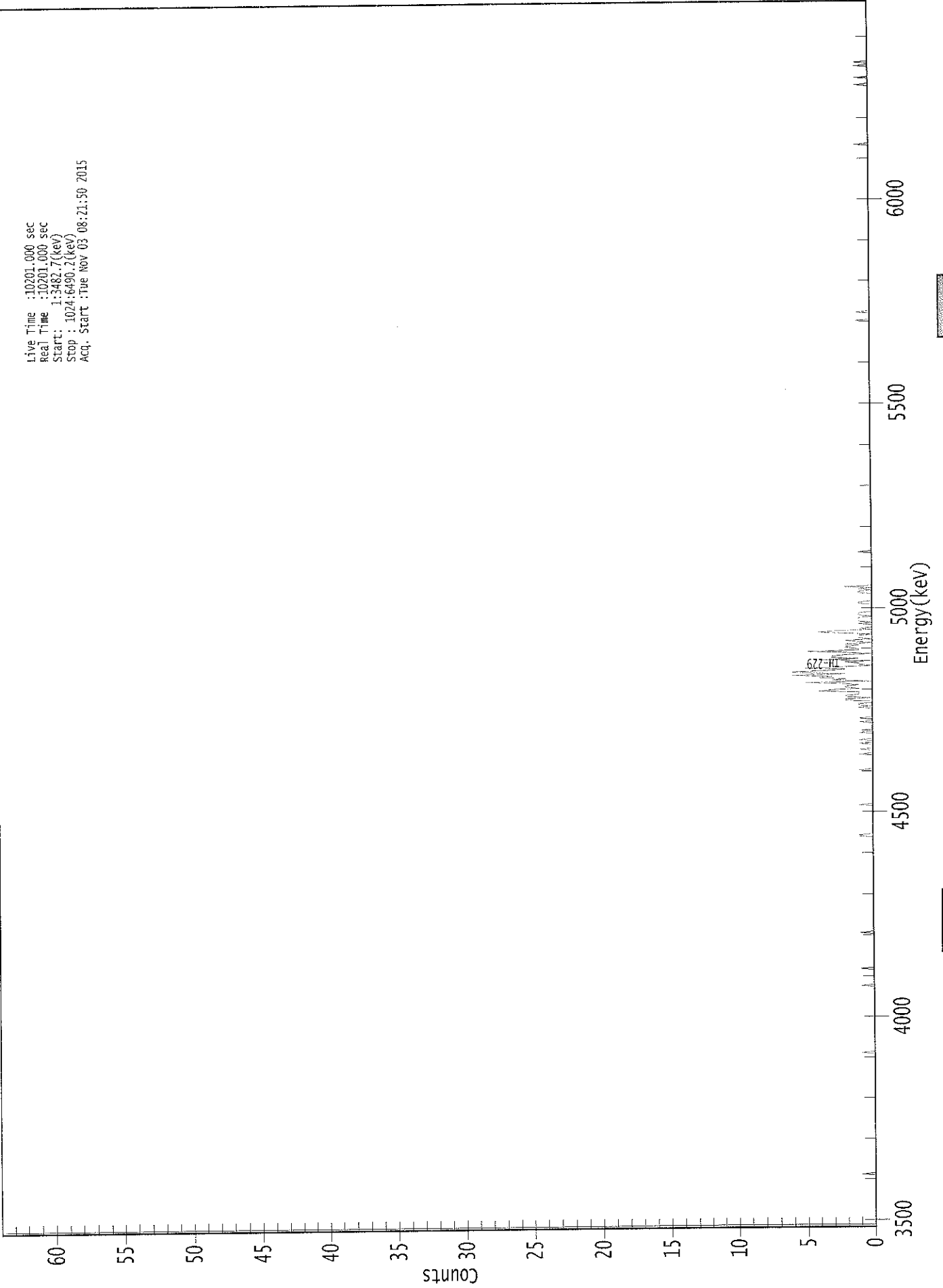
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.906	5850.00*	1.81E-002 +/- 3.08E-002	5.21E-002 +/- 9.19E-003
TH-228	0.949	5400.00*	-9.04E-003 +/- 2.23E-002	6.36E-002 +/- 1.12E-002
TH-229	1.000	4872.00*	1.51E+000 +/- 2.66E-001	6.39E-002 +/- 1.13E-002
TH-230	0.977	4672.00*	9.01E-002 +/- 6.87E-002	7.56E-002 +/- 1.33E-002
TH-232	1.000	3997.00*	1.58E-002 +/- 3.02E-002	5.57E-002 +/- 9.83E-003

AG
11/3/15

0000132977.CNF

Live Time : 10201.000 sec
Real Time : 10201.000 sec
Start : 1:3482.7(kev)
Stop : 1024:6490.2(kev)
Acq. Start : Tue Nov 03 08:21:50 2015



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 02

Elapsed Live time: 10201

Elapsed Real Time: 10201

Channel	10201	10201	0	0	0	0	0	0
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	1	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	1	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	1	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	1	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	1	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	1	1
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	1	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

369: 0 0 0 0 0 0 0 0 0

Sample Title: 02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	1	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	1	0	0	0	1	0
401:	0	0	0	1	0	0	1	0
409:	0	0	0	0	1	0	0	0
417:	0	0	0	0	0	1	0	0
425:	1	0	0	0	0	0	0	0
433:	0	1	0	1	1	0	0	2
441:	2	0	2	2	1	1	1	4
449:	3	1	2	2	1	2	5	0
457:	3	2	4	3	6	2	5	6
465:	3	2	5	2	0	1	1	2
473:	0	4	1	3	3	2	0	2
481:	5	1	1	2	2	1	2	0
489:	1	2	0	1	1	1	0	2
497:	4	3	0	1	0	0	0	1
505:	0	1	1	1	1	0	1	1
513:	1	0	0	0	0	0	0	0
521:	1	1	0	0	0	0	0	0
529:	0	1	1	0	1	0	2	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	1	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	1	0	0	0	0
761:	0	0	1	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 02

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	1	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	1	0	0	0	0	0	1	0
961:	0	0	0	0	0	0	0	0
969:	1	0	0	1	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



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11/3/15

Sample Description: CP5004S01-02-DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_010
 Chamber Serial Number:
 Detector Serial Number: 10
 Env. Background: System Bkgd 133258
 Reagent Blank: <not performed>

Sample Size: 1.517E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:21:51 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.225 mL
 Effective Efficiency: 0.2200 +/- 0.0176
 Counting Efficiency: 0.1921 +/- 0.0033 on 10/25/2014 6:44:30 PM
 Chem. Recovery Factor: 1.1454 +/- 0.0935

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.835	11.96	62.07	2.04	0.00E+000	2.9
TH-228	5.357	145.11	16.46	2.89	0.00E+000	12.1
TH-229 T	4.873	188.77	14.41	3.23	0.00E+000	5.8
TH-230	4.626	167.79	15.25	2.21	0.00E+000	3.7
TH-232	3.938	141.81	16.54	1.19	0.00E+000	4.9

T = Tracer Peak used for Effective Efficiency

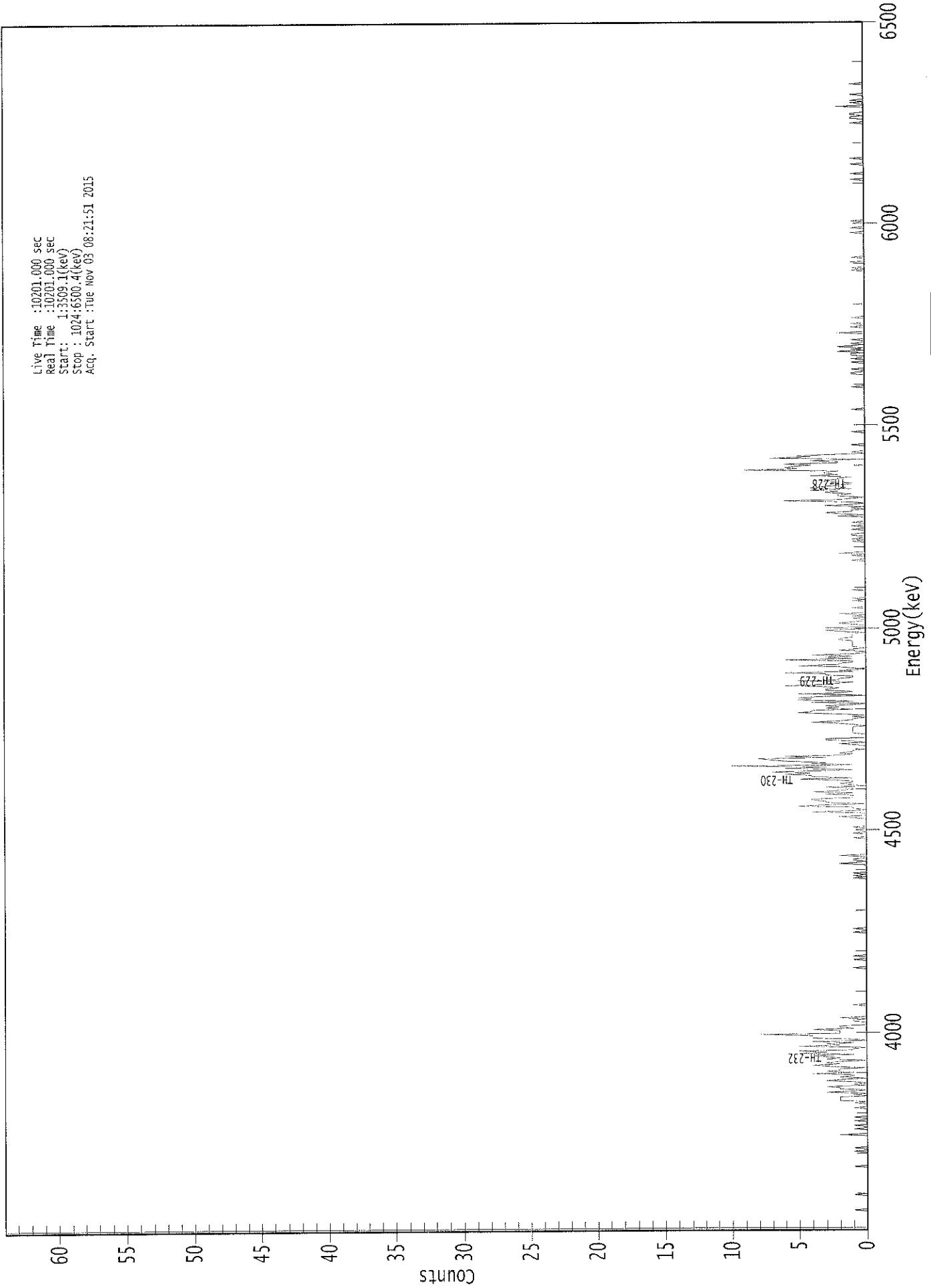
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	9.76E-002 +/- 6.25E-002	6.36E-002 +/- 9.94E-003
TH-228	0.991	5400.00*	1.18E+000 +/- 2.69E-001	7.14E-002 +/- 1.12E-002
TH-229	1.000	4872.00*	1.51E+000 +/- 2.35E-001	7.26E-002 +/- 1.14E-002
TH-230	0.989	4672.00*	1.33E+000 +/- 2.91E-001	6.36E-002 +/- 9.94E-003
TH-232	0.982	3997.00*	1.13E+000 +/- 2.56E-001	5.23E-002 +/- 8.18E-003

AG
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0000132978.CNF

Live Time : 10201.000 sec
Real Time : 10201.000 sec
Start : 1:3509.1(keV)
Stop : 1024:6500.4(keV)
Acq. Start : Tue Nov 03 08:21:51 2015



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 03

Elapsed Live time: 10201

Elapsed Real Time: 10201

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	1	0	0	0	0	0	0
25:	0	0	0	0	0	0	1	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	1	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	1	0	0	1	0
73:	0	0	0	0	0	0	0	0
81:	0	2	0	0	0	0	1	0
89:	0	1	0	0	0	1	0	0
97:	1	0	0	0	0	0	0	0
105:	1	0	0	0	1	0	2	2
113:	2	2	0	1	0	3	1	0
121:	2	2	3	0	1	0	1	3
129:	2	0	2	1	1	4	1	3
137:	2	2	0	3	4	2	3	2
145:	0	3	2	3	4	1	5	3
153:	5	1	1	0	5	2	3	1
161:	4	0	1	4	4	4	8	2
169:	2	2	4	1	2	2	0	0
177:	0	1	1	0	2	0	0	0
185:	0	0	0	0	0	0	0	1
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	1	0
225:	0	0	0	0	0	1	0	0
233:	1	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	1	0	0	1
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	1	0	1	0	1	0
305:	0	0	0	0	0	0	2	1
313:	0	1	1	0	0	2	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	1	0	0	0
337:	1	0	0	0	0	1	0	0
345:	0	0	0	0	0	1	2	0
353:	0	0	4	1	0	1	1	5
361:	3	0	3	3	4	4	1	1

369: 1 3 1 4 2 1 1 3

Sample Title: 03

Channel	1	2	3	4	5	6	7	8
377:	0	1	2	1	1	2	5	1
385:	4	4	6	4	7	3	1	6
393:	3	10	1	4	3	6	7	8
401:	3	6	2	1	2	1	1	0
409:	0	0	0	1	2	0	1	3
417:	3	0	0	0	0	1	1	1
425:	1	1	1	0	1	2	4	2
433:	1	1	0	1	0	2	5	4
441:	4	1	3	2	3	1	0	4
449:	1	5	4	5	3	0	5	2
457:	1	3	3	2	3	6	3	2
465:	1	5	2	2	1	1	3	3
473:	6	1	2	0	1	2	5	2
481:	2	1	1	6	1	3	1	4
489:	1	0	0	2	1	0	1	1
497:	1	1	1	1	2	2	1	1
505:	1	1	0	2	3	0	3	0
513:	0	1	2	1	0	0	1	0
521:	1	0	2	0	0	0	0	1
529:	0	0	0	0	0	1	0	1
537:	0	0	0	0	0	0	1	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	1
569:	0	0	0	1	0	2	0	0
577:	0	0	0	0	0	0	0	1
585:	0	1	0	0	1	1	0	0
593:	0	1	0	0	1	0	0	1
601:	0	0	0	0	2	0	2	3
609:	1	1	0	1	0	3	1	0
617:	1	6	2	1	0	2	2	1
625:	3	2	4	1	4	3	2	1
633:	1	3	3	2	2	1	4	2
641:	3	3	2	9	5	6	5	4
649:	6	2	2	4	0	7	4	5
657:	2	0	1	0	0	0	0	0
665:	1	0	0	0	0	0	0	0
673:	0	0	0	1	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	1	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	1	0	0	0	0	0	0
721:	0	0	0	0	1	1	0	0
729:	1	0	0	0	0	0	1	0
737:	0	1	0	0	1	1	0	2
745:	0	1	0	2	1	0	1	0
753:	0	1	0	0	0	0	0	2
761:	0	0	0	0	1	0	0	1
769:	0	0	0	0	1	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 03

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	1	0	1	0
817:	0	0	0	1	0	0	0	1
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	1	0	0	0
849:	1	0	0	0	0	0	1	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	1	0	0	0	0	1	0
897:	0	0	0	0	0	0	1	0
905:	0	0	0	1	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	1	0	0	0	1	1	0
945:	1	1	0	0	0	0	0	2
953:	0	0	1	0	1	0	0	0
961:	0	1	0	0	0	0	0	0
969:	0	0	1	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

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Sample Description: CP5004S01-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 04
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_011
 Chamber Serial Number:
 Detector Serial Number: 11
 Env. Background: System Bkgd 133259
 Reagent Blank: <not performed>

Sample Size: 1.505E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:21:52 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.221 mL
 Effective Efficiency: 0.1921 +/- 0.0162
 Counting Efficiency: 0.2004 +/- 0.0035 on 10/25/2014 6:44:33 PM
 Chem. Recovery Factor: 0.9588 +/- 0.0828

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.811	6.98	80.28	1.02	0.00E+000	2.6
TH-228	5.346	138.60	16.89	3.40	0.00E+000	5.6
TH-229 T	4.852	162.32	15.42	0.68	0.00E+000	3.1
TH-230	4.613	153.15	15.89	0.85	0.00E+000	9.6
TH-232	3.930	118.66	18.02	0.34	0.00E+000	3.6

T = Tracer Peak used for Effective Efficiency

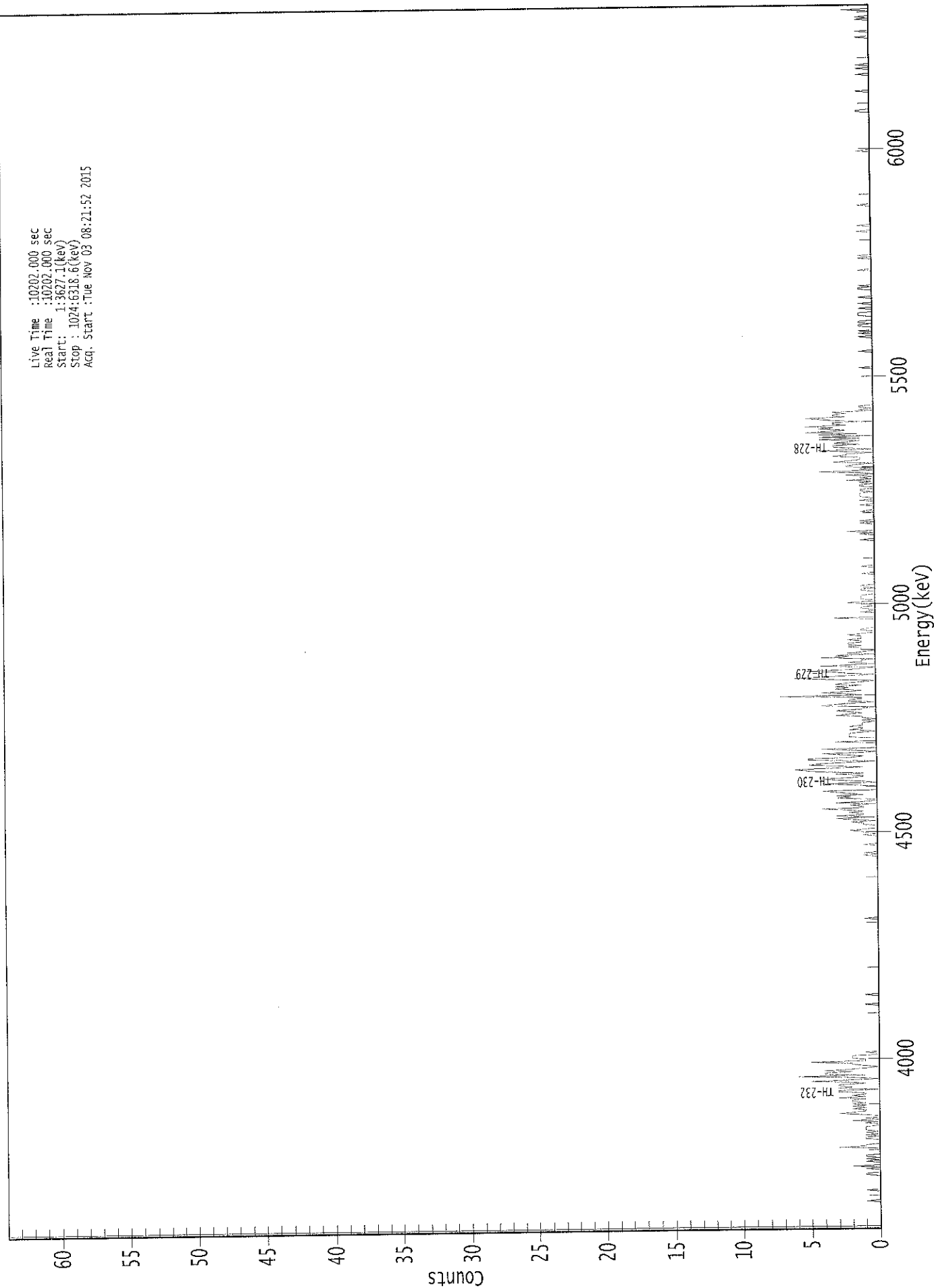
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.992	5850.00*	6.57E-002 +/- 5.39E-002	5.93E-002 +/- 9.83E-003
TH-228	0.985	5400.00*	1.30E+000 +/- 3.09E-001	8.73E-002 +/- 1.45E-002
TH-229	0.998	4872.00*	1.49E+000 +/- 2.48E-001	5.19E-002 +/- 8.60E-003
TH-230	0.982	4672.00*	1.41E+000 +/- 3.23E-001	5.49E-002 +/- 9.11E-003
TH-232	0.977	3997.00*	1.09E+000 +/- 2.66E-001	4.38E-002 +/- 7.26E-003

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0000132979.CNF

Live Time :10202.000 sec
Real Time :10202.000 sec
Start : 1:3627.1(kev)
Stop : 1024:6318.6(kev)
Acq. Start :Tue Nov 03 08:21:52 2015



ROI Type: 1

ROI Type: 3

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 04

Elapsed Live time: 10202
 Elapsed Real Time: 10202

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10202	10202	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	1
25:	0	0	0	0	0	0	0	0
33:	1	0	0	0	0	0	0	0
41:	0	0	0	0	0	1	1	0
49:	0	0	1	0	2	0	0	0
57:	1	0	1	0	1	1	0	0
65:	0	0	0	0	3	1	1	0
73:	0	0	0	1	1	0	1	0
81:	1	0	1	1	1	1	0	0
89:	1	0	2	0	1	0	0	1
97:	3	2	1	1	2	1	2	1
105:	2	1	2	2	1	3	1	2
113:	1	1	3	3	0	3	2	3
121:	3	1	2	5	2	0	2	6
129:	1	4	4	2	4	2	1	0
137:	1	2	2	5	1	1	2	2
145:	2	0	0	1	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	1	0	0	0	0
193:	0	0	0	1	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	1	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	1	0	1	0	0	0	0	0
321:	0	1	0	0	0	0	0	0
329:	0	1	0	1	1	2	1	0
337:	0	0	1	1	2	0	2	3
345:	0	3	1	1	2	1	2	4
353:	1	1	2	0	3	1	0	0
361:	3	2	3	1	2	3	4	0

369: 0 0 0 2 4 0 1 3

Sample Title: 04

Channel	1	2	3	4	5	6	7	8
377:	4	2	1	1	3	1	4	5
385:	6	4	1	3	5	4	2	0
393:	5	5	2	1	2	4	1	0
401:	2	4	0	0	0	0	0	3
409:	0	0	0	2	2	2	2	1
417:	0	2	1	1	2	1	1	1
425:	0	1	0	1	1	3	2	1
433:	2	3	1	1	0	4	3	2
441:	0	2	2	1	1	7	1	2
449:	4	2	1	3	2	3	1	3
457:	2	1	0	4	6	4	2	0
465:	2	3	5	2	1	0	4	2
473:	0	2	1	1	0	4	2	3
481:	0	2	1	0	1	1	2	1
489:	2	2	1	1	2	1	1	1
497:	2	1	0	0	1	1	0	0
505:	0	0	0	0	0	0	3	0
513:	0	0	0	1	0	0	1	1
521:	0	0	1	2	0	0	1	1
529:	1	1	0	0	0	1	1	0
537:	1	1	0	0	0	0	0	0
545:	0	0	0	1	0	0	0	0
553:	0	1	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	1
577:	0	0	0	0	1	0	2	0
585:	0	0	0	0	0	1	0	1
593:	0	0	0	0	0	0	0	1
601:	0	0	0	0	1	0	0	0
609:	1	0	0	1	1	1	1	0
617:	1	1	0	0	1	1	0	1
625:	0	2	0	1	0	2	0	1
633:	4	0	1	0	2	2	1	0
641:	3	2	1	1	1	3	2	2
649:	0	2	4	0	2	3	3	1
657:	3	2	1	4	1	4	0	4
665:	1	5	3	2	4	3	5	2
673:	3	3	1	3	4	5	2	3
681:	3	2	3	0	1	0	1	1
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	1
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	1	0	0
737:	0	0	0	0	0	0	0	0
745:	0	1	0	0	1	0	1	0
753:	0	0	1	1	0	1	1	0
761:	0	0	0	1	1	1	0	0
769:	0	1	0	0	0	1	0	0
777:	0	0	1	0	0	0	0	0
785:	0	1	1	0	1	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 1 0 0 0 0 0 0 0

Sample Title: 04

Channel	1	2	3	4	5	6	7	8	9
809:	0	0	0	1	0	1	0	0	0
817:	0	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0	0
833:	0	1	0	0	0	0	1	0	0
841:	0	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0	1
857:	0	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	1	0	0	0	0
905:	0	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	1	1	0	0
937:	0	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	1	0	0
953:	0	0	0	0	0	0	0	0	0
961:	0	0	0	0	1	0	0	0	0
969:	0	1	0	0	1	0	0	0	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	1	0	0	0	0	0
1001:	1	0	0	0	0	0	0	0	0
1009:	0	0	1	0	1	0	0	0	0
1017:	0	0	2	0	0	0	0	0	0



Apex-Alpha™

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Sample Description: CP5004S04-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_012
 Chamber Serial Number:
 Detector Serial Number: 12
 Env. Background: System Bkgd 133260
 Reagent Blank: <not performed>

Sample Size: 1.520E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:21:53 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.222 mL
 Effective Efficiency: 0.2233 +/- 0.0177
 Counting Efficiency: 0.1936 +/- 0.0034 on 10/25/2014 6:44:33 PM
 Chem. Recovery Factor: 1.1534 +/- 0.0935

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.808	4.64	105.44	1.36	0.00E+000	3.0
TH-228	5.366	145.81	16.31	1.19	0.00E+000	10.4
TH-229 T	4.877	189.15	14.29	0.85	0.00E+000	6.7
TH-230	4.625	168.98	15.13	1.02	0.00E+000	9.9
TH-232	3.954	140.66	16.55	0.34	0.00E+000	3.5

T = Tracer Peak used for Effective Efficiency

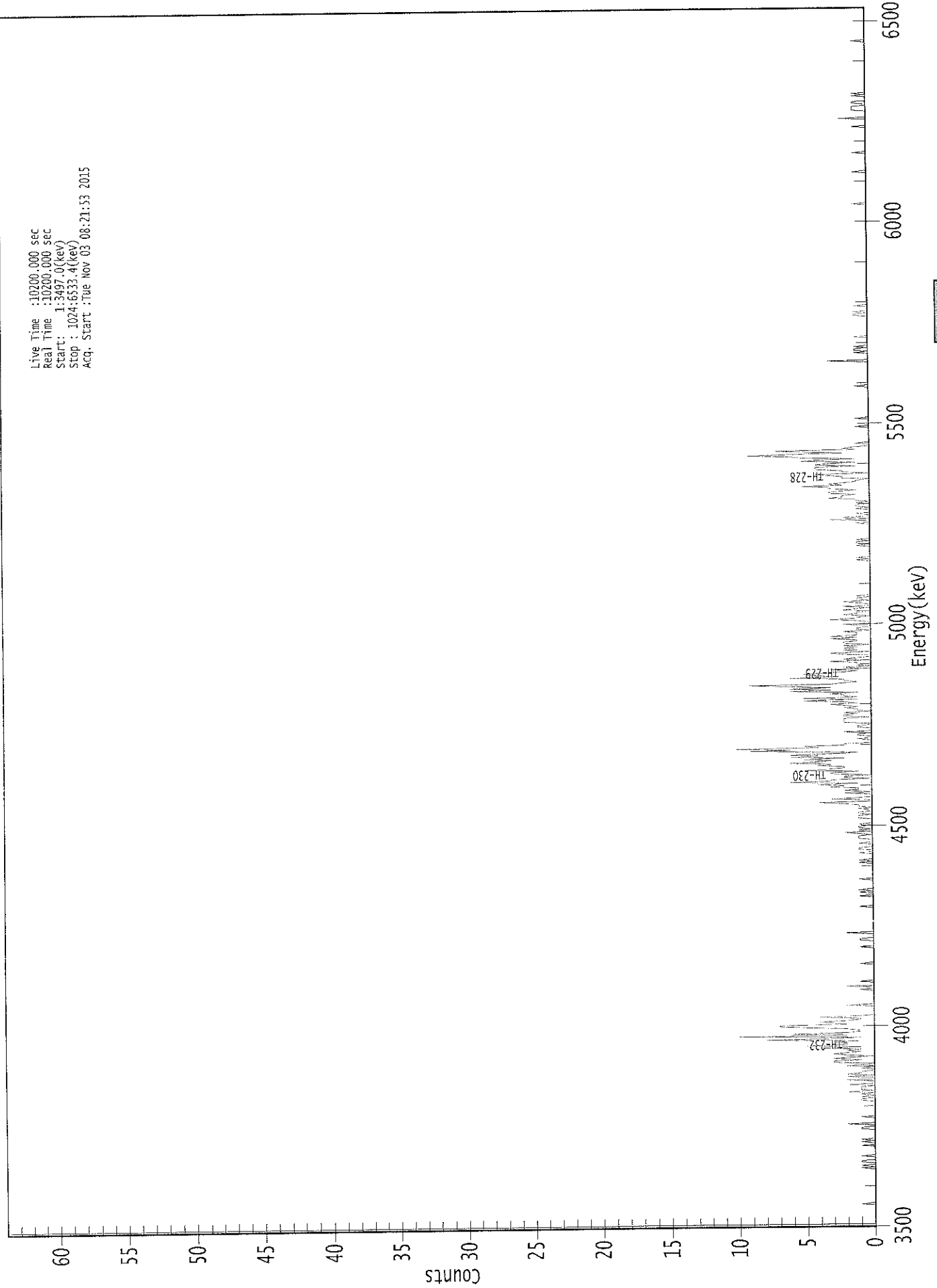
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.991	5850.00*	3.72E-002 +/- 3.97E-002	5.50E-002 +/- 8.54E-003
TH-228	0.994	5400.00*	1.17E+000 +/- 2.63E-001	5.29E-002 +/- 8.21E-003
TH-229	1.000	4872.00*	1.48E+000 +/- 2.30E-001	4.70E-002 +/- 7.29E-003
TH-230	0.989	4672.00*	1.32E+000 +/- 2.87E-001	4.93E-002 +/- 7.65E-003
TH-232	0.990	3997.00*	1.10E+000 +/- 2.49E-001	3.73E-002 +/- 5.80E-003

AG
 11/3/15

0000132980.CNF

Live Time : 10200.000 sec
Real Time : 10200.000 sec
Start : 1:3497.0(keV)
Stop : 1024:6533.4(keV)
Acq. Start : Tue Nov 03 08:21:53 2015



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 05

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10200	10200	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	1	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	1	0	1	0	0	1	1
57:	0	0	0	1	0	0	0	0
65:	0	0	0	0	1	0	0	1
73:	0	1	0	0	0	0	0	0
81:	0	0	1	1	0	0	2	0
89:	0	0	0	0	1	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	1	1	0	1	0	1
113:	0	2	0	1	1	1	0	2
121:	0	0	0	2	0	0	2	0
129:	2	1	1	0	0	1	0	2
137:	1	0	3	3	1	3	2	0
145:	2	3	2	1	2	1	4	1
153:	5	2	2	3	1	8	3	1
161:	10	2	6	2	1	1	2	4
169:	7	7	2	3	4	2	1	1
177:	4	1	0	0	0	0	0	0
185:	0	0	2	0	0	0	0	0
193:	0	0	0	0	0	0	0	1
201:	0	0	2	0	0	0	1	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	1	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	1	0	0	0	0
241:	0	1	1	0	0	0	0	2
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	1	0	0
273:	0	0	0	0	0	0	1	0
281:	0	1	0	1	0	0	0	0
289:	0	0	0	0	1	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	1	0	1	0	0	0
313:	0	0	1	0	0	1	1	0
321:	0	0	1	0	0	0	1	1
329:	1	0	1	2	0	1	0	1
337:	1	0	1	0	0	0	0	1
345:	1	1	0	1	1	0	0	1
353:	0	1	1	2	4	0	0	3
361:	1	0	0	0	2	0	2	1

369: 1 3 2 4 1 6 3 3

Sample Title: 05

Channel	1	2	3	4	5	6	7	8
377:	0	2	2	0	3	3	1	5
385:	3	2	2	4	3	6	4	3
393:	5	2	6	4	6	2	1	9
401:	6	10	4	5	2	2	0	0
409:	0	1	0	0	1	1	0	2
417:	0	0	0	1	1	0	0	2
425:	2	2	2	0	2	2	1	2
433:	0	1	1	2	1	2	3	1
441:	2	5	1	5	1	2	2	3
449:	1	6	3	6	3	6	9	3
457:	2	1	2	2	6	3	4	5
465:	4	2	1	3	0	2	0	1
473:	1	1	3	0	2	1	0	0
481:	2	3	0	2	1	2	1	2
489:	0	2	2	1	1	3	1	3
497:	1	1	1	2	0	1	1	0
505:	0	2	0	0	1	3	1	1
513:	0	2	1	1	0	2	1	0
521:	2	0	0	1	2	0	1	1
529:	0	1	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	1
561:	0	1	0	0	0	0	0	0
569:	0	0	0	1	0	1	1	0
577:	1	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	1	0
593:	0	3	0	2	0	0	1	0
601:	0	0	1	0	1	1	0	1
609:	0	1	1	3	2	2	1	3
617:	3	2	1	3	3	5	2	3
625:	2	1	1	0	2	2	3	4
633:	0	2	2	4	4	4	1	4
641:	3	1	5	4	1	5	6	9
649:	6	2	5	7	1	2	1	0
657:	0	1	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	1
673:	0	0	0	0	0	0	1	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	1	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	3	0
729:	0	0	0	0	0	1	0	1
737:	1	0	1	0	0	0	0	0
745:	0	0	1	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	1	1	0	1
769:	0	0	0	0	1	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 05

Channel									
809:	0	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0	0
857:	0	1	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0	0
881:	0	0	0	0	1	0	0	0	0
889:	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	1	0	0	0	0
905:	0	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0	0
921:	0	0	1	0	0	0	0	0	0
929:	0	2	0	0	0	0	0	0	0
937:	1	1	1	1	0	0	1	1	1
945:	0	0	0	0	1	0	1	0	0
953:	0	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	1	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0

108
11/3/15

Sample Description: CP5004S07-08
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 06
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_014
 Chamber Serial Number:
 Detector Serial Number: 14
 Env. Background: System Bkgd 133261
 Reagent Blank: <not performed>

Sample Size: 1.546E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:21:55 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.224 mL
 Effective Efficiency: 0.1588 +/- 0.0146
 Counting Efficiency: 0.1840 +/- 0.0032 on 10/25/2014 6:45:28 PM
 Chem. Recovery Factor: 0.8630 +/- 0.0809

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.783	4.75	128.67	4.25	0.00E+000	2.9
TH-228	5.333	119.09	18.30	3.91	0.00E+000	5.7
TH-229 T	4.858	135.62	17.00	2.38	0.00E+000	6.9
TH-230	4.594	161.96	15.51	2.04	0.00E+000	6.2
TH-232	3.935	105.15	19.20	0.85	0.00E+000	3.2

T = Tracer Peak used for Effective Efficiency

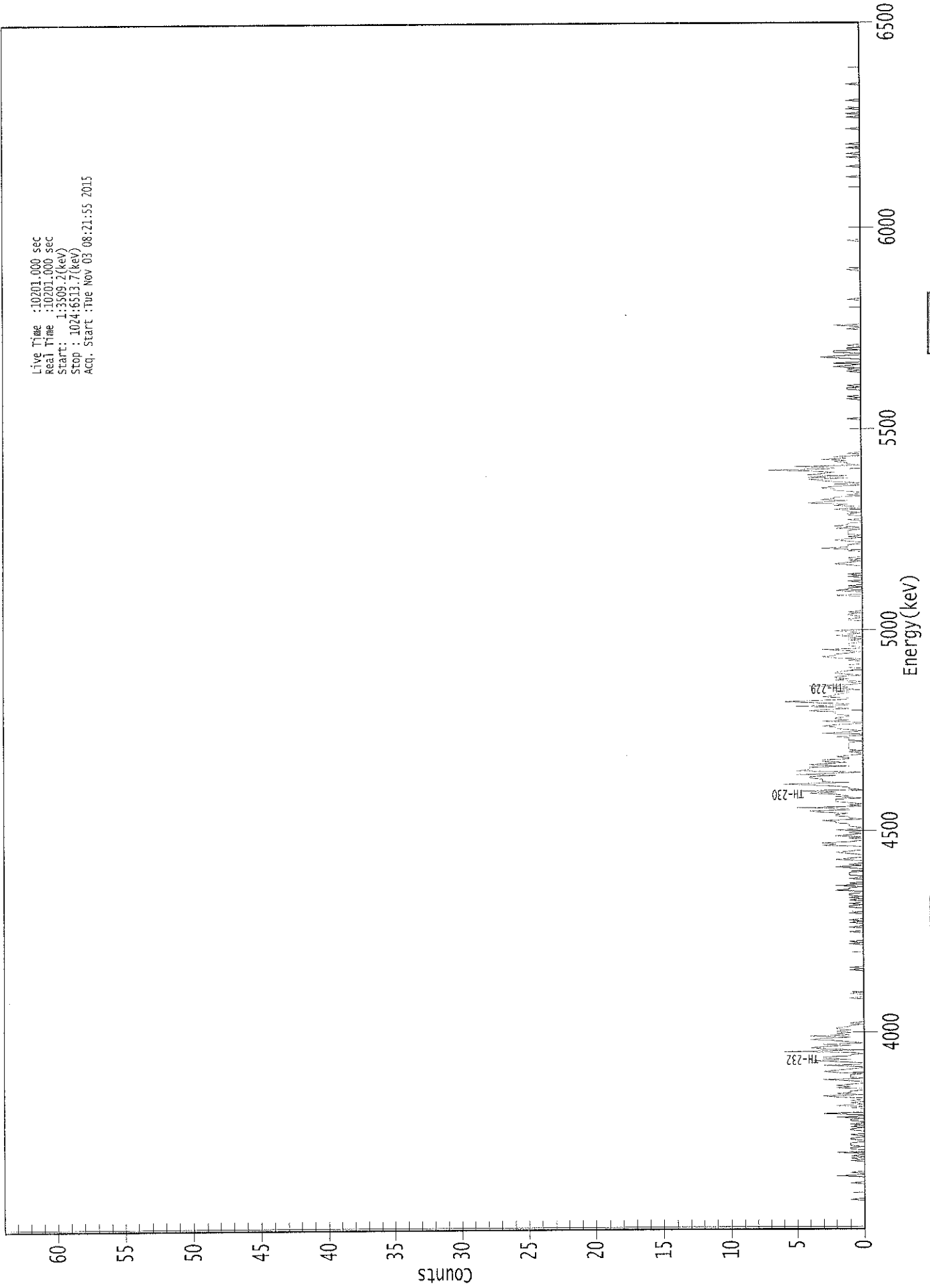
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.977	5850.00*	5.27E-002 +/- 6.85E-002	1.11E-001 +/- 2.01E-002
TH-228	0.976	5400.00*	1.32E+000 +/- 3.40E-001	1.08E-001 +/- 1.95E-002
TH-229	0.999	4872.00*	1.47E+000 +/- 2.65E-001	8.89E-002 +/- 1.60E-002
TH-230	0.968	4672.00*	1.75E+000 +/- 4.17E-001	8.42E-002 +/- 1.52E-002
TH-232	0.980	3997.00*	1.13E+000 +/- 2.99E-001	6.46E-002 +/- 1.17E-002

AG
11/3/15

0000132981.CNF

Live Time :10201.000 sec
Real Time :10201.000 sec
Start: 1:3309.2(kev)
Stop : 1024:6513.7(kev)
Acq. Start :Tue Nov 03 08:21:55 2015



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 06

Elapsed Live time: 10201
 Elapsed Real Time: 10201

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	1	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	1
41:	0	0	0	0	0	2	0	0
49:	1	0	0	0	0	0	0	0
57:	0	0	1	0	1	0	1	0
65:	0	2	0	0	1	1	0	1
73:	1	1	0	0	1	1	0	0
81:	1	0	0	0	1	1	0	1
89:	0	1	0	0	1	1	0	2
97:	0	0	3	1	0	0	0	1
105:	0	2	0	1	0	1	0	0
113:	2	3	0	2	1	1	0	0
121:	2	1	2	1	0	0	1	3
129:	0	1	1	1	0	2	3	2
137:	1	0	0	3	0	0	2	4
145:	1	3	3	1	1	0	1	6
153:	0	3	4	3	1	3	0	1
161:	2	4	3	1	4	1	2	1
169:	2	1	2	2	1	1	0	1
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	1	0	0	0
201:	1	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	1	0	1	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	1	0	1	0	0	0
249:	0	0	0	0	1	0	0	0
257:	1	0	0	0	1	0	1	0
265:	0	0	0	0	1	0	0	0
273:	0	1	1	0	1	0	0	1
281:	0	1	0	1	1	0	0	2
289:	1	1	0	2	0	1	0	0
297:	0	1	0	0	1	1	1	0
305:	0	0	1	2	0	1	0	0
313:	0	2	1	0	0	0	1	2
321:	1	0	0	0	0	3	2	3
329:	1	0	0	1	0	2	1	0
337:	1	0	2	0	0	1	1	1
345:	2	2	3	0	1	1	2	2
353:	1	3	4	1	1	5	0	1
361:	0	1	2	2	2	0	2	1

369: 2 4 2 5 0 1 1 2

Sample Title: 06

Channel	1	2	3	4	5	6	7	8
377:	4	6	1	3	3	3	4	4
385:	2	5	2	0	5	4	4	4
393:	1	4	3	1	3	3	1	1
401:	2	1	0	0	1	0	1	1
409:	1	1	1	1	1	0	1	1
417:	1	2	0	0	3	1	0	1
425:	2	2	3	2	0	0	3	1
433:	2	2	1	1	2	2	2	4
441:	3	1	2	5	1	1	4	6
449:	3	1	1	3	2	2	1	1
457:	2	0	2	1	4	1	0	1
465:	0	2	1	2	2	0	1	2
473:	2	1	0	0	1	1	1	0
481:	0	0	1	0	2	3	2	2
489:	1	0	1	3	0	0	1	1
497:	1	0	0	1	0	1	0	2
505:	1	0	1	2	0	0	0	0
513:	0	0	0	0	1	1	0	0
521:	1	1	0	1	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	2	0	0	0	2	1	1
545:	0	1	0	0	0	1	0	0
553:	0	1	0	1	0	0	0	0
561:	0	0	0	1	2	1	0	1
569:	0	1	0	0	0	0	0	1
577:	1	3	1	1	1	0	0	1
585:	2	1	0	1	0	1	1	1
593:	1	0	2	0	2	1	1	0
601:	0	1	0	0	0	1	1	0
609:	1	1	2	0	0	2	1	4
617:	3	1	3	2	2	0	1	0
625:	0	1	2	2	3	2	0	2
633:	0	2	3	4	1	4	1	4
641:	3	2	4	7	2	2	5	0
649:	1	1	2	1	3	1	2	0
657:	0	1	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	1	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	1
705:	0	1	0	0	0	0	0	1
713:	1	0	1	0	0	0	0	0
721:	0	0	0	0	0	0	1	0
729:	1	0	2	1	0	2	0	0
737:	0	1	3	2	0	0	2	2
745:	0	1	1	0	1	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	1	0	0	2	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	1	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 06

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	1	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	1	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	1	0	0	0	0
897:	0	0	0	0	1	0	0	0
905:	0	0	0	0	1	0	0	1
913:	0	0	0	0	1	0	0	1
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	1	0	0	0
937:	0	0	0	0	0	0	1	0
945:	0	1	0	0	0	1	0	0
953:	0	0	0	0	1	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	1	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



Apex-Alpha™

KB
11/3/15

Sample Description: CP5004S09-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 07
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_015
 Chamber Serial Number:
 Detector Serial Number: 15
 Env. Background: System Bkgd 133262
 Reagent Blank: <not performed>

Sample Size: 1.503E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:21:56 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.223 mL
 Effective Efficiency: 0.2502 +/- 0.0188
 Counting Efficiency: 0.2348 +/- 0.0040 on 5/1/2015 2:28:00 PM
 Chem. Recovery Factor: 1.0653 +/- 0.0822

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.889	12.49	56.77	0.51	0.00E+000	3.0
TH-228	5.358	168.64	15.16	1.36	0.00E+000	3.7
TH-229 T	4.879	212.83	13.44	0.17	0.00E+000	16.5
TH-230	4.608	183.32	14.51	0.68	0.00E+000	4.7
TH-232	3.931	163.00	15.40	0.00	0.00E+000	5.2

T = Tracer Peak used for Effective Efficiency

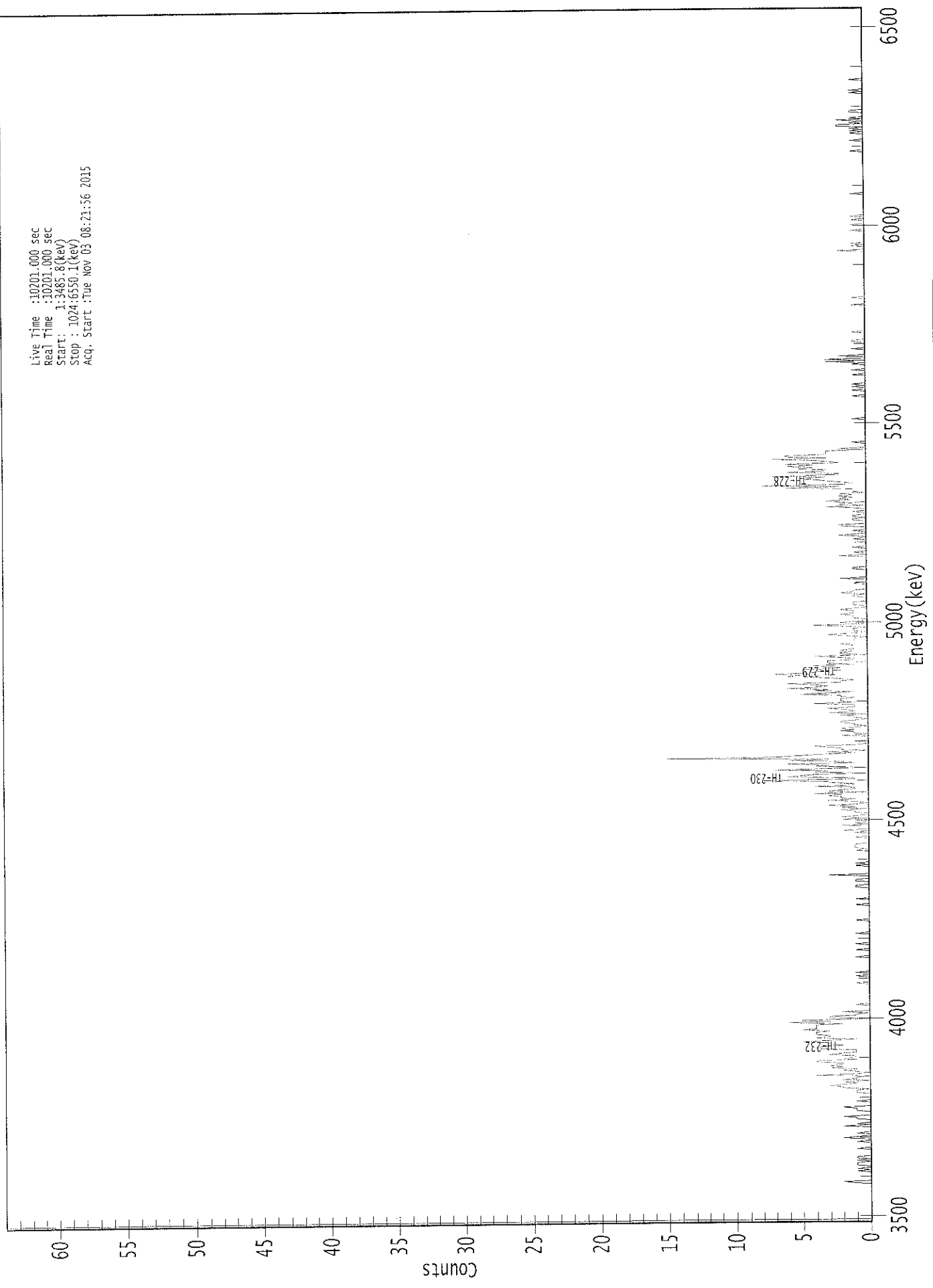
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.992	5850.00*	9.05E-002 +/- 5.31E-002	3.80E-002 +/- 5.61E-003
TH-228	0.991	5400.00*	1.22E+000 +/- 2.58E-001	4.97E-002 +/- 7.33E-003
TH-229	1.000	4872.00*	1.51E+000 +/- 2.22E-001	2.95E-002 +/- 4.36E-003
TH-230	0.979	4672.00*	1.29E+000 +/- 2.68E-001	3.98E-002 +/- 5.87E-003
TH-232	0.978	3997.00*	1.15E+000 +/- 2.45E-001	4.23E-002 +/- 6.23E-003

AG
11/3/15

0000132982.CNF

Live Time : 10201.000 sec
Real Time : 10201.000 sec
Start : 1:3485.8(keV)
Stop : 1024:6550.1(keV)
Acq. Start : Tue Nov 05 08:21:56 2015



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 07

Elapsed Live time: 10201

Elapsed Real Time: 10201

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	1	2	0	0	0	0	0
41:	0	0	0	1	0	1	0	0
49:	1	1	1	0	1	0	1	1
57:	0	0	0	0	0	0	1	0
65:	0	0	0	0	1	0	0	2
73:	1	0	0	1	0	0	0	0
81:	0	2	0	1	0	0	0	1
89:	1	2	0	0	0	0	1	1
97:	1	2	0	0	0	0	1	0
105:	0	0	0	0	0	1	1	1
113:	0	2	2	3	2	1	2	0
121:	2	1	1	0	4	1	0	1
129:	2	1	3	2	3	2	2	4
137:	4	1	2	1	1	3	2	1
145:	1	1	4	4	3	2	3	3
153:	5	3	1	4	3	3	4	4
161:	4	3	5	4	4	4	4	2
169:	6	3	5	0	3	3	1	1
177:	0	2	0	0	0	0	0	1
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	1	0	0	0	0	0	1
209:	0	0	1	0	0	0	0	0
217:	0	0	0	0	0	0	0	1
225:	0	0	0	0	0	1	0	0
233:	0	0	1	0	0	0	0	0
241:	0	0	0	1	0	0	0	0
249:	0	0	0	0	0	0	1	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	1	0	0	0	0
273:	1	0	0	0	0	0	0	0
281:	0	0	1	1	0	0	0	1
289:	1	0	0	0	3	0	0	0
297:	0	0	0	0	1	0	1	0
305:	0	0	0	0	0	0	0	0
313:	0	1	0	1	1	1	1	0
321:	0	0	0	0	1	0	0	0
329:	1	0	2	0	0	0	2	0
337:	1	0	0	2	0	2	1	0
345:	0	1	1	2	0	2	1	3
353:	1	0	1	3	1	2	2	3
361:	2	4	0	3	2	1	1	4

369: 1 1 3 3 8 1 1 6

Sample Title: 07

Channel	1	2	3	4	5	6	7	8
377:	5	4	0	4	3	7	3	0
385:	4	3	6	1	2	6	3	15
393:	7	5	4	1	3	0	2	2
401:	3	4	1	0	0	1	0	0
409:	0	0	2	0	1	1	2	1
417:	2	1	0	1	1	2	2	1
425:	0	1	1	2	0	3	1	1
433:	2	3	1	1	1	4	1	2
441:	2	2	1	2	2	5	3	1
449:	4	3	6	4	3	4	6	2
457:	2	1	2	4	6	5	7	4
465:	4	2	5	2	3	4	1	3
473:	3	3	1	1	2	4	0	2
481:	2	1	2	1	1	1	1	2
489:	1	1	1	1	1	0	2	3
497:	1	0	1	1	1	0	2	4
505:	0	2	1	0	0	1	1	1
513:	2	1	1	1	2	1	0	0
521:	1	1	1	0	0	0	0	1
529:	1	0	2	1	1	0	0	0
537:	0	0	1	0	0	0	2	0
545:	0	0	0	0	0	0	1	1
553:	0	0	0	0	0	0	0	0
561:	0	2	0	0	1	0	0	0
569:	1	0	0	0	0	0	0	1
577:	0	0	2	1	0	0	1	0
585:	0	0	2	2	0	0	0	1
593:	1	0	1	1	0	0	1	0
601:	0	1	3	0	2	1	2	3
609:	1	2	1	2	1	2	0	1
617:	1	1	6	2	8	1	1	2
625:	3	4	5	3	7	2	2	6
633:	3	3	5	4	6	4	6	2
641:	3	4	7	3	6	6	3	3
649:	3	3	0	2	0	0	0	0
657:	1	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	1	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	1
697:	0	0	0	0	1	0	0	1
705:	0	1	0	0	0	0	0	0
713:	0	1	0	0	0	1	0	0
721:	0	0	1	0	3	0	3	0
729:	0	2	0	0	0	0	0	1
737:	0	0	0	0	0	1	1	0
745:	0	0	0	0	0	1	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	1	0	0	0
777:	0	0	1	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 07

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	2	0	0	0	1	0
825:	1	0	0	0	0	0	0	0
833:	0	0	0	1	0	0	0	0
841:	1	0	0	0	1	0	0	1
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	1	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	1	0
905:	0	0	0	0	0	0	0	1
913:	0	0	0	0	0	1	0	1
921:	0	1	0	2	2	0	1	0
929:	2	0	1	0	0	0	0	1
937:	1	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	1
953:	0	1	0	0	0	0	0	0
961:	0	0	1	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



ICB
11/3/15

Sample Description: CP5004S11-12
 Spectrum File: \\OR-ALPHA\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 08
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_033
 Chamber Serial Number: 04026479A
 Detector Serial Number: 91132
 Env. Background: System Bkgd 133263
 Reagent Blank: <not performed>

Sample Size: 1.508E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:21:57 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.223 mL
 Effective Efficiency: 0.1765 +/- 0.0154
 Counting Efficiency: 0.1805 +/- 0.0032 on 10/25/2014 2:26:39 PM
 Chem. Recovery Factor: 0.9782 +/- 0.0873

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.861	5.66	85.23	0.34	0.00E+000	3.0
TH-228	5.371	121.64	17.89	1.36	0.00E+000	12.0
TH-229 T	4.891	150.32	16.03	0.68	0.00E+000	4.0
TH-230	4.637	135.49	16.88	0.51	0.00E+000	6.2
TH-232	3.962	134.00	16.99	0.00	0.00E+000	4.1

T = Tracer Peak used for Effective Efficiency

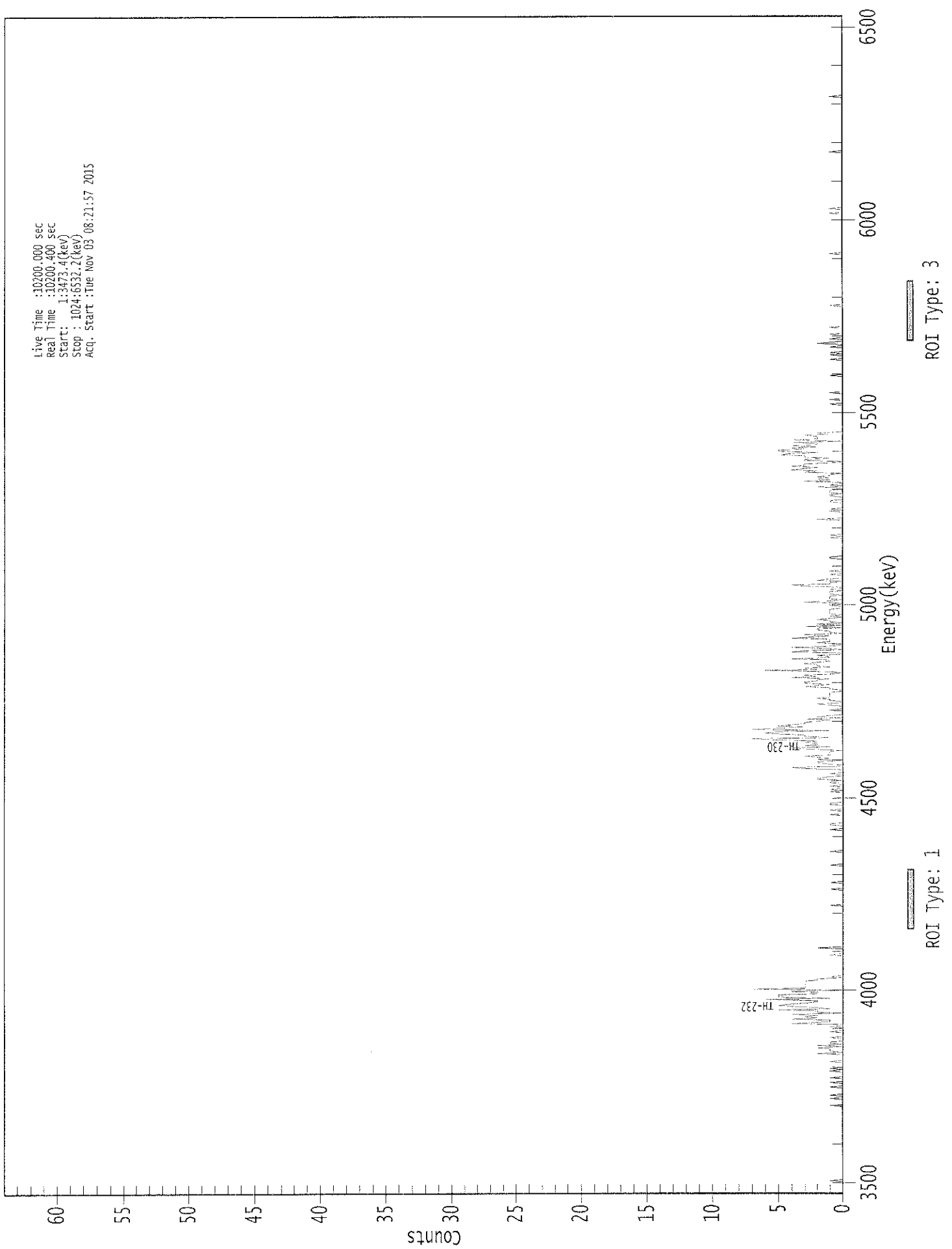
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	5.79E-002 +/- 5.03E-002	4.89E-002 +/- 8.39E-003
TH-228	0.996	5400.00*	1.24E+000 +/- 3.08E-001	7.01E-002 +/- 1.20E-002
TH-229	0.998	4872.00*	1.50E+000 +/- 2.58E-001	5.64E-002 +/- 9.67E-003
TH-230	0.994	4672.00*	1.35E+000 +/- 3.25E-001	5.23E-002 +/- 8.97E-003
TH-232	0.994	3997.00*	1.33E+000 +/- 3.22E-001	5.97E-002 +/- 1.02E-002

AG
11/3/15

0000132983.CNF

Live Time :10200.000 Sec
Real Time :10200.400 Sec
Start : 1:3473.4(keV)
Stop : 1024:5532.2(keV)
Acq. Start :Tue Nov 03 08:21:57 2015



: 00227

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 08

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	1	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	1	0	0	0	0
81:	0	0	1	0	0	1	0	0	0
89:	0	0	0	0	1	0	0	0	0
97:	1	0	0	0	1	0	0	0	0
105:	0	0	1	0	1	0	0	0	0
113:	0	0	1	0	0	0	0	0	0
121:	0	2	0	1	1	1	2	0	0
129:	2	0	1	1	0	0	0	1	0
137:	0	0	0	0	1	0	0	0	0
145:	1	0	0	4	2	1	1	4	0
153:	2	3	2	4	0	2	2	5	0
161:	1	2	4	5	4	3	2	2	0
169:	6	1	5	5	5	2	2	4	0
177:	0	7	3	3	3	3	3	3	0
185:	3	2	2	0	1	0	0	0	0
193:	0	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	1	0
209:	0	0	0	0	0	2	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	1	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	1	0	0	0	0	0	1	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	1	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	1	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	1	0	0	0	0
321:	1	1	0	0	0	0	0	0	0
329:	0	1	0	0	0	1	0	0	0
337:	0	0	1	1	0	0	0	0	0
345:	0	0	0	0	0	1	0	1	0
353:	0	0	1	0	0	1	1	0	0
361:	2	2	1	0	0	1	0	0	0

369: 0 3 4 0 0 1 2 2

Sample Title: 08

Channel	1	2	3	4	5	6	7	8
377:	0	2	1	2	3	1	1	1
385:	1	0	3	4	1	3	2	2
393:	3	2	5	7	1	3	3	5
401:	6	5	1	7	5	3	5	4
409:	3	3	2	1	3	0	2	1
417:	0	0	0	0	1	0	0	0
425:	1	2	0	0	1	1	2	1
433:	1	1	1	1	0	0	1	1
441:	3	2	1	3	3	2	2	1
449:	4	2	3	1	0	1	6	2
457:	3	1	2	2	3	2	1	1
465:	4	1	1	2	0	0	4	3
473:	0	1	4	1	0	0	2	1
481:	1	1	4	2	1	3	0	1
489:	1	2	2	0	3	0	2	0
497:	1	1	2	1	0	1	0	1
505:	1	1	1	1	0	0	1	1
513:	0	3	1	0	1	1	1	0
521:	1	1	1	0	1	0	0	3
529:	4	1	1	0	2	1	0	0
537:	0	1	0	0	1	0	0	0
545:	0	0	0	0	0	0	0	1
553:	1	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	1	0	1	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	2	0	0	0	0	0	0
593:	1	0	1	0	0	0	0	0
601:	1	1	0	0	0	1	1	0
609:	1	1	1	0	0	2	0	1
617:	0	0	3	1	2	1	2	1
625:	1	0	3	2	4	3	2	4
633:	3	3	1	0	3	3	1	3
641:	3	5	4	2	5	5	3	4
649:	2	4	2	2	4	0	4	2
657:	2	2	3	1	2	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	1	0	0
689:	0	1	0	0	0	0	0	1
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	1	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	1	0	0	0
729:	1	0	1	0	0	0	0	1
737:	0	0	2	1	0	0	1	0
745:	0	0	1	0	0	0	0	0
753:	1	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	1	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 08

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	1	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	1	0	0	0	1
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	1	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	1	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KB
11/3/15

Apex-Alpha™

Sample Description: CP5004S14-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 09
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_034
 Chamber Serial Number: 04026479B
 Detector Serial Number: 91136
 Env. Background: System Bkgd 133264
 Reagent Blank: <not performed>

Sample Size: 1.510E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:21:58 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.223 mL
 Effective Efficiency: 0.1937 +/- 0.0163
 Counting Efficiency: 0.1789 +/- 0.0031 on 10/25/2014 2:30:05 PM
 Chem. Recovery Factor: 1.0831 +/- 0.0928

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.862	4.49	98.45	0.51	0.00E+000	3.0
TH-228	5.348	132.15	17.11	0.85	0.00E+000	8.2
TH-229 T	4.858	165.32	15.28	0.68	0.00E+000	4.1
TH-230	4.612	135.83	16.83	0.17	0.00E+000	6.2
TH-232	3.942	138.00	16.74	0.00	0.00E+000	4.5

T = Tracer Peak used for Effective Efficiency

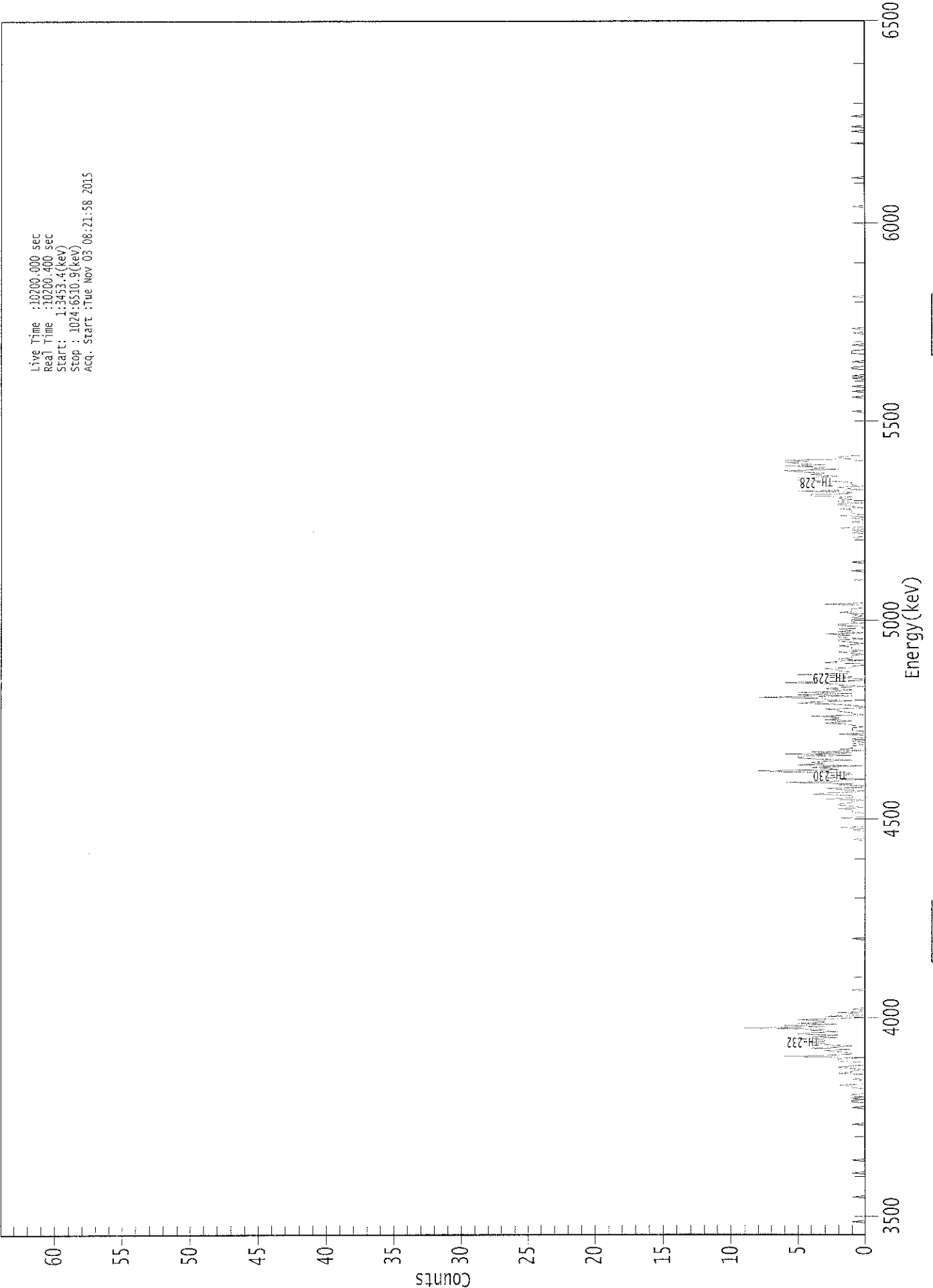
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	4.18E-002 +/- 4.17E-002	4.89E-002 +/- 8.03E-003
TH-228	0.986	5400.00*	1.23E+000 +/- 2.92E-001	5.57E-002 +/- 9.16E-003
TH-229	0.999	4872.00*	1.50E+000 +/- 2.47E-001	5.13E-002 +/- 8.44E-003
TH-230	0.982	4672.00*	1.23E+000 +/- 2.90E-001	3.79E-002 +/- 6.23E-003
TH-232	0.984	3997.00*	1.25E+000 +/- 2.93E-001	5.43E-002 +/- 8.93E-003

AG
11/3/15

0000132984.CNF

Live Time : 10209.000 sec
Real Time : 10260.400 sec
Start : 1:3453.4(keV)
Stop : 1024:6510.9(keV)
Acq. Start : Tue Nov 03 08:21:58 2015



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 09

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	1	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	1	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	1	0	0	0	0
57:	0	0	0	0	0	0	0	0	1
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	1	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	1	0	0	0	0	0
113:	1	1	0	1	0	1	1	0	0
121:	0	0	0	0	1	1	2	0	0
129:	0	0	0	1	0	0	0	0	0
137:	2	1	1	0	1	2	1	0	0
145:	0	0	2	2	2	0	6	3	0
153:	1	1	2	3	1	4	2	1	0
161:	3	3	4	3	3	5	2	4	0
169:	2	5	4	2	4	3	9	3	0
177:	6	2	5	3	3	5	2	0	0
185:	3	0	0	2	0	0	1	0	0
193:	0	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	1	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	1	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	1	0	0	0
337:	0	0	0	0	0	1	0	2	0
345:	0	0	0	0	0	0	0	2	0
353:	0	0	0	0	1	1	1	2	0
361:	0	1	2	2	1	1	0	3	0

369: 1 1 1 4 3 1 0 2

Sample Title: 09

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	3	0	0	2	1	6	2	2
385:	0	3	2	2	1	1	6	8
393:	2	3	4	0	5	3	4	3
401:	1	4	5	5	1	6	1	4
409:	0	2	1	1	1	0	1	0
417:	1	1	1	0	0	0	2	0
425:	0	1	1	1	0	1	1	3
433:	2	1	3	2	2	4	0	1
441:	1	2	2	3	0	0	1	2
449:	5	4	1	3	3	8	1	5
457:	1	5	2	1	3	2	0	2
465:	2	6	3	0	0	2	1	2
473:	5	1	1	2	2	3	1	1
481:	0	0	3	2	0	2	1	1
489:	1	0	1	2	0	1	1	1
497:	2	1	0	1	2	2	0	2
505:	2	1	3	0	2	1	2	0
513:	0	2	2	0	1	1	1	0
521:	1	0	1	0	2	1	1	1
529:	0	0	0	3	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	1
561:	0	0	0	0	0	0	1	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	1	0	0	0	1
593:	0	1	0	2	0	0	0	0
601:	1	0	0	1	0	2	0	1
609:	1	1	1	2	0	1	2	2
617:	0	2	2	1	2	1	4	4
625:	1	1	5	0	1	2	0	1
633:	1	1	2	5	5	5	2	3
641:	4	3	5	6	2	4	3	6
649:	3	5	6	4	6	1	2	2
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	1	0	0
697:	0	0	0	0	0	0	0	0
705:	0	1	0	0	0	0	1	0
713:	0	0	1	0	0	0	0	0
721:	0	1	0	1	0	0	0	0
729:	0	1	1	0	0	0	0	1
737:	0	0	0	0	0	0	1	1
745:	1	0	0	0	0	1	0	0
753:	0	0	0	0	0	0	0	1
761:	0	0	0	1	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	1	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 09

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	1	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	1	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	1	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	1
921:	0	0	0	0	0	0	0	0
929:	0	1	0	0	0	1	0	0
937:	0	0	0	0	0	0	1	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB
11/3/15

Sample Description: CP5004S16-17
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 10
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_035
 Chamber Serial Number: 04026477A
 Detector Serial Number: 58771
 Env. Background: System Bkgd 133265
 Reagent Blank: <not performed>

Sample Size: 1.507E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:22:00 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.223 mL
 Effective Efficiency: 0.2046 +/- 0.0168
 Counting Efficiency: 0.1647 +/- 0.0029 on 10/25/2014 2:34:10 PM
 Chem. Recovery Factor: 1.2420 +/- 0.1043

Peak Match Tolerance: 0.175 MeV

 ----- PEAK AREA REPORT -----

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.813	12.32	57.62	0.68	0.00E+000	4.5
TH-228	5.374	132.81	17.10	1.19	0.00E+000	4.9
TH-229	T 4.883	174.00	14.90	0.00	0.00E+000	3.8
TH-230	4.630	124.83	17.56	0.17	0.00E+000	6.0
TH-232	3.952	138.49	16.69	0.51	0.00E+000	4.7

T = Tracer Peak used for Effective Efficiency

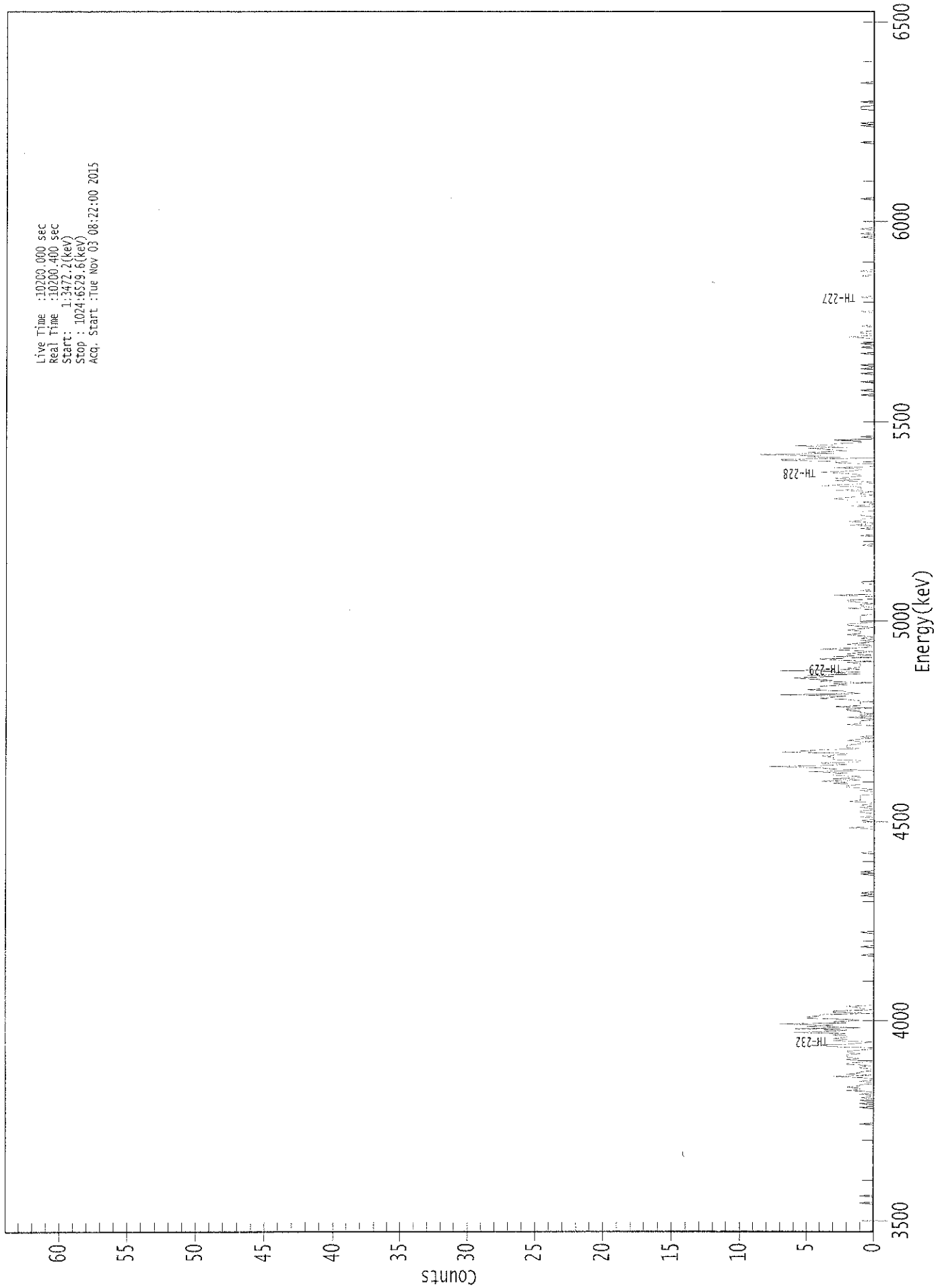
 ----- NUCLIDE ANALYSIS RESULTS -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.993	5850.00*	1.09E-001 +/- 6.51E-002	4.98E-002 +/- 8.02E-003
TH-228	0.996	5400.00*	1.17E+000 +/- 2.75E-001	5.82E-002 +/- 9.36E-003
TH-229	0.999	4872.00*	1.50E+000 +/- 2.42E-001	5.18E-002 +/- 8.33E-003
TH-230	0.991	4672.00*	1.07E+000 +/- 2.56E-001	3.59E-002 +/- 5.78E-003
TH-232	0.989	3997.00*	1.19E+000 +/- 2.76E-001	4.51E-002 +/- 7.26E-003

AG
11/3/15

0000132985.CNF

Live Time :10209.000 sec
Real Time :10209.400 sec
Start : 1:3472.2(kev)
Stop : 1024:6529.6(kev)
Acq. Start :Tue Nov 03 08:22:00 2015



: 00237

ROI Type: 1
ROI Type: 3

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 10

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	1	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	1	0	0	0	0	0	1	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	1	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	1	0	0	1	0	0	1	0	0
113:	1	0	0	1	0	0	2	1	0
121:	1	2	1	1	0	0	1	0	0
129:	0	1	3	0	2	1	1	0	0
137:	0	1	1	0	2	2	0	1	0
145:	2	1	2	2	2	1	2	2	0
153:	1	0	0	3	5	2	1	0	0
161:	3	2	3	2	2	3	2	6	0
169:	3	2	6	1	5	3	7	2	0
177:	3	1	2	5	5	4	4	0	0
185:	3	3	0	1	1	2	0	0	0
193:	0	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	1	0	0	0	0	0	0	1	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	1	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	1	0	1	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	1	0	1	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	1	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	2	0	0	0	0	0
345:	0	1	0	0	1	0	0	0	0
353:	1	1	0	0	1	0	1	0	0
361:	0	2	1	1	1	1	1	0	0

369: 0 0 1 0 1 2 2 1

Sample Title: 10

Channel	1	2	3	4	5	6	7	8	9
377:	3	2	4	1	3	1	1	3	
385:	3	2	5	0	3	4	8	4	
393:	2	4	1	1	3	3	3	4	
401:	2	2	7	5	4	1	2	2	
409:	2	1	1	1	2	1	0	1	
417:	0	0	0	0	0	0	0	0	
425:	0	2	1	1	1	0	0	2	
433:	0	1	0	1	1	2	2	0	
441:	3	1	1	1	1	1	2	4	
449:	3	2	7	1	2	2	5	4	
457:	4	4	2	3	0	4	3	5	
465:	6	3	5	1	3	1	7	1	
473:	2	1	1	1	1	2	0	3	
481:	4	0	3	0	2	1	0	2	
489:	4	1	0	0	2	1	0	1	
497:	0	1	0	1	2	1	1	1	
505:	2	1	0	1	2	2	0	1	
513:	1	1	1	1	1	0	0	0	
521:	0	0	2	0	1	1	0	1	
529:	2	2	0	0	0	3	0	0	
537:	0	1	0	0	0	0	0	1	
545:	1	0	0	0	0	0	0	0	
553:	0	0	0	0	0	0	0	0	
561:	0	0	0	0	0	0	0	0	
569:	0	0	0	0	0	0	0	1	
577:	0	0	0	0	0	0	0	1	
585:	0	0	0	0	0	1	0	0	
593:	2	0	0	2	1	1	0	0	
601:	1	1	1	1	0	0	0	0	
609:	2	0	0	1	2	2	3	2	
617:	1	0	1	1	0	3	1	1	
625:	1	4	2	0	0	3	1	3	
633:	2	1	1	2	4	2	1	1	
641:	3	0	0	0	3	2	7	7	
649:	0	5	4	9	3	5	2	3	
657:	5	2	6	3	3	1	1	3	
665:	0	0	1	0	0	0	0	0	
673:	0	0	0	0	0	0	0	0	
681:	0	0	0	0	0	0	0	0	
689:	0	0	0	0	0	0	0	0	
697:	0	0	0	0	0	1	0	0	
705:	0	1	0	0	0	0	0	0	
713:	1	0	0	0	0	0	0	1	
721:	0	0	0	1	0	0	1	0	
729:	0	0	0	0	0	0	0	0	
737:	1	0	0	0	0	1	0	0	
745:	1	0	0	0	0	1	2	0	
753:	0	1	1	0	0	0	0	1	
761:	0	0	0	0	0	0	0	0	
769:	0	0	0	1	0	0	0	0	
777:	0	0	0	0	0	0	0	1	
785:	0	0	0	0	0	0	0	0	
793:	0	0	0	0	0	0	0	0	

801: 0 1 0 0 0 1 0 0

Sample Title: 10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	1	0	0	1	0	0	0
841:	1	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	1	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	1	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	1	0
929:	1	0	0	0	0	0	0	0
937:	0	0	0	0	1	1	1	0
945:	0	0	1	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	1	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



Apex-Alpha™

*KB
11/3/15*

Sample Description: CP4106S03-04
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 11
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_036
 Chamber Serial Number: 04026477B
 Detector Serial Number: 84167
 Env. Background: System Bkgd 133266
 Reagent Blank: <not performed>

Sample Size: 1.510E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:22:02 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.224 mL
 Effective Efficiency: 0.2123 +/- 0.0171
 Counting Efficiency: 0.1806 +/- 0.0032 on 10/25/2014 2:38:17 PM
 Chem. Recovery Factor: 1.1757 +/- 0.0969

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.789	3.64	123.16	1.36	0.00E+000	0.0
TH-228	5.387	144.81	16.37	1.19	0.00E+000	8.2
TH-229 T	4.879	181.49	14.57	0.51	0.00E+000	4.5
TH-230	4.643	120.66	17.87	0.34	0.00E+000	6.0
TH-232	3.965	124.00	17.67	0.00	0.00E+000	5.6

T = Tracer Peak used for Effective Efficiency

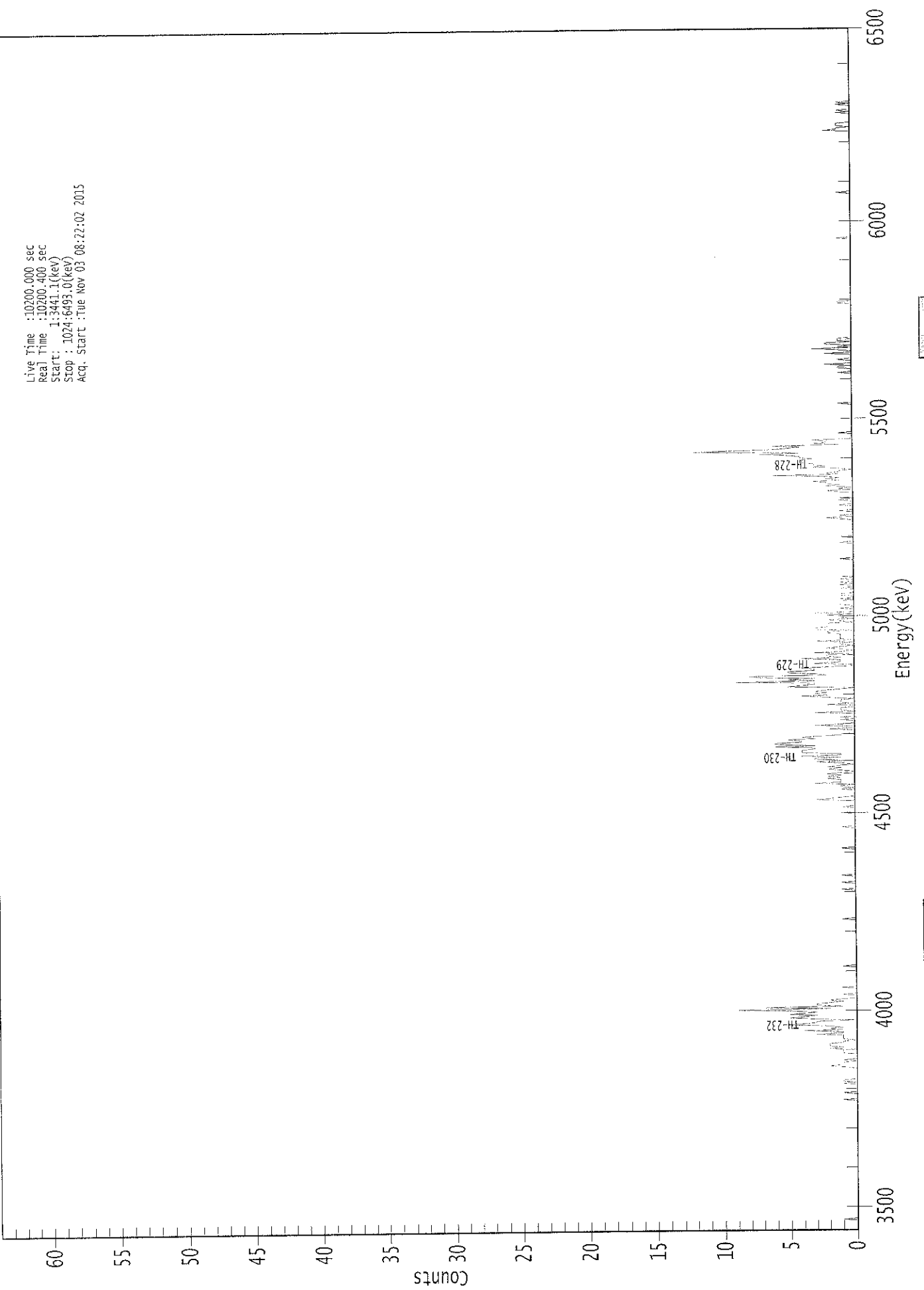
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.981	5850.00*	3.09E-002 +/- 3.84E-002	5.83E-002 +/- 9.20E-003
TH-228	0.999	5400.00*	1.23E+000 +/- 2.80E-001	5.60E-002 +/- 8.84E-003
TH-229	1.000	4872.00*	1.51E+000 +/- 2.38E-001	4.36E-002 +/- 6.88E-003
TH-230	0.996	4672.00*	9.99E-001 +/- 2.38E-001	3.96E-002 +/- 6.25E-003
TH-232	0.995	3997.00*	1.02E+000 +/- 2.43E-001	4.96E-002 +/- 7.82E-003

*AG
11/3/15*

0000132986.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:3441.1(keV)
Stop : 1024:6493.0(keV)
Acq. Start : Tue Nov 03 08:22:02 2015



 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 11

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	1	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	1
113:	0	0	0	0	0	1	0	0	0
121:	0	0	0	0	0	1	0	1	1
129:	1	0	0	0	0	0	0	0	0
137:	0	0	0	1	2	1	1	1	1
145:	0	1	0	0	0	0	0	0	1
153:	1	1	1	2	1	2	2	2	2
161:	1	1	0	1	1	1	1	3	3
169:	1	1	4	1	2	1	2	5	5
177:	4	3	3	0	3	5	4	3	3
185:	5	4	3	5	9	2	7	1	1
193:	3	3	2	1	2	1	0	0	0
201:	0	1	0	0	0	0	0	1	1
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	1	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	1	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	1	0	0	0	0	0	0
297:	1	0	0	0	0	0	1	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	1	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	1	1
345:	0	0	0	0	0	0	0	0	0
353:	0	0	0	1	0	0	0	0	0
361:	1	0	0	0	0	0	3	2	2

369: 1 0 0 0 0 0 0 0 1

Sample Title: 11

Channel	1	2	3	4	5	6	7	8	9
377:	0	1	1	0	3	1	1	1	1
385:	2	1	2	1	2	1	0	1	1
393:	2	1	2	1	0	1	3	0	0
401:	3	3	1	4	1	1	4	4	4
409:	4	3	3	6	3	6	6	4	4
417:	4	5	3	4	3	1	1	0	0
425:	0	0	2	0	0	3	1	0	0
433:	0	0	1	0	1	0	0	0	0
441:	3	0	1	1	1	0	0	2	2
449:	0	1	1	1	0	2	4	2	2
457:	3	2	3	2	1	0	5	4	4
465:	3	3	9	3	5	3	7	8	8
473:	2	3	5	5	3	3	4	2	2
481:	0	0	3	1	1	1	4	1	1
489:	2	2	0	3	1	0	1	2	2
497:	1	0	1	1	0	3	0	1	1
505:	1	1	1	1	2	2	0	3	3
513:	3	2	2	2	2	0	1	2	2
521:	0	1	0	2	0	3	0	0	0
529:	0	1	0	0	1	1	1	1	1
537:	0	1	0	0	1	1	0	0	0
545:	0	0	1	0	0	1	0	1	1
553:	0	0	1	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0	0
569:	0	0	0	1	0	0	0	0	0
577:	0	0	0	0	0	0	0	0	0
585:	0	1	0	0	0	0	1	0	0
593:	0	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	1	2	0	0
609:	1	0	0	0	1	0	0	0	0
617:	0	1	0	0	0	1	0	1	1
625:	0	0	0	0	1	2	0	1	1
633:	0	2	1	2	2	3	1	2	2
641:	1	2	6	1	2	1	1	0	0
649:	1	3	2	3	3	4	4	4	4
657:	3	4	4	5	7	4	12	10	10
665:	6	5	4	6	1	3	2	2	2
673:	3	0	0	0	0	0	1	0	0
681:	0	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	1	1
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0	0
729:	0	1	0	0	0	1	1	0	0
737:	2	0	0	0	1	0	0	0	0
745:	0	2	0	0	1	3	0	1	1
753:	0	2	2	0	1	1	1	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	1	1	0	0	0
793:	0	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 11

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	1	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	1	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	2
937:	1	1	0	1	1	1	0	0
945:	0	0	0	0	0	0	1	0
953:	1	0	0	0	0	1	0	1
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

ICB
11/3/15

Sample Description: CP4106S05-06
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 12
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_037
 Chamber Serial Number: 04026478A
 Detector Serial Number: 91133
 Env. Background: System Bkgd 133267
 Reagent Blank: <not performed>

Sample Size: 1.530E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:22:04 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.224 mL
 Effective Efficiency: 0.2101 +/- 0.0170
 Counting Efficiency: 0.1709 +/- 0.0030 on 10/25/2014 2:46:09 PM
 Chem. Recovery Factor: 1.2298 +/- 0.1018

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.868	7.47	79.84	1.53	0.00E+000	3.0
TH-228	5.350	146.15	16.27	0.85	0.00E+000	3.5
TH-229 T	4.867	179.66	14.64	0.34	0.00E+000	4.4
TH-230	4.618	163.32	15.37	0.68	0.00E+000	5.3
TH-232	3.939	153.00	15.90	0.00	0.00E+000	9.1

T = Tracer Peak used for Effective Efficiency

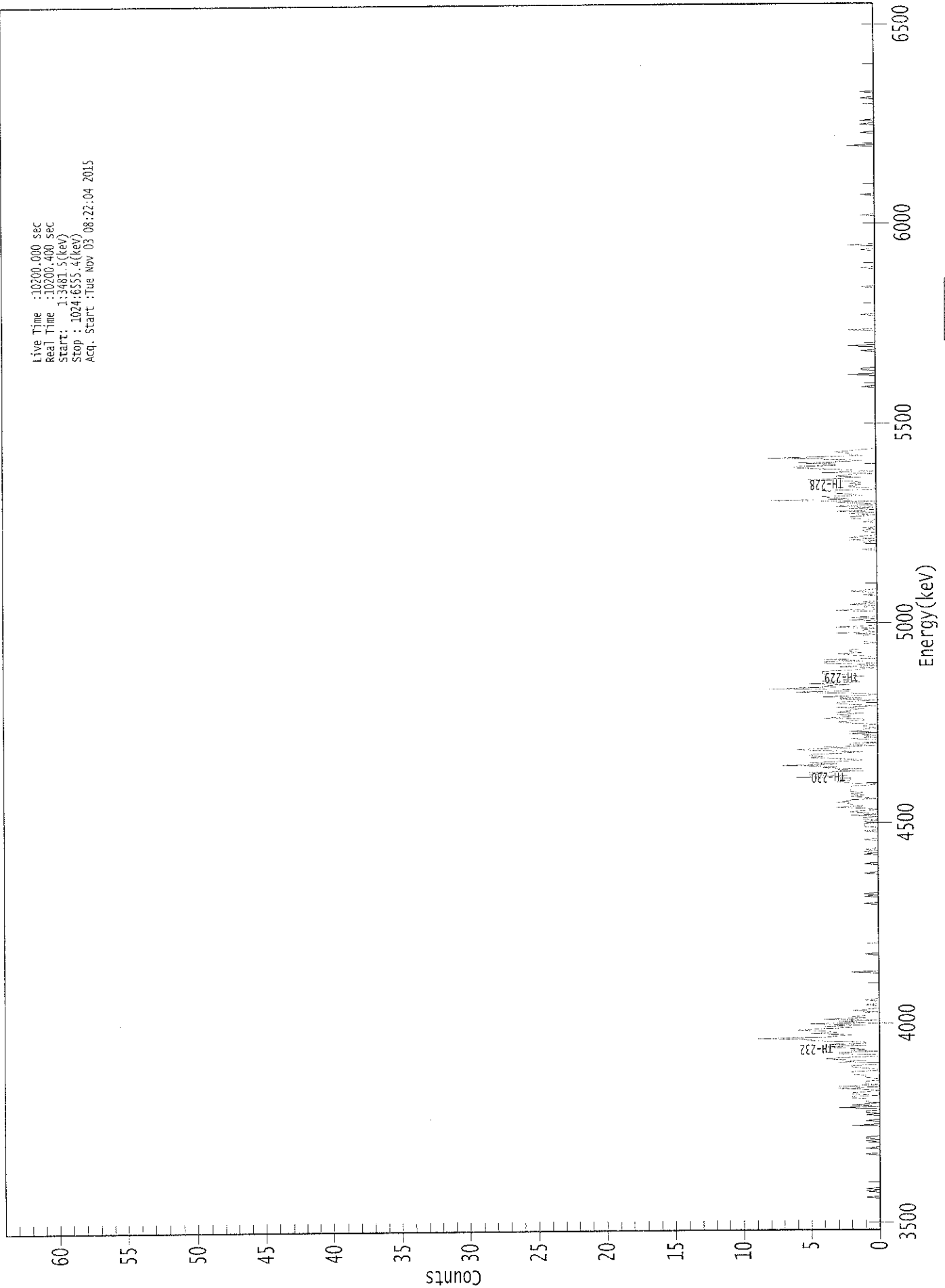
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.998	5850.00*	6.33E-002 +/- 5.15E-002	6.02E-002 +/- 9.55E-003
TH-228	0.987	5400.00*	1.24E+000 +/- 2.81E-001	5.07E-002 +/- 8.04E-003
TH-229	1.000	4872.00*	1.49E+000 +/- 2.36E-001	3.96E-002 +/- 6.28E-003
TH-230	0.985	4672.00*	1.35E+000 +/- 2.98E-001	4.66E-002 +/- 7.38E-003
TH-232	0.983	3997.00*	1.26E+000 +/- 2.83E-001	4.94E-002 +/- 7.83E-003

AG
11/3/15

0000132989.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:34:81.5 (keV)
Stop : 1024:6555.4 (keV)
Acq. Start : Tue Nov 03 08:22:04 2015



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 12

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	1	0	0	0	0
33:	1	0	1	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	1
65:	0	0	0	0	1	0	0	0
73:	0	0	1	0	1	1	0	0
81:	0	0	0	0	0	0	0	2
89:	0	0	0	1	0	0	0	0
97:	1	0	1	1	0	0	3	0
105:	2	1	0	1	1	1	2	2
113:	0	2	2	1	0	1	3	0
121:	3	0	1	1	1	0	0	1
129:	1	1	2	2	2	0	0	1
137:	2	2	0	0	3	1	3	4
145:	2	0	0	3	3	0	2	1
153:	3	4	1	4	1	1	5	5
161:	9	4	3	2	5	3	4	6
169:	4	2	4	1	5	1	3	0
177:	4	1	2	1	1	1	0	2
185:	1	0	0	0	1	0	0	0
193:	1	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	2
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	1	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	1	0	0	0	0	0	1	0
281:	1	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	1	0	0	0	0	0	0
305:	0	1	0	0	0	0	0	0
313:	0	1	0	1	0	1	0	0
321:	0	0	0	0	0	1	0	0
329:	0	0	0	0	1	0	0	0
337:	1	1	1	0	1	0	1	1
345:	0	2	0	1	2	1	0	1
353:	3	1	2	2	3	2	2	0
361:	1	2	1	2	1	2	2	2

369: 2 2 1 0 2 3 2 2

Sample Title: 12

Channel	1	2	3	4	5	6	7	8
377:	2	6	2	5	4	5	1	3
385:	1	4	3	7	3	5	3	1
393:	2	5	4	5	5	2	1	5
401:	6	2	4	0	2	2	0	0
409:	0	2	0	1	0	2	0	2
417:	1	1	0	1	1	0	2	3
425:	1	1	4	2	2	3	1	3
433:	2	2	1	3	0	1	3	3
441:	2	0	3	1	4	1	0	2
449:	6	2	2	8	3	4	2	5
457:	1	4	2	2	2	1	2	4
465:	4	4	2	1	0	3	0	1
473:	4	4	1	4	0	0	1	2
481:	3	1	2	2	1	1	1	1
489:	1	0	1	1	1	1	1	1
497:	0	3	0	1	1	0	3	1
505:	0	0	0	0	2	0	2	0
513:	0	0	0	0	3	0	0	1
521:	0	2	0	1	0	0	0	0
529:	0	1	0	0	2	1	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	1
569:	0	0	0	0	0	1	0	2
577:	0	2	1	0	0	0	1	1
585:	0	1	0	0	0	0	1	0
593:	0	2	2	1	0	2	0	3
601:	0	2	0	3	0	0	3	0
609:	8	2	3	4	1	2	3	3
617:	4	0	0	2	2	1	2	1
625:	2	5	3	1	3	2	0	4
633:	0	2	4	6	6	3	3	6
641:	2	1	4	8	4	1	2	2
649:	3	2	1	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	1	0
705:	0	0	0	0	0	0	0	0
713:	2	0	0	0	1	1	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	1	0	0	0
737:	2	0	0	0	0	0	0	0
745:	0	0	0	0	0	2	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	1	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	1	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 1 0 0 0 0 0 0 0

Sample Title: 12

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	1	0	0	0	2	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	1	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	1	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	2
905:	0	0	0	0	0	0	0	0
913:	0	0	1	0	0	0	0	0
921:	0	1	0	0	1	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	1
945:	0	0	0	0	1	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB
11/3/15

Sample Description: CP4106S08-09
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 13
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_038
 Chamber Serial Number: 04026478B
 Detector Serial Number: 91134
 Env. Background: System Bkgd 133268
 Reagent Blank: <not performed>

Sample Size: 1.537E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:22:05 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.224 mL
 Effective Efficiency: 0.1216 +/- 0.0126
 Counting Efficiency: 0.1615 +/- 0.0029 on 10/25/2014 2:50:18 PM
 Chem. Recovery Factor: 0.7528 +/- 0.0789

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.858	9.83	63.14	0.17	0.00E+000	6.0
TH-228	5.341	89.66	20.75	0.34	0.00E+000	4.4
TH-229 T	4.862	104.00	19.31	0.00	0.00E+000	5.0
TH-230	4.619	105.32	19.17	0.68	0.00E+000	4.5
TH-232	3.943	103.49	19.32	0.51	0.00E+000	4.0

T = Tracer Peak used for Effective Efficiency

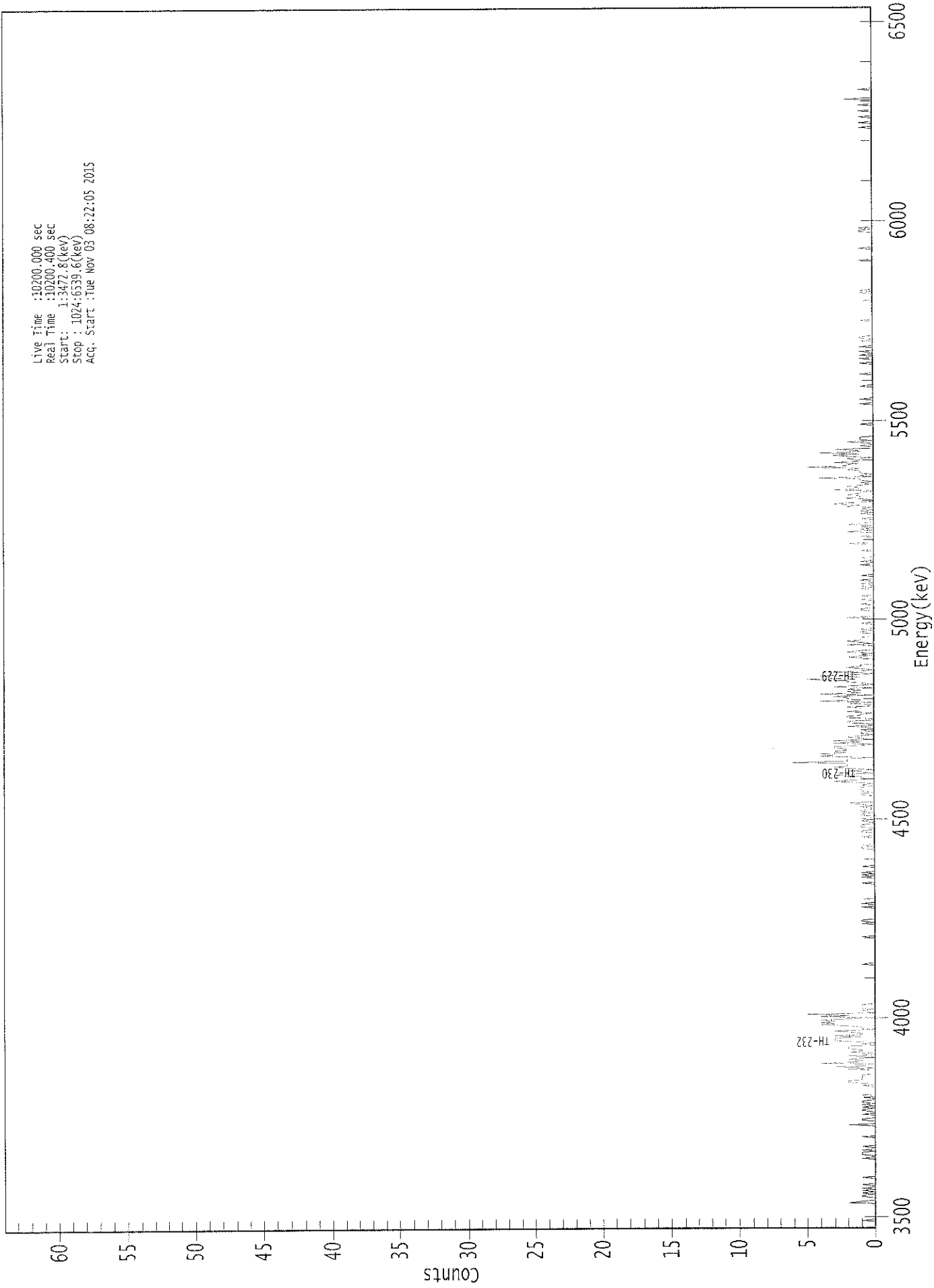
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.43E-001 +/- 9.50E-002	6.08E-002 +/- 1.23E-002
TH-228	0.982	5400.00*	1.31E+000 +/- 3.79E-001	6.97E-002 +/- 1.41E-002
TH-229	0.999	4872.00*	1.48E+000 +/- 3.00E-001	8.54E-002 +/- 1.73E-002
TH-230	0.985	4672.00*	1.50E+000 +/- 4.17E-001	8.01E-002 +/- 1.62E-002
TH-232	0.985	3997.00*	1.47E+000 +/- 4.11E-001	7.44E-002 +/- 1.51E-002

AG
 11/3/15

0000132990.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:3472.8(kev)
Stop : 1024:6539.6(kev)
Acq. Start : Tue Nov 05 08:22:05 2015



ROI Type: 1

ROI Type: 3

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 13

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	1	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	2	1	0
25:	0	0	1	1	0	1	1	0	1
33:	0	1	0	0	1	0	0	0	0
41:	0	0	1	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	1	0	0	1	1	1	1
65:	0	1	0	0	1	0	0	0	0
73:	0	0	0	0	1	0	0	0	0
81:	0	0	0	0	0	0	0	2	0
89:	0	0	1	1	0	0	0	0	1
97:	0	0	1	1	0	1	1	0	1
105:	0	1	1	0	0	1	0	0	1
113:	0	0	0	0	0	0	0	0	1
121:	0	1	2	2	1	1	1	1	1
129:	1	0	0	0	0	2	0	0	3
137:	0	0	4	1	1	2	1	1	0
145:	2	0	0	2	1	1	2	2	2
153:	2	0	1	0	2	3	3	3	3
161:	1	3	1	1	2	3	0	0	1
169:	1	2	4	3	4	3	4	4	2
177:	1	4	2	5	0	1	1	1	0
185:	1	1	1	1	0	0	0	0	0
193:	0	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	1	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	1	0	0	0	0
249:	0	0	0	0	0	0	0	0	1
257:	0	1	1	0	0	0	0	0	0
265:	0	0	0	0	0	1	0	0	0
273:	1	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	1	0	0	0	0	1	0	0
297:	1	0	1	0	0	0	0	0	1
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	1	1	1
321:	0	1	0	0	0	0	0	0	0
329:	1	0	0	0	1	1	0	0	0
337:	1	1	1	0	0	1	0	0	1
345:	0	0	1	1	0	1	1	0	0
353:	0	1	0	1	2	0	0	0	0
361:	0	0	0	1	1	0	1	1	1

369: 1 1 0 1 0 1 3 2

Sample Title: 13

Channel	1	2	3	4	5	6	7	8
377:	0	1	1	3	2	0	1	2
385:	0	2	3	2	2	2	6	2
393:	2	2	0	4	3	4	2	3
401:	2	2	3	3	1	0	3	1
409:	3	0	1	2	1	0	1	1
417:	0	1	0	0	2	0	0	2
425:	2	0	0	2	2	1	1	0
433:	2	1	1	1	2	0	0	2
441:	0	4	1	2	2	3	0	4
449:	1	2	1	2	0	3	1	0
457:	1	2	2	5	2	1	4	1
465:	0	3	1	0	1	2	1	1
473:	0	0	0	0	0	1	2	0
481:	1	0	2	1	0	0	0	0
489:	2	0	1	2	1	1	1	0
497:	0	0	1	1	0	1	0	0
505:	0	0	1	0	0	0	0	2
513:	0	0	0	0	0	1	1	0
521:	0	0	1	0	0	0	1	0
529:	0	1	0	0	0	0	0	1
537:	0	1	0	1	0	0	1	0
545:	0	0	1	0	0	0	0	0
553:	0	0	0	1	0	0	1	0
561:	0	1	0	0	0	0	0	1
569:	0	0	0	0	0	2	0	0
577:	0	0	0	1	0	0	0	2
585:	0	1	0	1	0	2	1	0
593:	0	0	1	0	0	0	1	0
601:	1	0	1	0	2	1	3	2
609:	0	1	0	2	1	1	2	1
617:	1	0	3	1	1	2	1	0
625:	1	0	1	1	4	0	1	0
633:	1	1	1	2	1	5	2	2
641:	1	3	1	1	2	0	2	3
649:	1	4	1	1	3	0	0	1
657:	0	0	2	0	1	1	1	0
665:	0	0	0	0	0	0	0	0
673:	0	1	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	1	0	0	0	1	0
697:	0	0	0	0	0	0	0	0
705:	0	1	0	0	0	0	0	0
713:	0	0	0	1	0	0	0	0
721:	0	0	0	0	1	0	0	0
729:	1	0	0	1	0	0	1	0
737:	0	0	1	0	0	0	0	0
745:	0	1	1	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	1	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	1
785:	0	1	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 13

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	1	0	0	0	0	0
817:	0	0	0	0	1	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	1	1	0	1	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	1	0	0	0	1	0	0
929:	0	0	1	0	0	0	0	1
937:	0	0	0	0	1	0	0	0
945:	0	2	0	0	0	0	0	0
953:	0	1	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KB
11/3/15

Sample Description: CP4106S10-11
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 14
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_039
 Chamber Serial Number: 06027396A
 Detector Serial Number: 83109
 Env. Background: System Bkgd 133269
 Reagent Blank: <not performed>

Sample Size: 1.505E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:22:07 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.225 mL
 Effective Efficiency: 0.1807 +/- 0.0158
 Counting Efficiency: 0.1934 +/- 0.0034 on 10/25/2014 2:53:34 PM
 Chem. Recovery Factor: 0.9341 +/- 0.0830

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.791	8.79	75.21	2.21	0.00E+000	3.0
TH-228	5.360	117.26	18.43	3.74	0.00E+000	4.7
TH-229 T	4.857	155.09	15.97	3.91	0.00E+000	4.4
TH-230	4.624	125.11	17.76	2.89	0.00E+000	4.7
TH-232	3.947	110.94	18.91	3.06	0.00E+000	3.6

T = Tracer Peak used for Effective Efficiency

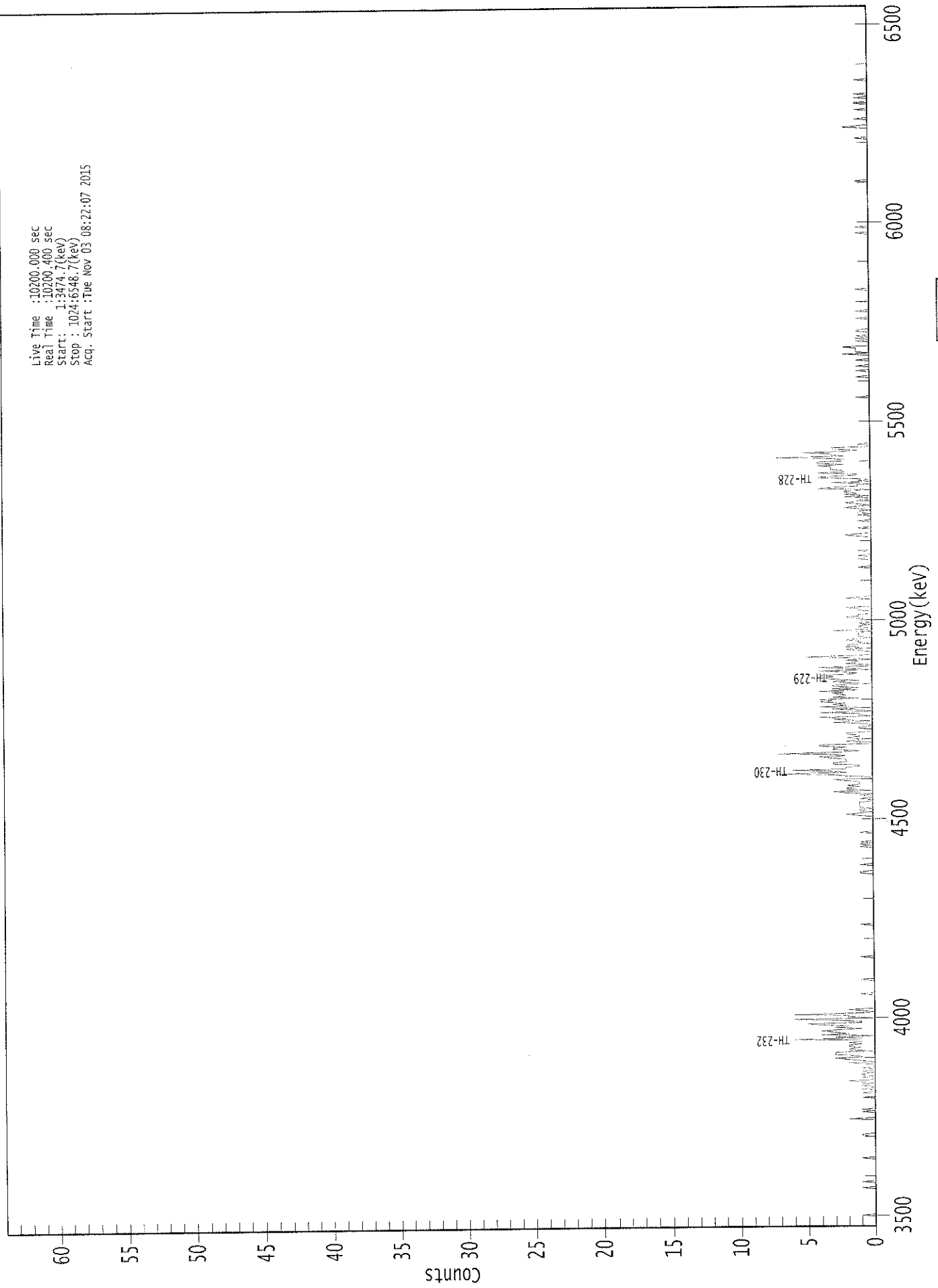
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.982	5850.00*	8.80E-002 +/- 6.79E-002	8.01E-002 +/- 1.37E-002
TH-228	0.992	5400.00*	1.17E+000 +/- 2.95E-001	9.60E-002 +/- 1.64E-002
TH-229	0.999	4872.00*	1.52E+000 +/- 2.59E-001	9.54E-002 +/- 1.63E-002
TH-230	0.988	4672.00*	1.22E+000 +/- 3.01E-001	8.55E-002 +/- 1.46E-002
TH-232	0.987	3997.00*	1.08E+000 +/- 2.75E-001	8.70E-002 +/- 1.49E-002

AG
11/3/15

0000132988.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:3474.7(keV)
Stop : 1024:6548.7(keV)
Acq. Start : Tue Nov 03 08:22:07 2015



00257

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 14

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	1	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	1	0	0	0	0	1	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	1	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	1	1	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	2	0	0	0	0	0
97:	1	0	1	0	0	0	0	0
105:	0	0	0	0	1	0	0	0
113:	1	0	0	1	0	0	1	1
121:	0	1	2	0	0	1	0	1
129:	1	0	1	0	0	1	0	0
137:	0	2	0	1	2	3	1	1
145:	3	3	3	0	2	2	1	2
153:	2	1	2	1	1	6	1	3
161:	0	4	2	3	4	3	1	3
169:	2	4	5	1	1	3	6	0
177:	2	2	6	1	0	1	2	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	1	0	0	0	0
201:	0	0	0	0	0	0	0	1
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	1	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	1	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	1	1	0	0	0	0	0	1
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	1	0
321:	1	0	1	0	0	0	0	0
329:	0	0	1	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	1	2	1	0	1	1	0	1
353:	1	1	1	1	0	0	1	0
361:	0	1	0	2	3	0	2	2

369: 1 2 1 1 1 2 3 0

Sample Title: 14

Channel	1	2	3	4	5	6	7	8
377:	0	2	3	7	2	3	6	2
385:	2	1	1	3	3	2	2	2
393:	3	4	2	3	7	2	1	3
401:	3	2	4	4	0	0	2	1
409:	1	2	1	1	2	2	0	0
417:	0	1	1	0	0	1	3	0
425:	3	2	4	0	1	1	4	0
433:	1	3	0	4	2	3	2	4
441:	3	4	1	3	2	2	3	2
449:	4	1	3	1	3	3	0	2
457:	3	1	3	4	3	4	2	1
465:	2	4	0	2	4	0	0	2
473:	1	1	2	0	2	5	1	0
481:	0	0	1	2	0	2	1	2
489:	0	1	1	2	1	0	1	1
497:	1	1	0	3	0	0	1	1
505:	0	1	0	0	0	1	2	1
513:	1	0	0	0	1	1	2	0
521:	0	0	0	0	0	0	2	1
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	1	0	0	0	0	0	0	1
561:	0	0	1	0	0	0	1	0
569:	0	0	0	0	0	0	0	0
577:	0	0	1	2	1	0	0	0
585:	0	1	0	0	0	0	0	1
593:	0	0	0	0	1	0	1	1
601:	0	1	2	1	0	1	2	1
609:	1	0	0	2	0	2	1	2
617:	2	0	4	3	1	1	0	3
625:	0	1	0	4	4	1	1	4
633:	2	2	3	3	3	4	2	4
641:	4	2	2	3	7	2	3	3
649:	5	2	1	3	3	0	0	1
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	1	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	1
713:	0	0	0	0	1	0	0	0
721:	1	0	0	0	0	1	0	0
729:	0	0	2	0	1	1	1	1
737:	2	0	0	0	0	1	0	1
745:	0	1	0	0	0	1	1	0
753:	0	0	0	0	0	0	0	0
761:	1	0	0	0	0	0	1	0
769:	0	0	0	0	0	0	1	0
777:	0	0	0	0	0	0	0	0
785:	1	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 14

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	1
833:	0	0	0	0	1	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	1	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	1
913:	0	0	0	0	0	0	0	0
921:	2	1	0	0	0	0	0	1
929:	0	0	0	0	0	0	0	1
937:	0	0	0	0	1	1	0	0
945:	0	1	0	0	1	0	0	0
953:	0	0	0	0	0	0	0	0
961:	1	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

160
11/3/15

Apex-Alpha™

Sample Description: CP4106S13-14
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 15
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_040
 Chamber Serial Number: 06027396B
 Detector Serial Number: 91135
 Env. Background: System Bkgd 133270
 Reagent Blank: <not performed>

Sample Size: 1.501E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:22:08 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.244 mL
 Effective Efficiency: 0.1562 +/- 0.0138
 Counting Efficiency: 0.1856 +/- 0.0032 on 10/25/2014 2:57:14 PM
 Chem. Recovery Factor: 0.8418 +/- 0.0760

Peak Match Tolerance: 0.175 MeV

 ----- PEAK AREA REPORT -----

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.894	5.15	94.34	0.85	0.00E+000	6.0
TH-228	5.355	128.81	17.36	1.19	0.00E+000	7.1
TH-229 T	4.858	145.66	16.26	0.34	0.00E+000	4.7
TH-230	4.625	119.32	18.00	0.68	0.00E+000	4.4
TH-232	3.945	109.66	18.75	0.34	0.00E+000	6.2

T = Tracer Peak used for Effective Efficiency

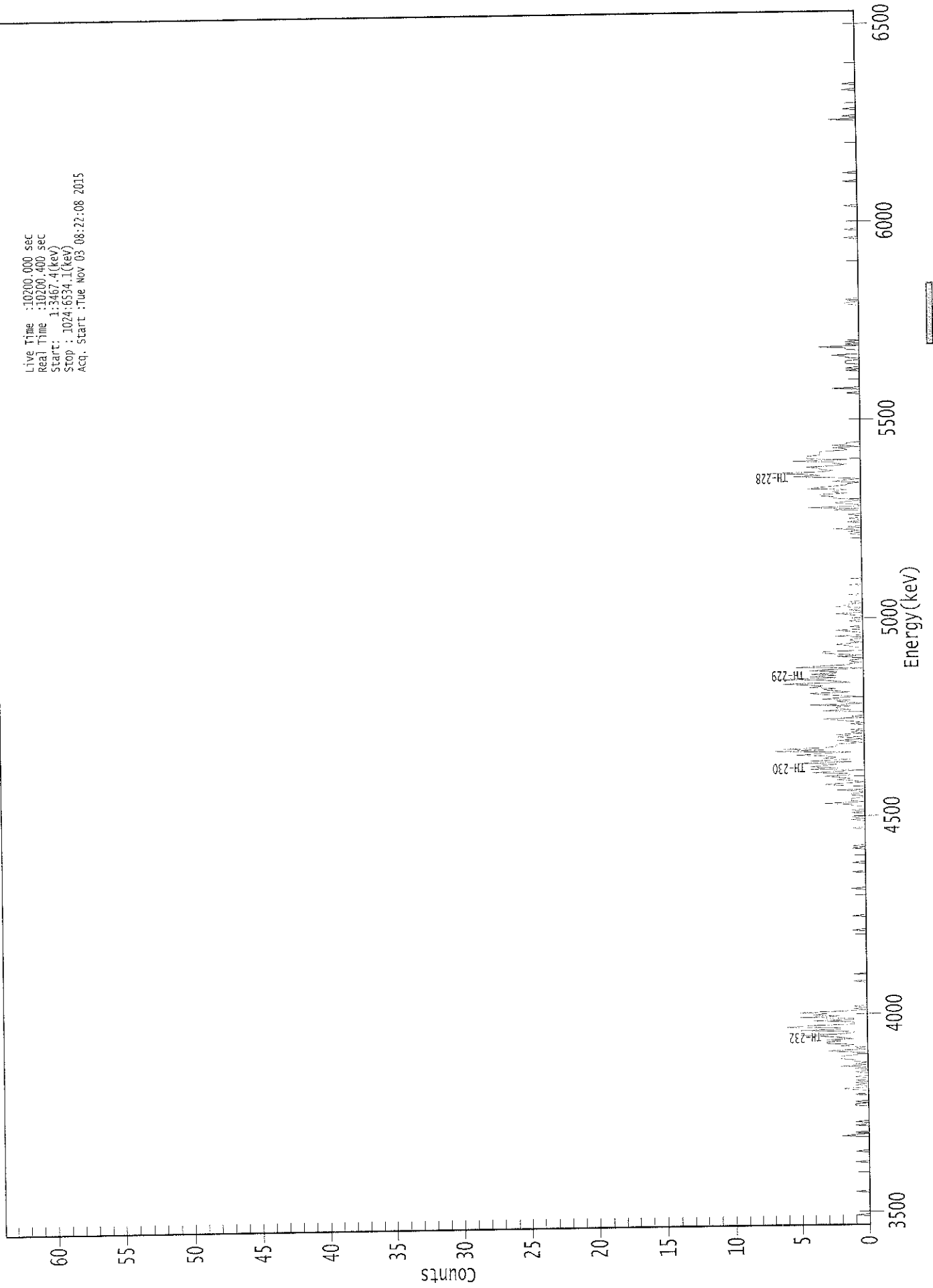
 ----- NUCLIDE ANALYSIS RESULTS -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.990	5850.00*	5.98E-002 +/- 5.74E-002	6.95E-002 +/- 1.21E-002
TH-228	0.990	5400.00*	1.50E+000 +/- 3.67E-001	7.65E-002 +/- 1.33E-002
TH-229	0.999	4872.00*	1.65E+000 +/- 2.87E-001	5.43E-002 +/- 9.42E-003
TH-230	0.989	4672.00*	1.35E+000 +/- 3.38E-001	6.38E-002 +/- 1.11E-002
TH-232	0.986	3997.00*	1.24E+000 +/- 3.17E-001	5.40E-002 +/- 9.38E-003

AG
11/3/15

0000132987.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3467.4(kev)
Stop : 1024:6534.1(kev)
Acq. Start :Tue Nov 03 08:27:08 2015



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 15

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	1	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	1	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	1	0	0	0
57:	0	0	0	0	0	0	1	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	2	1	0	1	0	0
81:	0	0	0	0	1	0	0	0	1
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	1	1	0	0
105:	1	0	0	0	0	0	1	0	0
113:	0	0	1	2	0	0	1	0	0
121:	1	0	1	0	0	1	0	0	0
129:	0	1	0	0	1	0	2	0	0
137:	1	0	1	1	2	2	2	1	0
145:	0	0	2	3	0	1	0	2	0
153:	1	3	3	2	3	1	2	3	0
161:	5	2	1	1	5	2	2	6	0
169:	4	1	1	1	4	1	1	5	0
177:	2	4	3	5	2	0	1	0	0
185:	1	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	1	0	0	0
209:	0	0	0	1	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	1	0	0	0	0	0	0	0	0
257:	0	0	0	0	1	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	1	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	1	0	0	0	0	0	0	0
305:	0	1	0	0	0	0	0	0	0
313:	0	0	0	0	0	1	0	1	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	1	0	0
337:	0	0	0	0	0	1	0	1	0
345:	0	0	0	1	0	1	0	0	0
353:	0	1	1	3	0	1	1	1	0
361:	0	0	1	1	0	0	2	0	0

369: 0 0 2 3 1 0 1 2

Sample Title: 15

Channel	1	2	3	4	5	6	7	8
377:	1	2	3	1	1	4	2	0
385:	4	2	4	3	2	5	1	4
393:	1	3	2	3	5	3	1	7
401:	3	6	3	2	2	2	0	1
409:	2	0	1	2	1	2	0	1
417:	0	1	0	0	0	0	1	0
425:	1	2	3	0	1	0	0	0
433:	0	3	1	2	2	1	4	0
441:	1	2	1	3	2	0	2	3
449:	4	1	2	3	2	4	3	4
457:	6	1	2	3	7	2	4	2
465:	4	2	2	4	2	0	5	3
473:	1	1	0	1	1	0	0	2
481:	0	2	3	3	0	0	0	1
489:	1	2	1	0	1	1	0	0
497:	2	0	0	0	1	2	0	0
505:	1	0	0	0	0	1	0	0
513:	0	0	1	2	0	0	1	0
521:	0	2	1	1	0	1	0	0
529:	0	0	0	1	0	0	0	0
537:	0	0	0	1	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	1	0
585:	1	0	2	0	1	0	0	0
593:	1	0	0	1	0	0	1	0
601:	0	0	2	0	4	0	0	1
609:	2	1	0	1	2	2	3	3
617:	1	2	2	1	4	3	2	1
625:	1	0	2	1	0	2	5	3
633:	4	7	3	2	3	3	4	2
641:	1	2	2	5	1	4	4	4
649:	3	3	3	3	1	1	2	0
657:	2	1	1	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	1	0	0	0
705:	2	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	1
721:	0	1	0	0	0	1	1	1
729:	0	0	1	1	2	0	0	0
737:	0	1	1	3	0	1	0	1
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	1
777:	1	0	0	1	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	1
833:	0	0	0	0	0	0	1	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	1	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	1
881:	0	0	0	0	0	0	1	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	2	0	0	1	0
937:	0	0	0	0	1	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	1	0	0	0
961:	0	1	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KS
11/3/15

Sample Description: CP4106S15-16
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 16
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_041
 Chamber Serial Number: 05026930A
 Detector Serial Number: 91087
 Env. Background: System Bkgd 133271
 Reagent Blank: <not performed>

Sample Size: 1.511E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:22:10 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.224 mL
 Effective Efficiency: 0.2203 +/- 0.0175
 Counting Efficiency: 0.1873 +/- 0.0033 on 10/25/2014 3:00:28 PM
 Chem. Recovery Factor: 1.1760 +/- 0.0954

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.889	5.15	94.34	0.85	0.00E+000	3.0
TH-228	5.362	141.15	16.56	0.85	0.00E+000	4.0
TH-229 T	4.861	188.49	14.30	0.51	0.00E+000	8.0
TH-230	4.626	124.64	17.67	1.36	0.00E+000	18.0
TH-232	3.938	114.11	18.62	2.89	0.00E+000	3.6

T = Tracer Peak used for Effective Efficiency

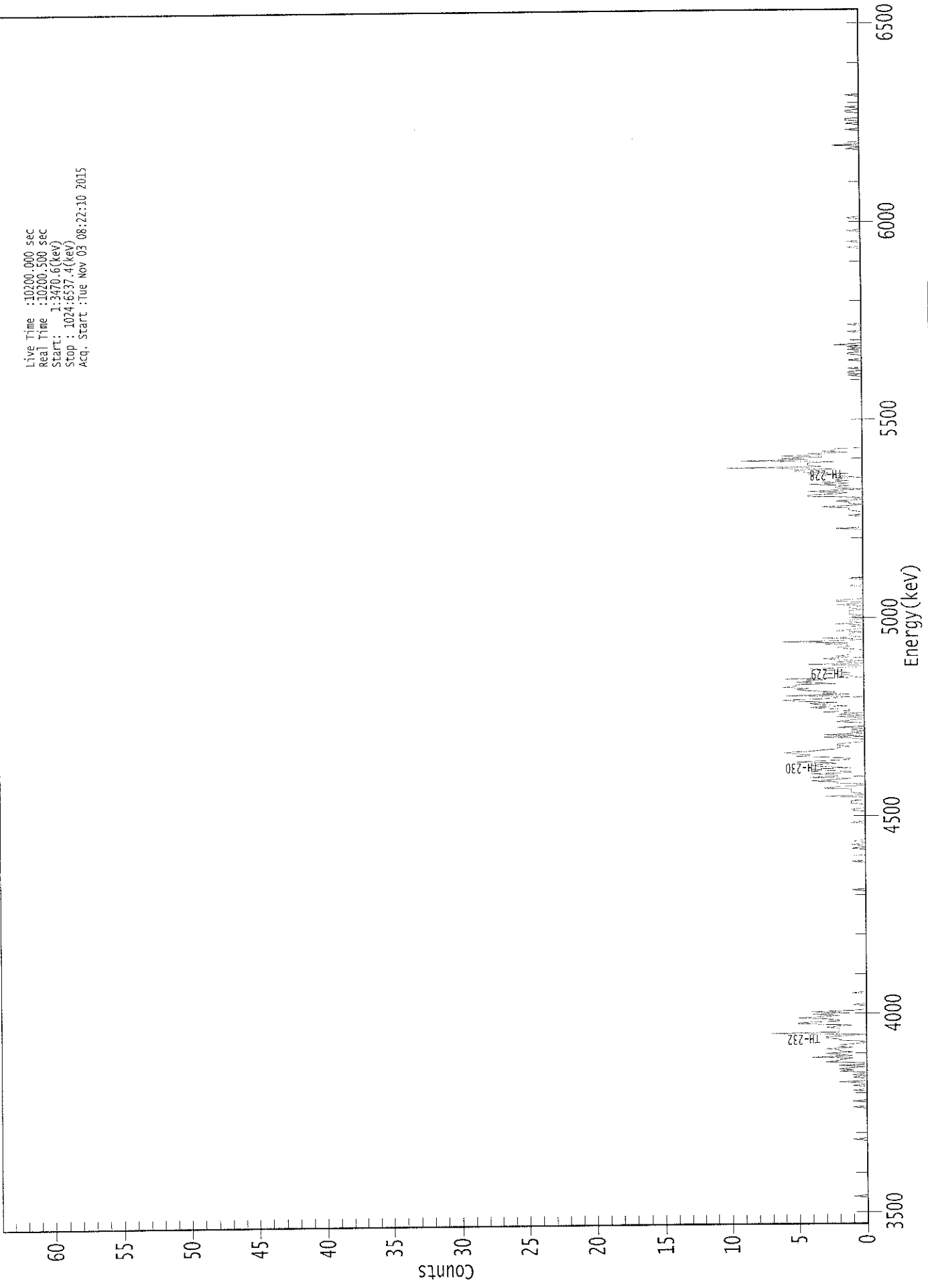
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.992	5850.00*	4.21E-002 +/- 4.03E-002	4.90E-002 +/- 7.61E-003
TH-228	0.992	5400.00*	1.15E+000 +/- 2.62E-001	4.90E-002 +/- 7.61E-003
TH-229	0.999	4872.00*	1.51E+000 +/- 2.34E-001	4.20E-002 +/- 6.52E-003
TH-230	0.989	4672.00*	9.94E-001 +/- 2.34E-001	5.47E-002 +/- 8.49E-003
TH-232	0.982	3997.00*	9.08E-001 +/- 2.20E-001	6.97E-002 +/- 1.08E-002

AG
11/3/15

0000132992.CNF

Live Time :10200.000 sec
Real Time :10200.500 sec
Start : 1:3470.6(keV)
Stop : 1024:6537.4(keV)
Acq. Start :Tue Nov 03 08:22:10 2015



ROI Type: 3

ROI Type: 1

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 16

Elapsed Live time: 10200

Elapsed Real Time: 10201

Channel	1	2	3	4	5	6	7	8	9
1:	1	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	1
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	1
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	1	0	0	0	0	0	1
105:	0	0	0	0	0	0	0	0	0
113:	1	0	0	0	1	0	0	0	2
121:	0	0	0	1	0	1	0	0	0
129:	2	1	2	1	0	2	0	0	0
137:	3	2	2	1	4	1	2	2	3
145:	1	2	2	3	1	2	2	2	1
153:	0	0	2	2	3	3	1	0	0
161:	7	2	2	2	2	3	2	2	1
169:	5	5	2	2	3	5	3	2	2
177:	4	1	4	1	0	0	0	0	0
185:	1	0	0	0	0	0	0	0	0
193:	0	0	1	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	1	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0	0
305:	0	1	0	0	0	0	0	0	0
313:	0	0	0	0	1	0	0	0	1
321:	0	0	1	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	1	0	0	0	0	0	0
345:	0	0	0	0	1	1	0	0	0
353:	0	0	1	1	1	0	0	0	0
361:	3	0	0	1	1	1	1	3	3

369: 2 0 0 2 2 4 2 1

Sample Title: 16

Channel	1	2	3	4	5	6	7	8
377:	4	2	2	4	1	1	3	4
385:	1	3	4	3	2	5	3	1
393:	1	3	5	4	5	6	4	3
401:	2	2	1	2	2	1	0	0
409:	0	1	3	0	3	0	1	0
417:	1	0	2	0	0	0	0	2
425:	1	0	0	2	0	2	0	3
433:	1	1	3	4	1	3	4	2
441:	5	6	3	2	1	6	1	3
449:	2	4	5	4	6	5	5	2
457:	5	4	3	6	0	1	1	3
465:	1	2	2	4	2	0	0	4
473:	0	2	0	2	3	1	2	1
481:	1	1	1	0	1	2	1	1
489:	3	1	6	1	0	3	0	1
497:	1	1	0	2	1	0	0	1
505:	0	2	0	1	1	0	1	1
513:	0	1	1	1	1	0	1	1
521:	0	2	0	0	2	2	0	0
529:	0	0	0	0	0	0	0	0
537:	0	1	0	0	0	0	0	1
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	2	0	0	0	0	0	0
593:	0	0	0	0	1	0	0	0
601:	1	1	1	3	1	0	1	1
609:	2	0	0	0	4	4	2	1
617:	4	2	0	2	2	1	4	1
625:	3	1	2	2	0	2	4	1
633:	4	5	5	2	10	3	4	4
641:	4	2	9	4	6	3	6	3
649:	4	1	3	2	2	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	1	0	1	1	0	0
721:	1	0	0	0	0	0	0	1
729:	0	0	0	0	1	1	0	0
737:	1	0	1	0	2	0	0	0
745:	0	0	0	0	0	0	0	1
753:	0	0	0	0	0	1	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 16

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	1	0
825:	0	0	0	1	0	0	0	0
833:	0	0	0	0	1	0	0	0
841:	0	0	0	0	0	0	0	1
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	1	0	0	2	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	1	0	0	0	0	1	0
929:	0	1	1	0	0	0	0	0
937:	1	1	0	0	1	0	0	0
945:	0	0	0	0	0	0	1	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

WJ
11/3/15

Apex-Alpha™

Sample Description: CP4106S18-19
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001329
 Batch Identification: 1510087A-TH
 Sample Identification: 17
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_042
 Chamber Serial Number: 05026930B
 Detector Serial Number: 84185
 Env. Background: System Bkgd 133272
 Reagent Blank: <not performed>

Sample Size: 1.524E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/7/2015 6:16:15 AM
 Acquisition Date/Time: 11/3/2015 8:22:12 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.223 mL
 Effective Efficiency: 0.1774 +/- 0.0155
 Counting Efficiency: 0.1737 +/- 0.0030 on 10/25/2014 3:04:21 PM
 Chem. Recovery Factor: 1.0213 +/- 0.0909

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.886	9.49	65.59	0.51	0.00E+000	3.0
TH-228	5.390	141.81	16.54	1.19	0.00E+000	6.6
TH-229 T	4.868	151.15	15.99	0.85	0.00E+000	4.0
TH-230	4.640	151.66	15.94	0.34	0.00E+000	13.4
TH-232	3.969	142.32	16.48	0.68	0.00E+000	17.6

T = Tracer Peak used for Effective Efficiency

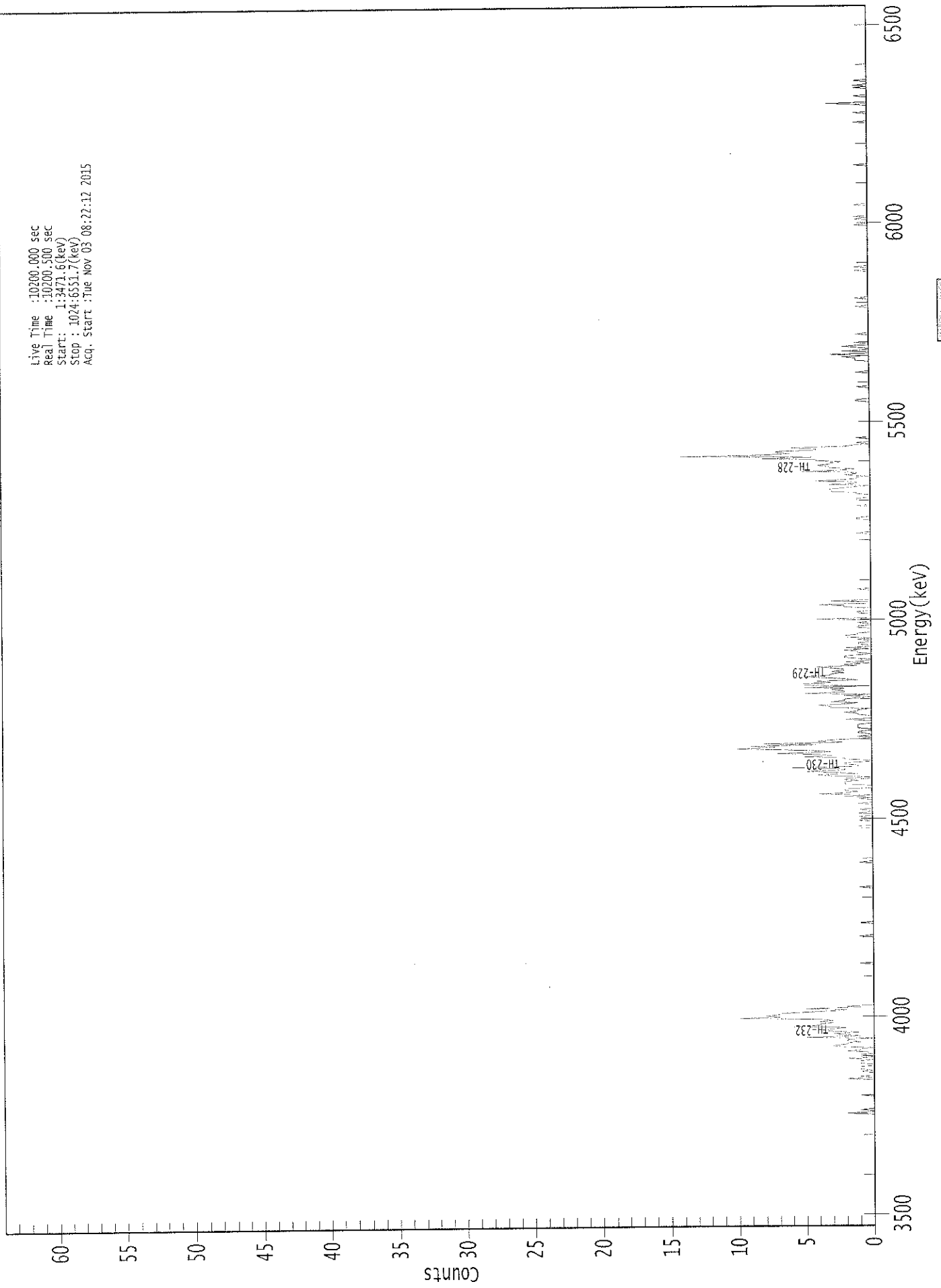
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.993	5850.00*	9.56E-002 +/- 6.48E-002	5.28E-002 +/- 9.04E-003
TH-228	0.999	5400.00*	1.43E+000 +/- 3.40E-001	6.63E-002 +/- 1.14E-002
TH-229	1.000	4872.00*	1.49E+000 +/- 2.55E-001	5.89E-002 +/- 1.01E-002
TH-230	0.995	4672.00*	1.49E+000 +/- 3.48E-001	4.69E-002 +/- 8.03E-003
TH-232	0.996	3997.00*	1.39E+000 +/- 3.31E-001	5.53E-002 +/- 9.45E-003

AG
11/3/15

0000132991.CNF

Live Time : 10200.000 sec
Real Time : 10200.500 sec
Start : 1:34:71.6 (keV)
Stop : 1024:6531.7 (keV)
Acq. Start : Tue Nov 03 08:22:12 2015



: 00272

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 17

Elapsed Live time: 10200

Elapsed Real Time: 10201

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	2	0
97:	0	1	0	0	0	0	0	0
105:	0	0	0	0	0	1	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	2	0	1	0	0
129:	0	1	0	1	1	1	0	0
137:	1	1	1	0	2	0	1	1
145:	0	0	2	1	1	0	3	3
153:	2	2	1	2	2	0	5	1
161:	2	3	1	3	4	3	2	6
169:	4	4	3	4	3	4	10	7
177:	8	7	7	5	3	2	5	1
185:	2	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	1	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	1	0	0	0	0
249:	0	0	0	0	0	0	1	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	1	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	1	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	1	1
337:	0	0	0	0	1	0	0	1
345:	0	0	1	0	0	1	0	0
353:	0	0	1	0	0	0	1	0
361:	2	0	4	2	1	2	2	0

369: 0 0 2 2 2 1 2 2

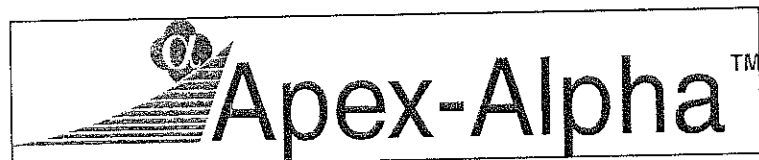
Sample Title: 17

Channel	1	2	3	4	5	6	7	8
377:	0	3	4	1	3	5	2	2
385:	6	1	1	2	2	0	0	2
393:	2	5	3	4	7	3	4	7
401:	10	7	9	4	8	2	4	3
409:	1	0	1	0	0	1	1	0
417:	0	1	1	1	1	0	0	0
425:	2	0	0	0	1	1	2	1
433:	1	0	3	3	4	2	1	3
441:	2	2	1	0	2	0	5	2
449:	2	3	2	5	0	5	5	3
457:	4	1	2	4	5	3	3	2
465:	3	2	2	3	4	1	2	0
473:	2	0	0	1	2	2	1	0
481:	1	1	2	0	2	0	0	1
489:	1	0	0	1	0	2	2	1
497:	1	0	0	0	0	1	1	0
505:	0	1	0	0	4	0	0	0
513:	0	1	1	0	0	0	2	2
521:	4	0	0	3	0	0	0	0
529:	0	0	0	0	0	1	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	1	0	0	0
585:	0	0	0	0	0	0	0	0
593:	1	1	0	0	0	0	0	0
601:	0	0	0	1	0	0	0	0
609:	1	1	0	0	0	1	1	3
617:	3	3	2	1	0	3	1	1
625:	4	2	1	1	0	2	1	1
633:	5	2	1	3	3	4	3	3
641:	2	4	4	8	4	14	8	6
649:	7	7	4	4	6	2	1	0
657:	1	0	0	0	1	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	1	1	0	0	0
697:	0	0	0	0	0	0	0	1
705:	0	0	0	0	0	0	0	0
713:	0	0	0	1	0	0	0	0
721:	0	0	0	0	0	1	1	1
729:	2	0	3	0	0	2	0	0
737:	1	2	0	0	1	0	0	0
745:	0	0	0	1	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	1	0	0	0	0	0
777:	0	1	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 1 0 0 1 0 0 0 0

Sample Title: 17

Channel	1	2	3	4	5	6	7	8
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	1	0
841:	0	0	0	1	0	1	0	0
849:	0	0	0	0	0	0	0	1
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	1	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	1	0	0	0
929:	0	0	0	0	1	0	0	0
937:	0	0	0	1	3	0	0	0
945:	0	0	1	0	0	0	0	0
953:	0	1	0	1	0	0	0	1
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 11/3/2015
Time : 5:45:15 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	11/3/2015 5:19:43 AM
Alpha 004	21f	ALL	Passed	11/3/2015 5:19:44 AM
Alpha 005	21f	ALL	Not Done	
Alpha 006	21f	ALL	Not Done	
Alpha 007	21f	ALL	Not Done	
Alpha 008	21f	ALL	Not Done	
Alpha 009	21f	ALL	Not Done	
Alpha 010	21f	ALL	Passed	11/3/2015 5:19:45 AM
Alpha 011	21f	ALL	Passed	11/3/2015 5:19:46 AM
Alpha 012	21f	ALL	Passed	11/3/2015 5:19:46 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Passed	11/3/2015 5:19:47 AM
Alpha 015	21f	ALL	Passed	11/3/2015 5:19:48 AM
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:19:49 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:19:51 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:19:52 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:19:54 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:19:55 AM
Alpha 038	Alpha Analyst100DC	Peak Energy	Action	11/3/2015 5:19:57 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:19:58 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:00 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:02 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:03 AM
Alpha 043	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:05 AM
Alpha 044	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:07 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:09 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:10 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:12 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:14 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:15 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:17 AM
Alpha 051	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:19 AM
Alpha 052	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:22 AM
Alpha 053	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:24 AM
Alpha 054	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:26 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:29 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:31 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:34 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	11/3/2015 5:20:37 AM

***** LIBRARY LISTING REPORT *****

Nuclide Library Title: Thorium

Nuclide Library Description: Th-227,-228,-229,-230,-232

Nuclide Name	Half-Life (Seconds)	Energy (keV)	Energy Uncert. (keV)	Yield (%)	Yield Uncert. (Abs.+ -)
TH-227	6.873E+008	5850.000*	0.000	97.5000	0.0000
TH-228	6.034E+007	5400.000*	0.000	99.9400	0.0000
TH-229	2.487E+011	4872.000*	0.000	99.5200	0.0000
TH-230	2.379E+012	4672.000*	0.000	99.8200	0.0000
TH-232	4.434E+017	3997.000*	0.000	100.0000	0.0000

* = key line

TOTALS: 5 Nuclides 5 Energy Lines

SECTION X
ANALYTICAL DATA (GAMMA SPECTROSCOPY)

Work Order	15-10087
Analysis Code	Gamma
Run	1
Date Received	10/14/2015
Lab Deadline	11/6/2015
Client	Auxier & Associates, Inc.
Project	PAP-KAN
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	LANL ER-130 Modified
Instrument Type	Gamma Spectroscopy
Radiometric Tracer	
Radiometric Sol#	
Tracer Act (dpm/g)	
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		10/14/15 00:00	1.0000E+00
02	MBL	BLANK		10/14/15 00:00	1.0000E+00
03	DUP	CP5004S01-02	37	10/07/15 10:10	5.6885E+02
04	DO	CP5004S01-02	37	10/07/15 10:10	5.6885E+02
05	TRG	CP5004S04-05	41	10/07/15 10:20	6.0550E+02
06	TRG	CP5004S07-08	35	10/07/15 10:30	6.1869E+02
07	TRG	CP5004S09-10	38	10/07/15 10:40	5.5713E+02
08	TRG	CP5004S11-12	32	10/07/15 10:50	5.6908E+02
09	TRG	CP5004S14-15	37	10/07/15 11:00	5.2860E+02
10	TRG	CP5004S16-17	40	10/07/15 11:10	5.6767E+02
11	TRG	CP4106S03-04	37	10/07/15 13:00	5.5697E+02
12	TRG	CP4106S05-06	35	10/07/15 13:10	5.3102E+02
13	TRG	CP4106S08-09	35	10/07/15 13:20	5.4730E+02
14	TRG	CP4106S10-11	33	10/07/15 13:30	5.3686E+02
15	TRG	CP4106S13-14	32	10/07/15 13:40	6.0554E+02
16	TRG	CP4106S15-16	38	10/07/15 13:50	5.5736E+02
17	TRG	CP4106S18-19	39	10/07/15 14:00	5.2497E+02

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

15-10087
Gamma
Run 1

Eberline Services
Oak Ridge Laboratory
Analysis Sheet

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS								
02	MBL								
03	DUP								
04	DO	10/19/15 07:21	KSALLINGS						
05	TRG	10/19/15 07:21	KSALLINGS						
06	TRG	10/19/15 07:21	KSALLINGS						
07	TRG	10/19/15 07:21	KSALLINGS						
08	TRG	10/19/15 07:21	KSALLINGS						
09	TRG	10/19/15 07:21	KSALLINGS						
10	TRG	10/19/15 07:21	KSALLINGS						
11	TRG	10/19/15 07:21	KSALLINGS						
12	TRG	10/19/15 07:21	KSALLINGS						
13	TRG	10/19/15 07:21	KSALLINGS						
14	TRG	10/19/15 07:21	KSALLINGS						
15	TRG	10/19/15 07:21	KSALLINGS						
16	TRG	10/19/15 07:21	KSALLINGS						
17	TRG	10/19/15 07:21	KSALLINGS						

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Preliminary Data Report & Analytical Calculations
Work Order: 15-10087-Gamma-1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
01	CO-60	LCS	LCS	pCi/g	1.42E+02	8.31E+00	7.10E-01	1.37E+02	103.82	OK		10/14/15 00:00	1.00E+00	11/09/15 11:21	YES
01	CS-137	LCS	LCS	pCi/g	9.05E+01	8.12E+00	9.27E-01	8.69E+01	104.14	OK		10/14/15 00:00	1.00E+00	11/09/15 11:21	YES
02	AC-228	MBL	BLANK	pCi/g	2.46E-02	6.24E-02	1.12E-01					10/14/15 00:00	1.00E+00	11/09/15 11:22	NO
02	BI-214	MBL	BLANK	pCi/g	2.91E-02	4.73E-02	7.95E-02					10/14/15 00:00	1.00E+00	11/09/15 11:22	NO
02	K-40	MBL	BLANK	pCi/g	1.57E-01	2.17E-01	4.21E-01					10/14/15 00:00	1.00E+00	11/09/15 11:22	NO
02	PB-212	MBL	BLANK	pCi/g	3.37E-02	3.35E-02	5.20E-02					10/14/15 00:00	1.00E+00	11/09/15 11:22	NO
02	PB-214	MBL	BLANK	pCi/g	3.46E-02	4.09E-02	6.37E-02					10/14/15 00:00	1.00E+00	11/09/15 11:22	NO
02	RA-226	MBL	BLANK	pCi/g	2.91E-02	4.73E-02	7.95E-02					10/14/15 00:00	1.00E+00	11/09/15 11:22	NO
02	RA-228	MBL	BLANK	pCi/g	2.46E-02	6.24E-02	1.12E-01					10/14/15 00:00	1.00E+00	11/09/15 11:22	NO
02	TH-234	MBL	BLANK	pCi/g	3.31E-01	2.67E-01	4.74E-01					10/14/15 00:00	1.00E+00	11/09/15 11:22	NO
02	TL-208	MBL	BLANK	pCi/g	5.03E-02	5.00E-02	8.65E-02					10/14/15 00:00	1.00E+00	11/09/15 11:22	NO
03	AC-228	DUP	CP5004S01-02	pCi/g	1.46E+00	2.19E-01	4.63E-01				OK	10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
03	BI-214	DUP	CP5004S01-02	pCi/g	1.35E+00	1.92E-01	1.82E-01				OK	10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
03	K-40	DUP	CP5004S01-02	pCi/g	2.16E+01	2.37E+00	7.94E-01				OK	10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
03	PB-212	DUP	CP5004S01-02	pCi/g	1.45E+00	1.77E-01	2.05E-01					10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
03	PB-214	DUP	CP5004S01-02	pCi/g	1.34E+00	1.61E-01	2.58E-01					10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
03	RA-226	DUP	CP5004S01-02	pCi/g	1.35E+00	1.92E-01	1.82E-01					10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
03	RA-228	DUP	CP5004S01-02	pCi/g	1.46E+00	2.19E-01	4.63E-01					10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
03	TH-234	DUP	CP5004S01-02	pCi/g	1.05E+01	1.49E+00	2.61E+00					10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
03	TL-208	DUP	CP5004S01-02	pCi/g	1.22E+00	1.70E-01	1.39E-01					10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
04	AC-228	DO	CP5004S01-02	pCi/g	1.33E+00	2.26E-01	4.16E-01					10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
04	BI-214	DO	CP5004S01-02	pCi/g	1.19E+00	1.63E-01	1.82E-01					10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
04	K-40	DO	CP5004S01-02	pCi/g	1.96E+01	2.18E+00	7.92E-01					10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
04	PB-212	DO	CP5004S01-02	pCi/g	1.38E+00	1.67E-01	2.50E-01					10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
04	PB-214	DO	CP5004S01-02	pCi/g	1.25E+00	1.49E-01	2.24E-01					10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
04	RA-226	DO	CP5004S01-02	pCi/g	1.19E+00	1.53E-01	1.82E-01					10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
04	RA-228	DO	CP5004S01-02	pCi/g	1.33E+00	2.26E-01	4.16E-01					10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
04	TH-234	DO	CP5004S01-02	pCi/g	1.08E+01	1.90E+00	2.62E+00					10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
04	TL-208	DO	CP5004S01-02	pCi/g	1.25E+00	1.83E-01	1.47E-01					10/07/15 10:10	5.69E+02	11/09/15 06:08	YES
05	AC-228	TRG	CP5004S04-05	pCi/g	1.26E+00	2.09E-01	3.31E-01					10/07/15 10:20	6.06E+02	11/09/15 06:09	YES
05	BI-214	TRG	CP5004S04-05	pCi/g	1.23E+00	1.52E-01	1.80E-01					10/07/15 10:20	6.06E+02	11/09/15 06:09	YES
05	K-40	TRG	CP5004S04-05	pCi/g	1.73E+01	2.24E+00	1.00E+00					10/07/15 10:20	6.06E+02	11/09/15 06:09	YES
05	PB-212	TRG	CP5004S04-05	pCi/g	1.33E+00	1.67E-01	2.21E-01					10/07/15 10:20	6.06E+02	11/09/15 06:09	YES
05	PB-214	TRG	CP5004S04-05	pCi/g	1.44E+00	1.61E-01	2.08E-01					10/07/15 10:20	6.06E+02	11/09/15 06:09	YES
05	RA-226	TRG	CP5004S04-05	pCi/g	1.23E+00	1.52E-01	1.80E-01					10/07/15 10:20	6.06E+02	11/09/15 06:09	YES
05	RA-228	TRG	CP5004S04-05	pCi/g	1.26E+00	2.09E-01	3.31E-01					10/07/15 10:20	6.06E+02	11/09/15 06:09	YES
05	TH-234	TRG	CP5004S04-05	pCi/g	7.92E+00	1.96E+00	2.92E+00					10/07/15 10:20	6.06E+02	11/09/15 06:09	YES
05	TL-208	TRG	CP5004S04-05	pCi/g	9.48E-01	1.48E-01	1.43E-01					10/07/15 10:20	6.06E+02	11/09/15 06:09	YES

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
06	AC-228	TRG	CP5004S07-08	pCi/g	9.06E-01	4.58E-01	8.57E-01					10/07/15 10:30	6.19E+02	11/09/15 06:09	NO
06	BI-214	TRG	CP5004S07-08	pCi/g	1.48E+00	2.95E-01	2.49E-01					10/07/15 10:30	6.19E+02	11/09/15 06:09	YES
06	K-40	TRG	CP5004S07-08	pCi/g	1.78E+01	3.11E+00	1.95E+00					10/07/15 10:30	6.19E+02	11/09/15 06:09	YES
06	PB-212	TRG	CP5004S07-08	pCi/g	1.86E+00	3.38E-01	4.07E-01					10/07/15 10:30	6.19E+02	11/09/15 06:09	YES
06	PB-214	TRG	CP5004S07-08	pCi/g	1.28E+00	3.04E-01	5.33E-01					10/07/15 10:30	6.19E+02	11/09/15 06:09	YES
06	RA-226	TRG	CP5004S07-08	pCi/g	1.45E+00	2.95E-01	2.49E-01					10/07/15 10:30	6.19E+02	11/09/15 06:09	YES
06	RA-228	TRG	CP5004S07-08	pCi/g	9.06E-01	4.58E-01	8.57E-01					10/07/15 10:30	6.19E+02	11/09/15 06:09	NO
06	TH-234	TRG	CP5004S07-08	pCi/g	4.36E+00	1.81E+00	2.92E+00					10/07/15 10:30	6.19E+02	11/09/15 06:09	YES
06	TL-208	TRG	CP5004S07-08	pCi/g	1.07E+00	2.94E-01	3.95E-01					10/07/15 10:30	6.19E+02	11/09/15 06:09	YES
07	AC-228	TRG	CP5004S09-10	pCi/g	1.51E+00	2.07E-01	6.37E-01					10/07/15 10:40	5.57E+02	11/09/15 07:13	YES
07	BI-214	TRG	CP5004S09-10	pCi/g	1.06E+00	1.57E-01	1.89E-01					10/07/15 10:40	5.57E+02	11/09/15 07:13	YES
07	K-40	TRG	CP5004S09-10	pCi/g	1.97E+01	2.51E+00	9.41E-01					10/07/15 10:40	5.57E+02	11/09/15 07:13	YES
07	PB-212	TRG	CP5004S09-10	pCi/g	1.27E+00	1.60E-01	3.27E-01					10/07/15 10:40	5.57E+02	11/09/15 07:13	YES
07	PB-214	TRG	CP5004S09-10	pCi/g	1.08E+00	1.60E-01	2.07E-01					10/07/15 10:40	5.57E+02	11/09/15 07:13	YES
07	RA-226	TRG	CP5004S09-10	pCi/g	1.05E+00	1.57E-01	1.89E-01					10/07/15 10:40	5.57E+02	11/09/15 07:13	YES
07	RA-228	TRG	CP5004S09-10	pCi/g	1.51E+00	2.07E-01	6.37E-01					10/07/15 10:40	5.57E+02	11/09/15 07:13	YES
07	TH-234	TRG	CP5004S09-10	pCi/g	1.10E+00	9.26E-01	1.47E+00					10/07/15 10:40	5.57E+02	11/09/15 07:13	NO
07	TL-208	TRG	CP5004S09-10	pCi/g	1.04E+00	1.58E-01	1.11E-01					10/07/15 10:40	5.57E+02	11/09/15 07:13	YES
08	AC-228	TRG	CP5004S11-12	pCi/g	1.38E+00	4.28E-01	6.86E-01					10/07/15 10:50	5.69E+02	11/09/15 07:13	YES
08	BI-214	TRG	CP5004S11-12	pCi/g	1.45E+00	3.28E-01	5.19E-01					10/07/15 10:50	5.69E+02	11/09/15 07:13	YES
08	K-40	TRG	CP5004S11-12	pCi/g	1.84E+01	3.42E+00	2.74E+00					10/07/15 10:50	5.69E+02	11/09/15 07:13	YES
08	PB-212	TRG	CP5004S11-12	pCi/g	1.87E+00	3.38E-01	4.01E-01					10/07/15 10:50	5.69E+02	11/09/15 07:13	YES
08	PB-214	TRG	CP5004S11-12	pCi/g	1.85E+00	3.27E-01	4.41E-01					10/07/15 10:50	5.69E+02	11/09/15 07:13	YES
08	RA-226	TRG	CP5004S11-12	pCi/g	1.45E+00	3.28E-01	5.19E-01					10/07/15 10:50	5.69E+02	11/09/15 07:13	YES
08	RA-228	TRG	CP5004S11-12	pCi/g	1.38E+00	4.28E-01	6.86E-01					10/07/15 10:50	5.69E+02	11/09/15 07:13	YES
08	TH-234	TRG	CP5004S11-12	pCi/g	1.03E+00	1.42E+00	2.20E+00					10/07/15 10:50	5.69E+02	11/09/15 07:13	NO
08	TL-208	TRG	CP5004S11-12	pCi/g	1.32E+00	3.41E-01	9.29E-02					10/07/15 10:50	5.69E+02	11/09/15 07:13	YES
09	AC-228	TRG	CP5004S14-15	pCi/g	1.39E+00	2.13E-01	3.62E-01					10/07/15 11:00	5.29E+02	11/09/15 08:16	YES
09	BI-214	TRG	CP5004S14-15	pCi/g	1.15E+00	1.67E-01	2.55E-01					10/07/15 11:00	5.29E+02	11/09/15 08:16	YES
09	K-40	TRG	CP5004S14-15	pCi/g	2.12E+01	2.38E+00	8.64E-01					10/07/15 11:00	5.29E+02	11/09/15 08:16	YES
09	PB-212	TRG	CP5004S14-15	pCi/g	1.51E+00	1.76E-01	2.58E-01					10/07/15 11:00	5.29E+02	11/09/15 08:16	YES
09	PB-214	TRG	CP5004S14-15	pCi/g	1.44E+00	1.64E-01	2.46E-01					10/07/15 11:00	5.29E+02	11/09/15 08:16	YES
09	RA-226	TRG	CP5004S14-15	pCi/g	1.15E+00	1.67E-01	2.55E-01					10/07/15 11:00	5.29E+02	11/09/15 08:16	YES
09	RA-228	TRG	CP5004S14-15	pCi/g	1.39E+00	2.13E-01	3.62E-01					10/07/15 11:00	5.29E+02	11/09/15 08:16	YES
09	TH-234	TRG	CP5004S14-15	pCi/g	2.34E+00	1.47E+00	2.42E+00					10/07/15 11:00	5.29E+02	11/09/15 08:16	YES
09	TL-208	TRG	CP5004S14-15	pCi/g	1.30E+00	1.81E-01	9.71E-02					10/07/15 11:00	5.29E+02	11/09/15 08:16	YES
10	AC-228	TRG	CP5004S16-17	pCi/g	1.47E+00	2.13E-01	3.28E-01					10/07/15 11:10	5.68E+02	11/09/15 08:16	YES
10	BI-214	TRG	CP5004S16-17	pCi/g	1.06E+00	1.66E-01	2.39E-01					10/07/15 11:10	5.68E+02	11/09/15 08:16	YES

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	RDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
10	K-40	TRG	CP5004S16-17	pCi/g	1.87E+01	2.38E+00	1.10E+00					10/07/15 11:10	5.68E+02	11/09/15 08:16	YES
10	PB-212	TRG	CP5004S16-17	pCi/g	1.37E+00	1.71E-01	3.96E-01					10/07/15 11:10	5.68E+02	11/09/15 08:16	YES
10	PB-214	TRG	CP5004S16-17	pCi/g	1.31E+00	1.54E-01	1.98E-01					10/07/15 11:10	5.68E+02	11/09/15 08:16	YES
10	RA-226	TRG	CP5004S16-17	pCi/g	1.06E+00	1.66E-01	2.39E-01					10/07/15 11:10	5.68E+02	11/09/15 08:16	YES
10	RA-228	TRG	CP5004S16-17	pCi/g	1.47E+00	2.13E-01	3.28E-01					10/07/15 11:10	5.68E+02	11/09/15 08:16	YES
10	TH-234	TRG	CP5004S16-17	pCi/g	9.28E-01	1.09E+00	1.82E+00					10/07/15 11:10	5.68E+02	11/09/15 08:16	YES
10	TL-208	TRG	CP5004S16-17	pCi/g	1.06E+00	1.67E-01	1.85E-01					10/07/15 11:10	5.68E+02	11/09/15 08:16	YES
11	AC-228	TRG	CP4106S03-04	pCi/g	1.46E+00	5.14E-01	9.67E-01					10/07/15 13:00	5.57E+02	11/09/15 08:16	YES
11	BI-214	TRG	CP4106S03-04	pCi/g	1.64E+00	3.73E-01	5.14E-01					10/07/15 13:00	5.57E+02	11/09/15 08:16	YES
11	K-40	TRG	CP4106S03-04	pCi/g	1.92E+01	3.25E+00	1.32E+00					10/07/15 13:00	5.57E+02	11/09/15 08:16	YES
11	PB-212	TRG	CP4106S03-04	pCi/g	1.84E+00	3.64E-01	4.65E-01					10/07/15 13:00	5.57E+02	11/09/15 08:16	YES
11	PB-214	TRG	CP4106S03-04	pCi/g	9.65E-01	3.09E-01	5.25E-01					10/07/15 13:00	5.57E+02	11/09/15 08:16	YES
11	RA-226	TRG	CP4106S03-04	pCi/g	1.64E+00	3.73E-01	5.14E-01					10/07/15 13:00	5.57E+02	11/09/15 08:16	YES
11	RA-228	TRG	CP4106S03-04	pCi/g	1.46E+00	5.14E-01	9.67E-01					10/07/15 13:00	5.57E+02	11/09/15 08:16	YES
11	TH-234	TRG	CP4106S03-04	pCi/g	-3.15E-01	5.11E-01	2.28E+00					10/07/15 13:00	5.57E+02	11/09/15 08:16	NO
11	TL-208	TRG	CP4106S03-04	pCi/g	1.06E+00	3.28E-01	5.98E-01					10/07/15 13:00	5.57E+02	11/09/15 08:16	YES
12	AC-228	TRG	CP4106S05-06	pCi/g	1.53E+00	2.44E-01	3.42E-01					10/07/15 13:10	5.31E+02	11/09/15 09:19	YES
12	BI-214	TRG	CP4106S05-06	pCi/g	1.41E+00	1.76E-01	2.12E-01					10/07/15 13:10	5.31E+02	11/09/15 09:19	YES
12	K-40	TRG	CP4106S05-06	pCi/g	2.14E+01	2.37E+00	1.08E+00					10/07/15 13:10	5.31E+02	11/09/15 09:19	YES
12	PB-212	TRG	CP4106S05-06	pCi/g	1.62E+00	1.82E-01	2.37E-01					10/07/15 13:10	5.31E+02	11/09/15 09:19	YES
12	PB-214	TRG	CP4106S05-06	pCi/g	1.49E+00	1.61E-01	2.10E-01					10/07/15 13:10	5.31E+02	11/09/15 09:19	YES
12	RA-226	TRG	CP4106S05-06	pCi/g	1.41E+00	1.76E-01	2.12E-01					10/07/15 13:10	5.31E+02	11/09/15 09:19	YES
12	RA-228	TRG	CP4106S05-06	pCi/g	1.53E+00	2.44E-01	3.42E-01					10/07/15 13:10	5.31E+02	11/09/15 09:19	YES
12	TH-234	TRG	CP4106S05-06	pCi/g	2.03E+00	1.58E+00	2.62E+00					10/07/15 13:10	5.31E+02	11/09/15 09:19	YES
12	TL-208	TRG	CP4106S05-06	pCi/g	1.51E+00	1.93E-01	9.67E-02					10/07/15 13:10	5.31E+02	11/09/15 09:19	YES
13	AC-228	TRG	CP4106S08-09	pCi/g	1.54E+00	1.95E-01	2.40E-01					10/07/15 13:20	5.47E+02	11/09/15 09:19	YES
13	BI-214	TRG	CP4106S08-09	pCi/g	1.24E+00	1.95E-01	2.87E-01					10/07/15 13:20	5.47E+02	11/09/15 09:19	YES
13	K-40	TRG	CP4106S08-09	pCi/g	2.12E+01	2.65E+00	7.50E-01					10/07/15 13:20	5.47E+02	11/09/15 09:19	YES
13	PB-212	TRG	CP4106S08-09	pCi/g	1.50E+00	1.77E-01	3.41E-01					10/07/15 13:20	5.47E+02	11/09/15 09:19	YES
13	PB-214	TRG	CP4106S08-09	pCi/g	1.25E+00	1.68E-01	2.87E-01					10/07/15 13:20	5.47E+02	11/09/15 09:19	YES
13	RA-226	TRG	CP4106S08-09	pCi/g	1.24E+00	1.95E-01	2.87E-01					10/07/15 13:20	5.47E+02	11/09/15 09:19	YES
13	RA-228	TRG	CP4106S08-09	pCi/g	1.54E+00	1.95E-01	2.40E-01					10/07/15 13:20	5.47E+02	11/09/15 09:19	YES
13	TH-234	TRG	CP4106S08-09	pCi/g	1.49E+00	9.50E-01	1.54E+00					10/07/15 13:20	5.47E+02	11/09/15 09:19	NO
13	TL-208	TRG	CP4106S08-09	pCi/g	1.09E+00	1.71E-01	1.60E-01					10/07/15 13:20	5.47E+02	11/09/15 09:19	YES
14	AC-228	TRG	CP4106S10-11	pCi/g	1.29E+00	5.15E-01	1.00E+00					10/07/15 13:30	5.37E+02	11/09/15 09:19	NO
14	BI-214	TRG	CP4106S10-11	pCi/g	1.42E+00	3.47E-01	6.26E-01					10/07/15 13:30	5.37E+02	11/09/15 09:19	YES
14	K-40	TRG	CP4106S10-11	pCi/g	2.11E+01	3.68E+00	2.37E+00					10/07/15 13:30	5.37E+02	11/09/15 09:19	YES
14	PB-212	TRG	CP4106S10-11	pCi/g	1.80E+00	3.77E-01	4.99E-01					10/07/15 13:30	5.37E+02	11/09/15 09:19	YES

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
14	PB-214	TRG	CP4106S10-11	pCi/g	1.20E+00	3.36E-01	4.50E-01					10/07/15 13:30	5.37E+02	11/09/15 09:19	YES
14	RA-226	TRG	CP4106S10-11	pCi/g	1.42E+00	3.47E-01	6.26E-01					10/07/15 13:30	5.37E+02	11/09/15 09:19	YES
14	RA-228	TRG	CP4106S10-11	pCi/g	1.29E+00	5.15E-01	1.00E+00					10/07/15 13:30	5.37E+02	11/09/15 09:19	NO
14	TH-234	TRG	CP4106S10-11	pCi/g	1.11E+00	1.45E+00	2.25E+00					10/07/15 13:30	5.37E+02	11/09/15 09:19	NO
14	TL-208	TRG	CP4106S10-11	pCi/g	1.42E+00	3.28E-01	2.43E-01					10/07/15 13:30	5.37E+02	11/09/15 09:19	YES
15	AC-228	TRG	CP4106S13-14	pCi/g	1.31E+00	2.01E-01	4.23E-01					10/07/15 13:40	6.06E+02	11/09/15 10:20	YES
15	BI-214	TRG	CP4106S13-14	pCi/g	1.03E+00	1.49E-01	1.74E-01					10/07/15 13:40	6.06E+02	11/09/15 10:20	YES
15	K-40	TRG	CP4106S13-14	pCi/g	1.96E+01	2.19E+00	9.33E-01					10/07/15 13:40	6.06E+02	11/09/15 10:20	YES
15	PB-212	TRG	CP4106S13-14	pCi/g	1.57E+00	1.71E-01	2.25E-01					10/07/15 13:40	6.06E+02	11/09/15 10:20	YES
15	PB-214	TRG	CP4106S13-14	pCi/g	1.09E+00	1.37E-01	2.24E-01					10/07/15 13:40	6.06E+02	11/09/15 10:20	YES
15	RA-226	TRG	CP4106S13-14	pCi/g	1.03E+00	1.49E-01	1.74E-01					10/07/15 13:40	6.06E+02	11/09/15 10:20	YES
15	RA-228	TRG	CP4106S13-14	pCi/g	1.31E+00	2.01E-01	4.23E-01					10/07/15 13:40	6.06E+02	11/09/15 10:20	YES
15	TH-234	TRG	CP4106S13-14	pCi/g	1.80E+00	1.33E+00	1.80E+00					10/07/15 13:40	6.06E+02	11/09/15 10:20	NO
15	TL-208	TRG	CP4106S13-14	pCi/g	1.14E+00	1.64E-01	1.23E-01					10/07/15 13:40	6.06E+02	11/09/15 10:20	YES
16	AC-228	TRG	CP4106S15-16	pCi/g	1.55E+00	2.16E-01	2.99E-01					10/07/15 13:50	5.57E+02	11/09/15 10:20	YES
16	BI-214	TRG	CP4106S15-16	pCi/g	8.75E-01	1.45E-01	2.27E-01					10/07/15 13:50	5.57E+02	11/09/15 10:20	YES
16	K-40	TRG	CP4106S15-16	pCi/g	2.13E+01	2.66E+00	8.80E-01					10/07/15 13:50	5.57E+02	11/09/15 10:20	YES
16	PB-212	TRG	CP4106S15-16	pCi/g	1.24E+00	1.61E-01	2.46E-01					10/07/15 13:50	5.57E+02	11/09/15 10:20	YES
16	PB-214	TRG	CP4106S15-16	pCi/g	1.06E+00	1.50E-01	2.39E-01					10/07/15 13:50	5.57E+02	11/09/15 10:20	YES
16	RA-226	TRG	CP4106S15-16	pCi/g	8.75E-01	1.45E-01	2.27E-01					10/07/15 13:50	5.57E+02	11/09/15 10:20	YES
16	RA-228	TRG	CP4106S15-16	pCi/g	1.55E+00	2.16E-01	2.99E-01					10/07/15 13:50	5.57E+02	11/09/15 10:20	YES
16	TH-234	TRG	CP4106S15-16	pCi/g	1.39E+00	9.02E-01	1.47E+00					10/07/15 13:50	5.57E+02	11/09/15 10:20	NO
16	TL-208	TRG	CP4106S15-16	pCi/g	1.13E+00	1.57E-01	1.11E-01					10/07/15 13:50	5.57E+02	11/09/15 10:20	YES
17	AC-228	TRG	CP4106S18-19	pCi/g	1.53E+00	5.25E-01	1.04E+00					10/07/15 14:00	5.25E+02	11/09/15 10:20	NO
17	BI-214	TRG	CP4106S18-19	pCi/g	1.19E+00	2.83E-01	4.12E-01					10/07/15 14:00	5.25E+02	11/09/15 10:20	YES
17	K-40	TRG	CP4106S18-19	pCi/g	2.28E+01	3.78E+00	3.21E+00					10/07/15 14:00	5.25E+02	11/09/15 10:20	YES
17	PB-212	TRG	CP4106S18-19	pCi/g	1.88E+00	3.43E-01	4.10E-01					10/07/15 14:00	5.25E+02	11/09/15 10:20	YES
17	PB-214	TRG	CP4106S18-19	pCi/g	9.57E-01	3.21E-01	5.68E-01					10/07/15 14:00	5.25E+02	11/09/15 10:20	YES
17	RA-226	TRG	CP4106S18-19	pCi/g	1.19E+00	2.83E-01	4.12E-01					10/07/15 14:00	5.25E+02	11/09/15 10:20	YES
17	RA-228	TRG	CP4106S18-19	pCi/g	1.53E+00	5.25E-01	1.04E+00					10/07/15 14:00	5.25E+02	11/09/15 10:20	NO
17	TH-234	TRG	CP4106S18-19	pCi/g	3.03E+00	1.48E+00	2.36E+00					10/07/15 14:00	5.25E+02	11/09/15 10:20	NO
17	TL-208	TRG	CP4106S18-19	pCi/g	1.43E+00	3.21E-01	1.01E-01					10/07/15 14:00	5.25E+02	11/09/15 10:20	YES

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	10/14/15 00:00	1.0000				0.00		
02	MBL	BLANK	10/14/15 00:00	1.0000				0.00		
03	DUP	CP5004S01-02	10/07/15 10:10	568.8500				0.00		
04	DO	CP5004S01-02	10/07/15 10:10	568.8500				0.00		
05	TRG	CP5004S04-05	10/07/15 10:20	605.5000				0.00		
06	TRG	CP5004S07-08	10/07/15 10:30	618.6900				0.00		
07	TRG	CP5004S09-10	10/07/15 10:40	557.1300				0.00		
08	TRG	CP5004S11-12	10/07/15 10:50	569.0800				0.00		
09	TRG	CP5004S14-15	10/07/15 11:00	528.6000				0.00		
10	TRG	CP5004S16-17	10/07/15 11:10	567.6700				0.00		
11	TRG	CP4106S03-04	10/07/15 13:00	556.9700				0.00		
12	TRG	CP4106S05-06	10/07/15 13:10	531.0200				0.00		
13	TRG	CP4106S08-09	10/07/15 13:20	547.3000				0.00		
14	TRG	CP4106S10-11	10/07/15 13:30	536.8600				0.00		
15	TRG	CP4106S13-14	10/07/15 13:40	605.5400				0.00		
16	TRG	CP4106S15-16	10/07/15 13:50	557.3600				0.00		
17	TRG	CP4106S18-19	10/07/15 14:00	524.9700				0.00		

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Aliquot Worksheet

Work Order		Run	Analysis Code	Rpt Units	Lab Deadline	Technician	
15-10087		1	Gamma	grams	11/6/2015	KSALLINGS	

Lab Fraction	Auxier & Associates, Inc. Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No. of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS	LCS						1.0000E+00	1.0000E+00				
02	BLANK	MBL						1.0000E+00	1.0000E+00				
03	CP5004S01-02	DUP						5.6885E+02	5.6885E+02				
04	CP5004S01-02	DO						5.6885E+02	5.6885E+02				
05	CP5004S04-05	TRG						6.0550E+02	6.0550E+02				
06	CP5004S07-08	TRG						6.1869E+02	6.1869E+02				
07	CP5004S09-10	TRG						5.5713E+02	5.5713E+02				
08	CP5004S11-12	TRG						5.6908E+02	5.6908E+02				
09	CP5004S14-15	TRG						5.2860E+02	5.2860E+02				
10	CP5004S16-17	TRG						5.6767E+02	5.6767E+02				
11	CP4106S03-04	TRG						5.5697E+02	5.5697E+02				
12	CP4106S05-06	TRG						5.3102E+02	5.3102E+02				
13	CP4106S08-09	TRG						5.4730E+02	5.4730E+02				
14	CP4106S10-11	TRG						5.3686E+02	5.3686E+02				
15	CP4106S13-14	TRG						6.0554E+02	6.0554E+02				
16	CP4106S15-16	TRG						5.5736E+02	5.5736E+02				
17	CP4106S18-19	TRG						5.2497E+02	5.2497E+02				

Comments

Technician: Kenny Selig Date: 10/19/15

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

GAS-1302

94268

Sand in 16 Ounce PP Taral Jar Filled to Top

Customer: Eberline Analytical Corporation
P.O. No.: 1304009, Item 7 **Product Code:** 8401-EG-SAN
Reference Date: 01-Jul-2013 12:00 PM EST **Grams of Master Source:** 0.017994

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solutions. Additional radionuclides were added gravimetrically from solutions calibrated by gamma-ray spectrometry, ionization chamber, or liquid scintillation counting. 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. Eckert & Ziegler Analytix (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Nuclide	Gamma-Ray Energy (keV)	Half-Life, Days	Master Source* $\mu\text{ps/gram}$	This Source μps	Uncertainty*, %			Calibration Method*
					u_A	u_B	U	
Am-241	59.5	1.580E+05	—	2.094E+03	0.1	1.7	3.5	4 π LS
Cd-109	88.0	4.626E+02	1.641E+05	2.952E+03	0.5	2.3	4.7	HPGe
Co-57	122.1	2.718E+02	8.865E+04	1.595E+03	0.4	2.0	4.1	HPGe
Ce-139	165.9	1.376E+02	1.243E+05	2.236E+03	0.4	1.9	3.9	HPGe
Hg-203	279.2	4.661E+01	2.627E+05	4.727E+03	0.3	1.9	3.8	HPGe
Sn-113	391.7	1.151E+02	1.736E+05	3.124E+03	0.4	1.9	3.9	HPGe
Cs-137	661.7	1.098E+04	1.120E+05	2.015E+03	0.7	1.9	4.0	HPGe
Y-88	898.0	1.066E+02	4.197E+05	7.553E+03	0.5	1.9	3.9	HPGe
Co-60	1173.2	1.925E+03	2.074E+05	3.732E+03	0.6	1.9	4.0	HPGe
Co-60	1332.5	1.925E+03	2.074E+05	3.732E+03	0.7	1.9	4.0	HPGe
Y-88	1836.1	1.066E+02	4.444E+05	7.996E+03	0.7	1.9	4.0	HPGe

* Master Source refers to Analytix' 8-isotope mixture which is calibrated quarterly.

Calibration Methods: 4 π LS - 4 pi Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber. **Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)



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11/9/15Analysis Report for 1510087-01
GAS 1302

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-01
Sample Description : GAS 1302
Sample Type : SOIL

Sample Size : 7.360E+02 grams
Facility : Countroom

Sample Taken On : 7/1/2013 5:06:15PM
Acquisition Started : 11/9/2015 11:21:59AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
Geometry : GAS-1402
Live Time : 1800.0 seconds
Real Time : 1827.3 seconds

Dead Time : 1.49 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 17 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 29329

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-01
GAS 1302

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 11:52:30AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	32.19	32.55	0.0000	0.00
2	49.78	50.13	0.0000	0.00
3	59.52	59.87	0.0000	0.00
4	67.85	68.19	0.0000	0.00
5	88.08	88.42	0.0000	0.00
6	122.08	122.41	0.0000	0.00
7	136.49	136.81	0.0000	0.00
8	165.81	166.12	0.0000	0.00
9	186.54	186.85	0.0000	0.00
10	239.88	240.17	0.0000	0.00
11	310.30	310.56	0.0000	0.00
12	337.69	337.95	0.0000	0.00
13	351.52	351.76	0.0000	0.00
14	391.87	392.11	0.0000	0.00
15	520.52	520.71	0.0000	0.00
16	566.75	566.93	0.0000	0.00
17	609.86	610.02	0.0000	0.00
18	661.85	661.99	0.0000	0.00
19	874.35	874.42	0.0000	0.00
20	892.37	892.43	0.0000	0.00
21	898.29	898.35	0.0000	0.00
22	1173.65	1173.61	0.0000	0.00
23	1226.47	1226.41	0.0000	0.00
24	1332.95	1332.85	0.0000	0.00
25	1391.04	1390.93	0.0000	0.00
26	1836.54	1836.25	0.0000	0.00
27	1922.32	1922.01	0.0000	0.00
28	2097.28	2096.89	0.0000	0.00
29	2240.21	2239.77	0.0000	0.00
30	2253.29	2252.84	0.0000	0.00
31	2395.64	2395.14	0.0000	0.00
32	2417.10	2416.60	0.0000	0.00
33	2506.22	2505.68	0.0000	0.00
34	2614.94	2614.36	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

0291A

Analysis Report for 1510087-01

GAS 1302

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 11:52:30AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M 1	32.19	30 -	35	32.55	2.03E+03	261.65	1.21E+04	1.93
M 2	49.78	45 -	65	50.13	5.06E+03	325.52	1.70E+04	1.41
M 3	59.52	45 -	65	59.87	8.89E+04	678.24	1.58E+04	1.43
M 4	67.85	67 -	71	68.19	5.32E+02	315.08	2.16E+04	3.45
M 5	88.08	83 -	93	88.42	4.35E+04	675.62	3.68E+04	1.92
M 6	122.08	117 -	125	122.41	8.72E+03	398.82	1.91E+04	1.91
M 7	136.49	134 -	140	136.81	1.20E+03	271.54	1.25E+04	1.56
M 8	165.81	163 -	168	166.12	1.29E+03	235.79	1.01E+04	1.66
M 9	186.54	185 -	190	186.85	2.36E+02	228.17	1.03E+04	2.47
M 10	239.88	238 -	243	240.17	2.76E+02	219.41	9.37E+03	5.24
M 11	310.30	309 -	313	310.56	1.49E+02	159.66	5.51E+03	1.99
M 12	337.69	336 -	340	337.95	1.76E+02	153.85	5.08E+03	2.01
M 13	351.52	349 -	355	351.76	2.42E+02	200.04	7.10E+03	4.09
M 14	391.87	389 -	395	392.11	4.84E+02	200.28	6.94E+03	1.53
M 15	520.52	518 -	524	520.71	1.47E+02	161.45	4.62E+03	2.97
M 16	566.75	565 -	569	566.93	1.05E+02	115.56	2.86E+03	2.76
M 17	609.86	606 -	613	610.02	2.02E+02	163.40	4.31E+03	4.13
M 18	661.85	657 -	666	661.99	3.30E+04	416.26	5.92E+03	1.59
M 19	874.35	872 -	877	874.42	1.33E+02	131.81	3.37E+03	3.73
M 20	892.37	889 -	902	892.43	2.34E+02	134.63	3.43E+03	2.64
M 21	898.29	889 -	902	898.35	6.22E+02	174.86	4.72E+03	2.73
M 22	1173.65	1168 -	1179	1173.61	2.99E+04	382.17	3.27E+03	2.16
M 23	1226.47	1222 -	1230	1226.41	7.43E+01	80.28	9.37E+02	8.34
M 24	1332.95	1327 -	1338	1332.85	2.72E+04	339.48	8.13E+02	2.12
M 25	1391.04	1385 -	1397	1390.93	6.33E+01	56.46	3.47E+02	5.89
M 26	1836.54	1831 -	1842	1836.25	2.60E+02	44.77	1.21E+02	2.78
M 27	1922.32	1914 -	1930	1922.01	5.44E+01	39.39	1.25E+02	11.04
M 28	2097.28	2093 -	2101	2096.89	2.75E+01	24.66	7.69E+01	5.19
M 29	2240.21	2237 -	2243	2239.77	1.15E+01	15.44	3.50E+01	2.94
M 30	2253.29	2244 -	2262	2252.84	4.99E+01	41.61	1.34E+02	12.79
M 31	2395.64	2392 -	2397	2395.14	7.00E+00	5.29	0.00E+00	1.88
M 32	2417.10	2414 -	2418	2416.60	5.71E+00	5.85	2.57E+00	1.67
M 33	2506.22	2500 -	2509	2505.68	4.01E+02	41.81	2.25E+01	2.77
M 34	2614.94	2610 -	2617	2614.36	1.49E+01	11.49	1.21E+01	2.69

Analysis Report for 1510087-01

GAS 1302

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 11:52:30AM

Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	30 -	35	2.03E+03	261.65	1.21E+04	2.02E+02
M	2	45 -	65	5.06E+03	325.52	1.70E+04	2.14E+02
m	3	45 -	65	8.89E+04	678.24	1.58E+04	2.07E+02
	4	67 -	71	5.32E+02	315.08	2.16E+04	2.56E+02
	5	83 -	93	4.35E+04	675.62	3.68E+04	4.37E+02
	6	117 -	125	8.72E+03	398.82	1.91E+04	2.90E+02
	7	134 -	140	1.20E+03	271.54	1.25E+04	2.16E+02
	8	163 -	168	1.29E+03	235.79	1.01E+04	1.85E+02
	9	185 -	190	2.36E+02	228.17	1.03E+04	1.86E+02
	10	238 -	243	2.76E+02	219.41	9.37E+03	1.78E+02
	11	309 -	313	1.49E+02	159.66	5.51E+03	1.30E+02
	12	336 -	340	1.76E+02	153.85	5.08E+03	1.25E+02
	13	349 -	355	2.42E+02	200.04	7.10E+03	1.62E+02
	14	389 -	395	4.84E+02	200.28	6.94E+03	1.61E+02
	15	518 -	524	1.47E+02	161.45	4.62E+03	1.31E+02
	16	565 -	569	1.05E+02	115.56	2.86E+03	9.35E+01
	17	606 -	613	2.02E+02	163.40	4.31E+03	1.32E+02
	18	657 -	666	3.30E+04	416.26	5.92E+03	1.67E+02
	19	872 -	877	1.33E+02	131.81	3.37E+03	1.07E+02
M	20	889 -	902	2.34E+02	134.63	3.43E+03	9.63E+01
m	21	889 -	902	6.22E+02	174.86	4.72E+03	1.13E+02
	22	1168 -	1179	2.99E+04	382.17	3.27E+03	1.34E+02
	23	1222 -	1230	7.43E+01	80.28	9.37E+02	6.45E+01
	24	1327 -	1338	2.72E+04	339.48	8.13E+02	6.64E+01
	25	1385 -	1397	6.33E+01	56.46	3.47E+02	2.64E+01
	26	1831 -	1842	2.60E+02	44.77	1.21E+02	2.55E+01
	27	1914 -	1930	5.44E+01	39.39	1.25E+02	3.00E+01
	28	2093 -	2101	2.75E+01	24.66	7.69E+01	1.83E+01
	29	2237 -	2243	1.15E+01	15.44	3.50E+01	1.14E+01
	30	2244 -	2262	4.99E+01	41.61	1.34E+02	3.22E+01
	31	2392 -	2397	7.00E+00	5.29	0.00E+00	0.00E+00

Analysis Report for 1510087-01

GAS 1302

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2417.10	2414 -	2418	5.71E+00	5.85	2.57E+00	2.77E+00
33	2506.22	2500 -	2509	4.01E+02	41.81	2.25E+01	9.90E+00
34	2614.94	2610 -	2617	1.49E+01	11.49	1.21E+01	6.99E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 11:52:30AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M 1	32.19	30 -	35	32.55	2.03E+03	261.65	1.21E+04	.....
M 2	49.78	45 -	65	50.13	5.06E+03	325.52	1.70E+04	TE-132 TH-227
m 3	59.52	45 -	65	59.87	8.89E+04	678.24	1.58E+04	AM-241
m 4	67.85	67 -	71	68.19	5.32E+02	315.08	2.16E+04	TI-44 TA-182 TH-230
5	88.08	83 -	93	88.42	4.35E+04	675.62	3.68E+04	CD-109 LU-176 SN-126
6	122.08	117 -	125	122.41	8.72E+03	398.82	1.91E+04	CO-57 EU-152 SE-75 EU-154
7	136.49	134 -	140	136.81	1.20E+03	271.54	1.25E+04	CO-57 SE-75
8	165.81	163 -	168	166.12	1.29E+03	235.79	1.01E+04	CE-139
9	186.54	185 -	190	186.85	2.36E+02	228.17	1.03E+04	RA-226
10	239.88	238 -	243	240.17	2.76E+02	219.41	9.37E+03	.....
11	310.30	309 -	313	310.56	1.49E+02	159.66	5.51E+03	.....
12	337.69	336 -	340	337.95	1.76E+02	153.85	5.08E+03	AC-228
13	351.52	349 -	355	351.76	2.42E+02	200.04	7.10E+03	PB-214
14	391.87	389 -	395	392.11	4.84E+02	200.28	6.94E+03	SN-113

: 00294

Analysis Report for 1510087-01

GAS 1302

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
15	520.52	518 -	524	520.71	1.47E+02	161.45	4.62E+03	RB-83
16	566.75	565 -	569	566.93	1.05E+02	115.56	2.86E+03	.....
17	609.86	606 -	613	610.02	2.02E+02	163.40	4.31E+03	BI-214
18	661.85	657 -	666	661.99	3.30E+04	416.26	5.92E+03	CS-137
19	874.35	872 -	877	874.42	1.33E+02	131.81	3.37E+03	.....
M 20	892.37	889 -	902	892.43	2.34E+02	134.63	3.43E+03	.....
m 21	898.29	889 -	902	898.35	6.22E+02	174.86	4.72E+03	Y-88
22	1173.65	1168 -	1179	1173.61	2.99E+04	382.17	3.27E+03	CO-60
23	1226.47	1222 -	1230	1226.41	7.43E+01	80.28	9.37E+02	.....
24	1332.95	1327 -	1338	1332.85	2.72E+04	339.48	8.13E+02	CO-60
25	1391.04	1385 -	1397	1390.93	6.33E+01	56.46	3.47E+02	.....
26	1836.54	1831 -	1842	1836.25	2.60E+02	44.77	1.21E+02	Y-88
27	1922.32	1914 -	1930	1922.01	5.44E+01	39.39	1.25E+02	.....
28	2097.28	2093 -	2101	2096.89	2.75E+01	24.66	7.69E+01	.....
29	2240.21	2237 -	2243	2239.77	1.15E+01	15.44	3.50E+01	.....
30	2253.29	2244 -	2262	2252.84	4.99E+01	41.61	1.34E+02	.....
31	2395.64	2392 -	2397	2395.14	7.00E+00	5.29	0.00E+00	.....
32	2417.10	2414 -	2418	2416.60	5.71E+00	5.85	2.57E+00	.....
33	2506.22	2500 -	2509	2505.68	4.01E+02	41.81	2.25E+01	.....
34	2614.94	2610 -	2617	2614.36	1.49E+01	11.49	1.21E+01	TL-208

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 11:52:30AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M 1	32.19	2.03E+03	261.65	6.14E-03	1.78E-03
m 2	49.78	5.06E+03	325.52	1.89E-02	1.78E-03
3	59.52	8.89E+04	678.24	2.36E-02	1.78E-03
4	67.85	5.32E+02	315.08	2.62E-02	2.06E-03
5	88.08	4.35E+04	675.62	2.85E-02	2.74E-03
6	122.08	8.72E+03	398.82	2.72E-02	2.07E-03
7	136.49	1.20E+03	271.54	2.61E-02	2.10E-03
8	165.81	1.29E+03	235.79	2.38E-02	2.18E-03
9	186.54	2.36E+02	228.17	2.24E-02	2.02E-03
10	239.88	2.76E+02	219.41	1.92E-02	1.63E-03

Analysis Report for 1510087-01
GAS 1302

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
11	310.30	1.49E+02	159.66	1.61E-02	1.28E-03	
12	337.69	1.76E+02	153.85	1.52E-02	1.22E-03	
13	351.52	2.42E+02	200.04	1.48E-02	1.19E-03	
14	391.87	4.84E+02	200.28	1.37E-02	1.11E-03	
15	520.52	1.47E+02	161.45	1.11E-02	9.80E-04	
16	566.75	1.05E+02	115.56	1.04E-02	9.33E-04	
17	609.86	2.02E+02	163.40	9.82E-03	8.88E-04	
18	661.85	3.30E+04	416.26	9.21E-03	8.34E-04	
19	874.35	1.33E+02	131.81	7.39E-03	6.44E-04	
M	20	892.37	2.34E+02	134.63	7.27E-03	6.27E-04
m	21	898.29	6.22E+02	174.86	7.23E-03	6.22E-04
22	1173.65	2.99E+04	382.17	5.85E-03	4.79E-04	
23	1226.47	7.43E+01	80.28	5.66E-03	4.70E-04	
24	1332.95	2.72E+04	339.48	5.31E-03	4.51E-04	
25	1391.04	6.33E+01	56.46	5.15E-03	4.37E-04	
26	1836.54	2.60E+02	44.77	4.30E-03	3.26E-04	
27	1922.32	5.44E+01	39.39	4.19E-03	3.26E-04	
28	2097.28	2.75E+01	24.66	4.03E-03	3.26E-04	
29	2240.21	1.15E+01	15.44	3.93E-03	3.26E-04	
30	2253.29	4.99E+01	41.61	3.92E-03	3.26E-04	
31	2395.64	7.00E+00	5.29	3.85E-03	3.26E-04	
32	2417.10	5.71E+00	5.85	3.84E-03	3.26E-04	
33	2506.22	4.01E+02	41.81	3.82E-03	3.26E-04	
34	2614.94	1.49E+01	11.49	3.79E-03	3.26E-04	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 11:52:30AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	32.19	2.03E+03	261.65			2.03E+03	2.62E+02
M	2	49.78	5.06E+03			5.06E+03	3.26E+02
m	3	59.52	8.89E+04	3.90E+00	6.83E-01	8.89E+04	6.78E+02
4	67.85	5.32E+02	315.08			5.32E+02	3.15E+02
5	88.08	4.35E+04	675.62			4.35E+04	6.76E+02
6	122.08	8.72E+03	398.82			8.72E+03	3.99E+02

Analysis Report for 1510087-01

GAS 1302

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
7	136.49	1.20E+03	271.54			1.20E+03	2.72E+02
8	165.81	1.29E+03	235.79			1.29E+03	2.36E+02
9	186.54	2.36E+02	228.17	3.20E+01	3.69E+00	2.04E+02	2.28E+02
10	239.88	2.76E+02	219.41			2.76E+02	2.19E+02
11	310.30	1.49E+02	159.66			1.49E+02	1.60E+02
12	337.69	1.76E+02	153.85			1.76E+02	1.54E+02
13	351.52	2.42E+02	200.04	4.42E+00	2.46E+00	2.38E+02	2.00E+02
14	391.87	4.84E+02	200.28			4.84E+02	2.00E+02
15	520.52	1.47E+02	161.45			1.47E+02	1.61E+02
16	566.75	1.05E+02	115.56			1.05E+02	1.16E+02
17	609.86	2.02E+02	163.40	2.60E+00	1.85E+00	1.99E+02	1.63E+02
18	661.85	3.30E+04	416.26			3.30E+04	4.16E+02
19	874.35	1.33E+02	131.81			1.33E+02	1.32E+02
M	892.37	2.34E+02	134.63			2.34E+02	1.35E+02
m	898.29	6.22E+02	174.86			6.22E+02	1.75E+02
22	1173.65	2.99E+04	382.17	1.38E+00	1.16E+00	2.99E+04	3.82E+02
23	1226.47	7.43E+01	80.28			7.43E+01	8.03E+01
24	1332.95	2.72E+04	339.48	9.07E-01	4.97E-01	2.72E+04	3.39E+02
25	1391.04	6.33E+01	56.46			6.33E+01	5.65E+01
26	1836.54	2.60E+02	44.77			2.60E+02	4.48E+01
27	1922.32	5.44E+01	39.39			5.44E+01	3.94E+01
28	2097.28	2.75E+01	24.66			2.75E+01	2.47E+01
29	2240.21	1.15E+01	15.44			1.15E+01	1.54E+01
30	2253.29	4.99E+01	41.61			4.99E+01	4.16E+01
31	2395.64	7.00E+00	5.29			7.00E+00	5.29E+00
32	2417.10	5.71E+00	5.85			5.71E+00	5.85E+00
33	2506.22	4.01E+02	41.81			4.01E+02	4.18E+01
34	2614.94	1.49E+01	11.49	1.73E+00	7.40E-01	1.32E+01	1.15E+01

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

AREA CORRECTION REPORT

REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 11:52:30AM

Ref. Peak Energy : 0.00 Reference Date :

Peak Ratio : 0.00 Uncertainty : 0.00

Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
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: 00297

Analysis Report for 1510087-01

GAS 1302

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	32.19	2.03E+03	261.65			2.03E+03	2.62E+02
M	2	49.78	5.06E+03	325.52			5.06E+03	3.26E+02
m	3	59.52	8.89E+04	678.24	3.90E+00	6.83E-01	8.89E+04	6.78E+02
	4	67.85	5.32E+02	315.08			5.32E+02	3.15E+02
	5	88.08	4.35E+04	675.62			4.35E+04	6.76E+02
	6	122.08	8.72E+03	398.82			8.72E+03	3.99E+02
	7	136.49	1.20E+03	271.54			1.20E+03	2.72E+02
	8	165.81	1.29E+03	235.79			1.29E+03	2.36E+02
	9	186.54	2.36E+02	228.17	3.20E+01	3.69E+00	2.04E+02	2.28E+02
	10	239.88	2.76E+02	219.41			2.76E+02	2.19E+02
	11	310.30	1.49E+02	159.66			1.49E+02	1.60E+02
	12	337.69	1.76E+02	153.85			1.76E+02	1.54E+02
	13	351.52	2.42E+02	200.04	4.42E+00	2.46E+00	2.38E+02	2.00E+02
	14	391.87	4.84E+02	200.28			4.84E+02	2.00E+02
	15	520.52	1.47E+02	161.45			1.47E+02	1.61E+02
	16	566.75	1.05E+02	115.56			1.05E+02	1.16E+02
	17	609.86	2.02E+02	163.40	2.60E+00	1.85E+00	1.99E+02	1.63E+02
	18	661.85	3.30E+04	416.26			3.30E+04	4.16E+02
	19	874.35	1.33E+02	131.81			1.33E+02	1.32E+02
M	20	892.37	2.34E+02	134.63			2.34E+02	1.35E+02
m	21	898.29	6.22E+02	174.86			6.22E+02	1.75E+02
	22	1173.65	2.99E+04	382.17	1.38E+00	1.16E+00	2.99E+04	3.82E+02
	23	1226.47	7.43E+01	80.28			7.43E+01	8.03E+01
	24	1332.95	2.72E+04	339.48	9.07E-01	4.97E-01	2.72E+04	3.39E+02
	25	1391.04	6.33E+01	56.46			6.33E+01	5.65E+01
	26	1836.54	2.60E+02	44.77			2.60E+02	4.48E+01
	27	1922.32	5.44E+01	39.39			5.44E+01	3.94E+01
	28	2097.28	2.75E+01	24.66			2.75E+01	2.47E+01
	29	2240.21	1.15E+01	15.44			1.15E+01	1.54E+01
	30	2253.29	4.99E+01	41.61			4.99E+01	4.16E+01
	31	2395.64	7.00E+00	5.29			7.00E+00	5.29E+00
	32	2417.10	5.71E+00	5.85			5.71E+00	5.85E+00
	33	2506.22	4.01E+02	41.81			4.01E+02	4.18E+01
	34	2614.94	1.49E+01	11.49	1.73E+00	7.40E-01	1.32E+01	1.15E+01

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1510087-01
 GAS 1302

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-57	0.951	122.06 *	85.51	6.91E+01	6.17E+00
		136.48 *	10.60	7.97E+01	1.94E+01
CO-60	0.967	1173.22 *	100.00	1.42E+02	1.18E+01
		1332.49 *	100.00	1.42E+02	1.22E+01
Y-88	0.701	898.02 *	93.40	5.06E+02	1.49E+02
		1836.01 *	99.38	3.35E+02	6.30E+01
CD-109	0.983	88.03 *	3.72	3.03E+03	3.46E+02
SN-113	0.712	255.12	1.93		
		391.69 *	64.90	1.98E+02	8.40E+01
SN-126	0.959	87.57 *	37.00	8.42E+01	8.20E+00
CS-137	0.993	661.65 *	85.12	9.05E+01	8.29E+00
CE-139	0.822	165.85 *	80.35	1.05E+02	2.14E+01
BI-214	0.404	609.31 *	46.30	8.94E-01	7.38E-01
		1120.29	15.10		
		1764.49	15.80		
		2204.22	4.98		
PB-214	0.416	295.21	19.19		
		351.92 *	37.19	8.83E-01	7.47E-01
RA-226	0.983	186.21 *	3.28	5.68E+00	1.22E+01
AM-241	1.000	59.54 *	35.90	2.15E+02	1.63E+01

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 Energy Tolerance : 1.000 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 11:52:30AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M 1	32.19	1.12747E+00	6.45		
2	49.78	2.81070E+00	3.22	Tol.	TE-132 TH-227
4	67.85	2.95503E-01	29.62	Tol.	TA-182 TH-230
10	239.88	1.53110E-01	39.81		
11	310.30	8.29991E-02	53.44	D-Esc	
12	337.69	9.75958E-02	43.79	Tol.	AC-228

Analysis Report for 1510087-01

GAS 1302

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
15	520.52	8.16572E-02	54.92		
16	566.75	5.81475E-02	55.20		
19	874.35	7.36699E-02	49.70		
M 20	892.37	1.30266E-01	28.71		
23	1226.47	4.12641E-02	54.04		
25	1391.04	3.51805E-02	44.58		
27	1922.32	3.02422E-02	36.18		
28	2097.28	1.52946E-02	44.79		
29	2240.21	6.38889E-03	67.15		
30	2253.29	2.77184E-02	41.70		
31	2395.64	3.88889E-03	37.80		
32	2417.10	3.17460E-03	51.21		
33	2506.22	2.22646E-01	5.22	Sum	
34	2614.94	7.33020E-03	43.63	Tol.	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-57	0.95	122.06	*	85.51	6.91E+01
		136.48	*	10.60	7.97E+01
CO-60	0.96	1173.22	*	100.00	1.42E+02
		1332.49	*	100.00	1.42E+02
Y-88	0.70	898.02	*	93.40	5.06E+02
		1836.01	*	99.38	3.35E+02
CD-109	0.98	88.03	*	3.72	3.03E+03
SN-113	0.71	255.12		1.93	
		391.69	*	64.90	1.98E+02
SN-126	0.95	87.57	*	37.00	8.42E+01
CS-137	0.99	661.65	*	85.12	9.05E+01
CE-139	0.82	165.85	*	80.35	1.05E+02
BI-214	0.40	609.31	*	46.30	8.94E-01
		1120.29		15.10	

Analysis Report for 1510087-01

GAS 1302

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.40	1764.49	15.80		
		2204.22	4.98		
PB-214	0.41	295.21	19.19		
		351.92 *	37.19	8.83E-01	7.47E-01
RA-226	0.98	186.21 *	3.28	5.68E+00	1.22E+01
AM-241	1.00	59.54 *	35.90	2.15E+02	1.63E+01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
CO-57	0.951	7.01E+01	5.89E+00	
CO-60	0.967	1.42E+02	8.48E+00	
Y-88	0.701	3.61E+02	5.81E+01	
? CD-109	0.983	3.03E+03	3.46E+02	
SN-113	0.712	1.98E+02	8.40E+01	
? SN-126	0.959	8.42E+01	8.20E+00	
CS-137	0.993	9.05E+01	8.29E+00	
CE-139	0.822	1.05E+02	2.14E+01	
BI-214	0.404	8.94E-01	7.38E-01	
PB-214	0.416	8.83E-01	7.47E-01	
RA-226	0.983	5.68E+00	1.22E+01	
AM-241	1.000	2.15E+02	1.63E+01	

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1510087-01

GAS 1302

 UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 11:52:30AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.19	1.12747E+00	6.45	
M	2	49.78	2.81070E+00	3.22	Tol. TE-132 TH-227
	4	67.85	2.95503E-01	29.62	Tol. TA-182 TH-230
	10	239.88	1.53110E-01	39.81	
	11	310.30	8.29991E-02	53.44	D-Esc
	12	337.69	9.75958E-02	43.79	Tol. AC-228
	15	520.52	8.16572E-02	54.92	
	16	566.75	5.81475E-02	55.20	
	19	874.35	7.36699E-02	49.70	
M	20	892.37	1.30266E-01	28.71	
	23	1226.47	4.12641E-02	54.04	
	25	1391.04	3.51805E-02	44.58	
	27	1922.32	3.02422E-02	36.18	
	28	2097.28	1.52946E-02	44.79	
	29	2240.21	6.38889E-03	67.15	
	30	2253.29	2.77184E-02	41.70	
	31	2395.64	3.88889E-03	37.80	
	32	2417.10	3.17460E-03	51.21	
	33	2506.22	2.22646E-01	5.22	Sum
	34	2614.94	7.33020E-03	43.63	Tol. TL-208

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

Analysis Report for 1510087-01

GAS 1302

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
+	BE-7	477.59	10.42	1.21E+05	3.16E+05	3.16E+05
+	NA-22	1274.54	99.94	-3.13E-02	5.25E-01	5.25E-01
+	@ NA-24	1368.53	99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09	99.86	1.00E+26		1.00E+26
+	AL-26	1808.65	99.76	1.25E-02	1.74E-01	1.74E-01
+	K-40	1460.81	10.67	6.36E-01	2.02E+00	2.02E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	8.43E-01	3.80E-01	4.18E-01
		78.34	96.00	-4.22E-01		3.80E-01
+	SC-46	889.25	99.98	1.87E+02	7.42E+02	7.52E+02
		1120.51	99.99	3.96E+02		7.42E+02
+	V-48	983.52	99.98	-1.06E+15	5.13E+15	1.04E+16
		1312.10	97.50	1.21E+15		5.13E+15
+	CR-51	320.08	9.83	-1.70E+09	7.27E+09	7.27E+09
+	MN-54	834.83	99.97	2.48E-01	3.72E+00	3.72E+00
+	CO-56	846.75	99.96	-2.58E+01	1.68E+02	1.08E+03
		1037.75	14.03	-2.36E+03		8.71E+03
		1238.25	67.00	6.48E+01		9.42E+02
		1771.40	15.51	-2.34E+02		2.12E+03
		2598.48	16.90	0.00E+00		1.68E+02
+	CO-57	122.06	* 85.51	6.91E+01	4.61E+00	4.61E+00
		136.48	* 10.60	7.97E+01		2.89E+01
+	CO-58	810.76	99.40	-3.60E+01	2.37E+03	2.37E+03
+	FE-59	1099.22	56.50	-9.67E+04	4.02E+05	7.28E+05
		1291.56	43.20	1.24E+05		4.02E+05
+	CO-60	1173.22	* 100.00	1.42E+02	7.10E-01	1.28E+00
		1332.49	* 100.00	1.42E+02		7.10E-01
+	ZN-65	1115.52	50.75	2.14E+00	1.43E+01	1.43E+01
+	@ GA-67	93.31	35.70	1.00E+26	1.00E+26	1.00E+26
	@	208.95	2.24	1.00E+26		1.00E+26
	@	300.22	16.00	1.00E+26		1.00E+26
+	SE-75	121.11	16.70	5.29E+03	6.76E+01	3.59E+02
		136.00	59.20	2.00E+02		6.76E+01
		264.65	59.80	-3.46E+00		7.42E+01
		279.53	25.20	2.27E+01		1.80E+02
		400.65	11.40	2.56E+02		4.62E+02
+	RB-82	776.52	13.00	2.16E+10	5.28E+10	5.28E+10
+	RB-83	520.41	46.00	6.95E+02	9.47E+02	9.47E+02
		529.64	30.30	-4.94E+02		1.39E+03
		552.65	16.40	-1.64E+02		2.60E+03
+	KR-85	513.99	0.43	1.20E+01	1.17E+02	1.17E+02
+	SR-85	513.99	99.27	4.46E+02	4.37E+03	4.37E+03

Analysis Report for 1510087-01

GAS 1302

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	*	93.40	5.06E+02	6.92E+01	3.48E+02
		1836.01	*	99.38	3.35E+02		6.92E+01
+	NB-93M	16.57		9.43	-4.31E+03	4.52E+02	4.52E+02
+	NB-94	702.63		100.00	-2.49E-01	4.44E-01	4.44E-01
		871.10		100.00	-7.79E-02		5.85E-01
+	NB-95	765.79		99.81	4.90E+06	1.21E+07	1.21E+07
+	@ NB-95M	235.69		25.00	1.00E+26	1.00E+26	1.00E+26
+	ZR-95	724.18		43.70	1.36E+03	9.67E+03	1.18E+04
		756.72		55.30	2.31E+03		9.67E+03
+	@ MO-99	181.06		6.20	1.00E+26	1.00E+26	1.00E+26
	@	739.58		12.80	1.00E+26		1.00E+26
	@	778.00		4.50	1.00E+26		1.00E+26
+	RU-103	497.08		89.00	5.02E+05	1.91E+06	1.91E+06
+	RU-106	621.84		9.80	3.42E+00	2.27E+01	2.27E+01
+	AG-108M	433.93		89.90	-1.76E-01	4.87E-01	5.08E-01
		614.37		90.40	-1.64E-02		4.87E-01
		722.95		90.50	-2.52E-02		5.15E-01
+	CD-109	88.03	*	3.72	3.03E+03	6.10E+01	6.10E+01
+	AG-110M	657.75		93.14	8.39E-01	8.28E+00	1.18E+01
		677.61		10.53	-1.68E+00		4.48E+01
		706.67		16.46	1.40E+00		2.97E+01
		763.93		21.98	-6.81E+00		2.40E+01
		884.67		71.63	5.66E+00		9.17E+00
		1384.27		23.94	5.13E-02		8.28E+00
+	CD-113M	263.70		0.02	-4.84E+02	1.48E+03	1.48E+03
+	SN-113	255.12		1.93	4.09E+02	1.33E+02	2.88E+03
		391.69	*	64.90	1.98E+02		1.33E+02
+	TE123M	159.00		84.10	-1.64E+00	4.41E+01	4.41E+01
+	SB-124	602.71		97.87	2.90E+00	8.10E+03	8.91E+03
		645.85		7.26	-2.59E+04		1.24E+05
		722.78		11.10	-4.09E+03		8.36E+04
		1691.02		49.00	4.38E+03		8.10E+03
+	I-125	35.49		6.49	2.85E+05	2.67E+05	2.67E+05
+	SB-125	176.33		6.89	-1.24E+00	2.72E+00	6.90E+00
		427.89		29.33	2.31E-01		2.72E+00
		463.38		10.35	1.20E+00		8.44E+00
		600.56		17.80	7.25E-01		4.42E+00
		635.90		11.32	-2.81E+00		7.08E+00
+	@ SB-126	414.70		83.30	1.00E+26	1.00E+26	1.00E+26
	@	666.33		99.60	1.00E+26		1.00E+26
	@	695.00		99.60	1.00E+26		1.00E+26
	@	720.50		53.80	1.00E+26		1.00E+26
+	SN-126	87.57	*	37.00	8.42E+01	1.70E+00	1.70E+00
+	@ SB-127	473.00		25.00	1.00E+26	1.00E+26	1.00E+26
	@	685.20		35.70	1.00E+26		1.00E+26
	@	783.80		14.70	1.00E+26		1.00E+26
+	I-129	29.78		57.00	-3.75E+00	2.94E+00	2.94E+00
		33.60		13.20	1.45E+01		8.55E+00

Analysis Report for 1510087-01

GAS 1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	-4.05E+01	2.94E+00	8.77E+00
+	@ I-131	284.30	6.05	1.00E+26	1.00E+26	1.00E+26
	@	364.48	81.20	1.00E+26		1.00E+26
	@	636.97	7.26	1.00E+26		1.00E+26
	@	722.89	1.80	1.00E+26		1.00E+26
+	@ TE-132	49.72	13.10	1.00E+26	1.00E+26	1.00E+26
	@	228.16	88.00	1.00E+26		1.00E+26
+	BA-133	81.00	33.00	-8.69E-01	6.51E-01	1.26E+00
		302.84	17.80	3.59E-01		2.07E+00
		356.01	60.00	-4.73E-02		6.51E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	@ XE-133	81.00	38.00	1.00E+26	1.00E+26	1.00E+26
+	CS-134	563.23	8.38	-3.11E+00	9.88E-01	1.12E+01
		569.32	15.43	1.15E+00		6.16E+00
		604.70	97.60	2.22E-01		9.88E-01
		795.84	85.40	-7.87E-02		1.33E+00
		801.93	8.73	9.28E-01		1.31E+01
+	CS-135	268.24	16.00	-8.07E-01	1.92E+00	1.92E+00
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	1.03E+20	2.62E+19	1.67E+20
		163.89	4.61	-2.02E+20		3.02E+20
		176.55	13.56	-1.71E+19		9.52E+19
		273.65	12.66	4.18E+19		1.21E+20
		340.57	48.50	6.00E+17		3.27E+19
		818.50	99.70	-8.48E+18		2.62E+19
		1048.07	79.60	1.22E+17		3.89E+19
		1235.34	19.70	3.80E+19		8.24E+19
+	CS-137	661.65	* 85.12	9.05E+01	9.27E-01	9.27E-01
+	LA-138	788.74	34.00	8.60E-01	3.14E-01	1.50E+00
		1435.80	66.00	1.35E-01		3.14E-01
+	CE-139	165.85	* 80.35	1.05E+02	3.02E+01	3.02E+01
+	@ BA-140	162.64	6.70	1.00E+26	1.00E+26	1.00E+26
	@	304.84	4.50	1.00E+26		1.00E+26
	@	423.70	3.20	1.00E+26		1.00E+26
	@	437.55	2.00	1.00E+26		1.00E+26
	@	537.32	25.00	1.00E+26		1.00E+26
+	@ LA-140	328.77	20.50	1.00E+26	1.00E+26	1.00E+26
	@	487.03	45.50	1.00E+26		1.00E+26
	@	815.85	23.50	1.00E+26		1.00E+26
	@	1596.49	95.49	1.00E+26		1.00E+26
+	CE-141	145.44	48.40	1.60E+07	4.94E+07	4.94E+07
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	2.51E+00	1.93E+01	1.93E+01
+	PM-144	476.78	42.00	-1.03E+00	2.31E+00	5.76E+00

Analysis Report for 1510087-01

GAS 1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-144	618.01	98.60	8.55E-01	2.31E+00	2.31E+00
		696.49	99.49	-4.77E-02		2.31E+00
+	PM-145	36.85	21.70	5.05E+00	2.06E+00	3.84E+00
		37.36	39.70	1.01E+00		2.06E+00
		42.30	15.10	-4.70E+00		4.79E+00
		72.40	2.31	-7.65E+00		1.73E+01
+	PM-146	453.90	39.94	-3.40E-01	1.58E+00	1.58E+00
		735.90	14.01	-3.55E-01		4.45E+00
		747.13	13.10	1.72E+00		4.86E+00
+	@ ND-147	91.11	28.90	1.00E+26	1.00E+26	1.00E+26
	@	531.02	13.10	1.00E+26		1.00E+26
+	@ PM-149	285.90	3.10	1.00E+26	1.00E+26	1.00E+26
+	EU-152	121.78	20.50	3.67E+01	1.60E+00	2.28E+00
		244.69	5.40	-2.84E+00		6.49E+00
		344.27	19.13	3.68E-01		1.92E+00
		778.89	9.20	-2.25E+00		5.99E+00
		964.01	10.40	-5.04E+00		7.34E+00
		1085.78	7.22	4.37E+00		1.01E+01
		1112.02	9.60	5.51E-01		7.70E+00
		1407.95	14.94	7.27E-01		1.60E+00
+	GD-153	97.43	31.30	-8.83E-02	9.18E+00	9.18E+00
		103.18	22.20	-6.67E+00		1.31E+01
+	EU-154	123.07	40.50	1.90E+01	9.50E-01	1.23E+00
		723.30	19.70	-1.38E-01		2.81E+00
		873.19	11.50	-1.25E+00		6.21E+00
		996.32	10.30	-7.03E-01		7.32E+00
		1004.76	17.90	8.79E-01		4.29E+00
		1274.45	35.50	-5.67E-02		9.50E-01
+	EU-155	86.50	30.90	1.28E+02	1.67E+00	3.40E+00
		105.30	20.70	1.95E-01		1.67E+00
+	EU-156	811.77	10.40	-5.35E+16	4.32E+17	5.67E+17
		1153.47	7.20	7.81E+16		8.36E+17
		1230.71	8.90	-8.63E+16		4.32E+17
+	HO-166M	184.41	72.60	6.50E-03	3.85E-01	3.85E-01
		280.45	29.60	-1.05E-02		1.05E+00
		410.94	11.10	1.15E+00		3.87E+00
		711.69	54.10	-4.25E-01		8.48E-01
+	TM-171	66.72	0.14	-8.44E+01	6.40E+02	6.40E+02
+	HF-172	81.75	4.52	-7.40E+00	5.30E+00	1.91E+01
		125.81	11.30	1.28E-01		5.30E+00
+	@ LU-172	181.53	20.60	1.00E+26	1.00E+26	1.00E+26
	@	810.06	16.63	1.00E+26		1.00E+26
	@	912.12	15.25	1.00E+26		1.00E+26
	@	1093.66	62.50	1.00E+26		1.00E+26
+	LU-173	100.72	5.24	5.39E-01	4.86E+00	1.55E+01
		272.11	21.20	1.75E+00		4.86E+00
+	HF-175	343.40	84.00	1.14E+03	1.96E+03	1.96E+03
+	LU-176	88.34	13.30	2.23E+02	3.33E-01	5.60E+00
		201.83	86.00	-9.46E-02		3.42E-01

Analysis Report for 1510087-01

GAS 1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	IU-176	306.78	94.00	-1.81E-01	3.33E-01	3.33E-01
+	TA-182	67.75	41.20	3.46E+02	1.72E+02	1.72E+02
		1121.30	34.90	1.87E+02		3.13E+02
		1189.05	16.23	2.30E+02		5.07E+02
		1221.41	26.98	2.20E+01		2.40E+02
		1231.02	11.44	-1.08E+02		5.40E+02
+	IR-192	308.46	29.68	-4.34E+02	3.17E+03	3.44E+03
		468.07	48.10	-1.79E+03		3.17E+03
+	HG-203	279.19	77.30	2.04E+04	1.47E+05	1.47E+05
+	BI-207	569.67	97.72	1.12E-01	4.60E-01	4.60E-01
		1063.62	74.90	-1.11E-01		8.73E-01
+	TL-208	583.14	30.22	6.19E-01	3.68E-01	1.46E+00
		860.37	4.48	-4.48E+00		1.28E+01
		2614.66	35.85	2.85E-01		3.68E-01
+	BI-210M	262.00	45.00	7.06E-02	6.79E-01	6.79E-01
		300.00	23.00	-1.91E-01		1.37E+00
+	PB-210	46.50	4.25	-1.28E+02	1.77E+01	1.77E+01
+	PB-211	404.84	2.90	-1.92E+00	1.24E+01	1.24E+01
		831.96	2.90	7.90E+00		1.90E+01
+	BI-212	727.17	11.80	4.92E-02	3.90E+00	3.90E+00
		1620.62	2.75	8.22E-02		6.84E+00
+	PB-212	238.63	44.60	3.99E-01	7.19E-01	7.19E-01
		300.09	3.41	-1.29E+00		9.22E+00
+	BI-214	609.31	* 46.30	8.94E-01	1.20E+00	1.20E+00
		1120.29	15.10	2.13E+00		3.99E+00
		1764.49	15.80	3.82E-01		1.22E+00
		2204.22	4.98	3.70E-01		3.66E+00
+	PB-214	295.21	19.19	1.40E-01	1.22E+00	1.65E+00
		351.92	* 37.19	8.83E-01		1.22E+00
+	RN-219	401.80	6.50	1.97E+00	5.57E+00	5.57E+00
+	RA-223	323.87	3.88	9.11E-01	8.31E+00	8.31E+00
+	RA-224	240.98	3.95	7.35E+00	8.14E+00	8.14E+00
+	RA-225	40.00	31.00	-3.08E+18	6.67E+17	6.67E+17
+	RA-226	186.21	* 3.28	5.68E+00	1.04E+01	1.04E+01
+	TH-227	50.10	8.40	4.92E+01	2.74E+00	9.14E+00
		236.00	11.50	-1.78E+00		2.74E+00
		256.20	6.30	-8.95E-02		4.92E+00
+	AC-228	338.32	11.40	4.28E-01	2.38E+00	2.87E+00
		911.07	27.70	1.14E+00		2.38E+00
		969.11	16.60	6.57E-01		3.91E+00
+	TH-230	48.44	16.90	1.27E+01	4.54E+00	4.54E+00
		62.85	4.60	-7.84E+02		1.27E+01
		67.67	0.37	2.10E+02		1.04E+02
+	PA-231	283.67	1.60	-2.29E+00	1.37E+01	1.94E+01
		302.67	2.30	2.38E+00		1.37E+01
+	TH-231	25.64	14.70	-1.38E+03	6.07E+00	6.43E+01
		84.21	6.40	-6.15E+02		6.07E+00
+	PA-233	311.98	38.60	7.63E+08	3.28E+09	3.28E+09

Analysis Report for 1510087-01

GAS 1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PA-234	131.20	20.40	-4.29E-02	1.19E+00	1.19E+00
		733.99	8.80	-2.04E+00		5.21E+00
		946.00	12.00	1.82E+00		5.92E+00
+	PA-234M	1001.03	0.92	-3.64E+01	6.78E+01	6.78E+01
+	TH-234	63.29	3.80	-5.19E+02	1.03E+01	1.03E+01
+	U-235	143.76	10.50	2.12E-01	2.41E+00	2.41E+00
		163.35	4.70	-4.03E+00		6.05E+00
		205.31	4.70	-1.97E+00		6.27E+00
+	NP-237	86.50	12.60	2.26E+02	6.01E+00	6.01E+00
+	@ NP-239	106.10	22.70	1.00E+26	1.00E+26	1.00E+26
	@	228.18	10.70	1.00E+26		1.00E+26
	@	277.60	14.10	1.00E+26		1.00E+26
+	AM-241	59.54	* 35.90	2.15E+02	3.82E+00	3.82E+00
+	AM-243	74.67	66.00	-3.33E-01	5.46E-01	5.46E-01
+	CM-243	209.75	3.29	7.02E-01	2.36E+00	9.70E+00
		228.14	10.60	-5.14E-01		3.15E+00
		277.60	14.00	-4.76E-02		2.36E+00

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction

? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59	10.42	3.16E+05	3.16E+05	1.21E+05	1.56E+05
	NA-22	1274.54	99.94	5.25E-01	5.25E-01	-3.13E-02	2.53E-01
@	NA-24	1368.53	99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09	99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65	99.76	1.74E-01	1.74E-01	1.25E-02	8.07E-02

: 00308

Analysis Report for 1510087-01

GAS 1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
K-40	1460.81	10.67	2.02E+00	2.02E+00	6.36E-01	9.60E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	4.18E-01	3.80E-01	8.43E-01	2.08E-01
	78.34	96.00	3.80E-01		-4.22E-01	1.89E-01
SC-46	889.25	99.98	7.52E+02	7.42E+02	1.87E+02	3.71E+02
	1120.51	99.99	7.42E+02		3.96E+02	3.65E+02
V-48	983.52	99.98	1.04E+16	5.13E+15	-1.06E+15	5.14E+15
	1312.10	97.50	5.13E+15		1.21E+15	2.48E+15
CR-51	320.08	9.83	7.27E+09	7.27E+09	-1.70E+09	3.60E+09
MN-54	834.83	99.97	3.72E+00	3.72E+00	2.48E-01	1.83E+00
CO-56	846.75	99.96	1.08E+03	1.68E+02	-2.58E+01	5.33E+02
	1037.75	14.03	8.71E+03		-2.36E+03	4.30E+03
	1238.25	67.00	9.42E+02		6.48E+01	4.57E+02
	1771.40	15.51	2.12E+03		-2.34E+02	9.81E+02
	2598.48	16.90	1.68E+02		0.00E+00	0.00E+00
+ CO-57	122.06	* 85.51	4.61E+00	4.61E+00	6.91E+01	2.30E+00
	136.48	* 10.60	2.89E+01		7.97E+01	1.44E+01
CO-58	810.76	99.40	2.37E+03	2.37E+03	-3.60E+01	1.17E+03
FE-59	1099.22	56.50	7.28E+05	4.02E+05	-9.67E+04	3.59E+05
	1291.56	43.20	4.02E+05		1.24E+05	1.93E+05
+ CO-60	1173.22	* 100.00	1.28E+00	7.10E-01	1.42E+02	6.35E-01
	1332.49	* 100.00	7.10E-01		1.42E+02	3.48E-01
ZN-65	1115.52	50.75	1.43E+01	1.43E+01	2.14E+00	7.04E+00
@ GA-67	93.31	35.70	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	208.95	2.24	1.00E+26		1.00E+26	1.00E+20
@	300.22	16.00	1.00E+26		1.00E+26	1.00E+20
SE-75	121.11	16.70	3.59E+02	6.76E+01	5.29E+03	1.79E+02
	136.00	59.20	6.76E+01		2.00E+02	3.35E+01
	264.65	59.80	7.42E+01		-3.46E+00	3.67E+01
	279.53	25.20	1.80E+02		2.27E+01	8.89E+01
	400.65	11.40	4.62E+02		2.56E+02	2.29E+02
RB-82	776.52	13.00	5.28E+10	5.28E+10	2.16E+10	2.60E+10
RB-83	520.41	46.00	9.47E+02	9.47E+02	6.95E+02	4.68E+02
	529.64	30.30	1.39E+03		-4.94E+02	6.88E+02
	552.65	16.40	2.60E+03		-1.64E+02	1.29E+03
KR-85	513.99	0.43	1.17E+02	1.17E+02	1.20E+01	5.81E+01
SR-85	513.99	99.27	4.37E+03	4.37E+03	4.46E+02	2.16E+03
+ Y-88	898.02	* 93.40	3.48E+02	6.92E+01	5.06E+02	1.73E+02
	1836.01	* 99.38	6.92E+01		3.35E+02	3.29E+01
NB-93M	16.57	9.43	4.52E+02	4.52E+02	-4.31E+03	2.22E+02
NB-94	702.63	100.00	4.44E-01	4.44E-01	-2.49E-01	2.19E-01
	871.10	100.00	5.85E-01		-7.79E-02	2.89E-01
NB-95	765.79	99.81	1.21E+07	1.21E+07	4.90E+06	5.97E+06
@ NB-95M	235.69	25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
ZR-95	724.18	43.70	1.18E+04	9.67E+03	1.36E+03	5.81E+03
	756.72	55.30	9.67E+03		2.31E+03	4.77E+03
@ MO-99	181.06	6.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	739.58	12.80	1.00E+26		1.00E+26	1.00E+20
@	778.00	4.50	1.00E+26		1.00E+26	1.00E+20
RU-103	497.08	89.00	1.91E+06	1.91E+06	5.02E+05	9.46E+05
RU-106	621.84	9.80	2.27E+01	2.27E+01	3.42E+00	1.12E+01
AG-108M	433.93	89.90	5.08E-01	4.87E-01	-1.76E-01	2.51E-01
	614.37	90.40	4.87E-01		-1.64E-02	2.40E-01

Analysis Report for 1510087-01

GAS 1302

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	AG-108M	722.95	90.50	5.15E-01	4.87E-01	-2.52E-02	2.54E-01
+	CD-109	88.03	*	3.72	6.10E+01	6.10E+01	3.04E+01
	AG-110M	657.75	93.14	1.18E+01	8.28E+00	8.39E-01	5.86E+00
		677.61	10.53	4.48E+01		-1.68E+00	2.21E+01
		706.67	16.46	2.97E+01		1.40E+00	1.46E+01
		763.93	21.98	2.40E+01		-6.81E+00	1.19E+01
		884.67	71.63	9.17E+00		5.66E+00	4.53E+00
		1384.27	23.94	8.28E+00		5.13E-02	3.90E+00
	CD-113M	263.70	0.02	1.48E+03	1.48E+03	-4.84E+02	7.32E+02
+	SN-113	255.12	1.93	2.88E+03	1.33E+02	4.09E+02	1.43E+03
		391.69	*	64.90	1.33E+02	1.98E+02	6.59E+01
	TE123M	159.00	84.10	4.41E+01	4.41E+01	-1.64E+00	2.19E+01
	SB-124	602.71	97.87	8.91E+03	8.10E+03	2.90E+00	4.40E+03
		645.85	7.26	1.24E+05		-2.59E+04	6.13E+04
		722.78	11.10	8.36E+04		-4.09E+03	4.12E+04
		1691.02	49.00	8.10E+03		4.38E+03	3.80E+03
	I-125	35.49	6.49	2.67E+05	2.67E+05	2.85E+05	1.33E+05
	SB-125	176.33	6.89	6.90E+00	2.72E+00	-1.24E+00	3.42E+00
		427.89	29.33	2.72E+00		2.31E-01	1.34E+00
		463.38	10.35	8.44E+00		1.20E+00	4.18E+00
		600.56	17.80	4.42E+00		7.25E-01	2.18E+00
		635.90	11.32	7.08E+00		-2.81E+00	3.50E+00
	@ SB-126	414.70	83.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	666.33	99.60	1.00E+26		1.00E+26	1.00E+20
	@	695.00	99.60	1.00E+26		1.00E+26	1.00E+20
	@	720.50	53.80	1.00E+26		1.00E+26	1.00E+20
+	SN-126	87.57	*	37.00	1.70E+00	8.42E+01	8.45E-01
	@ SB-127	473.00	25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	685.20	35.70	1.00E+26		1.00E+26	1.00E+20
	@	783.80	14.70	1.00E+26		1.00E+26	1.00E+20
	I-129	29.78	57.00	2.94E+00	2.94E+00	-3.75E+00	1.46E+00
		33.60	13.20	8.55E+00		1.45E+01	4.25E+00
		39.58	7.52	8.77E+00		-4.05E+01	4.36E+00
	@ I-131	284.30	6.05	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	364.48	81.20	1.00E+26		1.00E+26	1.00E+20
	@	636.97	7.26	1.00E+26		1.00E+26	1.00E+20
	@	722.89	1.80	1.00E+26		1.00E+26	1.00E+20
	@ TE-132	49.72	13.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	228.16	88.00	1.00E+26		1.00E+26	1.00E+20
	BA-133	81.00	33.00	1.26E+00	6.51E-01	-8.69E-01	6.28E-01
		302.84	17.80	2.07E+00		3.59E-01	1.02E+00
		356.01	60.00	6.51E-01		-4.73E-02	3.22E-01
	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@ XE-133	81.00	38.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CS-134	563.23	8.38	1.12E+01	9.88E-01	-3.11E+00	5.52E+00
		569.32	15.43	6.16E+00		1.15E+00	3.04E+00
		604.70	97.60	9.88E-01		2.22E-01	4.88E-01
		795.84	85.40	1.33E+00		-7.87E-02	6.57E-01
		801.93	8.73	1.31E+01		9.28E-01	6.46E+00
	CS-135	268.24	16.00	1.92E+00	1.92E+00	-8.07E-01	9.48E-01
	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
	@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20

Analysis Report for 1510087-01

GAS 1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)		
CS-136	153.22	7.46	1.67E+20	2.62E+19	1.03E+20	8.28E+19		
	163.89	4.61	3.02E+20		-2.02E+20	1.50E+20		
	176.55	13.56	9.52E+19		-1.71E+19	4.72E+19		
	273.65	12.66	1.21E+20		4.18E+19	6.01E+19		
	340.57	48.50	3.27E+19		6.00E+17	1.62E+19		
	818.50	99.70	2.62E+19		-8.48E+18	1.29E+19		
	1048.07	79.60	3.89E+19		1.22E+17	1.92E+19		
	1235.34	19.70	8.24E+19		3.80E+19	4.00E+19		
	+ CS-137	661.65	*		85.12	9.27E-01	9.05E+01	4.60E-01
		LA-138	788.74		34.00	1.50E+00	3.14E-01	8.60E-01
	1435.80	66.00	3.14E-01		1.35E-01	1.49E-01		
+ CE-139	165.85	*	80.35	3.02E+01	1.05E+02	1.50E+01		
@ BA-140	162.64		6.70	1.00E+26	1.00E+26	1.00E+20		
@	304.84		4.50	1.00E+26	1.00E+26	1.00E+20		
@	423.70		3.20	1.00E+26	1.00E+26	1.00E+20		
@	437.55		2.00	1.00E+26	1.00E+26	1.00E+20		
@	537.32		25.00	1.00E+26	1.00E+26	1.00E+20		
@ LA-140	328.77		20.50	1.00E+26	1.00E+26	1.00E+20		
@	487.03		45.50	1.00E+26	1.00E+26	1.00E+20		
@	815.85		23.50	1.00E+26	1.00E+26	1.00E+20		
@	1596.49		95.49	1.00E+26	1.00E+26	1.00E+20		
CE-141	145.44		48.40	4.94E+07	4.94E+07	1.60E+07		
@ CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+20		
@	293.26		42.00	1.00E+26	1.00E+26	1.00E+20		
@	664.55		5.20	1.00E+26	1.00E+26	1.00E+20		
CE-144	133.54		10.80	1.93E+01	1.93E+01	2.51E+00		
PM-144	476.78		42.00	5.76E+00	2.31E+00	-1.03E+00		
	618.01		98.60	2.31E+00		8.55E-01		
	696.49		99.49	2.31E+00		-4.77E-02		
PM-145	36.85		21.70	3.84E+00	2.06E+00	5.05E+00		
	37.36		39.70	2.06E+00		1.01E+00		
	42.30		15.10	4.79E+00		-4.70E+00		
	72.40		2.31	1.73E+01		-7.65E+00		
PM-146	453.90		39.94	1.58E+00	1.58E+00	-3.40E-01		
	735.90		14.01	4.45E+00		-3.55E-01		
	747.13		13.10	4.86E+00		1.72E+00		
@ ND-147	91.11		28.90	1.00E+26	1.00E+26	1.00E+20		
@	531.02		13.10	1.00E+26	1.00E+26	1.00E+20		
@ PM-149	285.90		3.10	1.00E+26	1.00E+26	1.00E+20		
EU-152	121.78		20.50	2.28E+00	1.60E+00	3.67E+01		
	244.69		5.40	6.49E+00		-2.84E+00		
	344.27		19.13	1.92E+00		3.68E-01		
	778.89		9.20	5.99E+00		-2.25E+00		
	964.01		10.40	7.34E+00		-5.04E+00		
	1085.78		7.22	1.01E+01		4.37E+00		
	1112.02		9.60	7.70E+00		5.51E-01		
	1407.95		14.94	1.60E+00		7.27E-01		
GD-153	97.43		31.30	9.18E+00	9.18E+00	-8.83E-02		
	103.18		22.20	1.31E+01		-6.67E+00		
EU-154	123.07		40.50	1.23E+00	9.50E-01	1.90E+01		
	723.30		19.70	2.81E+00		-1.38E-01		
	873.19		11.50	6.21E+00		-1.25E+00		
	996.32		10.30	7.32E+00		-7.03E-01		

Analysis Report for 1510087-01

GAS 1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-154	1004.76	17.90	4.29E+00	9.50E-01	8.79E-01	2.12E+00
	1274.45	35.50	9.50E-01		-5.67E-02	4.58E-01
EU-155	86.50	30.90	3.40E+00	1.67E+00	1.28E+02	1.70E+00
	105.30	20.70	1.67E+00		1.95E-01	8.29E-01
EU-156	811.77	10.40	5.67E+17	4.32E+17	-5.35E+16	2.80E+17
	1153.47	7.20	8.36E+17		7.81E+16	4.11E+17
	1230.71	8.90	4.32E+17		-8.63E+16	2.10E+17
HO-166M	184.41	72.60	3.85E-01	3.85E-01	6.50E-03	1.91E-01
	280.45	29.60	1.05E+00		-1.05E-02	5.21E-01
	410.94	11.10	3.87E+00		1.15E+00	1.91E+00
	711.69	54.10	8.48E-01		-4.25E-01	4.18E-01
TM-171	66.72	0.14	6.40E+02	6.40E+02	-8.44E+01	3.18E+02
HF-172	81.75	4.52	1.91E+01	5.30E+00	-7.40E+00	9.50E+00
	125.81	11.30	5.30E+00		1.28E-01	2.63E+00
@ LU-172	181.53	20.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	810.06	16.63	1.00E+26		1.00E+26	1.00E+20
@	912.12	15.25	1.00E+26		1.00E+26	1.00E+20
@	1093.66	62.50	1.00E+26		1.00E+26	1.00E+20
LU-173	100.72	5.24	1.55E+01	4.86E+00	5.39E-01	7.68E+00
	272.11	21.20	4.86E+00		1.75E+00	2.41E+00
HF-175	343.40	84.00	1.96E+03	1.96E+03	1.14E+03	9.67E+02
LU-176	88.34	13.30	5.60E+00	3.33E-01	2.23E+02	2.79E+00
	201.83	86.00	3.42E-01		-9.46E-02	1.69E-01
	306.78	94.00	3.33E-01		-1.81E-01	1.65E-01
TA-182	67.75	41.20	1.72E+02	1.72E+02	3.46E+02	8.55E+01
	1121.30	34.90	3.13E+02		1.87E+02	1.54E+02
	1189.05	16.23	5.07E+02		2.30E+02	2.48E+02
	1221.41	26.98	2.40E+02		2.20E+01	1.17E+02
	1231.02	11.44	5.40E+02		-1.08E+02	2.62E+02
IR-192	308.46	29.68	3.44E+03	3.17E+03	-4.34E+02	1.70E+03
	468.07	48.10	3.17E+03		-1.79E+03	1.57E+03
HG-203	279.19	77.30	1.47E+05	1.47E+05	2.04E+04	7.27E+04
BI-207	569.67	97.72	4.60E-01	4.60E-01	1.12E-01	2.27E-01
	1063.62	74.90	8.73E-01		-1.11E-01	4.30E-01
TL-208	583.14	30.22	1.46E+00	3.68E-01	6.19E-01	7.20E-01
	860.37	4.48	1.28E+01		-4.48E+00	6.33E+00
	2614.66	35.85	3.68E-01		2.85E-01	1.64E-01
BI-210M	262.00	45.00	6.79E-01	6.79E-01	7.06E-02	3.36E-01
	300.00	23.00	1.37E+00		-1.91E-01	6.76E-01
PB-210	46.50	4.25	1.77E+01	1.77E+01	-1.28E+02	8.79E+00
PB-211	404.84	2.90	1.24E+01	1.24E+01	-1.92E+00	6.12E+00
	831.96	2.90	1.90E+01		7.90E+00	9.37E+00
BI-212	727.17	11.80	3.90E+00	3.90E+00	4.92E-02	1.92E+00
	1620.62	2.75	6.84E+00		8.22E-02	3.20E+00
PB-212	238.63	44.60	7.19E-01	7.19E-01	3.99E-01	3.56E-01
	300.09	3.41	9.22E+00		-1.29E+00	4.56E+00
+ BI-214	609.31	*	46.30	1.20E+00	8.94E-01	5.95E-01
	1120.29		15.10	3.99E+00	2.13E+00	1.96E+00
	1764.49		15.80	1.22E+00	3.82E-01	5.68E-01
	2204.22		4.98	3.66E+00	3.70E-01	1.69E+00
+ PB-214	295.21		19.19	1.22E+00	1.40E-01	8.15E-01
	351.92	*	37.19	1.22E+00	8.83E-01	6.04E-01
RN-219	401.80		6.50	5.57E+00	1.97E+00	2.75E+00

Analysis Report for 1510087-01

GAS 1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RA-223	323.87	3.88	8.31E+00	8.31E+00	9.11E-01	4.11E+00
RA-224	240.98	3.95	8.14E+00	8.14E+00	7.35E+00	4.04E+00
RA-225	40.00	31.00	6.67E+17	6.67E+17	-3.08E+18	3.31E+17
+ RA-226	186.21 *	3.28	1.04E+01	1.04E+01	5.68E+00	5.19E+00
TH-227	50.10	8.40	9.14E+00	2.74E+00	4.92E+01	4.55E+00
	236.00	11.50	2.74E+00		-1.78E+00	1.36E+00
	256.20	6.30	4.92E+00		-8.95E-02	2.44E+00
AC-228	338.32	11.40	2.87E+00	2.38E+00	4.28E-01	1.42E+00
	911.07	27.70	2.38E+00		1.14E+00	1.18E+00
	969.11	16.60	3.91E+00		6.57E-01	1.93E+00
TH-230	48.44	16.90	4.54E+00	4.54E+00	1.27E+01	2.26E+00
	62.85	4.60	1.27E+01		-7.84E+02	6.33E+00
	67.67	0.37	1.04E+02		2.10E+02	5.18E+01
PA-231	283.67	1.60	1.94E+01	1.37E+01	-2.29E+00	9.61E+00
	302.67	2.30	1.37E+01		2.38E+00	6.77E+00
TH-231	25.64	14.70	6.43E+01	6.07E+00	-1.38E+03	3.21E+01
	84.21	6.40	6.07E+00		-6.15E+02	3.02E+00
PA-233	311.98	38.60	3.28E+09	3.28E+09	7.63E+08	1.62E+09
PA-234	131.20	20.40	1.19E+00	1.19E+00	-4.29E-02	5.91E-01
	733.99	8.80	5.21E+00		-2.04E+00	2.57E+00
	946.00	12.00	5.92E+00		1.82E+00	2.93E+00
PA-234M	1001.03	0.92	6.78E+01	6.78E+01	-3.64E+01	3.34E+01
TH-234	63.29	3.80	1.03E+01	1.03E+01	-5.19E+02	5.13E+00
U-235	143.76	10.50	2.41E+00	2.41E+00	2.12E-01	1.19E+00
	163.35	4.70	6.05E+00		-4.03E+00	3.00E+00
	205.31	4.70	6.27E+00		-1.97E+00	3.11E+00
NP-237	86.50	12.60	6.01E+00	6.01E+00	2.26E+02	3.00E+00
@ NP-239	106.10	22.70	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	228.18	10.70	1.00E+26		1.00E+26	1.00E+20
@	277.60	14.10	1.00E+26		1.00E+26	1.00E+20
+ AM-241	59.54 *	35.90	3.82E+00	3.82E+00	2.15E+02	1.91E+00
AM-243	74.67	66.00	5.46E-01	5.46E-01	-3.33E-01	2.71E-01
CM-243	209.75	3.29	9.70E+00	2.36E+00	7.02E-01	4.81E+00
	228.14	10.60	3.15E+00		-5.14E-01	1.56E+00
	277.60	14.00	2.36E+00		-4.76E-02	1.17E+00

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

: 00313

Analysis Report for 1510087-01
GAS 1302

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

369: 523 519 478 486 498 526 527 547

Sample Title: GAS 1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	476	482	526	491	497	443	506	477
385:	502	477	513	508	492	503	571	788
393:	618	483	497	487	507	514	501	522
401:	515	505	530	488	458	516	505	502
409:	507	541	529	447	460	502	484	454
417:	458	485	515	546	532	476	495	506
425:	480	518	492	529	495	498	481	501
433:	483	536	525	507	527	550	535	493
441:	494	519	510	515	504	577	514	521
449:	514	486	509	573	501	538	484	523
457:	501	534	560	524	532	549	521	562
465:	553	499	518	538	496	520	519	552
473:	537	478	535	481	476	456	472	434
481:	451	427	417	445	421	387	436	440
489:	374	397	427	402	413	384	409	386
497:	387	429	396	414	372	386	416	433
505:	366	375	407	350	392	416	438	410
513:	361	346	354	354	340	335	353	374
521:	382	365	325	325	325	299	344	325
529:	299	326	322	307	325	344	351	325
537:	314	359	345	332	320	332	304	319
545:	284	316	311	296	330	309	332	315
553:	279	317	293	310	304	311	315	312
561:	296	315	285	292	301	322	322	322
569:	270	290	304	320	297	280	291	307
577:	279	282	262	306	298	287	324	327
585:	307	322	310	322	286	275	263	279
593:	285	268	266	284	311	299	301	291
601:	267	297	283	297	274	280	268	318
609:	300	311	312	280	286	240	256	267
617:	279	339	267	280	284	273	280	276
625:	299	257	242	261	283	279	287	267
633:	244	280	304	263	292	257	292	306
641:	286	264	276	267	272	254	280	295
649:	264	264	299	271	276	300	307	281
657:	275	274	357	820	7257	18474	6875	768
665:	460	365	262	263	244	228	256	218
673:	255	255	253	232	239	247	239	221
681:	227	230	221	230	249	230	247	251
689:	216	249	243	253	238	224	246	228
697:	238	242	244	241	239	226	244	230
705:	232	232	250	261	230	231	245	231
713:	272	241	264	236	287	236	249	228
721:	262	230	243	238	229	260	234	252
729:	227	230	240	239	247	223	224	239
737:	224	261	251	245	238	251	228	241
745:	263	242	234	224	264	233	221	236
753:	225	238	256	244	221	257	249	241
761:	252	232	245	269	252	244	226	255
769:	265	239	236	250	244	256	261	254
777:	243	248	232	251	231	231	258	236
785:	258	259	251	273	264	243	254	266
793:	224	253	266	289	270	259	255	269

801: 255 250 250 255 278 242 260 269

Sample Title: GAS 1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	242	226	274	247	249	253	271	234
817:	259	251	273	276	272	296	301	271
825:	239	281	252	261	253	271	284	268
833:	293	304	264	258	283	260	270	272
841:	292	271	270	296	287	302	242	255
849:	256	267	250	299	320	282	295	284
857:	276	285	297	287	302	283	267	286
865:	315	276	281	296	289	267	283	271
873:	325	304	318	317	284	284	302	278
881:	299	329	270	284	317	310	311	288
889:	275	280	351	324	344	334	301	324
897:	370	525	458	329	339	296	307	335
905:	295	325	323	329	342	337	331	383
913:	334	350	343	319	365	317	363	334
921:	329	342	308	340	320	354	339	375
929:	356	348	357	340	365	330	380	333
937:	371	357	368	377	333	382	369	368
945:	380	355	381	387	394	405	339	428
953:	379	377	390	377	369	365	395	395
961:	366	348	355	321	304	322	300	348
969:	300	291	269	285	303	269	279	280
977:	298	275	289	244	296	256	248	279
985:	264	286	250	277	273	283	269	303
993:	276	271	269	268	282	267	242	253
1001:	266	286	272	260	279	286	256	282
1009:	263	287	259	246	269	255	272	246
1017:	238	262	240	217	251	250	238	247
1025:	251	265	227	249	267	272	283	254
1033:	248	259	258	261	231	263	244	235
1041:	269	256	271	250	247	285	272	244
1049:	235	257	229	249	245	254	263	268
1057:	258	275	245	240	233	229	248	221
1065:	255	256	229	241	243	239	220	240
1073:	243	246	266	260	228	255	282	265
1081:	253	211	284	249	243	251	237	228
1089:	254	257	225	223	229	226	244	244
1097:	243	230	231	254	252	237	252	254
1105:	264	262	275	269	228	266	257	257
1113:	236	243	238	228	220	206	219	207
1121:	191	202	189	178	145	166	163	171
1129:	155	176	142	164	170	163	151	159
1137:	140	164	169	160	147	149	147	157
1145:	143	155	128	134	163	139	144	163
1153:	135	139	160	162	144	147	148	145
1161:	143	136	155	149	154	158	148	166
1169:	140	165	335	2508	11261	12503	3347	511
1177:	307	183	129	108	114	93	100	87
1185:	116	105	100	112	106	103	100	89
1193:	73	104	81	86	89	97	82	86
1201:	79	80	74	92	87	76	85	80
1209:	77	71	82	71	58	81	79	62
1217:	59	55	60	76	50	67	46	64
1225:	57	69	65	64	59	52	42	47

1233: 69 43 56 53 51 44 38 52

Sample Title: GAS 1302

Channel								
1241:	51	40	46	28	50	54	47	58
1249:	54	49	38	45	43	38	38	39
1257:	46	45	36	40	44	55	34	40
1265:	33	41	34	26	34	34	42	43
1273:	26	42	28	28	35	43	30	33
1281:	27	35	43	48	35	25	36	32
1289:	25	35	40	23	35	34	28	27
1297:	29	40	32	39	31	30	37	41
1305:	38	32	37	34	33	39	39	43
1313:	44	34	33	40	30	40	38	36
1321:	45	33	40	44	36	36	40	57
1329:	65	148	1420	7824	12033	4966	683	208
1337:	104	40	20	29	22	15	20	30
1345:	24	28	16	15	13	23	17	21
1353:	23	22	24	21	22	9	13	22
1361:	13	13	22	19	17	24	16	11
1369:	23	19	20	11	18	9	17	11
1377:	21	17	17	11	9	14	15	11
1385:	12	10	16	21	19	28	31	19
1393:	12	18	27	12	12	18	11	17
1401:	15	23	12	14	16	9	22	12
1409:	22	17	19	18	9	18	6	15
1417:	12	12	16	9	20	17	16	16
1425:	17	19	21	11	12	12	10	17
1433:	22	17	15	15	7	13	19	11
1441:	12	9	15	11	14	15	21	14
1449:	13	9	10	11	12	19	17	14
1457:	17	8	21	16	25	21	12	12
1465:	17	9	13	17	14	13	11	14
1473:	13	14	12	8	18	17	9	12
1481:	8	10	11	14	15	17	8	13
1489:	24	15	9	12	11	9	22	8
1497:	10	10	15	7	10	11	18	11
1505:	14	14	12	14	15	15	13	17
1513:	9	8	10	9	11	15	12	14
1521:	12	17	9	7	3	8	11	10
1529:	14	13	13	14	12	14	14	13
1537:	6	20	8	9	14	12	13	13
1545:	10	20	14	16	17	14	9	6
1553:	8	19	9	12	16	10	10	10
1561:	8	20	8	13	11	16	9	14
1569:	11	10	10	10	15	12	16	15
1577:	15	10	14	5	8	5	8	11
1585:	12	14	9	10	15	13	12	10
1593:	12	16	13	13	9	18	14	13
1601:	6	9	5	10	16	15	7	16
1609:	12	14	7	14	8	13	19	7
1617:	14	11	7	7	8	10	17	9
1625:	8	10	8	9	17	4	7	13
1633:	9	4	14	10	5	16	8	10
1641:	9	8	11	12	12	10	7	6
1649:	8	17	14	9	7	10	8	12
1657:	10	10	11	13	6	9	7	9

1665: 7 7 5 7 6 10 8 5

Sample Title: GAS 1302

Channel	1	2	3	4	5	6	7	8
1673:	11	14	11	11	13	5	5	8
1681:	7	9	7	13	8	6	7	8
1689:	19	9	9	7	10	15	5	12
1697:	6	5	12	15	5	10	7	6
1705:	11	12	10	12	9	8	9	12
1713:	9	12	10	7	6	8	8	6
1721:	10	9	7	7	5	13	5	8
1729:	4	12	9	10	12	8	6	7
1737:	11	12	8	10	10	9	7	7
1745:	15	7	10	14	12	10	10	5
1753:	2	10	4	6	5	7	7	9
1761:	9	9	6	13	16	10	6	8
1769:	8	8	7	9	4	8	7	9
1777:	10	12	10	4	8	8	7	7
1785:	4	11	2	8	7	8	7	3
1793:	8	9	9	9	5	9	7	9
1801:	6	7	6	7	7	4	11	9
1809:	7	10	6	9	7	13	7	10
1817:	9	10	5	6	5	6	7	7
1825:	9	10	5	7	10	4	5	8
1833:	9	10	56	91	85	28	9	8
1841:	8	4	7	9	7	3	9	8
1849:	9	6	6	4	10	7	6	9
1857:	7	6	4	8	4	7	7	7
1865:	8	6	3	6	2	9	10	13
1873:	10	5	8	8	4	8	6	7
1881:	6	3	9	9	7	8	7	5
1889:	2	4	15	9	4	6	7	8
1897:	3	1	4	6	7	5	10	9
1905:	7	6	3	6	5	4	8	4
1913:	5	4	6	7	6	11	14	5
1921:	6	10	8	4	6	4	6	9
1929:	8	3	3	8	10	6	12	7
1937:	7	6	6	11	4	5	13	7
1945:	4	5	8	4	8	1	12	4
1953:	8	7	5	9	9	9	6	8
1961:	7	7	5	5	4	6	3	6
1969:	7	7	5	7	8	6	5	11
1977:	10	8	9	5	2	5	7	8
1985:	5	8	8	10	6	12	8	4
1993:	4	10	9	7	7	3	12	10
2001:	6	7	9	10	7	8	4	4
2009:	2	10	4	6	9	7	8	8
2017:	4	8	4	8	5	6	9	5
2025:	5	8	7	13	5	6	8	3
2033:	7	4	6	7	8	2	8	10
2041:	8	5	7	8	4	3	6	6
2049:	4	3	5	3	4	5	6	7
2057:	7	9	4	10	3	9	4	5
2065:	9	5	5	5	3	3	6	4
2073:	5	5	5	3	6	4	8	5
2081:	8	3	7	10	8	4	5	9
2089:	7	6	5	5	3	6	9	10

2097: 13 7 4 9 5 4 3 11

Sample Title: GAS 1302

Channel	1	2	3	4	5	6	7	8
2105:	6	2	8	7	4	5	7	7
2113:	8	5	3	6	9	9	9	11
2121:	5	4	8	7	9	11	9	8
2129:	5	7	2	10	4	4	7	7
2137:	2	4	7	6	6	7	8	8
2145:	2	2	9	3	9	4	5	7
2153:	4	6	8	5	7	8	8	7
2161:	5	3	7	6	5	3	10	5
2169:	8	3	9	4	6	3	4	5
2177:	6	7	5	6	6	6	2	6
2185:	4	4	5	6	5	5	8	5
2193:	2	8	11	8	5	2	7	5
2201:	5	5	5	9	2	7	7	4
2209:	5	6	5	5	6	2	6	4
2217:	1	8	4	8	5	6	9	9
2225:	4	5	7	3	9	3	7	8
2233:	4	4	6	3	2	4	6	7
2241:	6	2	2	3	4	4	9	10
2249:	4	4	6	7	8	8	6	8
2257:	4	8	14	5	3	2	7	7
2265:	5	5	9	9	8	6	5	8
2273:	9	7	7	2	12	3	7	7
2281:	10	8	6	6	6	5	9	4
2289:	13	9	9	7	2	5	13	2
2297:	4	5	6	5	5	4	5	5
2305:	4	5	3	5	4	2	7	2
2313:	2	2	7	3	8	8	6	3
2321:	9	5	3	4	5	5	5	2
2329:	3	1	3	7	3	2	0	2
2337:	3	4	7	2	6	5	5	3
2345:	3	7	1	3	2	5	2	5
2353:	2	3	2	1	4	2	3	5
2361:	3	4	3	2	2	3	3	5
2369:	1	0	2	1	1	1	3	1
2377:	4	3	4	3	3	1	2	1
2385:	2	2	1	2	0	0	0	0
2393:	1	0	3	3	0	0	0	3
2401:	2	1	1	2	2	3	0	0
2409:	0	2	2	0	1	0	0	3
2417:	4	0	0	0	2	1	3	1
2425:	1	2	0	1	1	0	2	0
2433:	0	2	2	0	0	0	3	0
2441:	0	1	3	2	3	0	1	0
2449:	1	0	0	1	1	0	2	2
2457:	0	3	0	1	1	1	2	1
2465:	1	2	1	0	1	3	1	1
2473:	0	0	2	1	0	0	0	3
2481:	3	1	2	2	1	1	2	1
2489:	1	0	0	2	2	0	1	2
2497:	0	1	3	1	1	2	6	48
2505:	132	131	74	17	0	0	2	0
2513:	0	0	0	0	0	0	0	1
2521:	0	0	0	0	1	0	0	1

2529: 0 0 0 0 0 0 0 0 1

Sample Title: GAS 1302

Channel								
2537:	0	0	0	0	0	0	0	0
2545:	0	1	0	0	0	0	1	0
2553:	1	0	0	0	1	0	0	0
2561:	0	0	0	1	0	0	0	0
2569:	0	0	0	0	1	0	0	0
2577:	0	1	1	1	0	1	0	0
2585:	0	0	0	1	1	0	0	0
2593:	0	0	0	0	0	0	0	0
2601:	0	0	0	1	0	1	0	0
2609:	1	1	0	0	5	5	8	2
2617:	0	1	0	1	0	0	0	0
2625:	0	0	0	0	0	0	0	0
2633:	0	0	0	0	0	0	0	1
2641:	0	0	0	0	1	0	0	0
2649:	0	1	0	1	0	0	0	0
2657:	0	1	0	0	0	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	1	1	0	0	0	0	0
2681:	0	0	0	0	1	0	0	0
2689:	0	0	0	0	0	0	0	1
2697:	0	0	0	0	0	2	1	1
2705:	0	0	0	0	0	0	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	0	0	0	0	0
2729:	0	0	0	1	0	1	1	1
2737:	1	0	0	1	0	0	0	0
2745:	0	0	0	0	0	0	0	1
2753:	0	1	0	0	0	1	0	0
2761:	0	0	0	0	1	0	0	0
2769:	0	0	0	0	0	0	0	0
2777:	0	0	0	1	1	1	0	0
2785:	0	0	0	0	0	0	1	0
2793:	1	0	0	0	0	0	0	1
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	0	0	0	0	0
2825:	0	0	1	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	1	0	0	0	0
2849:	0	1	0	0	2	0	0	0
2857:	0	0	0	0	0	1	0	1
2865:	0	0	0	0	0	0	1	0
2873:	0	0	0	1	0	0	0	0
2881:	0	1	0	0	0	0	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	1	1	0	0	0	0	0
2913:	0	0	0	1	0	1	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	1	0	0	0	1
2937:	0	0	0	0	0	1	0	0
2945:	0	0	0	0	1	0	0	0
2953:	0	1	0	0	0	0	0	0

2961: 0 0 0 0 0 0 0 0 0

Sample Title: GAS 1302

Channel	1	0	1	0	0	0	0	0
2969:	1	0	1	0	0	0	0	0
2977:	1	0	0	0	0	0	0	0
2985:	0	0	0	0	0	0	0	0
2993:	0	0	0	0	0	1	1	1
3001:	0	1	0	0	0	0	1	0
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	0	0	0	0	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	1	0	0	0
3057:	0	0	1	0	0	0	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	2	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	0	1	0	0
3097:	0	1	0	1	0	0	0	0
3105:	0	0	0	0	0	0	0	0
3113:	0	1	0	0	0	0	0	0
3121:	0	0	0	0	0	0	0	1
3129:	0	0	0	0	0	0	0	0
3137:	0	0	1	0	0	0	0	0
3145:	0	0	0	0	0	1	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	0	0
3169:	0	0	0	0	1	0	0	0
3177:	0	0	0	0	0	0	1	0
3185:	0	1	0	0	0	0	0	0
3193:	0	2	0	0	1	0	0	0
3201:	1	0	0	0	0	0	0	0
3209:	0	0	0	1	0	1	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	0	0	0	1
3241:	0	0	0	1	1	0	0	0
3249:	1	0	0	1	1	0	0	0
3257:	0	0	1	0	0	0	0	0
3265:	0	0	1	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	1	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	1	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	1	1	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	1	0	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0 0

Sample Title: GAS 1302

Channel								
3401:	0	0	0	0	0	0	1	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	1	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	1
3473:	1	0	0	0	0	1	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	1	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	1
3505:	1	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	1	0	0	0	0	0	0	0
3529:	0	0	0	1	0	0	0	0
3537:	0	0	0	0	0	0	0	1
3545:	0	0	0	0	0	0	0	1
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	1	0	1
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	1	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	1	0	0	0	0	0	0	0
3625:	0	1	0	0	0	0	0	0
3633:	0	1	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	1	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	1	0
3697:	0	0	1	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	1	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	1	0	0	1	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	1	0	0	0	0	0	0
3753:	1	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	1	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	1

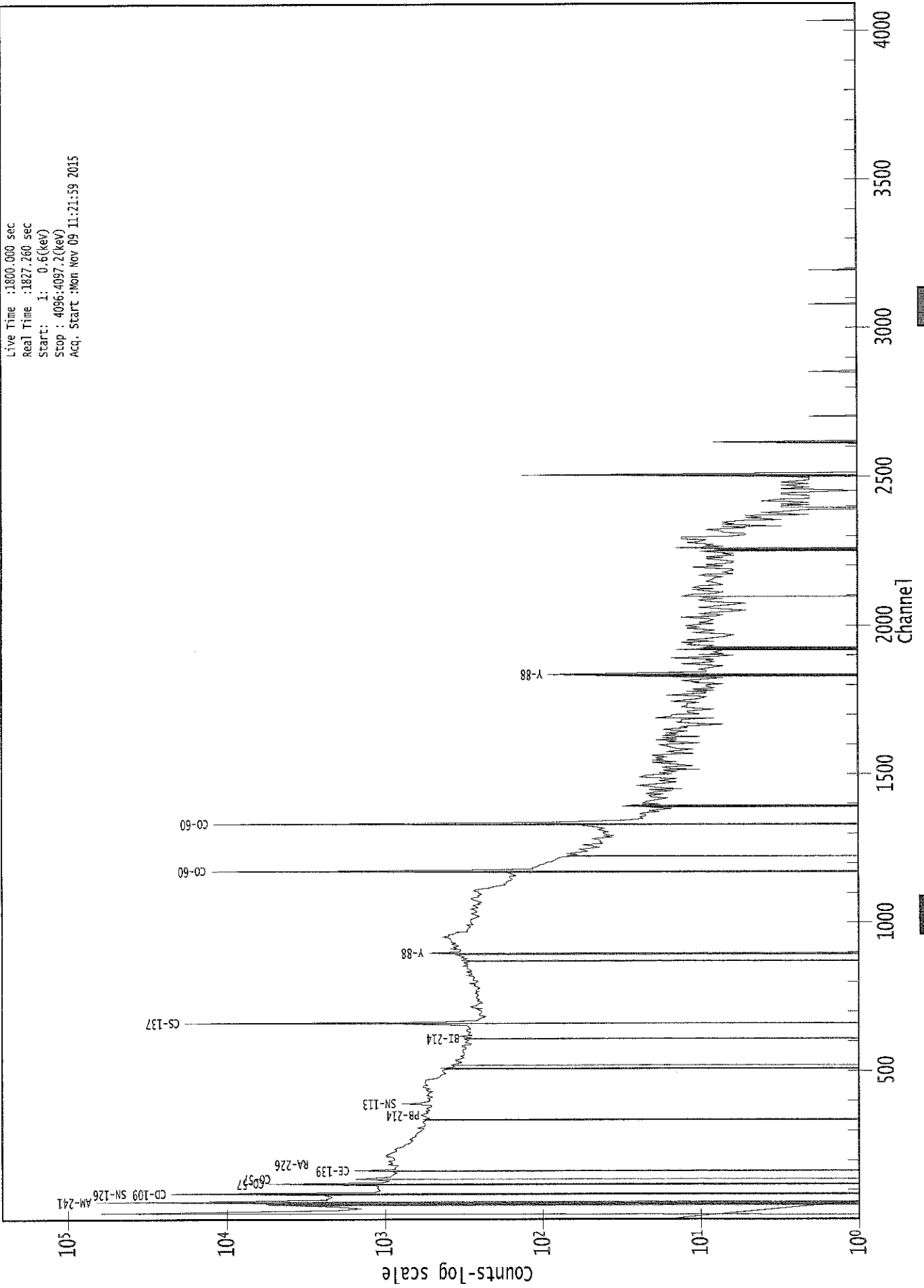
3825: 0 0 0 0 0 0 0 0 0

Sample Title: GAS 1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	1	0	0	0	0	0	0
3897:	1	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	1	0	0	0	0	0
3921:	0	0	0	1	0	0	0	1
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	1	0	0	0	0
3945:	1	0	0	0	0	0	0	0
3953:	1	0	0	0	0	0	0	0
3961:	0	1	0	0	0	0	0	0
3969:	0	1	0	0	0	0	0	0
3977:	0	0	0	0	0	0	1	0
3985:	0	0	0	0	0	0	1	0
3993:	0	0	1	1	1	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	2	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	1	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	1	0	0	0	0	0	0

0000029329.CNF

Live Time :1800.000 sec
Real Time :1827.260 sec
Start : 1: 0.6(keV)
Stop : 4036.4097.2(keV)
Acq. Start :Mon Nov 09 11:21:59 2015



KS
11/9/15



Analysis Report for 1510087-02
BLANK

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-02
Sample Description : BLANK
Sample Type : SOIL

Sample Size : 7.834E+02 grams
Facility : Countroom

Sample Taken On : 11/9/2015 5:06:37PM
Acquisition Started : 11/9/2015 11:22:06AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3600.6 seconds

Dead Time : 0.02 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 7 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 29330

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-02

BLANK

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 12:22:10PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
1	52.83	52.94	0.0000	0.00
2	272.64	272.62	0.0000	0.00
3	306.64	306.60	0.0000	0.00
4	358.40	358.33	0.0000	0.00
5	414.89	414.80	0.0000	0.00
6	732.43	732.18	0.0000	0.00
7	766.30	766.03	0.0000	0.00
8	827.40	827.11	0.0000	0.00
9	914.82	914.49	0.0000	0.00
10	959.88	959.53	0.0000	0.00
11	969.41	969.06	0.0000	0.00
12	1040.40	1040.03	0.0000	0.00
13	1045.18	1044.80	0.0000	0.00
14	1063.54	1063.15	0.0000	0.00
15	1082.53	1082.14	0.0000	0.00
16	1094.12	1093.72	0.0000	0.00
17	1128.67	1128.26	0.0000	0.00
18	1140.26	1139.85	0.0000	0.00
19	1239.00	1238.55	0.0000	0.00
20	1362.49	1362.00	0.0000	0.00
21	1368.54	1368.05	0.0000	0.00
22	1621.21	1620.65	0.0000	0.00
23	1764.61	1764.00	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1510087-02

BLANK

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 12:22:10PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	52.83	51 -	57	52.94	5.63E+01	51.16	3.81E+02	2.98
2	272.64	265 -	284	272.62	4.55E+01	54.26	2.31E+02	13.75
3	306.64	303 -	311	306.60	2.67E+01	30.32	1.23E+02	2.30
4	358.40	355 -	362	358.33	2.80E+01	22.27	6.40E+01	3.74
5	414.89	411 -	420	414.80	2.19E+01	26.10	8.41E+01	2.82
6	732.43	729 -	736	732.18	1.03E+01	12.65	1.93E+01	1.86
7	766.30	764 -	768	766.03	8.27E+00	7.52	5.45E+00	1.82
8	827.40	825 -	829	827.11	7.00E+00	8.54	1.00E+01	2.62
9	914.82	908 -	921	914.49	2.29E+01	14.63	1.22E+01	10.10
M 10	959.88	954 -	972	959.53	1.33E+01	10.79	5.05E+00	2.91
m 11	969.41	954 -	972	969.06	1.04E+01	9.41	1.16E+01	2.92
M 12	1040.40	1038 -	1048	1040.03	7.17E+00	5.55	3.36E+00	2.47
m 13	1045.18	1038 -	1048	1044.80	1.50E+01	10.62	1.13E+01	2.48
14	1063.54	1057 -	1069	1063.15	2.00E+01	11.59	5.91E+00	7.66
15	1082.53	1079 -	1085	1082.14	7.50E+00	6.95	3.00E+00	3.34
16	1094.12	1090 -	1096	1093.72	7.50E+00	9.21	9.00E+00	1.30
17	1128.67	1126 -	1130	1128.26	9.64E+00	7.09	2.73E+00	2.12
18	1140.26	1137 -	1142	1139.85	6.77E+00	8.43	8.45E+00	2.79
19	1239.00	1234 -	1242	1238.55	1.23E+01	11.69	1.35E+01	2.00
20	1362.49	1359 -	1366	1362.00	7.42E+00	8.94	9.17E+00	4.08
21	1368.54	1366 -	1370	1368.05	7.00E+00	6.18	2.00E+00	1.89
22	1621.21	1616 -	1623	1620.65	7.80E+00	7.48	4.40E+00	1.91
23	1764.61	1760 -	1768	1764.00	1.10E+01	6.63	0.00E+00	3.75

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1510087-02

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PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 12:22:10PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	52.83	51 -	57	5.63E+01	51.16	3.81E+02	4.02E+01
2	272.64	265 -	284	4.55E+01	54.26	2.31E+02	4.32E+01
3	306.64	303 -	311	2.67E+01	30.32	1.23E+02	2.34E+01
4	358.40	355 -	362	2.80E+01	22.27	6.40E+01	1.61E+01
5	414.89	411 -	420	2.19E+01	26.10	8.41E+01	2.00E+01
6	732.43	729 -	736	1.03E+01	12.65	1.93E+01	8.95E+00
7	766.30	764 -	768	8.27E+00	7.52	5.45E+00	3.98E+00
8	827.40	825 -	829	7.00E+00	8.54	1.00E+01	5.51E+00
9	914.82	908 -	921	2.29E+01	14.63	1.22E+01	9.09E+00
M 10	959.88	954 -	972	1.33E+01	10.79	5.05E+00	3.69E+00
m 11	969.41	954 -	972	1.04E+01	9.41	1.16E+01	5.61E+00
M 12	1040.40	1038 -	1048	7.17E+00	5.55	3.36E+00	3.01E+00
m 13	1045.18	1038 -	1048	1.50E+01	10.62	1.13E+01	5.52E+00
14	1063.54	1057 -	1069	2.00E+01	11.59	5.91E+00	6.04E+00
15	1082.53	1079 -	1085	7.50E+00	6.95	3.00E+00	3.51E+00
16	1094.12	1090 -	1096	7.50E+00	9.21	9.00E+00	6.08E+00
17	1128.67	1126 -	1130	9.64E+00	7.09	2.73E+00	2.81E+00
18	1140.26	1137 -	1142	6.77E+00	8.43	8.45E+00	5.45E+00
19	1239.00	1234 -	1242	1.23E+01	11.69	1.35E+01	7.70E+00
20	1362.49	1359 -	1366	7.42E+00	8.94	9.17E+00	5.83E+00
21	1368.54	1366 -	1370	7.00E+00	6.18	2.00E+00	2.63E+00
22	1621.21	1616 -	1623	7.80E+00	7.48	4.40E+00	4.09E+00
23	1764.61	1760 -	1768	1.10E+01	6.63	0.00E+00	0.00E+00

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1510087-02

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PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 12:22:10PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	52.83	51 -	57	52.94	5.63E+01	51.16	3.81E+02	.....
2	272.64	265 -	284	272.62	4.55E+01	54.26	2.31E+02	LU-173
3	306.64	303 -	311	306.60	2.67E+01	30.32	1.23E+02	LU-176
4	358.40	355 -	362	358.33	2.80E+01	22.27	6.40E+01	.....
5	414.89	411 -	420	414.80	2.19E+01	26.10	8.41E+01	SB-126
6	732.43	729 -	736	732.18	1.03E+01	12.65	1.93E+01	.....
7	766.30	764 -	768	766.03	8.27E+00	7.52	5.45E+00	NB-95
8	827.40	825 -	829	827.11	7.00E+00	8.54	1.00E+01	.....
9	914.82	908 -	921	914.49	2.29E+01	14.63	1.22E+01	.....
M 10	959.88	954 -	972	959.53	1.33E+01	10.79	5.05E+00	.....
m 11	969.41	954 -	972	969.06	1.04E+01	9.41	1.16E+01	AC-228
M 12	1040.40	1038 -	1048	1040.03	7.17E+00	5.55	3.36E+00	.....
m 13	1045.18	1038 -	1048	1044.80	1.50E+01	10.62	1.13E+01	.....
14	1063.54	1057 -	1069	1063.15	2.00E+01	11.59	5.91E+00	BI-207
15	1082.53	1079 -	1085	1082.14	7.50E+00	6.95	3.00E+00	.....
16	1094.12	1090 -	1096	1093.72	7.50E+00	9.21	9.00E+00	LU-172
17	1128.67	1126 -	1130	1128.26	9.64E+00	7.09	2.73E+00	.....
18	1140.26	1137 -	1142	1139.85	6.77E+00	8.43	8.45E+00	.....
19	1239.00	1234 -	1242	1238.55	1.23E+01	11.69	1.35E+01	CO-56
20	1362.49	1359 -	1366	1362.00	7.42E+00	8.94	9.17E+00	.....
21	1368.54	1366 -	1370	1368.05	7.00E+00	6.18	2.00E+00	NA-24
22	1621.21	1616 -	1623	1620.65	7.80E+00	7.48	4.40E+00	BI-212
23	1764.61	1760 -	1768	1764.00	1.10E+01	6.63	0.00E+00	BI-214

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 12:22:10PM

Analysis Report for 1510087-02

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	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	52.83	5.63E+01	51.16	1.80E-02	1.68E-03
	2	272.64	4.55E+01	54.26	1.63E-02	1.56E-03
	3	306.64	2.67E+01	30.32	1.51E-02	1.43E-03
	4	358.40	2.80E+01	22.27	1.36E-02	1.18E-03
	5	414.89	2.19E+01	26.10	1.22E-02	9.96E-04
	6	732.43	1.03E+01	12.65	8.04E-03	7.00E-04
	7	766.30	8.27E+00	7.52	7.76E-03	6.78E-04
	8	827.40	7.00E+00	8.54	7.29E-03	6.39E-04
	9	914.82	2.29E+01	14.63	6.72E-03	5.85E-04
M	10	959.88	1.33E+01	10.79	6.46E-03	5.62E-04
m	11	969.41	1.04E+01	9.41	6.41E-03	5.57E-04
M	12	1040.40	7.17E+00	5.55	6.05E-03	5.21E-04
m	13	1045.18	1.50E+01	10.62	6.03E-03	5.18E-04
	14	1063.54	2.00E+01	11.59	5.95E-03	5.09E-04
	15	1082.53	7.50E+00	6.95	5.86E-03	4.99E-04
	16	1094.12	7.50E+00	9.21	5.81E-03	4.93E-04
	17	1128.67	9.64E+00	7.09	5.67E-03	4.76E-04
	18	1140.26	6.77E+00	8.43	5.62E-03	4.70E-04
	19	1239.00	1.23E+01	11.69	5.27E-03	4.83E-04
	20	1362.49	7.42E+00	8.94	4.91E-03	5.14E-04
	21	1368.54	7.00E+00	6.18	4.89E-03	5.11E-04
	22	1621.21	7.80E+00	7.48	4.38E-03	4.07E-04
	23	1764.61	1.10E+01	6.63	4.19E-03	3.47E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 12:22:10PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	52.83	5.63E+01	51.16			5.63E+01	5.12E+01
2	272.64	4.55E+01	54.26			4.55E+01	5.43E+01
3	306.64	2.67E+01	30.32			2.67E+01	3.03E+01
4	358.40	2.80E+01	22.27			2.80E+01	2.23E+01
5	414.89	2.19E+01	26.10			2.19E+01	2.61E+01

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Analysis Report for 1510087-02

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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
6	732.43	1.03E+01	12.65			1.03E+01	1.26E+01
7	766.30	8.27E+00	7.52			8.27E+00	7.52E+00
8	827.40	7.00E+00	8.54			7.00E+00	8.54E+00
9	914.82	2.29E+01	14.63			2.29E+01	1.46E+01
M 10	959.88	1.33E+01	10.79			1.33E+01	1.08E+01
m 11	969.41	1.04E+01	9.41			1.04E+01	9.41E+00
M 12	1040.40	7.17E+00	5.55			7.17E+00	5.55E+00
m 13	1045.18	1.50E+01	10.62			1.50E+01	1.06E+01
14	1063.54	2.00E+01	11.59			2.00E+01	1.16E+01
15	1082.53	7.50E+00	6.95			7.50E+00	6.95E+00
16	1094.12	7.50E+00	9.21			7.50E+00	9.21E+00
17	1128.67	9.64E+00	7.09			9.64E+00	7.09E+00
18	1140.26	6.77E+00	8.43			6.77E+00	8.43E+00
19	1239.00	1.23E+01	11.69			1.23E+01	1.17E+01
20	1362.49	7.42E+00	8.94			7.42E+00	8.94E+00
21	1368.54	7.00E+00	6.18			7.00E+00	6.18E+00
22	1621.21	7.80E+00	7.48			7.80E+00	7.48E+00
23	1764.61	1.10E+01	6.63	4.23E+00	2.21E+00	6.77E+00	6.99E+00

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 12:22:10PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	52.83	5.63E+01	51.16			5.63E+01	5.12E+01
2	272.64	4.55E+01	54.26			4.55E+01	5.43E+01
3	306.64	2.67E+01	30.32			2.67E+01	3.03E+01
4	358.40	2.80E+01	22.27			2.80E+01	2.23E+01
5	414.89	2.19E+01	26.10			2.19E+01	2.61E+01
6	732.43	1.03E+01	12.65			1.03E+01	1.26E+01
7	766.30	8.27E+00	7.52			8.27E+00	7.52E+00
8	827.40	7.00E+00	8.54			7.00E+00	8.54E+00
9	914.82	2.29E+01	14.63			2.29E+01	1.46E+01
M 10	959.88	1.33E+01	10.79			1.33E+01	1.08E+01

Analysis Report for 1510087-02

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	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	11	969.41	1.04E+01	9.41			1.04E+01	9.41E+00
M	12	1040.40	7.17E+00	5.55			7.17E+00	5.55E+00
m	13	1045.18	1.50E+01	10.62			1.50E+01	1.06E+01
	14	1063.54	2.00E+01	11.59			2.00E+01	1.16E+01
	15	1082.53	7.50E+00	6.95			7.50E+00	6.95E+00
	16	1094.12	7.50E+00	9.21			7.50E+00	9.21E+00
	17	1128.67	9.64E+00	7.09			9.64E+00	7.09E+00
	18	1140.26	6.77E+00	8.43			6.77E+00	8.43E+00
	19	1239.00	1.23E+01	11.69			1.23E+01	1.17E+01
	20	1362.49	7.42E+00	8.94			7.42E+00	8.94E+00
	21	1368.54	7.00E+00	6.18			7.00E+00	6.18E+00
	22	1621.21	7.80E+00	7.48			7.80E+00	7.48E+00
	23	1764.61	1.10E+01	6.63	4.23E+00	2.21E+00	6.77E+00	6.99E+00

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
NB-95	0.960	765.79 *	99.81	1.02E-02	9.31E-03
LU-173	0.572	100.72 - 272.11 *	5.24 21.20	1.26E-01	1.51E-01

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 Energy Tolerance : 1.000 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

Analysis Report for 1510087-02

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 12:22:10PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	52.83	1.56360E-02	45.44		
3	306.64	7.41162E-03	56.81	Tol.	LU-176
4	358.40	7.77778E-03	39.77		
5	414.89	6.09375E-03	59.48	Tol.	SB-126
6	732.43	2.87500E-03	61.11		
8	827.40	1.94444E-03	61.03		
9	914.82	6.36015E-03	31.95		
M 10	959.88	3.70517E-03	40.46		
m 11	969.41	2.90070E-03	45.04	Tol.	AC-228
M 12	1040.40	1.99181E-03	38.67		
m 13	1045.18	4.17935E-03	35.29		
14	1063.54	5.56763E-03	28.90	Tol.	BI-207
15	1082.53	2.08333E-03	46.31		
16	1094.12	2.08333E-03	61.37	Tol.	LU-172
17	1128.67	2.67677E-03	36.78		
18	1140.26	1.88131E-03	62.21		
19	1239.00	3.40643E-03	47.68	Tol.	CO-56
20	1362.49	2.06019E-03	60.30		
21	1368.54	1.94444E-03	44.18	Tol.	NA-24
22	1621.21	2.16667E-03	47.97	Tol.	BI-212
23	1764.61	1.88079E-03	51.62	Tol.	BI-214

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1510087-02

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Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
NB-95	0.96	765.79 *	99.81	1.02E-02	9.31E-03
LU-173	0.57	100.72	5.24		
		272.11 *	21.20	1.26E-01	1.51E-01

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 @ = Energy line not used for Weighted Mean Activity
 Energy Tolerance : 1.000 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
NB-95	0.960	1.02E-02	9.31E-03	
LU-173	0.572	1.26E-01	1.51E-01	

? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity
 Errors quoted at 2.000sigma

Analysis Report for 1510087-02

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 12:22:10PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	52.83	1.56360E-02	45.44		
3	306.64	7.41162E-03	56.81	Tol.	LU-176
4	358.40	7.77778E-03	39.77		
5	414.89	6.09375E-03	59.48	Tol.	SB-126
6	732.43	2.87500E-03	61.11		
8	827.40	1.94444E-03	61.03		
9	914.82	6.36015E-03	31.95		
M 10	959.88	3.70517E-03	40.46		
m 11	969.41	2.90070E-03	45.04	Tol.	AC-228
M 12	1040.40	1.99181E-03	38.67		
m 13	1045.18	4.17935E-03	35.29		
14	1063.54	5.56763E-03	28.90	Tol.	BI-207
15	1082.53	2.08333E-03	46.31		
16	1094.12	2.08333E-03	61.37	Tol.	LU-172
17	1128.67	2.67677E-03	36.78		
18	1140.26	1.88131E-03	62.21		
19	1239.00	3.40643E-03	47.68	Tol.	CO-56
20	1362.49	2.06019E-03	60.30		
21	1368.54	1.94444E-03	44.18	Tol.	NA-24
22	1621.21	2.16667E-03	47.97	Tol.	BI-212
23	1764.61	1.88079E-03	51.62	Tol.	BI-214

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

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Analysis Report for 1510087-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-1.99E-02	2.19E-01	2.19E-01
+	NA-22	1274.54	99.94	5.11E-03	2.95E-02	2.95E-02
+	NA-24	1368.53	99.99	2.56E-04	1.68E-02	2.56E-02
		2754.09	99.86	3.62E-03		1.68E-02
+	AL-26	1808.65	99.76	-6.96E-03	2.50E-02	2.50E-02
+	K-40	1460.81	10.67	1.57E-01	4.21E-01	4.21E-01
+	AR-41	1293.64	99.16	-1.23E-03	3.10E-03	3.10E-03
+	TI-44	67.88	94.40	5.19E-03	1.31E-02	1.31E-02
		78.34	96.00	2.51E-03		1.41E-02
+	SC-46	889.25	99.98	-1.04E-02	2.42E-02	2.42E-02
		1120.51	99.99	1.10E-02		3.48E-02
+	V-48	983.52	99.98	6.06E-03	2.72E-02	2.72E-02
		1312.10	97.50	9.79E-03		2.90E-02
+	CR-51	320.08	9.83	1.20E-01	2.25E-01	2.25E-01
+	MN-54	834.83	99.97	3.69E-03	2.66E-02	2.66E-02
+	CO-56	846.75	99.96	3.34E-03	2.85E-02	2.85E-02
		1037.75	14.03	4.07E-02		2.26E-01
		1238.25	67.00	3.73E-02		6.23E-02
		1771.40	15.51	-2.21E-02		1.59E-01
		2598.48	16.90	1.40E-02		1.03E-01
+	CO-57	122.06	85.51	-3.72E-03	1.87E-02	1.87E-02
		136.48	10.60	-8.34E-02		1.62E-01
+	CO-58	810.76	99.40	-1.08E-02	2.77E-02	2.77E-02
+	FE-59	1099.22	56.50	-4.38E-03	4.86E-02	4.86E-02
		1291.56	43.20	-5.41E-03		6.11E-02
+	CO-60	1173.22	100.00	9.74E-03	3.16E-02	3.16E-02
		1332.49	100.00	4.80E-03		3.74E-02
+	ZN-65	1115.52	50.75	4.95E-03	6.21E-02	6.21E-02
+	GA-67	93.31	35.70	6.99E-02	5.46E-02	5.46E-02
		208.95	2.24	-3.99E-01		8.04E-01
		300.22	16.00	1.16E-01		1.44E-01
+	SE-75	121.11	16.70	-2.02E-03	2.86E-02	9.77E-02
		136.00	59.20	5.24E-03		2.86E-02
		264.65	59.80	6.65E-04		2.98E-02
		279.53	25.20	1.66E-02		7.77E-02
		400.65	11.40	-6.05E-02		1.71E-01
+	RB-82	776.52	13.00	-9.23E-02	1.98E-01	1.98E-01
+	RB-83	520.41	46.00	3.27E-03	5.54E-02	5.54E-02
		529.64	30.30	-2.86E-02		6.89E-02
		552.65	16.40	-5.41E-03		1.38E-01
+	KR-85	513.99	0.43	-4.30E+00	6.67E+00	6.67E+00
+	SR-85	513.99	99.27	-1.88E-02	2.91E-02	2.91E-02
+	Y-88	898.02	93.40	4.34E-03	3.30E-02	3.37E-02
		1836.01	99.38	7.03E-03		3.30E-02
+	NB-93M	16.57	9.43	-6.51E+03	3.06E+03	3.06E+03
+	NB-94	702.63	100.00	-1.20E-02	2.67E-02	2.83E-02
		871.10	100.00	-2.37E-03		2.67E-02

Analysis Report for 1510087-02

BLANK

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-95	765.79	*	99.81	1.02E-02	1.31E-02	1.31E-02
+	NB-95M	235.69		25.00	4.42E-03	8.20E-02	8.20E-02
+	ZR-95	724.18		43.70	1.34E-02	4.15E-02	5.90E-02
		756.72		55.30	-4.41E-03		4.15E-02
+	MO-99	181.06		6.20	-1.20E-01	1.89E-01	2.84E-01
		739.58		12.80	6.34E-03		1.89E-01
		778.00		4.50	1.97E-01		5.90E-01
+	RU-103	497.08		89.00	5.97E-04	2.34E-02	2.34E-02
+	RU-106	621.84		9.80	5.35E-03	2.40E-01	2.40E-01
+	AG-108M	433.93		89.90	-2.13E-03	2.53E-02	2.53E-02
		614.37		90.40	-1.38E-02		3.19E-02
		722.95		90.50	-3.91E-03		2.78E-02
+	CD-109	88.03		3.72	-3.05E-01	4.24E-01	4.24E-01
+	AG-110M	657.75		93.14	-1.96E-02	3.00E-02	3.00E-02
		677.61		10.53	-1.53E-02		2.71E-01
		706.67		16.46	-2.39E-02		1.62E-01
		763.93		21.98	-7.00E-03		1.05E-01
		884.67		71.63	5.61E-03		4.01E-02
		1384.27		23.94	2.06E-02		1.16E-01
+	CD-113M	263.70		0.02	2.64E+01	8.01E+01	8.01E+01
+	SN-113	255.12		1.93	-3.48E-01	2.53E-02	1.10E+00
		391.69		64.90	-2.90E-02		2.53E-02
+	TE123M	159.00		84.10	1.93E-02	2.14E-02	2.14E-02
+	SB-124	602.71		97.87	-1.83E-02	2.86E-02	2.86E-02
		645.85		7.26	-1.19E-02		3.49E-01
		722.78		11.10	-3.18E-02		2.26E-01
		1691.02		49.00	1.75E-02		6.44E-02
+	I-125	35.49		6.49	2.44E-01	2.12E+00	2.12E+00
+	SB-125	176.33		6.89	-1.59E-01	6.41E-02	2.37E-01
		427.89		29.33	-1.94E-02		6.41E-02
		463.38		10.35	-3.71E-02		2.08E-01
		600.56		17.80	3.77E-02		1.74E-01
		635.90		11.32	-1.74E-01		2.12E-01
+	SB-126	414.70		83.30	1.90E-02	2.75E-02	3.08E-02
		666.33		99.60	-2.98E-03		2.75E-02
		695.00		99.60	8.81E-03		3.52E-02
		720.50		53.80	-2.10E-03		4.97E-02
+	SN-126	87.57		37.00	-3.07E-02	4.27E-02	4.27E-02
+	SB-127	473.00		25.00	-3.06E-02	6.84E-02	8.26E-02
		685.20		35.70	-2.25E-02		6.84E-02
		783.80		14.70	-6.86E-02		1.85E-01
+	I-129	29.78		57.00	-1.46E-01	6.67E-01	6.67E-01
		33.60		13.20	1.79E-01		1.41E+00
		39.58		7.52	1.95E-01		1.15E+00
+	I-131	284.30		6.05	8.69E-02	2.12E-02	2.92E-01
		364.48		81.20	8.08E-03		2.12E-02
		636.97		7.26	-1.30E-01		3.32E-01
		722.89		1.80	-1.93E-01		1.37E+00

Analysis Report for 1510087-02

BLANK

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE-132	49.72	13.10	-5.46E-02	2.15E-02	2.62E-01
		228.16	88.00	-2.14E-03		2.15E-02
+	BA-133	81.00	33.00	-1.04E-02	3.36E-02	3.83E-02
		302.84	17.80	1.62E-02		1.27E-01
		356.01	60.00	-2.55E-02		3.36E-02
+	I-133	529.87	86.30	4.16E-03	2.22E-02	2.22E-02
+	XE-133	81.00	38.00	-8.78E-03	3.23E-02	3.23E-02
+	CS-134	563.23	8.38	4.26E-02	3.14E-02	2.41E-01
		569.32	15.43	6.84E-03		1.50E-01
		604.70	97.60	-2.62E-02		3.14E-02
		795.84	85.40	1.64E-02		3.35E-02
		801.93	8.73	-8.31E-02		2.76E-01
+	CS-135	268.24	16.00	1.31E-01	1.36E-01	1.36E-01
+	I-135	1131.51	22.50	1.09E-02	6.48E-02	9.51E-02
		1260.41	28.60	2.42E-02		6.48E-02
		1678.03	9.54	2.02E-02		1.62E-01
+	CS-136	153.22	7.46	1.21E-01	2.83E-02	2.33E-01
		163.89	4.61	-1.11E-01		3.65E-01
		176.55	13.56	1.08E-02		1.26E-01
		273.65	12.66	3.25E-02		1.41E-01
		340.57	48.50	-6.02E-04		4.32E-02
		818.50	99.70	-1.14E-03		2.83E-02
		1048.07	79.60	3.30E-04		4.44E-02
		1235.34	19.70	6.83E-03		1.65E-01
+	CS-137	661.65	85.12	1.27E-02	3.59E-02	3.59E-02
+	LA-138	788.74	34.00	2.56E-02	5.12E-02	8.14E-02
		1435.80	66.00	2.18E-02		5.12E-02
+	CE-139	165.85	80.35	4.52E-03	2.26E-02	2.26E-02
+	BA-140	162.64	6.70	-2.27E-02	8.14E-02	2.48E-01
		304.84	4.50	1.76E-01		5.30E-01
		423.70	3.20	-6.65E-02		5.64E-01
		437.55	2.00	-4.84E-03		1.11E+00
		537.32	25.00	2.34E-02		8.14E-02
+	LA-140	328.77	20.50	7.68E-02	3.37E-02	1.06E-01
		487.03	45.50	2.61E-03		4.38E-02
		815.85	23.50	4.70E-02		1.28E-01
		1596.49	95.49	3.37E-03		3.37E-02
+	CE-141	145.44	48.40	-1.78E-02	3.59E-02	3.59E-02
+	CE-143	57.36	11.80	-7.70E-02	4.23E-02	1.27E-01
		293.26	42.00	-5.80E-02		4.23E-02
		664.55	5.20	5.18E-02		4.94E-01
+	CE-144	133.54	10.80	-7.07E-02	1.38E-01	1.38E-01
+	PM-144	476.78	42.00	-4.94E-03	2.55E-02	5.43E-02
		618.01	98.60	-3.35E-03		2.55E-02
		696.49	99.49	4.03E-03		3.43E-02
+	PM-145	36.85	21.70	-6.87E-02	2.69E-01	5.23E-01
		37.36	39.70	-3.53E-02		2.69E-01
		42.30	15.10	-1.58E-01		4.45E-01
		72.40	2.31	1.13E-01		5.55E-01

Analysis Report for 1510087-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-146	453.90	39.94	-1.57E-03	4.68E-02	4.68E-02
		735.90	14.01	2.68E-02		1.72E-01
		747.13	13.10	-4.88E-02		1.86E-01
+	ND-147	91.11	28.90	2.68E-02	6.59E-02	6.59E-02
		531.02	13.10	1.13E-02		1.76E-01
+	PM-149	285.90	3.10	5.48E-02	5.37E-01	5.37E-01
+	EU-152	121.78	20.50	-1.55E-02	7.80E-02	7.80E-02
		244.69	5.40	5.54E-02		3.49E-01
		344.27	19.13	-3.26E-02		1.06E-01
		778.89	9.20	3.63E-02		3.05E-01
		964.01	10.40	-2.17E-01		2.59E-01
		1085.78	7.22	-2.27E-02		3.41E-01
		1112.02	9.60	-2.07E-02		2.76E-01
		1407.95	14.94	5.35E-02		1.61E-01
+	GD-153	97.43	31.30	-8.50E-03	4.78E-02	4.78E-02
		103.18	22.20	7.14E-03		6.72E-02
+	EU-154	123.07	40.50	-1.01E-02	3.95E-02	3.95E-02
		723.30	19.70	-1.80E-02		1.28E-01
		873.19	11.50	2.19E-02		2.47E-01
		996.32	10.30	-2.15E-01		2.23E-01
		1004.76	17.90	4.30E-03		1.93E-01
		1274.45	35.50	1.44E-02		8.31E-02
+	EU-155	86.50	30.90	2.33E-02	5.46E-02	5.46E-02
		105.30	20.70	2.31E-02		7.49E-02
+	EU-156	811.77	10.40	-6.16E-02	2.63E-01	2.63E-01
		1153.47	7.20	-3.55E-02		3.94E-01
		1230.71	8.90	9.06E-02		3.19E-01
+	HO-166M	184.41	72.60	2.17E-02	3.23E-02	3.23E-02
		280.45	29.60	1.41E-02		6.64E-02
		410.94	11.10	6.37E-04		1.94E-01
		711.69	54.10	-1.83E-02		5.28E-02
+	TM-171	66.72	0.14	-4.40E+00	8.27E+00	8.27E+00
+	HF-172	81.75	4.52	-2.07E-02	1.52E-01	2.88E-01
		125.81	11.30	4.49E-02		1.52E-01
+	LU-172	181.53	20.60	-4.60E-02	4.85E-02	9.02E-02
		810.06	16.63	-6.34E-02		1.62E-01
		912.12	15.25	1.09E-01		2.10E-01
		1093.66	62.50	1.93E-02		4.85E-02
+	LU-173	100.72	5.24	2.94E-02	2.47E-01	2.80E-01
		272.11	* 21.20	1.26E-01		2.47E-01
+	HF-175	343.40	84.00	-3.08E-03	2.47E-02	2.47E-02
+	LU-176	88.34	13.30	-8.53E-02	2.24E-02	1.19E-01
		201.83	86.00	-1.66E-02		2.24E-02
		306.78	94.00	1.45E-02		2.60E-02
+	TA-182	67.75	41.20	1.19E-02	3.01E-02	3.01E-02
		1121.30	34.90	5.80E-02		1.03E-01
		1189.05	16.23	-9.32E-02		1.42E-01
		1221.41	26.98	4.76E-02		1.34E-01
		1231.02	11.44	-1.26E-02		2.07E-01

Analysis Report for 1510087-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	IR-192	308.46	29.68	4.74E-02	4.75E-02	7.99E-02
		468.07	48.10	6.87E-03		4.75E-02
+	HG-203	279.19	77.30	4.42E-03	2.55E-02	2.55E-02
+	BI-207	569.67	97.72	1.08E-03	2.36E-02	2.36E-02
		1063.62	74.90	2.22E-03		4.46E-02
+	TL-208	583.14	30.22	5.03E-02	8.65E-02	9.47E-02
		860.37	4.48	7.21E-02		6.63E-01
		2614.66	35.85	1.32E-02		8.65E-02
+	BI-210M	262.00	45.00	1.26E-02	3.98E-02	3.98E-02
		300.00	23.00	8.41E-02		1.05E-01
+	PB-210	46.50	4.25	1.64E+00	1.33E+00	1.33E+00
+	PB-211	404.84	2.90	1.65E-01	7.91E-01	7.91E-01
		831.96	2.90	-3.72E-02		8.25E-01
+	BI-212	727.17	11.80	5.98E-02	2.02E-01	2.02E-01
		1620.62	2.75	6.21E-01		1.39E+00
+	PB-212	238.63	44.60	3.37E-02	5.20E-02	5.20E-02
		300.09	3.41	5.68E-01		7.06E-01
+	BI-214	609.31	46.30	2.91E-02	7.95E-02	7.95E-02
		1120.29	15.10	7.27E-02		2.31E-01
		1764.49	15.80	1.59E-01		2.63E-01
		2204.22	4.98	9.79E-02		4.55E-01
+	PB-214	295.21	19.19	2.97E-02	6.37E-02	1.18E-01
		351.92	37.19	3.46E-02		6.37E-02
+	RN-219	401.80	6.50	8.41E-03	3.22E-01	3.22E-01
+	RA-223	323.87	3.88	-1.53E-01	5.21E-01	5.21E-01
+	RA-224	240.98	3.95	1.64E-01	5.42E-01	5.42E-01
+	RA-225	40.00	31.00	4.50E-02	2.64E-01	2.64E-01
+	RA-226	186.21	3.28	5.67E-01	7.38E-01	7.38E-01
+	TH-227	50.10	8.40	-8.76E-02	1.86E-01	4.21E-01
		236.00	11.50	1.00E-02		1.86E-01
		256.20	6.30	1.02E-01		3.46E-01
+	AC-228	338.32	11.40	-9.37E-03	1.12E-01	1.63E-01
		911.07	27.70	2.46E-02		1.12E-01
		969.11	16.60	-3.18E-02		1.92E-01
+	TH-230	48.44	16.90	-1.03E-01	2.43E-01	2.43E-01
		62.85	4.60	2.76E-01		3.94E-01
		67.67	0.37	1.33E+00		3.36E+00
+	PA-231	283.67	1.60	3.34E-01	9.84E-01	1.12E+00
		302.67	2.30	1.25E-01		9.84E-01
+	TH-231	25.64	14.70	-2.71E+00	2.19E-01	8.03E+00
		84.21	6.40	5.34E-02		2.19E-01
+	PA-233	311.98	38.60	-2.37E-04	4.81E-02	4.81E-02
+	PA-234	131.20	20.40	-3.36E-02	7.58E-02	7.58E-02
		733.99	8.80	-3.35E-02		3.04E-01
		946.00	12.00	-2.03E-02		2.03E-01
+	PA-234M	1001.03	0.92	1.91E+00	3.83E+00	3.83E+00
+	TH-234	63.29	3.80	3.31E-01	4.74E-01	4.74E-01

Analysis Report for 1510087-02

BLANK

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	U-235	143.76	10.50	4.57E-02	1.69E-01	1.69E-01
		163.35	4.70	-3.28E-02		3.58E-01
		205.31	4.70	2.58E-01		4.70E-01
+	NP-237	86.50	12.60	5.71E-02	1.34E-01	1.34E-01
+	NP-239	106.10	22.70	-1.08E-02	6.46E-02	6.46E-02
		228.18	10.70	-1.73E-02		1.74E-01
		277.60	14.10	1.15E-01		1.39E-01
+	AM-241	59.54	35.90	3.14E-03	4.55E-02	4.55E-02
+	AM-243	74.67	66.00	1.58E-03	2.19E-02	2.19E-02
+	CM-243	209.75	3.29	5.83E-02	1.50E-01	5.84E-01
		228.14	10.60	-1.86E-02		1.87E-01
		277.60	14.00	1.23E-01		1.50E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	2.19E-01	2.19E-01	-1.99E-02	9.81E-02
NA-22	1274.54	99.94	2.95E-02	2.95E-02	5.11E-03	1.22E-02
NA-24	1368.53	99.99	2.56E-02	1.68E-02	2.56E-04	1.07E-02
	2754.09	99.86	1.68E-02		3.62E-03	5.95E-03
AL-26	1808.65	99.76	2.50E-02	2.50E-02	-6.96E-03	9.35E-03
K-40	1460.81	10.67	4.21E-01	4.21E-01	1.57E-01	1.84E-01
AR-41	1293.64	99.16	3.10E-03	3.10E-03	-1.23E-03	1.20E-03
TI-44	67.88	94.40	1.31E-02	1.31E-02	5.19E-03	6.02E-03
	78.34	96.00	1.41E-02		2.51E-03	6.55E-03
SC-46	889.25	99.98	2.42E-02	2.42E-02	-1.04E-02	1.02E-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SC-46	1120.51	99.99	3.48E-02	2.42E-02	1.10E-02	1.51E-02
V-48	983.52	99.98	2.72E-02	2.72E-02	6.06E-03	1.16E-02
	1312.10	97.50	2.90E-02		9.79E-03	1.19E-02
CR-51	320.08	9.83	2.25E-01	2.25E-01	1.20E-01	1.03E-01
MN-54	834.83	99.97	2.66E-02	2.66E-02	3.69E-03	1.15E-02
CO-56	846.75	99.96	2.85E-02	2.85E-02	3.34E-03	1.24E-02
	1037.75	14.03	2.26E-01		4.07E-02	9.78E-02
	1238.25	67.00	6.23E-02		3.73E-02	2.75E-02
	1771.40	15.51	1.59E-01		-2.21E-02	5.95E-02
	2598.48	16.90	1.03E-01		1.40E-02	3.26E-02
CO-57	122.06	85.51	1.87E-02	1.87E-02	-3.72E-03	8.79E-03
	136.48	10.60	1.62E-01		-8.34E-02	7.61E-02
CO-58	810.76	99.40	2.77E-02	2.77E-02	-1.08E-02	1.21E-02
FE-59	1099.22	56.50	4.86E-02	4.86E-02	-4.38E-03	2.04E-02
	1291.56	43.20	6.11E-02		-5.41E-03	2.47E-02
CO-60	1173.22	100.00	3.16E-02	3.16E-02	9.74E-03	1.34E-02
	1332.49	100.00	3.74E-02		4.80E-03	1.61E-02
ZN-65	1115.52	50.75	6.21E-02	6.21E-02	4.95E-03	2.66E-02
GA-67	93.31	35.70	5.46E-02	5.46E-02	6.99E-02	2.61E-02
	208.95	2.24	8.04E-01		-3.99E-01	3.74E-01
	300.22	16.00	1.44E-01		1.16E-01	6.68E-02
SE-75	121.11	16.70	9.77E-02	2.86E-02	-2.02E-03	4.59E-02
	136.00	59.20	2.86E-02		5.24E-03	1.34E-02
	264.65	59.80	2.98E-02		6.65E-04	1.36E-02
	279.53	25.20	7.77E-02		1.66E-02	3.57E-02
	400.65	11.40	1.71E-01		-6.05E-02	7.63E-02
RB-82	776.52	13.00	1.98E-01	1.98E-01	-9.23E-02	8.60E-02
RB-83	520.41	46.00	5.54E-02	5.54E-02	3.27E-03	2.50E-02
	529.64	30.30	6.89E-02		-2.86E-02	3.03E-02
	552.65	16.40	1.38E-01		-5.41E-03	6.09E-02
KR-85	513.99	0.43	6.67E+00	6.67E+00	-4.30E+00	3.05E+00
SR-85	513.99	99.27	2.91E-02	2.91E-02	-1.88E-02	1.33E-02
Y-88	898.02	93.40	3.37E-02	3.30E-02	4.34E-03	1.48E-02
	1836.01	99.38	3.30E-02		7.03E-03	1.33E-02
NB-93M	16.57	9.43	3.06E+03	3.06E+03	-6.51E+03	1.48E+03
NB-94	702.63	100.00	2.83E-02	2.67E-02	-1.20E-02	1.26E-02
	871.10	100.00	2.67E-02		-2.37E-03	1.15E-02
+ NB-95	765.79	* 99.81	1.31E-02	1.31E-02	1.02E-02	4.90E-03
NB-95M	235.69	25.00	8.20E-02	8.20E-02	4.42E-03	3.83E-02
ZR-95	724.18	43.70	5.90E-02	4.15E-02	1.34E-02	2.59E-02
	756.72	55.30	4.15E-02		-4.41E-03	1.78E-02
MO-99	181.06	6.20	2.84E-01	1.89E-01	-1.20E-01	1.33E-01
	739.58	12.80	1.89E-01		6.34E-03	8.26E-02
	778.00	4.50	5.90E-01		1.97E-01	2.60E-01
RU-103	497.08	89.00	2.34E-02	2.34E-02	5.97E-04	1.04E-02
RU-106	621.84	9.80	2.40E-01	2.40E-01	5.35E-03	1.06E-01
AG-108M	433.93	89.90	2.53E-02	2.53E-02	-2.13E-03	1.14E-02
	614.37	90.40	3.19E-02		-1.38E-02	1.44E-02
	722.95	90.50	2.78E-02		-3.91E-03	1.21E-02
CD-109	88.03	3.72	4.24E-01	4.24E-01	-3.05E-01	2.00E-01
AG-110M	657.75	93.14	3.00E-02	3.00E-02	-1.96E-02	1.34E-02
	677.61	10.53	2.71E-01		-1.53E-02	1.21E-01
	706.67	16.46	1.62E-01		-2.39E-02	7.13E-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AG-110M	763.93	21.98	1.05E-01	3.00E-02	-7.00E-03	4.52E-02
	884.67	71.63	4.01E-02		5.61E-03	1.74E-02
	1384.27	23.94	1.16E-01		2.06E-02	4.70E-02
CD-113M	263.70	0.02	8.01E+01	8.01E+01	2.64E+01	3.67E+01
SN-113	255.12	1.93	1.10E+00	2.53E-02	-3.48E-01	5.10E-01
	391.69	64.90	2.53E-02		-2.90E-02	1.11E-02
TE123M	159.00	84.10	2.14E-02	2.14E-02	1.93E-02	1.01E-02
SB-124	602.71	97.87	2.86E-02	2.86E-02	-1.83E-02	1.29E-02
	645.85	7.26	3.49E-01		-1.19E-02	1.54E-01
	722.78	11.10	2.26E-01		-3.18E-02	9.86E-02
	1691.02	49.00	6.44E-02		1.75E-02	2.60E-02
I-125	35.49	6.49	2.12E+00	2.12E+00	2.44E-01	1.02E+00
SB-125	176.33	6.89	2.37E-01	6.41E-02	-1.59E-01	1.10E-01
	427.89	29.33	6.41E-02		-1.94E-02	2.84E-02
	463.38	10.35	2.08E-01		-3.71E-02	9.31E-02
	600.56	17.80	1.74E-01		3.77E-02	7.90E-02
	635.90	11.32	2.12E-01		-1.74E-01	9.31E-02
SB-126	414.70	83.30	3.08E-02	2.75E-02	1.90E-02	1.42E-02
	666.33	99.60	2.75E-02		-2.98E-03	1.22E-02
	695.00	99.60	3.52E-02		8.81E-03	1.61E-02
	720.50	53.80	4.97E-02		-2.10E-03	2.19E-02
SN-126	87.57	37.00	4.27E-02	4.27E-02	-3.07E-02	2.01E-02
SB-127	473.00	25.00	8.26E-02	6.84E-02	-3.06E-02	3.68E-02
	685.20	35.70	6.84E-02		-2.25E-02	3.01E-02
	783.80	14.70	1.85E-01		-6.86E-02	8.12E-02
I-129	29.78	57.00	6.67E-01	6.67E-01	-1.46E-01	3.21E-01
	33.60	13.20	1.41E+00		1.79E-01	6.76E-01
	39.58	7.52	1.15E+00		1.95E-01	5.51E-01
I-131	284.30	6.05	2.92E-01	2.12E-02	8.69E-02	1.33E-01
	364.48	81.20	2.12E-02		8.08E-03	9.43E-03
	636.97	7.26	3.32E-01		-1.30E-01	1.47E-01
	722.89	1.80	1.37E+00		-1.93E-01	5.98E-01
TE-132	49.72	13.10	2.62E-01	2.15E-02	-5.46E-02	1.25E-01
	228.16	88.00	2.15E-02		-2.14E-03	1.00E-02
BA-133	81.00	33.00	3.83E-02	3.36E-02	-1.04E-02	1.77E-02
	302.84	17.80	1.27E-01		1.62E-02	5.88E-02
	356.01	60.00	3.36E-02		-2.55E-02	1.52E-02
I-133	529.87	86.30	2.22E-02	2.22E-02	4.16E-03	9.89E-03
XE-133	81.00	38.00	3.23E-02	3.23E-02	-8.78E-03	1.50E-02
CS-134	563.23	8.38	2.41E-01	3.14E-02	4.26E-02	1.05E-01
	569.32	15.43	1.50E-01		6.84E-03	6.62E-02
	604.70	97.60	3.14E-02		-2.62E-02	1.43E-02
	795.84	85.40	3.35E-02		1.64E-02	1.47E-02
	801.93	8.73	2.76E-01		-8.31E-02	1.18E-01
CS-135	268.24	16.00	1.36E-01	1.36E-01	1.31E-01	6.31E-02
I-135	1131.51	22.50	9.51E-02	6.48E-02	1.09E-02	4.17E-02
	1260.41	28.60	6.48E-02		2.42E-02	2.73E-02
	1678.03	9.54	1.62E-01		2.02E-02	6.28E-02
CS-136	153.22	7.46	2.33E-01	2.83E-02	1.21E-01	1.09E-01
	163.89	4.61	3.65E-01		-1.11E-01	1.70E-01
	176.55	13.56	1.26E-01		1.08E-02	5.87E-02
	273.65	12.66	1.41E-01		3.25E-02	6.41E-02
	340.57	48.50	4.32E-02		-6.02E-04	1.97E-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)		
CS-136	818.50	99.70	2.83E-02	2.83E-02	-1.14E-03	1.24E-02		
	1048.07	79.60	4.44E-02		3.30E-04	1.95E-02		
	1235.34	19.70	1.65E-01		6.83E-03	7.03E-02		
CS-137	661.65	85.12	3.59E-02	3.59E-02	1.27E-02	1.62E-02		
LA-138	788.74	34.00	8.14E-02	5.12E-02	2.56E-02	3.57E-02		
	1435.80	66.00	5.12E-02		2.18E-02	2.14E-02		
CE-139	165.85	80.35	2.26E-02	2.26E-02	4.52E-03	1.06E-02		
BA-140	162.64	6.70	2.48E-01	8.14E-02	-2.27E-02	1.16E-01		
	304.84	4.50	5.30E-01		1.76E-01	2.46E-01		
	423.70	3.20	5.64E-01		-6.65E-02	2.49E-01		
	437.55	2.00	1.11E+00		-4.84E-03	5.03E-01		
	537.32	25.00	8.14E-02		2.34E-02	3.57E-02		
LA-140	328.77	20.50	1.06E-01	3.37E-02	7.68E-02	4.84E-02		
	487.03	45.50	4.38E-02		2.61E-03	1.93E-02		
	815.85	23.50	1.28E-01		4.70E-02	5.68E-02		
	1596.49	95.49	3.37E-02		3.37E-03	1.38E-02		
CE-141	145.44	48.40	3.59E-02	3.59E-02	-1.78E-02	1.69E-02		
CE-143	57.36	11.80	1.27E-01	4.23E-02	-7.70E-02	5.85E-02		
	293.26	42.00	4.23E-02		-5.80E-02	1.93E-02		
	664.55	5.20	4.94E-01		5.18E-02	2.21E-01		
CE-144	133.54	10.80	1.38E-01	1.38E-01	-7.07E-02	6.45E-02		
PM-144	476.78	42.00	5.43E-02	2.55E-02	-4.94E-03	2.44E-02		
	618.01	98.60	2.55E-02		-3.35E-03	1.13E-02		
	696.49	99.49	3.43E-02		4.03E-03	1.56E-02		
PM-145	36.85	21.70	5.23E-01	2.69E-01	-6.87E-02	2.51E-01		
	37.36	39.70	2.69E-01		-3.53E-02	1.29E-01		
	42.30	15.10	4.45E-01		-1.58E-01	2.14E-01		
	72.40	2.31	5.55E-01		1.13E-01	2.56E-01		
PM-146	453.90	39.94	4.68E-02	4.68E-02	-1.57E-03	2.06E-02		
	735.90	14.01	1.72E-01		2.68E-02	7.43E-02		
	747.13	13.10	1.86E-01		-4.88E-02	8.04E-02		
ND-147	91.11	28.90	6.59E-02	6.59E-02	2.68E-02	3.14E-02		
	531.02	13.10	1.76E-01		1.13E-02	7.84E-02		
PM-149	285.90	3.10	5.37E-01	5.37E-01	5.48E-02	2.44E-01		
EU-152	121.78	20.50	7.80E-02	7.80E-02	-1.55E-02	3.67E-02		
	244.69	5.40	3.49E-01		5.54E-02	1.61E-01		
	344.27	19.13	1.06E-01		-3.26E-02	4.81E-02		
	778.89	9.20	3.05E-01		3.63E-02	1.34E-01		
	964.01	10.40	2.59E-01		-2.17E-01	1.10E-01		
	1085.78	7.22	3.41E-01		-2.27E-02	1.40E-01		
	1112.02	9.60	2.76E-01		-2.07E-02	1.14E-01		
	1407.95	14.94	1.61E-01		5.35E-02	6.23E-02		
	GD-153	97.43	31.30		4.78E-02	4.78E-02	-8.50E-03	2.24E-02
		103.18	22.20		6.72E-02		7.14E-03	3.15E-02
EU-154	123.07	40.50	3.95E-02	3.95E-02	-1.01E-02	1.85E-02		
	723.30	19.70	1.28E-01		-1.80E-02	5.57E-02		
	873.19	11.50	2.47E-01		2.19E-02	1.08E-01		
	996.32	10.30	2.23E-01		-2.15E-01	9.13E-02		
	1004.76	17.90	1.93E-01		4.30E-03	8.48E-02		
	1274.45	35.50	8.31E-02		1.44E-02	3.44E-02		
EU-155	86.50	30.90	5.46E-02	5.46E-02	2.33E-02	2.58E-02		
	105.30	20.70	7.49E-02		2.31E-02	3.52E-02		
EU-156	811.77	10.40	2.63E-01	2.63E-01	-6.16E-02	1.15E-01		

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-156	1153.47	7.20	3.94E-01	2.63E-01	-3.55E-02	1.65E-01
	1230.71	8.90	3.19E-01		9.06E-02	1.32E-01
HO-166M	184.41	72.60	3.23E-02	3.23E-02	2.17E-02	1.53E-02
	280.45	29.60	6.64E-02		1.41E-02	3.05E-02
	410.94	11.10	1.94E-01		6.37E-04	8.77E-02
	711.69	54.10	5.28E-02		-1.83E-02	2.35E-02
TM-171	66.72	0.14	8.27E+00	8.27E+00	-4.40E+00	3.76E+00
HF-172	81.75	4.52	2.88E-01	1.52E-01	-2.07E-02	1.34E-01
	125.81	11.30	1.52E-01		4.49E-02	7.15E-02
LU-172	181.53	20.60	9.02E-02	4.85E-02	-4.60E-02	4.22E-02
	810.06	16.63	1.62E-01		-6.34E-02	7.07E-02
	912.12	15.25	2.10E-01		1.09E-01	9.24E-02
	1093.66	62.50	4.85E-02		1.93E-02	2.08E-02
+ LU-173	100.72	5.24	2.80E-01	2.47E-01	2.94E-02	1.31E-01
	272.11	* 21.20	2.47E-01		1.26E-01	1.20E-01
HF-175	343.40	84.00	2.47E-02	2.47E-02	-3.08E-03	1.12E-02
LU-176	88.34	13.30	1.19E-01	2.24E-02	-8.53E-02	5.59E-02
	201.83	86.00	2.24E-02		-1.66E-02	1.05E-02
	306.78	94.00	2.60E-02		1.45E-02	1.21E-02
TA-182	67.75	41.20	3.01E-02	3.01E-02	1.19E-02	1.38E-02
	1121.30	34.90	1.03E-01		5.80E-02	4.48E-02
	1189.05	16.23	1.42E-01		-9.32E-02	5.64E-02
	1221.41	26.98	1.34E-01		4.76E-02	5.80E-02
	1231.02	11.44	2.07E-01		-1.26E-02	8.22E-02
IR-192	308.46	29.68	7.99E-02	4.75E-02	4.74E-02	3.70E-02
	468.07	48.10	4.75E-02		6.87E-03	2.14E-02
HG-203	279.19	77.30	2.55E-02	2.55E-02	4.42E-03	1.17E-02
BI-207	569.67	97.72	2.36E-02	2.36E-02	1.08E-03	1.05E-02
	1063.62	74.90	4.46E-02		2.22E-03	1.94E-02
TL-208	583.14	30.22	9.47E-02	8.65E-02	5.03E-02	4.29E-02
	860.37	4.48	6.63E-01		7.21E-02	2.90E-01
	2614.66	35.85	8.65E-02		1.32E-02	3.43E-02
BI-210M	262.00	45.00	3.98E-02	3.98E-02	1.26E-02	1.82E-02
	300.00	23.00	1.05E-01		8.41E-02	4.87E-02
PB-210	46.50	4.25	1.33E+00	1.33E+00	1.64E+00	6.42E-01
PB-211	404.84	2.90	7.91E-01	7.91E-01	1.65E-01	3.60E-01
	831.96	2.90	8.25E-01		-3.72E-02	3.51E-01
BI-212	727.17	11.80	2.02E-01	2.02E-01	5.98E-02	8.74E-02
	1620.62	2.75	1.39E+00		6.21E-01	5.86E-01
PB-212	238.63	44.60	5.20E-02	5.20E-02	3.37E-02	2.44E-02
	300.09	3.41	7.06E-01		5.68E-01	3.28E-01
BI-214	609.31	46.30	7.95E-02	7.95E-02	2.91E-02	3.67E-02
	1120.29	15.10	2.31E-01		7.27E-02	1.00E-01
	1764.49	15.80	2.63E-01		1.59E-01	1.12E-01
	2204.22	4.98	4.55E-01		9.79E-02	1.61E-01
PB-214	295.21	19.19	1.18E-01	6.37E-02	2.97E-02	5.47E-02
	351.92	37.19	6.37E-02		3.46E-02	2.93E-02
RN-219	401.80	6.50	3.22E-01	3.22E-01	8.41E-03	1.45E-01
RA-223	323.87	3.88	5.21E-01	5.21E-01	-1.53E-01	2.37E-01
RA-224	240.98	3.95	5.42E-01	5.42E-01	1.64E-01	2.52E-01
RA-225	40.00	31.00	2.64E-01	2.64E-01	4.50E-02	1.27E-01
RA-226	186.21	3.28	7.38E-01	7.38E-01	5.67E-01	3.50E-01
TH-227	50.10	8.40	4.21E-01	1.86E-01	-8.76E-02	2.01E-01

: 00346

Analysis Report for 1510087-02

BLANK

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TH-227	236.00	11.50	1.86E-01	1.86E-01	1.00E-02	8.68E-02
	256.20	6.30	3.46E-01		1.02E-01	1.61E-01
AC-228	338.32	11.40	1.63E-01	1.12E-01	-9.37E-03	7.34E-02
	911.07	27.70	1.12E-01		2.46E-02	4.92E-02
	969.11	16.60	1.92E-01		-3.18E-02	8.37E-02
TH-230	48.44	16.90	2.43E-01	2.43E-01	-1.03E-01	1.16E-01
	62.85	4.60	3.94E-01		2.76E-01	1.85E-01
	67.67	0.37	3.36E+00		1.33E+00	1.54E+00
PA-231	283.67	1.60	1.12E+00	9.84E-01	3.34E-01	5.11E-01
	302.67	2.30	9.84E-01		1.25E-01	4.55E-01
TH-231	25.64	14.70	8.03E+00	2.19E-01	-2.71E+00	3.86E+00
	84.21	6.40	2.19E-01		5.34E-02	1.02E-01
PA-233	311.98	38.60	4.81E-02	4.81E-02	-2.37E-04	2.18E-02
PA-234	131.20	20.40	7.58E-02	7.58E-02	-3.36E-02	3.54E-02
	733.99	8.80	3.04E-01		-3.35E-02	1.34E-01
	946.00	12.00	2.03E-01		-2.03E-02	8.52E-02
PA-234M	1001.03	0.92	3.83E+00	3.83E+00	1.91E+00	1.69E+00
TH-234	63.29	3.80	4.74E-01	4.74E-01	3.31E-01	2.22E-01
U-235	143.76	10.50	1.69E-01	1.69E-01	4.57E-02	7.95E-02
	163.35	4.70	3.58E-01		-3.28E-02	1.67E-01
	205.31	4.70	4.70E-01		2.58E-01	2.21E-01
NP-237	86.50	12.60	1.34E-01	1.34E-01	5.71E-02	6.33E-02
NP-239	106.10	22.70	6.46E-02	6.46E-02	-1.08E-02	3.04E-02
	228.18	10.70	1.74E-01		-1.73E-02	8.08E-02
	277.60	14.10	1.39E-01		1.15E-01	6.43E-02
AM-241	59.54	35.90	4.55E-02	4.55E-02	3.14E-03	2.11E-02
AM-243	74.67	66.00	2.19E-02	2.19E-02	1.58E-03	1.02E-02
CM-243	209.75	3.29	5.84E-01	1.50E-01	5.83E-02	2.72E-01
	228.14	10.60	1.87E-01		-1.86E-02	8.70E-02
	277.60	14.00	1.50E-01		1.23E-01	6.91E-02

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

: 00347

Analysis Report for 1510087-02
BLANK

No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: BLANK

Elapsed Live time: 3600

Elapsed Real Time: 3601

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	1	115
9:	501	1089	1050	402	554	1690	269	86	
17:	101	70	82	92	66	84	78	67	
25:	67	60	69	76	63	69	73	72	
33:	73	67	73	66	68	66	68	73	
41:	71	67	72	81	72	88	107	73	
49:	50	49	50	50	50	39	26	18	
57:	14	20	24	19	13	17	31	33	
65:	19	9	16	10	16	10	13	15	
73:	22	17	30	20	21	18	22	17	
81:	18	19	21	22	26	20	18	21	
89:	18	13	24	36	47	25	23	17	
97:	15	13	22	13	14	14	13	15	
105:	22	16	18	14	22	15	17	10	
113:	20	19	13	13	20	11	25	13	
121:	11	17	19	21	12	22	17	19	
129:	13	20	18	10	9	17	14	14	
137:	16	21	19	25	12	20	20	15	
145:	14	16	16	21	13	14	15	22	
153:	10	18	12	9	22	12	18	12	
161:	14	7	12	22	10	15	17	11	
169:	14	13	10	14	16	9	9	12	
177:	10	15	16	14	13	19	8	19	
185:	21	45	18	15	20	13	7	17	
193:	5	9	11	13	13	15	12	12	
201:	10	12	21	10	24	18	12	12	
209:	8	17	10	14	11	9	12	13	
217:	7	11	11	7	12	10	16	12	
225:	10	14	8	12	9	15	14	9	
233:	12	11	14	9	15	16	13	14	
241:	18	10	8	7	11	11	10	7	
249:	8	6	11	12	12	9	14	11	
257:	11	15	8	6	7	12	6	7	
265:	4	11	9	9	14	13	4	9	
273:	5	8	4	10	7	11	12	9	
281:	4	6	7	5	7	9	3	9	
289:	7	12	5	5	12	8	10	21	
297:	2	11	10	15	15	8	8	10	
305:	10	14	16	10	9	6	5	7	
313:	8	6	8	9	3	7	11	9	
321:	9	9	7	11	6	3	9	8	
329:	10	8	7	4	14	8	3	2	
337:	5	5	7	9	9	5	7	9	
345:	5	7	8	6	4	6	13	16	
353:	8	2	6	6	10	7	13	11	
361:	5	2	6	6	3	5	3	4	

369: 11 9 5 4 4 5 8 3

Sample Title: BLANK

Channel								
377:	5	4	4	5	5	9	5	10
385:	9	6	5	5	11	5	4	1
393:	4	3	7	7	7	6	3	10
401:	1	5	5	7	7	5	10	6
409:	5	6	3	6	9	8	13	7
417:	6	6	3	3	5	4	6	3
425:	6	0	5	4	3	8	9	4
433:	3	8	5	10	6	3	5	3
441:	9	2	6	6	1	5	11	4
449:	4	5	2	1	5	3	2	7
457:	3	5	4	8	5	2	6	8
465:	3	3	8	6	4	6	1	7
473:	7	5	3	9	6	6	2	5
481:	6	5	2	3	6	4	2	6
489:	1	5	3	1	5	4	3	5
497:	7	1	4	5	2	7	3	3
505:	3	7	6	3	9	19	33	19
513:	6	3	2	9	6	7	4	5
521:	5	8	5	3	3	4	5	3
529:	4	4	2	9	4	1	8	1
537:	4	1	3	1	3	4	3	4
545:	4	5	6	5	4	3	4	9
553:	1	3	5	3	4	5	1	3
561:	2	2	4	3	4	3	2	6
569:	3	5	4	3	5	5	2	6
577:	3	4	0	4	3	1	9	4
585:	3	7	2	3	4	4	2	5
593:	6	3	3	2	7	6	7	2
601:	5	2	6	7	3	3	4	9
609:	18	8	4	4	8	3	5	2
617:	3	2	1	5	3	2	2	1
625:	4	4	1	0	3	1	5	7
633:	1	4	3	2	1	3	4	2
641:	7	1	5	3	3	4	2	3
649:	0	1	4	3	4	7	4	4
657:	4	3	3	4	2	6	6	5
665:	2	1	3	4	2	3	4	8
673:	1	5	2	4	1	5	4	3
681:	3	3	5	3	0	2	2	3
689:	2	6	3	7	9	4	4	5
697:	6	2	4	4	4	4	0	2
705:	4	5	5	1	2	3	2	4
713:	2	8	1	6	4	4	2	2
721:	4	1	2	1	4	2	3	2
729:	1	1	6	5	2	2	1	2
737:	0	2	5	1	1	5	3	3
745:	0	3	3	3	2	0	2	2
753:	2	2	4	3	1	0	0	3
761:	1	1	0	0	2	5	3	1
769:	1	1	3	5	2	1	1	4
777:	0	2	5	4	2	1	2	4
785:	2	3	4	2	4	0	2	0
793:	1	5	3	3	1	3	2	1

801: 1 2 2 1 3 2 4 3

Sample Title: BLANK

Channel	1	2	3	4	5	6	7	8
809:	2	2	2	0	3	4	4	2
817:	2	4	1	2	2	3	1	2
825:	0	4	3	5	0	2	0	1
833:	5	1	2	1	2	2	1	3
841:	1	4	1	4	2	2	2	4
849:	1	1	2	2	1	2	0	3
857:	1	3	3	3	5	1	1	4
865:	1	1	4	0	1	2	1	1
873:	5	3	1	2	5	1	5	2
881:	4	1	1	2	3	2	2	1
889:	0	1	3	1	0	5	4	1
897:	5	4	3	1	0	1	3	2
905:	1	2	2	0	1	4	4	5
913:	1	2	2	1	1	2	4	2
921:	0	0	3	4	1	0	3	3
929:	1	0	3	4	5	2	1	2
937:	0	6	3	1	1	3	0	2
945:	0	2	1	3	1	0	2	3
953:	0	0	3	2	1	2	1	7
961:	1	1	1	2	3	2	1	1
969:	6	4	2	0	2	4	0	0
977:	1	0	1	1	2	1	1	1
985:	2	3	0	3	1	0	2	2
993:	0	2	0	0	1	2	2	3
1001:	6	2	2	2	1	2	3	3
1009:	2	1	0	1	5	1	0	2
1017:	3	2	1	4	2	2	1	3
1025:	2	2	0	2	3	0	0	3
1033:	0	2	6	0	0	1	1	4
1041:	1	0	3	3	8	3	1	0
1049:	2	3	1	1	4	1	3	1
1057:	0	3	2	1	1	2	4	1
1065:	5	1	1	2	0	0	1	0
1073:	1	2	2	1	1	1	0	1
1081:	3	1	3	1	0	0	1	1
1089:	2	1	1	2	2	5	1	0
1097:	0	0	3	4	1	1	4	2
1105:	3	1	0	2	1	1	2	2
1113:	1	0	1	2	1	5	1	2
1121:	2	1	3	2	0	0	2	4
1129:	5	0	1	2	3	2	0	1
1137:	1	1	4	2	3	0	1	2
1145:	3	4	3	0	3	3	1	1
1153:	0	2	2	0	1	2	0	1
1161:	5	0	1	2	2	0	2	0
1169:	1	1	1	1	3	3	1	1
1177:	1	1	3	0	1	0	3	0
1185:	2	1	0	1	1	2	0	0
1193:	3	2	3	2	4	0	1	2
1201:	0	0	2	1	2	2	1	2
1209:	1	1	1	0	1	1	1	1
1217:	2	1	3	1	1	4	1	3
1225:	1	0	3	1	0	1	1	1

1233: 1 0 1 1 2 5 6 1

Sample Title: BLANK

Channel	1	2	3	4	5	6	7	8
1241:	3	0	2	2	0	0	1	2
1249:	4	0	1	0	1	2	1	0
1257:	2	2	1	3	1	1	0	1
1265:	0	1	1	1	0	1	1	0
1273:	2	1	1	1	2	2	0	1
1281:	1	1	2	3	0	3	1	2
1289:	1	1	0	0	0	2	0	1
1297:	1	1	0	0	2	2	1	1
1305:	1	2	0	1	0	0	2	2
1313:	0	1	2	0	0	0	0	0
1321:	1	1	2	0	1	1	1	2
1329:	1	1	2	5	1	3	0	1
1337:	2	1	2	0	3	0	0	0
1345:	2	0	0	0	1	2	1	2
1353:	3	1	0	1	0	0	0	2
1361:	1	3	3	2	1	0	2	4
1369:	2	0	0	1	0	0	1	1
1377:	1	1	1	0	1	0	0	0
1385:	1	2	2	1	0	2	1	0
1393:	1	0	2	0	0	0	0	2
1401:	1	0	0	0	0	1	1	0
1409:	1	1	0	0	0	1	1	0
1417:	0	0	1	0	0	0	2	2
1425:	1	0	0	0	2	0	0	0
1433:	2	1	2	2	1	1	0	1
1441:	1	1	0	3	1	1	4	1
1449:	0	0	1	1	1	2	1	2
1457:	0	0	3	2	10	1	1	1
1465:	1	2	1	1	0	1	2	1
1473:	1	1	2	1	1	0	0	0
1481:	0	1	0	0	0	0	0	0
1489:	1	1	1	1	1	0	0	2
1497:	1	0	0	1	2	1	0	0
1505:	0	0	1	2	0	3	1	0
1513:	0	0	0	1	0	1	2	2
1521:	0	1	0	0	0	1	1	0
1529:	1	4	0	2	0	1	1	0
1537:	0	0	0	0	0	1	0	0
1545:	0	1	0	2	1	0	1	0
1553:	1	1	0	0	2	0	0	0
1561:	0	2	1	0	0	1	0	0
1569:	2	1	0	1	0	0	1	1
1577:	0	0	0	1	2	2	0	2
1585:	1	1	1	1	0	1	1	2
1593:	3	0	1	0	0	0	0	1
1601:	1	0	0	0	1	1	1	1
1609:	1	0	0	1	2	0	1	0
1617:	1	0	1	2	4	2	0	0
1625:	0	0	0	2	0	1	1	0
1633:	1	0	0	2	0	0	0	1
1641:	0	0	2	0	0	1	0	1
1649:	0	0	2	0	0	0	0	0
1657:	1	1	0	0	0	0	2	0

1665: 1 1 0 1 1 2 1 0

Sample Title: BLANK

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1673:	0	0	1	0	0	2	0	0
1681:	1	0	0	0	0	0	0	2
1689:	0	1	1	0	1	1	1	0
1697:	2	2	0	0	3	0	1	0
1705:	0	0	1	0	0	2	1	1
1713:	0	0	1	1	1	1	0	1
1721:	0	0	0	1	1	1	1	1
1729:	1	2	1	1	0	0	0	1
1737:	0	2	0	2	0	2	1	1
1745:	0	0	0	1	1	1	1	0
1753:	0	0	0	1	0	0	0	0
1761:	0	2	3	2	2	1	1	0
1769:	0	0	0	0	1	0	1	1
1777:	0	0	0	1	1	0	1	0
1785:	0	1	0	0	0	0	0	1
1793:	0	0	0	0	0	0	3	1
1801:	0	1	1	0	0	1	0	0
1809:	1	0	0	1	0	1	1	0
1817:	0	0	1	0	0	0	0	0
1825:	0	1	0	0	0	0	0	0
1833:	1	1	1	1	1	1	0	0
1841:	1	1	0	1	0	0	2	1
1849:	0	1	0	2	0	0	0	0
1857:	0	0	0	0	1	0	0	0
1865:	0	0	0	0	0	0	0	1
1873:	0	0	2	0	0	1	0	0
1881:	0	0	0	0	1	0	0	1
1889:	1	0	0	1	0	0	0	0
1897:	0	1	0	1	0	0	1	1
1905:	0	0	0	0	0	0	1	1
1913:	0	3	0	2	0	0	0	0
1921:	0	0	1	0	0	1	0	0
1929:	0	0	0	0	2	0	0	0
1937:	0	0	0	1	0	0	0	1
1945:	0	1	0	0	0	1	0	1
1953:	0	0	0	2	1	1	2	0
1961:	0	0	0	1	0	0	0	0
1969:	0	0	0	0	0	1	0	1
1977:	1	0	0	1	1	2	2	0
1985:	0	0	0	1	1	0	0	0
1993:	0	0	0	0	0	0	0	0
2001:	1	1	0	0	1	1	0	3
2009:	1	1	0	1	0	1	0	0
2017:	0	1	2	0	0	0	0	1
2025:	0	0	0	0	1	0	0	0
2033:	0	0	0	1	0	0	0	0
2041:	0	1	0	0	1	1	0	1
2049:	2	0	0	1	0	3	0	0
2057:	1	1	1	0	0	0	0	1
2065:	0	0	0	1	0	2	1	0
2073:	1	1	0	1	2	0	0	1
2081:	0	1	0	0	0	0	1	0
2089:	0	0	0	0	0	1	0	0

2097: 3 0 1 0 0 1 2 0

Sample Title: BLANK

Channel	1	2	3	4	5	6	7	8	9
2105:	1	0	0	0	0	0	1	0	
2113:	0	0	0	0	1	0	0	0	
2121:	0	0	0	0	0	0	0	0	
2129:	1	1	1	0	0	1	0	1	
2137:	0	0	1	0	1	0	0	0	
2145:	0	0	1	0	0	1	1	0	
2153:	0	1	0	0	1	0	0	0	
2161:	0	1	0	0	0	0	0	1	
2169:	1	0	0	0	0	2	0	0	
2177:	0	0	0	0	1	0	0	0	
2185:	0	0	0	2	0	0	0	1	
2193:	0	1	0	0	0	0	0	0	
2201:	0	0	2	0	0	0	0	0	
2209:	0	0	0	0	0	0	0	0	
2217:	0	1	0	0	0	0	0	0	
2225:	0	3	1	1	0	1	0	0	
2233:	0	1	0	0	0	0	1	0	
2241:	0	0	0	0	0	0	0	1	
2249:	0	0	0	0	0	1	0	0	
2257:	0	0	0	0	0	0	1	0	
2265:	1	0	1	0	0	1	1	0	
2273:	0	0	0	0	1	0	1	0	
2281:	0	0	1	1	0	0	0	0	
2289:	0	0	0	1	1	1	0	0	
2297:	0	1	0	0	1	1	3	0	
2305:	1	1	0	0	0	0	0	1	
2313:	0	2	0	0	0	0	0	0	
2321:	0	0	0	0	0	0	0	0	
2329:	0	1	0	0	0	0	1	1	
2337:	2	0	0	2	0	1	0	0	
2345:	1	0	0	0	1	1	0	1	
2353:	0	0	0	0	0	0	1	0	
2361:	0	1	0	0	1	0	0	0	
2369:	0	1	0	1	2	0	0	0	
2377:	0	0	0	0	0	0	0	0	
2385:	0	0	0	0	0	0	0	1	
2393:	0	1	1	1	0	0	0	0	
2401:	0	0	0	0	0	0	0	0	
2409:	0	0	0	1	1	0	0	1	
2417:	0	1	0	1	0	0	0	0	
2425:	0	0	0	0	0	1	2	0	
2433:	0	1	0	1	0	0	0	0	
2441:	1	0	0	0	0	0	0	0	
2449:	0	0	0	0	2	0	0	0	
2457:	0	0	0	0	2	0	0	0	
2465:	0	1	1	0	0	0	0	1	
2473:	1	0	0	0	0	0	0	0	
2481:	0	0	0	0	1	0	0	0	
2489:	0	2	0	1	0	1	0	0	
2497:	0	0	0	0	0	0	1	0	
2505:	2	0	0	1	1	0	0	0	
2513:	0	0	0	0	0	0	0	1	
2521:	0	0	1	0	0	0	0	0	

2529: 0 0 0 0 0 0 0 1 0

Sample Title: BLANK

Channel								
2537:	0	0	0	3	0	1	0	0
2545:	0	0	1	0	0	0	0	0
2553:	0	0	0	0	3	0	0	0
2561:	0	1	0	0	0	0	1	0
2569:	0	0	0	0	0	0	1	0
2577:	1	0	0	0	0	0	0	0
2585:	0	0	0	0	0	0	0	0
2593:	0	0	0	0	1	0	0	0
2601:	0	0	0	0	0	0	0	0
2609:	1	0	0	0	2	2	0	0
2617:	1	0	0	0	1	1	2	0
2625:	0	0	0	0	0	0	0	0
2633:	0	0	0	0	0	1	0	0
2641:	0	0	1	0	0	0	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	1	0	1	0	1	0	0
2665:	0	0	0	0	0	0	1	0
2673:	0	0	0	0	0	0	0	0
2681:	1	0	1	0	0	0	0	0
2689:	0	0	0	1	3	0	1	0
2697:	0	0	0	0	0	0	1	0
2705:	1	1	0	0	0	2	2	0
2713:	1	0	0	0	0	0	2	0
2721:	0	0	0	0	0	0	0	0
2729:	0	0	0	0	0	0	0	0
2737:	0	0	1	0	0	0	0	0
2745:	0	0	0	0	0	2	0	0
2753:	0	0	0	0	0	0	0	0
2761:	0	0	0	0	0	0	0	0
2769:	0	0	0	0	0	0	1	0
2777:	0	0	0	1	0	0	0	0
2785:	0	1	0	0	0	0	0	0
2793:	0	0	0	0	1	0	0	0
2801:	0	0	0	0	0	0	0	0
2809:	0	1	0	0	0	0	0	0
2817:	0	0	0	0	0	0	0	0
2825:	0	1	0	0	0	0	1	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	0	0
2849:	0	1	0	0	0	1	0	0
2857:	0	0	0	0	1	0	0	0
2865:	1	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	1	0	0	1	2	0
2897:	1	0	1	0	0	0	1	0
2905:	0	0	1	0	0	0	0	0
2913:	0	0	0	0	0	1	0	0
2921:	0	0	0	0	0	0	0	0
2929:	2	0	0	1	0	1	0	1
2937:	0	1	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	1	0	1	0	0	0	0	0

2961: 0 0 0 0 0 0 0 0 1

Sample Title: BLANK

Channel								
2969:	0	0	0	1	0	0	0	0
2977:	0	0	0	0	1	0	2	0
2985:	0	0	0	0	0	1	1	0
2993:	0	0	0	0	1	0	0	0
3001:	0	1	0	0	0	1	0	0
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	1	0	0
3025:	0	0	0	0	0	0	1	0
3033:	0	0	1	0	0	0	0	1
3041:	0	1	2	0	1	0	1	0
3049:	0	0	0	0	0	0	0	1
3057:	0	1	0	0	0	0	0	0
3065:	0	0	0	0	0	0	1	1
3073:	0	0	0	0	1	0	0	0
3081:	1	0	0	0	0	1	1	0
3089:	0	0	0	0	0	0	0	0
3097:	0	0	0	0	1	0	0	0
3105:	0	1	0	0	0	0	1	0
3113:	0	0	0	0	0	0	0	1
3121:	0	1	0	0	0	0	0	0
3129:	0	0	1	0	0	0	0	0
3137:	0	0	0	0	0	1	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	1	0
3161:	0	0	0	0	0	0	1	0
3169:	0	0	0	0	1	0	0	1
3177:	0	0	0	0	1	0	0	1
3185:	0	0	0	0	2	0	0	0
3193:	0	0	0	0	0	0	0	0
3201:	0	0	0	0	0	1	0	0
3209:	0	0	0	0	0	0	1	0
3217:	0	1	0	1	1	0	0	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	1	0	0	0	0	0	1
3249:	0	1	0	0	1	0	0	0
3257:	0	0	1	1	0	0	0	1
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	1
3289:	0	0	0	0	0	0	0	0
3297:	0	1	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	1	0	0
3321:	0	0	1	0	0	0	1	1
3329:	0	0	0	0	0	0	0	0
3337:	1	0	0	2	0	0	0	0
3345:	0	0	0	0	0	0	0	1
3353:	0	0	0	0	1	0	0	1
3361:	0	0	1	0	0	0	0	0
3369:	0	0	1	0	0	1	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	1	0	0	0	1	0	0

3393: 1 0 0 0 0 0 0 0 0

Sample Title: BLANK

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	0	0
3409:	0	1	0	1	0	0	0	0
3417:	0	0	0	0	0	0	2	0
3425:	0	0	0	0	1	0	0	0
3433:	0	0	0	0	0	0	0	1
3441:	0	0	0	0	0	0	0	0
3449:	1	0	0	0	0	0	0	1
3457:	0	0	0	0	0	1	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	1	0	0	0
3489:	0	0	1	0	2	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	1	0	1	0	1
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	1	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	1	0	0	0
3553:	0	0	0	0	0	0	0	1
3561:	1	0	0	0	0	0	0	0
3569:	1	0	1	2	0	1	0	0
3577:	0	0	0	1	0	0	0	0
3585:	1	0	0	0	0	0	0	0
3593:	0	0	0	1	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	1	0	0	0	1
3625:	0	0	0	1	1	0	1	0
3633:	0	0	0	1	0	0	0	0
3641:	0	0	0	0	0	0	1	0
3649:	0	0	0	1	0	0	0	0
3657:	0	0	1	0	0	0	0	0
3665:	0	1	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	1
3681:	0	0	1	0	0	0	0	0
3689:	0	0	0	1	1	1	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	1	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	1	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	1	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	2
3785:	0	0	0	0	1	0	0	0
3793:	1	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	1	0	0	0
3817:	0	1	1	0	0	0	0	0

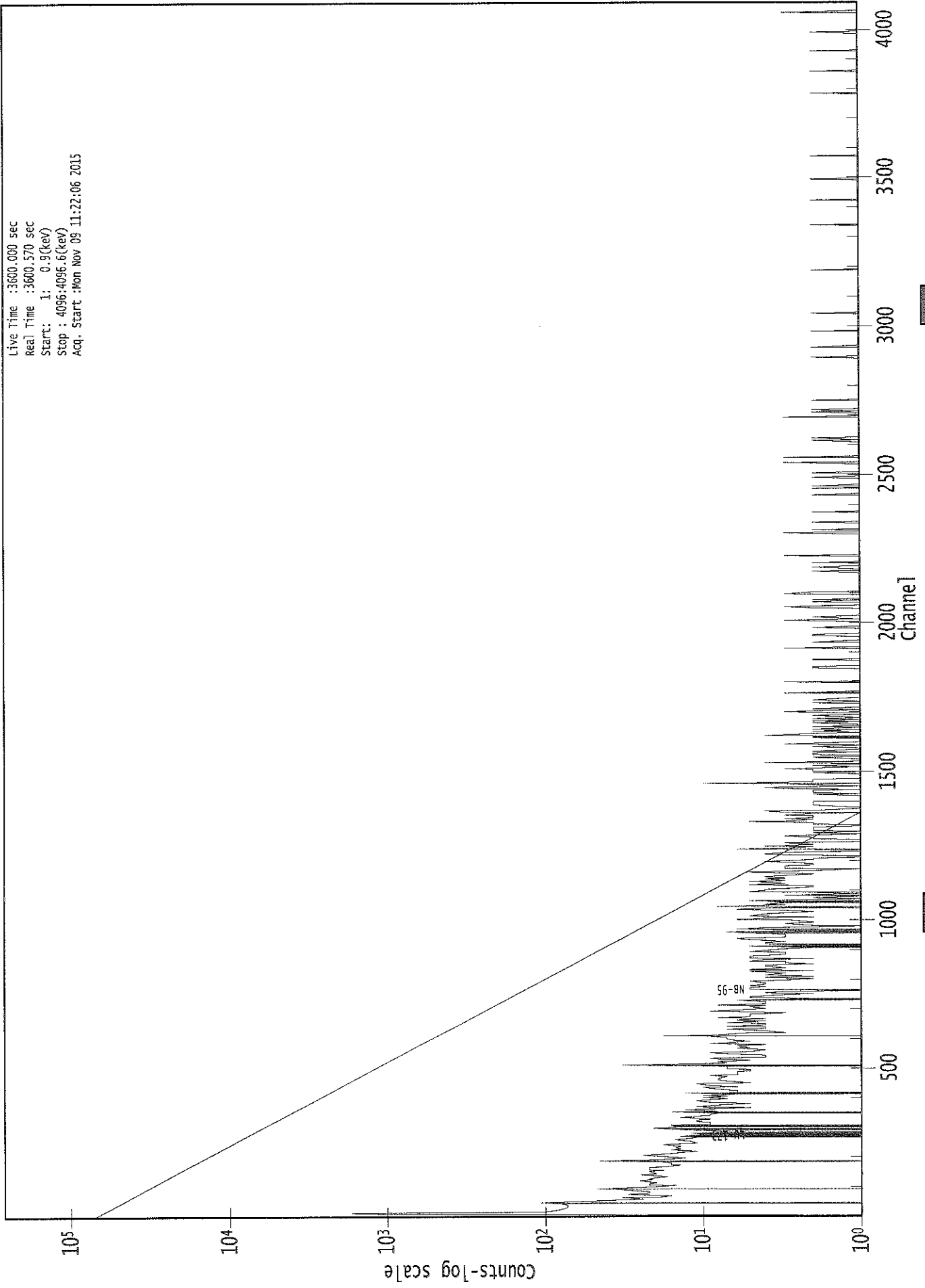
3825: 0 0 0 0 0 0 0 0 0

Sample Title: BLANK

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	1	0
3841:	0	0	0	0	1	1	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	2	1	0	1	0	0
3865:	0	0	0	0	0	0	0	0
3873:	1	1	0	0	0	0	0	1
3881:	0	0	0	0	0	0	0	0
3889:	1	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	1	0	0	0	0	0	1	0
3921:	0	0	0	0	0	0	0	2
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	1	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	1	0	0	0	0	0	1
3961:	0	0	0	1	0	1	0	0
3969:	0	1	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	1	0	0	0	0	0	2
3993:	0	0	0	0	0	0	1	1
4001:	0	0	0	1	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	1	0	1	0	0	1	0	0
4033:	0	0	0	1	0	0	0	0
4041:	0	0	0	1	0	0	0	0
4049:	0	0	0	0	0	0	0	1
4057:	0	3	0	0	0	1	0	1
4065:	0	1	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000029330.CNF

Live Time :3600.000 sec
Real Time :3600.570 sec
Start : 1: 0.9(kev)
Stop : 4096.4096.6(kev)
Acq. Start :Mon Nov 09 11:22:06 2015



Analysis Report for 1510087-03
CP5004S01-02

✓
1119

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-03
Sample Description : CP5004S01-02
Sample Type : SOIL

Sample Size : 5.688E+02 grams
Facility : Countroom

Sample Taken On : 10/7/2015 5:07:05PM
Acquisition Started : 11/9/2015 6:08:57AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.5 seconds

Dead Time : 0.04 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 19 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 29303

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-03
CP5004S01-02

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 7:09:01AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.55	46.90	0.0000	0.00
2	60.78	61.13	0.0000	0.00
3	63.61	63.96	0.0000	0.00
4	74.79	75.13	0.0000	0.00
5	77.59	77.93	0.0000	0.00
6	84.80	85.13	0.0000	0.00
7	87.80	88.13	0.0000	0.00
8	92.53	92.86	0.0000	0.00
9	99.35	99.68	0.0000	0.00
10	111.37	111.70	0.0000	0.00
11	129.35	129.67	0.0000	0.00
12	144.31	144.63	0.0000	0.00
13	185.79	186.10	0.0000	0.00
14	209.36	209.66	0.0000	0.00
15	238.72	239.01	0.0000	0.00
16	241.66	241.94	0.0000	0.00
17	270.22	270.49	0.0000	0.00
18	276.78	277.06	0.0000	0.00
19	295.40	295.67	0.0000	0.00
20	300.07	300.33	0.0000	0.00
21	327.57	327.83	0.0000	0.00
22	338.81	339.07	0.0000	0.00
23	352.04	352.29	0.0000	0.00
24	463.33	463.54	0.0000	0.00
25	511.06	511.26	0.0000	0.00
26	528.07	528.26	0.0000	0.00
27	583.46	583.63	0.0000	0.00
28	609.13	609.29	0.0000	0.00
29	650.38	650.53	0.0000	0.00
30	726.36	726.48	0.0000	0.00
31	767.52	767.63	0.0000	0.00
32	786.46	786.55	0.0000	0.00
33	795.76	795.85	0.0000	0.00
34	849.16	849.24	0.0000	0.00
35	860.67	860.74	0.0000	0.00
36	894.09	894.15	0.0000	0.00
37	898.80	898.86	0.0000	0.00
38	911.46	911.52	0.0000	0.00
39	935.96	936.01	0.0000	0.00
40	949.93	949.97	0.0000	0.00
41	965.38	965.42	0.0000	0.00
42	969.37	969.41	0.0000	0.00

Analysis Report for 1510087-03
CP5004S01-02

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	997.53	997.55	0.0000	0.00
44	1001.64	1001.66	0.0000	0.00
45	1052.27	1052.28	0.0000	0.00
46	1120.99	1120.98	0.0000	0.00
47	1283.01	1282.93	0.0000	0.00
48	1307.20	1307.12	0.0000	0.00
49	1378.37	1378.26	0.0000	0.00
50	1401.87	1401.75	0.0000	0.00
51	1408.64	1408.52	0.0000	0.00
52	1417.68	1417.55	0.0000	0.00
53	1461.20	1461.05	0.0000	0.00
54	1508.82	1508.66	0.0000	0.00
55	1585.41	1585.22	0.0000	0.00
56	1588.38	1588.19	0.0000	0.00
57	1621.02	1620.82	0.0000	0.00
58	1729.45	1729.21	0.0000	0.00
59	1765.21	1764.96	0.0000	0.00
60	1831.12	1830.84	0.0000	0.00
61	1847.96	1847.67	0.0000	0.00
62	1913.86	1913.55	0.0000	0.00
63	2070.60	2070.22	0.0000	0.00
64	2080.51	2080.14	0.0000	0.00
65	2104.80	2104.41	0.0000	0.00
66	2204.49	2204.07	0.0000	0.00
67	2272.55	2272.10	0.0000	0.00
68	2379.09	2378.60	0.0000	0.00
69	2424.69	2424.18	0.0000	0.00
70	2433.38	2432.87	0.0000	0.00
71	2495.90	2495.36	0.0000	0.00
72	2615.10	2614.51	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510087-03
CP5004S01-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 7:09:01AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.55	44 - 50	46.90	1.35E+02	92.47	1.47E+03	1.36
M	2	60.78	60 - 67	61.13	7.82E+01	44.61	5.99E+02	1.43
m	3	63.61	60 - 67	63.96	8.37E+02	91.65	1.22E+03	1.44
M	4	74.79	72 - 81	75.13	4.46E+02	87.82	1.37E+03	1.46
m	5	77.59	72 - 81	77.93	6.56E+02	94.19	1.34E+03	1.46
M	6	84.80	83 - 97	85.13	1.53E+02	69.63	1.14E+03	1.48
m	7	87.80	83 - 97	88.13	2.66E+02	73.16	1.07E+03	1.48
m	8	92.53	83 - 97	92.86	1.15E+03	97.71	8.96E+02	1.49
	9	99.35	98 - 103	99.68	9.24E+01	77.92	1.14E+03	1.26
	10	111.37	108 - 116	111.70	1.87E+02	104.24	1.56E+03	4.72
	11	129.35	127 - 133	129.67	7.49E+01	82.05	1.17E+03	1.84
	12	144.31	141 - 148	144.63	1.19E+02	87.95	1.21E+03	2.10
	13	185.79	181 - 189	186.10	4.11E+02	99.02	1.26E+03	1.57
	14	209.36	207 - 213	209.66	8.64E+01	69.79	8.17E+02	2.03
M	15	238.72	235 - 245	239.01	1.04E+03	79.87	4.37E+02	1.60
m	16	241.66	235 - 245	241.94	3.01E+02	87.93	5.04E+02	2.28
	17	270.22	268 - 274	270.49	7.55E+01	54.61	4.95E+02	1.75
	18	276.78	274 - 280	277.06	8.30E+01	52.11	4.32E+02	1.40
M	19	295.40	292 - 307	295.67	3.69E+02	55.62	3.22E+02	1.84
m	20	300.07	292 - 307	300.33	5.65E+01	44.56	3.10E+02	1.91
	21	327.57	323 - 332	327.83	8.79E+01	64.02	5.36E+02	2.19
	22	338.81	336 - 343	339.07	2.07E+02	56.28	3.94E+02	1.49
	23	352.04	347 - 356	352.29	5.23E+02	77.96	5.69E+02	1.76
	24	463.33	460 - 467	463.54	5.92E+01	40.79	2.34E+02	2.18
	25	511.06	506 - 516	511.26	1.93E+02	60.48	3.85E+02	2.22
	26	528.07	524 - 531	528.26	4.35E+01	37.15	1.95E+02	4.31
	27	583.46	580 - 589	583.63	3.25E+02	54.21	2.31E+02	2.06
	28	609.13	598 - 613	609.29	4.13E+02	80.85	4.90E+02	1.88
	29	650.38	648 - 652	650.53	1.80E+01	22.90	9.80E+01	1.63
	30	726.36	718 - 732	726.48	5.24E+01	61.97	3.81E+02	1.84
	31	767.52	763 - 773	767.63	6.92E+01	41.55	1.96E+02	3.66
	32	786.46	783 - 790	786.55	2.74E+01	29.93	1.29E+02	1.30
	33	795.76	790 - 800	795.85	6.26E+01	36.31	1.41E+02	2.14
	34	849.16	847 - 852	849.24	2.57E+01	19.00	5.26E+01	3.48
	35	860.67	857 - 864	860.74	3.47E+01	28.50	1.13E+02	2.26
	36	894.09	892 - 896	894.15	2.25E+01	16.68	4.09E+01	2.72
	37	898.80	897 - 902	898.86	2.22E+01	19.90	6.37E+01	2.83
	38	911.46	906 - 917	911.52	1.99E+02	49.23	2.02E+02	2.05
	39	935.96	931 - 941	936.01	5.66E+01	32.39	1.09E+02	5.73
	40	949.93	944 - 955	949.97	4.89E+01	36.06	1.38E+02	5.22

Analysis Report for 1510087-03

CP5004S01-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	965.38	961 -	972	965.42	6.90E+01	27.82	9.24E+01	2.40
m	42	969.37	961 -	972	969.41	1.34E+02	30.90	6.27E+01	1.99
M	43	997.53	996 -	1006	997.55	1.45E+01	11.49	1.92E+01	1.71
m	44	1001.64	996 -	1006	1001.66	6.72E+01	24.98	5.67E+01	2.49
	45	1052.27	1049 -	1056	1052.28	3.40E+01	20.59	4.80E+01	3.26
	46	1120.99	1115 -	1126	1120.98	9.37E+01	37.79	1.31E+02	1.97
	47	1283.01	1280 -	1287	1282.93	1.47E+01	18.00	4.46E+01	0.93
	48	1307.20	1305 -	1309	1307.12	1.60E+01	14.11	3.00E+01	2.67
	49	1378.37	1374 -	1381	1378.26	2.41E+01	20.78	5.59E+01	1.29
	50	1401.87	1397 -	1405	1401.75	1.90E+01	17.61	3.60E+01	2.16
	51	1408.64	1406 -	1411	1408.52	1.03E+01	13.30	2.75E+01	1.85
	52	1417.68	1413 -	1422	1417.55	1.96E+01	18.76	3.68E+01	1.14
	53	1461.20	1454 -	1465	1461.05	8.73E+02	61.45	3.39E+01	2.32
	54	1508.82	1505 -	1511	1508.66	1.45E+01	13.17	2.10E+01	1.91
M	55	1585.41	1584 -	1595	1585.22	6.91E+00	6.91	1.17E+01	2.99
m	56	1588.38	1584 -	1595	1588.19	2.13E+01	17.37	3.19E+01	2.99
	57	1621.02	1617 -	1624	1620.82	1.69E+01	9.59	4.11E+00	3.38
	58	1729.45	1723 -	1735	1729.21	2.18E+01	19.06	3.25E+01	1.30
	59	1765.21	1761 -	1771	1764.96	8.45E+01	20.51	1.10E+01	2.58
	60	1831.12	1828 -	1833	1830.84	1.06E+01	7.55	2.75E+00	1.93
	61	1847.96	1843 -	1852	1847.67	1.58E+01	12.92	1.43E+01	2.72
	62	1913.86	1910 -	1919	1913.55	1.19E+01	9.22	6.13E+00	2.59
	63	2070.60	2064 -	2075	2070.22	1.41E+01	10.20	5.82E+00	3.67
	64	2080.51	2076 -	2083	2080.14	7.11E+00	7.21	3.78E+00	2.86
	65	2104.80	2098 -	2109	2104.41	1.41E+01	14.14	1.78E+01	2.25
	66	2204.49	2199 -	2209	2204.07	2.80E+01	10.58	0.00E+00	1.42
	67	2272.55	2267 -	2277	2272.10	8.50E+00	10.79	1.10E+01	6.88
	68	2379.09	2375 -	2380	2378.60	5.00E+00	4.47	0.00E+00	1.00
	69	2424.69	2421 -	2426	2424.18	5.50E+00	6.08	3.00E+00	0.97
	70	2433.38	2430 -	2435	2432.87	5.64E+00	6.08	2.71E+00	1.27
	71	2495.90	2492 -	2498	2495.36	5.36E+00	6.34	3.29E+00	3.30
	72	2615.10	2610 -	2619	2614.51	1.16E+02	22.29	4.48E+00	2.79

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 7:09:01AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Analysis Report for 1510087-03

CP5004S01-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.55	44 -	50	1.35E+02	92.47	1.47E+03	7.36E+01
M	2	60.78	60 -	67	7.82E+01	44.61	5.99E+02	4.02E+01
m	3	63.61	60 -	67	8.37E+02	91.65	1.22E+03	5.75E+01
M	4	74.79	72 -	81	4.46E+02	87.82	1.37E+03	6.08E+01
m	5	77.59	72 -	81	6.56E+02	94.19	1.34E+03	6.03E+01
M	6	84.80	83 -	97	1.53E+02	69.63	1.14E+03	5.55E+01
m	7	87.80	83 -	97	2.66E+02	73.16	1.07E+03	5.38E+01
m	8	92.53	83 -	97	1.15E+03	97.71	8.96E+02	4.92E+01
	9	99.35	98 -	103	9.24E+01	77.92	1.14E+03	6.21E+01
	10	111.37	108 -	116	1.87E+02	104.24	1.56E+03	8.27E+01
	11	129.35	127 -	133	7.49E+01	82.05	1.17E+03	6.59E+01
	12	144.31	141 -	148	1.19E+02	87.95	1.21E+03	7.00E+01
	13	185.79	181 -	189	4.11E+02	99.02	1.26E+03	7.43E+01
	14	209.36	207 -	213	8.64E+01	69.79	8.17E+02	5.53E+01
M	15	238.72	235 -	245	1.04E+03	79.87	4.37E+02	3.44E+01
m	16	241.66	235 -	245	3.01E+02	87.93	5.04E+02	3.69E+01
	17	270.22	268 -	274	7.55E+01	54.61	4.95E+02	4.26E+01
	18	276.78	274 -	280	8.30E+01	52.11	4.32E+02	4.01E+01
M	19	295.40	292 -	307	3.69E+02	55.62	3.22E+02	2.95E+01
m	20	300.07	292 -	307	5.65E+01	44.56	3.10E+02	2.89E+01
	21	327.57	323 -	332	8.79E+01	64.02	5.36E+02	5.03E+01
	22	338.81	336 -	343	2.07E+02	56.28	3.94E+02	3.98E+01
	23	352.04	347 -	356	5.23E+02	77.96	5.69E+02	5.19E+01
	24	463.33	460 -	467	5.92E+01	40.79	2.34E+02	3.11E+01
	25	511.06	506 -	516	1.93E+02	60.48	3.85E+02	4.42E+01
	26	528.07	524 -	531	4.35E+01	37.15	1.95E+02	2.85E+01
	27	583.46	580 -	589	3.25E+02	54.21	2.31E+02	3.33E+01
	28	609.13	598 -	613	4.13E+02	80.85	4.90E+02	2.42E+01
	29	650.38	648 -	652	1.80E+01	22.90	9.80E+01	1.75E+01
	30	726.36	718 -	732	5.24E+01	61.97	3.81E+02	2.25E+01
	31	767.52	763 -	773	6.92E+01	41.55	1.96E+02	3.13E+01
	32	786.46	783 -	790	2.74E+01	29.93	1.29E+02	2.30E+01
	33	795.76	790 -	800	6.26E+01	36.31	1.41E+02	2.69E+01
	34	849.16	847 -	852	2.57E+01	19.00	5.26E+01	1.32E+01
	35	860.67	857 -	864	3.47E+01	28.50	1.13E+02	2.13E+01
	36	894.09	892 -	896	2.25E+01	16.68	4.09E+01	1.13E+01
	37	898.80	897 -	902	2.22E+01	19.90	6.37E+01	1.44E+01
	38	911.46	906 -	917	1.99E+02	49.23	2.02E+02	3.32E+01
	39	935.96	931 -	941	5.66E+01	32.39	1.09E+02	2.36E+01
	40	949.93	944 -	955	4.89E+01	36.06	1.38E+02	2.73E+01
M	41	965.38	961 -	972	6.90E+01	27.82	9.24E+01	1.58E+01
m	42	969.37	961 -	972	1.34E+02	30.90	6.27E+01	1.30E+01
M	43	997.53	996 -	1006	1.45E+01	11.49	1.92E+01	7.20E+00
m	44	1001.64	996 -	1006	6.72E+01	24.98	5.67E+01	1.24E+01
	45	1052.27	1049 -	1056	3.40E+01	20.59	4.80E+01	1.39E+01
	46	1120.99	1115 -	1126	9.37E+01	37.79	1.31E+02	2.67E+01
	47	1283.01	1280 -	1287	1.47E+01	18.00	4.46E+01	1.34E+01
	48	1307.20	1305 -	1309	1.60E+01	14.11	3.00E+01	9.55E+00
	49	1378.37	1374 -	1381	2.41E+01	20.78	5.59E+01	1.51E+01
	50	1401.87	1397 -	1405	1.90E+01	17.61	3.60E+01	1.26E+01
	51	1408.64	1406 -	1411	1.03E+01	13.30	2.75E+01	9.58E+00

Analysis Report for 1510087-03
 CP5004S01-02

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
52	1417.68	1413 -	1422	1.96E+01	18.76	3.68E+01	1.36E+01
53	1461.20	1454 -	1465	8.73E+02	61.45	3.39E+01	1.38E+01
54	1508.82	1505 -	1511	1.45E+01	13.17	2.10E+01	8.83E+00
M 55	1585.41	1584 -	1595	6.91E+00	6.91	1.17E+01	5.62E+00
m 56	1588.38	1584 -	1595	2.13E+01	17.37	3.19E+01	9.28E+00
57	1621.02	1617 -	1624	1.69E+01	9.59	4.11E+00	4.04E+00
58	1729.45	1723 -	1735	2.18E+01	19.06	3.25E+01	1.37E+01
59	1765.21	1761 -	1771	8.45E+01	20.51	1.10E+01	7.47E+00
60	1831.12	1828 -	1833	1.06E+01	7.55	2.75E+00	3.13E+00
61	1847.96	1843 -	1852	1.58E+01	12.92	1.43E+01	8.37E+00
62	1913.86	1910 -	1919	1.19E+01	9.22	6.13E+00	5.02E+00
63	2070.60	2064 -	2075	1.41E+01	10.20	5.82E+00	5.67E+00
64	2080.51	2076 -	2083	7.11E+00	7.21	3.78E+00	3.99E+00
65	2104.80	2098 -	2109	1.41E+01	14.14	1.78E+01	9.85E+00
66	2204.49	2199 -	2209	2.80E+01	10.58	0.00E+00	0.00E+00
67	2272.55	2267 -	2277	8.50E+00	10.79	1.10E+01	7.47E+00
68	2379.09	2375 -	2380	5.00E+00	4.47	0.00E+00	0.00E+00
69	2424.69	2421 -	2426	5.50E+00	6.08	3.00E+00	3.18E+00
70	2433.38	2430 -	2435	5.64E+00	6.08	2.71E+00	3.12E+00
71	2495.90	2492 -	2498	5.36E+00	6.34	3.29E+00	3.57E+00
72	2615.10	2610 -	2619	1.16E+02	22.29	4.48E+00	4.79E+00

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 7:09:01AM

Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
 Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	46.55	44 -	50	46.90	1.35E+02	92.47	1.47E+03	PB-210
M 2	60.78	60 -	67	61.13	7.82E+01	44.61	5.99E+02	.....
m 3	63.61	60 -	67	63.96	8.37E+02	91.65	1.22E+03	TH-234 TH-230

Analysis Report for 1510087-03

CP5004S01-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	4	74.79	72 -	81	75.13	4.46E+02	87.82	1.37E+03	AM-243
m	5	77.59	72 -	81	77.93	6.56E+02	94.19	1.34E+03	TI-44
M	6	84.80	83 -	97	85.13	1.53E+02	69.63	1.14E+03	TH-231
m	7	87.80	83 -	97	88.13	2.66E+02	73.16	1.07E+03	SN-126 CD-109 LU-176
m	8	92.53	83 -	97	92.86	1.15E+03	97.71	8.96E+02	GA-67
	9	99.35	98 -	103	99.68	9.24E+01	77.92	1.14E+03	.....
	10	111.37	108 -	116	111.70	1.87E+02	104.24	1.56E+03	.....
	11	129.35	127 -	133	129.67	7.49E+01	82.05	1.17E+03	.....
	12	144.31	141 -	148	144.63	1.19E+02	87.95	1.21E+03	U-235
	13	185.79	181 -	189	186.10	4.11E+02	99.02	1.26E+03	RA-226
	14	209.36	207 -	213	209.66	8.64E+01	69.79	8.17E+02	CM-243 GA-67
M	15	238.72	235 -	245	239.01	1.04E+03	79.87	4.37E+02	PB-212
m	16	241.66	235 -	245	241.94	3.01E+02	87.93	5.04E+02	RA-224
	17	270.22	268 -	274	270.49	7.55E+01	54.61	4.95E+02	.....
	18	276.78	274 -	280	277.06	8.30E+01	52.11	4.32E+02	CM-243 NP-239
M	19	295.40	292 -	307	295.67	3.69E+02	55.62	3.22E+02	PB-214
m	20	300.07	292 -	307	300.33	5.65E+01	44.56	3.10E+02	PB-212 BI-210M GA-67
	21	327.57	323 -	332	327.83	8.79E+01	64.02	5.36E+02	.....
	22	338.81	336 -	343	339.07	2.07E+02	56.28	3.94E+02	AC-228
	23	352.04	347 -	356	352.29	5.23E+02	77.96	5.69E+02	PB-214
	24	463.33	460 -	467	463.54	5.92E+01	40.79	2.34E+02	SB-125
	25	511.06	506 -	516	511.26	1.93E+02	60.48	3.85E+02	.....
	26	528.07	524 -	531	528.26	4.35E+01	37.15	1.95E+02	.....
	27	583.46	580 -	589	583.63	3.25E+02	54.21	2.31E+02	TL-208
	28	609.13	598 -	613	609.29	4.13E+02	80.85	4.90E+02	BI-214
	29	650.38	648 -	652	650.53	1.80E+01	22.90	9.80E+01	.....
	30	726.36	718 -	732	726.48	5.24E+01	61.97	3.81E+02	BI-212
	31	767.52	763 -	773	767.63	6.92E+01	41.55	1.96E+02	.....
	32	786.46	783 -	790	786.55	2.74E+01	29.93	1.29E+02	.....
	33	795.76	790 -	800	795.85	6.26E+01	36.31	1.41E+02	CS-134
	34	849.16	847 -	852	849.24	2.57E+01	19.00	5.26E+01	.....
	35	860.67	857 -	864	860.74	3.47E+01	28.50	1.13E+02	TL-208
	36	894.09	892 -	896	894.15	2.25E+01	16.68	4.09E+01	.....
	37	898.80	897 -	902	898.86	2.22E+01	19.90	6.37E+01	Y-88
	38	911.46	906 -	917	911.52	1.99E+02	49.23	2.02E+02	AC-228 LU-172
	39	935.96	931 -	941	936.01	5.66E+01	32.39	1.09E+02	.....
	40	949.93	944 -	955	949.97	4.89E+01	36.06	1.38E+02	.....
M	41	965.38	961 -	972	965.42	6.90E+01	27.82	9.24E+01	.....
m	42	969.37	961 -	972	969.41	1.34E+02	30.90	6.27E+01	AC-228
M	43	997.53	996 -	1006	997.55	1.45E+01	11.49	1.92E+01	.....
m	44	1001.64	996 -	1006	1001.66	6.72E+01	24.98	5.67E+01	PA-234M
	45	1052.27	1049 -	1056	1052.28	3.40E+01	20.59	4.80E+01	.....
	46	1120.99	1115 -	1126	1120.98	9.37E+01	37.79	1.31E+02	TA-182 SC-46 BI-214
	47	1283.01	1280 -	1287	1282.93	1.47E+01	18.00	4.46E+01	.....
	48	1307.20	1305 -	1309	1307.12	1.60E+01	14.11	3.00E+01	.....

: 00367

Analysis Report for 1510087-03

CP5004S01-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
49	1378.37	1374 -	1381	1378.26	2.41E+01	20.78	5.59E+01	.....
50	1401.87	1397 -	1405	1401.75	1.90E+01	17.61	3.60E+01	.....
51	1408.64	1406 -	1411	1408.52	1.03E+01	13.30	2.75E+01	EU-152
52	1417.68	1413 -	1422	1417.55	1.96E+01	18.76	3.68E+01	.....
53	1461.20	1454 -	1465	1461.05	8.73E+02	61.45	3.39E+01	K-40
54	1508.82	1505 -	1511	1508.66	1.45E+01	13.17	2.10E+01	.....
M 55	1585.41	1584 -	1595	1585.22	6.91E+00	6.91	1.17E+01	.....
m 56	1588.38	1584 -	1595	1588.19	2.13E+01	17.37	3.19E+01	.....
57	1621.02	1617 -	1624	1620.82	1.69E+01	9.59	4.11E+00	BI-212
58	1729.45	1723 -	1735	1729.21	2.18E+01	19.06	3.25E+01	.....
59	1765.21	1761 -	1771	1764.96	8.45E+01	20.51	1.10E+01	BI-214
60	1831.12	1828 -	1833	1830.84	1.06E+01	7.55	2.75E+00	.....
61	1847.96	1843 -	1852	1847.67	1.58E+01	12.92	1.43E+01	.....
62	1913.86	1910 -	1919	1913.55	1.19E+01	9.22	6.13E+00	.....
63	2070.60	2064 -	2075	2070.22	1.41E+01	10.20	5.82E+00	.....
64	2080.51	2076 -	2083	2080.14	7.11E+00	7.21	3.78E+00	.....
65	2104.80	2098 -	2109	2104.41	1.41E+01	14.14	1.78E+01	.....
66	2204.49	2199 -	2209	2204.07	2.80E+01	10.58	0.00E+00	BI-214
67	2272.55	2267 -	2277	2272.10	8.50E+00	10.79	1.10E+01	.....
68	2379.09	2375 -	2380	2378.60	5.00E+00	4.47	0.00E+00	.....
69	2424.69	2421 -	2426	2424.18	5.50E+00	6.08	3.00E+00	.....
70	2433.38	2430 -	2435	2432.87	5.64E+00	6.08	2.71E+00	.....
71	2495.90	2492 -	2498	2495.36	5.36E+00	6.34	3.29E+00	.....
72	2615.10	2610 -	2619	2614.51	1.16E+02	22.29	4.48E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 7:09:01AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
	1	46.55	1.35E+02	92.47	1.68E-02	1.78E-03
M	2	60.78	7.82E+01	44.61	2.41E-02	1.82E-03
m	3	63.61	8.37E+02	91.65	2.50E-02	1.92E-03
M	4	74.79	4.46E+02	87.82	2.75E-02	2.30E-03
m	5	77.59	6.56E+02	94.19	2.78E-02	2.39E-03
M	6	84.80	1.53E+02	69.63	2.84E-02	2.63E-03

Analysis Report for 1510087-03
CP5004S01-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	7	87.80	2.66E+02	73.16	2.85E-02	2.73E-03
m	8	92.53	1.15E+03	97.71	2.86E-02	2.65E-03
	9	99.35	9.24E+01	77.92	2.85E-02	2.52E-03
	10	111.37	1.87E+02	104.24	2.79E-02	2.28E-03
	11	129.35	7.49E+01	82.05	2.67E-02	2.09E-03
	12	144.31	1.19E+02	87.95	2.55E-02	2.12E-03
	13	185.79	4.11E+02	99.02	2.24E-02	2.03E-03
	14	209.36	8.64E+01	69.79	2.09E-02	1.85E-03
M	15	238.72	1.04E+03	79.87	1.92E-02	1.64E-03
m	16	241.66	3.01E+02	87.93	1.91E-02	1.62E-03
	17	270.22	7.55E+01	54.61	1.77E-02	1.41E-03
	18	276.78	8.30E+01	52.11	1.74E-02	1.36E-03
M	19	295.40	3.69E+02	55.62	1.67E-02	1.31E-03
m	20	300.07	5.65E+01	44.56	1.65E-02	1.30E-03
	21	327.57	8.79E+01	64.02	1.55E-02	1.24E-03
	22	338.81	2.07E+02	56.28	1.52E-02	1.22E-03
	23	352.04	5.23E+02	77.96	1.48E-02	1.19E-03
	24	463.33	5.92E+01	40.79	1.21E-02	1.04E-03
	25	511.06	1.93E+02	60.48	1.12E-02	9.90E-04
	26	528.07	4.35E+01	37.15	1.10E-02	9.73E-04
	27	583.46	3.25E+02	54.21	1.02E-02	9.15E-04
	28	609.13	4.13E+02	80.85	9.83E-03	8.89E-04
	29	650.38	1.80E+01	22.90	9.34E-03	8.46E-04
	30	726.36	5.24E+01	61.97	8.56E-03	7.76E-04
	31	767.52	6.92E+01	41.55	8.20E-03	7.39E-04
	32	786.46	2.74E+01	29.93	8.04E-03	7.22E-04
	33	795.76	6.26E+01	36.31	7.96E-03	7.14E-04
	34	849.16	2.57E+01	19.00	7.56E-03	6.66E-04
	35	860.67	3.47E+01	28.50	7.48E-03	6.56E-04
	36	894.09	2.25E+01	16.68	7.26E-03	6.26E-04
	37	898.80	2.22E+01	19.90	7.23E-03	6.22E-04
	38	911.46	1.99E+02	49.23	7.15E-03	6.15E-04
	39	935.96	5.66E+01	32.39	7.00E-03	6.03E-04
	40	949.93	4.89E+01	36.06	6.91E-03	5.95E-04
M	41	965.38	6.90E+01	27.82	6.83E-03	5.87E-04
m	42	969.37	1.34E+02	30.90	6.80E-03	5.85E-04
M	43	997.53	1.45E+01	11.49	6.65E-03	5.71E-04
m	44	1001.64	6.72E+01	24.98	6.63E-03	5.68E-04
	45	1052.27	3.40E+01	20.59	6.37E-03	5.42E-04
	46	1120.99	9.37E+01	37.79	6.06E-03	5.06E-04
	47	1283.01	1.47E+01	18.00	5.46E-03	4.60E-04
	48	1307.20	1.60E+01	14.11	5.39E-03	4.56E-04
	49	1378.37	2.41E+01	20.78	5.18E-03	4.40E-04
	50	1401.87	1.90E+01	17.61	5.12E-03	4.34E-04
	51	1408.64	1.03E+01	13.30	5.10E-03	4.32E-04
	52	1417.68	1.96E+01	18.76	5.08E-03	4.30E-04
	53	1461.20	8.73E+02	61.45	4.97E-03	4.19E-04
	54	1508.82	1.45E+01	13.17	4.86E-03	4.07E-04
M	55	1585.41	6.91E+00	6.91	4.70E-03	3.88E-04
m	56	1588.38	2.13E+01	17.37	4.69E-03	3.87E-04
	57	1621.02	1.69E+01	9.59	4.63E-03	3.79E-04
	58	1729.45	2.18E+01	19.06	4.45E-03	3.52E-04
	59	1765.21	8.45E+01	20.51	4.39E-03	3.43E-04

Analysis Report for 1510087-03
CP5004S01-02

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
60	1831.12	1.06E+01	7.55	4.30E-03	3.27E-04
61	1847.96	1.58E+01	12.92	4.28E-03	3.26E-04
62	1913.86	1.19E+01	9.22	4.20E-03	3.26E-04
63	2070.60	1.41E+01	10.20	4.05E-03	3.26E-04
64	2080.51	7.11E+00	7.21	4.04E-03	3.26E-04
65	2104.80	1.41E+01	14.14	4.02E-03	3.26E-04
66	2204.49	2.80E+01	10.58	3.95E-03	3.26E-04
67	2272.55	8.50E+00	10.79	3.91E-03	3.26E-04
68	2379.09	5.00E+00	4.47	3.86E-03	3.26E-04
69	2424.69	5.50E+00	6.08	3.84E-03	3.26E-04
70	2433.38	5.64E+00	6.08	3.84E-03	3.26E-04
71	2495.90	5.36E+00	6.34	3.82E-03	3.26E-04
72	2615.10	1.16E+02	22.29	3.79E-03	3.26E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 7:09:01AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
	1	46.55	1.35E+02	92.47	4.50E+01	8.46E+00	9.04E+01	9.29E+01
M	2	60.78	7.82E+01	44.61			7.82E+01	4.46E+01
m	3	63.61	8.37E+02	91.65	7.80E+01	1.33E+01	7.59E+02	9.26E+01
M	4	74.79	4.46E+02	87.82	5.09E+00	4.37E+00	4.41E+02	8.79E+01
m	5	77.59	6.56E+02	94.19	9.75E+00	8.28E+00	6.46E+02	9.46E+01
M	6	84.80	1.53E+02	69.63	2.38E+00	8.92E+00	1.51E+02	7.02E+01
m	7	87.80	2.66E+02	73.16			2.66E+02	7.32E+01
m	8	92.53	1.15E+03	97.71	1.34E+02	9.83E+00	1.01E+03	9.82E+01
	9	99.35	9.24E+01	77.92			9.24E+01	7.79E+01
	10	111.37	1.87E+02	104.24			1.87E+02	1.04E+02
	11	129.35	7.49E+01	82.05			7.49E+01	8.20E+01
	12	144.31	1.19E+02	87.95	7.18E+00	7.25E+00	1.12E+02	8.83E+01
	13	185.79	4.11E+02	99.02	6.41E+01	7.38E+00	3.47E+02	9.93E+01
	14	209.36	8.64E+01	69.79			8.64E+01	6.98E+01
M	15	238.72	1.04E+03	79.87	2.34E+01	6.34E+00	1.02E+03	8.01E+01
m	16	241.66	3.01E+02	87.93			3.01E+02	8.79E+01
	17	270.22	7.55E+01	54.61			7.55E+01	5.46E+01

Analysis Report for 1510087-03

CP5004S01-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	18	276.78	8.30E+01	52.11			8.30E+01	5.21E+01
M	19	295.40	3.69E+02	55.62	4.17E+00	5.50E+00	3.65E+02	5.59E+01
m	20	300.07	5.65E+01	44.56			5.65E+01	4.46E+01
	21	327.57	8.79E+01	64.02			8.79E+01	6.40E+01
	22	338.81	2.07E+02	56.28	2.22E-01	4.54E+00	2.07E+02	5.65E+01
	23	352.04	5.23E+02	77.96	8.83E+00	4.91E+00	5.14E+02	7.81E+01
	24	463.33	5.92E+01	40.79			5.92E+01	4.08E+01
	25	511.06	1.93E+02	60.48	8.12E+01	5.49E+00	1.11E+02	6.07E+01
	26	528.07	4.35E+01	37.15			4.35E+01	3.71E+01
	27	583.46	3.25E+02	54.21	6.34E+00	3.74E+00	3.19E+02	5.43E+01
	28	609.13	4.13E+02	80.85	5.20E+00	3.69E+00	4.08E+02	8.09E+01
	29	650.38	1.80E+01	22.90			1.80E+01	2.29E+01
	30	726.36	5.24E+01	61.97			5.24E+01	6.20E+01
	31	767.52	6.92E+01	41.55			6.92E+01	4.16E+01
	32	786.46	2.74E+01	29.93			2.74E+01	2.99E+01
	33	795.76	6.26E+01	36.31			6.26E+01	3.63E+01
	34	849.16	2.57E+01	19.00			2.57E+01	1.90E+01
	35	860.67	3.47E+01	28.50			3.47E+01	2.85E+01
	36	894.09	2.25E+01	16.68			2.25E+01	1.67E+01
	37	898.80	2.22E+01	19.90			2.22E+01	1.99E+01
	38	911.46	1.99E+02	49.23	3.28E+00	2.53E+00	1.96E+02	4.93E+01
	39	935.96	5.66E+01	32.39			5.66E+01	3.24E+01
	40	949.93	4.89E+01	36.06			4.89E+01	3.61E+01
M	41	965.38	6.90E+01	27.82			6.90E+01	2.78E+01
m	42	969.37	1.34E+02	30.90			1.34E+02	3.09E+01
M	43	997.53	1.45E+01	11.49			1.45E+01	1.15E+01
m	44	1001.64	6.72E+01	24.98	4.17E+00	2.83E+00	6.30E+01	2.51E+01
	45	1052.27	3.40E+01	20.59			3.40E+01	2.06E+01
	46	1120.99	9.37E+01	37.79	2.28E+00	2.55E+00	9.14E+01	3.79E+01
	47	1283.01	1.47E+01	18.00			1.47E+01	1.80E+01
	48	1307.20	1.60E+01	14.11			1.60E+01	1.41E+01
	49	1378.37	2.41E+01	20.78			2.41E+01	2.08E+01
	50	1401.87	1.90E+01	17.61			1.90E+01	1.76E+01
	51	1408.64	1.03E+01	13.30			1.03E+01	1.33E+01
	52	1417.68	1.96E+01	18.76			1.96E+01	1.88E+01
	53	1461.20	8.73E+02	61.45	6.46E+00	2.33E+00	8.67E+02	6.15E+01
	54	1508.82	1.45E+01	13.17			1.45E+01	1.32E+01
M	55	1585.41	6.91E+00	6.91			6.91E+00	6.91E+00
m	56	1588.38	2.13E+01	17.37			2.13E+01	1.74E+01
	57	1621.02	1.69E+01	9.59			1.69E+01	9.59E+00
	58	1729.45	2.18E+01	19.06			2.18E+01	1.91E+01
	59	1765.21	8.45E+01	20.51			8.45E+01	2.05E+01
	60	1831.12	1.06E+01	7.55			1.06E+01	7.55E+00
	61	1847.96	1.58E+01	12.92			1.58E+01	1.29E+01
	62	1913.86	1.19E+01	9.22			1.19E+01	9.22E+00
	63	2070.60	1.41E+01	10.20			1.41E+01	1.02E+01
	64	2080.51	7.11E+00	7.21			7.11E+00	7.21E+00
	65	2104.80	1.41E+01	14.14			1.41E+01	1.41E+01
	66	2204.49	2.80E+01	10.58			2.80E+01	1.06E+01
	67	2272.55	8.50E+00	10.79			8.50E+00	1.08E+01
	68	2379.09	5.00E+00	4.47			5.00E+00	4.47E+00
	69	2424.69	5.50E+00	6.08			5.50E+00	6.08E+00
	70	2433.38	5.64E+00	6.08			5.64E+00	6.08E+00
	71	2495.90	5.36E+00	6.34			5.36E+00	6.34E+00

Analysis Report for 1510087-03

CP5004S01-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
72	2615.10	1.16E+02	22.29	3.47E+00	1.48E+00	1.12E+02	2.23E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.00sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 7:09:01AM

Ref. Peak Energy : 0.00

Reference Date :

Peak Ratio : 0.00

Uncertainty : 0.00

Background File

: \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.55	1.35E+02	92.47	4.50E+01	8.46E+00	9.04E+01
M	2	60.78	7.82E+01	44.61			7.82E+01
m	3	63.61	8.37E+02	91.65	7.80E+01	1.33E+01	7.59E+02
M	4	74.79	4.46E+02	87.82	5.09E+00	4.37E+00	4.41E+02
m	5	77.59	6.56E+02	94.19	9.75E+00	8.28E+00	6.46E+02
M	6	84.80	1.53E+02	69.63	2.38E+00	8.92E+00	1.51E+02
m	7	87.80	2.66E+02	73.16			2.66E+02
m	8	92.53	1.15E+03	97.71	1.34E+02	9.83E+00	1.01E+03
	9	99.35	9.24E+01	77.92			9.24E+01
	10	111.37	1.87E+02	104.24			1.87E+02
	11	129.35	7.49E+01	82.05			7.49E+01
	12	144.31	1.19E+02	87.95	7.18E+00	7.25E+00	1.12E+02
	13	185.79	4.11E+02	99.02	6.41E+01	7.38E+00	3.47E+02
	14	209.36	8.64E+01	69.79			8.64E+01
M	15	238.72	1.04E+03	79.87	2.34E+01	6.34E+00	1.02E+03
m	16	241.66	3.01E+02	87.93			3.01E+02
	17	270.22	7.55E+01	54.61			7.55E+01
	18	276.78	8.30E+01	52.11			8.30E+01
M	19	295.40	3.69E+02	55.62	4.17E+00	5.50E+00	3.65E+02
m	20	300.07	5.65E+01	44.56			5.65E+01
	21	327.57	8.79E+01	64.02			8.79E+01
	22	338.81	2.07E+02	56.28	2.22E-01	4.54E+00	2.07E+02
	23	352.04	5.23E+02	77.96	8.83E+00	4.91E+00	5.14E+02
	24	463.33	5.92E+01	40.79			5.92E+01
	25	511.06	1.93E+02	60.48	8.12E+01	5.49E+00	1.11E+02
	26	528.07	4.35E+01	37.15			4.35E+01
	27	583.46	3.25E+02	54.21	6.34E+00	3.74E+00	3.19E+02

: 00372

Analysis Report for 1510087-03

CP5004S01-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
28	609.13	4.13E+02	80.85	5.20E+00	3.69E+00	4.08E+02	8.09E+01
29	650.38	1.80E+01	22.90			1.80E+01	2.29E+01
30	726.36	5.24E+01	61.97			5.24E+01	6.20E+01
31	767.52	6.92E+01	41.55			6.92E+01	4.16E+01
32	786.46	2.74E+01	29.93			2.74E+01	2.99E+01
33	795.76	6.26E+01	36.31			6.26E+01	3.63E+01
34	849.16	2.57E+01	19.00			2.57E+01	1.90E+01
35	860.67	3.47E+01	28.50			3.47E+01	2.85E+01
36	894.09	2.25E+01	16.68			2.25E+01	1.67E+01
37	898.80	2.22E+01	19.90			2.22E+01	1.99E+01
38	911.46	1.99E+02	49.23	3.28E+00	2.53E+00	1.96E+02	4.93E+01
39	935.96	5.66E+01	32.39			5.66E+01	3.24E+01
40	949.93	4.89E+01	36.06			4.89E+01	3.61E+01
M	41	965.38	6.90E+01			6.90E+01	2.78E+01
m	42	969.37	1.34E+02			1.34E+02	3.09E+01
M	43	997.53	1.45E+01			1.45E+01	1.15E+01
m	44	1001.64	6.72E+01	4.17E+00	2.83E+00	6.30E+01	2.51E+01
	45	1052.27	3.40E+01			3.40E+01	2.06E+01
	46	1120.99	9.37E+01	2.28E+00	2.55E+00	9.14E+01	3.79E+01
	47	1283.01	1.47E+01			1.47E+01	1.80E+01
	48	1307.20	1.60E+01			1.60E+01	1.41E+01
	49	1378.37	2.41E+01			2.41E+01	2.08E+01
	50	1401.87	1.90E+01			1.90E+01	1.76E+01
	51	1408.64	1.03E+01			1.03E+01	1.33E+01
	52	1417.68	1.96E+01			1.96E+01	1.88E+01
	53	1461.20	8.73E+02	6.46E+00	2.33E+00	8.67E+02	6.15E+01
	54	1508.82	1.45E+01			1.45E+01	1.32E+01
M	55	1585.41	6.91E+00			6.91E+00	6.91E+00
m	56	1588.38	2.13E+01			2.13E+01	1.74E+01
	57	1621.02	1.69E+01			1.69E+01	9.59E+00
	58	1729.45	2.18E+01			2.18E+01	1.91E+01
	59	1765.21	8.45E+01			8.45E+01	2.05E+01
	60	1831.12	1.06E+01			1.06E+01	7.55E+00
	61	1847.96	1.58E+01			1.58E+01	1.29E+01
	62	1913.86	1.19E+01			1.19E+01	9.22E+00
	63	2070.60	1.41E+01			1.41E+01	1.02E+01
	64	2080.51	7.11E+00			7.11E+00	7.21E+00
	65	2104.80	1.41E+01			1.41E+01	1.41E+01
	66	2204.49	2.80E+01			2.80E+01	1.06E+01
	67	2272.55	8.50E+00			8.50E+00	1.08E+01
	68	2379.09	5.00E+00			5.00E+00	4.47E+00
	69	2424.69	5.50E+00			5.50E+00	6.08E+00
	70	2433.38	5.64E+00			5.64E+00	6.08E+00
	71	2495.90	5.36E+00			5.36E+00	6.34E+00
	72	2615.10	1.16E+02	3.47E+00	1.48E+00	1.12E+02	2.23E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1510087-03
CP5004S01-02

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.976	1460.81 *	10.67	2.16E+01	2.42E+00
GA-67	0.568	93.31 *	35.70	1.33E+03	5.84E+03
		208.95 *	2.24	2.47E+03	1.07E+04
		300.22 *	16.00	2.86E+02	1.28E+03
		88.03 *	3.72	3.48E+00	1.03E+00
CD-109	0.991	87.57 *	37.00	3.33E-01	9.70E-02
SN-126	0.992	583.14 *	30.22	1.37E+00	2.64E-01
TL-208	0.977	860.37 *	4.48	1.37E+00	1.13E+00
		2614.66 *	35.85	1.09E+00	2.36E-01
		46.50 *	4.25	1.67E+00	1.73E+00
PB-210	1.000	727.17 *	11.80	6.85E-01	8.12E-01
BI-212	0.914	1620.62 *	2.75	1.76E+00	1.00E+00
		238.63 *	44.60	1.57E+00	1.82E-01
PB-212	0.999	300.09 *	3.41	1.33E+00	1.05E+00
		609.31 *	46.30	1.18E+00	2.58E-01
BI-214	0.966	1120.29 *	15.10	1.32E+00	5.57E-01
		1764.49 *	15.80	1.61E+00	4.09E-01
		2204.22 *	4.98	1.88E+00	7.27E-01
		295.21 *	19.19	1.51E+00	2.59E-01
PB-214	0.997	351.92 *	37.19	1.24E+00	2.13E-01
		240.98 *	3.95	5.28E+00	1.60E+00
RA-224	0.929	186.21 *	3.28	6.24E+00	1.16E+01
AC-228	0.977	338.32 *	11.40	1.58E+00	4.49E-01
		911.07 *	27.70	1.31E+00	3.47E-01
		969.11 *	16.60	1.57E+00	3.86E-01
TH-231	0.362	25.64 *	14.70		
		84.21 *	6.40	1.10E+00	5.20E-01
PA-234M	0.942	1001.03 *	0.92	1.36E+01	5.57E+00
TH-234	0.983	63.29 *	3.80	1.05E+01	1.52E+00
AM-243	0.998	74.67 *	66.00	3.21E-01	6.94E-02
CM-243	0.319	209.75 *	3.29	1.66E+00	1.35E+00
		228.14 *	10.60		
		277.60 *	14.00	4.50E-01	2.85E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

Analysis Report for 1510087-03
CP5004S01-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 7:09:01AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
M	2	60.78	2.17225E-02	28.52		
m	5	77.59	1.79375E-01	7.32		
	9	99.35	2.56641E-02	42.17	D-Esc	
	10	111.37	5.19554E-02	27.87		
	11	129.35	2.08186E-02	54.74		
	12	144.31	3.10218E-02	39.51	Tol.	U-235
	17	270.22	2.09834E-02	36.15	Sum	
	21	327.57	2.44125E-02	36.42		
	24	463.33	1.64394E-02	34.46	Sum	
	25	511.06	3.09203E-02	27.28		
	26	528.07	1.20725E-02	42.74		
	29	650.38	5.00000E-03	63.60		
	31	767.52	1.92149E-02	30.04		
	32	786.46	7.62228E-03	54.54		
	33	795.76	1.73872E-02	29.01	Sum	
	34	849.16	7.14477E-03	36.93		
	36	894.09	6.25969E-03	37.01		
	37	898.80	6.15741E-03	44.89	Tol.	Y-88
	39	935.96	1.57345E-02	28.59	Sum	
	40	949.93	1.35746E-02	36.89	S-Esc	
M	41	965.38	1.91703E-02	20.15	Sum	
M	43	997.53	4.03386E-03	39.56		
	45	1052.27	9.44444E-03	30.28		
	47	1283.01	4.08784E-03	61.16		
	48	1307.20	4.44444E-03	44.08	Sum	
	49	1378.37	6.68269E-03	43.20		
	50	1401.87	5.27778E-03	46.33		
	51	1408.64	2.85301E-03	64.77	Tol.	EU-152
	52	1417.68	5.43860E-03	47.91		
	54	1508.82	4.02778E-03	45.42		
M	55	1585.41	1.92020E-03	49.98	Sum	
m	56	1588.38	5.92140E-03	40.74		
	58	1729.45	6.04167E-03	43.81	Sum	
	60	1831.12	2.95139E-03	35.53	Sum	
	61	1847.96	4.40217E-03	40.77	Sum	
	62	1913.86	3.31481E-03	38.63	Sum	
	63	2070.60	3.91340E-03	36.19	Sum	
	64	2080.51	1.97531E-03	50.70		
	65	2104.80	3.91304E-03	50.20	S-Esc	
	67	2272.55	2.36111E-03	63.49		
	68	2379.09	1.38889E-03	44.72		
	69	2424.69	1.52778E-03	55.30		

Analysis Report for 1510087-03
CP5004S01-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
70	2433.38	1.56746E-03	53.90		
71	2495.90	1.48810E-03	59.21		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.97	1460.81 *	10.67	2.16E+01	2.42E+00
GA-67	0.56	93.31 *	35.70	1.33E+03	5.84E+03
		208.95 *	2.24	2.47E+03	1.07E+04
		300.22 *	16.00	2.86E+02	1.28E+03
CD-109	0.99	88.03 *	3.72	3.48E+00	1.03E+00
SN-126	0.99	87.57 *	37.00	3.33E-01	9.70E-02
TL-208	0.97	583.14 *	30.22	1.37E+00	2.64E-01
		860.37 *	4.48	1.37E+00	1.13E+00
		2614.66 *	35.85	1.09E+00	2.36E-01
PB-210	1.00	46.50 *	4.25	1.67E+00	1.73E+00
BI-212	0.91	727.17 *	11.80	6.85E-01	8.12E-01
		1620.62 *	2.75	1.76E+00	1.00E+00
PB-212	0.99	238.63 *	44.60	1.57E+00	1.82E-01
		300.09 *	3.41	1.33E+00	1.05E+00
BI-214	0.96	609.31 *	46.30	1.18E+00	2.58E-01
		1120.29 *	15.10	1.32E+00	5.57E-01
		1764.49 *	15.80	1.61E+00	4.09E-01
		2204.22 *	4.98	1.88E+00	7.27E-01
PB-214	0.99	295.21 *	19.19	1.51E+00	2.59E-01
		351.92 *	37.19	1.24E+00	2.13E-01
RA-224	0.92	240.98 *	3.95	5.28E+00	1.60E+00
RA-226	0.97	186.21 *	3.28	6.24E+00	1.16E+01
AC-228	0.97	338.32 *	11.40	1.58E+00	4.49E-01
		911.07 *	27.70	1.31E+00	3.47E-01
		969.11 *	16.60	1.57E+00	3.86E-01
TH-231	0.36	25.64	14.70		

Analysis Report for 1510087-03
CP5004S01-02

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TH-231	0.36	84.21 *	6.40	1.10E+00	5.20E-01
PA-234M	0.94	1001.03 *	0.92	1.36E+01	5.57E+00
TH-234	0.98	63.29 *	3.80	1.05E+01	1.52E+00
AM-243	0.99	74.67 *	66.00	3.21E-01	6.94E-02
CM-243	0.31	209.75 *	3.29	1.66E+00	1.35E+00
		228.14	10.60		
		277.60 *	14.00	4.50E-01	2.85E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.976	2.16E+01	2.42E+00	
GA-67	0.568	8.16E+02	3.46E+03	
? CD-109	0.991	3.48E+00	1.03E+00	
? SN-126	0.992	3.33E-01	9.70E-02	
TL-208	0.977	1.22E+00	1.74E-01	
PB-210	1.000	1.67E+00	1.73E+00	
BI-212	0.914	1.11E+00	6.31E-01	
PB-212	0.999	1.45E+00	1.80E-01	
BI-214	0.966	1.35E+00	1.96E-01	
PB-214	0.997	1.34E+00	1.64E-01	
RA-224	0.929	5.28E+00	1.60E+00	
RA-226	0.972	6.24E+00	1.16E+01	
AC-228	0.977	1.46E+00	2.24E-01	
TH-231	0.362	1.10E+00	5.20E-01	
PA-234M	0.942	1.36E+01	5.57E+00	
TH-234	0.983	1.05E+01	1.52E+00	
AM-243	0.998	3.21E-01	6.94E-02	
CM-243	0.319	4.78E-01	2.78E-01	

Analysis Report for 1510087-03

CP5004S01-02

- ? = nuclide is part of an undetermined solution
- X = nuclide rejected by the interference analysis
- @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1510087-03
CP5004S01-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 7:09:01AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
M	2	60.78	2.17225E-02	28.52		
m	5	77.59	1.79375E-01	7.32		
	9	99.35	2.56641E-02	42.17	D-Esc	
	10	111.37	5.19554E-02	27.87		
	11	129.35	2.08186E-02	54.74		
	12	144.31	3.10218E-02	39.51	Tol.	U-235
	17	270.22	2.09834E-02	36.15	Sum	
	21	327.57	2.44125E-02	36.42		
	24	463.33	1.64394E-02	34.46	Sum	
	25	511.06	3.09203E-02	27.28		
	26	528.07	1.20725E-02	42.74		
	29	650.38	5.00000E-03	63.60		
	31	767.52	1.92149E-02	30.04		
	32	786.46	7.62228E-03	54.54		
	33	795.76	1.73872E-02	29.01	Sum	
	34	849.16	7.14477E-03	36.93		
	36	894.09	6.25969E-03	37.01		
	37	898.80	6.15741E-03	44.89	Tol.	Y-88
	39	935.96	1.57345E-02	28.59	Sum	
	40	949.93	1.35746E-02	36.89	S-Esc	
M	41	965.38	1.91703E-02	20.15	Sum	
M	43	997.53	4.03386E-03	39.56		
	45	1052.27	9.44444E-03	30.28		
	47	1283.01	4.08784E-03	61.16		
	48	1307.20	4.44444E-03	44.08	Sum	
	49	1378.37	6.68269E-03	43.20		
	50	1401.87	5.27778E-03	46.33		
	51	1408.64	2.85301E-03	64.77	Tol.	EU-152
	52	1417.68	5.43860E-03	47.91		
	54	1508.82	4.02778E-03	45.42		
M	55	1585.41	1.92020E-03	49.98	Sum	
m	56	1588.38	5.92140E-03	40.74		
	58	1729.45	6.04167E-03	43.81	Sum	
	60	1831.12	2.95139E-03	35.53	Sum	
	61	1847.96	4.40217E-03	40.77	Sum	

Analysis Report for 1510087-03
CP5004S01-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
62	1913.86	3.31481E-03	38.63	Sum	
63	2070.60	3.91340E-03	36.19	Sum	
64	2080.51	1.97531E-03	50.70		
65	2104.80	3.91304E-03	50.20	S-Esc	
67	2272.55	2.36111E-03	63.49		
68	2379.09	1.38889E-03	44.72		
69	2424.69	1.52778E-03	55.30		
70	2433.38	1.56746E-03	53.90		
71	2495.90	1.48810E-03	59.21		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	3.38E-02	8.12E-01	8.12E-01
+	NA-22	1274.54	99.94	4.29E-02	8.09E-02	8.09E-02
+	NA-24	1368.53	99.99	-7.14E+12	1.24E+14	3.12E+14
		2754.09	99.86	-9.00E+13		1.24E+14
+	AL-26	1808.65	99.76	-3.27E-03	4.58E-02	4.58E-02
+	K-40	1460.81	* 10.67	2.16E+01	7.94E-01	7.94E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	1.52E-02	7.42E-02	7.42E-02
		78.34	96.00	2.30E-01		9.17E-02
+	SC-46	889.25	99.98	-4.83E-02	7.96E-02	7.96E-02
		1120.51	99.99	2.32E-01		1.57E-01
+	V-48	983.52	99.98	4.87E-02	3.05E-01	3.17E-01
		1312.10	97.50	-5.18E-02		3.05E-01
+	CR-51	320.08	9.83	3.34E-01	1.14E+00	1.14E+00
+	MN-54	834.83	99.97	-1.45E-02	7.71E-02	7.71E-02
+	CO-56	846.75	99.96	-8.92E-04	9.20E-02	9.20E-02
		1037.75	14.03	-5.85E-02		6.53E-01
		1238.25	67.00	8.11E-02		2.13E-01
		1771.40	15.51	9.48E-02		4.86E-01

Analysis Report for 1510087-03
CP5004S01-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CO-56	2598.48	16.90	-9.13E-03	9.20E-02	2.95E-01
+	CO-57	122.06	85.51	-5.45E-04	6.25E-02	6.25E-02
		136.48	10.60	1.53E-01		5.21E-01
+	CO-58	810.76	99.40	1.75E-02	1.01E-01	1.01E-01
+	FE-59	1099.22	56.50	-6.55E-02	2.32E-01	2.32E-01
		1291.56	43.20	-4.48E-02		2.67E-01
+	CO-60	1173.22	100.00	-1.42E-02	6.04E-02	8.49E-02
		1332.49	100.00	-1.39E-02		6.04E-02
+	ZN-65	1115.52	50.75	1.79E-02	1.70E-01	1.70E-01
+	GA-67	93.31	* 35.70	1.33E+03	3.76E+02	3.76E+02
		208.95	* 2.24	2.47E+03		3.25E+03
		300.22	* 16.00	2.86E+02		7.31E+02
+	SE-75	121.11	16.70	4.66E-02	1.01E-01	3.53E-01
		136.00	59.20	4.70E-02		1.04E-01
		264.65	59.80	2.59E-02		1.01E-01
		279.53	25.20	3.18E-02		2.53E-01
		400.65	11.40	-3.18E-01		5.09E-01
+	RB-82	776.52	13.00	-3.32E-01	1.23E+00	1.23E+00
+	RB-83	520.41	46.00	1.68E-02	1.75E-01	1.75E-01
		529.64	30.30	-3.46E-02		2.72E-01
		552.65	16.40	2.62E-01		5.24E-01
+	KR-85	513.99	0.43	3.59E+01	2.20E+01	2.20E+01
+	SR-85	513.99	99.27	2.21E-01	1.36E-01	1.36E-01
+	Y-88	898.02	93.40	2.71E-02	5.39E-02	9.85E-02
		1836.01	99.38	-8.28E-03		5.39E-02
+	NB-93M	16.57	9.43	-5.53E+01	7.06E+01	7.06E+01
+	NB-94	702.63	100.00	6.02E-02	6.57E-02	7.70E-02
		871.10	100.00	-2.88E-02		6.57E-02
+	NB-95	765.79	99.81	1.21E-01	1.65E-01	1.65E-01
+	NB-95M	235.69	25.00	-1.15E+03	1.39E+02	1.39E+02
+	ZR-95	724.18	43.70	-2.24E-01	1.79E-01	2.59E-01
		756.72	55.30	1.68E-03		1.79E-01
+	MO-99	181.06	6.20	-7.42E+02	1.73E+03	3.08E+03
		739.58	12.80	-1.44E+03		1.73E+03
		778.00	4.50	-8.46E+02		5.32E+03
+	RU-103	497.08	89.00	-2.60E-02	1.18E-01	1.18E-01
+	RU-106	621.84	9.80	1.61E-01	6.75E-01	6.75E-01
+	AG-108M	433.93	89.90	-9.75E-03	6.64E-02	6.64E-02
		614.37	90.40	1.99E-02		7.40E-02
		722.95	90.50	-2.09E-01		7.95E-02
+	CD-109	88.03	* 3.72	3.48E+00	3.73E+00	3.73E+00
+	AG-110M	657.75	93.14	1.85E-02	8.13E-02	8.13E-02
		677.61	10.53	1.17E-01		6.64E-01
		706.67	16.46	-1.93E-02		4.57E-01
		763.93	21.98	5.07E-02		3.80E-01
		884.67	71.63	-4.04E-02		1.02E-01
		1384.27	23.94	-9.16E-02		3.03E-01
+	CD-113M	263.70	0.02	9.80E+01	2.25E+02	2.25E+02

Analysis Report for 1510087-03
CP5004S01-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SN-113	255.12	1.93	-1.19E+00	9.78E-02	3.09E+00
		391.69	64.90	2.96E-02		9.78E-02
+	TE123M	159.00	84.10	-5.92E-02	7.18E-02	7.18E-02
+	SB-124	602.71	97.87	-3.21E-02	1.09E-01	1.09E-01
		645.85	7.26	-3.25E-02		1.21E+00
		722.78	11.10	-2.47E+00		9.43E-01
		1691.02	49.00	5.65E-02		1.51E-01
+	I-125	35.49	6.49	-1.47E-01	3.31E+00	3.31E+00
+	SB-125	176.33	6.89	-1.36E-01	2.09E-01	7.38E-01
		427.89	29.33	1.97E-02		2.09E-01
		463.38	10.35	3.81E-01		6.64E-01
		600.56	17.80	1.31E-01		4.19E-01
		635.90	11.32	7.77E-03		5.81E-01
+	SB-126	414.70	83.30	2.00E-02	4.16E-01	4.57E-01
		666.33	99.60	1.14E-01		4.39E-01
		695.00	99.60	3.42E-02		4.16E-01
		720.50	53.80	2.01E-01		8.40E-01
+	SN-126	87.57	* 37.00	3.33E-01	3.57E-01	3.57E-01
+	SB-127	473.00	25.00	1.60E+01	6.31E+01	8.06E+01
		685.20	35.70	1.48E+01		6.31E+01
		783.80	14.70	1.96E+01		1.80E+02
+	I-129	29.78	57.00	-1.10E-01	4.79E-01	4.79E-01
		33.60	13.20	-7.37E-01		1.30E+00
		39.58	7.52	4.13E-01		1.51E+00
+	I-131	284.30	6.05	6.31E-01	9.42E-01	1.33E+01
		364.48	81.20	-6.08E-01		9.42E-01
		636.97	7.26	6.03E+00		1.49E+01
		722.89	1.80	-1.74E+02		6.62E+01
+	TE-132	49.72	13.10	-1.58E+02	6.04E+01	6.42E+02
		228.16	88.00	-1.82E+01		6.04E+01
+	BA-133	81.00	33.00	-1.32E+00	8.81E-02	1.96E-01
		302.84	17.80	1.31E-01		2.88E-01
		356.01	60.00	1.21E-02		8.81E-02
+	I-133	529.87	86.30	-1.91E+09	1.50E+10	1.50E+10
+	XE-133	81.00	38.00	-8.45E+01	1.25E+01	1.25E+01
+	CS-134	563.23	8.38	-1.27E-01	8.06E-02	7.32E-01
		569.32	15.43	1.10E-01		4.31E-01
		604.70	97.60	-8.67E-01		8.06E-02
		795.84	85.40	1.19E-01		1.01E-01
		801.93	8.73	-1.17E-01		7.26E-01
+	CS-135	268.24	16.00	3.07E-01	3.57E-01	3.57E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	2.67E+00	3.83E-01	3.92E+00
		163.89	4.61	2.13E+00		6.42E+00
		176.55	13.56	-3.75E-01		2.04E+00
		273.65	12.66	-4.71E+00		2.20E+00
		340.57	48.50	1.47E+00		8.21E-01

Analysis Report for 1510087-03
CP5004S01-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-136	818.50	99.70	-1.02E-01	3.83E-01	3.83E-01
		1048.07	79.60	1.87E-01		5.08E-01
		1235.34	19.70	-4.52E-01		2.76E+00
+	CS-137	661.65	85.12	-1.80E-02	8.18E-02	8.18E-02
+	LA-138	788.74	34.00	5.77E-02	1.03E-01	2.17E-01
		1435.80	66.00	1.57E-02		1.03E-01
+	CE-139	165.85	80.35	-2.79E-02	7.52E-02	7.52E-02
+	BA-140	162.64	6.70	1.77E+00	1.40E+00	4.63E+00
		304.84	4.50	-6.67E+00		5.72E+00
		423.70	3.20	1.23E+00		1.08E+01
		437.55	2.00	-1.05E+01		1.70E+01
		537.32	25.00	-1.71E-01		1.40E+00
+	LA-140	328.77	20.50	1.65E+00	3.68E-01	1.71E+00
		487.03	45.50	3.32E-01		8.54E-01
		815.85	23.50	-5.50E-01		1.73E+00
		1596.49	95.49	-3.67E-02		3.68E-01
+	CE-141	145.44	48.40	2.41E-01	2.23E-01	2.23E-01
+	CE-143	57.36	11.80	4.11E+06	2.62E+06	8.81E+06
		293.26	42.00	7.36E+06		2.62E+06
		664.55	5.20	-1.52E+06		1.79E+07
+	CE-144	133.54	10.80	1.65E-01	5.03E-01	5.03E-01
+	PM-144	476.78	42.00	1.47E-03	6.97E-02	1.41E-01
		618.01	98.60	-2.34E-03		6.97E-02
		696.49	99.49	-2.32E-02		7.15E-02
+	PM-145	36.85	21.70	-1.46E-01	3.31E-01	6.19E-01
		37.36	39.70	4.35E-02		3.31E-01
		42.30	15.10	-2.34E-01		6.44E-01
		72.40	2.31	-2.32E+00		3.53E+00
+	PM-146	453.90	39.94	7.32E-02	1.58E-01	1.58E-01
		735.90	14.01	7.63E-02		4.74E-01
		747.13	13.10	1.25E-01		5.64E-01
+	ND-147	91.11	28.90	6.75E-01	2.54E+00	2.54E+00
		531.02	13.10	-4.56E-01		3.66E+00
+	PM-149	285.90	3.10	-3.39E+03	4.19E+04	4.19E+04
+	EU-152	121.78	20.50	-2.10E-03	2.41E-01	2.41E-01
		244.69	5.40	1.26E-02		1.00E+00
		344.27	19.13	-1.48E-02		2.55E-01
		778.89	9.20	2.40E-01		7.46E-01
		964.01	10.40	-9.89E-01		9.57E-01
		1085.78	7.22	-9.32E-01		9.70E-01
		1112.02	9.60	6.79E-02		7.75E-01
		1407.95	14.94	4.96E-02		4.67E-01
+	GD-153	97.43	31.30	-1.97E-01	1.86E-01	1.86E-01
		103.18	22.20	2.46E-02		2.45E-01
+	EU-154	123.07	40.50	3.26E-02	1.23E-01	1.23E-01
		723.30	19.70	-9.65E-01		3.68E-01
		873.19	11.50	1.92E-01		6.19E-01
		996.32	10.30	5.76E-02		6.77E-01
		1004.76	17.90	2.81E-03		4.98E-01

Analysis Report for 1510087-03
CP5004S01-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	1274.45	35.50	1.19E-01	1.23E-01	2.24E-01
+	EU-155	86.50	30.90	3.32E-02	2.37E-01	2.37E-01
		105.30	20.70	9.82E-02		2.37E-01
+	EU-156	811.77	10.40	8.19E-01	3.11E+00	3.11E+00
		1153.47	7.20	2.14E+00		6.02E+00
		1230.71	8.90	0.00E+00		4.10E+00
+	HO-166M	184.41	72.60	3.31E-01	1.06E-01	1.06E-01
		280.45	29.60	2.46E-02		1.63E-01
		410.94	11.10	-1.70E-02		5.64E-01
		711.69	54.10	-2.21E-02		1.21E-01
+	TM-171	66.72	0.14	2.13E+00	5.29E+01	5.29E+01
+	HF-172	81.75	4.52	-1.83E+00	4.44E-01	1.49E+00
		125.81	11.30	1.30E-01		4.44E-01
+	LU-172	181.53	20.60	-4.01E+00	3.93E+00	7.46E+00
		810.06	16.63	-6.26E+00		1.23E+01
		912.12	15.25	6.81E+01		2.72E+01
		1093.66	62.50	1.88E+00		3.93E+00
+	LU-173	100.72	5.24	8.99E-01	2.87E-01	1.05E+00
		272.11	21.20	2.86E-01		2.87E-01
+	HF-175	343.40	84.00	-4.63E-03	8.11E-02	8.11E-02
+	LU-176	88.34	13.30	-6.25E-01	4.89E-02	5.55E-01
		201.83	86.00	-4.65E-02		5.98E-02
		306.78	94.00	1.26E-02		4.89E-02
+	TA-182	67.75	41.20	4.24E-02	2.07E-01	2.07E-01
		1121.30	34.90	6.95E-01		4.24E-01
		1189.05	16.23	6.57E-02		7.26E-01
		1221.41	26.98	-1.87E-01		3.67E-01
		1231.02	11.44	0.00E+00		8.79E-01
+	IR-192	308.46	29.68	6.17E-02	1.66E-01	2.14E-01
		468.07	48.10	5.96E-02		1.66E-01
+	HG-203	279.19	77.30	2.06E-02	1.12E-01	1.12E-01
+	BI-207	569.67	97.72	2.34E-02	6.82E-02	6.82E-02
		1063.62	74.90	-5.37E-03		1.00E-01
+	TL-208	583.14	* 30.22	1.37E+00	1.39E-01	3.01E-01
		860.37	* 4.48	1.37E+00		1.79E+00
		2614.66	* 35.85	1.09E+00		1.39E-01
+	BI-210M	262.00	45.00	-1.16E-02	1.16E-01	1.16E-01
		300.00	23.00	-4.76E-01		2.42E-01
+	PB-210	46.50	* 4.25	1.67E+00	2.82E+00	2.82E+00
+	PB-211	404.84	2.90	2.48E-01	1.91E+00	1.91E+00
		831.96	2.90	-9.21E-01		2.28E+00
+	BI-212	727.17	* 11.80	6.85E-01	1.12E+00	1.33E+00
		1620.62	* 2.75	1.76E+00		1.12E+00
+	PB-212	238.63	* 44.60	1.57E+00	2.05E-01	2.05E-01
		300.09	* 3.41	1.33E+00		3.38E+00
+	BI-214	609.31	* 46.30	1.18E+00	1.82E-01	3.42E-01
		1120.29	* 15.10	1.32E+00		8.14E-01
		1764.49	* 15.80	1.61E+00		3.35E-01

Analysis Report for 1510087-03
CP5004S01-02

Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	2204.22	*	4.98	1.88E+00	1.82E-01
+	PB-214	295.21	*	19.19	1.51E+00	2.58E-01
		351.92	*	37.19	1.24E+00	2.58E-01
+	RN-219	401.80		6.50	-1.48E-01	7.82E-01
+	RA-223	323.87		3.88	-1.37E+00	1.28E+00
+	RA-224	240.98	*	3.95	5.28E+00	2.33E+00
+	RA-225	40.00		31.00	4.48E-01	1.64E+00
+	RA-226	186.21	*	3.28	6.24E+00	2.77E+00
+	TH-227	50.10		8.40	-2.38E-01	5.83E-01
		236.00		11.50	-4.83E+00	5.83E-01
		256.20		6.30	-7.18E-01	7.71E-01
+	AC-228	338.32	*	11.40	1.58E+00	4.63E-01
		911.07	*	27.70	1.31E+00	4.63E-01
		969.11	*	16.60	1.57E+00	6.25E-01
+	TH-230	48.44		16.90	1.81E-01	5.36E-01
		62.85		4.60	1.06E+01	2.24E+00
		67.67		0.37	3.87E+00	1.89E+01
+	PA-231	283.67		1.60	-3.35E-02	2.22E+00
		302.67		2.30	1.00E+00	2.22E+00
+	TH-231	25.64		14.70	4.60E-01	2.08E+00
		84.21	*	6.40	1.10E+00	2.08E+00
+	PA-233	311.98		38.60	-1.16E-02	2.78E-01
+	PA-234	131.20		20.40	-1.48E-01	2.52E-01
		733.99		8.80	6.08E-02	7.35E-01
		946.00		12.00	-1.63E-01	6.05E-01
+	PA-234M	1001.03	*	0.92	1.36E+01	9.47E+00
+	TH-234	63.29	*	3.80	1.05E+01	2.61E+00
+	U-235	143.76		10.50	3.11E-01	5.14E-01
		163.35		4.70	3.75E-01	1.13E+00
		205.31		4.70	6.75E-01	1.15E+00
+	NP-237	86.50		12.60	8.04E-02	5.73E-01
+	NP-239	106.10		22.70	1.29E+03	3.11E+03
		228.18		10.70	-2.14E+03	7.09E+03
		277.60		14.10	2.50E+03	5.61E+03
+	AM-241	59.54		35.90	4.77E-02	2.16E-01
+	AM-243	74.67	*	66.00	3.21E-01	1.70E-01
+	CM-243	209.75	*	3.29	1.66E+00	4.50E-01
		228.14		10.60	-1.49E-01	4.93E-01
		277.60	*	14.00	4.50E-01	4.50E-01

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction

? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1510087-03
CP5004S01-02

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	8.12E-01	8.12E-01	3.38E-02	3.84E-01
NA-22	1274.54	99.94	8.09E-02	8.09E-02	4.29E-02	3.71E-02
NA-24	1368.53	99.99	3.12E+14	1.24E+14	-7.14E+12	1.40E+14
	2754.09	99.86	1.24E+14		-9.00E+13	3.93E+13
AL-26	1808.65	99.76	4.58E-02	4.58E-02	-3.27E-03	1.88E-02
+ K-40	1460.81	*	10.67	7.94E-01	7.94E-01	2.16E+01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	7.42E-02	7.42E-02	1.52E-02	3.64E-02
	78.34	96.00	9.17E-02		2.30E-01	4.52E-02
SC-46	889.25	99.98	7.96E-02	7.96E-02	-4.83E-02	3.66E-02
	1120.51	99.99	1.57E-01		2.32E-01	7.47E-02
V-48	983.52	99.98	3.17E-01	3.05E-01	4.87E-02	1.48E-01
	1312.10	97.50	3.05E-01		-5.18E-02	1.38E-01
CR-51	320.08	9.83	1.14E+00	1.14E+00	3.34E-01	5.44E-01
MN-54	834.83	99.97	7.71E-02	7.71E-02	-1.45E-02	3.60E-02
CO-56	846.75	99.96	9.20E-02	9.20E-02	-8.92E-04	4.28E-02
	1037.75	14.03	6.53E-01		-5.85E-02	3.00E-01
	1238.25	67.00	2.13E-01		8.11E-02	1.00E-01
	1771.40	15.51	4.86E-01		9.48E-02	2.08E-01
	2598.48	16.90	2.95E-01		-9.13E-03	1.10E-01
CO-57	122.06	85.51	6.25E-02	6.25E-02	-5.45E-04	3.04E-02
	136.48	10.60	5.21E-01		1.53E-01	2.53E-01
CO-58	810.76	99.40	1.01E-01	1.01E-01	1.75E-02	4.72E-02
FE-59	1099.22	56.50	2.32E-01	2.32E-01	-6.55E-02	1.08E-01
	1291.56	43.20	2.67E-01		-4.48E-02	1.21E-01
CO-60	1173.22	100.00	8.49E-02	6.04E-02	-1.42E-02	3.94E-02
	1332.49	100.00	6.04E-02		-1.39E-02	2.68E-02
ZN-65	1115.52	50.75	1.70E-01	1.70E-01	1.79E-02	7.86E-02
+ GA-67	93.31	*	35.70	3.76E+02	1.33E+03	1.86E+02
	208.95	*	2.24	3.25E+03	2.47E+03	1.58E+03
	300.22	*	16.00	7.31E+02	2.86E+02	3.59E+02
SE-75	121.11	16.70	3.53E-01	1.01E-01	4.66E-02	1.72E-01
	136.00	59.20	1.04E-01		4.70E-02	5.08E-02
	264.65	59.80	1.01E-01		2.59E-02	4.86E-02
	279.53	25.20	2.53E-01		3.18E-02	1.22E-01
	400.65	11.40	5.09E-01		-3.18E-01	2.40E-01
RB-82	776.52	13.00	1.23E+00	1.23E+00	-3.32E-01	5.76E-01

Analysis Report for 1510087-03
CP5004S01-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RB-83	520.41	46.00	1.75E-01	1.75E-01	1.68E-02	8.28E-02
	529.64	30.30	2.72E-01		-3.46E-02	1.29E-01
	552.65	16.40	5.24E-01		2.62E-01	2.48E-01
KR-85	513.99	0.43	2.20E+01	2.20E+01	3.59E+01	1.06E+01
SR-85	513.99	99.27	1.36E-01	1.36E-01	2.21E-01	6.55E-02
Y-88	898.02	93.40	9.85E-02	5.39E-02	2.71E-02	4.60E-02
	1836.01	99.38	5.39E-02		-8.28E-03	2.18E-02
NB-93M	16.57	9.43	7.06E+01	7.06E+01	-5.53E+01	3.29E+01
NB-94	702.63	100.00	7.70E-02	6.57E-02	6.02E-02	3.65E-02
	871.10	100.00	6.57E-02		-2.88E-02	3.04E-02
NB-95	765.79	99.81	1.65E-01	1.65E-01	1.21E-01	7.81E-02
NB-95M	235.69	25.00	1.39E+02	1.39E+02	-1.15E+03	6.77E+01
ZR-95	724.18	43.70	2.59E-01	1.79E-01	-2.24E-01	1.23E-01
MO-99	756.72	55.30	1.79E-01		1.68E-03	8.42E-02
	181.06	6.20	3.08E+03	1.73E+03	-7.42E+02	1.49E+03
	739.58	12.80	1.73E+03		-1.44E+03	8.06E+02
	778.00	4.50	5.32E+03		-8.46E+02	2.48E+03
RU-103	497.08	89.00	1.18E-01	1.18E-01	-2.60E-02	5.57E-02
RU-106	621.84	9.80	6.75E-01	6.75E-01	1.61E-01	3.17E-01
AG-108M	433.93	89.90	6.64E-02	6.64E-02	-9.75E-03	3.16E-02
	614.37	90.40	7.40E-02		1.99E-02	3.50E-02
	722.95	90.50	7.95E-02		-2.09E-01	3.75E-02
+ CD-109	88.03	*	3.72	3.73E+00	3.48E+00	1.85E+00
AG-110M	657.75		93.14	8.13E-02	8.13E-02	1.85E-02
	677.61		10.53	6.64E-01		1.17E-01
	706.67		16.46	4.57E-01		-1.93E-02
	763.93		21.98	3.80E-01		5.07E-02
	884.67		71.63	1.02E-01		-4.04E-02
	1384.27		23.94	3.03E-01		-9.16E-02
CD-113M	263.70	0.02	2.25E+02	2.25E+02	9.80E+01	1.08E+02
SN-113	255.12	1.93	3.09E+00	9.78E-02	-1.19E+00	1.48E+00
	391.69	64.90	9.78E-02		2.96E-02	4.65E-02
TE123M	159.00	84.10	7.18E-02	7.18E-02	-5.92E-02	3.48E-02
SB-124	602.71	97.87	1.09E-01	1.09E-01	-3.21E-02	5.19E-02
	645.85	7.26	1.21E+00		-3.25E-02	5.67E-01
	722.78	11.10	9.43E-01		-2.47E+00	4.44E-01
	1691.02	49.00	1.51E-01		5.65E-02	6.39E-02
I-125	35.49	6.49	3.31E+00	3.31E+00	-1.47E-01	1.61E+00
SB-125	176.33	6.89	7.38E-01	2.09E-01	-1.36E-01	3.58E-01
	427.89	29.33	2.09E-01		1.97E-02	9.94E-02
	463.38	10.35	6.64E-01		3.81E-01	3.17E-01
	600.56	17.80	4.19E-01		1.31E-01	1.99E-01
	635.90	11.32	5.81E-01		7.77E-03	2.74E-01
SB-126	414.70	83.30	4.57E-01	4.16E-01	2.00E-02	2.19E-01
	666.33	99.60	4.39E-01		1.14E-01	2.08E-01
	695.00	99.60	4.16E-01		3.42E-02	1.96E-01
	720.50	53.80	8.40E-01		2.01E-01	3.96E-01
+ SN-126	87.57	*	37.00	3.57E-01	3.33E-01	1.77E-01
SB-127	473.00	25.00	8.06E+01	6.31E+01	1.60E+01	3.82E+01
	685.20	35.70	6.31E+01		1.48E+01	2.96E+01
	783.80	14.70	1.80E+02		1.96E+01	8.45E+01
I-129	29.78	57.00	4.79E-01	4.79E-01	-1.10E-01	2.32E-01
	33.60	13.20	1.30E+00		-7.37E-01	6.32E-01

Analysis Report for 1510087-03
CP5004S01-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-129	39.58	7.52	1.51E+00	4.79E-01	4.13E-01	7.37E-01
I-131	284.30	6.05	1.33E+01	9.42E-01	6.31E-01	6.35E+00
	364.48	81.20	9.42E-01		-6.08E-01	4.46E-01
	636.97	7.26	1.49E+01		6.03E+00	7.00E+00
	722.89	1.80	6.62E+01		-1.74E+02	3.12E+01
TE-132	49.72	13.10	6.42E+02	6.04E+01	-1.58E+02	3.14E+02
	228.16	88.00	6.04E+01		-1.82E+01	2.92E+01
BA-133	81.00	33.00	1.96E-01	8.81E-02	-1.32E+00	9.60E-02
	302.84	17.80	2.88E-01		1.31E-01	1.38E-01
	356.01	60.00	8.81E-02		1.21E-02	4.20E-02
I-133	529.87	86.30	1.50E+10	1.50E+10	-1.91E+09	7.13E+09
XE-133	81.00	38.00	1.25E+01	1.25E+01	-8.45E+01	6.14E+00
CS-134	563.23	8.38	7.32E-01	8.06E-02	-1.27E-01	3.45E-01
	569.32	15.43	4.31E-01		1.10E-01	2.04E-01
	604.70	97.60	8.06E-02		-8.67E-01	3.84E-02
	795.84	85.40	1.01E-01		1.19E-01	4.77E-02
	801.93	8.73	7.26E-01		-1.17E-01	3.36E-01
CS-135	268.24	16.00	3.57E-01	3.57E-01	3.07E-01	1.72E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.92E+00	3.83E-01	2.67E+00	1.91E+00
	163.89	4.61	6.42E+00		2.13E+00	3.12E+00
	176.55	13.56	2.04E+00		-3.75E-01	9.88E-01
	273.65	12.66	2.20E+00		-4.71E+00	1.05E+00
	340.57	48.50	8.21E-01		1.47E+00	3.97E-01
	818.50	99.70	3.83E-01		-1.02E-01	1.79E-01
	1048.07	79.60	5.08E-01		1.87E-01	2.35E-01
	1235.34	19.70	2.76E+00		-4.52E-01	1.29E+00
CS-137	661.65	85.12	8.18E-02	8.18E-02	-1.80E-02	3.86E-02
LA-138	788.74	34.00	2.17E-01	1.03E-01	5.77E-02	1.02E-01
	1435.80	66.00	1.03E-01		1.57E-02	4.62E-02
CE-139	165.85	80.35	7.52E-02	7.52E-02	-2.79E-02	3.65E-02
BA-140	162.64	6.70	4.63E+00	1.40E+00	1.77E+00	2.25E+00
	304.84	4.50	5.72E+00		-6.67E+00	2.72E+00
	423.70	3.20	1.08E+01		1.23E+00	5.13E+00
	437.55	2.00	1.70E+01		-1.05E+01	8.10E+00
	537.32	25.00	1.40E+00		-1.71E-01	6.60E-01
LA-140	328.77	20.50	1.71E+00	3.68E-01	1.65E+00	8.20E-01
	487.03	45.50	8.54E-01		3.32E-01	4.07E-01
	815.85	23.50	1.73E+00		-5.50E-01	8.06E-01
	1596.49	95.49	3.68E-01		-3.67E-02	1.61E-01
CE-141	145.44	48.40	2.23E-01	2.23E-01	2.41E-01	1.09E-01
CE-143	57.36	11.80	8.81E+06	2.62E+06	4.11E+06	4.32E+06
	293.26	42.00	2.62E+06		7.36E+06	1.28E+06
	664.55	5.20	1.79E+07		-1.52E+06	8.44E+06
CE-144	133.54	10.80	5.03E-01	5.03E-01	1.65E-01	2.45E-01
PM-144	476.78	42.00	1.41E-01	6.97E-02	1.47E-03	6.67E-02
	618.01	98.60	6.97E-02		-2.34E-03	3.29E-02
	696.49	99.49	7.15E-02		-2.32E-02	3.36E-02
PM-145	36.85	21.70	6.19E-01	3.31E-01	-1.46E-01	3.01E-01
	37.36	39.70	3.31E-01		4.35E-02	1.61E-01
	42.30	15.10	6.44E-01		-2.34E-01	3.13E-01

Analysis Report for 1510087-03

CP5004S01-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-145	72.40	2.31	3.53E+00	3.31E-01	-2.32E+00	1.73E+00
PM-146	453.90	39.94	1.58E-01	1.58E-01	7.32E-02	7.52E-02
	735.90	14.01	4.74E-01		7.63E-02	2.22E-01
	747.13	13.10	5.64E-01		1.25E-01	2.65E-01
ND-147	91.11	28.90	2.54E+00	2.54E+00	6.75E-01	1.25E+00
	531.02	13.10	3.66E+00		-4.56E-01	1.73E+00
PM-149	285.90	3.10	4.19E+04	4.19E+04	-3.39E+03	2.01E+04
EU-152	121.78	20.50	2.41E-01	2.41E-01	-2.10E-03	1.17E-01
	244.69	5.40	1.00E+00		1.26E-02	4.84E-01
	344.27	19.13	2.55E-01		-1.48E-02	1.21E-01
	778.89	9.20	7.46E-01		2.40E-01	3.49E-01
	964.01	10.40	9.57E-01		-9.89E-01	4.53E-01
	1085.78	7.22	9.70E-01		-9.32E-01	4.45E-01
	1112.02	9.60	7.75E-01		6.79E-02	3.57E-01
	1407.95	14.94	4.67E-01		4.96E-02	2.10E-01
GD-153	97.43	31.30	1.86E-01	1.86E-01	-1.97E-01	9.10E-02
	103.18	22.20	2.45E-01		2.46E-02	1.19E-01
EU-154	123.07	40.50	1.23E-01	1.23E-01	3.26E-02	6.01E-02
	723.30	19.70	3.68E-01		-9.65E-01	1.73E-01
	873.19	11.50	6.19E-01		1.92E-01	2.89E-01
	996.32	10.30	6.77E-01		5.76E-02	3.12E-01
	1004.76	17.90	4.98E-01		2.81E-03	2.34E-01
	1274.45	35.50	2.24E-01		1.19E-01	1.03E-01
EU-155	86.50	30.90	2.37E-01	2.37E-01	3.32E-02	1.16E-01
	105.30	20.70	2.37E-01		9.82E-02	1.15E-01
EU-156	811.77	10.40	3.11E+00	3.11E+00	8.19E-01	1.46E+00
	1153.47	7.20	6.02E+00		2.14E+00	2.82E+00
	1230.71	8.90	4.10E+00		0.00E+00	1.89E+00
HO-166M	184.41	72.60	1.06E-01	1.06E-01	3.31E-01	5.21E-02
	280.45	29.60	1.63E-01		2.46E-02	7.78E-02
	410.94	11.10	5.64E-01		-1.70E-02	2.70E-01
	711.69	54.10	1.21E-01		-2.21E-02	5.65E-02
TM-171	66.72	0.14	5.29E+01	5.29E+01	2.13E+00	2.60E+01
HF-172	81.75	4.52	1.49E+00	4.44E-01	-1.83E+00	7.30E-01
	125.81	11.30	4.44E-01		1.30E-01	2.16E-01
LU-172	181.53	20.60	7.46E+00	3.93E+00	-4.01E+00	3.62E+00
	810.06	16.63	1.23E+01		-6.26E+00	5.75E+00
	912.12	15.25	2.72E+01		6.81E+01	1.31E+01
	1093.66	62.50	3.93E+00		1.88E+00	1.83E+00
LU-173	100.72	5.24	1.05E+00	2.87E-01	8.99E-01	5.13E-01
	272.11	21.20	2.87E-01		2.86E-01	1.38E-01
HF-175	343.40	84.00	8.11E-02	8.11E-02	-4.63E-03	3.86E-02
LU-176	88.34	13.30	5.55E-01	4.89E-02	-6.25E-01	2.73E-01
	201.83	86.00	5.98E-02		-4.65E-02	2.89E-02
	306.78	94.00	4.89E-02		1.26E-02	2.33E-02
TA-182	67.75	41.20	2.07E-01	2.07E-01	4.24E-02	1.01E-01
	1121.30	34.90	4.24E-01		6.95E-01	2.02E-01
	1189.05	16.23	7.26E-01		6.57E-02	3.40E-01
	1221.41	26.98	3.67E-01		-1.87E-01	1.69E-01
	1231.02	11.44	8.79E-01		0.00E+00	4.06E-01
IR-192	308.46	29.68	2.14E-01	1.66E-01	6.17E-02	1.02E-01
	468.07	48.10	1.66E-01		5.96E-02	7.87E-02
HG-203	279.19	77.30	1.12E-01	1.12E-01	2.06E-02	5.37E-02

Analysis Report for 1510087-03
CP5004S01-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BI-207	569.67	97.72	6.82E-02	6.82E-02	2.34E-02	3.23E-02
	1063.62	74.90	1.00E-01		-5.37E-03	4.64E-02
+ TL-208	583.14 *	30.22	3.01E-01	1.39E-01	1.37E+00	1.45E-01
	860.37 *	4.48	1.79E+00		1.37E+00	8.40E-01
	2614.66 *	35.85	1.39E-01		1.09E+00	5.64E-02
BI-210M	262.00	45.00	1.16E-01	1.16E-01	-1.16E-02	5.60E-02
	300.00	23.00	2.42E-01		-4.76E-01	1.16E-01
+ PB-210	46.50 *	4.25	2.82E+00	2.82E+00	1.67E+00	1.38E+00
PB-211	404.84	2.90	1.91E+00	1.91E+00	2.48E-01	9.07E-01
	831.96	2.90	2.28E+00		-9.21E-01	1.06E+00
+ BI-212	727.17 *	11.80	1.33E+00	1.12E+00	6.85E-01	6.47E-01
	1620.62 *	2.75	1.12E+00		1.76E+00	4.19E-01
+ PB-212	238.63 *	44.60	2.05E-01	2.05E-01	1.57E+00	1.00E-01
	300.09 *	3.41	3.38E+00		1.33E+00	1.66E+00
+ BI-214	609.31 *	46.30	3.42E-01	1.82E-01	1.18E+00	1.67E-01
	1120.29 *	15.10	8.14E-01		1.32E+00	3.88E-01
	1764.49 *	15.80	3.35E-01		1.61E+00	1.42E-01
	2204.22 *	4.98	1.82E-01		1.88E+00	0.00E+00
+ PB-214	295.21 *	19.19	5.98E-01	2.58E-01	1.51E+00	2.93E-01
	351.92 *	37.19	2.58E-01		1.24E+00	1.26E-01
RN-219	401.80	6.50	7.82E-01	7.82E-01	-1.48E-01	3.71E-01
RA-223	323.87	3.88	1.28E+00	1.28E+00	-1.37E+00	6.09E-01
+ RA-224	240.98 *	3.95	2.33E+00	2.33E+00	5.28E+00	1.14E+00
RA-225	40.00	31.00	1.64E+00	1.64E+00	4.48E-01	8.00E-01
+ RA-226	186.21 *	3.28	2.77E+00	2.77E+00	6.24E+00	1.36E+00
TH-227	50.10	8.40	9.70E-01	5.83E-01	-2.38E-01	4.74E-01
	236.00	11.50	5.83E-01		-4.83E+00	2.84E-01
	256.20	6.30	7.71E-01		-7.18E-01	3.70E-01
+ AC-228	338.32 *	11.40	6.31E-01	4.63E-01	1.58E+00	3.05E-01
	911.07 *	27.70	4.63E-01		1.31E+00	2.23E-01
	969.11 *	16.60	6.25E-01		1.57E+00	2.97E-01
TH-230	48.44	16.90	5.36E-01	5.36E-01	1.81E-01	2.62E-01
	62.85	4.60	2.24E+00		1.06E+01	1.11E+00
	67.67	0.37	1.89E+01		3.87E+00	9.28E+00
PA-231	283.67	1.60	3.01E+00	2.22E+00	-3.35E-02	1.44E+00
	302.67	2.30	2.22E+00		1.00E+00	1.06E+00
+ TH-231	25.64	14.70	3.89E+00	2.08E+00	4.60E-01	1.89E+00
	84.21 *	6.40	2.08E+00		1.10E+00	1.03E+00
PA-233	311.98	38.60	2.78E-01	2.78E-01	-1.16E-02	1.32E-01
PA-234	131.20	20.40	2.52E-01	2.52E-01	-1.48E-01	1.23E-01
	733.99	8.80	7.35E-01		6.08E-02	3.44E-01
	946.00	12.00	6.05E-01		-1.63E-01	2.81E-01
+ PA-234M	1001.03 *	0.92	9.47E+00	9.47E+00	1.36E+01	4.44E+00
+ TH-234	63.29 *	3.80	2.61E+00	2.61E+00	1.05E+01	1.29E+00
U-235	143.76	10.50	5.14E-01	5.14E-01	3.11E-01	2.51E-01
	163.35	4.70	1.13E+00		3.75E-01	5.50E-01
	205.31	4.70	1.15E+00		6.75E-01	5.58E-01
NP-237	86.50	12.60	5.73E-01	5.73E-01	8.04E-02	2.82E-01
NP-239	106.10	22.70	3.11E+03	3.11E+03	1.29E+03	1.51E+03
	228.18	10.70	7.09E+03		-2.14E+03	3.42E+03
	277.60	14.10	5.61E+03		2.50E+03	2.70E+03
AM-241	59.54	35.90	2.16E-01	2.16E-01	4.77E-02	1.06E-01
+ AM-243	74.67 *	66.00	1.70E-01	1.70E-01	3.21E-01	8.41E-02

Analysis Report for 1510087-03
CP5004S01-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	CM-243	209.75	*	3.29	2.18E+00	4.50E-01	1.66E+00	1.07E+00
		228.14		10.60	4.93E-01		-1.49E-01	2.38E-01
		277.60	*	14.00	4.50E-01		4.50E-01	2.18E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP5004S01-02

Elapsed Live time: 3600

Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	67	99	70	99	76	81
25:	76	78	82	68	74	75	83	74
33:	77	70	84	75	89	86	85	101
41:	85	95	82	99	90	124	197	134
49:	114	112	121	129	149	158	136	157
57:	151	178	150	148	197	180	373	726
65:	211	161	151	161	196	185	182	165
73:	204	218	472	356	405	610	169	197
81:	170	161	136	196	230	164	206	306
89:	176	223	225	327	913	436	192	130
97:	92	97	149	113	105	100	99	92
105:	95	111	94	80	113	115	129	119
113:	120	98	100	91	81	77	88	86
121:	83	107	82	93	92	86	80	79
129:	126	125	86	89	75	93	94	89
137:	84	91	85	76	81	92	76	109
145:	115	88	85	76	70	71	67	90
153:	60	103	89	87	76	81	64	74
161:	76	91	86	87	70	75	75	67
169:	79	73	65	66	60	70	62	63
177:	72	75	56	68	72	77	77	66
185:	99	324	201	65	58	81	74	56
193:	62	61	49	77	68	68	68	57
201:	56	66	57	63	76	73	52	62
209:	105	107	68	50	51	60	54	48
217:	49	54	64	66	66	60	63	59
225:	68	58	51	60	45	49	54	53
233:	59	57	51	55	65	195	700	240
241:	123	160	103	43	31	35	45	47
249:	34	41	32	39	43	42	40	36
257:	38	38	64	52	41	45	40	42
265:	52	32	32	27	37	71	89	35
273:	32	32	47	43	45	67	36	29
281:	31	42	30	34	27	32	44	26
289:	34	30	33	23	41	43	172	193
297:	52	34	29	53	53	37	21	35
305:	24	26	18	32	34	25	29	27
313:	29	24	29	18	22	29	27	40
321:	28	24	28	32	37	24	38	56
329:	48	32	37	24	31	25	26	17
337:	19	77	146	46	39	30	30	24
345:	22	26	25	20	25	23	69	333
353:	224	33	25	30	33	22	27	18
361:	28	27	20	28	19	15	23	32

369: 23 24 17 25 29 27 22 37

Sample Title: CP5004S01-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	21	28	19	25	18	26	17	22
385:	20	25	21	32	22	21	29	20
393:	25	27	17	17	27	18	17	17
401:	18	28	19	29	28	31	24	22
409:	30	25	23	24	16	26	22	21
417:	24	26	20	22	17	24	12	27
425:	16	21	23	14	21	19	28	20
433:	19	17	19	20	15	18	25	15
441:	18	32	23	23	21	20	18	25
449:	19	10	23	25	19	19	17	21
457:	17	16	19	16	16	23	39	37
465:	17	16	12	13	23	20	18	16
473:	11	17	16	13	12	12	14	19
481:	16	15	14	23	28	13	24	16
489:	20	21	17	22	20	24	8	18
497:	12	12	22	13	14	15	13	17
505:	19	16	20	22	20	46	96	75
513:	36	22	16	16	19	19	16	11
521:	14	18	20	14	14	21	24	15
529:	24	21	8	9	14	16	14	17
537:	15	12	17	14	10	14	16	11
545:	10	14	12	10	17	17	14	18
553:	22	20	11	15	12	13	21	9
561:	9	21	18	10	13	11	13	11
569:	14	22	14	21	18	12	18	15
577:	10	10	15	10	14	29	141	158
585:	43	17	10	8	11	11	7	18
593:	11	12	10	14	16	15	16	13
601:	25	20	20	17	15	17	13	35
609:	149	217	57	18	11	19	19	14
617:	15	5	14	7	19	14	11	9
625:	11	12	10	12	14	13	19	10
633:	12	14	16	10	8	15	13	14
641:	8	11	9	11	8	10	14	11
649:	12	17	20	7	9	15	14	13
657:	11	12	17	17	13	9	16	11
665:	14	23	13	9	14	13	14	12
673:	14	15	12	15	16	9	12	8
681:	6	9	6	8	12	15	15	12
689:	15	9	8	17	10	15	13	11
697:	9	8	10	16	12	16	20	14
705:	13	18	11	10	10	9	9	9
713:	14	10	14	15	11	17	9	15
721:	15	21	9	8	10	12	36	46
729:	18	9	11	7	16	11	14	8
737:	3	9	11	12	7	12	6	15
745:	15	11	12	14	10	11	11	14
753:	7	8	13	16	11	11	9	10
761:	13	10	3	13	12	17	25	22
769:	28	15	8	15	9	13	4	12
777:	7	15	5	11	11	10	9	7
785:	11	25	13	11	8	8	6	11
793:	8	13	28	19	14	10	13	3

801: 7 7 4 5 15 9 10 12

Sample Title: CP5004S01-02

Channel	1	2	3	4	5	6	7	8	9
809:	10	11	9	13	6	15	13	7	
817:	9	9	9	14	10	8	7	10	
825:	10	10	7	7	7	9	7	9	
833:	12	7	8	15	12	7	13	14	
841:	13	12	7	8	13	5	2	15	
849:	10	10	11	4	6	10	5	9	
857:	4	7	10	21	20	12	11	6	
865:	9	8	7	8	7	6	9	9	
873:	6	9	11	13	9	5	8	12	
881:	13	6	7	13	10	7	5	6	
889:	9	7	6	4	14	6	17	2	
897:	5	12	13	11	7	6	7	7	
905:	12	7	13	8	9	26	95	82	
913:	21	14	9	10	6	9	5	10	
921:	9	12	8	8	6	8	7	11	
929:	11	6	5	10	8	13	16	15	
937:	9	13	11	8	3	6	6	5	
945:	6	9	10	13	9	15	15	13	
953:	8	10	5	7	5	7	5	9	
961:	6	9	7	11	40	21	15	20	
969:	64	53	14	4	4	9	9	7	
977:	13	7	5	9	15	11	9	7	
985:	10	4	6	8	9	5	2	7	
993:	12	5	2	4	7	13	5	9	
1001:	28	28	16	8	10	2	8	8	
1009:	8	9	9	6	8	5	6	12	
1017:	7	11	9	6	4	5	6	5	
1025:	7	9	10	6	8	4	6	12	
1033:	8	6	6	4	8	10	4	5	
1041:	7	7	6	2	8	11	6	4	
1049:	2	6	12	12	12	5	7	2	
1057:	4	4	4	10	7	7	7	7	
1065:	7	9	7	9	7	10	6	5	
1073:	11	4	8	5	6	1	8	8	
1081:	13	10	5	2	7	4	8	8	
1089:	8	7	12	5	10	13	10	8	
1097:	5	5	6	8	12	10	7	7	
1105:	2	12	7	5	3	7	8	5	
1113:	10	6	7	5	6	7	11	34	
1121:	45	14	10	9	5	6	3	7	
1129:	9	6	7	7	5	13	4	7	
1137:	7	1	7	8	7	5	14	11	
1145:	9	7	7	7	8	8	14	6	
1153:	9	11	16	15	10	11	9	7	
1161:	12	11	6	7	9	9	8	10	
1169:	18	9	6	4	11	6	13	6	
1177:	3	6	8	9	12	5	6	8	
1185:	7	11	16	9	3	12	16	6	
1193:	10	13	9	14	12	5	8	7	
1201:	13	4	11	3	9	11	6	14	
1209:	12	7	10	9	11	8	3	13	
1217:	7	7	7	8	8	8	6	4	
1225:	12	6	8	7	4	8	7	8	

1233: 4 11 7 7 10 23 21 9

Sample Title: CP5004S01-02

Channel	1	2	3	4	5	6	7	8	9
1241:	8	8	15	7	5	5	5	5	6
1249:	5	10	3	4	7	3	6	7	
1257:	7	6	6	6	7	5	4	7	
1265:	9	4	5	9	2	4	4	6	
1273:	5	7	4	6	10	7	1	4	
1281:	1	11	3	6	4	5	3	3	
1289:	4	4	8	4	4	4	5	7	
1297:	3	5	7	5	6	6	6	3	
1305:	3	8	8	10	2	4	6	6	
1313:	3	7	5	10	2	8	4	7	
1321:	3	5	3	7	5	3	0	5	
1329:	4	5	4	0	4	1	3	5	
1337:	4	2	5	5	4	6	2	5	
1345:	1	4	3	1	3	3	1	6	
1353:	7	1	5	4	5	5	2	3	
1361:	5	4	4	6	3	4	5	4	
1369:	2	2	4	1	4	2	4	4	
1377:	6	17	7	6	6	2	2	3	
1385:	4	4	4	4	2	2	4	1	
1393:	3	1	2	2	2	3	1	5	
1401:	6	9	4	4	3	1	2	9	
1409:	8	3	1	4	2	2	6	2	
1417:	12	4	2	5	2	1	1	3	
1425:	3	2	3	1	6	3	3	4	
1433:	5	1	1	2	5	6	5	3	
1441:	2	2	4	4	1	2	4	6	
1449:	3	2	4	2	1	1	2	6	
1457:	6	5	34	177	357	249	44	9	
1465:	0	4	3	3	3	0	2	2	
1473:	3	4	1	1	3	1	1	1	
1481:	1	1	3	2	2	1	2	3	
1489:	1	0	2	4	1	7	3	3	
1497:	2	3	1	6	5	3	2	1	
1505:	2	3	3	3	7	7	0	3	
1513:	5	1	1	0	3	0	2	0	
1521:	3	1	1	1	4	1	3	2	
1529:	1	2	1	0	2	0	1	2	
1537:	0	2	3	3	0	4	2	2	
1545:	1	1	2	3	0	2	2	4	
1553:	2	1	1	0	2	4	1	3	
1561:	0	2	0	1	4	4	2	2	
1569:	2	3	1	3	2	2	1	0	
1577:	0	2	3	6	3	2	3	1	
1585:	5	2	6	11	7	3	2	3	
1593:	5	2	1	2	3	2	1	4	
1601:	2	1	4	0	2	2	0	2	
1609:	0	2	1	0	1	3	3	0	
1617:	0	0	3	4	6	4	2	0	
1625:	1	2	1	2	1	4	5	3	
1633:	2	3	3	2	4	2	3	1	
1641:	1	1	0	1	2	0	3	1	
1649:	0	3	1	1	1	1	2	2	
1657:	1	2	1	0	0	5	3	0	

1665: 1 1 1 1 1 0 2 0

Sample Title: CP5004S01-02

Channel	1	2	3	4	5	6	7	8
1673:	0	0	3	0	1	2	2	3
1681:	3	3	3	1	1	1	0	2
1689:	0	2	2	1	0	3	1	0
1697:	4	1	0	1	0	0	3	1
1705:	1	3	1	2	2	1	3	2
1713:	1	0	1	2	2	2	2	1
1721:	2	1	0	1	2	2	3	2
1729:	4	13	4	4	2	1	0	4
1737:	1	2	0	2	0	1	0	1
1745:	0	0	0	2	3	0	2	2
1753:	0	1	3	0	1	0	0	1
1761:	0	2	9	21	31	18	3	3
1769:	2	1	0	1	2	3	1	1
1777:	2	2	1	3	2	1	1	1
1785:	0	1	0	2	0	2	2	0
1793:	3	2	2	0	2	2	1	1
1801:	0	0	0	1	3	0	1	0
1809:	1	1	1	2	1	1	1	1
1817:	1	0	2	1	2	1	1	1
1825:	2	0	1	0	2	2	5	3
1833:	0	0	0	0	1	2	3	1
1841:	1	1	1	1	2	4	4	6
1849:	1	2	2	0	1	0	1	1
1857:	0	0	0	0	1	1	1	3
1865:	2	1	4	0	2	0	0	2
1873:	1	2	1	1	1	1	2	1
1881:	0	0	0	0	0	1	1	1
1889:	1	3	1	0	1	1	3	1
1897:	3	1	2	1	1	2	2	1
1905:	0	2	3	2	0	0	2	3
1913:	4	1	1	1	1	2	0	1
1921:	1	2	0	0	1	0	1	2
1929:	1	0	0	2	0	0	1	1
1937:	0	0	1	2	0	1	4	1
1945:	0	1	0	2	0	1	2	1
1953:	2	2	3	0	2	1	0	1
1961:	0	1	2	0	0	0	0	1
1969:	2	1	1	1	1	0	0	2
1977:	0	1	1	0	0	0	1	3
1985:	0	0	0	1	1	0	2	0
1993:	0	0	2	3	3	2	1	2
2001:	2	1	2	2	0	1	1	0
2009:	0	5	0	0	1	2	1	0
2017:	1	1	1	0	1	0	2	1
2025:	1	0	1	0	2	1	3	0
2033:	0	2	1	3	0	1	1	1
2041:	0	1	1	1	2	0	2	1
2049:	0	0	0	2	2	1	0	0
2057:	1	0	2	1	1	2	0	1
2065:	2	1	0	0	1	4	2	3
2073:	2	1	0	0	1	1	0	3
2081:	1	3	0	1	0	2	0	1
2089:	0	0	1	0	0	1	0	1

2097: 1 1 1 0 3 1 3 5

Sample Title: CP5004S01-02

Channel	1	2	3	4	5	6	7	8
2105:	3	2	2	2	0	1	1	1
2113:	1	1	4	1	0	2	2	1
2121:	0	1	1	1	0	0	2	1
2129:	0	1	1	1	0	1	1	0
2137:	3	1	1	1	1	1	3	3
2145:	1	3	5	0	1	1	0	2
2153:	0	0	0	1	0	1	1	2
2161:	0	0	1	0	3	2	2	0
2169:	4	1	1	1	0	0	0	0
2177:	0	2	2	1	1	2	2	2
2185:	2	1	1	1	3	0	2	2
2193:	0	0	0	1	0	0	0	1
2201:	2	1	4	12	3	2	1	2
2209:	0	0	2	1	1	2	1	2
2217:	0	0	0	2	2	1	0	1
2225:	0	1	2	0	3	2	3	4
2233:	1	2	2	3	0	2	3	0
2241:	2	0	1	3	2	2	2	2
2249:	0	2	0	1	3	0	1	1
2257:	0	1	0	0	1	0	0	4
2265:	1	0	1	1	3	0	0	1
2273:	2	3	2	1	0	1	1	2
2281:	3	2	2	0	1	4	2	0
2289:	1	2	1	0	1	2	2	3
2297:	2	1	0	2	2	1	2	1
2305:	1	3	3	3	2	1	0	2
2313:	0	1	1	0	0	2	0	0
2321:	0	2	2	0	1	2	1	0
2329:	1	0	1	0	2	2	0	1
2337:	1	4	0	1	2	0	1	0
2345:	0	1	1	2	1	0	1	3
2353:	1	1	2	0	1	0	4	0
2361:	1	1	2	1	0	2	0	0
2369:	0	0	1	1	0	0	0	0
2377:	1	0	4	0	0	0	2	0
2385:	0	1	3	2	0	0	1	0
2393:	1	3	0	0	4	0	1	1
2401:	1	2	0	1	0	1	2	3
2409:	2	1	2	0	2	2	4	0
2417:	1	1	1	1	0	1	2	0
2425:	4	0	0	0	1	0	1	1
2433:	4	1	0	0	1	2	0	1
2441:	1	1	1	2	2	4	2	1
2449:	3	2	0	1	1	0	0	0
2457:	0	1	2	0	1	1	0	0
2465:	0	0	0	3	1	0	0	2
2473:	0	0	0	0	1	1	1	0
2481:	0	0	3	0	0	0	2	1
2489:	1	0	1	0	0	2	2	2
2497:	1	0	0	1	2	0	0	0
2505:	0	1	1	0	0	3	0	1
2513:	0	0	0	1	0	0	0	1
2521:	0	0	0	1	1	1	1	0

2529: 0 2 0 0 1 0 2 0

Sample Title: CP5004S01-02

Channel	1	2	3	4	5	6	7	8
2537:	1	0	0	1	0	1	0	1
2545:	0	0	1	0	2	0	0	0
2553:	0	0	0	0	0	2	0	0
2561:	0	0	2	1	0	0	0	0
2569:	0	0	0	2	0	1	1	0
2577:	0	0	0	0	0	2	1	1
2585:	2	1	1	1	1	1	0	1
2593:	1	0	0	0	0	1	1	1
2601:	0	0	0	0	0	0	0	0
2609:	1	0	1	3	19	38	36	17
2617:	1	3	0	0	0	0	0	0
2625:	0	2	0	0	0	0	0	0
2633:	0	1	0	0	0	0	0	0
2641:	2	0	1	0	0	0	0	1
2649:	0	1	0	0	1	0	0	0
2657:	0	0	0	0	0	1	1	0
2665:	0	0	0	0	0	1	0	1
2673:	0	0	1	0	1	1	0	1
2681:	0	0	0	1	0	0	1	1
2689:	0	0	0	0	1	0	1	1
2697:	0	0	0	0	0	0	1	0
2705:	1	0	1	0	0	0	0	0
2713:	0	1	1	1	0	0	1	0
2721:	1	0	0	1	0	1	0	0
2729:	0	0	0	1	0	1	0	0
2737:	1	0	1	0	1	0	0	1
2745:	0	0	1	0	0	0	0	0
2753:	1	0	0	0	0	0	1	2
2761:	0	0	0	0	0	0	0	0
2769:	0	0	1	2	0	2	0	0
2777:	1	0	1	0	1	1	1	0
2785:	0	0	0	0	0	0	0	0
2793:	1	0	0	0	0	2	0	1
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	2	0	0	0	0
2817:	0	0	0	0	0	0	2	0
2825:	0	0	2	0	0	0	1	1
2833:	0	0	0	0	0	1	1	0
2841:	0	0	0	1	0	0	0	0
2849:	0	0	1	1	1	0	0	2
2857:	0	0	1	1	0	1	0	0
2865:	1	0	0	0	1	0	1	0
2873:	0	1	1	0	0	0	0	0
2881:	0	0	2	0	0	0	0	0
2889:	0	0	0	0	0	0	1	1
2897:	0	0	0	0	0	1	0	0
2905:	0	0	0	0	2	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	1
2929:	1	0	0	0	0	0	1	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	2
2953:	0	0	0	0	1	0	0	1

2961: 0 1 0 1 0 0 2 0

Sample Title: CP5004S01-02

Channel	1	2	3	4	5	6	7	8
2969:	1	0	0	0	0	0	1	0
2977:	0	0	0	0	1	1	1	0
2985:	1	0	0	0	0	0	0	0
2993:	1	0	1	1	1	1	0	0
3001:	0	0	0	0	0	0	1	0
3009:	0	0	0	0	0	1	0	0
3017:	0	0	0	0	1	0	0	1
3025:	1	0	0	0	0	0	0	0
3033:	0	0	1	0	0	1	0	0
3041:	0	0	1	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	2	1	0	0	1
3065:	1	0	2	0	0	0	1	0
3073:	0	0	0	1	1	0	0	0
3081:	0	0	1	0	0	0	0	0
3089:	0	0	0	0	0	0	0	0
3097:	0	0	1	0	0	0	0	0
3105:	0	0	0	0	0	0	0	2
3113:	1	0	0	0	1	0	0	0
3121:	0	0	0	2	0	0	0	0
3129:	0	1	0	0	1	0	2	0
3137:	0	0	0	0	0	0	1	0
3145:	0	0	0	0	0	0	1	0
3153:	0	0	0	0	1	0	0	0
3161:	0	0	1	0	0	0	0	0
3169:	0	0	0	0	0	0	0	1
3177:	0	0	0	0	0	0	0	2
3185:	0	0	0	0	0	1	0	0
3193:	0	0	0	0	4	0	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	1	0	0	0	1	0	0
3217:	0	1	0	0	0	0	0	0
3225:	0	0	0	0	0	0	0	1
3233:	0	0	0	0	0	0	1	1
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	0	1	0
3257:	0	0	0	1	0	0	0	0
3265:	0	0	0	0	0	1	0	0
3273:	0	1	0	1	0	0	0	0
3281:	0	0	0	0	0	1	1	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	1
3313:	0	0	0	0	0	0	0	0
3321:	0	1	0	0	0	0	0	1
3329:	0	0	0	0	1	0	0	1
3337:	1	0	0	0	0	0	0	1
3345:	0	0	0	0	1	0	0	1
3353:	0	0	0	0	0	1	0	0
3361:	0	0	1	0	0	0	1	0
3369:	0	0	0	1	0	1	0	0
3377:	1	0	1	0	0	0	0	1
3385:	0	0	0	0	0	0	0	0

3393: 0 0 0 0 0 1 0 0

Sample Title: CP5004S01-02

Channel	1	2	3	4	5	6	7	8
3401:	0	0	1	0	0	0	0	0
3409:	1	0	0	0	0	0	1	0
3417:	0	0	0	0	1	1	0	0
3425:	0	0	1	1	0	0	1	0
3433:	0	0	1	0	0	0	0	0
3441:	0	1	0	0	0	0	0	0
3449:	1	0	0	0	0	0	0	1
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	1
3473:	0	0	0	1	0	0	0	0
3481:	0	0	1	0	0	0	0	0
3489:	0	1	0	0	0	0	0	0
3497:	0	0	0	1	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	2	1	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	1	0	0	0	0	0	1
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	1	3	0	0	0	0	0	0
3569:	0	0	0	0	0	1	0	0
3577:	0	0	0	0	0	0	0	1
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	1	1	0	1	0	0	1
3641:	0	0	1	0	0	0	0	1
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	1	0	0	0	0	0	0
3673:	0	0	1	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	1	0	0
3697:	0	0	0	0	0	1	0	0
3705:	0	0	0	0	1	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	1	0	0	0	1	0	0
3737:	0	1	0	0	0	0	0	1
3745:	0	0	0	0	1	0	0	0
3753:	0	0	1	0	1	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	1
3785:	0	0	1	1	0	0	1	0
3793:	0	0	0	0	0	0	0	0
3801:	0	1	0	0	0	0	1	1
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

3825: 0 0 1 1 0 0 0 0

Sample Title: CP5004S01-02

Channel	1	2	3	4	5	6	7	8	9
3833:	0	0	0	0	0	0	0	0	0
3841:	0	1	0	0	0	0	0	1	0
3849:	0	0	2	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	1	1
3881:	1	0	0	0	1	0	0	0	0
3889:	0	0	0	0	0	0	0	0	0
3897:	1	0	0	0	0	0	0	0	0
3905:	0	1	0	0	0	0	0	0	1
3913:	1	0	0	0	0	1	0	0	0
3921:	1	0	1	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0	0
3937:	0	0	0	1	0	0	0	0	0
3945:	0	0	0	0	0	0	0	1	0
3953:	0	0	0	1	0	0	0	0	0
3961:	0	1	0	0	1	1	1	1	1
3969:	0	0	0	1	0	1	0	0	1
3977:	0	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0	0
3993:	0	0	1	0	0	0	0	0	0
4001:	1	0	0	0	0	0	0	0	0
4009:	1	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0	0
4025:	0	1	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0	1
4041:	0	0	0	0	0	0	0	1	0
4049:	0	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0	0
4065:	0	1	0	0	0	0	0	0	0
4073:	1	1	0	0	0	0	0	1	0
4081:	1	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	1	0

Analysis Report for 1510087-04
CP5004S01-02

1119

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-04
Sample Description : CP5004S01-02
Sample Type : SOIL

Sample Size : 5.688E+02 grams
Facility : Countroom

Sample Taken On : 10/7/2015 5:07:35PM
Acquisition Started : 11/9/2015 7:12:58AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.5 seconds

Dead Time : 0.04 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 19 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 29308

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-04
CP5004S01-02

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 8:13:02AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	63.37	63.72	0.0000	0.00
2	74.94	75.28	0.0000	0.00
3	77.38	77.72	0.0000	0.00
4	87.80	88.13	0.0000	0.00
5	92.53	92.86	0.0000	0.00
6	98.98	99.31	0.0000	0.00
7	104.87	105.20	0.0000	0.00
8	186.11	186.41	0.0000	0.00
9	209.66	209.96	0.0000	0.00
10	238.67	238.96	0.0000	0.00
11	241.72	242.00	0.0000	0.00
12	270.05	270.33	0.0000	0.00
13	277.46	277.74	0.0000	0.00
14	295.43	295.70	0.0000	0.00
15	300.52	300.79	0.0000	0.00
16	327.89	328.15	0.0000	0.00
17	338.45	338.71	0.0000	0.00
18	352.09	352.34	0.0000	0.00
19	408.81	409.04	0.0000	0.00
20	463.04	463.25	0.0000	0.00
21	505.98	506.17	0.0000	0.00
22	510.92	511.12	0.0000	0.00
23	583.51	583.68	0.0000	0.00
24	609.56	609.72	0.0000	0.00
25	664.74	664.88	0.0000	0.00
26	727.63	727.75	0.0000	0.00
27	767.91	768.02	0.0000	0.00
28	774.36	774.46	0.0000	0.00
29	795.79	795.89	0.0000	0.00
30	860.85	860.92	0.0000	0.00
31	911.35	911.41	0.0000	0.00
32	934.88	934.93	0.0000	0.00
33	969.67	969.70	0.0000	0.00
34	1000.70	1000.73	0.0000	0.00
35	1121.00	1120.98	0.0000	0.00
36	1156.96	1156.93	0.0000	0.00
37	1238.33	1238.27	0.0000	0.00
38	1311.25	1311.16	0.0000	0.00
39	1378.05	1377.94	0.0000	0.00
40	1409.09	1408.97	0.0000	0.00
41	1416.50	1416.37	0.0000	0.00
42	1461.29	1461.15	0.0000	0.00

Analysis Report for 1510087-04
CP5004S01-02

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1465.68	1465.54	0.0000	0.00
44	1469.53	1469.39	0.0000	0.00
45	1509.38	1509.22	0.0000	0.00
46	1520.94	1520.78	0.0000	0.00
47	1632.36	1632.16	0.0000	0.00
48	1660.27	1660.05	0.0000	0.00
49	1729.91	1729.67	0.0000	0.00
50	1738.32	1738.08	0.0000	0.00
51	1765.05	1764.80	0.0000	0.00
52	1847.01	1846.72	0.0000	0.00
53	2023.83	2023.47	0.0000	0.00
54	2104.23	2103.85	0.0000	0.00
55	2118.71	2118.32	0.0000	0.00
56	2205.07	2204.65	0.0000	0.00
57	2447.28	2446.76	0.0000	0.00
58	2615.03	2614.44	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510087-04

CP5004S01-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 8:13:02AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	63.37	60 -	66	63.72	8.55E+02	125.22	2.23E+03	1.33
M	2	74.94	71 -	83	75.28	4.53E+02	107.53	1.86E+03	1.60
m	3	77.38	71 -	83	77.72	6.05E+02	112.90	1.86E+03	1.61
m	4	87.80	83 -	98	88.13	2.29E+02	76.47	1.28E+03	1.48
m	5	92.53	83 -	98	92.86	1.04E+03	100.26	1.19E+03	1.49
	6	98.98	98 -	102	99.31	7.50E+01	69.45	9.90E+02	1.43
	7	104.87	103 -	108	105.20	6.36E+01	76.92	1.13E+03	1.01
	8	186.11	182 -	190	186.41	4.60E+02	94.15	1.07E+03	1.77
	9	209.66	207 -	213	209.96	8.43E+01	68.18	7.77E+02	1.60
M	10	238.67	234 -	248	238.96	9.84E+02	75.97	3.83E+02	1.68
m	11	241.72	234 -	248	242.00	1.95E+02	77.43	3.69E+02	1.68
M	12	270.05	267 -	280	270.33	1.03E+02	47.86	3.64E+02	1.88
m	13	277.46	267 -	280	277.74	7.19E+01	45.20	3.43E+02	1.89
M	14	295.43	291 -	303	295.70	3.28E+02	52.35	3.26E+02	1.62
m	15	300.52	291 -	303	300.79	7.49E+01	40.69	2.99E+02	1.80
	16	327.89	325 -	332	328.15	5.65E+01	55.79	4.83E+02	2.15
	17	338.45	336 -	342	338.71	2.12E+02	51.84	3.38E+02	1.87
	18	352.09	348 -	356	352.34	5.04E+02	70.66	4.56E+02	1.91
	19	408.81	405 -	413	409.04	7.13E+01	45.55	2.77E+02	4.55
	20	463.04	461 -	467	463.25	5.42E+01	38.48	2.28E+02	1.72
M	21	505.98	505 -	519	506.17	1.69E+01	13.53	4.66E+01	1.91
m	22	510.92	505 -	519	511.12	1.88E+02	44.63	2.02E+02	2.66
	23	583.51	578 -	589	583.68	3.41E+02	63.69	3.38E+02	1.95
	24	609.56	606 -	613	609.72	3.64E+02	54.00	2.42E+02	1.89
	25	664.74	661 -	668	664.88	3.67E+01	33.11	1.55E+02	3.29
	26	727.63	724 -	731	727.75	5.25E+01	36.61	1.89E+02	1.74
	27	767.91	765 -	771	768.02	5.62E+01	33.94	1.70E+02	2.95
	28	774.36	772 -	778	774.46	5.03E+01	29.69	1.13E+02	4.74
	29	795.79	793 -	800	795.89	4.83E+01	30.72	1.27E+02	1.83
	30	860.85	855 -	867	860.92	5.57E+01	42.68	1.87E+02	2.49
	31	911.35	905 -	913	911.41	1.95E+02	45.60	1.84E+02	1.92
	32	934.88	930 -	940	934.93	3.24E+01	35.28	1.49E+02	2.08
	33	969.67	966 -	974	969.70	8.78E+01	44.53	2.28E+02	1.76
	34	1000.70	998 -	1003	1000.73	5.69E+01	24.94	8.01E+01	2.22
	35	1121.00	1117 -	1127	1120.98	1.26E+02	35.05	9.00E+01	2.24
	36	1156.96	1152 -	1163	1156.93	2.85E+01	34.87	1.37E+02	8.45
	37	1238.33	1233 -	1242	1238.27	4.40E+01	34.00	1.40E+02	2.58
	38	1311.25	1306 -	1316	1311.16	2.69E+01	26.41	6.82E+01	3.23
	39	1378.05	1373 -	1381	1377.94	2.17E+01	18.71	4.06E+01	1.66
	40	1409.09	1406 -	1412	1408.97	1.37E+01	12.55	1.46E+01	3.25

Analysis Report for 1510087-04

CP5004S01-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1416.50	1413 - 1419		1416.37	1.52E+01	8.96	3.59E+00	3.83
M	42	1461.29	1456 - 1471		1461.15	7.95E+02	57.28	1.30E+01	2.18
m	43	1465.68	1456 - 1471		1465.54	1.81E+01	35.44	9.56E-01	2.66
m	44	1469.53	1456 - 1471		1469.39	1.32E+01	8.25	7.17E-02	1.91
M	45	1509.38	1506 - 1524		1509.22	1.81E+01	10.79	2.85E+00	2.44
m	46	1520.94	1506 - 1524		1520.78	1.19E+01	10.61	1.13E+01	2.44
	47	1632.36	1628 - 1635		1632.16	1.33E+01	14.00	2.34E+01	2.89
	48	1660.27	1654 - 1664		1660.05	9.21E+00	8.85	5.58E+00	2.93
	49	1729.91	1725 - 1734		1729.67	1.69E+01	14.42	2.01E+01	1.76
	50	1738.32	1735 - 1741		1738.08	6.91E+00	8.99	8.18E+00	2.40
	51	1765.05	1760 - 1770		1764.80	6.80E+01	20.90	2.20E+01	2.42
	52	1847.01	1842 - 1850		1846.72	1.49E+01	12.03	1.23E+01	2.84
	53	2023.83	2021 - 2026		2023.47	8.82E+00	7.87	4.36E+00	2.78
	54	2104.23	2099 - 2109		2103.85	1.80E+01	15.39	2.20E+01	2.35
	55	2118.71	2115 - 2122		2118.32	1.18E+01	9.80	8.38E+00	1.98
	56	2205.07	2200 - 2211		2204.65	3.10E+01	11.14	0.00E+00	2.53
	57	2447.28	2441 - 2451		2446.76	9.50E+00	10.98	1.10E+01	2.96
	58	2615.03	2609 - 2619		2614.44	1.18E+02	22.68	5.53E+00	2.79

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 8:13:02AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	63.37	60 - 66		8.55E+02	125.22	2.23E+03	9.10E+01
M	2	74.94	71 - 83		4.53E+02	107.53	1.86E+03	7.08E+01
m	3	77.38	71 - 83		6.05E+02	112.90	1.86E+03	7.10E+01
m	4	87.80	83 - 98		2.29E+02	76.47	1.28E+03	5.89E+01
m	5	92.53	83 - 98		1.04E+03	100.26	1.19E+03	5.68E+01
	6	98.98	98 - 102		7.50E+01	69.45	9.90E+02	5.53E+01
	7	104.87	103 - 108		6.36E+01	76.92	1.13E+03	6.19E+01
	8	186.11	182 - 190		4.60E+02	94.15	1.07E+03	6.89E+01
	9	209.66	207 - 213		8.43E+01	68.18	7.77E+02	5.40E+01
M	10	238.67	234 - 248		9.84E+02	75.97	3.83E+02	3.22E+01

Analysis Report for 1510087-04

CP5004S01-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	11	241.72	234 -	248	1.95E+02	77.43	3.69E+02	3.16E+01
M	12	270.05	267 -	280	1.03E+02	47.86	3.64E+02	3.14E+01
m	13	277.46	267 -	280	7.19E+01	45.20	3.43E+02	3.04E+01
M	14	295.43	291 -	303	3.28E+02	52.35	3.26E+02	2.97E+01
m	15	300.52	291 -	303	7.49E+01	40.69	2.99E+02	2.84E+01
	16	327.89	325 -	332	5.65E+01	55.79	4.83E+02	4.42E+01
	17	338.45	336 -	342	2.12E+02	51.84	3.38E+02	3.53E+01
	18	352.09	348 -	356	5.04E+02	70.66	4.56E+02	4.49E+01
	19	408.81	405 -	413	7.13E+01	45.55	2.77E+02	3.48E+01
	20	463.04	461 -	467	5.42E+01	38.48	2.28E+02	2.92E+01
M	21	505.98	505 -	519	1.69E+01	13.53	4.66E+01	1.12E+01
m	22	510.92	505 -	519	1.88E+02	44.63	2.02E+02	2.34E+01
	23	583.51	578 -	589	3.41E+02	63.69	3.38E+02	4.26E+01
	24	609.56	606 -	613	3.64E+02	54.00	2.42E+02	3.14E+01
	25	664.74	661 -	668	3.67E+01	33.11	1.55E+02	2.53E+01
	26	727.63	724 -	731	5.25E+01	36.61	1.89E+02	2.76E+01
	27	767.91	765 -	771	5.62E+01	33.94	1.70E+02	2.50E+01
	28	774.36	772 -	778	5.03E+01	29.69	1.13E+02	2.14E+01
	29	795.79	793 -	800	4.83E+01	30.72	1.27E+02	2.25E+01
	30	860.85	855 -	867	5.57E+01	42.68	1.87E+02	3.29E+01
	31	911.35	905 -	913	1.95E+02	45.60	1.84E+02	2.96E+01
	32	934.88	930 -	940	3.24E+01	35.28	1.49E+02	2.75E+01
	33	969.67	966 -	974	8.78E+01	44.53	2.28E+02	3.32E+01
	34	1000.70	998 -	1003	5.69E+01	24.94	8.01E+01	1.63E+01
	35	1121.00	1117 -	1127	1.26E+02	35.05	9.00E+01	2.21E+01
	36	1156.96	1152 -	1163	2.85E+01	34.87	1.37E+02	2.73E+01
	37	1238.33	1233 -	1242	4.40E+01	34.00	1.40E+02	2.57E+01
	38	1311.25	1306 -	1316	2.69E+01	26.41	6.82E+01	2.00E+01
	39	1378.05	1373 -	1381	2.17E+01	18.71	4.06E+01	1.33E+01
	40	1409.09	1406 -	1412	1.37E+01	12.55	1.46E+01	8.33E+00
	41	1416.50	1413 -	1419	1.52E+01	8.96	3.59E+00	3.62E+00
M	42	1461.29	1456 -	1471	7.95E+02	57.28	1.30E+01	5.93E+00
m	43	1465.68	1456 -	1471	1.81E+01	35.44	9.56E-01	1.61E+00
m	44	1469.53	1456 -	1471	1.32E+01	8.25	7.17E-02	4.40E-01
M	45	1509.38	1506 -	1524	1.81E+01	10.79	2.85E+00	2.78E+00
m	46	1520.94	1506 -	1524	1.19E+01	10.61	1.13E+01	5.53E+00
	47	1632.36	1628 -	1635	1.33E+01	14.00	2.34E+01	9.83E+00
	48	1660.27	1654 -	1664	9.21E+00	8.85	5.58E+00	5.29E+00
	49	1729.91	1725 -	1734	1.69E+01	14.42	2.01E+01	9.74E+00
	50	1738.32	1735 -	1741	6.91E+00	8.99	8.18E+00	5.99E+00
	51	1765.05	1760 -	1770	6.80E+01	20.90	2.20E+01	1.06E+01
	52	1847.01	1842 -	1850	1.49E+01	12.03	1.23E+01	7.59E+00
	53	2023.83	2021 -	2026	8.82E+00	7.87	4.36E+00	4.25E+00
	54	2104.23	2099 -	2109	1.80E+01	15.39	2.20E+01	1.06E+01
	55	2118.71	2115 -	2122	1.18E+01	9.80	8.38E+00	5.74E+00
	56	2205.07	2200 -	2211	3.10E+01	11.14	0.00E+00	0.00E+00
	57	2447.28	2441 -	2451	9.50E+00	10.98	1.10E+01	7.47E+00
	58	2615.03	2609 -	2619	1.18E+02	22.68	5.53E+00	5.28E+00

Analysis Report for 1510087-04
CP5004S01-02

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 8:13:02AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	60 -	66	63.72	8.55E+02	125.22	2.23E+03	TH-234 TH-230
M	2	71 -	83	75.28	4.53E+02	107.53	1.86E+03	AM-243
m	3	71 -	83	77.72	6.05E+02	112.90	1.86E+03	TI-44
m	4	83 -	98	88.13	2.29E+02	76.47	1.28E+03	SN-126 CD-109 LU-176
m	5	83 -	98	92.86	1.04E+03	100.26	1.19E+03	GA-67
	6	98 -	102	99.31	7.50E+01	69.45	9.90E+02	.....
	7	103 -	108	105.20	6.36E+01	76.92	1.13E+03	EU-155
	8	182 -	190	186.41	4.60E+02	94.15	1.07E+03	RA-226
	9	207 -	213	209.96	8.43E+01	68.18	7.77E+02	CM-243 GA-67
M	10	234 -	248	238.96	9.84E+02	75.97	3.83E+02	PB-212
m	11	234 -	248	242.00	1.95E+02	77.43	3.69E+02	RA-224
M	12	267 -	280	270.33	1.03E+02	47.86	3.64E+02	.....
m	13	267 -	280	277.74	7.19E+01	45.20	3.43E+02	CM-243 NP-239
M	14	291 -	303	295.70	3.28E+02	52.35	3.26E+02	PB-214
m	15	291 -	303	300.79	7.49E+01	40.69	2.99E+02	GA-67 PB-212 BI-210M
	16	325 -	332	328.15	5.65E+01	55.79	4.83E+02	LA-140
	17	336 -	342	338.71	2.12E+02	51.84	3.38E+02	AC-228
	18	348 -	356	352.34	5.04E+02	70.66	4.56E+02	PB-214
	19	405 -	413	409.04	7.13E+01	45.55	2.77E+02	.....
	20	461 -	467	463.25	5.42E+01	38.48	2.28E+02	SB-125
M	21	505 -	519	506.17	1.69E+01	13.53	4.66E+01	.....
m	22	505 -	519	511.12	1.88E+02	44.63	2.02E+02	.....
	23	578 -	589	583.68	3.41E+02	63.69	3.38E+02	TL-208

Analysis Report for 1510087-04

CP5004S01-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
24	609.56	606 -	613	609.72	3.64E+02	54.00	2.42E+02	BI-214
25	664.74	661 -	668	664.88	3.67E+01	33.11	1.55E+02	CE-143
26	727.63	724 -	731	727.75	5.25E+01	36.61	1.89E+02	BI-212
27	767.91	765 -	771	768.02	5.62E+01	33.94	1.70E+02	.....
28	774.36	772 -	778	774.46	5.03E+01	29.69	1.13E+02	.....
29	795.79	793 -	800	795.89	4.83E+01	30.72	1.27E+02	CS-134
30	860.85	855 -	867	860.92	5.57E+01	42.68	1.87E+02	TL-208
31	911.35	905 -	913	911.41	1.95E+02	45.60	1.84E+02	AC-228 LU-172
32	934.88	930 -	940	934.93	3.24E+01	35.28	1.49E+02	.....
33	969.67	966 -	974	969.70	8.78E+01	44.53	2.28E+02	AC-228
34	1000.70	998 -	1003	1000.73	5.69E+01	24.94	8.01E+01	PA-234M
35	1121.00	1117 -	1127	1120.98	1.26E+02	35.05	9.00E+01	TA-182 SC-46 BI-214
36	1156.96	1152 -	1163	1156.93	2.85E+01	34.87	1.37E+02	.....
37	1238.33	1233 -	1242	1238.27	4.40E+01	34.00	1.40E+02	CO-56
38	1311.25	1306 -	1316	1311.16	2.69E+01	26.41	6.82E+01	V-48
39	1378.05	1373 -	1381	1377.94	2.17E+01	18.71	4.06E+01	.....
40	1409.09	1406 -	1412	1408.97	1.37E+01	12.55	1.46E+01	.....
41	1416.50	1413 -	1419	1416.37	1.52E+01	8.96	3.59E+00	.....
M 42	1461.29	1456 -	1471	1461.15	7.95E+02	57.28	1.30E+01	K-40
m 43	1465.68	1456 -	1471	1465.54	1.81E+01	35.44	9.56E-01	.....
m 44	1469.53	1456 -	1471	1469.39	1.32E+01	8.25	7.17E-02	.....
M 45	1509.38	1506 -	1524	1509.22	1.81E+01	10.79	2.85E+00	.....
m 46	1520.94	1506 -	1524	1520.78	1.19E+01	10.61	1.13E+01	.....
47	1632.36	1628 -	1635	1632.16	1.33E+01	14.00	2.34E+01	.....
48	1660.27	1654 -	1664	1660.05	9.21E+00	8.85	5.58E+00	.....
49	1729.91	1725 -	1734	1729.67	1.69E+01	14.42	2.01E+01	.....
50	1738.32	1735 -	1741	1738.08	6.91E+00	8.99	8.18E+00	.....
51	1765.05	1760 -	1770	1764.80	6.80E+01	20.90	2.20E+01	BI-214
52	1847.01	1842 -	1850	1846.72	1.49E+01	12.03	1.23E+01	.....
53	2023.83	2021 -	2026	2023.47	8.82E+00	7.87	4.36E+00	.....
54	2104.23	2099 -	2109	2103.85	1.80E+01	15.39	2.20E+01	.....
55	2118.71	2115 -	2122	2118.32	1.18E+01	9.80	8.38E+00	.....
56	2205.07	2200 -	2211	2204.65	3.10E+01	11.14	0.00E+00	BI-214
57	2447.28	2441 -	2451	2446.76	9.50E+00	10.98	1.10E+01	.....
58	2615.03	2609 -	2619	2614.44	1.18E+02	22.68	5.53E+00	TL-208

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1510087-04
CP5004S01-02

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 8:13:02AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	63.37	8.55E+02	125.22	2.49E-02	1.91E-03
M	2	74.94	4.53E+02	107.53	2.75E-02	2.30E-03
m	3	77.38	6.05E+02	112.90	2.78E-02	2.38E-03
m	4	87.80	2.29E+02	76.47	2.85E-02	2.73E-03
m	5	92.53	1.04E+03	100.26	2.86E-02	2.65E-03
	6	98.98	7.50E+01	69.45	2.85E-02	2.52E-03
	7	104.87	6.36E+01	76.92	2.83E-02	2.41E-03
	8	186.11	4.60E+02	94.15	2.24E-02	2.03E-03
	9	209.66	8.43E+01	68.18	2.09E-02	1.85E-03
M	10	238.67	9.84E+02	75.97	1.92E-02	1.64E-03
m	11	241.72	1.95E+02	77.43	1.91E-02	1.62E-03
M	12	270.05	1.03E+02	47.86	1.77E-02	1.41E-03
m	13	277.46	7.19E+01	45.20	1.74E-02	1.35E-03
M	14	295.43	3.28E+02	52.35	1.67E-02	1.31E-03
m	15	300.52	7.49E+01	40.69	1.65E-02	1.30E-03
	16	327.89	5.65E+01	55.79	1.55E-02	1.24E-03
	17	338.45	2.12E+02	51.84	1.52E-02	1.22E-03
	18	352.09	5.04E+02	70.66	1.48E-02	1.19E-03
	19	408.81	7.13E+01	45.55	1.33E-02	1.10E-03
	20	463.04	5.42E+01	38.48	1.21E-02	1.04E-03
M	21	505.98	1.69E+01	13.53	1.13E-02	9.95E-04
m	22	510.92	1.88E+02	44.63	1.12E-02	9.90E-04
	23	583.51	3.41E+02	63.69	1.02E-02	9.15E-04
	24	609.56	3.64E+02	54.00	9.82E-03	8.88E-04
	25	664.74	3.67E+01	33.11	9.18E-03	8.31E-04
	26	727.63	5.25E+01	36.61	8.55E-03	7.75E-04
	27	767.91	5.62E+01	33.94	8.19E-03	7.39E-04
	28	774.36	5.03E+01	29.69	8.14E-03	7.33E-04
	29	795.79	4.83E+01	30.72	7.96E-03	7.14E-04
	30	860.85	5.57E+01	42.68	7.48E-03	6.56E-04
	31	911.35	1.95E+02	45.60	7.15E-03	6.15E-04
	32	934.88	3.24E+01	35.28	7.00E-03	6.03E-04
	33	969.67	8.78E+01	44.53	6.80E-03	5.85E-04
	34	1000.70	5.69E+01	24.94	6.63E-03	5.69E-04
	35	1121.00	1.26E+02	35.05	6.06E-03	5.06E-04
	36	1156.96	2.85E+01	34.87	5.92E-03	4.88E-04
	37	1238.33	4.40E+01	34.00	5.61E-03	4.68E-04
	38	1311.25	2.69E+01	26.41	5.38E-03	4.55E-04
	39	1378.05	2.17E+01	18.71	5.18E-03	4.40E-04
	40	1409.09	1.37E+01	12.55	5.10E-03	4.32E-04
	41	1416.50	1.52E+01	8.96	5.08E-03	4.30E-04
M	42	1461.29	7.95E+02	57.28	4.97E-03	4.19E-04
m	43	1465.68	1.81E+01	35.44	4.96E-03	4.18E-04
m	44	1469.53	1.32E+01	8.25	4.95E-03	4.17E-04
M	45	1509.38	1.81E+01	10.79	4.86E-03	4.07E-04

Analysis Report for 1510087-04
 CP5004S01-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	46	1520.94	1.19E+01	10.61	4.83E-03	4.04E-04
	47	1632.36	1.33E+01	14.00	4.61E-03	3.77E-04
	48	1660.27	9.21E+00	8.85	4.56E-03	3.70E-04
	49	1729.91	1.69E+01	14.42	4.45E-03	3.52E-04
	50	1738.32	6.91E+00	8.99	4.43E-03	3.50E-04
	51	1765.05	6.80E+01	20.90	4.39E-03	3.43E-04
	52	1847.01	1.49E+01	12.03	4.28E-03	3.26E-04
	53	2023.83	8.82E+00	7.87	4.09E-03	3.26E-04
	54	2104.23	1.80E+01	15.39	4.02E-03	3.26E-04
	55	2118.71	1.18E+01	9.80	4.01E-03	3.26E-04
	56	2205.07	3.10E+01	11.14	3.95E-03	3.26E-04
	57	2447.28	9.50E+00	10.98	3.83E-03	3.26E-04
	58	2615.03	1.18E+02	22.68	3.79E-03	3.26E-04

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 8:13:02AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	63.37	8.55E+02	125.22	7.80E+01	1.33E+01	7.77E+02	1.26E+02
M	2	74.94	4.53E+02	107.53	5.09E+00	4.37E+00	4.47E+02	1.08E+02
m	3	77.38	6.05E+02	112.90	9.75E+00	8.28E+00	5.95E+02	1.13E+02
m	4	87.80	2.29E+02	76.47			2.29E+02	7.65E+01
m	5	92.53	1.04E+03	100.26	1.34E+02	9.83E+00	9.05E+02	1.01E+02
	6	98.98	7.50E+01	69.45			7.50E+01	6.95E+01
	7	104.87	6.36E+01	76.92			6.36E+01	7.69E+01
	8	186.11	4.60E+02	94.15	6.41E+01	7.38E+00	3.96E+02	9.44E+01
	9	209.66	8.43E+01	68.18			8.43E+01	6.82E+01
M	10	238.67	9.84E+02	75.97	2.34E+01	6.34E+00	9.61E+02	7.62E+01
m	11	241.72	1.95E+02	77.43			1.95E+02	7.74E+01
M	12	270.05	1.03E+02	47.86			1.03E+02	4.79E+01
m	13	277.46	7.19E+01	45.20			7.19E+01	4.52E+01
M	14	295.43	3.28E+02	52.35	4.17E+00	5.50E+00	3.23E+02	5.26E+01
m	15	300.52	7.49E+01	40.69			7.49E+01	4.07E+01
	16	327.89	5.65E+01	55.79			5.65E+01	5.58E+01
	17	338.45	2.12E+02	51.84	2.22E-01	4.54E+00	2.12E+02	5.20E+01

Analysis Report for 1510087-04

CP5004S01-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
18	352.09	5.04E+02	70.66	8.83E+00	4.91E+00	4.95E+02	7.08E+01
19	408.81	7.13E+01	45.55			7.13E+01	4.56E+01
20	463.04	5.42E+01	38.48			5.42E+01	3.85E+01
M 21	505.98	1.69E+01	13.53			1.69E+01	1.35E+01
m 22	510.92	1.88E+02	44.63	8.12E+01	5.49E+00	1.07E+02	4.50E+01
23	583.51	3.41E+02	63.69	6.34E+00	3.74E+00	3.35E+02	6.38E+01
24	609.56	3.64E+02	54.00	5.20E+00	3.69E+00	3.59E+02	5.41E+01
25	664.74	3.67E+01	33.11			3.67E+01	3.31E+01
26	727.63	5.25E+01	36.61			5.25E+01	3.66E+01
27	767.91	5.62E+01	33.94			5.62E+01	3.39E+01
28	774.36	5.03E+01	29.69			5.03E+01	2.97E+01
29	795.79	4.83E+01	30.72			4.83E+01	3.07E+01
30	860.85	5.57E+01	42.68			5.57E+01	4.27E+01
31	911.35	1.95E+02	45.60	3.28E+00	2.53E+00	1.92E+02	4.57E+01
32	934.88	3.24E+01	35.28			3.24E+01	3.53E+01
33	969.67	8.78E+01	44.53			8.78E+01	4.45E+01
34	1000.70	5.69E+01	24.94	4.17E+00	2.83E+00	5.28E+01	2.51E+01
35	1121.00	1.26E+02	35.05	2.28E+00	2.55E+00	1.24E+02	3.51E+01
36	1156.96	2.85E+01	34.87			2.85E+01	3.49E+01
37	1238.33	4.40E+01	34.00			4.40E+01	3.40E+01
38	1311.25	2.69E+01	26.41			2.69E+01	2.64E+01
39	1378.05	2.17E+01	18.71			2.17E+01	1.87E+01
40	1409.09	1.37E+01	12.55			1.37E+01	1.25E+01
41	1416.50	1.52E+01	8.96			1.52E+01	8.96E+00
M 42	1461.29	7.95E+02	57.28	6.46E+00	2.33E+00	7.88E+02	5.73E+01
m 43	1465.68	1.81E+01	35.44			1.81E+01	3.54E+01
m 44	1469.53	1.32E+01	8.25			1.32E+01	8.25E+00
M 45	1509.38	1.81E+01	10.79			1.81E+01	1.08E+01
m 46	1520.94	1.19E+01	10.61			1.19E+01	1.06E+01
47	1632.36	1.33E+01	14.00			1.33E+01	1.40E+01
48	1660.27	9.21E+00	8.85			9.21E+00	8.85E+00
49	1729.91	1.69E+01	14.42			1.69E+01	1.44E+01
50	1738.32	6.91E+00	8.99			6.91E+00	8.99E+00
51	1765.05	6.80E+01	20.90			6.80E+01	2.09E+01
52	1847.01	1.49E+01	12.03			1.49E+01	1.20E+01
53	2023.83	8.82E+00	7.87			8.82E+00	7.87E+00
54	2104.23	1.80E+01	15.39			1.80E+01	1.54E+01
55	2118.71	1.18E+01	9.80			1.18E+01	9.80E+00
56	2205.07	3.10E+01	11.14			3.10E+01	1.11E+01
57	2447.28	9.50E+00	10.98			9.50E+00	1.10E+01
58	2615.03	1.18E+02	22.68	3.47E+00	1.48E+00	1.15E+02	2.27E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1510087-04

CP5004S01-02

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 8:13:02AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	63.37	8.55E+02	125.22	7.80E+01	1.33E+01	7.77E+02	1.26E+02
M	2	74.94	4.53E+02	107.53	5.09E+00	4.37E+00	4.47E+02	1.08E+02
m	3	77.38	6.05E+02	112.90	9.75E+00	8.28E+00	5.95E+02	1.13E+02
m	4	87.80	2.29E+02	76.47			2.29E+02	7.65E+01
m	5	92.53	1.04E+03	100.26	1.34E+02	9.83E+00	9.05E+02	1.01E+02
	6	98.98	7.50E+01	69.45			7.50E+01	6.95E+01
	7	104.87	6.36E+01	76.92			6.36E+01	7.69E+01
	8	186.11	4.60E+02	94.15	6.41E+01	7.38E+00	3.96E+02	9.44E+01
	9	209.66	8.43E+01	68.18			8.43E+01	6.82E+01
M	10	238.67	9.84E+02	75.97	2.34E+01	6.34E+00	9.61E+02	7.62E+01
m	11	241.72	1.95E+02	77.43			1.95E+02	7.74E+01
M	12	270.05	1.03E+02	47.86			1.03E+02	4.79E+01
m	13	277.46	7.19E+01	45.20			7.19E+01	4.52E+01
M	14	295.43	3.28E+02	52.35	4.17E+00	5.50E+00	3.23E+02	5.26E+01
m	15	300.52	7.49E+01	40.69			7.49E+01	4.07E+01
	16	327.89	5.65E+01	55.79			5.65E+01	5.58E+01
	17	338.45	2.12E+02	51.84	2.22E-01	4.54E+00	2.12E+02	5.20E+01
	18	352.09	5.04E+02	70.66	8.83E+00	4.91E+00	4.95E+02	7.08E+01
	19	408.81	7.13E+01	45.55			7.13E+01	4.56E+01
	20	463.04	5.42E+01	38.48			5.42E+01	3.85E+01
M	21	505.98	1.69E+01	13.53			1.69E+01	1.35E+01
m	22	510.92	1.88E+02	44.63	8.12E+01	5.49E+00	1.07E+02	4.50E+01
	23	583.51	3.41E+02	63.69	6.34E+00	3.74E+00	3.35E+02	6.38E+01
	24	609.56	3.64E+02	54.00	5.20E+00	3.69E+00	3.59E+02	5.41E+01
	25	664.74	3.67E+01	33.11			3.67E+01	3.31E+01
	26	727.63	5.25E+01	36.61			5.25E+01	3.66E+01
	27	767.91	5.62E+01	33.94			5.62E+01	3.39E+01
	28	774.36	5.03E+01	29.69			5.03E+01	2.97E+01
	29	795.79	4.83E+01	30.72			4.83E+01	3.07E+01
	30	860.85	5.57E+01	42.68			5.57E+01	4.27E+01
	31	911.35	1.95E+02	45.60	3.28E+00	2.53E+00	1.92E+02	4.57E+01
	32	934.88	3.24E+01	35.28			3.24E+01	3.53E+01
	33	969.67	8.78E+01	44.53			8.78E+01	4.45E+01
	34	1000.70	5.69E+01	24.94	4.17E+00	2.83E+00	5.28E+01	2.51E+01
	35	1121.00	1.26E+02	35.05	2.28E+00	2.55E+00	1.24E+02	3.51E+01
	36	1156.96	2.85E+01	34.87			2.85E+01	3.49E+01
	37	1238.33	4.40E+01	34.00			4.40E+01	3.40E+01
	38	1311.25	2.69E+01	26.41			2.69E+01	2.64E+01
	39	1378.05	2.17E+01	18.71			2.17E+01	1.87E+01
	40	1409.09	1.37E+01	12.55			1.37E+01	1.25E+01
	41	1416.50	1.52E+01	8.96			1.52E+01	8.96E+00

Analysis Report for 1510087-04

CP5004S01-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	42	1461.29	7.95E+02	57.28	6.46E+00	2.33E+00	7.88E+02	5.73E+01
m	43	1465.68	1.81E+01	35.44			1.81E+01	3.54E+01
m	44	1469.53	1.32E+01	8.25			1.32E+01	8.25E+00
M	45	1509.38	1.81E+01	10.79			1.81E+01	1.08E+01
m	46	1520.94	1.19E+01	10.61			1.19E+01	1.06E+01
	47	1632.36	1.33E+01	14.00			1.33E+01	1.40E+01
	48	1660.27	9.21E+00	8.85			9.21E+00	8.85E+00
	49	1729.91	1.69E+01	14.42			1.69E+01	1.44E+01
	50	1738.32	6.91E+00	8.99			6.91E+00	8.99E+00
	51	1765.05	6.80E+01	20.90			6.80E+01	2.09E+01
	52	1847.01	1.49E+01	12.03			1.49E+01	1.20E+01
	53	2023.83	8.82E+00	7.87			8.82E+00	7.87E+00
	54	2104.23	1.80E+01	15.39			1.80E+01	1.54E+01
	55	2118.71	1.18E+01	9.80			1.18E+01	9.80E+00
	56	2205.07	3.10E+01	11.14			3.10E+01	1.11E+01
	57	2447.28	9.50E+00	10.98			9.50E+00	1.10E+01
	58	2615.03	1.18E+02	22.68	3.47E+00	1.48E+00	1.15E+02	2.27E+01

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.964	1460.81 *	10.67	1.96E+01	2.22E+00
GA-67	0.564	93.31 *	35.70	1.20E+03	5.27E+03
		208.95 *	2.24	2.44E+03	1.05E+04
		300.22 *	16.00	3.84E+02	1.70E+03
CD-109	0.991	88.03 *	3.72	3.00E+00	1.06E+00
SN-126	0.992	87.57 *	37.00	2.87E-01	9.96E-02
TL-208	0.978	583.14 *	30.22	1.44E+00	3.03E-01
		860.37 *	4.48	2.20E+00	1.69E+00
		2614.66 *	35.85	1.11E+00	2.40E-01
BI-212	0.738	727.17 *	11.80	6.86E-01	4.83E-01
		1620.62	2.75		
PB-212	0.998	238.63 *	44.60	1.48E+00	1.72E-01
		300.09 *	3.41	1.76E+00	9.65E-01
BI-214	0.963	609.31 *	46.30	1.04E+00	1.83E-01

Analysis Report for 1510087-04
CP5004S01-02

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.963	1120.29 *	15.10	1.78E+00	5.28E-01
		1764.49 *	15.80	1.29E+00	4.10E-01
		2204.22 *	4.98	2.08E+00	7.67E-01
PB-214	0.995	295.21 *	19.19	1.33E+00	2.41E-01
		351.92 *	37.19	1.19E+00	1.96E-01
RA-224	0.917	240.98 *	3.95	3.42E+00	1.39E+00
RA-226	0.998	186.21 *	3.28	7.12E+00	1.31E+01
AC-228	0.978	338.32 *	11.40	1.62E+00	4.18E-01
		911.07 *	27.70	1.28E+00	3.24E-01
		969.11 *	16.60	1.03E+00	5.28E-01
PA-234M	0.983	1001.03 *	0.92	1.14E+01	5.52E+00
TH-234	0.999	63.29 *	3.80	1.08E+01	1.94E+00
AM-243	0.989	74.67 *	66.00	3.26E-01	8.29E-02
CM-243	0.373	209.75 *	3.29	1.63E+00	1.32E+00
		228.14	10.60		
		277.60 *	14.00	3.90E-01	2.47E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 8:13:02AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 3	77.38	1.65277E-01	9.51	Tol.	TI-44
6	98.98	2.08455E-02	46.28	D-Esc	
7	104.87	1.76690E-02	60.47	Tol.	EU-155
M 12	270.05	2.86924E-02	23.17		
16	327.89	1.56972E-02	49.36	Tol.	LA-140
19	408.81	1.97976E-02	31.96		
20	463.04	1.50562E-02	35.49	Sum	
M 21	505.98	4.69510E-03	40.02	Sum	
m 22	510.92	2.96809E-02	21.04	Sum	
25	664.74	1.01998E-02	45.08	Tol.	CE-143
27	767.91	1.56107E-02	30.20		
28	774.36	1.39849E-02	29.48		
29	795.79	1.34115E-02	31.82	Sum	

Analysis Report for 1510087-04
CP5004S01-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
32	934.88	8.99403E-03	54.48	Sum	
36	1156.96	7.91524E-03	61.19	Sum	
37	1238.33	1.22222E-02	38.64	Tol.	CO-56
38	1311.25	7.47723E-03	49.07	Sum	
39	1378.05	6.02183E-03	43.16		
40	1409.09	3.80952E-03	45.75		
41	1416.50	4.22386E-03	29.46	Sum	
m 43	1465.68	5.02634E-03	97.93		
m 44	1469.53	3.67762E-03	31.14	Sum	
M 45	1509.38	5.01897E-03	29.87		
m 46	1520.94	3.30493E-03	44.57	Sum	
47	1632.36	3.68889E-03	52.71		
48	1660.27	2.55787E-03	48.03		
49	1729.91	4.70165E-03	42.60	Sum	
50	1738.32	1.91919E-03	65.03	Sum	
52	1847.01	4.12698E-03	40.49		
53	2023.83	2.44950E-03	44.65		
54	2104.23	5.00000E-03	42.76	S-Esc	
55	2118.71	3.28125E-03	41.47		
57	2447.28	2.63889E-03	57.77	Sum	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.96	1460.81 *	10.67	1.96E+01	2.22E+00
GA-67	0.56	93.31 *	35.70	1.20E+03	5.27E+03
		208.95 *	2.24	2.44E+03	1.05E+04
		300.22 *	16.00	3.84E+02	1.70E+03
CD-109	0.99	88.03 *	3.72	3.00E+00	1.06E+00
SN-126	0.99	87.57 *	37.00	2.87E-01	9.96E-02
TL-208	0.97	583.14 *	30.22	1.44E+00	3.03E-01
		860.37 *	4.48	2.20E+00	1.69E+00

Analysis Report for 1510087-04
CP5004S01-02

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TL-208	0.97	2614.66 *	35.85	1.11E+00	2.40E-01
BI-212	0.73	727.17 *	11.80	6.86E-01	4.83E-01
		1620.62	2.75		
PB-212	0.99	238.63 *	44.60	1.48E+00	1.72E-01
		300.09 *	3.41	1.76E+00	9.65E-01
BI-214	0.96	609.31 *	46.30	1.04E+00	1.83E-01
		1120.29 *	15.10	1.78E+00	5.28E-01
		1764.49 *	15.80	1.29E+00	4.10E-01
		2204.22 *	4.98	2.08E+00	7.67E-01
PB-214	0.99	295.21 *	19.19	1.33E+00	2.41E-01
		351.92 *	37.19	1.19E+00	1.96E-01
RA-224	0.91	240.98 *	3.95	3.42E+00	1.39E+00
RA-226	0.99	186.21 *	3.28	7.12E+00	1.31E+01
AC-228	0.97	338.32 *	11.40	1.62E+00	4.18E-01
		911.07 *	27.70	1.28E+00	3.24E-01
		969.11 *	16.60	1.03E+00	5.28E-01
PA-234M	0.98	1001.03 *	0.92	1.14E+01	5.52E+00
TH-234	0.99	63.29 *	3.80	1.08E+01	1.94E+00
AM-243	0.98	74.67 *	66.00	3.26E-01	8.29E-02
CM-243	0.37	209.75 *	3.29	1.63E+00	1.32E+00
		228.14	10.60		
		277.60 *	14.00	3.90E-01	2.47E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.964	1.96E+01	2.22E+00	
GA-67	0.564	7.51E+02	3.19E+03	
? CD-109	0.991	3.00E+00	1.06E+00	
? SN-126	0.992	2.87E-01	9.96E-02	
TL-208	0.978	1.25E+00	1.87E-01	

Analysis Report for 1510087-04
CP5004S01-02

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BI-212	0.738	6.86E-01	4.83E-01	
PB-212	0.998	1.38E+00	1.71E-01	
BI-214	0.963	1.19E+00	1.56E-01	
PB-214	0.995	1.25E+00	1.52E-01	
RA-224	0.917	3.42E+00	1.39E+00	
RA-226	0.998	7.12E+00	1.31E+01	
AC-228	0.978	1.33E+00	2.30E-01	
PA-234M	0.983	1.14E+01	5.52E+00	
TH-234	0.999	1.08E+01	1.94E+00	
AM-243	0.989	3.26E-01	8.29E-02	
CM-243	0.373	4.15E-01	2.43E-01	

- ? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1510087-04
CP5004S01-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 8:13:02AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
m	3	77.38	1.65277E-01	9.51	Tol.	TI-44
	6	98.98	2.08455E-02	46.28	D-Esc	
	7	104.87	1.76690E-02	60.47	Tol.	EU-155
M	12	270.05	2.86924E-02	23.17		
	16	327.89	1.56972E-02	49.36	Tol.	LA-140
	19	408.81	1.97976E-02	31.96		
	20	463.04	1.50562E-02	35.49	Sum	
M	21	505.98	4.69510E-03	40.02	Sum	
m	22	510.92	2.96809E-02	21.04	Sum	
	25	664.74	1.01998E-02	45.08	Tol.	CE-143
	27	767.91	1.56107E-02	30.20		
	28	774.36	1.39849E-02	29.48		
	29	795.79	1.34115E-02	31.82	Sum	
	32	934.88	8.99403E-03	54.48	Sum	
	36	1156.96	7.91524E-03	61.19	Sum	
	37	1238.33	1.22222E-02	38.64	Tol.	CO-56
	38	1311.25	7.47723E-03	49.07	Sum	
	39	1378.05	6.02183E-03	43.16		
	40	1409.09	3.80952E-03	45.75		
	41	1416.50	4.22386E-03	29.46	Sum	
m	43	1465.68	5.02634E-03	97.93		
m	44	1469.53	3.67762E-03	31.14	Sum	
M	45	1509.38	5.01897E-03	29.87		
m	46	1520.94	3.30493E-03	44.57	Sum	
	47	1632.36	3.68889E-03	52.71		
	48	1660.27	2.55787E-03	48.03		
	49	1729.91	4.70165E-03	42.60	Sum	
	50	1738.32	1.91919E-03	65.03	Sum	
	52	1847.01	4.12698E-03	40.49		
	53	2023.83	2.44950E-03	44.65		
	54	2104.23	5.00000E-03	42.76	S-Esc	
	55	2118.71	3.28125E-03	41.47		
	57	2447.28	2.63889E-03	57.77	Sum	

Analysis Report for 1510087-04
CP5004S01-02

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
+	BE-7	477.59	10.42	2.32E-01	8.77E-01	8.77E-01
+	NA-22	1274.54	99.94	9.22E-03	7.63E-02	7.63E-02
+	NA-24	1368.53	99.99	7.32E+13	2.32E+14	3.40E+14
		2754.09	99.86	1.65E+13		2.32E+14
+	AL-26	1808.65	99.76	1.37E-02	4.84E-02	4.84E-02
+	K-40	1460.81	* 10.67	1.96E+01	7.92E-01	7.92E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-3.48E-03	7.41E-02	7.41E-02
		78.34	96.00	1.35E-01		9.03E-02
+	SC-46	889.25	99.98	-6.50E-02	7.79E-02	7.79E-02
		1120.51	99.99	3.07E-01		1.72E-01
+	V-48	983.52	99.98	-2.04E-01	2.41E-01	2.41E-01
		1312.10	97.50	1.07E-01		3.26E-01
+	CR-51	320.08	9.83	-3.72E-01	1.09E+00	1.09E+00
+	MN-54	834.83	99.97	-1.33E-02	7.34E-02	7.34E-02
+	CO-56	846.75	99.96	-3.41E-02	8.26E-02	8.26E-02
		1037.75	14.03	1.95E-02		6.93E-01
		1238.25	67.00	2.35E-01		2.26E-01
		1771.40	15.51	3.62E-02		4.31E-01
		2598.48	16.90	4.57E-02		2.95E-01
+	CO-57	122.06	85.51	5.73E-03	6.24E-02	6.24E-02
		136.48	10.60	-1.36E-01		5.08E-01
+	CO-58	810.76	99.40	-2.39E-02	9.56E-02	9.56E-02
+	FE-59	1099.22	56.50	-6.14E-02	2.36E-01	2.36E-01
		1291.56	43.20	3.16E-02		3.23E-01
+	CO-60	1173.22	100.00	-1.09E-03	7.70E-02	9.11E-02
		1332.49	100.00	2.90E-03		7.70E-02
+	ZN-65	1115.52	50.75	3.02E-02	1.77E-01	1.77E-01
+	GA-67	93.31	* 35.70	1.20E+03	4.52E+02	4.52E+02
		208.95	* 2.24	2.44E+03		3.20E+03
		300.22	* 16.00	3.84E+02		6.67E+02
+	SE-75	121.11	16.70	-7.09E-02	9.30E-02	3.50E-01

Analysis Report for 1510087-04

CP5004S01-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	2.92E-02	9.30E-02	1.02E-01
		264.65	59.80	-2.15E-02		9.30E-02
		279.53	25.20	4.25E-03		2.53E-01
		400.65	11.40	5.44E-02		5.16E-01
+	RB-82	776.52	13.00	-2.08E-01	1.37E+00	1.37E+00
+	RB-83	520.41	46.00	5.45E-02	1.63E-01	1.63E-01
		529.64	30.30	1.34E-01		2.57E-01
		552.65	16.40	-7.16E-02		4.84E-01
+	KR-85	513.99	0.43	2.74E+01	2.03E+01	2.03E+01
+	SR-85	513.99	99.27	1.69E-01	1.25E-01	1.25E-01
+	Y-88	898.02	93.40	-1.01E-01	6.65E-02	7.85E-02
		1836.01	99.38	-4.97E-03		6.65E-02
+	NB-93M	16.57	9.43	-1.16E+02	6.49E+01	6.49E+01
+	NB-94	702.63	100.00	5.88E-03	6.52E-02	6.81E-02
		871.10	100.00	-9.93E-03		6.52E-02
+	NB-95	765.79	99.81	1.07E-02	1.77E-01	1.77E-01
+	NB-95M	235.69	25.00	-1.07E+03	1.35E+02	1.35E+02
+	ZR-95	724.18	43.70	-3.41E-03	1.75E-01	2.42E-01
		756.72	55.30	-4.95E-02		1.75E-01
+	MO-99	181.06	6.20	1.69E+02	2.04E+03	3.06E+03
		739.58	12.80	-1.23E+03		2.04E+03
		778.00	4.50	-1.08E+02		5.83E+03
+	RU-103	497.08	89.00	2.76E-02	1.25E-01	1.25E-01
+	RU-106	621.84	9.80	-2.74E-01	7.29E-01	7.29E-01
+	AG-108M	433.93	89.90	-2.11E-02	6.93E-02	6.93E-02
		614.37	90.40	4.79E-02		7.90E-02
		722.95	90.50	7.24E-03		7.57E-02
+	CD-109	88.03	* 3.72	3.00E+00	4.44E+00	4.44E+00
+	AG-110M	657.75	93.14	1.14E-02	7.68E-02	7.68E-02
		677.61	10.53	-1.74E-01		6.27E-01
		706.67	16.46	1.22E-01		4.65E-01
		763.93	21.98	4.79E-02		4.02E-01
		884.67	71.63	-5.92E-03		9.25E-02
		1384.27	23.94	-1.04E-01		2.20E-01
+	CD-113M	263.70	0.02	-1.29E+02	1.96E+02	1.96E+02
+	SN-113	255.12	1.93	-1.91E-02	1.02E-01	3.05E+00
		391.69	64.90	2.74E-02		1.02E-01
+	TE123M	159.00	84.10	2.82E-02	7.22E-02	7.22E-02
+	SB-124	602.71	97.87	-5.80E-03	1.02E-01	1.02E-01
		645.85	7.26	2.30E-02		1.22E+00
		722.78	11.10	8.59E-02		8.98E-01
		1691.02	49.00	-2.03E-02		1.23E-01
+	I-125	35.49	6.49	1.98E+00	3.43E+00	3.43E+00
+	SB-125	176.33	6.89	2.20E-01	2.15E-01	7.46E-01
		427.89	29.33	-7.94E-02		2.15E-01
		463.38	10.35	2.58E-01		6.79E-01
		600.56	17.80	-4.50E-03		3.96E-01
		635.90	11.32	1.02E-01		5.62E-01

Analysis Report for 1510087-04
CP5004S01-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-5.60E-04	4.27E-01	4.27E-01
		666.33	99.60	2.26E-01		4.41E-01
		695.00	99.60	1.19E-01		4.51E-01
		720.50	53.80	1.06E-01		7.76E-01
+	SN-126	87.57	* 37.00	2.87E-01	4.25E-01	4.25E-01
+	SB-127	473.00	25.00	1.38E+01	6.77E+01	8.20E+01
		685.20	35.70	5.98E+01		6.77E+01
		783.80	14.70	-7.90E+00		1.72E+02
+	I-129	29.78	57.00	3.04E-01	4.87E-01	4.87E-01
		33.60	13.20	6.41E-01		1.33E+00
		39.58	7.52	-6.70E-01		1.51E+00
+	I-131	284.30	6.05	3.69E+00	1.01E+00	1.41E+01
		364.48	81.20	-2.43E-01		1.01E+00
		636.97	7.26	6.61E+00		1.48E+01
		722.89	1.80	6.05E+00		6.32E+01
+	TE-132	49.72	13.10	-2.10E+02	6.08E+01	6.66E+02
		228.16	88.00	-4.84E-01		6.08E+01
+	BA-133	81.00	33.00	-7.12E-01	8.64E-02	2.00E-01
		302.84	17.80	-4.53E-02		2.99E-01
		356.01	60.00	7.40E-04		8.64E-02
+	I-133	529.87	86.30	7.65E+09	1.47E+10	1.47E+10
+	XE-133	81.00	38.00	-4.58E+01	1.29E+01	1.29E+01
+	CS-134	563.23	8.38	4.66E-02	7.77E-02	8.18E-01
		569.32	15.43	1.95E-01		4.60E-01
		604.70	97.60	1.93E-02		7.77E-02
		795.84	85.40	7.48E-02		1.01E-01
		801.93	8.73	-4.66E-01		7.91E-01
+	CS-135	268.24	16.00	2.83E-01	3.52E-01	3.52E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	-1.38E-03	3.24E-01	3.82E+00
		163.89	4.61	4.73E-02		6.16E+00
		176.55	13.56	6.08E-01		2.07E+00
		273.65	12.66	-2.71E+00		2.29E+00
		340.57	48.50	5.74E-01		7.72E-01
		818.50	99.70	-2.16E-01		3.24E-01
		1048.07	79.60	-1.16E-01		5.05E-01
		1235.34	19.70	-1.51E+00		2.84E+00
+	CS-137	661.65	85.12	1.43E-02	8.49E-02	8.49E-02
+	LA-138	788.74	34.00	1.15E-01	1.07E-01	2.17E-01
		1435.80	66.00	-1.48E-02		1.07E-01
+	CE-139	165.85	80.35	2.46E-02	7.66E-02	7.66E-02
+	BA-140	162.64	6.70	2.34E+00	1.41E+00	4.47E+00
		304.84	4.50	2.61E+00		6.42E+00
		423.70	3.20	2.90E+00		1.13E+01
		437.55	2.00	5.96E+00		1.77E+01
		537.32	25.00	-5.09E-03		1.41E+00
+	LA-140	328.77	20.50	1.32E+00	4.07E-01	1.70E+00

Analysis Report for 1510087-04
CP5004S01-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	487.03	45.50	1.75E-01	4.07E-01	7.94E-01
		815.85	23.50	5.92E-01		1.63E+00
		1596.49	95.49	7.78E-03		4.07E-01
+	CE-141	145.44	48.40	2.19E-01	2.27E-01	2.27E-01
+	CE-143	57.36	11.80	-8.35E+06	2.65E+06	8.77E+06
		293.26	42.00	6.89E+06		2.65E+06
		664.55	5.20	1.31E+07		1.92E+07
+	CE-144	133.54	10.80	-3.66E-01	5.00E-01	5.00E-01
+	PM-144	476.78	42.00	4.14E-04	7.27E-02	1.49E-01
		618.01	98.60	3.07E-02		7.90E-02
		696.49	99.49	-1.34E-02		7.27E-02
+	PM-145	36.85	21.70	-1.40E-01	3.34E-01	6.35E-01
		37.36	39.70	-9.34E-02		3.34E-01
		42.30	15.10	-5.97E-01		6.72E-01
		72.40	2.31	-3.91E+00		3.60E+00
+	PM-146	453.90	39.94	-4.33E-02	1.61E-01	1.61E-01
		735.90	14.01	-5.62E-03		5.18E-01
		747.13	13.10	-1.36E-01		5.36E-01
+	ND-147	91.11	28.90	-1.76E+00	2.50E+00	2.50E+00
		531.02	13.10	1.13E+00		3.58E+00
+	PM-149	285.90	3.10	8.60E+03	4.57E+04	4.57E+04
+	EU-152	121.78	20.50	2.21E-02	2.40E-01	2.40E-01
		244.69	5.40	-7.14E-01		1.01E+00
		344.27	19.13	-1.16E-02		2.71E-01
		778.89	9.20	2.49E-01		7.75E-01
		964.01	10.40	1.90E-01		8.65E-01
		1085.78	7.22	-2.23E-01		9.27E-01
		1112.02	9.60	1.38E-02		7.75E-01
		1407.95	14.94	2.09E-01		4.52E-01
+	GD-153	97.43	31.30	-9.06E-03	1.95E-01	1.95E-01
		103.18	22.20	2.75E-01		2.53E-01
+	EU-154	123.07	40.50	-1.78E-02	1.23E-01	1.23E-01
		723.30	19.70	3.35E-02		3.50E-01
		873.19	11.50	1.79E-01		6.10E-01
		996.32	10.30	-2.73E-02		6.64E-01
		1004.76	17.90	-1.26E-01		4.45E-01
		1274.45	35.50	2.55E-02		2.11E-01
+	EU-155	86.50	30.90	-1.16E-01	2.34E-01	2.34E-01
		105.30	20.70	9.92E-02		2.51E-01
+	EU-156	811.77	10.40	2.29E-01	2.96E+00	2.96E+00
		1153.47	7.20	6.84E-01		5.54E+00
		1230.71	8.90	1.97E+00		4.58E+00
+	HO-166M	184.41	72.60	3.25E-01	1.04E-01	1.04E-01
		280.45	29.60	-2.43E-02		1.66E-01
		410.94	11.10	1.61E-01		5.72E-01
		711.69	54.10	2.87E-02		1.33E-01
+	TM-171	66.72	0.14	4.94E+00	5.40E+01	5.40E+01
+	HF-172	81.75	4.52	-9.97E-01	4.54E-01	1.53E+00
		125.81	11.30	-4.37E-01		4.54E-01

Analysis Report for 1510087-04
CP5004S01-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	-5.79E-01	3.65E+00	7.25E+00
		810.06	16.63	-1.89E+00		1.23E+01
		912.12	15.25	-1.19E+01		2.80E+01
		1093.66	62.50	-4.42E-02		3.65E+00
+	LU-173	100.72	5.24	2.13E-01	2.94E-01	1.05E+00
		272.11	21.20	3.43E-01		2.94E-01
+	HF-175	343.40	84.00	3.98E-03	8.37E-02	8.37E-02
+	LU-176	88.34	13.30	5.85E-02	5.16E-02	5.65E-01
		201.83	86.00	-3.24E-02		5.98E-02
		306.78	94.00	-1.30E-02		5.16E-02
+	TA-182	67.75	41.20	-9.72E-03	2.07E-01	2.07E-01
		1121.30	34.90	8.04E-01		4.54E-01
		1189.05	16.23	-9.12E-02		6.31E-01
		1221.41	26.98	-5.75E-02		3.97E-01
		1231.02	11.44	4.21E-01		9.81E-01
+	IR-192	308.46	29.68	1.14E-02	1.58E-01	2.26E-01
		468.07	48.10	1.81E-02		1.58E-01
+	HG-203	279.19	77.30	2.66E-02	1.10E-01	1.10E-01
+	BI-207	569.67	97.72	1.77E-02	6.99E-02	6.99E-02
		1063.62	74.90	1.49E-02		1.04E-01
+	TL-208	583.14	* 30.22	1.44E+00	1.47E-01	3.81E-01
		860.37	* 4.48	2.20E+00		2.70E+00
		2614.66	* 35.85	1.11E+00		1.47E-01
+	BI-210M	262.00	45.00	7.40E-02	1.12E-01	1.12E-01
		300.00	23.00	-5.61E-01		2.46E-01
+	PB-210	46.50	4.25	-3.00E-02	2.21E+00	2.21E+00
+	PB-211	404.84	2.90	-1.66E-01	1.60E+00	1.60E+00
		831.96	2.90	-1.69E+00		2.13E+00
+	BI-212	727.17	* 11.80	6.86E-01	7.59E-01	7.59E-01
		1620.62	2.75	5.92E-01		2.49E+00
+	PB-212	238.63	* 44.60	1.48E+00	2.50E-01	2.50E-01
		300.09	* 3.41	1.76E+00		3.06E+00
+	BI-214	609.31	* 46.30	1.04E+00	1.82E-01	1.92E-01
		1120.29	* 15.10	1.78E+00		6.84E-01
		1764.49	* 15.80	1.29E+00		4.53E-01
		2204.22	* 4.98	2.08E+00		1.82E-01
+	PB-214	295.21	* 19.19	1.33E+00	2.24E-01	5.41E-01
		351.92	* 37.19	1.19E+00		2.24E-01
+	RN-219	401.80	6.50	2.08E-01	7.48E-01	7.48E-01
+	RA-223	323.87	3.88	3.65E-01	1.33E+00	1.33E+00
+	RA-224	240.98	* 3.95	3.42E+00	2.82E+00	2.82E+00
+	RA-225	40.00	31.00	-7.28E-01	1.65E+00	1.65E+00
+	RA-226	186.21	* 3.28	7.12E+00	2.58E+00	2.58E+00
+	TH-227	50.10	8.40	-3.15E-01	5.60E-01	9.98E-01
		236.00	11.50	-4.46E+00		5.60E-01
		256.20	6.30	-3.25E-01		7.59E-01
+	AC-228	338.32	* 11.40	1.62E+00	4.16E-01	5.62E-01
		911.07	* 27.70	1.28E+00		4.16E-01

Analysis Report for 1510087-04
CP5004S01-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.03E+00	4.16E-01	8.08E-01
+	TH-230	48.44		16.90	2.60E-01	5.39E-01	5.39E-01
		62.85		4.60	9.49E+00		2.21E+00
		67.67		0.37	-8.89E-01		1.89E+01
+	PA-231	283.67		1.60	1.27E+00	2.30E+00	3.22E+00
		302.67		2.30	-3.49E-01		2.30E+00
+	TH-231	25.64		14.70	8.90E-03	1.07E+00	4.10E+00
		84.21		6.40	-2.12E+00		1.07E+00
+	PA-233	311.98		38.60	1.32E-01	3.07E-01	3.07E-01
+	PA-234	131.20		20.40	-4.51E-02	2.53E-01	2.53E-01
		733.99		8.80	2.12E-01		8.27E-01
		946.00		12.00	1.71E-01		6.05E-01
+	PA-234M	1001.03	*	0.92	1.14E+01	7.87E+00	7.87E+00
+	TH-234	63.29	*	3.80	1.08E+01	2.62E+00	2.62E+00
+	U-235	143.76		10.50	3.59E-01	5.09E-01	5.09E-01
		163.35		4.70	8.31E-03		1.08E+00
		205.31		4.70	2.47E-01		1.11E+00
+	NP-237	86.50		12.60	-2.80E-01	5.66E-01	5.66E-01
+	NP-239	106.10		22.70	1.32E+03	3.33E+03	3.33E+03
		228.18		10.70	-5.70E+01		7.15E+03
		277.60		14.10	2.54E+03		5.53E+03
+	AM-241	59.54		35.90	-8.83E-02	2.09E-01	2.09E-01
+	AM-243	74.67	*	66.00	3.26E-01	2.27E-01	2.27E-01
+	CM-243	209.75	*	3.29	1.63E+00	4.91E-01	2.13E+00
		228.14		10.60	-3.91E-03		4.91E-01
		277.60	*	14.00	3.90E-01		7.36E-01

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction

? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

: 00426

Analysis Report for 1510087-04
CP5004S01-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	8.77E-01	8.77E-01	2.32E-01	4.17E-01
NA-22	1274.54	99.94	7.63E-02	7.63E-02	9.22E-03	3.48E-02
NA-24	1368.53	99.99	3.40E+14	2.32E+14	7.32E+13	1.53E+14
	2754.09	99.86	2.32E+14		1.65E+13	9.22E+13
AL-26	1808.65	99.76	4.84E-02	4.84E-02	1.37E-02	2.01E-02
+ K-40	1460.81	*	10.67	7.92E-01	1.96E+01	3.62E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	7.41E-02	7.41E-02	-3.48E-03	3.63E-02
	78.34	96.00	9.03E-02		1.35E-01	4.45E-02
SC-46	889.25	99.98	7.79E-02	7.79E-02	-6.50E-02	3.58E-02
	1120.51	99.99	1.72E-01		3.07E-01	8.20E-02
V-48	983.52	99.98	2.41E-01	2.41E-01	-2.04E-01	1.10E-01
	1312.10	97.50	3.26E-01		1.07E-01	1.49E-01
CR-51	320.08	9.83	1.09E+00	1.09E+00	-3.72E-01	5.18E-01
MN-54	834.83	99.97	7.34E-02	7.34E-02	-1.33E-02	3.42E-02
CO-56	846.75	99.96	8.26E-02	8.26E-02	-3.41E-02	3.82E-02
	1037.75	14.03	6.93E-01		1.95E-02	3.20E-01
	1238.25	67.00	2.26E-01		2.35E-01	1.07E-01
	1771.40	15.51	4.31E-01		3.62E-02	1.80E-01
	2598.48	16.90	2.95E-01		4.57E-02	1.10E-01
CO-57	122.06	85.51	6.24E-02	6.24E-02	5.73E-03	3.04E-02
	136.48	10.60	5.08E-01		-1.36E-01	2.47E-01
CO-58	810.76	99.40	9.56E-02	9.56E-02	-2.39E-02	4.47E-02
FE-59	1099.22	56.50	2.36E-01	2.36E-01	-6.14E-02	1.10E-01
	1291.56	43.20	3.23E-01		3.16E-02	1.49E-01
CO-60	1173.22	100.00	9.11E-02	7.70E-02	-1.09E-03	4.25E-02
	1332.49	100.00	7.70E-02		2.90E-03	3.51E-02
ZN-65	1115.52	50.75	1.77E-01	1.77E-01	3.02E-02	8.23E-02
+ GA-67	93.31	*	35.70	4.52E+02	1.20E+03	2.24E+02
	208.95	*	2.24	3.20E+03	2.44E+03	1.56E+03
	300.22	*	16.00	6.67E+02	3.84E+02	3.26E+02
SE-75	121.11	16.70	3.50E-01	9.30E-02	-7.09E-02	1.70E-01
	136.00	59.20	1.02E-01		2.92E-02	4.98E-02
	264.65	59.80	9.30E-02		-2.15E-02	4.45E-02
	279.53	25.20	2.53E-01		4.25E-03	1.22E-01
	400.65	11.40	5.16E-01		5.44E-02	2.44E-01
RB-82	776.52	13.00	1.37E+00	1.37E+00	-2.08E-01	6.42E-01
RB-83	520.41	46.00	1.63E-01	1.63E-01	5.45E-02	7.71E-02
	529.64	30.30	2.57E-01		1.34E-01	1.22E-01
	552.65	16.40	4.84E-01		-7.16E-02	2.29E-01
KR-85	513.99	0.43	2.03E+01	2.03E+01	2.74E+01	9.79E+00
SR-85	513.99	99.27	1.25E-01	1.25E-01	1.69E-01	6.03E-02
Y-88	898.02	93.40	7.85E-02	6.65E-02	-1.01E-01	3.60E-02
	1836.01	99.38	6.65E-02		-4.97E-03	2.81E-02
NB-93M	16.57	9.43	6.49E+01	6.49E+01	-1.16E+02	3.01E+01
NB-94	702.63	100.00	6.81E-02	6.52E-02	5.88E-03	3.20E-02
	871.10	100.00	6.52E-02		-9.93E-03	3.02E-02
NB-95	765.79	99.81	1.77E-01	1.77E-01	1.07E-02	8.45E-02
NB-95M	235.69	25.00	1.35E+02	1.35E+02	-1.07E+03	6.55E+01
ZR-95	724.18	43.70	2.42E-01	1.75E-01	-3.41E-03	1.14E-01
	756.72	55.30	1.75E-01		-4.95E-02	8.20E-02

Analysis Report for 1510087-04
CP5004S01-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
MO-99	181.06	6.20	3.06E+03	2.04E+03	1.69E+02	1.48E+03
	739.58	12.80	2.04E+03		-1.23E+03	9.58E+02
	778.00	4.50	5.83E+03		-1.08E+02	2.73E+03
RU-103	497.08	89.00	1.25E-01	1.25E-01	2.76E-02	5.92E-02
RU-106	621.84	9.80	7.29E-01	7.29E-01	-2.74E-01	3.44E-01
AG-108M	433.93	89.90	6.93E-02	6.93E-02	-2.11E-02	3.31E-02
	614.37	90.40	7.90E-02		4.79E-02	3.75E-02
	722.95	90.50	7.57E-02		7.24E-03	3.55E-02
+ CD-109	88.03	* 3.72	4.44E+00	4.44E+00	3.00E+00	2.20E+00
AG-110M	657.75	93.14	7.68E-02	7.68E-02	1.14E-02	3.61E-02
	677.61	10.53	6.27E-01		-1.74E-01	2.93E-01
	706.67	16.46	4.65E-01		1.22E-01	2.19E-01
	763.93	21.98	4.02E-01		4.79E-02	1.90E-01
	884.67	71.63	9.25E-02		-5.92E-03	4.25E-02
	1384.27	23.94	2.20E-01		-1.04E-01	9.41E-02
CD-113M	263.70	0.02	1.96E+02	1.96E+02	-1.29E+02	9.39E+01
SN-113	255.12	1.93	3.05E+00	1.02E-01	-1.91E-02	1.47E+00
	391.69	64.90	1.02E-01		2.74E-02	4.85E-02
	TE123M	159.00	84.10		7.22E-02	7.22E-02	2.82E-02	3.50E-02
SB-124	602.71	97.87	1.02E-01	1.02E-01	-5.80E-03	4.81E-02
	645.85	7.26	1.22E+00		2.30E-02	5.71E-01
	722.78	11.10	8.98E-01		8.59E-02	4.22E-01
	1691.02	49.00	1.23E-01		-2.03E-02	4.95E-02
I-125	35.49	6.49	3.43E+00	3.43E+00	1.98E+00	1.67E+00
SB-125	176.33	6.89	7.46E-01	2.15E-01	2.20E-01	3.61E-01
	427.89	29.33	2.15E-01		-7.94E-02	1.03E-01
	463.38	10.35	6.79E-01		2.58E-01	3.25E-01
	600.56	17.80	3.96E-01		-4.50E-03	1.88E-01
	635.90	11.32	5.62E-01		1.02E-01	2.64E-01
	SB-126	414.70	83.30		4.27E-01	4.27E-01	-5.60E-04	2.03E-01
	666.33	99.60	4.41E-01		2.26E-01	2.08E-01
	695.00	99.60	4.51E-01		1.19E-01	2.13E-01
	720.50	53.80	7.76E-01		1.06E-01	3.64E-01
+ SN-126	87.57	* 37.00	4.25E-01	4.25E-01	2.87E-01	2.11E-01
SB-127	473.00	25.00	8.20E+01	6.77E+01	1.38E+01	3.89E+01
	685.20	35.70	6.77E+01		5.98E+01	3.19E+01
	783.80	14.70	1.72E+02		-7.90E+00	8.06E+01
I-129	29.78	57.00	4.87E-01	4.87E-01	3.04E-01	2.37E-01
	33.60	13.20	1.33E+00		6.41E-01	6.48E-01
	39.58	7.52	1.51E+00		-6.70E-01	7.36E-01
I-131	284.30	6.05	1.41E+01	1.01E+00	3.69E+00	6.76E+00
	364.48	81.20	1.01E+00		-2.43E-01	4.80E-01
	636.97	7.26	1.48E+01		6.61E+00	6.99E+00
	722.89	1.80	6.32E+01		6.05E+00	2.97E+01
TE-132	49.72	13.10	6.66E+02	6.08E+01	-2.10E+02	3.26E+02
BA-133	228.16	88.00	6.08E+01	8.64E-02	-4.84E-01	2.93E+01
	81.00	33.00	2.00E-01		7.12E-01	9.82E-02
	302.84	17.80	2.99E-01		-4.53E-02	1.43E-01
	356.01	60.00	8.64E-02		7.40E-04	4.11E-02
I-133	529.87	86.30	1.47E+10	1.47E+10	7.65E+09	6.96E+09
XE-133	81.00	38.00	1.29E+01	1.29E+01	-4.58E+01	6.32E+00
CS-134	563.23	8.38	8.18E-01	7.77E-02	4.66E-02	3.88E-01
	569.32	15.43	4.60E-01		1.95E-01	2.19E-01

Analysis Report for 1510087-04

CP5004S01-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	604.70	97.60	7.77E-02	7.77E-02	1.93E-02	3.70E-02
	795.84	85.40	1.01E-01		7.48E-02	4.77E-02
	801.93	8.73	7.91E-01		-4.66E-01	3.69E-01
@ I-135 @	268.24	16.00	3.52E-01	3.52E-01	2.83E-01	1.70E-01
	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
	CS-136	153.22	7.46	3.82E+00	3.24E-01	-1.38E-03
	163.89	4.61	6.16E+00		4.73E-02	2.99E+00
	176.55	13.56	2.07E+00		6.08E-01	1.00E+00
	273.65	12.66	2.29E+00		-2.71E+00	1.10E+00
	340.57	48.50	7.72E-01		5.74E-01	3.73E-01
	818.50	99.70	3.24E-01		-2.16E-01	1.49E-01
	1048.07	79.60	5.05E-01		-1.16E-01	2.33E-01
	1235.34	19.70	2.84E+00		-1.51E+00	1.33E+00
CS-137	661.65	85.12	8.49E-02	8.49E-02	1.43E-02	4.02E-02
LA-138	788.74	34.00	2.17E-01	1.07E-01	1.15E-01	1.02E-01
	1435.80	66.00	1.07E-01		-1.48E-02	4.80E-02
CE-139	165.85	80.35	7.66E-02	7.66E-02	2.46E-02	3.72E-02
BA-140	162.64	6.70	4.47E+00	1.41E+00	2.34E+00	2.17E+00
	304.84	4.50	6.42E+00		2.61E+00	3.07E+00
	423.70	3.20	1.13E+01		2.90E+00	5.41E+00
	437.55	2.00	1.77E+01		5.96E+00	8.46E+00
	537.32	25.00	1.41E+00		-5.09E-03	6.68E-01
LA-140	328.77	20.50	1.70E+00	4.07E-01	1.32E+00	8.16E-01
	487.03	45.50	7.94E-01		1.75E-01	3.77E-01
	815.85	23.50	1.63E+00		5.92E-01	7.59E-01
	1596.49	95.49	4.07E-01		7.78E-03	1.80E-01
CE-141	145.44	48.40	2.27E-01	2.27E-01	2.19E-01	1.11E-01
CE-143	57.36	11.80	8.77E+06	2.65E+06	-8.35E+06	4.29E+06
	293.26	42.00	2.65E+06		6.89E+06	1.29E+06
	664.55	5.20	1.92E+07		1.31E+07	9.07E+06
CE-144	133.54	10.80	5.00E-01	5.00E-01	-3.66E-01	2.43E-01
PM-144	476.78	42.00	1.49E-01	7.27E-02	4.14E-04	7.08E-02
	618.01	98.60	7.90E-02		3.07E-02	3.75E-02
	696.49	99.49	7.27E-02		-1.34E-02	3.42E-02
PM-145	36.85	21.70	6.35E-01	3.34E-01	-1.40E-01	3.09E-01
	37.36	39.70	3.34E-01		-9.34E-02	1.63E-01
	42.30	15.10	6.72E-01		-5.97E-01	3.28E-01
	72.40	2.31	3.60E+00		-3.91E+00	1.77E+00
PM-146	453.90	39.94	1.61E-01	1.61E-01	-4.33E-02	7.70E-02
	735.90	14.01	5.18E-01		-5.62E-03	2.44E-01
	747.13	13.10	5.36E-01		-1.36E-01	2.52E-01
ND-147	91.11	28.90	2.50E+00	2.50E+00	-1.76E+00	1.23E+00
	531.02	13.10	3.58E+00		1.13E+00	1.69E+00
PM-149	285.90	3.10	4.57E+04	4.57E+04	8.60E+03	2.19E+04
EU-152	121.78	20.50	2.40E-01	2.40E-01	2.21E-02	1.17E-01
	244.69	5.40	1.01E+00		-7.14E-01	4.89E-01
	344.27	19.13	2.71E-01		-1.16E-02	1.29E-01
	778.89	9.20	7.75E-01		2.49E-01	3.63E-01
	964.01	10.40	8.65E-01		1.90E-01	4.07E-01
	1085.78	7.22	9.27E-01		-2.23E-01	4.24E-01
	1112.02	9.60	7.75E-01		1.38E-02	3.57E-01

Analysis Report for 1510087-04

CP5004S01-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
EU-152	1407.95	14.94	4.52E-01	2.40E-01	2.09E-01	2.02E-01	
GD-153	97.43	31.30	1.95E-01	1.95E-01	-9.06E-03	9.52E-02	
	103.18	22.20	2.53E-01		2.75E-01	1.24E-01	
EU-154	123.07	40.50	1.23E-01	1.23E-01	-1.78E-02	5.99E-02	
	723.30	19.70	3.50E-01		3.35E-02	1.64E-01	
	873.19	11.50	6.10E-01		1.79E-01	2.84E-01	
	996.32	10.30	6.64E-01		-2.73E-02	3.06E-01	
	1004.76	17.90	4.45E-01		-1.26E-01	2.07E-01	
	1274.45	35.50	2.11E-01		2.55E-02	9.65E-02	
EU-155	86.50	30.90	2.34E-01	2.34E-01	-1.16E-01	1.15E-01	
	105.30	20.70	2.51E-01		9.92E-02	1.22E-01	
EU-156	811.77	10.40	2.96E+00	2.96E+00	2.29E-01	1.39E+00	
	1153.47	7.20	5.54E+00		6.84E-01	2.59E+00	
	1230.71	8.90	4.58E+00		1.97E+00	2.13E+00	
HO-166M	184.41	72.60	1.04E-01	1.04E-01	3.25E-01	5.11E-02	
	280.45	29.60	1.66E-01		-2.43E-02	7.94E-02	
	410.94	11.10	5.72E-01		1.61E-01	2.74E-01	
	711.69	54.10	1.33E-01		2.87E-02	6.26E-02	
TM-171	66.72	0.14	5.40E+01	5.40E+01	4.94E+00	2.65E+01	
HF-172	81.75	4.52	1.53E+00	4.54E-01	-9.97E-01	7.48E-01	
	125.81	11.30	4.54E-01		-4.37E-01	2.21E-01	
LU-172	181.53	20.60	7.25E+00	3.65E+00	-5.79E-01	3.51E+00	
	810.06	16.63	1.23E+01		-1.89E+00	5.74E+00	
	912.12	15.25	2.80E+01		-1.19E+01	1.35E+01	
	1093.66	62.50	3.65E+00		-4.42E-02	1.69E+00	
LU-173	100.72	5.24	1.05E+00	2.94E-01	2.13E-01	5.12E-01	
	272.11	21.20	2.94E-01		3.43E-01	1.42E-01	
HF-175	343.40	84.00	8.37E-02	8.37E-02	3.98E-03	3.99E-02	
LU-176	88.34	13.30	5.65E-01	5.16E-02	5.85E-02	2.78E-01	
	201.83	86.00	5.98E-02		-3.24E-02	2.89E-02	
	306.78	94.00	5.16E-02		-1.30E-02	2.46E-02	
TA-182	67.75	41.20	2.07E-01	2.07E-01	-9.72E-03	1.01E-01	
	1121.30	34.90	4.54E-01		8.04E-01	2.17E-01	
	1189.05	16.23	6.31E-01		-9.12E-02	2.92E-01	
	1221.41	26.98	3.97E-01		-5.75E-02	1.85E-01	
	1231.02	11.44	9.81E-01		4.21E-01	4.57E-01	
IR-192	308.46	29.68	2.26E-01	1.58E-01	1.14E-02	1.08E-01	
	468.07	48.10	1.58E-01		1.81E-02	7.46E-02	
HG-203	279.19	77.30	1.10E-01	1.10E-01	2.66E-02	5.26E-02	
BI-207	569.67	97.72	6.99E-02	6.99E-02	1.77E-02	3.32E-02	
	1063.62	74.90	1.04E-01		1.49E-02	4.82E-02	
+ TL-208	583.14	*	30.22	3.81E-01	1.47E-01	1.44E+00	1.85E-01
	860.37	*	4.48	2.70E+00		2.20E+00	1.30E+00
	2614.66	*	35.85	1.47E-01		1.11E+00	6.04E-02
BI-210M	262.00	45.00	1.12E-01	1.12E-01	7.40E-02	5.36E-02	
	300.00	23.00	2.46E-01		-5.61E-01	1.18E-01	
PB-210	46.50	4.25	2.21E+00	2.21E+00	-3.00E-02	1.08E+00	
PB-211	404.84	2.90	1.60E+00	1.60E+00	-1.66E-01	7.52E-01	
	831.96	2.90	2.13E+00		-1.69E+00	9.84E-01	
+ BI-212	727.17	*	11.80	7.59E-01	7.59E-01	6.86E-01	3.62E-01
	1620.62		2.75	2.49E+00		5.92E-01	1.10E+00
+ PB-212	238.63	*	44.60	2.50E-01	2.50E-01	1.48E+00	1.23E-01
	300.09	*	3.41	3.06E+00		1.76E+00	1.50E+00

Analysis Report for 1510087-04

CP5004S01-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	BI-214	609.31	*	46.30	1.92E-01	1.82E-01	1.04E+00	9.23E-02
		1120.29	*	15.10	6.84E-01		1.78E+00	3.23E-01
		1764.49	*	15.80	4.53E-01		1.29E+00	2.01E-01
		2204.22	*	4.98	1.82E-01		2.08E+00	0.00E+00
+	PB-214	295.21	*	19.19	5.41E-01	2.24E-01	1.33E+00	2.65E-01
		351.92	*	37.19	2.24E-01		1.19E+00	1.09E-01
	RN-219	401.80		6.50	7.48E-01	7.48E-01	2.08E-01	3.54E-01
	RA-223	323.87		3.88	1.33E+00	1.33E+00	3.65E-01	6.37E-01
+	RA-224	240.98	*	3.95	2.82E+00	2.82E+00	3.42E+00	1.39E+00
	RA-225	40.00		31.00	1.65E+00	1.65E+00	-7.28E-01	8.01E-01
+	RA-226	186.21	*	3.28	2.58E+00	2.58E+00	7.12E+00	1.27E+00
	TH-227	50.10		8.40	9.98E-01	5.60E-01	-3.15E-01	4.88E-01
		236.00		11.50	5.60E-01		-4.46E+00	2.72E-01
		256.20		6.30	7.59E-01		-3.25E-01	3.64E-01
+	AC-228	338.32	*	11.40	5.62E-01	4.16E-01	1.62E+00	2.71E-01
		911.07	*	27.70	4.16E-01		1.28E+00	1.99E-01
		969.11	*	16.60	8.08E-01		1.03E+00	3.88E-01
	TH-230	48.44		16.90	5.39E-01	5.39E-01	2.60E-01	2.64E-01
		62.85		4.60	2.21E+00		9.49E+00	1.09E+00
		67.67		0.37	1.89E+01		-8.89E-01	9.28E+00
	PA-231	283.67		1.60	3.22E+00	2.30E+00	1.27E+00	1.54E+00
		302.67		2.30	2.30E+00		-3.49E-01	1.10E+00
	TH-231	25.64		14.70	4.10E+00	1.07E+00	8.90E-03	1.99E+00
		84.21		6.40	1.07E+00		-2.12E+00	5.27E-01
	PA-233	311.98		38.60	3.07E-01	3.07E-01	1.32E-01	1.47E-01
	PA-234	131.20		20.40	2.53E-01	2.53E-01	-4.51E-02	1.23E-01
		733.99		8.80	8.27E-01		2.12E-01	3.90E-01
		946.00		12.00	6.05E-01		1.71E-01	2.81E-01
+	PA-234M	1001.03	*	0.92	7.87E+00	7.87E+00	1.14E+01	3.64E+00
+	TH-234	63.29	*	3.80	2.62E+00	2.62E+00	1.08E+01	1.29E+00
	U-235	143.76		10.50	5.09E-01	5.09E-01	3.59E-01	2.48E-01
		163.35		4.70	1.08E+00		8.31E-03	5.26E-01
		205.31		4.70	1.11E+00		2.47E-01	5.35E-01
	NP-237	86.50		12.60	5.66E-01	5.66E-01	-2.80E-01	2.78E-01
	NP-239	106.10		22.70	3.33E+03	3.33E+03	1.32E+03	1.63E+03
		228.18		10.70	7.15E+03		-5.70E+01	3.45E+03
		277.60		14.10	5.53E+03		2.54E+03	2.66E+03
	AM-241	59.54		35.90	2.09E-01	2.09E-01	-8.83E-02	1.03E-01
+	AM-243	74.67	*	66.00	2.27E-01	2.27E-01	3.26E-01	1.12E-01
+	CM-243	209.75	*	3.29	2.13E+00	4.91E-01	1.63E+00	1.04E+00
		228.14		10.60	4.91E-01		-3.91E-03	2.37E-01
		277.60	*	14.00	7.36E-01		3.90E-01	3.60E-01

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction

Analysis Report for 1510087-04
CP5004S01-02

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP5004S01-02

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	56	123	73	72	88	93
25:	88	87	69	91	84	81	61	71
33:	64	75	102	87	78	92	83	104
41:	89	83	113	115	93	127	164	123
49:	119	133	147	124	118	146	166	151
57:	139	132	144	176	175	176	341	708
65:	240	153	164	191	167	178	191	206
73:	205	233	462	409	419	547	187	163
81:	185	180	157	218	208	142	243	304
89:	158	232	238	288	877	495	195	113
97:	114	108	170	130	78	84	101	108
105:	102	137	86	97	95	126	117	103
113:	139	109	104	106	87	94	79	88
121:	86	94	91	90	94	98	83	84
129:	121	112	99	86	90	87	85	86
137:	103	72	75	91	80	83	78	121
145:	101	87	79	101	77	86	90	90
153:	76	80	86	72	75	71	90	68
161:	71	65	87	88	69	65	77	89
169:	61	64	62	60	92	60	70	74
177:	62	59	70	63	67	68	70	68
185:	85	299	216	66	67	57	49	60
193:	59	55	73	68	52	56	70	51
201:	64	62	64	58	68	67	55	51
209:	84	109	64	58	52	51	58	53
217:	50	47	56	49	49	56	47	54
225:	56	50	52	52	55	52	50	51
233:	39	40	45	64	65	175	652	251
241:	114	144	102	48	37	36	39	35
249:	37	48	43	36	40	44	39	33
257:	38	34	43	50	47	30	32	43
265:	28	26	37	32	36	80	63	55
273:	39	36	35	39	34	64	46	25
281:	31	39	34	34	44	39	37	35
289:	32	37	33	37	31	42	147	205
297:	60	30	26	59	64	35	24	34
305:	26	40	33	23	28	38	33	28
313:	29	37	28	30	25	26	26	22
321:	26	34	36	30	27	32	39	55
329:	50	32	32	31	32	28	23	20
337:	25	109	133	35	35	24	28	29
345:	34	26	28	28	31	27	75	277
353:	205	38	24	27	19	29	32	14
361:	16	30	17	23	37	21	23	28

369: 31 30 26 23 16 32 20 23

Sample Title: CP5004S01-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	26	25	16	34	21	24	20	27
385:	16	22	26	30	19	25	26	37
393:	27	18	20	26	33	24	16	22
401:	21	27	16	15	11	21	27	22
409:	27	37	28	22	15	20	24	17
417:	17	22	23	19	23	14	23	23
425:	17	24	31	15	23	23	18	25
433:	27	23	24	15	19	27	23	17
441:	16	11	13	17	23	22	18	22
449:	20	19	10	24	29	28	17	18
457:	22	26	27	21	14	23	53	38
465:	12	14	14	17	20	15	15	18
473:	14	14	20	17	11	13	20	21
481:	18	16	16	15	21	17	17	16
489:	24	14	15	17	17	14	22	18
497:	19	15	17	18	16	14	18	11
505:	12	21	11	19	27	48	80	63
513:	33	13	11	18	19	13	14	14
521:	16	15	9	16	12	6	14	12
529:	13	13	18	11	21	13	12	16
537:	11	18	16	17	11	16	9	13
545:	19	17	18	11	25	24	6	16
553:	4	12	18	19	14	12	20	14
561:	15	12	26	11	19	18	14	18
569:	15	23	21	13	15	12	13	17
577:	12	13	14	15	16	26	141	171
585:	38	19	20	22	15	16	13	6
593:	16	10	10	12	19	18	18	18
601:	7	19	17	15	19	14	16	27
609:	141	204	59	13	11	17	19	21
617:	18	17	9	15	22	12	17	12
625:	13	14	19	15	16	12	4	12
633:	10	7	12	11	11	13	18	17
641:	9	8	13	7	10	13	10	10
649:	13	14	11	18	7	18	12	10
657:	7	17	15	16	9	13	16	20
665:	16	22	11	7	8	9	12	14
673:	12	17	15	15	11	7	7	9
681:	5	8	12	18	10	13	15	12
689:	5	8	20	14	21	14	13	12
697:	14	10	9	13	8	13	11	12
705:	15	12	14	12	11	12	11	9
713:	19	13	17	13	8	11	11	14
721:	9	12	12	10	11	13	29	43
729:	19	10	12	13	13	12	19	14
737:	7	12	10	11	14	10	19	14
745:	16	13	13	8	8	7	14	10
753:	13	7	11	9	9	14	13	11
761:	11	15	14	14	8	16	27	33
769:	28	18	11	15	27	19	14	12
777:	16	4	7	11	13	14	8	4
785:	12	15	11	15	11	9	14	7
793:	6	11	29	20	15	11	13	7

801: 11 8 10 7 9 17 15 5

Sample Title: CP5004S01-02

Channel	1	2	3	4	5	6	7	8
809:	9	11	15	8	7	13	6	8
817:	10	9	7	4	2	6	11	9
825:	8	6	12	8	3	8	11	5
833:	9	8	7	17	8	9	10	11
841:	9	13	2	12	4	5	6	8
849:	7	8	7	14	7	8	8	10
857:	11	10	4	21	25	17	12	8
865:	10	6	7	6	6	6	8	12
873:	7	8	9	11	6	10	11	10
881:	12	8	2	8	8	8	7	3
889:	3	4	7	10	12	11	8	8
897:	4	5	6	6	4	10	14	10
905:	5	10	11	5	10	19	90	112
913:	25	6	8	6	6	6	3	9
921:	6	8	6	10	7	5	3	3
929:	6	6	4	5	12	20	14	12
937:	8	9	8	9	6	8	4	9
945:	8	8	9	5	15	5	8	7
953:	3	10	7	6	8	5	10	8
961:	7	9	5	13	29	16	9	19
969:	68	47	15	13	9	6	7	12
977:	3	9	14	8	9	5	1	7
985:	4	5	3	6	8	3	11	4
993:	6	8	8	5	6	3	10	25
1001:	35	20	4	13	6	5	8	7
1009:	10	8	5	9	9	12	7	5
1017:	8	6	9	8	5	9	6	9
1025:	9	5	6	3	5	3	3	9
1033:	6	8	9	9	5	6	7	9
1041:	5	5	9	8	6	4	4	9
1049:	8	5	12	6	9	6	9	6
1057:	7	1	6	7	13	6	5	7
1065:	9	7	8	8	7	6	10	9
1073:	3	3	4	10	9	7	7	11
1081:	6	9	1	8	3	5	7	7
1089:	7	4	7	5	6	9	12	3
1097:	11	12	7	6	7	10	8	9
1105:	6	7	8	6	7	5	6	4
1113:	5	7	12	6	6	7	14	46
1121:	51	20	9	3	5	8	2	4
1129:	7	6	7	11	10	6	5	5
1137:	3	5	11	4	9	4	10	10
1145:	2	12	7	6	7	11	7	5
1153:	8	10	13	12	11	7	7	8
1161:	2	11	3	8	6	2	5	7
1169:	12	11	9	9	5	12	9	9
1177:	11	7	9	10	7	11	9	4
1185:	11	9	12	10	5	10	3	5
1193:	6	12	13	7	12	11	9	5
1201:	9	5	7	6	6	4	7	10
1209:	5	6	6	11	10	8	12	6
1217:	10	13	4	9	10	9	7	5
1225:	9	10	5	11	8	9	11	11

1233: 3 9 8 10 12 21 22 14

Sample Title: CP5004S01-02

Channel	1	2	3	4	5	6	7	8	9	10
1241:	9	6	8	6	6	4	10	6		
1249:	1	5	5	11	7	8	4	9		
1257:	3	5	7	2	4	12	6	6		
1265:	5	7	6	7	6	7	4	7		
1273:	3	11	3	4	5	5	2	8		
1281:	6	9	7	4	2	3	10	6		
1289:	5	8	5	8	7	8	4	8		
1297:	6	9	5	10	8	4	8	8		
1305:	5	8	9	6	1	5	7	11		
1313:	4	7	3	0	2	7	2	5		
1321:	4	5	8	4	5	3	6	1		
1329:	7	4	6	6	2	5	6	4		
1337:	8	3	6	6	3	3	5	1		
1345:	3	6	5	6	3	2	4	4		
1353:	6	0	7	8	0	5	5	4		
1361:	4	6	4	3	5	3	2	6		
1369:	5	2	3	4	1	2	1	2		
1377:	9	17	7	2	1	3	1	4		
1385:	3	0	0	4	4	1	5	5		
1393:	3	2	2	3	4	6	2	3		
1401:	5	1	3	6	4	2	4	5		
1409:	4	5	1	0	0	1	4	3		
1417:	5	4	0	1	3	2	3	4		
1425:	1	0	4	6	4	5	6	5		
1433:	1	9	1	3	5	4	4	6		
1441:	1	0	3	1	2	2	5	2		
1449:	1	2	2	5	4	3	4	0		
1457:	3	3	28	153	348	223	48	5		
1465:	4	8	1	2	7	4	0	0		
1473:	4	0	3	2	2	3	2	3		
1481:	2	2	3	2	0	1	1	1		
1489:	3	3	0	4	3	1	4	6		
1497:	3	0	1	5	3	3	1	3		
1505:	0	0	1	3	8	6	1	4		
1513:	2	2	1	3	4	2	3	2		
1521:	6	2	3	1	1	1	4	2		
1529:	2	3	1	3	1	0	3	0		
1537:	4	3	0	2	4	1	3	2		
1545:	0	2	2	4	1	0	1	5		
1553:	1	1	3	0	0	0	1	1		
1561:	1	1	0	1	1	1	1	1		
1569:	3	0	0	1	0	0	0	2		
1577:	2	2	4	2	2	3	4	7		
1585:	1	4	6	8	8	3	0	7		
1593:	7	4	1	2	3	1	2	3		
1601:	2	3	5	2	3	2	2	2		
1609:	0	1	2	0	1	2	2	0		
1617:	2	4	1	5	7	1	1	2		
1625:	4	2	1	3	1	2	4	7		
1633:	2	4	2	0	3	3	3	2		
1641:	0	1	5	1	3	0	3	0		
1649:	0	1	0	1	1	0	1	1		
1657:	1	1	0	3	2	2	1	0		

1665: 0 5 0 2 0 3 1 1

Sample Title: CP5004S01-02

Channel	1	2	3	4	5	6	7	8
1673:	1	1	0	2	2	3	1	4
1681:	2	3	2	1	3	1	2	1
1689:	0	1	2	2	0	0	1	1
1697:	1	4	1	0	2	0	2	2
1705:	2	0	1	1	1	0	2	2
1713:	2	2	0	2	1	1	3	1
1721:	1	1	3	0	1	1	3	2
1729:	1	8	6	2	1	2	1	0
1737:	4	3	2	1	0	0	2	1
1745:	0	1	3	1	1	0	4	2
1753:	0	0	1	2	2	1	0	2
1761:	0	2	7	17	28	17	2	1
1769:	2	1	1	0	4	0	0	1
1777:	1	1	1	2	1	1	0	1
1785:	2	1	1	1	1	0	1	0
1793:	0	2	0	1	0	3	3	0
1801:	1	1	0	1	3	0	1	0
1809:	1	1	2	0	1	0	2	1
1817:	1	2	3	2	0	1	2	1
1825:	1	2	2	1	1	0	5	2
1833:	2	1	3	0	2	1	1	1
1841:	0	0	2	1	0	4	4	7
1849:	3	0	3	1	1	2	1	1
1857:	0	2	1	0	1	3	0	0
1865:	1	3	0	3	2	0	3	0
1873:	1	2	1	1	0	2	0	1
1881:	2	1	1	0	1	1	4	1
1889:	3	0	2	1	1	1	0	1
1897:	2	0	0	0	2	1	3	3
1905:	1	2	1	3	1	1	1	1
1913:	1	1	0	1	2	1	1	0
1921:	0	1	1	3	1	3	1	2
1929:	2	2	1	0	2	3	2	1
1937:	2	0	2	1	3	3	0	0
1945:	2	3	1	0	1	1	1	0
1953:	1	1	2	1	0	0	0	1
1961:	0	0	2	1	2	1	0	1
1969:	2	0	1	0	0	1	4	0
1977:	2	2	3	2	1	1	3	1
1985:	0	0	1	0	0	0	0	2
1993:	1	0	1	1	3	3	0	0
2001:	1	2	1	0	1	0	1	0
2009:	0	1	2	0	0	1	2	1
2017:	1	2	3	0	2	1	3	3
2025:	2	0	0	1	1	0	3	1
2033:	2	2	1	0	1	1	1	0
2041:	0	2	1	0	0	1	1	2
2049:	2	3	1	1	1	1	0	0
2057:	3	0	0	2	0	1	0	0
2065:	0	2	1	1	2	1	1	1
2073:	3	0	4	0	2	1	0	1
2081:	2	0	0	2	1	0	0	2
2089:	0	0	2	0	1	2	2	1

2097: 0 2 0 1 2 3 6 8

Sample Title: CP5004S01-02

Channel	1	2	3	4	5	6	7	8
2105:	4	2	1	2	0	2	2	1
2113:	3	0	0	0	2	6	4	2
2121:	1	1	1	0	1	3	0	1
2129:	0	1	1	0	2	2	1	0
2137:	1	0	0	2	0	1	1	0
2145:	0	1	1	1	0	0	0	0
2153:	0	2	1	0	2	0	0	2
2161:	2	2	1	0	3	1	0	1
2169:	1	0	2	1	0	0	2	1
2177:	1	0	1	1	2	2	0	1
2185:	4	1	0	1	0	1	1	1
2193:	1	1	2	0	1	0	0	0
2201:	2	1	4	9	8	3	1	1
2209:	1	1	0	0	0	2	1	1
2217:	2	0	2	0	1	1	1	1
2225:	1	1	3	2	0	1	1	0
2233:	0	2	1	0	0	2	1	0
2241:	0	2	0	1	1	0	1	3
2249:	1	2	0	1	0	2	0	1
2257:	0	0	1	1	1	0	1	1
2265:	0	1	1	0	3	1	0	1
2273:	1	1	0	0	0	2	0	3
2281:	1	0	0	0	0	0	1	0
2289:	1	3	0	1	0	0	2	1
2297:	1	1	4	1	2	1	1	0
2305:	1	2	0	1	4	1	0	2
2313:	2	0	1	1	1	0	0	1
2321:	0	1	3	2	1	1	2	1
2329:	1	0	1	0	0	0	1	2
2337:	0	1	1	1	1	1	0	0
2345:	0	3	0	1	0	0	2	0
2353:	0	1	0	1	1	0	1	0
2361:	1	2	1	2	1	0	0	2
2369:	0	0	2	0	2	0	0	2
2377:	0	1	0	1	0	3	0	0
2385:	2	2	1	0	3	1	0	1
2393:	1	0	0	0	1	1	2	1
2401:	0	2	2	0	1	1	0	1
2409:	2	3	0	3	2	1	0	0
2417:	1	1	1	2	1	1	0	1
2425:	0	0	1	1	0	2	0	1
2433:	0	2	0	0	0	1	2	1
2441:	0	1	1	1	2	1	4	1
2449:	3	1	0	1	1	0	0	0
2457:	1	0	3	1	0	0	1	0
2465:	0	2	0	1	2	0	0	1
2473:	0	0	0	3	0	0	2	0
2481:	1	3	0	1	1	2	0	0
2489:	2	1	0	1	1	0	0	0
2497:	1	2	0	0	1	0	0	1
2505:	0	1	0	0	1	0	0	1
2513:	0	0	0	1	0	0	0	0
2521:	1	1	0	1	0	0	0	0

2529: 0 1 0 1 1 0 1 2

Sample Title: CP5004S01-02

Channel	1	2	3	4	5	6	7	8
2537:	0	1	0	2	1	0	0	0
2545:	2	0	1	0	1	0	0	0
2553:	0	2	0	0	0	1	0	1
2561:	1	1	0	0	0	0	0	0
2569:	0	1	2	0	1	0	0	0
2577:	0	2	0	1	1	0	0	0
2585:	1	1	0	0	1	1	0	0
2593:	0	0	0	1	0	0	1	0
2601:	0	1	0	1	0	0	0	0
2609:	0	2	2	3	15	42	29	22
2617:	5	1	0	1	0	1	0	0
2625:	0	0	0	0	0	0	1	0
2633:	1	0	0	0	0	1	0	0
2641:	0	0	1	2	0	0	1	1
2649:	0	1	0	0	0	0	0	1
2657:	0	0	0	0	0	0	0	0
2665:	0	0	1	0	0	0	0	1
2673:	0	0	0	0	0	1	0	3
2681:	0	0	1	0	0	0	0	0
2689:	0	0	0	1	0	0	0	0
2697:	1	1	0	1	0	2	0	2
2705:	0	0	0	0	0	0	1	0
2713:	0	2	0	0	0	0	0	0
2721:	0	0	0	0	0	0	0	0
2729:	0	0	0	0	0	2	0	0
2737:	0	0	0	0	0	0	0	0
2745:	1	0	1	1	0	1	1	0
2753:	2	1	0	0	0	1	0	0
2761:	0	0	0	1	0	0	0	0
2769:	0	0	0	0	1	0	0	0
2777:	0	0	2	0	0	0	0	0
2785:	0	0	1	0	0	0	1	0
2793:	0	0	0	0	0	0	0	0
2801:	1	0	0	0	0	0	0	0
2809:	1	1	0	0	0	0	0	0
2817:	0	1	0	0	1	2	0	1
2825:	0	0	0	1	0	0	0	0
2833:	1	1	0	0	0	0	1	0
2841:	0	0	0	1	0	0	0	0
2849:	0	0	0	0	0	0	1	0
2857:	0	1	1	0	0	0	0	0
2865:	0	0	0	0	0	0	1	1
2873:	1	0	0	0	1	0	0	0
2881:	0	0	0	0	0	0	1	2
2889:	0	1	1	0	0	0	0	0
2897:	1	1	0	0	0	0	1	1
2905:	0	0	1	0	0	1	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	1	0	0	1	0
2929:	0	0	1	0	0	0	1	0
2937:	0	0	0	0	0	0	1	1
2945:	1	0	0	0	0	1	0	0
2953:	0	0	0	0	0	0	0	2

2961: 1 1 0 0 0 1 0 1

Sample Title: CP5004S01-02

Channel	1	2	3	4	5	6	7	8
2969:	1	0	0	1	0	0	0	1
2977:	0	0	0	0	1	1	0	0
2985:	0	1	0	0	0	0	0	1
2993:	0	0	0	0	0	1	1	0
3001:	0	0	0	0	0	0	1	1
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	2
3025:	0	0	1	0	0	0	1	0
3033:	0	0	1	0	0	0	1	0
3041:	1	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	2	0	0	0	0	0
3065:	1	0	0	0	0	1	0	0
3073:	0	0	0	0	1	1	0	0
3081:	1	0	0	1	2	0	1	0
3089:	0	0	1	0	0	0	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	2	0	0	0	1	1
3113:	1	0	0	1	0	0	0	0
3121:	0	0	0	0	1	0	0	0
3129:	0	0	0	0	1	1	0	0
3137:	0	0	0	0	1	0	1	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	1	0	1	0	1
3161:	0	1	1	1	0	0	1	0
3169:	0	0	1	0	0	0	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	1	0	0	0	0
3193:	0	0	1	0	1	0	1	0
3201:	0	0	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	2	0	0	0	0	0	0	0
3225:	1	0	0	1	0	0	0	0
3233:	0	0	0	0	0	1	0	0
3241:	0	0	1	0	1	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	0	1	0	0	0	0	1	0
3265:	1	1	0	0	0	0	0	0
3273:	0	0	0	2	0	0	0	0
3281:	0	0	0	1	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	1	0	0	0	0	1	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	0	1	0
3337:	0	2	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	1	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	1
3377:	0	1	1	0	0	0	0	0
3385:	0	1	0	0	0	0	0	2

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP5004S01-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	0	0
3409:	1	0	0	0	0	0	0	0
3417:	0	0	0	0	0	1	0	0
3425:	0	0	0	0	1	0	1	0
3433:	0	0	0	1	0	1	0	0
3441:	0	0	0	0	0	0	0	1
3449:	0	0	0	0	0	0	0	0
3457:	0	0	1	1	0	0	0	1
3465:	0	0	0	0	0	0	1	0
3473:	0	0	0	0	0	0	0	0
3481:	0	1	0	0	0	0	0	0
3489:	0	0	0	1	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	1	0	0	0	0
3513:	0	0	0	0	0	0	0	1
3521:	0	0	0	0	0	0	1	0
3529:	0	0	0	0	0	0	1	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	1	1	0	0	0
3561:	0	1	0	0	0	0	0	0
3569:	0	0	0	0	0	0	1	0
3577:	0	0	0	0	0	0	0	0
3585:	1	0	0	0	0	1	0	0
3593:	1	0	0	1	0	0	0	0
3601:	0	0	0	1	2	1	0	0
3609:	0	0	0	0	0	0	1	0
3617:	0	0	1	0	0	0	0	0
3625:	0	0	0	0	0	0	1	0
3633:	0	0	1	0	0	0	0	0
3641:	0	0	0	0	0	0	2	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	1	0	0
3665:	0	0	0	1	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	2
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	1	0	0	0	0	0	1	1
3729:	0	0	0	0	0	0	0	0
3737:	0	0	1	0	1	0	0	0
3745:	0	1	0	0	0	0	0	0
3753:	0	0	1	0	0	0	0	0
3761:	0	0	0	0	1	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	1	0	0	0	0
3785:	0	0	0	1	0	1	0	0
3793:	0	0	0	0	0	2	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	1	0
3817:	0	0	0	0	0	0	0	0

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3825: 0 0 0 0 0 0 0 0

Sample Title: CP5004S01-02

Channel								
3833:	0	0	0	0	0	0	0	1
3841:	0	1	0	0	0	0	0	0
3849:	0	0	1	1	0	0	0	0
3857:	0	0	0	0	0	1	0	0
3865:	0	1	0	0	0	0	0	0
3873:	0	1	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	1	0	1
3897:	1	0	0	0	0	0	1	0
3905:	0	0	1	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	1	0	0	0	1	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	1	0	0	0	0	0
3961:	0	0	2	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	1	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	1	0	1	0	0	1
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	1	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	1	0	0
4065:	0	0	0	0	1	0	1	0
4073:	1	0	0	0	0	0	1	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

Analysis Report for 1510087-05
CP5004S04-05

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GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-05
Sample Description : CP5004S04-05
Sample Type : SOIL

Sample Size : 6.055E+02 grams
Facility : Countroom

Sample Taken On : 10/7/2015 5:08:40PM
Acquisition Started : 11/9/2015 6:09:08AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.4 seconds

Dead Time : 0.04 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 8 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 29304

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-05
CP5004S04-05

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 7:09:21AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
1	46.88	46.99	0.0000	0.00
2	53.55	53.65	0.0000	0.00
3	63.22	63.31	0.0000	0.00
4	76.21	76.30	0.0000	0.00
5	92.73	92.81	0.0000	0.00
6	105.95	106.02	0.0000	0.00
7	112.08	112.15	0.0000	0.00
8	128.76	128.82	0.0000	0.00
9	163.26	163.30	0.0000	0.00
10	186.13	186.15	0.0000	0.00
11	209.61	209.62	0.0000	0.00
12	238.79	238.79	0.0000	0.00
13	241.79	241.78	0.0000	0.00
14	258.54	258.53	0.0000	0.00
15	269.84	269.82	0.0000	0.00
16	295.33	295.29	0.0000	0.00
17	300.49	300.45	0.0000	0.00
18	328.01	327.96	0.0000	0.00
19	338.30	338.24	0.0000	0.00
20	351.99	351.92	0.0000	0.00
21	438.79	438.68	0.0000	0.00
22	463.87	463.75	0.0000	0.00
23	511.13	510.99	0.0000	0.00
24	583.24	583.06	0.0000	0.00
25	609.37	609.18	0.0000	0.00
26	726.98	726.74	0.0000	0.00
27	767.99	767.72	0.0000	0.00
28	794.88	794.60	0.0000	0.00
29	862.17	861.87	0.0000	0.00
30	899.48	899.16	0.0000	0.00
31	911.49	911.17	0.0000	0.00
32	933.61	933.28	0.0000	0.00
33	969.38	969.03	0.0000	0.00
34	1001.24	1000.88	0.0000	0.00
35	1120.62	1120.21	0.0000	0.00
36	1124.41	1124.00	0.0000	0.00
37	1156.17	1155.75	0.0000	0.00
38	1184.86	1184.43	0.0000	0.00
39	1238.58	1238.13	0.0000	0.00
40	1362.35	1361.86	0.0000	0.00
41	1377.98	1377.48	0.0000	0.00
42	1406.13	1405.62	0.0000	0.00

Analysis Report for 1510087-05
CP5004S04-05

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1430.25	1429.74	0.0000	0.00
44	1461.01	1460.48	0.0000	0.00
45	1486.34	1485.81	0.0000	0.00
46	1510.77	1510.23	0.0000	0.00
47	1513.77	1513.23	0.0000	0.00
48	1559.38	1558.83	0.0000	0.00
49	1567.40	1566.84	0.0000	0.00
50	1585.09	1584.53	0.0000	0.00
51	1589.56	1589.00	0.0000	0.00
52	1593.05	1592.49	0.0000	0.00
53	1650.85	1650.28	0.0000	0.00
54	1661.05	1660.47	0.0000	0.00
55	1725.16	1724.57	0.0000	0.00
56	1729.32	1728.73	0.0000	0.00
57	1764.80	1764.19	0.0000	0.00
58	1772.34	1771.73	0.0000	0.00
59	1783.46	1782.85	0.0000	0.00
60	1847.78	1847.16	0.0000	0.00
61	1904.27	1903.64	0.0000	0.00
62	2119.34	2118.67	0.0000	0.00
63	2151.41	2150.73	0.0000	0.00
64	2184.82	2184.13	0.0000	0.00
65	2204.44	2203.74	0.0000	0.00
66	2311.94	2311.24	0.0000	0.00
67	2614.18	2613.44	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510087-05
CP5004S04-05

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 7:09:21AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)	
1	46.88	44 -	50	46.99	1.58E+02	109.15	2.05E+03	1.25	
2	53.55	51 -	56	53.65	9.51E+01	93.37	1.66E+03	1.75	
3	63.22	59 -	67	63.31	6.19E+02	135.57	2.45E+03	1.79	
4	76.21	72 -	81	76.30	1.17E+03	161.02	3.01E+03	3.77	
5	92.73	89 -	96	92.81	8.94E+02	130.49	2.17E+03	1.30	
6	105.95	105 -	108	106.02	5.22E+01	56.11	7.32E+02	1.92	
7	112.08	109 -	115	112.15	1.17E+02	84.23	1.20E+03	2.81	
8	128.76	125 -	131	128.82	8.64E+01	81.05	1.13E+03	2.24	
9	163.26	161 -	165	163.30	4.52E+01	54.58	6.18E+02	1.65	
10	186.13	182 -	189	186.15	3.71E+02	84.29	9.31E+02	1.33	
11	209.61	207 -	213	209.62	6.21E+01	68.21	8.00E+02	2.05	
M	12	238.79	235 -	246	238.79	9.22E+02	74.28	4.40E+02	1.54
m	13	241.79	235 -	246	241.78	2.36E+02	87.14	5.41E+02	2.28
14	258.54	254 -	263	258.53	1.35E+02	66.91	5.57E+02	2.06	
15	269.84	265 -	273	269.82	1.47E+02	62.16	5.05E+02	3.23	
M	16	295.33	291 -	304	295.29	3.64E+02	52.76	3.03E+02	1.63
m	17	300.49	291 -	304	300.45	6.70E+01	40.35	2.80E+02	1.82
18	328.01	325 -	331	327.96	4.63E+01	47.10	3.67E+02	1.23	
19	338.30	334 -	342	338.24	2.10E+02	59.39	4.12E+02	1.98	
20	351.99	347 -	355	351.92	5.96E+02	69.58	3.78E+02	1.46	
21	438.79	434 -	443	438.68	5.62E+01	48.47	3.00E+02	1.76	
22	463.87	459 -	469	463.75	6.51E+01	53.89	3.54E+02	1.92	
23	511.13	505 -	516	510.99	2.24E+02	58.58	3.15E+02	2.16	
24	583.24	579 -	587	583.06	2.75E+02	51.04	2.26E+02	1.47	
25	609.37	605 -	612	609.18	4.36E+02	54.70	2.08E+02	1.84	
26	726.98	720 -	729	726.74	3.99E+01	45.64	2.74E+02	1.76	
27	767.99	764 -	773	767.72	6.70E+01	39.19	1.84E+02	2.92	
28	794.88	790 -	799	794.60	4.51E+01	34.48	1.42E+02	1.58	
29	862.17	857 -	868	861.87	8.82E+01	37.58	1.34E+02	2.24	
30	899.48	895 -	904	899.16	2.48E+01	28.93	1.06E+02	3.43	
31	911.49	907 -	915	911.17	1.97E+02	39.73	1.22E+02	1.97	
32	933.61	930 -	938	933.28	3.04E+01	30.71	1.27E+02	4.08	
33	969.38	965 -	972	969.03	8.07E+01	36.00	1.51E+02	1.83	
34	1001.24	995 -	1007	1000.88	6.23E+01	38.93	1.47E+02	2.50	
M	35	1120.62	1114 -	1129	1120.21	1.01E+02	29.91	9.16E+01	2.31
m	36	1124.41	1114 -	1129	1124.00	2.06E+01	23.19	5.94E+01	2.10
37	1156.17	1151 -	1161	1155.75	2.95E+01	33.59	1.27E+02	3.22	
38	1184.86	1180 -	1189	1184.43	4.10E+01	26.91	8.00E+01	6.73	
39	1238.58	1233 -	1243	1238.13	4.96E+01	34.44	1.31E+02	2.06	
40	1362.35	1358 -	1369	1361.86	2.54E+01	20.98	4.33E+01	7.59	

Analysis Report for 1510087-05

CP5004S04-05

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1377.98	1374 - 1381		1377.48	2.55E+01	18.55	4.10E+01	1.77
42	1406.13	1398 - 1416		1405.62	3.16E+01	25.99	4.88E+01	7.29
43	1430.25	1426 - 1433		1429.74	2.18E+01	13.56	1.63E+01	3.19
44	1461.01	1455 - 1466		1460.48	7.06E+02	57.41	5.66E+01	2.39
45	1486.34	1484 - 1488		1485.81	6.44E+00	6.18	3.13E+00	2.41
M	46	1510.77	1506 - 1519	1510.23	2.07E+01	12.17	8.00E+00	2.58
m	47	1513.77	1506 - 1519	1513.23	1.33E+01	12.49	8.00E+00	2.58
	48	1559.38	1554 - 1562	1558.83	1.07E+01	10.02	8.53E+00	4.18
	49	1567.40	1564 - 1569	1566.84	6.44E+00	6.40	3.13E+00	2.99
M	50	1585.09	1582 - 1596	1584.53	1.43E+01	8.28	5.00E+00	5.62
m	51	1589.56	1582 - 1596	1589.00	2.38E+01	12.83	7.00E+00	2.39
m	52	1593.05	1582 - 1596	1592.49	1.79E+01	14.58	9.00E+00	3.11
	53	1650.85	1648 - 1652	1650.28	5.14E+00	6.36	3.71E+00	1.83
	54	1661.05	1657 - 1664	1660.47	7.68E+00	10.20	1.26E+01	2.13
M	55	1725.16	1723 - 1732	1724.57	7.49E+00	5.55	7.27E-01	2.33
m	56	1729.32	1723 - 1732	1728.73	2.14E+01	13.11	1.48E+01	3.36
	57	1764.80	1761 - 1767	1764.19	6.56E+01	17.91	1.08E+01	3.62
	58	1772.34	1769 - 1774	1771.73	5.50E+00	7.07	5.00E+00	2.16
	59	1783.46	1779 - 1785	1782.85	6.79E+00	9.21	1.04E+01	0.98
	60	1847.78	1845 - 1850	1847.16	9.88E+00	8.89	6.23E+00	2.94
	61	1904.27	1900 - 1907	1903.64	1.10E+01	6.63	0.00E+00	4.72
	62	2119.34	2115 - 2123	2118.67	9.46E+00	8.26	5.08E+00	2.78
	63	2151.41	2146 - 2154	2150.73	1.00E+01	12.53	1.80E+01	4.30
	64	2184.82	2181 - 2187	2184.13	7.00E+00	9.21	1.00E+01	2.03
	65	2204.44	2197 - 2208	2203.74	1.79E+01	16.25	2.41E+01	4.72
	66	2311.94	2307 - 2314	2311.24	8.00E+00	7.48	4.00E+00	1.89
	67	2614.18	2608 - 2618	2613.44	1.03E+02	21.31	5.39E+00	2.92

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 7:09:21AM

Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	46.88	44 -	50	1.58E+02	109.15	2.05E+03	8.73E+01

Analysis Report for 1510087-05

CP5004S04-05

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level	
2	53.55	51 -	56	9.51E+01	93.37	1.66E+03	7.51E+01	
3	63.22	59 -	67	6.19E+02	135.57	2.45E+03	1.04E+02	
4	76.21	72 -	81	1.17E+03	161.02	3.01E+03	1.42E+02	
5	92.73	89 -	96	8.94E+02	130.49	2.17E+03	9.53E+01	
6	105.95	105 -	108	5.22E+01	56.11	7.32E+02	4.46E+01	
7	112.08	109 -	115	1.17E+02	84.23	1.20E+03	6.69E+01	
8	128.76	125 -	131	8.64E+01	81.05	1.13E+03	6.48E+01	
9	163.26	161 -	165	4.52E+01	54.58	6.18E+02	4.35E+01	
10	186.13	182 -	189	3.71E+02	84.29	9.31E+02	6.16E+01	
11	209.61	207 -	213	6.21E+01	68.21	8.00E+02	5.46E+01	
M	12	238.79	235 -	246	9.22E+02	74.28	4.40E+02	3.45E+01
m	13	241.79	235 -	246	2.36E+02	87.14	5.41E+02	3.82E+01
	14	258.54	254 -	263	1.35E+02	66.91	5.57E+02	5.16E+01
	15	269.84	265 -	273	1.47E+02	62.16	5.05E+02	4.71E+01
M	16	295.33	291 -	304	3.64E+02	52.76	3.03E+02	2.86E+01
m	17	300.49	291 -	304	6.70E+01	40.35	2.80E+02	2.75E+01
	18	328.01	325 -	331	4.63E+01	47.10	3.67E+02	3.71E+01
	19	338.30	334 -	342	2.10E+02	59.39	4.12E+02	4.26E+01
	20	351.99	347 -	355	5.96E+02	69.58	3.78E+02	4.07E+01
	21	438.79	434 -	443	5.62E+01	48.47	3.00E+02	3.79E+01
	22	463.87	459 -	469	6.51E+01	53.89	3.54E+02	4.23E+01
	23	511.13	505 -	516	2.24E+02	58.58	3.15E+02	2.00E+01
	24	583.24	579 -	587	2.75E+02	51.04	2.26E+02	3.19E+01
	25	609.37	605 -	612	4.36E+02	54.70	2.08E+02	2.90E+01
	26	726.98	720 -	729	3.99E+01	45.64	2.74E+02	3.60E+01
	27	767.99	764 -	773	6.70E+01	39.19	1.84E+02	2.93E+01
	28	794.88	790 -	799	4.51E+01	34.48	1.42E+02	2.61E+01
	29	862.17	857 -	868	8.82E+01	37.58	1.34E+02	2.68E+01
	30	899.48	895 -	904	2.48E+01	28.93	1.06E+02	2.23E+01
	31	911.49	907 -	915	1.97E+02	39.73	1.22E+02	2.31E+01
	32	933.61	930 -	938	3.04E+01	30.71	1.27E+02	2.36E+01
	33	969.38	965 -	972	8.07E+01	36.00	1.51E+02	2.56E+01
	34	1001.24	995 -	1007	6.23E+01	38.93	1.47E+02	2.93E+01
M	35	1120.62	1114 -	1129	1.01E+02	29.91	9.16E+01	1.57E+01
m	36	1124.41	1114 -	1129	2.06E+01	23.19	5.94E+01	1.27E+01
	37	1156.17	1151 -	1161	2.95E+01	33.59	1.27E+02	2.61E+01
	38	1184.86	1180 -	1189	4.10E+01	26.91	8.00E+01	1.95E+01
	39	1238.58	1233 -	1243	4.96E+01	34.44	1.31E+02	2.58E+01
	40	1362.35	1358 -	1369	2.54E+01	20.98	4.33E+01	1.51E+01
	41	1377.98	1374 -	1381	2.55E+01	18.55	4.10E+01	1.28E+01
	42	1406.13	1398 -	1416	3.16E+01	25.99	4.88E+01	1.93E+01
	43	1430.25	1426 -	1433	2.18E+01	13.56	1.63E+01	8.08E+00
	44	1461.01	1455 -	1466	7.06E+02	57.41	5.66E+01	1.79E+01
	45	1486.34	1484 -	1488	6.44E+00	6.18	3.13E+00	2.91E+00
M	46	1510.77	1506 -	1519	2.07E+01	12.17	8.00E+00	4.65E+00
m	47	1513.77	1506 -	1519	1.33E+01	12.49	8.00E+00	4.65E+00
	48	1559.38	1554 -	1562	1.07E+01	10.02	8.53E+00	6.24E+00
	49	1567.40	1564 -	1569	6.44E+00	6.40	3.13E+00	3.21E+00
M	50	1585.09	1582 -	1596	1.43E+01	8.28	5.00E+00	3.68E+00
m	51	1589.56	1582 -	1596	2.38E+01	12.83	7.00E+00	4.35E+00
m	52	1593.05	1582 -	1596	1.79E+01	14.58	9.00E+00	4.93E+00

Analysis Report for 1510087-05

CP5004S04-05

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	53	1648 -	1652	5.14E+00	6.36	3.71E+00	3.67E+00
	54	1657 -	1664	7.68E+00	10.20	1.26E+01	7.04E+00
M	55	1723 -	1732	7.49E+00	5.55	7.27E-01	1.40E+00
m	56	1723 -	1732	2.14E+01	13.11	1.48E+01	6.33E+00
	57	1761 -	1767	6.56E+01	17.91	1.08E+01	6.28E+00
	58	1772.34	1769 - 1774	5.50E+00	7.07	5.00E+00	4.35E+00
	59	1783.46	1779 - 1785	6.79E+00	9.21	1.04E+01	6.24E+00
	60	1847.78	1845 - 1850	9.88E+00	8.89	6.23E+00	5.16E+00
	61	1904.27	1900 - 1907	1.10E+01	6.63	0.00E+00	0.00E+00
	62	2119.34	2115 - 2123	9.46E+00	8.26	5.08E+00	4.53E+00
	63	2151.41	2146 - 2154	1.00E+01	12.53	1.80E+01	8.89E+00
	64	2184.82	2181 - 2187	7.00E+00	9.21	1.00E+01	6.19E+00
	65	2204.44	2197 - 2208	1.79E+01	16.25	2.41E+01	1.14E+01
	66	2311.94	2307 - 2314	8.00E+00	7.48	4.00E+00	4.03E+00
	67	2614.18	2608 - 2618	1.03E+02	21.31	5.39E+00	5.26E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 7:09:21AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	46.88	44 -	50	46.99	1.58E+02	109.15	2.05E+03	PB-210
2	53.55	51 -	56	53.65	9.51E+01	93.37	1.66E+03	.....
3	63.22	59 -	67	63.31	6.19E+02	135.57	2.45E+03	TH-234 TH-230
4	76.21	72 -	81	76.30	1.17E+03	161.02	3.01E+03	.....
5	92.73	89 -	96	92.81	8.94E+02	130.49	2.17E+03	GA-67
6	105.95	105 -	108	106.02	5.22E+01	56.11	7.32E+02	NP-239 EU-155
7	112.08	109 -	115	112.15	1.17E+02	84.23	1.20E+03	.....
8	128.76	125 -	131	128.82	8.64E+01	81.05	1.13E+03	.....

: 00449

Analysis Report for 1510087-05

CP5004S04-05

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	9	163.26	161 -	165	163.30	4.52E+01	54.58	6.18E+02	U-235 BA-140 CS-136
	10	186.13	182 -	189	186.15	3.71E+02	84.29	9.31E+02	RA-226
	11	209.61	207 -	213	209.62	6.21E+01	68.21	8.00E+02	CM-243 GA-67
M	12	238.79	235 -	246	238.79	9.22E+02	74.28	4.40E+02	PB-212
m	13	241.79	235 -	246	241.78	2.36E+02	87.14	5.41E+02	RA-224
	14	258.54	254 -	263	258.53	1.35E+02	66.91	5.57E+02	.....
	15	269.84	265 -	273	269.82	1.47E+02	62.16	5.05E+02	.....
M	16	295.33	291 -	304	295.29	3.64E+02	52.76	3.03E+02	PB-214
m	17	300.49	291 -	304	300.45	6.70E+01	40.35	2.80E+02	GA-67 PB-212 BI-210M
	18	328.01	325 -	331	327.96	4.63E+01	47.10	3.67E+02	LA-140
	19	338.30	334 -	342	338.24	2.10E+02	59.39	4.12E+02	AC-228
	20	351.99	347 -	355	351.92	5.96E+02	69.58	3.78E+02	PB-214
	21	438.79	434 -	443	438.68	5.62E+01	48.47	3.00E+02	.....
	22	463.87	459 -	469	463.75	6.51E+01	53.89	3.54E+02	SB-125
	23	511.13	505 -	516	510.99	2.24E+02	58.58	3.15E+02	.....
	24	583.24	579 -	587	583.06	2.75E+02	51.04	2.26E+02	TL-208
	25	609.37	605 -	612	609.18	4.36E+02	54.70	2.08E+02	BI-214
	26	726.98	720 -	729	726.74	3.99E+01	45.64	2.74E+02	BI-212
	27	767.99	764 -	773	767.72	6.70E+01	39.19	1.84E+02	.....
	28	794.88	790 -	799	794.60	4.51E+01	34.48	1.42E+02	CS-134
	29	862.17	857 -	868	861.87	8.82E+01	37.58	1.34E+02	.....
	30	899.48	895 -	904	899.16	2.48E+01	28.93	1.06E+02	.....
	31	911.49	907 -	915	911.17	1.97E+02	39.73	1.22E+02	AC-228 LU-172
	32	933.61	930 -	938	933.28	3.04E+01	30.71	1.27E+02	.....
	33	969.38	965 -	972	969.03	8.07E+01	36.00	1.51E+02	AC-228
	34	1001.24	995 -	1007	1000.88	6.23E+01	38.93	1.47E+02	PA-234M
M	35	1120.62	1114 -	1129	1120.21	1.01E+02	29.91	9.16E+01	SC-46 BI-214 TA-182
m	36	1124.41	1114 -	1129	1124.00	2.06E+01	23.19	5.94E+01	.....
	37	1156.17	1151 -	1161	1155.75	2.95E+01	33.59	1.27E+02	.....
	38	1184.86	1180 -	1189	1184.43	4.10E+01	26.91	8.00E+01	.....
	39	1238.58	1233 -	1243	1238.13	4.96E+01	34.44	1.31E+02	CO-56
	40	1362.35	1358 -	1369	1361.86	2.54E+01	20.98	4.33E+01	.....
	41	1377.98	1374 -	1381	1377.48	2.55E+01	18.55	4.10E+01	.....
	42	1406.13	1398 -	1416	1405.62	3.16E+01	25.99	4.88E+01	.....
	43	1430.25	1426 -	1433	1429.74	2.18E+01	13.56	1.63E+01	.....
	44	1461.01	1455 -	1466	1460.48	7.06E+02	57.41	5.66E+01	K-40
	45	1486.34	1484 -	1488	1485.81	6.44E+00	6.18	3.13E+00	.....
M	46	1510.77	1506 -	1519	1510.23	2.07E+01	12.17	8.00E+00	.....
m	47	1513.77	1506 -	1519	1513.23	1.33E+01	12.49	8.00E+00	.....
	48	1559.38	1554 -	1562	1558.83	1.07E+01	10.02	8.53E+00	.....
	49	1567.40	1564 -	1569	1566.84	6.44E+00	6.40	3.13E+00	.....
M	50	1585.09	1582 -	1596	1584.53	1.43E+01	8.28	5.00E+00	.....
m	51	1589.56	1582 -	1596	1589.00	2.38E+01	12.83	7.00E+00	.....
m	52	1593.05	1582 -	1596	1592.49	1.79E+01	14.58	9.00E+00	.....
	53	1650.85	1648 -	1652	1650.28	5.14E+00	6.36	3.71E+00	.....
	54	1661.05	1657 -	1664	1660.47	7.68E+00	10.20	1.26E+01	.....

Analysis Report for 1510087-05

CP5004S04-05

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	55	1725.16	1723 -	1732	1724.57	7.49E+00	5.55	7.27E-01	.....
m	56	1729.32	1723 -	1732	1728.73	2.14E+01	13.11	1.48E+01	.....
	57	1764.80	1761 -	1767	1764.19	6.56E+01	17.91	1.08E+01	BI-214
	58	1772.34	1769 -	1774	1771.73	5.50E+00	7.07	5.00E+00	CO-56
	59	1783.46	1779 -	1785	1782.85	6.79E+00	9.21	1.04E+01	.....
	60	1847.78	1845 -	1850	1847.16	9.88E+00	8.89	6.23E+00	.....
	61	1904.27	1900 -	1907	1903.64	1.10E+01	6.63	0.00E+00	.....
	62	2119.34	2115 -	2123	2118.67	9.46E+00	8.26	5.08E+00	.....
	63	2151.41	2146 -	2154	2150.73	1.00E+01	12.53	1.80E+01	.....
	64	2184.82	2181 -	2187	2184.13	7.00E+00	9.21	1.00E+01	.....
	65	2204.44	2197 -	2208	2203.74	1.79E+01	16.25	2.41E+01	BI-214
	66	2311.94	2307 -	2314	2311.24	8.00E+00	7.48	4.00E+00	.....
	67	2614.18	2608 -	2618	2613.44	1.03E+02	21.31	5.39E+00	TL-208

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 7:09:21AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.88	1.58E+02	109.15	1.37E-02	1.68E-03
	2	53.55	9.51E+01	93.37	1.85E-02	1.68E-03
	3	63.22	6.19E+02	135.57	2.37E-02	2.04E-03
	4	76.21	1.17E+03	161.02	2.74E-02	3.33E-03
	5	92.73	8.94E+02	130.49	2.85E-02	4.30E-03
	6	105.95	5.22E+01	56.11	2.80E-02	3.71E-03
	7	112.08	1.17E+02	84.23	2.75E-02	3.43E-03
	8	128.76	8.64E+01	81.05	2.60E-02	2.79E-03
	9	163.26	4.52E+01	54.58	2.29E-02	1.75E-03
	10	186.13	3.71E+02	84.29	2.11E-02	1.65E-03
	11	209.61	6.21E+01	68.21	1.95E-02	1.63E-03
M	12	238.79	9.22E+02	74.28	1.79E-02	1.60E-03
m	13	241.79	2.36E+02	87.14	1.77E-02	1.60E-03
	14	258.54	1.35E+02	66.91	1.69E-02	1.58E-03
	15	269.84	1.47E+02	62.16	1.64E-02	1.57E-03
M	16	295.33	3.64E+02	52.76	1.55E-02	1.48E-03
m	17	300.49	6.70E+01	40.35	1.53E-02	1.46E-03

: 00451

Analysis Report for 1510087-05
CP5004S04-05

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
18	328.01	4.63E+01	47.10	1.44E-02	1.32E-03	
19	338.30	2.10E+02	59.39	1.41E-02	1.27E-03	
20	351.99	5.96E+02	69.58	1.37E-02	1.21E-03	
21	438.79	5.62E+01	48.47	1.18E-02	9.72E-04	
22	463.87	6.51E+01	53.89	1.13E-02	9.46E-04	
23	511.13	2.24E+02	58.58	1.06E-02	8.98E-04	
24	583.24	2.75E+02	51.04	9.58E-03	8.25E-04	
25	609.37	4.36E+02	54.70	9.27E-03	7.98E-04	
26	726.98	3.99E+01	45.64	8.09E-03	7.03E-04	
27	767.99	6.70E+01	39.19	7.74E-03	6.77E-04	
28	794.88	4.51E+01	34.48	7.53E-03	6.60E-04	
29	862.17	8.82E+01	37.58	7.06E-03	6.16E-04	
30	899.48	2.48E+01	28.93	6.82E-03	5.93E-04	
31	911.49	1.97E+02	39.73	6.74E-03	5.86E-04	
32	933.61	3.04E+01	30.71	6.61E-03	5.75E-04	
33	969.38	8.07E+01	36.00	6.41E-03	5.57E-04	
34	1001.24	6.23E+01	38.93	6.25E-03	5.41E-04	
M	35	1120.62	1.01E+02	29.91	5.70E-03	4.80E-04
m	36	1124.41	2.06E+01	23.19	5.69E-03	4.78E-04
	37	1156.17	2.95E+01	33.59	5.56E-03	4.61E-04
	38	1184.86	4.10E+01	26.91	5.46E-03	4.58E-04
	39	1238.58	4.96E+01	34.44	5.27E-03	4.83E-04
	40	1362.35	2.54E+01	20.98	4.91E-03	5.14E-04
	41	1377.98	2.55E+01	18.55	4.87E-03	5.08E-04
	42	1406.13	3.16E+01	25.99	4.80E-03	4.96E-04
	43	1430.25	2.18E+01	13.56	4.74E-03	4.86E-04
	44	1461.01	7.06E+02	57.41	4.67E-03	4.73E-04
	45	1486.34	6.44E+00	6.18	4.62E-03	4.63E-04
M	46	1510.77	2.07E+01	12.17	4.57E-03	4.53E-04
m	47	1513.77	1.33E+01	12.49	4.56E-03	4.51E-04
	48	1559.38	1.07E+01	10.02	4.48E-03	4.32E-04
	49	1567.40	6.44E+00	6.40	4.47E-03	4.29E-04
M	50	1585.09	1.43E+01	8.28	4.43E-03	4.22E-04
m	51	1589.56	2.38E+01	12.83	4.43E-03	4.20E-04
m	52	1593.05	1.79E+01	14.58	4.42E-03	4.19E-04
	53	1650.85	5.14E+00	6.36	4.33E-03	3.95E-04
	54	1661.05	7.68E+00	10.20	4.32E-03	3.90E-04
M	55	1725.16	7.49E+00	5.55	4.23E-03	3.64E-04
m	56	1729.32	2.14E+01	13.11	4.23E-03	3.62E-04
	57	1764.80	6.56E+01	17.91	4.18E-03	3.47E-04
	58	1772.34	5.50E+00	7.07	4.18E-03	3.44E-04
	59	1783.46	6.79E+00	9.21	4.16E-03	3.40E-04
	60	1847.78	9.88E+00	8.89	4.10E-03	3.18E-04
	61	1904.27	1.10E+01	6.63	4.05E-03	3.18E-04
	62	2119.34	9.46E+00	8.26	3.95E-03	3.18E-04
	63	2151.41	1.00E+01	12.53	3.94E-03	3.18E-04
	64	2184.82	7.00E+00	9.21	3.93E-03	3.18E-04
	65	2204.44	1.79E+01	16.25	3.93E-03	3.18E-04
	66	2311.94	8.00E+00	7.48	3.93E-03	3.18E-04
	67	2614.18	1.03E+02	21.31	4.05E-03	3.18E-04

Analysis Report for 1510087-05
CP5004S04-05

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 7:09:21AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	46.88	1.58E+02	109.15	6.46E+01	1.16E+01	9.34E+01	1.10E+02	
2	53.55	9.51E+01	93.37			9.51E+01	9.34E+01	
3	63.22	6.19E+02	135.57	4.34E+01	1.15E+01	5.76E+02	1.36E+02	
4	76.21	1.17E+03	161.02			1.17E+03	1.61E+02	
5	92.73	8.94E+02	130.49	5.70E+01	9.03E+00	8.37E+02	1.31E+02	
6	105.95	5.22E+01	56.11			5.22E+01	5.61E+01	
7	112.08	1.17E+02	84.23			1.17E+02	8.42E+01	
8	128.76	8.64E+01	81.05			8.64E+01	8.10E+01	
9	163.26	4.52E+01	54.58			4.52E+01	5.46E+01	
10	186.13	3.71E+02	84.29	4.72E+01	7.97E+00	3.23E+02	8.47E+01	
11	209.61	6.21E+01	68.21			6.21E+01	6.82E+01	
M	12	238.79	9.22E+02	74.28	2.36E+01	1.35E+01	8.98E+02	7.55E+01
m	13	241.79	2.36E+02	87.14	6.38E+00	3.91E+00	2.29E+02	8.72E+01
	14	258.54	1.35E+02	66.91			1.35E+02	6.69E+01
	15	269.84	1.47E+02	62.16			1.47E+02	6.22E+01
M	16	295.33	3.64E+02	52.76	8.57E+00	6.10E+00	3.56E+02	5.31E+01
m	17	300.49	6.70E+01	40.35			6.70E+01	4.03E+01
	18	328.01	4.63E+01	47.10	0.00E+00	0.00E+00	4.63E+01	4.71E+01
	19	338.30	2.10E+02	59.39			2.10E+02	5.94E+01
	20	351.99	5.96E+02	69.58	1.40E+01	5.55E+00	5.82E+02	6.98E+01
	21	438.79	5.62E+01	48.47			5.62E+01	4.85E+01
	22	463.87	6.51E+01	53.89			6.51E+01	5.39E+01
	23	511.13	2.24E+02	58.58	8.41E+01	5.50E+00	1.39E+02	5.88E+01
	24	583.24	2.75E+02	51.04	7.32E+00	4.08E+00	2.68E+02	5.12E+01
	25	609.37	4.36E+02	54.70	1.30E+01	3.89E+00	4.23E+02	5.48E+01
	26	726.98	3.99E+01	45.64			3.99E+01	4.56E+01
	27	767.99	6.70E+01	39.19			6.70E+01	3.92E+01
	28	794.88	4.51E+01	34.48			4.51E+01	3.45E+01
	29	862.17	8.82E+01	37.58			8.82E+01	3.76E+01
	30	899.48	2.48E+01	28.93			2.48E+01	2.89E+01
	31	911.49	1.97E+02	39.73	5.60E+00	3.32E+00	1.92E+02	3.99E+01
	32	933.61	3.04E+01	30.71			3.04E+01	3.07E+01
	33	969.38	8.07E+01	36.00			8.07E+01	3.60E+01
	34	1001.24	6.23E+01	38.93			6.23E+01	3.89E+01
M	35	1120.62	1.01E+02	29.91	3.93E+00	2.96E+00	9.68E+01	3.01E+01

Analysis Report for 1510087-05

CP5004S04-05

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	36	1124.41	2.06E+01	23.19			2.06E+01	2.32E+01
	37	1156.17	2.95E+01	33.59			2.95E+01	3.36E+01
	38	1184.86	4.10E+01	26.91			4.10E+01	2.69E+01
	39	1238.58	4.96E+01	34.44			4.96E+01	3.44E+01
	40	1362.35	2.54E+01	20.98			2.54E+01	2.10E+01
	41	1377.98	2.55E+01	18.55			2.55E+01	1.85E+01
	42	1406.13	3.16E+01	25.99			3.16E+01	2.60E+01
	43	1430.25	2.18E+01	13.56			2.18E+01	1.36E+01
	44	1461.01	7.06E+02	57.41	1.12E+01	2.55E+00	6.94E+02	5.75E+01
	45	1486.34	6.44E+00	6.18			6.44E+00	6.18E+00
M	46	1510.77	2.07E+01	12.17			2.07E+01	1.22E+01
m	47	1513.77	1.33E+01	12.49			1.33E+01	1.25E+01
	48	1559.38	1.07E+01	10.02			1.07E+01	1.00E+01
	49	1567.40	6.44E+00	6.40			6.44E+00	6.40E+00
M	50	1585.09	1.43E+01	8.28			1.43E+01	8.28E+00
m	51	1589.56	2.38E+01	12.83			2.38E+01	1.28E+01
m	52	1593.05	1.79E+01	14.58			1.79E+01	1.46E+01
	53	1650.85	5.14E+00	6.36			5.14E+00	6.36E+00
	54	1661.05	7.68E+00	10.20			7.68E+00	1.02E+01
M	55	1725.16	7.49E+00	5.55			7.49E+00	5.55E+00
m	56	1729.32	2.14E+01	13.11			2.14E+01	1.31E+01
	57	1764.80	6.56E+01	17.91	4.23E+00	2.21E+00	6.14E+01	1.80E+01
	58	1772.34	5.50E+00	7.07			5.50E+00	7.07E+00
	59	1783.46	6.79E+00	9.21			6.79E+00	9.21E+00
	60	1847.78	9.88E+00	8.89			9.88E+00	8.89E+00
	61	1904.27	1.10E+01	6.63			1.10E+01	6.63E+00
	62	2119.34	9.46E+00	8.26			9.46E+00	8.26E+00
	63	2151.41	1.00E+01	12.53			1.00E+01	1.25E+01
	64	2184.82	7.00E+00	9.21			7.00E+00	9.21E+00
	65	2204.44	1.79E+01	16.25	5.94E-01	1.16E+00	1.73E+01	1.63E+01
	66	2311.94	8.00E+00	7.48			8.00E+00	7.48E+00
	67	2614.18	1.03E+02	21.31	7.38E+00	1.57E+00	9.59E+01	2.14E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 7:09:21AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.CNF

Corrected Area is: Original * Peak Ratio - Background

: 00454

Analysis Report for 1510087-05

CP5004S04-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	46.88	1.58E+02	109.15	6.46E+01	1.16E+01	9.34E+01	1.10E+02
2	53.55	9.51E+01	93.37			9.51E+01	9.34E+01
3	63.22	6.19E+02	135.57	4.34E+01	1.15E+01	5.76E+02	1.36E+02
4	76.21	1.17E+03	161.02			1.17E+03	1.61E+02
5	92.73	8.94E+02	130.49	5.70E+01	9.03E+00	8.37E+02	1.31E+02
6	105.95	5.22E+01	56.11			5.22E+01	5.61E+01
7	112.08	1.17E+02	84.23			1.17E+02	8.42E+01
8	128.76	8.64E+01	81.05			8.64E+01	8.10E+01
9	163.26	4.52E+01	54.58			4.52E+01	5.46E+01
10	186.13	3.71E+02	84.29	4.72E+01	7.97E+00	3.23E+02	8.47E+01
11	209.61	6.21E+01	68.21			6.21E+01	6.82E+01
M	12	238.79	9.22E+02	2.36E+01	1.35E+01	8.98E+02	7.55E+01
m	13	241.79	2.36E+02	6.38E+00	3.91E+00	2.29E+02	8.72E+01
	14	258.54	1.35E+02			1.35E+02	6.69E+01
	15	269.84	1.47E+02			1.47E+02	6.22E+01
M	16	295.33	3.64E+02	8.57E+00	6.10E+00	3.56E+02	5.31E+01
m	17	300.49	6.70E+01			6.70E+01	4.03E+01
	18	328.01	4.63E+01	0.00E+00	0.00E+00	4.63E+01	4.71E+01
	19	338.30	2.10E+02			2.10E+02	5.94E+01
	20	351.99	5.96E+02	1.40E+01	5.55E+00	5.82E+02	6.98E+01
	21	438.79	5.62E+01			5.62E+01	4.85E+01
	22	463.87	6.51E+01			6.51E+01	5.39E+01
	23	511.13	2.24E+02	8.41E+01	5.50E+00	1.39E+02	5.88E+01
	24	583.24	2.75E+02	7.32E+00	4.08E+00	2.68E+02	5.12E+01
	25	609.37	4.36E+02	1.30E+01	3.89E+00	4.23E+02	5.48E+01
	26	726.98	3.99E+01			3.99E+01	4.56E+01
	27	767.99	6.70E+01			6.70E+01	3.92E+01
	28	794.88	4.51E+01			4.51E+01	3.45E+01
	29	862.17	8.82E+01			8.82E+01	3.76E+01
	30	899.48	2.48E+01			2.48E+01	2.89E+01
	31	911.49	1.97E+02	5.60E+00	3.32E+00	1.92E+02	3.99E+01
	32	933.61	3.04E+01			3.04E+01	3.07E+01
	33	969.38	8.07E+01			8.07E+01	3.60E+01
	34	1001.24	6.23E+01			6.23E+01	3.89E+01
M	35	1120.62	1.01E+02	3.93E+00	2.96E+00	9.68E+01	3.01E+01
m	36	1124.41	2.06E+01			2.06E+01	2.32E+01
	37	1156.17	2.95E+01			2.95E+01	3.36E+01
	38	1184.86	4.10E+01			4.10E+01	2.69E+01
	39	1238.58	4.96E+01			4.96E+01	3.44E+01
	40	1362.35	2.54E+01			2.54E+01	2.10E+01
	41	1377.98	2.55E+01			2.55E+01	1.85E+01
	42	1406.13	3.16E+01			3.16E+01	2.60E+01
	43	1430.25	2.18E+01			2.18E+01	1.36E+01
	44	1461.01	7.06E+02	1.12E+01	2.55E+00	6.94E+02	5.75E+01
	45	1486.34	6.44E+00			6.44E+00	6.18E+00
M	46	1510.77	2.07E+01			2.07E+01	1.22E+01
m	47	1513.77	1.33E+01			1.33E+01	1.25E+01
	48	1559.38	1.07E+01			1.07E+01	1.00E+01
	49	1567.40	6.44E+00			6.44E+00	6.40E+00
M	50	1585.09	1.43E+01			1.43E+01	8.28E+00
m	51	1589.56	2.38E+01			2.38E+01	1.28E+01
m	52	1593.05	1.79E+01			1.79E+01	1.46E+01
	53	1650.85	5.14E+00			5.14E+00	6.36E+00
	54	1661.05	7.68E+00			7.68E+00	1.02E+01

Analysis Report for 1510087-05

CP5004S04-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M 55	1725.16	7.49E+00	5.55			7.49E+00	5.55E+00
m 56	1729.32	2.14E+01	13.11			2.14E+01	1.31E+01
57	1764.80	6.56E+01	17.91	4.23E+00	2.21E+00	6.14E+01	1.80E+01
58	1772.34	5.50E+00	7.07			5.50E+00	7.07E+00
59	1783.46	6.79E+00	9.21			6.79E+00	9.21E+00
60	1847.78	9.88E+00	8.89			9.88E+00	8.89E+00
61	1904.27	1.10E+01	6.63			1.10E+01	6.63E+00
62	2119.34	9.46E+00	8.26			9.46E+00	8.26E+00
63	2151.41	1.00E+01	12.53			1.00E+01	1.25E+01
64	2184.82	7.00E+00	9.21			7.00E+00	9.21E+00
65	2204.44	1.79E+01	16.25	5.94E-01	1.16E+00	1.73E+01	1.63E+01
66	2311.94	8.00E+00	7.48			8.00E+00	7.48E+00
67	2614.18	1.03E+02	21.31	7.38E+00	1.57E+00	9.59E+01	2.14E+01

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.994	1460.81 *	10.67	1.73E+01	2.29E+00
GA-67	0.583	93.31 *	35.70	1.03E+03	4.54E+03
		208.95 *	2.24	1.79E+03	7.83E+03
		300.22 *	16.00	3.45E+02	1.53E+03
TL-208	0.873	583.14 *	30.22	1.15E+00	2.40E-01
		860.37	4.48		
PB-210	0.977	2614.66 *	35.85	8.19E-01	1.93E-01
		46.50 *	4.25	2.00E+00	2.36E+00
BI-212	0.761	727.17 *	11.80	5.19E-01	5.95E-01
		1620.62	2.75		
PB-212	0.994	238.63 *	44.60	1.40E+00	1.72E-01
		300.09 *	3.41	1.59E+00	9.72E-01
BI-214	0.993	609.31 *	46.30	1.22E+00	1.90E-01
		1120.29 *	15.10	1.39E+00	4.48E-01
		1764.49 *	15.80	1.15E+00	3.52E-01
		2204.22 *	4.98	1.10E+00	1.04E+00
PB-214	0.999	295.21 *	19.19	1.49E+00	2.64E-01
		351.92 *	37.19	1.41E+00	2.11E-01

: 00456

Analysis Report for 1510087-05
CP5004S04-05

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
RA-224	0.901	240.98	*	3.95	4.06E+00	1.59E+00
RA-226	0.999	186.21	*	3.28	5.80E+00	1.07E+01
AC-228	0.982	338.32	*	11.40	1.62E+00	4.81E-01
		911.07	*	27.70	1.27E+00	2.87E-01
		969.11	*	16.60	9.40E-01	4.27E-01
PA-234M	0.993	1001.03	*	0.92	1.34E+01	8.48E+00
TH-234	0.999	63.29	*	3.80	7.92E+00	1.99E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 7:09:21AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	53.55	2.64304E-02	49.07		
4	76.21	3.24783E-01	6.89		
6	105.95	1.44956E-02	53.76	Tol.	EU-155 NP-239
7	112.08	3.23863E-02	36.12		
8	128.76	2.40125E-02	46.88		
9	163.26	1.25604E-02	60.35	Tol.	CS-136 BA-140 U-235
14	258.54	3.73867E-02	24.86		
15	269.84	4.07393E-02	21.19		
18	328.01	1.28684E-02	50.84	Tol.	LA-140
21	438.79	1.56075E-02	43.13	D-Esc	
22	463.87	1.80785E-02	41.40	Tol.	SB-125
23	511.13	3.87481E-02	21.09		
27	767.99	1.86006E-02	29.26		
28	794.88	1.25323E-02	38.21	Sum	
29	862.17	2.45072E-02	21.30		
30	899.48	6.89637E-03	58.27		
32	933.61	8.44267E-03	50.52		
m 36	1124.41	5.72935E-03	56.23		
37	1156.17	8.18100E-03	57.02	Sum	

Analysis Report for 1510087-05
CP5004S04-05

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
38	1184.86	1.13889E-02	32.81		
39	1238.58	1.37742E-02	34.73		
40	1362.35	7.04787E-03	41.34	Sum	
41	1377.98	7.08937E-03	36.34		
42	1406.13	8.77976E-03	41.11		
43	1430.25	6.06481E-03	31.06		
45	1486.34	1.78819E-03	48.04		
M	46	1510.77	5.76082E-03	29.33	
m	47	1513.77	3.69461E-03	46.95	
	48	1559.38	2.98148E-03	46.70	
	49	1567.40	1.78819E-03	49.73	
M	50	1585.09	3.96696E-03	28.98	Sum
m	51	1589.56	6.60986E-03	26.95	
m	52	1593.05	4.98205E-03	40.64	D-Esc
	53	1650.85	1.42857E-03	61.87	
	54	1661.05	2.13294E-03	66.41	
M	55	1725.16	2.08081E-03	37.01	
m	56	1729.32	5.93966E-03	30.67	Sum
	58	1772.34	1.52778E-03	64.28	
	59	1783.46	1.88657E-03	67.77	
	60	1847.78	2.74573E-03	44.96	Sum
	61	1904.27	3.05556E-03	30.15	
	62	2119.34	2.62731E-03	43.67	
	63	2151.41	2.77778E-03	62.65	
	64	2184.82	1.94444E-03	65.76	
	66	2311.94	2.22222E-03	46.77	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	1.73E+01	2.29E+00
GA-67	0.58	93.31 *	35.70	1.03E+03	4.54E+03

Analysis Report for 1510087-05
 CP5004S04-05

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
GA-67	0.58	208.95 *		2.24	1.79E+03	7.83E+03
		300.22 *		16.00	3.45E+02	1.53E+03
TL-208	0.87	583.14 *		30.22	1.15E+00	2.40E-01
		860.37		4.48		
		2614.66 *		35.85	8.19E-01	1.93E-01
PB-210	0.97	46.50 *		4.25	2.00E+00	2.36E+00
BI-212	0.76	727.17 *		11.80	5.19E-01	5.95E-01
		1620.62		2.75		
PB-212	0.99	238.63 *		44.60	1.40E+00	1.72E-01
		300.09 *		3.41	1.59E+00	9.72E-01
BI-214	0.99	609.31 *		46.30	1.22E+00	1.90E-01
		1120.29 *		15.10	1.39E+00	4.48E-01
		1764.49 *		15.80	1.15E+00	3.52E-01
		2204.22 *		4.98	1.10E+00	1.04E+00
PB-214	0.99	295.21 *		19.19	1.49E+00	2.64E-01
		351.92 *		37.19	1.41E+00	2.11E-01
RA-224	0.90	240.98 *		3.95	4.06E+00	1.59E+00
RA-226	0.99	186.21 *		3.28	5.80E+00	1.07E+01
AC-228	0.98	338.32 *		11.40	1.62E+00	4.81E-01
		911.07 *		27.70	1.27E+00	2.87E-01
		969.11 *		16.60	9.40E-01	4.27E-01
PA-234M	0.99	1001.03 *		0.92	1.34E+01	8.48E+00
TH-234	0.99	63.29 *		3.80	7.92E+00	1.99E+00

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 @ = Energy line not used for Weighted Mean Activity
 Energy Tolerance : 1.000 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.994	1.73E+01	2.29E+00	
GA-67	0.583	5.20E+02	2.21E+03	
TL-208	0.873	9.48E-01	1.51E-01	
PB-210	0.977	2.00E+00	2.36E+00	

Analysis Report for 1510087-05
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Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BI-212	0.761	5.19E-01	5.95E-01	
PB-212	0.994	1.33E+00	1.70E-01	
BI-214	0.993	1.23E+00	1.55E-01	
PB-214	0.999	1.44E+00	1.64E-01	
RA-224	0.901	4.06E+00	1.59E+00	
RA-226	0.999	5.80E+00	1.07E+01	
AC-228	0.982	1.26E+00	2.13E-01	
PA-234M	0.993	1.34E+01	8.48E+00	
TH-234	0.999	7.92E+00	1.99E+00	

- ? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1510087-05
CP5004S04-05

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 7:09:21AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	53.55	2.64304E-02	49.07		
4	76.21	3.24783E-01	6.89		
6	105.95	1.44956E-02	53.76	Tol.	EU-155 NP-239
7	112.08	3.23863E-02	36.12		
8	128.76	2.40125E-02	46.88		
9	163.26	1.25604E-02	60.35	Tol.	CS-136 BA-140 U-235
14	258.54	3.73867E-02	24.86		
15	269.84	4.07393E-02	21.19		
18	328.01	1.28684E-02	50.84	Tol.	LA-140
21	438.79	1.56075E-02	43.13	D-Esc	
22	463.87	1.80785E-02	41.40	Tol.	SB-125
23	511.13	3.87481E-02	21.09		
27	767.99	1.86006E-02	29.26		
28	794.88	1.25323E-02	38.21	Sum	
29	862.17	2.45072E-02	21.30		
30	899.48	6.89637E-03	58.27		
32	933.61	8.44267E-03	50.52		
m 36	1124.41	5.72935E-03	56.23		
37	1156.17	8.18100E-03	57.02	Sum	
38	1184.86	1.13889E-02	32.81		
39	1238.58	1.37742E-02	34.73		
40	1362.35	7.04787E-03	41.34	Sum	
41	1377.98	7.08937E-03	36.34		
42	1406.13	8.77976E-03	41.11		
43	1430.25	6.06481E-03	31.06		
45	1486.34	1.78819E-03	48.04		
M 46	1510.77	5.76082E-03	29.33		
m 47	1513.77	3.69461E-03	46.95		
48	1559.38	2.98148E-03	46.70		
49	1567.40	1.78819E-03	49.73		
M 50	1585.09	3.96696E-03	28.98	Sum	
m 51	1589.56	6.60986E-03	26.95		

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	52	1593.05	4.98205E-03	40.64	D-Esc
	53	1650.85	1.42857E-03	61.87	
	54	1661.05	2.13294E-03	66.41	
M	55	1725.16	2.08081E-03	37.01	
m	56	1729.32	5.93966E-03	30.67	Sum
	58	1772.34	1.52778E-03	64.28	
	59	1783.46	1.88657E-03	67.77	
	60	1847.78	2.74573E-03	44.96	Sum
	61	1904.27	3.05556E-03	30.15	
	62	2119.34	2.62731E-03	43.67	
	63	2151.41	2.77778E-03	62.65	
	64	2184.82	1.94444E-03	65.76	
	66	2311.94	2.22222E-03	46.77	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	1.96E-01	7.79E-01	7.79E-01
+	NA-22	1274.54	99.94	1.39E-02	8.18E-02	8.18E-02
+	NA-24	1368.53	99.99	0.00E+00	2.03E+14	2.81E+14
		2754.09	99.86	7.28E+13		2.03E+14
+	AL-26	1808.65	99.76	-4.62E-03	5.85E-02	5.85E-02
+	K-40	1460.81	* 10.67	1.73E+01	1.00E+00	1.00E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	2.14E-03	5.30E-02	5.30E-02
		78.34	96.00	2.62E-01		7.21E-02
+	SC-46	889.25	99.98	2.33E-02	8.85E-02	8.85E-02
		1120.51	99.99	2.48E-01		1.67E-01
+	V-48	983.52	99.98	8.63E-02	2.79E-01	3.09E-01
		1312.10	97.50	7.50E-02		2.79E-01
+	CR-51	320.08	9.83	-5.19E-02	1.14E+00	1.14E+00
+	MN-54	834.83	99.97	1.49E-02	8.39E-02	8.39E-02

Analysis Report for 1510087-05
CP5004S04-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-56	846.75	99.96	5.77E-03	8.59E-02	8.59E-02
		1037.75	14.03	-2.19E-01		5.71E-01
		1238.25	67.00	1.92E-01		2.17E-01
		1771.40	15.51	-3.36E-01		4.44E-01
		2598.48	16.90	7.25E-02		2.90E-01
+	CO-57	122.06	85.51	-5.95E-03	5.71E-02	5.71E-02
		136.48	10.60	1.66E-01		4.70E-01
+	CO-58	810.76	99.40	-4.33E-02	8.68E-02	8.68E-02
+	FE-59	1099.22	56.50	1.15E-01	2.49E-01	2.49E-01
		1291.56	43.20	7.39E-02		3.00E-01
+	CO-60	1173.22	100.00	2.45E-02	6.53E-02	9.44E-02
		1332.49	100.00	-4.98E-03		6.53E-02
+	ZN-65	1115.52	50.75	-1.72E-02	1.76E-01	1.76E-01
+	GA-67	93.31	* 35.70	1.03E+03	2.42E+02	2.42E+02
		208.95	* 2.24	1.79E+03		3.22E+03
		300.22	* 16.00	3.45E+02		6.90E+02
+	SE-75	121.11	16.70	3.19E-02	9.16E-02	3.28E-01
		136.00	59.20	-4.84E-02		9.25E-02
		264.65	59.80	-1.54E-02		9.16E-02
		279.53	25.20	-1.26E-01		2.50E-01
		400.65	11.40	-7.40E-02		5.44E-01
+	RB-82	776.52	13.00	-1.04E-01	1.29E+00	1.29E+00
+	RB-83	520.41	46.00	-3.03E-02	1.41E-01	1.41E-01
		529.64	30.30	-1.55E-02		2.24E-01
		552.65	16.40	-3.09E-01		3.63E-01
+	KR-85	513.99	0.43	-6.84E+00	1.49E+01	1.49E+01
+	SR-85	513.99	99.27	-4.21E-02	9.17E-02	9.17E-02
+	Y-88	898.02	93.40	2.19E-02	6.25E-02	8.94E-02
		1836.01	99.38	-1.78E-02		6.25E-02
+	NB-93M	16.57	9.43	-9.16E+03	5.47E+03	5.47E+03
+	NB-94	702.63	100.00	2.73E-02	6.01E-02	7.45E-02
		871.10	100.00	-2.54E-02		6.01E-02
+	NB-95	765.79	99.81	1.19E-01	1.65E-01	1.65E-01
+	NB-95M	235.69	25.00	-1.31E+03	1.51E+02	1.51E+02
+	ZR-95	724.18	43.70	-1.53E-01	1.84E-01	2.57E-01
		756.72	55.30	-3.03E-02		1.84E-01
+	MO-99	181.06	6.20	1.00E+03	1.79E+03	3.07E+03
		739.58	12.80	-3.78E+02		1.79E+03
		778.00	4.50	5.92E+02		5.76E+03
+	RU-103	497.08	89.00	-5.61E-02	9.03E-02	9.03E-02
+	RU-106	621.84	9.80	1.24E-02	7.05E-01	7.05E-01
+	AG-108M	433.93	89.90	-1.33E-03	5.33E-02	5.33E-02
		614.37	90.40	-2.49E-02		7.19E-02
		722.95	90.50	-1.82E-01		7.99E-02
+	CD-109	88.03	3.72	1.76E+00	1.86E+00	1.86E+00
+	AG-110M	657.75	93.14	-4.15E-03	7.76E-02	7.76E-02
		677.61	10.53	-2.80E-02		6.48E-01
		706.67	16.46	3.29E-02		4.91E-01

Analysis Report for 1510087-05
CP5004S04-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AG-110M	763.93	21.98	5.30E-02	7.76E-02	3.82E-01
		884.67	71.63	1.25E-02		1.07E-01
		1384.27	23.94	2.92E-02		3.14E-01
+	CD-113M	263.70	0.02	-1.91E+02	1.93E+02	1.93E+02
+	SN-113	255.12	1.93	-2.71E+00	9.67E-02	3.07E+00
		391.69	64.90	-6.25E-03		9.67E-02
+	TE123M	159.00	84.10	-2.14E-03	6.78E-02	6.78E-02
+	SB-124	602.71	97.87	1.63E-02	9.43E-02	9.43E-02
		645.85	7.26	1.40E-01		1.24E+00
		722.78	11.10	-2.16E+00		9.47E-01
		1691.02	49.00	-1.72E-02		1.62E-01
+	I-125	35.49	6.49	3.61E+00	5.80E+00	5.80E+00
+	SB-125	176.33	6.89	-4.32E-01	1.94E-01	7.35E-01
		427.89	29.33	1.33E-01		1.94E-01
		463.38	10.35	7.36E-01		6.27E-01
		600.56	17.80	-6.60E-02		3.63E-01
		635.90	11.32	-2.24E-01		5.50E-01
+	SB-126	414.70	83.30	5.97E-02	3.81E-01	3.81E-01
		666.33	99.60	-4.06E-02		4.31E-01
		695.00	99.60	1.67E-01		4.27E-01
		720.50	53.80	-3.97E-01		8.27E-01
+	SN-126	87.57	37.00	1.69E-01	1.78E-01	1.78E-01
+	SB-127	473.00	25.00	1.03E+01	6.35E+01	7.43E+01
		685.20	35.70	1.01E+01		6.35E+01
		783.80	14.70	4.50E+01		1.78E+02
+	I-129	29.78	57.00	5.74E-02	1.14E+00	1.14E+00
		33.60	13.20	-1.94E+00		2.47E+00
		39.58	7.52	8.03E-01		2.08E+00
+	I-131	284.30	6.05	-1.59E+00	9.77E-01	1.38E+01
		364.48	81.20	-9.17E-02		9.77E-01
		636.97	7.26	-6.77E+00		1.37E+01
		722.89	1.80	-1.52E+02		6.65E+01
+	TE-132	49.72	13.10	6.95E+00	5.84E+01	6.21E+02
		228.16	88.00	-7.84E+00		5.84E+01
+	BA-133	81.00	33.00	3.64E-02	7.96E-02	1.31E-01
		302.84	17.80	-1.59E-01		3.01E-01
		356.01	60.00	-4.16E-04		7.96E-02
+	I-133	529.87	86.30	-2.80E+09	1.20E+10	1.20E+10
+	XE-133	81.00	38.00	2.33E+00	8.39E+00	8.39E+00
+	CS-134	563.23	8.38	2.28E-01	8.69E-02	6.83E-01
		569.32	15.43	1.50E-02		3.87E-01
		604.70	97.60	1.69E-02		8.69E-02
		795.84	85.40	5.86E-02		9.16E-02
		801.93	8.73	-3.50E-01		7.09E-01
+	CS-135	268.24	16.00	-5.82E-02	3.37E-01	3.37E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	1.91E+00	3.05E-01	3.69E+00

Analysis Report for 1510087-05
CP5004S04-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-136	163.89	4.61	-4.01E-01	3.05E-01	5.88E+00
		176.55	13.56	1.40E+00		2.14E+00
		273.65	12.66	-6.35E-01		2.29E+00
		340.57	48.50	-4.13E-01		6.92E-01
		818.50	99.70	-1.28E-01		3.05E-01
		1048.07	79.60	-4.11E-02		5.12E-01
		1235.34	19.70	3.78E-02		2.88E+00
+	CS-137	661.65	85.12	-1.94E-02	8.14E-02	8.14E-02
+	LA-138	788.74	34.00	6.82E-02	9.55E-02	2.11E-01
		1435.80	66.00	2.66E-02		9.55E-02
+	CE-139	165.85	80.35	3.79E-02	7.24E-02	7.24E-02
+	BA-140	162.64	6.70	1.50E+00	1.15E+00	4.25E+00
		304.84	4.50	1.39E+00		6.45E+00
		423.70	3.20	7.31E-01		9.23E+00
		437.55	2.00	5.53E+00		1.63E+01
		537.32	25.00	-7.04E-01		1.15E+00
+	LA-140	328.77	20.50	3.77E-01	4.21E-01	1.55E+00
		487.03	45.50	-2.57E-01		5.98E-01
		815.85	23.50	2.12E-01		1.40E+00
		1596.49	95.49	3.43E-02		4.21E-01
+	CE-141	145.44	48.40	2.06E-01	2.14E-01	2.14E-01
+	CE-143	57.36	11.80	-1.11E+06	2.42E+06	6.36E+06
		293.26	42.00	-4.27E+04		2.42E+06
		664.55	5.20	8.99E+06		1.90E+07
+	CE-144	133.54	10.80	1.02E-01	4.72E-01	4.72E-01
+	PM-144	476.78	42.00	3.38E-02	7.23E-02	1.35E-01
		618.01	98.60	1.82E-02		7.35E-02
		696.49	99.49	-1.75E-02		7.23E-02
+	PM-145	36.85	21.70	3.45E-01	5.10E-01	9.92E-01
		37.36	39.70	1.77E-01		5.10E-01
		42.30	15.10	-1.40E-01		8.11E-01
		72.40	2.31	-9.42E-01		2.24E+00
+	PM-146	453.90	39.94	1.01E-01	1.41E-01	1.41E-01
		735.90	14.01	-1.73E-01		4.26E-01
		747.13	13.10	-2.45E-01		5.03E-01
+	ND-147	91.11	28.90	3.66E+00	2.17E+00	2.17E+00
		531.02	13.10	-1.00E-01		3.13E+00
+	PM-149	285.90	3.10	7.59E+03	4.37E+04	4.37E+04
+	EU-152	121.78	20.50	-2.29E-02	2.20E-01	2.20E-01
		244.69	5.40	-1.68E+00		9.62E-01
		344.27	19.13	2.39E-02		2.39E-01
		778.89	9.20	1.42E-01		7.88E-01
		964.01	10.40	3.15E-02		7.99E-01
		1085.78	7.22	-2.76E-01		9.69E-01
		1112.02	9.60	-2.08E-02		8.49E-01
		1407.95	14.94	-2.13E-01		4.00E-01
+	GD-153	97.43	31.30	7.76E-02	1.66E-01	1.66E-01
		103.18	22.20	-1.01E-01		2.29E-01
+	EU-154	123.07	40.50	-2.09E-02	1.10E-01	1.10E-01

Analysis Report for 1510087-05
CP5004S04-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	723.30	19.70	-8.43E-01	1.10E-01	3.69E-01
		873.19	11.50	2.23E-02		5.59E-01
		996.32	10.30	-6.67E-02		7.19E-01
		1004.76	17.90	1.08E-01		4.76E-01
		1274.45	35.50	3.85E-02		2.27E-01
+	EU-155	86.50	30.90	2.64E-01	2.12E-01	2.12E-01
		105.30	20.70	-4.86E-02		2.34E-01
+	EU-156	811.77	10.40	-1.58E+00	2.51E+00	2.51E+00
		1153.47	7.20	3.62E+00		5.84E+00
		1230.71	8.90	7.61E-01		4.40E+00
+	HO-166M	184.41	72.60	1.05E-01	9.30E-02	9.30E-02
		280.45	29.60	-8.87E-02		1.77E-01
		410.94	11.10	2.14E-01		5.01E-01
		711.69	54.10	-5.57E-02		1.26E-01
+	TM-171	66.72	0.14	-2.19E+01	3.64E+01	3.64E+01
+	HF-172	81.75	4.52	-1.03E+00	4.25E-01	9.65E-01
		125.81	11.30	-3.06E-01		4.25E-01
+	LU-172	181.53	20.60	-5.13E-01	3.29E+00	7.15E+00
		810.06	16.63	-5.46E+00		1.10E+01
		912.12	15.25	6.88E+01		2.67E+01
		1093.66	62.50	-7.72E-02		3.29E+00
+	LU-173	100.72	5.24	4.29E-01	2.82E-01	9.48E-01
		272.11	21.20	8.39E-02		2.82E-01
+	HF-175	343.40	84.00	1.90E-02	7.78E-02	7.78E-02
+	LU-176	88.34	13.30	4.69E-01	5.31E-02	4.94E-01
		201.83	86.00	5.22E-03		6.11E-02
		306.78	94.00	3.06E-02		5.31E-02
+	TA-182	67.75	41.20	5.98E-03	1.48E-01	1.48E-01
		1121.30	34.90	7.58E-01		4.50E-01
		1189.05	16.23	2.20E-02		6.20E-01
		1221.41	26.98	-6.73E-03		3.98E-01
		1231.02	11.44	1.28E-01		9.43E-01
+	IR-192	308.46	29.68	1.98E-02	1.43E-01	2.25E-01
		468.07	48.10	-2.49E-02		1.43E-01
+	HG-203	279.19	77.30	2.27E-02	1.13E-01	1.13E-01
+	BI-207	569.67	97.72	2.30E-03	5.94E-02	5.94E-02
		1063.62	74.90	2.91E-02		1.10E-01
+	TL-208	583.14	* 30.22	1.15E+00	1.43E-01	2.89E-01
		860.37	4.48	1.83E+00		1.98E+00
		2614.66	* 35.85	8.19E-01		1.43E-01
+	BI-210M	262.00	45.00	-9.00E-02	1.01E-01	1.01E-01
		300.00	23.00	7.60E-02		2.53E-01
+	PB-210	46.50	* 4.25	2.00E+00	3.86E+00	3.86E+00
+	PB-211	404.84	2.90	2.34E-01	1.84E+00	1.84E+00
		831.96	2.90	-7.61E-01		2.53E+00
+	BI-212	727.17	* 11.80	5.19E-01	9.72E-01	9.72E-01
		1620.62	2.75	4.25E-01		2.42E+00
+	PB-212	238.63	* 44.60	1.40E+00	2.21E-01	2.21E-01
		300.09	* 3.41	1.59E+00		3.19E+00

Analysis Report for 1510087-05
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BI-214	609.31	*	46.30	1.22E+00	1.80E-01	1.80E-01
		1120.29	*	15.10	1.39E+00		1.06E+00
		1764.49	*	15.80	1.15E+00		3.27E-01
		2204.22	*	4.98	1.10E+00		1.63E+00
+	PB-214	295.21	*	19.19	1.49E+00	2.08E-01	5.66E-01
		351.92	*	37.19	1.41E+00		2.08E-01
+	RN-219	401.80		6.50	1.53E-01	8.11E-01	8.11E-01
+	RA-223	323.87		3.88	-7.00E-02	1.29E+00	1.29E+00
+	RA-224	240.98	*	3.95	4.06E+00	2.52E+00	2.52E+00
+	RA-225	40.00		31.00	8.59E-01	2.23E+00	2.23E+00
+	RA-226	186.21	*	3.28	5.80E+00	2.31E+00	2.31E+00
+	TH-227	50.10		8.40	1.04E-02	6.33E-01	9.33E-01
		236.00		11.50	-5.51E+00		6.33E-01
		256.20		6.30	-4.01E-01		8.14E-01
+	AC-228	338.32	*	11.40	1.62E+00	3.31E-01	6.79E-01
		911.07	*	27.70	1.27E+00		3.31E-01
		969.11	*	16.60	9.40E-01		6.29E-01
+	TH-230	48.44		16.90	-3.45E-01	5.08E-01	5.08E-01
		62.85		4.60	6.11E+00		1.70E+00
		67.67		0.37	5.47E-01		1.35E+01
+	PA-231	283.67		1.60	-3.62E-01	2.31E+00	3.15E+00
		302.67		2.30	-1.22E+00		2.31E+00
+	TH-231	25.64		14.70	-1.65E+00	7.55E-01	1.34E+01
		84.21		6.40	8.22E-01		7.55E-01
+	PA-233	311.98		38.60	7.99E-02	2.92E-01	2.92E-01
+	PA-234	131.20		20.40	8.19E-02	2.48E-01	2.48E-01
		733.99		8.80	1.80E-01		7.11E-01
		946.00		12.00	2.29E-01		6.02E-01
+	PA-234M	1001.03	*	0.92	1.34E+01	1.32E+01	1.32E+01
+	TH-234	63.29	*	3.80	7.92E+00	2.92E+00	2.92E+00
+	U-235	143.76		10.50	-3.49E-02	4.80E-01	4.80E-01
		163.35		4.70	3.68E-01		1.04E+00
		205.31		4.70	7.55E-01		1.11E+00
+	NP-237	86.50		12.60	6.39E-01	5.13E-01	5.13E-01
+	NP-239	106.10		22.70	8.47E+02	3.04E+03	3.04E+03
		228.18		10.70	-9.19E+02		6.85E+03
		277.60		14.10	2.74E+01		5.53E+03
+	AM-241	59.54		35.90	1.29E-03	1.57E-01	1.57E-01
+	AM-243	74.67		66.00	-1.76E-01	1.03E-01	1.03E-01
+	CM-243	209.75		3.29	1.93E+00	3.84E-01	1.76E+00
		228.14		10.60	-6.40E-02		4.77E-01
		277.60		14.00	1.90E-03		3.84E-01

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- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	7.79E-01	7.79E-01	1.96E-01	3.67E-01
NA-22	1274.54	99.94	8.18E-02	8.18E-02	1.39E-02	3.76E-02
NA-24	1368.53	99.99	2.81E+14	2.03E+14	0.00E+00	1.24E+14
	2754.09	99.86	2.03E+14		7.28E+13	8.20E+13
AL-26	1808.65	99.76	5.85E-02	5.85E-02	-4.62E-03	2.52E-02
+ K-40	1460.81	* 10.67	1.00E+00	1.00E+00	1.73E+01	4.69E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	5.30E-02	5.30E-02	2.14E-03	2.58E-02
	78.34	96.00	7.21E-02		2.62E-01	3.54E-02
SC-46	889.25	99.98	8.85E-02	8.85E-02	2.33E-02	4.11E-02
	1120.51	99.99	1.67E-01		2.48E-01	7.95E-02
V-48	983.52	99.98	3.09E-01	2.79E-01	8.63E-02	1.44E-01
	1312.10	97.50	2.79E-01		7.50E-02	1.25E-01
CR-51	320.08	9.83	1.14E+00	1.14E+00	-5.19E-02	5.45E-01
MN-54	834.83	99.97	8.39E-02	8.39E-02	1.49E-02	3.95E-02
CO-56	846.75	99.96	8.59E-02	8.59E-02	5.77E-03	3.98E-02
	1037.75	14.03	5.71E-01		-2.19E-01	2.59E-01
	1238.25	67.00	2.17E-01		1.92E-01	1.02E-01
	1771.40	15.51	4.44E-01		-3.36E-01	1.87E-01
	2598.48	16.90	2.90E-01		7.25E-02	1.13E-01
CO-57	122.06	85.51	5.71E-02	5.71E-02	-5.95E-03	2.77E-02
	136.48	10.60	4.70E-01		1.66E-01	2.28E-01
CO-58	810.76	99.40	8.68E-02	8.68E-02	-4.33E-02	4.03E-02
FE-59	1099.22	56.50	2.49E-01	2.49E-01	1.15E-01	1.16E-01
	1291.56	43.20	3.00E-01		7.39E-02	1.37E-01
CO-60	1173.22	100.00	9.44E-02	6.53E-02	2.45E-02	4.41E-02
	1332.49	100.00	6.53E-02		-4.98E-03	2.93E-02
ZN-65	1115.52	50.75	1.76E-01	1.76E-01	-1.72E-02	8.15E-02
+ GA-67	93.31	* 35.70	2.42E+02	2.42E+02	1.03E+03	1.19E+02

Analysis Report for 1510087-05
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
GA-67	208.95	*	2.24	3.22E+03	2.42E+02	1.79E+03	1.57E+03
	300.22	*	16.00	6.90E+02		3.45E+02	3.38E+02
SE-75	121.11		16.70	3.28E-01	9.16E-02	3.19E-02	1.60E-01
	136.00		59.20	9.25E-02		-4.84E-02	4.49E-02
	264.65		59.80	9.16E-02		-1.54E-02	4.38E-02
	279.53		25.20	2.50E-01		-1.26E-01	1.20E-01
	400.65		11.40	5.44E-01		-7.40E-02	2.58E-01
RB-82	776.52		13.00	1.29E+00	1.29E+00	-1.04E-01	6.06E-01
RB-83	520.41		46.00	1.41E-01	1.41E-01	-3.03E-02	6.59E-02
	529.64		30.30	2.24E-01		-1.55E-02	1.05E-01
	552.65		16.40	3.63E-01		-3.09E-01	1.68E-01
KR-85	513.99		0.43	1.49E+01	1.49E+01	-6.84E+00	7.08E+00
SR-85	513.99		99.27	9.17E-02	9.17E-02	-4.21E-02	4.36E-02
Y-88	898.02		93.40	8.94E-02	6.25E-02	2.19E-02	4.15E-02
	1836.01		99.38	6.25E-02		-1.78E-02	2.62E-02
NB-93M	16.57		9.43	5.47E+03	5.47E+03	-9.16E+03	2.67E+03
NB-94	702.63		100.00	7.45E-02	6.01E-02	2.73E-02	3.52E-02
	871.10		100.00	6.01E-02		-2.54E-02	2.77E-02
NB-95	765.79		99.81	1.65E-01	1.65E-01	1.19E-01	7.86E-02
NB-95M	235.69		25.00	1.51E+02	1.51E+02	-1.31E+03	7.36E+01
ZR-95	724.18		43.70	2.57E-01	1.84E-01	-1.53E-01	1.22E-01
	756.72		55.30	1.84E-01		-3.03E-02	8.63E-02
MO-99	181.06		6.20	3.07E+03	1.79E+03	1.00E+03	1.49E+03
	739.58		12.80	1.79E+03		-3.78E+02	8.33E+02
	778.00		4.50	5.76E+03		5.92E+02	2.70E+03
RU-103	497.08		89.00	9.03E-02	9.03E-02	-5.61E-02	4.20E-02
RU-106	621.84		9.80	7.05E-01	7.05E-01	1.24E-02	3.32E-01
AG-108M	433.93		89.90	5.33E-02	5.33E-02	-1.33E-03	2.51E-02
	614.37		90.40	7.19E-02		-2.49E-02	3.39E-02
	722.95		90.50	7.99E-02		-1.82E-01	3.76E-02
CD-109	88.03		3.72	1.86E+00	1.86E+00	1.76E+00	9.12E-01
AG-110M	657.75		93.14	7.76E-02	7.76E-02	-4.15E-03	3.66E-02
	677.61		10.53	6.48E-01		-2.80E-02	3.04E-01
	706.67		16.46	4.91E-01		3.29E-02	2.32E-01
	763.93		21.98	3.82E-01		5.30E-02	1.80E-01
	884.67		71.63	1.07E-01		1.25E-02	4.98E-02
	1384.27		23.94	3.14E-01		2.92E-02	1.41E-01
CD-113M	263.70		0.02	1.93E+02	1.93E+02	-1.91E+02	9.24E+01
SN-113	255.12		1.93	3.07E+00	9.67E-02	-2.71E+00	1.47E+00
	391.69		64.90	9.67E-02		-6.25E-03	4.59E-02
	159.00		84.10	6.78E-02	6.78E-02	-2.14E-03	3.28E-02
SB-124	602.71		97.87	9.43E-02	9.43E-02	1.63E-02	4.45E-02
	645.85		7.26	1.24E+00		1.40E-01	5.83E-01
	722.78		11.10	9.47E-01		-2.16E+00	4.46E-01
	1691.02		49.00	1.62E-01		-1.72E-02	6.94E-02
	35.49		6.49	5.80E+00	5.80E+00	3.61E+00	2.82E+00
I-125	176.33		6.89	7.35E-01	1.94E-01	-4.32E-01	3.56E-01
	427.89		29.33	1.94E-01		1.33E-01	9.23E-02
	463.38		10.35	6.27E-01		7.36E-01	2.99E-01
	600.56		17.80	3.63E-01		-6.60E-02	1.71E-01
	635.90		11.32	5.50E-01		-2.24E-01	2.58E-01
	414.70		83.30	3.81E-01	3.81E-01	5.97E-02	1.81E-01
SB-126	666.33		99.60	4.31E-01		-4.06E-02	2.03E-01

Analysis Report for 1510087-05

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-126	695.00	99.60	4.27E-01	3.81E-01	1.67E-01	2.01E-01
	720.50	53.80	8.27E-01		-3.97E-01	3.90E-01
SN-126	87.57	37.00	1.78E-01	1.78E-01	1.69E-01	8.73E-02
SB-127	473.00	25.00	7.43E+01	6.35E+01	1.03E+01	3.50E+01
	685.20	35.70	6.35E+01		1.01E+01	2.98E+01
	783.80	14.70	1.78E+02		4.50E+01	8.40E+01
I-129	29.78	57.00	1.14E+00	1.14E+00	5.74E-02	5.55E-01
	33.60	13.20	2.47E+00		-1.94E+00	1.20E+00
	39.58	7.52	2.08E+00		8.03E-01	1.01E+00
I-131	284.30	6.05	1.38E+01	9.77E-01	-1.59E+00	6.62E+00
	364.48	81.20	9.77E-01		-9.17E-02	4.63E-01
	636.97	7.26	1.37E+01		-6.77E+00	6.44E+00
	722.89	1.80	6.65E+01		-1.52E+02	3.13E+01
TE-132	49.72	13.10	6.21E+02	5.84E+01	6.95E+00	3.02E+02
	228.16	88.00	5.84E+01		-7.84E+00	2.82E+01
BA-133	81.00	33.00	1.31E-01	7.96E-02	3.64E-02	6.37E-02
	302.84	17.80	3.01E-01		-1.59E-01	1.44E-01
	356.01	60.00	7.96E-02		-4.16E-04	3.78E-02
I-133	529.87	86.30	1.20E+10	1.20E+10	-2.80E+09	5.60E+09
XE-133	81.00	38.00	8.39E+00	8.39E+00	2.33E+00	4.08E+00
CS-134	563.23	8.38	6.83E-01	8.69E-02	2.28E-01	3.21E-01
	569.32	15.43	3.87E-01		1.50E-02	1.82E-01
	604.70	97.60	8.69E-02		1.69E-02	4.16E-02
	795.84	85.40	9.16E-02		5.86E-02	4.31E-02
	801.93	8.73	7.09E-01		-3.50E-01	3.28E-01
CS-135	268.24	16.00	3.37E-01	3.37E-01	-5.82E-02	1.62E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.69E+00	3.05E-01	1.91E+00	1.79E+00
	163.89	4.61	5.88E+00		-4.01E-01	2.85E+00
	176.55	13.56	2.14E+00		1.40E+00	1.04E+00
	273.65	12.66	2.29E+00		-6.35E-01	1.10E+00
	340.57	48.50	6.92E-01		-4.13E-01	3.32E-01
	818.50	99.70	3.05E-01		-1.28E-01	1.40E-01
	1048.07	79.60	5.12E-01		-4.11E-02	2.37E-01
	1235.34	19.70	2.88E+00		3.78E-02	1.35E+00
	CS-137	661.65	85.12		8.14E-02	8.14E-02	-1.94E-02	3.84E-02
LA-138	788.74	34.00	2.11E-01	9.55E-02	6.82E-02	9.88E-02
	1435.80	66.00	9.55E-02		2.66E-02	4.24E-02
CE-139	165.85	80.35	7.24E-02	7.24E-02	3.79E-02	3.51E-02
BA-140	162.64	6.70	4.25E+00	1.15E+00	1.50E+00	2.06E+00
	304.84	4.50	6.45E+00		1.39E+00	3.08E+00
	423.70	3.20	9.23E+00		7.31E-01	4.36E+00
	437.55	2.00	1.63E+01		5.53E+00	7.72E+00
	537.32	25.00	1.15E+00		-7.04E-01	5.38E-01
LA-140	328.77	20.50	1.55E+00	4.21E-01	3.77E-01	7.43E-01
	487.03	45.50	5.98E-01		-2.57E-01	2.79E-01
	815.85	23.50	1.40E+00		2.12E-01	6.44E-01
	1596.49	95.49	4.21E-01		3.43E-02	1.87E-01
CE-141	145.44	48.40	2.14E-01	2.14E-01	2.06E-01	1.04E-01
CE-143	57.36	11.80	6.36E+06	2.42E+06	-1.11E+06	3.09E+06
	293.26	42.00	2.42E+06		-4.27E+04	1.17E+06

Analysis Report for 1510087-05

CP5004S04-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CE-143	664.55	5.20	1.90E+07	2.42E+06	8.99E+06	8.98E+06
CE-144	133.54	10.80	4.72E-01	4.72E-01	1.02E-01	2.30E-01
PM-144	476.78	42.00	1.35E-01	7.23E-02	3.38E-02	6.35E-02
	618.01	98.60	7.35E-02		1.82E-02	3.48E-02
	696.49	99.49	7.23E-02		-1.75E-02	3.40E-02
PM-145	36.85	21.70	9.92E-01	5.10E-01	3.45E-01	4.83E-01
	37.36	39.70	5.10E-01		1.77E-01	2.48E-01
	42.30	15.10	8.11E-01		-1.40E-01	3.94E-01
	72.40	2.31	2.24E+00		-9.42E-01	1.09E+00
PM-146	453.90	39.94	1.41E-01	1.41E-01	1.01E-01	6.66E-02
	735.90	14.01	4.26E-01		-1.73E-01	1.98E-01
	747.13	13.10	5.03E-01		-2.45E-01	2.35E-01
ND-147	91.11	28.90	2.17E+00	2.17E+00	3.66E+00	1.07E+00
	531.02	13.10	3.13E+00		-1.00E-01	1.47E+00
PM-149	285.90	3.10	4.37E+04	4.37E+04	7.59E+03	2.09E+04
EU-152	121.78	20.50	2.20E-01	2.20E-01	-2.29E-02	1.07E-01
	244.69	5.40	9.62E-01		-1.68E+00	4.63E-01
	344.27	19.13	2.39E-01		2.39E-02	1.13E-01
	778.89	9.20	7.88E-01		1.42E-01	3.70E-01
	964.01	10.40	7.99E-01		3.15E-02	3.75E-01
	1085.78	7.22	9.69E-01		-2.76E-01	4.45E-01
	1112.02	9.60	8.49E-01		-2.08E-02	3.94E-01
	1407.95	14.94	4.00E-01		-2.13E-01	1.76E-01
GD-153	97.43	31.30	1.66E-01	1.66E-01	7.76E-02	8.11E-02
	103.18	22.20	2.29E-01		-1.01E-01	1.11E-01
EU-154	123.07	40.50	1.10E-01	1.10E-01	-2.09E-02	5.35E-02
	723.30	19.70	3.69E-01		-8.43E-01	1.74E-01
	873.19	11.50	5.59E-01		2.23E-02	2.58E-01
	996.32	10.30	7.19E-01		-6.67E-02	3.34E-01
	1004.76	17.90	4.76E-01		1.08E-01	2.23E-01
	1274.45	35.50	2.27E-01		3.85E-02	1.04E-01
EU-155	86.50	30.90	2.12E-01	2.12E-01	2.64E-01	1.04E-01
	105.30	20.70	2.34E-01		-4.86E-02	1.14E-01
EU-156	811.77	10.40	2.51E+00	2.51E+00	-1.58E+00	1.16E+00
	1153.47	7.20	5.84E+00		3.62E+00	2.73E+00
	1230.71	8.90	4.40E+00		7.61E-01	2.04E+00
HO-166M	184.41	72.60	9.30E-02	9.30E-02	1.05E-01	4.54E-02
	280.45	29.60	1.77E-01		-8.87E-02	8.49E-02
	410.94	11.10	5.01E-01		2.14E-01	2.38E-01
	711.69	54.10	1.26E-01		-5.57E-02	5.94E-02
TM-171	66.72	0.14	3.64E+01	3.64E+01	-2.19E+01	1.77E+01
HF-172	81.75	4.52	9.65E-01	4.25E-01	-1.03E+00	4.69E-01
	125.81	11.30	4.25E-01		-3.06E-01	2.07E-01
LU-172	181.53	20.60	7.15E+00	3.29E+00	-5.13E-01	3.47E+00
	810.06	16.63	1.10E+01		-5.46E+00	5.08E+00
	912.12	15.25	2.67E+01		6.88E+01	1.29E+01
	1093.66	62.50	3.29E+00		-7.72E-02	1.51E+00
LU-173	100.72	5.24	9.48E-01	2.82E-01	4.29E-01	4.62E-01
	272.11	21.20	2.82E-01		8.39E-02	1.36E-01
HF-175	343.40	84.00	7.78E-02	7.78E-02	1.90E-02	3.69E-02
LU-176	88.34	13.30	4.94E-01	5.31E-02	4.69E-01	2.43E-01
	201.83	86.00	6.11E-02		5.22E-03	2.96E-02
	306.78	94.00	5.31E-02		3.06E-02	2.53E-02

Analysis Report for 1510087-05
CP5004S04-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TA-182	67.75	41.20	1.48E-01	1.48E-01	5.98E-03	7.20E-02
	1121.30	34.90	4.50E-01		7.58E-01	2.15E-01
	1189.05	16.23	6.20E-01		2.20E-02	2.87E-01
	1221.41	26.98	3.98E-01		-6.73E-03	1.85E-01
	1231.02	11.44	9.43E-01		1.28E-01	4.38E-01
IR-192	308.46	29.68	2.25E-01	1.43E-01	1.98E-02	1.07E-01
	468.07	48.10	1.43E-01		-2.49E-02	6.75E-02
HG-203	279.19	77.30	1.13E-01	1.13E-01	2.27E-02	5.45E-02
BI-207	569.67	97.72	5.94E-02	5.94E-02	2.30E-03	2.80E-02
	1063.62	74.90	1.10E-01		2.91E-02	5.11E-02
+ TL-208	583.14	*	30.22	1.43E-01	1.15E+00	1.39E-01
	860.37		4.48	1.98E+00	1.83E+00	9.38E-01
	2614.66	*	35.85	1.43E-01	8.19E-01	6.00E-02
BI-210M	262.00		45.00	1.01E-01	-9.00E-02	4.83E-02
	300.00		23.00	2.53E-01	7.60E-02	1.22E-01
+ PB-210	46.50	*	4.25	3.86E+00	2.00E+00	1.90E+00
	404.84		2.90	1.84E+00	1.84E+00	2.34E-01
PB-211	831.96		2.90	2.53E+00	-7.61E-01	1.19E+00
	727.17	*	11.80	9.72E-01	9.72E-01	5.19E-01
+ BI-212	1620.62		2.75	2.42E+00	4.25E-01	1.07E+00
	238.63	*	44.60	2.21E-01	2.21E-01	1.40E+00
+ PB-212	300.09	*	3.41	3.19E+00	1.59E+00	1.56E+00
	609.31	*	46.30	1.80E-01	1.80E-01	1.22E+00
+ BI-214	1120.29	*	15.10	1.06E+00	1.39E+00	5.12E-01
	1764.49	*	15.80	3.27E-01	1.15E+00	1.38E-01
	2204.22	*	4.98	1.63E+00	1.10E+00	7.29E-01
	295.21	*	19.19	5.66E-01	2.08E-01	1.49E+00
+ PB-214	351.92	*	37.19	2.08E-01	1.41E+00	1.01E-01
	401.80		6.50	8.11E-01	8.11E-01	1.53E-01
RN-219	323.87		3.88	1.29E+00	1.29E+00	-7.00E-02
RA-223	240.98	*	3.95	2.52E+00	2.52E+00	4.06E+00
+ RA-224	40.00		31.00	2.23E+00	2.23E+00	8.59E-01
RA-225	186.21	*	3.28	2.31E+00	2.31E+00	5.80E+00
+ RA-226	50.10		8.40	9.33E-01	6.33E-01	1.04E-02
TH-227	236.00		11.50	6.33E-01	-5.51E+00	3.08E-01
+ AC-228	256.20		6.30	8.14E-01	-4.01E-01	3.91E-01
	338.32	*	11.40	6.79E-01	3.31E-01	1.62E+00
	911.07	*	27.70	3.31E-01		1.27E+00
	969.11	*	16.60	6.29E-01		9.40E-01
TH-230	48.44		16.90	5.08E-01	5.08E-01	-3.45E-01
	62.85		4.60	1.70E+00		6.11E+00
	67.67		0.37	1.35E+01		5.47E-01
PA-231	283.67		1.60	3.15E+00	2.31E+00	-3.62E-01
	302.67		2.30	2.31E+00		-1.22E+00
TH-231	25.64		14.70	1.34E+01	7.55E-01	-1.65E+00
	84.21		6.40	7.55E-01		8.22E-01
PA-233	311.98		38.60	2.92E-01	2.92E-01	7.99E-02
PA-234	131.20		20.40	2.48E-01	2.48E-01	8.19E-02
	733.99		8.80	7.11E-01		1.80E-01
	946.00		12.00	6.02E-01		2.29E-01
+ PA-234M	1001.03	*	0.92	1.32E+01	1.32E+01	1.34E+01
+ TH-234	63.29	*	3.80	2.92E+00	2.92E+00	7.92E+00
U-235	143.76		10.50	4.80E-01	4.80E-01	-3.49E-02

Analysis Report for 1510087-05
 CP5004S04-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
U-235	163.35	4.70	1.04E+00	4.80E-01	3.68E-01	5.05E-01
	205.31	4.70	1.11E+00		7.55E-01	5.37E-01
NP-237	86.50	12.60	5.13E-01	5.13E-01	6.39E-01	2.52E-01
NP-239	106.10	22.70	3.04E+03	3.04E+03	8.47E+02	1.48E+03
	228.18	10.70	6.85E+03		-9.19E+02	3.30E+03
	277.60	14.10	5.53E+03		2.74E+01	2.66E+03
AM-241	59.54	35.90	1.57E-01	1.57E-01	1.29E-03	7.63E-02
AM-243	74.67	66.00	1.03E-01	1.03E-01	-1.76E-01	5.03E-02
CM-243	209.75	3.29	1.76E+00	3.84E-01	1.93E+00	8.54E-01
	228.14	10.60	4.77E-01		-6.40E-02	2.30E-01
	277.60	14.00	3.84E-01		1.90E-03	1.85E-01

- + = Nuclide identified during the nuclide identification
- * = Energy line found in the spectrum
- > = MDA value not calculated
- @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP5004S04-05

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	163
9:	614	1199	1131	414	565	1799	358	157
17:	206	134	163	141	135	150	123	124
25:	117	104	112	110	126	124	117	126
33:	135	133	133	175	138	125	135	146
41:	146	132	145	147	152	176	245	154
49:	161	149	145	150	168	188	145	128
57:	136	119	138	152	147	159	363	455
65:	148	148	136	150	173	168	168	169
73:	200	209	497	268	524	406	133	140
81:	130	142	126	202	205	135	253	246
89:	137	243	175	279	689	238	124	92
97:	95	108	118	105	95	96	101	84
105:	106	119	104	89	90	93	111	125
113:	122	93	83	83	89	85	92	92
121:	82	74	79	80	78	89	84	95
129:	114	114	79	86	95	71	77	84
137:	78	65	78	69	94	68	79	130
145:	94	68	86	74	79	75	82	69
153:	84	87	72	65	66	81	61	62
161:	70	62	83	87	52	66	72	77
169:	58	75	74	59	63	49	76	77
177:	69	58	85	69	66	66	66	66
185:	102	287	124	70	55	48	58	73
193:	59	59	53	51	54	60	62	76
201:	67	45	63	60	60	66	50	59
209:	90	90	64	56	53	60	53	78
217:	46	44	61	46	45	46	53	44
225:	52	47	49	46	51	48	49	51
233:	53	62	36	52	55	285	611	114
241:	111	142	76	45	39	32	38	38
249:	42	41	39	48	32	31	40	48
257:	41	52	63	33	43	34	28	22
265:	32	34	41	33	45	67	59	60
273:	28	30	44	39	53	42	35	39
281:	40	39	41	30	35	32	35	41
289:	26	36	29	41	28	61	230	146
297:	45	30	37	63	50	41	36	24
305:	30	33	32	29	31	24	28	30
313:	35	28	22	25	32	37	22	28
321:	32	26	28	29	27	34	32	54
329:	31	31	21	29	29	19	33	27
337:	44	119	98	28	29	19	25	25
345:	20	19	22	21	32	29	131	372
353:	131	29	18	25	19	22	24	30
361:	26	22	14	27	19	29	21	24

369: 27 17 21 21 29 17 22 24

Sample Title: CP5004S04-05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	24	20	24	35	13	19	20	21
385:	18	24	26	23	27	22	17	32
393:	21	25	22	24	22	19	21	22
401:	23	29	17	27	22	34	20	18
409:	27	33	22	22	24	23	21	21
417:	18	23	14	16	13	20	21	16
425:	20	23	21	24	26	27	17	15
433:	20	15	18	18	34	25	22	21
441:	22	18	13	13	22	21	7	17
449:	21	13	18	23	19	24	23	21
457:	9	19	11	17	18	24	46	36
465:	17	18	12	23	20	14	17	11
473:	25	14	26	22	13	17	15	15
481:	14	18	14	11	14	9	15	16
489:	14	21	20	19	14	20	10	10
497:	15	17	10	12	23	14	18	17
505:	14	15	26	14	31	60	97	55
513:	17	18	23	11	11	13	15	14
521:	13	16	23	16	16	12	16	17
529:	11	15	17	11	23	12	18	17
537:	10	6	15	20	17	11	13	12
545:	15	12	10	11	20	10	14	13
553:	8	9	19	17	10	17	8	14
561:	11	24	20	9	15	13	15	18
569:	16	19	17	17	20	17	8	12
577:	17	22	11	12	24	55	182	76
585:	14	9	5	14	11	9	9	11
593:	12	16	11	20	11	12	16	14
601:	10	18	13	16	12	11	23	69
609:	243	156	16	10	14	13	11	16
617:	16	15	26	9	12	8	18	9
625:	12	13	11	7	19	14	10	13
633:	14	13	9	8	11	15	9	12
641:	19	10	14	9	14	10	10	11
649:	12	6	10	13	9	14	11	9
657:	13	10	18	8	20	15	14	12
665:	24	14	10	7	16	8	17	17
673:	9	12	8	11	13	11	11	9
681:	11	8	11	18	9	12	10	11
689:	10	11	11	10	19	13	9	18
697:	9	11	6	13	18	17	19	13
705:	17	13	15	14	9	17	6	11
713:	14	13	19	12	9	7	15	20
721:	19	12	10	11	12	8	39	37
729:	9	11	12	9	9	9	7	9
737:	11	7	6	12	9	11	13	12
745:	10	11	11	12	1	13	13	14
753:	13	9	13	15	9	15	9	12
761:	13	11	10	5	12	21	23	33
769:	19	16	8	13	9	12	11	8
777:	12	11	12	11	13	14	7	12
785:	17	16	7	11	9	8	10	11
793:	13	15	24	11	10	8	6	6

801: 8 6 4 10 12 16 12 8

Sample Title: CP5004S04-05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	6	9	5	8	8	5	12	3
817:	5	9	2	8	2	8	9	8
825:	6	6	13	11	11	5	13	14
833:	10	14	8	13	13	13	10	15
841:	5	10	14	6	9	3	4	9
849:	10	9	6	12	13	6	9	4
857:	6	6	12	25	29	12	16	11
865:	10	12	8	8	4	6	6	8
873:	8	5	10	8	11	5	9	13
881:	8	5	9	11	8	9	11	6
889:	5	10	4	11	3	6	2	6
897:	8	11	12	12	4	8	9	6
905:	7	7	6	2	15	39	100	66
913:	10	13	7	7	12	11	5	4
921:	9	4	2	9	5	5	5	11
929:	10	3	14	11	15	16	11	8
937:	10	6	9	12	8	5	7	9
945:	8	12	7	7	8	5	7	4
953:	11	10	6	4	5	9	8	8
961:	3	7	7	22	13	9	14	36
969:	52	20	10	2	5	6	8	9
977:	6	6	10	9	7	10	6	6
985:	10	11	9	3	3	5	5	9
993:	1	9	4	9	11	7	14	18
1001:	22	9	12	10	11	5	4	6
1009:	6	4	9	6	6	6	7	6
1017:	9	7	6	8	9	8	6	7
1025:	11	6	7	7	6	9	5	13
1033:	11	8	3	5	4	1	8	4
1041:	2	3	7	7	2	11	7	6
1049:	11	8	5	7	9	7	5	9
1057:	8	8	5	11	8	7	11	8
1065:	6	11	10	6	9	8	8	8
1073:	5	10	9	9	2	8	9	13
1081:	8	4	8	6	8	4	7	5
1089:	5	5	5	5	3	9	6	10
1097:	8	7	10	7	11	10	5	6
1105:	2	7	7	5	7	8	9	5
1113:	9	9	9	5	10	9	24	52
1121:	28	11	10	14	4	9	7	9
1129:	2	6	10	3	8	4	8	7
1137:	2	11	4	11	7	4	7	3
1145:	7	10	8	6	5	10	7	8
1153:	7	15	15	12	9	7	5	6
1161:	2	6	6	12	11	12	7	9
1169:	4	12	11	10	9	12	7	8
1177:	13	6	1	7	4	11	11	10
1185:	7	9	10	9	3	5	5	11
1193:	6	8	9	13	8	9	8	8
1201:	6	13	9	7	14	16	4	12
1209:	9	7	7	10	11	10	13	11
1217:	6	2	10	10	13	4	6	12
1225:	7	9	8	7	12	9	8	7

1233: 6 8 7 11 13 25 17 11

Sample Title: CP5004S04-05

Channel	6	8	7	11	13	25	17	11
1241:	4	8	5	6	4	10	3	3
1249:	8	9	6	11	5	7	9	4
1257:	4	3	6	10	6	4	5	9
1265:	6	5	2	5	5	5	10	6
1273:	7	11	1	7	1	5	6	8
1281:	8	4	4	3	7	5	3	7
1289:	6	5	7	3	4	8	6	4
1297:	6	4	6	4	4	6	4	5
1305:	1	4	4	3	7	4	4	7
1313:	0	2	3	2	3	7	6	0
1321:	5	5	1	5	5	3	7	2
1329:	3	5	5	6	1	5	0	4
1337:	3	1	5	2	1	4	4	5
1345:	4	2	3	5	6	4	1	6
1353:	4	7	4	5	1	2	6	5
1361:	7	6	5	2	2	5	2	2
1369:	3	1	4	4	1	2	3	4
1377:	14	10	3	5	5	2	6	3
1385:	4	4	3	2	2	2	2	5
1393:	0	2	4	4	1	1	3	3
1401:	4	8	4	1	1	2	5	6
1409:	3	1	3	3	3	3	2	0
1417:	3	3	3	1	3	3	2	2
1425:	0	1	3	3	6	3	9	4
1433:	1	2	5	5	2	2	2	1
1441:	3	2	1	3	5	4	2	3
1449:	2	2	4	2	2	5	3	3
1457:	1	19	93	269	238	93	9	2
1465:	4	0	2	0	2	3	3	3
1473:	1	2	0	0	3	3	1	1
1481:	3	1	0	0	3	3	2	0
1489:	1	1	2	1	3	1	3	5
1497:	4	3	0	6	3	7	1	0
1505:	1	0	3	1	4	9	5	1
1513:	6	2	1	3	2	1	0	1
1521:	0	1	3	3	2	3	2	1
1529:	2	0	2	1	4	1	3	1
1537:	1	0	2	8	1	3	5	3
1545:	2	1	1	4	0	0	0	1
1553:	1	1	2	0	3	0	3	4
1561:	2	0	0	0	1	3	0	4
1569:	0	1	0	2	2	2	0	0
1577:	2	2	3	4	1	0	5	3
1585:	2	4	3	8	10	4	4	8
1593:	5	3	1	0	1	0	2	2
1601:	2	0	0	1	1	1	2	4
1609:	2	3	2	1	1	1	2	3
1617:	1	1	2	2	5	1	3	2
1625:	1	3	0	2	5	5	1	1
1633:	3	0	4	0	3	5	3	2
1641:	0	2	1	1	5	0	1	1
1649:	1	3	2	0	0	0	1	0
1657:	0	1	1	3	5	3	1	0

1665: 3 2 2 1 2 0 1 1

Sample Title: CP5004S04-05

Channel	1	2	3	4	5	6	7	8
1673:	3	2	1	1	1	2	2	0
1681:	0	0	4	2	2	1	1	1
1689:	0	1	1	3	2	2	2	0
1697:	4	0	2	3	4	1	1	1
1705:	1	1	4	2	1	2	0	0
1713:	2	2	0	1	0	5	3	0
1721:	3	0	0	2	4	1	3	6
1729:	11	4	2	0	3	0	1	3
1737:	1	1	2	0	3	2	1	2
1745:	0	1	0	1	1	0	1	1
1753:	0	2	1	0	0	0	1	1
1761:	0	5	18	17	20	11	0	2
1769:	0	1	3	3	1	0	0	0
1777:	3	1	1	0	3	2	1	5
1785:	0	1	0	3	0	0	1	0
1793:	0	1	0	1	2	1	1	1
1801:	2	1	0	1	2	2	3	0
1809:	1	3	1	0	3	2	1	1
1817:	0	1	3	0	0	1	3	0
1825:	2	2	2	2	2	0	2	0
1833:	0	3	1	0	1	1	1	0
1841:	1	4	3	3	0	5	3	4
1849:	1	0	0	2	1	2	5	1
1857:	0	3	0	1	0	1	1	0
1865:	2	1	2	0	3	2	0	4
1873:	1	1	1	0	1	1	2	0
1881:	3	1	1	3	0	0	2	2
1889:	1	1	1	0	0	2	3	1
1897:	1	2	0	0	1	2	2	3
1905:	1	2	0	0	1	2	1	0
1913:	0	0	2	0	1	1	4	0
1921:	0	2	1	1	0	1	2	0
1929:	2	2	0	0	1	0	1	1
1937:	2	1	1	2	1	0	0	1
1945:	2	1	2	1	2	0	1	3
1953:	1	4	0	2	3	0	2	1
1961:	2	0	0	1	2	2	0	2
1969:	2	0	2	1	2	0	1	3
1977:	2	0	1	1	1	1	1	1
1985:	1	0	1	1	3	3	2	0
1993:	3	3	0	1	0	2	1	0
2001:	1	3	3	2	1	2	0	0
2009:	1	3	2	1	4	0	1	4
2017:	4	4	0	1	1	1	0	0
2025:	0	2	2	1	1	2	1	0
2033:	1	2	1	2	2	0	0	0
2041:	1	4	0	2	1	1	1	1
2049:	0	0	0	1	0	0	0	0
2057:	1	0	0	2	2	0	1	1
2065:	2	2	1	1	2	0	1	1
2073:	2	0	2	1	1	2	1	2
2081:	1	2	0	1	0	0	1	1
2089:	2	1	2	3	1	0	1	0

2097: 0 0 0 3 2 5 7 1

Sample Title: CP5004S04-05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2105:	2	1	4	0	1	1	0	2
2113:	0	0	0	1	1	3	3	2
2121:	1	1	0	1	0	2	2	0
2129:	0	0	1	2	1	1	2	1
2137:	2	0	1	0	2	0	2	3
2145:	1	1	1	4	1	1	5	3
2153:	3	0	2	0	0	1	1	0
2161:	1	1	3	2	1	1	2	2
2169:	1	1	0	0	0	1	1	0
2177:	1	2	0	2	0	2	2	3
2185:	4	1	0	1	0	1	1	0
2193:	0	0	0	3	1	0	1	1
2201:	5	4	4	6	4	2	2	0
2209:	0	2	3	0	1	6	2	1
2217:	2	0	1	2	0	3	0	1
2225:	1	0	1	0	1	0	1	1
2233:	0	0	1	0	1	2	1	0
2241:	0	1	0	1	0	0	1	0
2249:	4	2	0	3	2	0	0	1
2257:	1	1	1	1	0	1	0	0
2265:	1	1	1	1	2	1	1	0
2273:	2	0	1	0	0	0	0	1
2281:	2	1	1	1	3	0	3	0
2289:	0	1	1	0	2	2	0	0
2297:	3	0	2	1	1	1	1	3
2305:	0	1	0	1	1	0	4	3
2313:	1	0	0	0	3	0	2	1
2321:	0	1	3	0	2	3	1	0
2329:	0	1	1	0	1	0	0	1
2337:	0	0	2	2	1	1	4	0
2345:	5	2	1	2	3	0	1	0
2353:	0	0	1	0	1	2	0	1
2361:	1	1	3	0	2	0	2	0
2369:	2	0	2	1	1	2	2	1
2377:	0	3	0	0	1	1	1	1
2385:	1	0	0	0	0	2	1	1
2393:	0	0	1	2	0	1	0	1
2401:	1	0	0	0	1	2	0	0
2409:	0	2	1	0	2	0	2	0
2417:	1	1	0	1	0	2	2	2
2425:	2	0	0	1	0	0	1	0
2433:	2	1	1	2	1	0	2	0
2441:	1	1	0	0	1	1	2	1
2449:	1	2	2	0	0	1	0	1
2457:	2	1	1	2	1	1	0	0
2465:	3	0	0	2	2	2	0	2
2473:	0	1	2	0	1	2	0	0
2481:	0	0	2	1	1	1	0	0
2489:	2	0	1	1	0	0	0	0
2497:	1	0	0	0	1	0	0	0
2505:	0	0	1	1	0	0	0	1
2513:	0	0	0	1	0	1	2	2
2521:	1	1	1	0	1	0	0	2

2529: 2 0 1 1 0 1 0 0

Sample Title: CP5004S04-05

Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	0	0	0	1	0	0	
2545:	0	1	1	0	1	0	0	0	
2553:	1	0	0	0	1	0	1	1	
2561:	0	0	0	0	0	0	1	0	
2569:	1	0	0	0	1	1	1	1	
2577:	1	1	1	0	1	1	1	0	
2585:	0	1	0	1	1	0	1	0	
2593:	0	1	0	0	1	1	1	0	
2601:	0	0	0	0	0	0	1	0	
2609:	2	2	6	14	29	31	17	4	
2617:	1	0	0	0	1	0	0	0	
2625:	0	0	0	0	0	2	0	0	
2633:	0	0	1	1	0	0	0	2	
2641:	0	0	0	1	2	1	0	1	
2649:	0	0	0	0	1	2	0	0	
2657:	0	0	0	1	0	0	1	1	
2665:	0	0	1	0	1	0	1	1	
2673:	1	0	1	0	0	0	0	0	
2681:	1	0	2	0	0	1	0	0	
2689:	0	1	0	0	0	0	0	0	
2697:	0	0	1	0	1	0	0	3	
2705:	0	0	0	0	0	0	1	0	
2713:	0	0	0	0	0	1	1	0	
2721:	0	1	0	0	0	0	0	0	
2729:	0	0	0	2	0	0	0	0	
2737:	1	0	0	0	0	0	0	1	
2745:	2	1	0	0	1	2	0	0	
2753:	1	1	1	0	0	0	0	0	
2761:	0	0	1	0	0	0	0	2	
2769:	0	1	1	0	0	0	0	0	
2777:	0	1	0	1	0	1	1	0	
2785:	0	0	0	0	0	0	0	0	
2793:	0	1	0	0	0	0	0	0	
2801:	0	0	0	1	0	0	0	0	
2809:	1	0	0	0	0	0	0	1	
2817:	1	0	0	0	0	0	0	0	
2825:	1	0	0	0	1	1	0	1	
2833:	0	0	0	0	0	0	0	0	
2841:	0	0	0	0	1	1	0	0	
2849:	1	0	0	1	0	0	2	0	
2857:	0	0	1	0	1	0	0	0	
2865:	0	0	2	0	0	0	1	0	
2873:	0	0	0	0	0	0	0	0	
2881:	0	0	0	0	0	2	1	1	
2889:	0	0	0	0	0	0	1	0	
2897:	0	1	0	1	0	0	0	1	
2905:	0	0	1	0	0	0	0	0	
2913:	0	0	0	0	0	0	0	0	
2921:	0	0	0	0	0	0	0	0	
2929:	0	0	2	0	0	0	0	0	
2937:	0	1	1	0	0	0	0	0	
2945:	0	0	1	0	1	0	0	0	
2953:	0	0	0	0	1	0	1	0	

2961: 0 0 0 1 2 0 0 0

Sample Title: CP5004S04-05

Channel	1	2	3	4	5	6	7	8
2969:	0	2	0	0	0	3	0	0
2977:	0	0	0	0	1	0	0	0
2985:	0	0	2	0	1	2	0	0
2993:	1	0	0	0	0	0	0	1
3001:	1	1	0	0	0	0	1	0
3009:	0	1	0	0	1	0	1	0
3017:	0	0	0	0	0	0	0	1
3025:	0	0	1	0	1	0	0	0
3033:	0	0	0	0	0	2	0	0
3041:	0	0	0	0	1	0	0	0
3049:	0	0	0	0	1	0	0	0
3057:	0	1	0	1	0	0	0	1
3065:	0	0	1	1	1	0	0	1
3073:	0	0	0	0	0	0	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	0	0	0	0
3097:	1	0	0	0	1	0	0	0
3105:	0	0	0	0	0	0	2	0
3113:	0	0	0	0	0	1	0	1
3121:	1	0	0	0	1	1	1	1
3129:	0	0	0	0	0	0	0	0
3137:	1	0	0	0	0	0	0	0
3145:	0	0	1	0	0	1	0	0
3153:	0	0	0	3	1	0	0	0
3161:	2	0	0	0	0	0	0	1
3169:	0	0	0	0	1	1	0	0
3177:	0	1	0	0	0	1	0	0
3185:	0	1	2	0	0	0	0	0
3193:	0	0	1	0	1	0	0	0
3201:	1	0	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	1	0	0	0	1	0	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	0	0	0	1
3241:	0	0	0	0	0	0	1	0
3249:	0	0	0	0	1	0	1	1
3257:	1	1	0	0	0	0	0	0
3265:	0	1	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	1	0	0
3297:	0	1	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	2	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	1	0	1	0	0	1	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	1	0	1	0	0	0	0
3377:	1	0	0	0	0	2	0	0
3385:	0	0	0	0	1	0	0	0

3393: 1 1 0 0 1 1 0 0

Sample Title: CP5004S04-05

Channel	1	2	3	4	5	6	7	8
3401:	0	0	0	0	0	0	0	0
3409:	1	0	1	0	0	0	0	0
3417:	0	0	0	0	1	1	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	1	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	2	0	0	0	0
3465:	0	0	0	0	0	1	0	0
3473:	0	1	1	0	1	2	0	0
3481:	1	1	0	0	1	0	0	0
3489:	1	0	0	1	0	1	0	0
3497:	0	0	0	0	0	1	0	0
3505:	1	0	0	0	0	0	1	0
3513:	0	0	0	0	0	0	0	0
3521:	1	0	1	1	0	0	0	0
3529:	0	1	0	1	0	0	0	0
3537:	1	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	1	1	0	1
3561:	0	0	0	0	0	1	0	0
3569:	0	0	0	0	0	1	1	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	1	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	1	0	0	0	0
3625:	0	0	0	0	1	0	0	0
3633:	0	0	0	0	0	1	0	0
3641:	0	0	0	3	0	0	0	0
3649:	0	0	0	0	0	0	1	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	1	0	0	0	0	2	0
3681:	0	0	1	1	0	0	0	0
3689:	0	0	0	0	0	1	0	0
3697:	0	1	0	1	0	0	1	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	1	0	0	0
3729:	1	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	1	0	0	0	0	1	0	0
3753:	0	0	0	0	0	1	0	0
3761:	0	0	0	0	0	0	0	1
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	1	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	1	0	0	0
3817:	1	0	0	0	0	0	0	0

3825: 0 0 0 1 0 0 0 0

Sample Title: CP5004S04-05

Channel	1	2	3	4	5	6	7	8
3833:	1	0	0	0	0	0	0	0
3841:	0	0	0	1	1	0	1	0
3849:	0	1	0	0	0	0	0	1
3857:	1	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	1	0	1	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	1	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	2	0	0	0	0	0	0	0
3913:	0	0	0	1	1	0	0	0
3921:	0	0	1	0	0	0	0	0
3929:	0	1	0	0	0	1	0	0
3937:	0	0	0	0	1	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	1	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	1	0	0	0	1	0
3985:	1	0	0	0	1	1	1	0
3993:	0	0	0	0	0	0	1	1
4001:	0	0	0	0	0	0	0	0
4009:	0	1	0	0	0	0	0	0
4017:	1	0	0	0	0	0	0	0
4025:	0	0	1	0	0	0	0	1
4033:	0	0	0	1	0	0	0	0
4041:	0	0	0	0	0	1	0	0
4049:	0	0	0	1	0	0	0	0
4057:	0	0	0	0	0	0	1	0
4065:	0	0	0	0	1	0	0	0
4073:	1	0	1	0	0	0	0	1
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

Analysis Report for 1510087-06
CP5004S07-08

✓
1119

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-06
Sample Description : CP5004S07-08
Sample Type : SOIL

Sample Size : 6.187E+02 grams
Facility : Countroom

Sample Taken On : 10/7/2015 5:09:11PM
Acquisition Started : 11/9/2015 6:09:46AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3662.8 seconds

Dead Time : 1.71 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 15 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 11/8/2014
Efficiency Calibration Description :

Sample Number : 29306

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-06
CP5004S07-08

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 7:10:50AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
1	63.46	62.73	0.0000	0.00
2	75.96	75.23	0.0000	0.00
3	92.01	91.28	0.0000	0.00
4	129.05	128.34	0.0000	0.00
5	143.30	142.60	0.0000	0.00
6	186.03	185.34	0.0000	0.00
7	208.08	207.40	0.0000	0.00
8	239.20	238.53	0.0000	0.00
9	295.26	294.62	0.0000	0.00
10	328.48	327.85	0.0000	0.00
11	338.49	337.88	0.0000	0.00
12	352.09	351.47	0.0000	0.00
13	488.80	488.25	0.0000	0.00
14	510.54	510.00	0.0000	0.00
15	583.55	583.05	0.0000	0.00
16	609.20	608.71	0.0000	0.00
17	769.63	769.21	0.0000	0.00
18	912.41	912.07	0.0000	0.00
19	969.43	969.12	0.0000	0.00
20	1042.92	1042.65	0.0000	0.00
21	1056.50	1056.24	0.0000	0.00
22	1120.64	1120.41	0.0000	0.00
23	1154.76	1154.56	0.0000	0.00
24	1237.72	1237.56	0.0000	0.00
25	1377.10	1377.02	0.0000	0.00
26	1460.81	1460.78	0.0000	0.00
27	1605.54	1605.61	0.0000	0.00
28	1659.01	1659.10	0.0000	0.00
29	1696.15	1696.27	0.0000	0.00
30	1763.86	1764.03	0.0000	0.00
31	1925.79	1926.06	0.0000	0.00
32	2023.79	2024.13	0.0000	0.00
33	2071.73	2072.10	0.0000	0.00
34	2203.89	2204.36	0.0000	0.00
35	2217.63	2218.11	0.0000	0.00
36	2406.96	2407.57	0.0000	0.00
37	2614.50	2615.27	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510087-06
CP5004S07-08

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 7:10:50AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	63.46	59 -	68	62.73	3.71E+02	131.96	2.29E+03	2.59
2	75.96	69 -	80	75.23	8.55E+02	156.86	2.64E+03	4.18
3	92.01	84 -	96	91.28	6.10E+02	160.76	2.72E+03	2.84
4	129.05	124 -	132	128.34	6.93E+01	82.90	1.02E+03	1.22
5	143.30	140 -	146	142.60	6.90E+01	66.01	7.42E+02	2.93
6	186.03	180 -	190	185.34	2.23E+02	90.90	9.78E+02	2.59
7	208.08	204 -	212	207.40	9.23E+01	67.56	6.49E+02	4.63
8	239.20	232 -	245	238.53	6.55E+02	97.72	7.70E+02	2.35
9	295.26	290 -	299	294.62	1.60E+02	62.16	4.63E+02	3.24
M 10	328.48	324 -	342	327.85	3.40E+01	37.68	2.24E+02	2.97
m 11	338.49	324 -	342	337.88	1.31E+02	45.21	2.56E+02	2.79
12	352.09	344 -	356	351.47	2.65E+02	71.39	4.75E+02	2.54
13	488.80	483 -	495	488.25	4.51E+01	42.20	1.88E+02	8.50
14	510.54	504 -	517	510.00	1.30E+02	51.67	2.41E+02	2.96
15	583.55	577 -	586	583.05	1.13E+02	41.38	1.81E+02	2.32
16	609.20	602 -	615	608.71	1.80E+02	51.09	2.10E+02	2.45
17	769.63	765 -	774	769.21	3.67E+01	29.05	9.86E+01	6.30
18	912.41	906 -	918	912.07	6.95E+01	36.37	1.21E+02	2.56
19	969.43	965 -	973	969.12	4.89E+01	30.23	1.16E+02	2.71
20	1042.92	1040 -	1045	1042.65	1.91E+01	13.53	2.18E+01	3.21
21	1056.50	1051 -	1063	1056.24	2.20E+01	26.09	6.41E+01	1.43
22	1120.64	1115 -	1125	1120.41	4.72E+01	26.93	7.17E+01	3.02
23	1154.76	1150 -	1160	1154.56	1.94E+01	24.84	7.33E+01	4.83
24	1237.72	1234 -	1245	1237.56	3.00E+01	28.14	8.40E+01	3.69
25	1377.10	1365 -	1388	1377.02	3.92E+01	18.00	1.15E+01	12.28
26	1460.81	1453 -	1466	1460.78	2.63E+02	36.11	2.80E+01	3.12
27	1605.54	1602 -	1609	1605.61	9.32E+00	7.75	3.36E+00	1.60
28	1659.01	1656 -	1662	1659.10	7.11E+00	6.95	3.78E+00	2.23
29	1696.15	1690 -	1701	1696.27	1.10E+01	6.63	0.00E+00	6.72
30	1763.86	1757 -	1768	1764.03	3.60E+01	12.00	0.00E+00	3.62
31	1925.79	1920 -	1929	1926.06	6.22E+00	7.81	5.56E+00	2.90
32	2023.79	2019 -	2028	2024.13	8.00E+00	5.66	0.00E+00	1.47
33	2071.73	2067 -	2075	2072.10	1.00E+01	6.32	0.00E+00	1.69
34	2203.89	2200 -	2207	2204.36	1.40E+01	7.48	0.00E+00	1.58
35	2217.63	2215 -	2220	2218.11	5.57E+00	6.08	2.86E+00	2.67
36	2406.96	2403 -	2410	2407.57	7.00E+00	5.29	0.00E+00	1.33
37	2614.50	2611 -	2619	2615.27	3.37E+01	12.82	4.67E+00	1.24

Analysis Report for 1510087-06
CP5004S07-08

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 7:10:50AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	63.46	59 -	68	3.71E+02	131.96	2.29E+03	1.04E+02
2	75.96	69 -	80	8.55E+02	156.86	2.64E+03	1.20E+02
3	92.01	84 -	96	6.10E+02	160.76	2.72E+03	1.26E+02
4	129.05	124 -	132	6.93E+01	82.90	1.02E+03	6.68E+01
5	143.30	140 -	146	6.90E+01	66.01	7.42E+02	5.25E+01
6	186.03	180 -	190	2.23E+02	90.90	9.78E+02	7.06E+01
7	208.08	204 -	212	9.23E+01	67.56	6.49E+02	5.32E+01
8	239.20	232 -	245	6.55E+02	97.72	7.70E+02	6.84E+01
9	295.26	290 -	299	1.60E+02	62.16	4.63E+02	4.67E+01
M 10	328.48	324 -	342	3.40E+01	37.68	2.24E+02	2.46E+01
m 11	338.49	324 -	342	1.31E+02	45.21	2.56E+02	2.63E+01
12	352.09	344 -	356	2.65E+02	71.39	4.75E+02	5.22E+01
13	488.80	483 -	495	4.51E+01	42.20	1.88E+02	3.29E+01
14	510.54	504 -	517	1.30E+02	51.67	2.41E+02	3.81E+01
15	583.55	577 -	586	1.13E+02	41.38	1.81E+02	2.92E+01
16	609.20	602 -	615	1.80E+02	51.09	2.10E+02	3.57E+01
17	769.63	765 -	774	3.67E+01	29.05	9.86E+01	2.17E+01
18	912.41	906 -	918	6.95E+01	36.37	1.21E+02	2.66E+01
19	969.43	965 -	973	4.89E+01	30.23	1.16E+02	2.81E+01
20	1042.92	1040 -	1045	1.91E+01	13.53	2.18E+01	8.49E+00
21	1056.50	1051 -	1063	2.20E+01	26.09	6.41E+01	2.00E+01
22	1120.64	1115 -	1125	4.72E+01	26.93	7.17E+01	1.90E+01
23	1154.76	1150 -	1160	1.94E+01	24.84	7.33E+01	1.91E+01
24	1237.72	1234 -	1245	3.00E+01	28.14	8.40E+01	2.13E+01
25	1377.10	1365 -	1388	3.92E+01	18.00	1.15E+01	1.06E+01
26	1460.81	1453 -	1466	2.63E+02	36.11	2.80E+01	1.30E+01
27	1605.54	1602 -	1609	9.32E+00	7.75	3.36E+00	3.92E+00
28	1659.01	1656 -	1662	7.11E+00	6.95	3.78E+00	3.66E+00
29	1696.15	1690 -	1701	1.10E+01	6.63	0.00E+00	0.00E+00
30	1763.86	1757 -	1768	3.60E+01	12.00	0.00E+00	0.00E+00
31	1925.79	1920 -	1929	6.22E+00	7.81	5.56E+00	4.94E+00

Analysis Report for 1510087-06
CP5004S07-08

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2023.79	2019 -	2028	8.00E+00	5.66	0.00E+00	0.00E+00
33	2071.73	2067 -	2075	1.00E+01	6.32	0.00E+00	0.00E+00
34	2203.89	2200 -	2207	1.40E+01	7.48	0.00E+00	0.00E+00
35	2217.63	2215 -	2220	5.57E+00	6.08	2.86E+00	3.15E+00
36	2406.96	2403 -	2410	7.00E+00	5.29	0.00E+00	0.00E+00
37	2614.50	2611 -	2619	3.37E+01	12.82	4.67E+00	4.47E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 7:10:50AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	63.46	59 -	68	62.73	3.71E+02	131.96	2.29E+03	TH-234 TH-230
2	75.96	69 -	80	75.23	8.55E+02	156.86	2.64E+03	.....
3	92.01	84 -	96	91.28	6.10E+02	160.76	2.72E+03	ND-147
4	129.05	124 -	132	128.34	6.93E+01	82.90	1.02E+03	.....
5	143.30	140 -	146	142.60	6.90E+01	66.01	7.42E+02	U-235
6	186.03	180 -	190	185.34	2.23E+02	90.90	9.78E+02	RA-226
7	208.08	204 -	212	207.40	9.23E+01	67.56	6.49E+02	GA-67
8	239.20	232 -	245	238.53	6.55E+02	97.72	7.70E+02	PB-212
9	295.26	290 -	299	294.62	1.60E+02	62.16	4.63E+02	PB-214
M 10	328.48	324 -	342	327.85	3.40E+01	37.68	2.24E+02	LA-140
m 11	338.49	324 -	342	337.88	1.31E+02	45.21	2.56E+02	AC-228
12	352.09	344 -	356	351.47	2.65E+02	71.39	4.75E+02	PB-214
13	488.80	483 -	495	488.25	4.51E+01	42.20	1.88E+02	.....
14	510.54	504 -	517	510.00	1.30E+02	51.67	2.41E+02	.....
15	583.55	577 -	586	583.05	1.13E+02	41.38	1.81E+02	TL-208
16	609.20	602 -	615	608.71	1.80E+02	51.09	2.10E+02	BI-214
17	769.63	765 -	774	769.21	3.67E+01	29.05	9.86E+01	.....
18	912.41	906 -	918	912.07	6.95E+01	36.37	1.21E+02	LU-172
19	969.43	965 -	973	969.12	4.89E+01	30.23	1.16E+02	AC-228

Analysis Report for 1510087-06

CP5004S07-08

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
20	1042.92	1040 -	1045	1042.65	1.91E+01	13.53	2.18E+01	.....
21	1056.50	1051 -	1063	1056.24	2.20E+01	26.09	6.41E+01	.....
22	1120.64	1115 -	1125	1120.41	4.72E+01	26.93	7.17E+01	SC-46 BI-214 TA-182
23	1154.76	1150 -	1160	1154.56	1.94E+01	24.84	7.33E+01	.....
24	1237.72	1234 -	1245	1237.56	3.00E+01	28.14	8.40E+01	CO-56
25	1377.10	1365 -	1388	1377.02	3.92E+01	18.00	1.15E+01	.....
26	1460.81	1453 -	1466	1460.78	2.63E+02	36.11	2.80E+01	K-40
27	1605.54	1602 -	1609	1605.61	9.32E+00	7.75	3.36E+00	.....
28	1659.01	1656 -	1662	1659.10	7.11E+00	6.95	3.78E+00	.....
29	1696.15	1690 -	1701	1696.27	1.10E+01	6.63	0.00E+00	.....
30	1763.86	1757 -	1768	1764.03	3.60E+01	12.00	0.00E+00	BI-214
31	1925.79	1920 -	1929	1926.06	6.22E+00	7.81	5.56E+00	.....
32	2023.79	2019 -	2028	2024.13	8.00E+00	5.66	0.00E+00	.....
33	2071.73	2067 -	2075	2072.10	1.00E+01	6.32	0.00E+00	.....
34	2203.89	2200 -	2207	2204.36	1.40E+01	7.48	0.00E+00	BI-214
35	2217.63	2215 -	2220	2218.11	5.57E+00	6.08	2.86E+00	.....
36	2406.96	2403 -	2410	2407.57	7.00E+00	5.29	0.00E+00	.....
37	2614.50	2611 -	2619	2615.27	3.37E+01	12.82	4.67E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 7:10:50AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	63.46	3.71E+02	131.96	2.32E-02	1.76E-03
2	75.96	8.55E+02	156.86	2.13E-02	1.69E-03
3	92.01	6.10E+02	160.76	1.91E-02	1.62E-03
4	129.05	6.93E+01	82.90	1.53E-02	1.48E-03
5	143.30	6.90E+01	66.01	1.42E-02	1.37E-03
6	186.03	2.23E+02	90.90	1.16E-02	1.15E-03
7	208.08	9.23E+01	67.56	1.06E-02	1.08E-03
8	239.20	6.55E+02	97.72	9.40E-03	9.85E-04
9	295.26	1.60E+02	62.16	7.78E-03	8.43E-04
M 10	328.48	3.40E+01	37.68	7.05E-03	8.06E-04

Analysis Report for 1510087-06
CP5004S07-08

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	11	338.49	1.31E+02	45.21	6.86E-03	7.95E-04
	12	352.09	2.65E+02	71.39	6.61E-03	7.80E-04
	13	488.80	4.51E+01	42.20	4.81E-03	5.94E-04
	14	510.54	1.30E+02	51.67	4.61E-03	5.62E-04
	15	583.55	1.13E+02	41.38	4.04E-03	4.55E-04
	16	609.20	1.80E+02	51.09	3.88E-03	4.17E-04
	17	769.63	3.67E+01	29.05	3.08E-03	2.80E-04
	18	912.41	6.95E+01	36.37	2.61E-03	2.06E-04
	19	969.43	4.89E+01	30.23	2.46E-03	1.99E-04
	20	1042.92	1.91E+01	13.53	2.29E-03	1.89E-04
	21	1056.50	2.20E+01	26.09	2.27E-03	1.88E-04
	22	1120.64	4.72E+01	26.93	2.14E-03	1.79E-04
	23	1154.76	1.94E+01	24.84	2.08E-03	1.75E-04
	24	1237.72	3.00E+01	28.14	1.95E-03	1.90E-04
	25	1377.10	3.92E+01	18.00	1.77E-03	2.06E-04
	26	1460.81	2.63E+02	36.11	1.68E-03	1.89E-04
	27	1605.54	9.32E+00	7.75	1.55E-03	1.59E-04
	28	1659.01	7.11E+00	6.95	1.51E-03	1.48E-04
	29	1696.15	1.10E+01	6.63	1.48E-03	1.40E-04
	30	1763.86	3.60E+01	12.00	1.43E-03	1.26E-04
	31	1925.79	6.22E+00	7.81	1.34E-03	1.11E-04
	32	2023.79	8.00E+00	5.66	1.29E-03	1.11E-04
	33	2071.73	1.00E+01	6.32	1.26E-03	1.11E-04
	34	2203.89	1.40E+01	7.48	1.21E-03	1.11E-04
	35	2217.63	5.57E+00	6.08	1.20E-03	1.11E-04
	36	2406.96	7.00E+00	5.29	1.13E-03	1.11E-04
	37	2614.50	3.37E+01	12.82	1.07E-03	1.11E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 7:10:50AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	63.46	3.71E+02	131.96	5.38E+01	9.34E+00	3.17E+02	1.32E+02
2	75.96	8.55E+02	156.86			8.55E+02	1.57E+02
3	92.01	6.10E+02	160.76	5.44E+01	8.36E+00	5.56E+02	1.61E+02

: 00491

Analysis Report for 1510087-06

CP5004S07-08

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	4	129.05	6.93E+01	82.90		6.93E+01	8.29E+01
	5	143.30	6.90E+01	66.01		6.90E+01	6.60E+01
	6	186.03	2.23E+02	90.90	1.43E+01	7.33E+00	2.09E+02
	7	208.08	9.23E+01	67.56		9.23E+01	6.76E+01
	8	239.20	6.55E+02	97.72	1.09E+01	6.39E+00	6.44E+02
	9	295.26	1.60E+02	62.16		1.60E+02	6.22E+01
M	10	328.48	3.40E+01	37.68		3.40E+01	3.77E+01
m	11	338.49	1.31E+02	45.21		1.31E+02	4.52E+01
	12	352.09	2.65E+02	71.39	8.07E+00	5.01E+00	2.57E+02
	13	488.80	4.51E+01	42.20		4.51E+01	4.22E+01
	14	510.54	1.30E+02	51.67	4.21E+01	4.92E+00	8.82E+01
	15	583.55	1.13E+02	41.38		1.13E+02	4.14E+01
	16	609.20	1.80E+02	51.09	5.16E+00	1.63E+00	1.75E+02
	17	769.63	3.67E+01	29.05		3.67E+01	2.91E+01
	18	912.41	6.95E+01	36.37		6.95E+01	3.64E+01
	19	969.43	4.89E+01	30.23		4.89E+01	3.02E+01
	20	1042.92	1.91E+01	13.53		1.91E+01	1.35E+01
	21	1056.50	2.20E+01	26.09		2.20E+01	2.61E+01
	22	1120.64	4.72E+01	26.93		4.72E+01	2.69E+01
	23	1154.76	1.94E+01	24.84		1.94E+01	2.48E+01
	24	1237.72	3.00E+01	28.14		3.00E+01	2.81E+01
	25	1377.10	3.92E+01	18.00		3.92E+01	1.80E+01
	26	1460.81	2.63E+02	36.11		2.63E+02	3.61E+01
	27	1605.54	9.32E+00	7.75		9.32E+00	7.75E+00
	28	1659.01	7.11E+00	6.95		7.11E+00	6.95E+00
	29	1696.15	1.10E+01	6.63		1.10E+01	6.63E+00
	30	1763.86	3.60E+01	12.00	1.11E-01	9.77E-01	3.59E+01
	31	1925.79	6.22E+00	7.81		6.22E+00	7.81E+00
	32	2023.79	8.00E+00	5.66		8.00E+00	5.66E+00
	33	2071.73	1.00E+01	6.32		1.00E+01	6.32E+00
	34	2203.89	1.40E+01	7.48		1.40E+01	7.48E+00
	35	2217.63	5.57E+00	6.08		5.57E+00	6.08E+00
	36	2406.96	7.00E+00	5.29		7.00E+00	5.29E+00
	37	2614.50	3.37E+01	12.82	1.20E+00	1.02E+00	3.25E+01

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1510087-06

CP5004S07-08

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 7:10:50AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	63.46	3.71E+02	131.96	5.38E+01	9.34E+00	3.17E+02	1.32E+02
2	75.96	8.55E+02	156.86			8.55E+02	1.57E+02
3	92.01	6.10E+02	160.76	5.44E+01	8.36E+00	5.56E+02	1.61E+02
4	129.05	6.93E+01	82.90			6.93E+01	8.29E+01
5	143.30	6.90E+01	66.01			6.90E+01	6.60E+01
6	186.03	2.23E+02	90.90	1.43E+01	7.33E+00	2.09E+02	9.12E+01
7	208.08	9.23E+01	67.56			9.23E+01	6.76E+01
8	239.20	6.55E+02	97.72	1.09E+01	6.39E+00	6.44E+02	9.79E+01
9	295.26	1.60E+02	62.16			1.60E+02	6.22E+01
M 10	328.48	3.40E+01	37.68			3.40E+01	3.77E+01
m 11	338.49	1.31E+02	45.21			1.31E+02	4.52E+01
12	352.09	2.65E+02	71.39	8.07E+00	5.01E+00	2.57E+02	7.16E+01
13	488.80	4.51E+01	42.20			4.51E+01	4.22E+01
14	510.54	1.30E+02	51.67	4.21E+01	4.92E+00	8.82E+01	5.19E+01
15	583.55	1.13E+02	41.38			1.13E+02	4.14E+01
16	609.20	1.80E+02	51.09	5.16E+00	1.63E+00	1.75E+02	5.11E+01
17	769.63	3.67E+01	29.05			3.67E+01	2.91E+01
18	912.41	6.95E+01	36.37			6.95E+01	3.64E+01
19	969.43	4.89E+01	30.23			4.89E+01	3.02E+01
20	1042.92	1.91E+01	13.53			1.91E+01	1.35E+01
21	1056.50	2.20E+01	26.09			2.20E+01	2.61E+01
22	1120.64	4.72E+01	26.93			4.72E+01	2.69E+01
23	1154.76	1.94E+01	24.84			1.94E+01	2.48E+01
24	1237.72	3.00E+01	28.14			3.00E+01	2.81E+01
25	1377.10	3.92E+01	18.00			3.92E+01	1.80E+01
26	1460.81	2.63E+02	36.11			2.63E+02	3.61E+01
27	1605.54	9.32E+00	7.75			9.32E+00	7.75E+00
28	1659.01	7.11E+00	6.95			7.11E+00	6.95E+00
29	1696.15	1.10E+01	6.63			1.10E+01	6.63E+00
30	1763.86	3.60E+01	12.00	1.11E-01	9.77E-01	3.59E+01	1.20E+01
31	1925.79	6.22E+00	7.81			6.22E+00	7.81E+00
32	2023.79	8.00E+00	5.66			8.00E+00	5.66E+00
33	2071.73	1.00E+01	6.32			1.00E+01	6.32E+00
34	2203.89	1.40E+01	7.48			1.40E+01	7.48E+00
35	2217.63	5.57E+00	6.08			5.57E+00	6.08E+00
36	2406.96	7.00E+00	5.29			7.00E+00	5.29E+00
37	2614.50	3.37E+01	12.82	1.20E+00	1.02E+00	3.25E+01	1.29E+01

Analysis Report for 1510087-06
CP5004S07-08

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	1.000	1460.81 *	10.67	1.78E+01	3.17E+00
ND-147	0.602	91.11 *	28.90	9.53E+00	2.88E+00
		531.02	13.10		
TL-208	0.873	583.14 *	30.22	1.12E+00	4.30E-01
		860.37	4.48		
		2614.66 *	35.85	1.03E+00	4.20E-01
PB-212	0.850	238.63 *	44.60	1.86E+00	3.44E-01
		300.09	3.41		
BI-214	0.982	609.31 *	46.30	1.18E+00	3.68E-01
		1120.29 *	15.10	1.77E+00	1.02E+00
		1764.49 *	15.80	1.92E+00	6.66E-01
		2204.22 *	4.98	2.83E+00	1.53E+00
PB-214	0.997	295.21 *	19.19	1.30E+00	5.24E-01
		351.92 *	37.19	1.27E+00	3.84E-01
RA-226	0.995	186.21 *	3.28	6.65E+00	1.25E+01
TH-234	0.995	63.29 *	3.80	4.36E+00	1.85E+00

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 7:10:50AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1510087-06
CP5004S07-08

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	75.96	2.37609E-01	9.17	
	4	129.05	1.92456E-02	59.83	
	5	143.30	1.91667E-02	47.83	Tol. U-235
	7	208.08	2.56322E-02	36.61	Tol. GA-67
M	10	328.48	9.43521E-03	55.47	Tol. LA-140
m	11	338.49	3.62582E-02	17.32	Tol. AC-228
	13	488.80	1.25400E-02	46.74	
	14	510.54	2.45076E-02	29.42	
	17	769.63	1.01970E-02	39.57	Sum
	18	912.41	1.93056E-02	26.17	Tol. LU-172
	19	969.43	1.35921E-02	30.89	Tol. AC-228
	20	1042.92	5.30556E-03	35.41	
	21	1056.50	6.09825E-03	59.42	
	23	1154.76	5.37698E-03	64.17	
	24	1237.72	8.33333E-03	46.90	
	25	1377.10	1.09012E-02	22.93	
	27	1605.54	2.58838E-03	41.56	
	28	1659.01	1.97531E-03	48.84	
	29	1696.15	3.05556E-03	30.15	
	31	1925.79	1.72840E-03	62.76	
	32	2023.79	2.22222E-03	35.36	
	33	2071.73	2.77778E-03	31.62	
	35	2217.63	1.54762E-03	54.59	
	36	2406.96	1.94444E-03	37.80	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	1.00	1460.81 *	10.67	1.78E+01	3.17E+00
ND-147	0.60	91.11 *	28.90	9.53E+00	2.88E+00

Analysis Report for 1510087-06
CP5004S07-08

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
ND-147	0.60	531.02	13.10		
TL-208	0.87	583.14 *	30.22	1.12E+00	4.30E-01
		860.37	4.48		
		2614.66 *	35.85	1.03E+00	4.20E-01
PB-212	0.85	238.63 *	44.60	1.86E+00	3.44E-01
		300.09	3.41		
BI-214	0.98	609.31 *	46.30	1.18E+00	3.68E-01
		1120.29 *	15.10	1.77E+00	1.02E+00
		1764.49 *	15.80	1.92E+00	6.66E-01
		2204.22 *	4.98	2.83E+00	1.53E+00
PB-214	0.99	295.21 *	19.19	1.30E+00	5.24E-01
		351.92 *	37.19	1.27E+00	3.84E-01
RA-226	0.99	186.21 *	3.28	6.65E+00	1.25E+01
TH-234	0.99	63.29 *	3.80	4.36E+00	1.85E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	1.000	1.78E+01	3.17E+00	
ND-147	0.602	9.53E+00	2.88E+00	
TL-208	0.873	1.07E+00	3.00E-01	
PB-212	0.850	1.86E+00	3.44E-01	
BI-214	0.982	1.45E+00	3.01E-01	
PB-214	0.997	1.28E+00	3.10E-01	
RA-226	0.995	6.65E+00	1.25E+01	
TH-234	0.995	4.36E+00	1.85E+00	

Analysis Report for 1510087-06

CP5004S07-08

- ? = nuclide is part of an undetermined solution
- X = nuclide rejected by the interference analysis
- @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.00sigma

Analysis Report for 1510087-06
CP5004S07-08

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 7:10:50AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	75.96	2.37609E-01	9.17		
4	129.05	1.92456E-02	59.83		
5	143.30	1.91667E-02	47.83	Tol.	U-235
7	208.08	2.56322E-02	36.61	Tol.	GA-67
M 10	328.48	9.43521E-03	55.47	Tol.	LA-140
m 11	338.49	3.62582E-02	17.32	Tol.	AC-228
13	488.80	1.25400E-02	46.74		
14	510.54	2.45076E-02	29.42		
17	769.63	1.01970E-02	39.57	Sum	
18	912.41	1.93056E-02	26.17	Tol.	LU-172
19	969.43	1.35921E-02	30.89	Tol.	AC-228
20	1042.92	5.30556E-03	35.41		
21	1056.50	6.09825E-03	59.42		
23	1154.76	5.37698E-03	64.17		
24	1237.72	8.33333E-03	46.90		
25	1377.10	1.09012E-02	22.93		
27	1605.54	2.58838E-03	41.56		
28	1659.01	1.97531E-03	48.84		
29	1696.15	3.05556E-03	30.15		
31	1925.79	1.72840E-03	62.76		
32	2023.79	2.22222E-03	35.36		
33	2071.73	2.77778E-03	31.62		
35	2217.63	1.54762E-03	54.59		
36	2406.96	1.94444E-03	37.80		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1510087-06

CP5004S07-08

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	1.08E-01	1.75E+00	1.75E+00
+	NA-22	1274.54	99.94	1.37E-02	1.73E-01	1.73E-01
+	NA-24	1368.53	99.99	-7.92E+14	5.26E+14	5.72E+14
		2754.09	99.86	1.13E+14		5.26E+14
+	AL-26	1808.65	99.76	8.65E-03	1.37E-01	1.37E-01
+	K-40	1460.81	* 10.67	1.78E+01	1.95E+00	1.95E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.70E-01	9.83E-02	9.83E-02
		78.34	96.00	-1.91E-02		1.17E-01
+	SC-46	889.25	99.98	3.58E-02	1.93E-01	1.93E-01
		1120.51	99.99	3.15E-01		3.28E-01
+	V-48	983.52	99.98	2.05E-01	6.68E-01	6.68E-01
		1312.10	97.50	-1.71E-01		7.04E-01
+	CR-51	320.08	9.83	-1.29E-02	2.54E+00	2.54E+00
+	MN-54	834.83	99.97	4.75E-02	1.60E-01	1.60E-01
+	CO-56	846.75	99.96	1.57E-02	2.02E-01	2.02E-01
		1037.75	14.03	-3.12E-03		1.57E+00
		1238.25	67.00	4.80E-01		4.97E-01
		1771.40	15.51	-4.62E-01		8.75E-01
		2598.48	16.90	5.18E-01		1.41E+00
+	CO-57	122.06	85.51	-1.28E-02	1.06E-01	1.06E-01
		136.48	10.60	1.07E-01		9.60E-01
+	CO-58	810.76	99.40	1.30E-01	2.31E-01	2.31E-01
+	FE-59	1099.22	56.50	1.43E-02	5.70E-01	5.70E-01
		1291.56	43.20	-4.71E-01		5.83E-01
+	CO-60	1173.22	100.00	2.44E-02	1.92E-01	2.11E-01
		1332.49	100.00	5.24E-02		1.92E-01
+	ZN-65	1115.52	50.75	6.90E-02	4.13E-01	4.13E-01
+	GA-67	93.31	35.70	8.95E+02	3.22E+02	3.22E+02
		208.95	2.24	2.60E+03		5.09E+03
		300.22	16.00	1.59E+02		7.74E+02
+	SE-75	121.11	16.70	5.61E-02	1.96E-01	6.11E-01
		136.00	59.20	2.13E-02		1.96E-01
		264.65	59.80	-7.81E-02		2.13E-01
		279.53	25.20	8.66E-02		5.36E-01
		400.65	11.40	3.10E-01		1.29E+00
+	RB-82	776.52	13.00	-4.44E-01	2.87E+00	2.87E+00
+	RB-83	520.41	46.00	7.87E-02	3.81E-01	3.81E-01
		529.64	30.30	-3.06E-01		4.87E-01
		552.65	16.40	-3.69E-01		9.81E-01
+	KR-85	513.99	0.43	4.58E+01	4.08E+01	4.08E+01
+	SR-85	513.99	99.27	2.82E-01	2.51E-01	2.51E-01

Analysis Report for 1510087-06

CP5004S07-08

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
+	Y-88	898.02	93.40	-3.92E-02	1.30E-01	1.95E-01
		1836.01	99.38	1.81E-02		1.30E-01
+	NB-93M	16.57	9.43	1.24E+00	4.49E-01	4.49E-01
+	NB-94	702.63	100.00	-1.31E-02	1.44E-01	1.44E-01
		871.10	100.00	-2.04E-02		1.45E-01
+	NB-95	765.79	99.81	1.47E-02	3.24E-01	3.24E-01
+	NB-95M	235.69	25.00	7.53E+02	3.42E+02	3.42E+02
+	ZR-95	724.18	43.70	6.47E-02	3.89E-01	5.07E-01
		756.72	55.30	-1.50E-02		3.89E-01
+	MO-99	181.06	6.20	2.99E+01	4.00E+03	6.25E+03
		739.58	12.80	8.32E+02		4.00E+03
		778.00	4.50	-2.88E+03		1.23E+04
+	RU-103	497.08	89.00	5.15E-02	2.20E-01	2.20E-01
+	RU-106	621.84	9.80	1.04E-01	1.37E+00	1.37E+00
+	AG-108M	433.93	89.90	-3.61E-02	1.33E-01	1.33E-01
		614.37	90.40	-1.85E-02		1.75E-01
		722.95	90.50	-5.31E-02		1.65E-01
+	CD-109	88.03	3.72	-2.21E+00	2.99E+00	2.99E+00
+	AG-110M	657.75	93.14	2.89E-02	1.62E-01	1.62E-01
		677.61	10.53	6.96E-01		1.52E+00
		706.67	16.46	4.95E-01		1.01E+00
		763.93	21.98	4.57E-02		8.22E-01
		884.67	71.63	3.72E-03		2.19E-01
		1384.27	23.94	-1.11E-01		6.51E-01
+	CD-113M	263.70	0.02	-1.24E+02	4.57E+02	4.57E+02
+	SN-113	255.12	1.93	-8.84E-01	2.05E-01	6.27E+00
		391.69	64.90	-1.38E-01		2.05E-01
+	TE123M	159.00	84.10	-5.61E-02	1.41E-01	1.41E-01
+	SB-124	602.71	97.87	-1.81E-04	2.06E-01	2.06E-01
		645.85	7.26	1.18E+00		2.89E+00
		722.78	11.10	-5.73E-01		1.93E+00
		1691.02	49.00	-2.42E-02		3.42E-01
+	I-125	35.49	6.49	-2.36E-01	1.13E+00	1.13E+00
+	SB-125	176.33	6.89	2.16E-01	4.43E-01	1.46E+00
		427.89	29.33	3.37E-01		4.43E-01
		463.38	10.35	5.74E-01		1.32E+00
		600.56	17.80	2.84E-03		7.81E-01
		635.90	11.32	-6.26E-01		1.08E+00
+	SB-126	414.70	83.30	-3.32E-01	8.70E-01	9.07E-01
		666.33	99.60	4.12E-01		9.17E-01
		695.00	99.60	-4.22E-02		8.70E-01
		720.50	53.80	-5.13E-01		1.58E+00
+	SN-126	87.57	37.00	-2.11E-01	2.86E-01	2.86E-01
+	SB-127	473.00	25.00	-2.53E+01	1.29E+02	1.69E+02
		685.20	35.70	-4.63E+01		1.29E+02
		783.80	14.70	1.56E+02		4.00E+02
+	I-129	29.78	57.00	-1.21E-02	8.39E-02	8.39E-02
		33.60	13.20	7.44E-02		3.77E-01

Analysis Report for 1510087-06
CP5004S07-08

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	-4.86E-01	8.39E-02	6.97E-01
+	I-131	284.30	6.05	-8.38E-01	2.22E+00	2.94E+01
		364.48	81.20	-1.40E+00		2.22E+00
		636.97	7.26	-6.12E+00		2.89E+01
		722.89	1.80	-4.02E+01		1.35E+02
+	TE-132	49.72	13.10	-1.89E+01	1.25E+02	4.93E+02
		228.16	88.00	1.29E+01		1.25E+02
+	BA-133	81.00	33.00	-5.81E-03	2.97E-01	3.17E-01
		302.84	17.80	2.01E-01		6.28E-01
		356.01	60.00	2.91E-02		2.97E-01
+	I-133	529.87	86.30	-1.69E+10	2.69E+10	2.69E+10
+	XE-133	81.00	38.00	-3.72E-01	2.03E+01	2.03E+01
+	CS-134	563.23	8.38	-1.20E-01	1.92E-01	1.72E+00
		569.32	15.43	-1.74E-01		9.40E-01
		604.70	97.60	8.02E-03		1.92E-01
		795.84	85.40	1.11E-01		2.01E-01
		801.93	8.73	-8.35E-02		1.85E+00
+	CS-135	268.24	16.00	2.16E-01	7.03E-01	7.03E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	3.23E+00	7.50E-01	7.36E+00
		163.89	4.61	5.65E+00		1.19E+01
		176.55	13.56	5.98E-01		4.04E+00
		273.65	12.66	1.91E+00		5.07E+00
		340.57	48.50	1.99E+00		1.60E+00
		818.50	99.70	-3.97E-02		7.50E-01
		1048.07	79.60	-2.69E-01		1.09E+00
		1235.34	19.70	-1.54E+00		6.93E+00
+	CS-137	661.65	85.12	-2.32E-02	1.66E-01	1.66E-01
+	LA-138	788.74	34.00	-1.54E-01	2.16E-01	4.74E-01
		1435.80	66.00	1.31E-02		2.16E-01
+	CE-139	165.85	80.35	1.64E-02	1.42E-01	1.42E-01
+	BA-140	162.64	6.70	1.55E+00	2.95E+00	8.56E+00
		304.84	4.50	-6.96E-01		1.44E+01
		423.70	3.20	-9.27E+00		2.22E+01
		437.55	2.00	-9.72E+00		3.36E+01
		537.32	25.00	1.18E+00		2.95E+00
+	LA-140	328.77	20.50	7.44E-02	8.29E-01	3.32E+00
		487.03	45.50	-6.02E-01		1.54E+00
		815.85	23.50	1.27E-01		3.62E+00
		1596.49	95.49	-1.81E-01		8.29E-01
+	CE-141	145.44	48.40	-7.03E-02	4.03E-01	4.03E-01
+	CE-143	57.36	11.80	-1.87E+06	4.59E+06	8.45E+06
		293.26	42.00	7.85E+06		4.59E+06
		664.55	5.20	3.92E+06		3.80E+07
+	CE-144	133.54	10.80	2.15E-01	9.54E-01	9.54E-01
+	PM-144	476.78	42.00	-1.02E-01	1.32E-01	2.98E-01
		618.01	98.60	-3.47E-02		1.32E-01

Analysis Report for 1510087-06
CP5004S07-08

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
	PM-144	696.49	99.49	-2.87E-02	1.32E-01	1.49E-01
+	PM-145	36.85	21.70	1.47E-02	1.29E-01	2.38E-01
		37.36	39.70	-3.84E-02		1.29E-01
		42.30	15.10	-1.76E-02		3.71E-01
		72.40	2.31	7.72E+00		4.65E+00
+	PM-146	453.90	39.94	1.40E-02	3.06E-01	3.06E-01
		735.90	14.01	-6.92E-01		9.78E-01
		747.13	13.10	-1.57E-01		1.13E+00
+	ND-147	91.11	* 28.90	9.53E+00	4.39E+00	4.39E+00
		531.02	13.10	-4.65E+00		6.79E+00
+	PM-149	285.90	3.10	-2.54E+04	9.33E+04	9.33E+04
+	EU-152	121.78	20.50	-4.93E-02	4.08E-01	4.08E-01
		244.69	5.40	-8.23E-02		2.38E+00
		344.27	19.13	-3.09E+00		5.85E-01
		778.89	9.20	-3.87E-01		1.65E+00
		964.01	10.40	1.99E-01		2.08E+00
		1085.78	7.22	-8.59E-01		2.31E+00
		1112.02	9.60	4.64E-01		1.80E+00
		1407.95	14.94	-2.90E-01		1.05E+00
+	GD-153	97.43	31.30	2.77E-02	3.28E-01	3.28E-01
		103.18	22.20	-1.45E-01		4.03E-01
+	EU-154	123.07	40.50	-4.75E-03	2.08E-01	2.08E-01
		723.30	19.70	-2.46E-01		7.62E-01
		873.19	11.50	-4.98E-01		1.24E+00
		996.32	10.30	4.03E-01		1.71E+00
		1004.76	17.90	3.81E-01		9.94E-01
		1274.45	35.50	3.80E-02		4.78E-01
+	EU-155	86.50	30.90	3.64E-02	3.30E-01	3.30E-01
		105.30	20.70	-2.38E-01		3.97E-01
+	EU-156	811.77	10.40	1.37E-01	6.68E+00	6.68E+00
		1153.47	7.20	2.18E+00		1.21E+01
		1230.71	8.90	1.46E+00		1.08E+01
+	HO-166M	184.41	72.60	3.61E-01	1.72E-01	1.72E-01
		280.45	29.60	1.01E-01		3.74E-01
		410.94	11.10	3.23E-01		1.16E+00
		711.69	54.10	-3.79E-02		2.53E-01
+	TM-171	66.72	0.14	6.16E+01	6.99E+01	6.99E+01
+	HF-172	81.75	4.52	-4.38E-02	7.91E-01	2.23E+00
		125.81	11.30	-5.16E-02		7.91E-01
+	LU-172	181.53	20.60	-9.70E-01	8.99E+00	1.59E+01
		810.06	16.63	1.64E+01		2.91E+01
		912.12	15.25	6.97E+01		4.68E+01
		1093.66	62.50	-4.45E-01		8.99E+00
+	LU-173	100.72	5.24	-1.08E+00	5.68E-01	1.62E+00
		272.11	21.20	2.41E-01		5.68E-01
+	HF-175	343.40	84.00	-4.48E-01	1.92E-01	1.92E-01
+	LU-176	88.34	13.30	1.26E+00	1.15E-01	8.39E-01
		201.83	86.00	3.10E-03		1.24E-01
		306.78	94.00	-5.00E-02		1.15E-01

Analysis Report for 1510087-06
CP5004S07-08

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
+	TA-182	67.75	41.20	-4.73E-01	2.74E-01	2.74E-01
		1121.30	34.90	7.15E-01		8.55E-01
		1189.05	16.23	2.25E-01		1.44E+00
		1221.41	26.98	-1.47E-01		9.49E-01
		1231.02	11.44	3.13E-01		2.32E+00
+	IR-192	308.46	29.68	2.62E-02	3.58E-01	5.07E-01
		468.07	48.10	-1.20E-01		3.58E-01
+	HG-203	279.19	77.30	3.79E-02	2.35E-01	2.35E-01
+	BI-207	569.67	97.72	-2.68E-02	1.44E-01	1.44E-01
		1063.62	74.90	-4.33E-02		1.87E-01
+	TL-208	583.14	* 30.22	1.12E+00	3.95E-01	6.07E-01
		860.37	4.48	1.85E+00		4.00E+00
		2614.66	* 35.85	1.03E+00		3.95E-01
+	BI-210M	262.00	45.00	-3.00E-02	2.31E-01	2.31E-01
		300.00	23.00	1.06E-01		5.82E-01
+	PB-210	46.50	4.25	3.74E-01	1.42E+00	1.42E+00
+	PB-211	404.84	2.90	-2.75E+00	4.12E+00	4.12E+00
		831.96	2.90	-7.35E-01		4.77E+00
+	BI-212	727.17	11.80	1.10E+00	1.40E+00	1.40E+00
		1620.62	2.75	1.36E-01		4.30E+00
+	PB-212	238.63	* 44.60	1.86E+00	4.07E-01	4.07E-01
		300.09	3.41	7.12E-01		3.93E+00
+	BI-214	609.31	* 46.30	1.18E+00	2.49E-01	5.05E-01
		1120.29	* 15.10	1.77E+00		1.53E+00
		1764.49	* 15.80	1.92E+00		2.49E-01
		2204.22	* 4.98	2.83E+00		5.46E-01
+	PB-214	295.21	* 19.19	1.30E+00	5.33E-01	7.81E-01
		351.92	* 37.19	1.27E+00		5.33E-01
+	RN-219	401.80	6.50	7.61E-02	1.86E+00	1.86E+00
+	RA-223	323.87	3.88	-3.57E-01	2.87E+00	2.87E+00
+	RA-224	240.98	3.95	1.88E+01	4.59E+00	4.59E+00
+	RA-225	40.00	31.00	-5.43E-01	7.79E-01	7.79E-01
+	RA-226	186.21	* 3.28	6.65E+00	4.62E+00	4.62E+00
+	TH-227	50.10	8.40	-2.89E-02	7.56E-01	7.56E-01
		236.00	11.50	3.16E+00		1.44E+00
		256.20	6.30	4.78E-02		1.62E+00
+	AC-228	338.32	11.40	1.58E+00	8.57E-01	1.23E+00
		911.07	27.70	9.06E-01		8.57E-01
		969.11	16.60	1.30E+00		1.51E+00
+	TH-230	48.44	16.90	6.75E-02	3.68E-01	3.68E-01
		62.85	4.60	4.01E+00		1.98E+00
		67.67	0.37	-4.33E+01		2.50E+01
+	PA-231	283.67	1.60	-4.02E-01	4.83E+00	6.75E+00
		302.67	2.30	1.55E+00		4.83E+00
+	TH-231	25.64	14.70	-3.41E-01	3.14E-01	3.14E-01
		84.21	6.40	-3.05E-02		1.47E+00
+	PA-233	311.98	38.60	-4.50E-02	6.62E-01	6.62E-01
+	PA-234	131.20	20.40	3.57E-02	4.65E-01	4.65E-01

Analysis Report for 1510087-06

CP5004S07-08

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	733.99	8.80	-6.79E-01	4.65E-01	1.60E+00
		946.00	12.00	5.34E-01		1.32E+00
+	PA-234M	1001.03	0.92	5.78E-01	1.86E+01	1.86E+01
+	TH-234	63.29	*	3.80	2.92E+00	2.92E+00
+	U-235	143.76	10.50	6.76E-02	9.20E-01	9.20E-01
		163.35	4.70	9.95E-01		2.10E+00
		205.31	4.70	-6.25E-02		2.39E+00
+	NP-237	86.50	12.60	8.81E-02	8.00E-01	8.00E-01
+	NP-239	106.10	22.70	-3.13E+03	5.23E+03	5.23E+03
		228.18	10.70	-7.12E+02		1.43E+04
		277.60	14.10	-4.38E+02		1.16E+04
+	AM-241	59.54	35.90	-5.58E-02	2.36E-01	2.36E-01
+	AM-243	74.67	66.00	6.97E-01	1.74E-01	1.74E-01
+	CM-243	209.75	3.29	3.10E+00	8.03E-01	3.51E+00
		228.14	10.60	1.05E-01		1.02E+00
		277.60	14.00	-3.04E-02		8.03E-01

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction

? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59	10.42	1.75E+00	1.75E+00	1.08E-01	8.26E-01
	NA-22	1274.54	99.94	1.73E-01	1.73E-01	1.37E-02	7.75E-02
	NA-24	1368.53	99.99	5.72E+14	5.26E+14	-7.92E+14	2.42E+14
		2754.09	99.86	5.26E+14		1.13E+14	1.86E+14
	AL-26	1808.65	99.76	1.37E-01	1.37E-01	8.65E-03	5.69E-02
+	K-40	1460.81	*	10.67	1.95E+00	1.78E+01	8.82E-01

: 00504

Analysis Report for 1510087-06
CP5004S07-08

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	9.83E-02	9.83E-02	-1.70E-01	4.84E-02
	78.34	96.00	1.17E-01		-1.91E-02	5.76E-02
SC-46	889.25	99.98	1.93E-01	1.93E-01	3.58E-02	8.85E-02
	1120.51	99.99	3.28E-01		3.15E-01	1.54E-01
V-48	983.52	99.98	6.68E-01	6.68E-01	2.05E-01	3.06E-01
	1312.10	97.50	7.04E-01		-1.71E-01	3.15E-01
CR-51	320.08	9.83	2.54E+00	2.54E+00	-1.29E-02	1.22E+00
MN-54	834.83	99.97	1.60E-01	1.60E-01	4.75E-02	7.40E-02
CO-56	846.75	99.96	2.02E-01	2.02E-01	1.57E-02	9.30E-02
	1037.75	14.03	1.57E+00		-3.12E-03	7.17E-01
	1238.25	67.00	4.97E-01		4.80E-01	2.32E-01
	1771.40	15.51	8.75E-01		-4.62E-01	3.39E-01
	2598.48	16.90	1.41E+00		5.18E-01	5.85E-01
CO-57	122.06	85.51	1.06E-01	1.06E-01	-1.28E-02	5.17E-02
	136.48	10.60	9.60E-01		1.07E-01	4.68E-01
CO-58	810.76	99.40	2.31E-01	2.31E-01	1.30E-01	1.08E-01
FE-59	1099.22	56.50	5.70E-01	5.70E-01	1.43E-02	2.63E-01
	1291.56	43.20	5.83E-01		-4.71E-01	2.58E-01
CO-60	1173.22	100.00	2.11E-01	1.92E-01	2.44E-02	9.74E-02
	1332.49	100.00	1.92E-01		5.24E-02	8.70E-02
ZN-65	1115.52	50.75	4.13E-01	4.13E-01	6.90E-02	1.90E-01
GA-67	93.31	35.70	3.22E+02	3.22E+02	8.95E+02	1.59E+02
	208.95	2.24	5.09E+03		2.60E+03	2.47E+03
	300.22	16.00	7.74E+02		1.59E+02	3.73E+02
SE-75	121.11	16.70	6.11E-01	1.96E-01	5.61E-02	2.98E-01
	136.00	59.20	1.96E-01		2.13E-02	9.55E-02
	264.65	59.80	2.13E-01		-7.81E-02	1.03E-01
	279.53	25.20	5.36E-01		8.66E-02	2.58E-01
	400.65	11.40	1.29E+00		3.10E-01	6.16E-01
RB-82	776.52	13.00	2.87E+00	2.87E+00	-4.44E-01	1.33E+00
RB-83	520.41	46.00	3.81E-01	3.81E-01	7.87E-02	1.80E-01
	529.64	30.30	4.87E-01		-3.06E-01	2.28E-01
	552.65	16.40	9.81E-01		-3.69E-01	4.60E-01
KR-85	513.99	0.43	4.08E+01	4.08E+01	4.58E+01	1.96E+01
SR-85	513.99	99.27	2.51E-01	2.51E-01	2.82E-01	1.20E-01
Y-88	898.02	93.40	1.95E-01	1.30E-01	-3.92E-02	8.92E-02
	1836.01	99.38	1.30E-01		1.81E-02	5.05E-02
NB-93M	16.57	9.43	4.49E-01	4.49E-01	1.24E+00	2.19E-01
NB-94	702.63	100.00	1.44E-01	1.44E-01	-1.31E-02	6.71E-02
	871.10	100.00	1.45E-01		-2.04E-02	6.63E-02
NB-95	765.79	99.81	3.24E-01	3.24E-01	1.47E-02	1.52E-01
NB-95M	235.69	25.00	3.42E+02	3.42E+02	7.53E+02	1.68E+02
ZR-95	724.18	43.70	5.07E-01	3.89E-01	6.47E-02	2.37E-01
	756.72	55.30	3.89E-01		-1.50E-02	1.81E-01
MO-99	181.06	6.20	6.25E+03	4.00E+03	2.99E+01	3.05E+03
	739.58	12.80	4.00E+03		8.32E+02	1.85E+03
	778.00	4.50	1.23E+04		-2.88E+03	5.69E+03
RU-103	497.08	89.00	2.20E-01	2.20E-01	5.15E-02	1.03E-01
RU-106	621.84	9.80	1.37E+00	1.37E+00	1.04E-01	6.40E-01
AG-108M	433.93	89.90	1.33E-01	1.33E-01	-3.61E-02	6.31E-02
	614.37	90.40	1.75E-01		-1.85E-02	8.29E-02
	722.95	90.50	1.65E-01		-5.31E-02	7.69E-02

Analysis Report for 1510087-06
CP5004S07-08

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CD-109	88.03	3.72	2.99E+00	2.99E+00	-2.21E+00	1.47E+00
AG-110M	657.75	93.14	1.62E-01	1.62E-01	2.89E-02	7.56E-02
	677.61	10.53	1.52E+00		6.96E-01	7.09E-01
	706.67	16.46	1.01E+00		4.95E-01	4.72E-01
	763.93	21.98	8.22E-01		4.57E-02	3.85E-01
	884.67	71.63	2.19E-01		3.72E-03	1.00E-01
	1384.27	23.94	6.51E-01		-1.11E-01	2.83E-01
CD-113M	263.70	0.02	4.57E+02	4.57E+02	-1.24E+02	2.20E+02
SN-113	255.12	1.93	6.27E+00	2.05E-01	-8.84E-01	3.02E+00
	391.69	64.90	2.05E-01		-1.38E-01	9.75E-02
TE123M	159.00	84.10	1.41E-01	1.41E-01	-5.61E-02	6.85E-02
SB-124	602.71	97.87	2.06E-01	2.06E-01	-1.81E-04	9.70E-02
	645.85	7.26	2.89E+00		1.18E+00	1.36E+00
	722.78	11.10	1.93E+00		-5.73E-01	8.97E-01
	1691.02	49.00	3.42E-01		-2.42E-02	1.38E-01
I-125	35.49	6.49	1.13E+00	1.13E+00	-2.36E-01	5.52E-01
SB-125	176.33	6.89	1.46E+00	4.43E-01	2.16E-01	7.10E-01
	427.89	29.33	4.43E-01		3.37E-01	2.11E-01
	463.38	10.35	1.32E+00		5.74E-01	6.29E-01
	600.56	17.80	7.81E-01		2.84E-03	3.67E-01
	635.90	11.32	1.08E+00		-6.26E-01	5.00E-01
SB-126	414.70	83.30	9.07E-01	8.70E-01	-3.32E-01	4.32E-01
	666.33	99.60	9.17E-01		4.12E-01	4.30E-01
	695.00	99.60	8.70E-01		-4.22E-02	4.05E-01
	720.50	53.80	1.58E+00		-5.13E-01	7.31E-01
SN-126	87.57	37.00	2.86E-01	2.86E-01	-2.11E-01	1.41E-01
SB-127	473.00	25.00	1.69E+02	1.29E+02	-2.53E+01	7.99E+01
	685.20	35.70	1.29E+02		-4.63E+01	5.98E+01
	783.80	14.70	4.00E+02		1.56E+02	1.87E+02
I-129	29.78	57.00	8.39E-02	8.39E-02	-1.21E-02	4.10E-02
	33.60	13.20	3.77E-01		7.44E-02	1.84E-01
	39.58	7.52	6.97E-01		-4.86E-01	3.40E-01
I-131	284.30	6.05	2.94E+01	2.22E+00	-8.38E-01	1.41E+01
	364.48	81.20	2.22E+00		-1.40E+00	1.06E+00
	636.97	7.26	2.89E+01		-6.12E+00	1.35E+01
	722.89	1.80	1.35E+02		-4.02E+01	6.30E+01
TE-132	49.72	13.10	4.93E+02	1.25E+02	-1.89E+01	2.41E+02
	228.16	88.00	1.25E+02		1.29E+01	6.03E+01
BA-133	81.00	33.00	3.17E-01	2.97E-01	-5.81E-03	1.56E-01
	302.84	17.80	6.28E-01		2.01E-01	3.02E-01
	356.01	60.00	2.97E-01		2.91E-02	1.44E-01
I-133	529.87	86.30	2.69E+10	2.69E+10	-1.69E+10	1.26E+10
XE-133	81.00	38.00	2.03E+01	2.03E+01	-3.72E-01	9.99E+00
CS-134	563.23	8.38	1.72E+00	1.92E-01	-1.20E-01	8.12E-01
	569.32	15.43	9.40E-01		-1.74E-01	4.43E-01
	604.70	97.60	1.92E-01		8.02E-03	9.16E-02
	795.84	85.40	2.01E-01		1.11E-01	9.36E-02
	801.93	8.73	1.85E+00		-8.35E-02	8.58E-01
CS-135	268.24	16.00	7.03E-01	7.03E-01	2.16E-01	3.40E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	7.36E+00	7.50E-01	3.23E+00	3.59E+00

Analysis Report for 1510087-06
CP5004S07-08

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-136	163.89	4.61	1.19E+01	7.50E-01	5.65E+00	5.81E+00
	176.55	13.56	4.04E+00		5.98E-01	1.96E+00
	273.65	12.66	5.07E+00		1.91E+00	2.45E+00
	340.57	48.50	1.60E+00		1.99E+00	7.72E-01
	818.50	99.70	7.50E-01		-3.97E-02	3.43E-01
	1048.07	79.60	1.09E+00		-2.69E-01	4.96E-01
	1235.34	19.70	6.93E+00		-1.54E+00	3.23E+00
CS-137	661.65	85.12	1.66E-01	1.66E-01	-2.32E-02	7.78E-02
LA-138	788.74	34.00	4.74E-01	2.16E-01	-1.54E-01	2.21E-01
	1435.80	66.00	2.16E-01		1.31E-02	9.36E-02
CE-139	165.85	80.35	1.42E-01	1.42E-01	1.64E-02	6.92E-02
BA-140	162.64	6.70	8.56E+00	2.95E+00	1.55E+00	4.17E+00
	304.84	4.50	1.44E+01		-6.96E-01	6.91E+00
	423.70	3.20	2.22E+01		-9.27E+00	1.06E+01
	437.55	2.00	3.36E+01		-9.72E+00	1.59E+01
	537.32	25.00	2.95E+00		1.18E+00	1.39E+00
LA-140	328.77	20.50	3.32E+00	8.29E-01	7.44E-02	1.59E+00
	487.03	45.50	1.54E+00		-6.02E-01	7.27E-01
	815.85	23.50	3.62E+00		1.27E-01	1.67E+00
	1596.49	95.49	8.29E-01		-1.81E-01	3.50E-01
CE-141	145.44	48.40	4.03E-01	4.03E-01	-7.03E-02	1.96E-01
CE-143	57.36	11.80	8.45E+06	4.59E+06	-1.87E+06	4.15E+06
	293.26	42.00	4.59E+06		7.85E+06	2.23E+06
	664.55	5.20	3.80E+07		3.92E+06	1.78E+07
CE-144	133.54	10.80	9.54E-01	9.54E-01	2.15E-01	4.66E-01
PM-144	476.78	42.00	2.98E-01	1.32E-01	-1.02E-01	1.41E-01
	618.01	98.60	1.32E-01		-3.47E-02	6.12E-02
	696.49	99.49	1.49E-01		-2.87E-02	6.94E-02
PM-145	36.85	21.70	2.38E-01	1.29E-01	1.47E-02	1.16E-01
	37.36	39.70	1.29E-01		-3.84E-02	6.30E-02
	42.30	15.10	3.71E-01		-1.76E-02	1.81E-01
	72.40	2.31	4.65E+00		7.72E+00	2.29E+00
PM-146	453.90	39.94	3.06E-01	3.06E-01	1.40E-02	1.45E-01
	735.90	14.01	9.78E-01		-6.92E-01	4.52E-01
	747.13	13.10	1.13E+00		-1.57E-01	5.24E-01
+ ND-147	91.11	* 28.90	4.39E+00	4.39E+00	9.53E+00	2.17E+00
	531.02	13.10	6.79E+00		-4.65E+00	3.17E+00
PM-149	285.90	3.10	9.33E+04	9.33E+04	-2.54E+04	4.49E+04
EU-152	121.78	20.50	4.08E-01	4.08E-01	-4.93E-02	1.99E-01
	244.69	5.40	2.38E+00		-8.23E-02	1.16E+00
	344.27	19.13	5.85E-01		-3.09E+00	2.80E-01
	778.89	9.20	1.65E+00		-3.87E-01	7.65E-01
	964.01	10.40	2.08E+00		1.99E-01	9.74E-01
	1085.78	7.22	2.31E+00		-8.59E-01	1.05E+00
	1112.02	9.60	1.80E+00		4.64E-01	8.21E-01
	1407.95	14.94	1.05E+00		-2.90E-01	4.63E-01
GD-153	97.43	31.30	3.28E-01	3.28E-01	2.77E-02	1.61E-01
	103.18	22.20	4.03E-01		-1.45E-01	1.97E-01
EU-154	123.07	40.50	2.08E-01	2.08E-01	-4.75E-03	1.02E-01
	723.30	19.70	7.62E-01		-2.46E-01	3.56E-01
	873.19	11.50	1.24E+00		-4.98E-01	5.67E-01
	996.32	10.30	1.71E+00		4.03E-01	7.90E-01
	1004.76	17.90	9.94E-01		3.81E-01	4.58E-01

Analysis Report for 1510087-06
CP5004S07-08

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-154	1274.45	35.50	4.78E-01	2.08E-01	3.80E-02	2.15E-01
EU-155	86.50	30.90	3.30E-01	3.30E-01	3.64E-02	1.62E-01
	105.30	20.70	3.97E-01		-2.38E-01	1.94E-01
EU-156	811.77	10.40	6.68E+00	6.68E+00	1.37E-01	3.10E+00
	1153.47	7.20	1.21E+01		2.18E+00	5.57E+00
	1230.71	8.90	1.08E+01		1.46E+00	4.99E+00
HO-166M	184.41	72.60	1.72E-01	1.72E-01	3.61E-01	8.39E-02
	280.45	29.60	3.74E-01		1.01E-01	1.80E-01
	410.94	11.10	1.16E+00		3.23E-01	5.54E-01
	711.69	54.10	2.53E-01		-3.79E-02	1.17E-01
TM-171	66.72	0.14	6.99E+01	6.99E+01	6.16E+01	3.44E+01
HF-172	81.75	4.52	2.23E+00	7.91E-01	-4.38E-02	1.10E+00
	125.81	11.30	7.91E-01		-5.16E-02	3.86E-01
LU-172	181.53	20.60	1.59E+01	8.99E+00	-9.70E-01	7.78E+00
	810.06	16.63	2.91E+01		1.64E+01	1.36E+01
	912.12	15.25	4.68E+01		6.97E+01	2.22E+01
LU-173	1093.66	62.50	8.99E+00		-4.45E-01	4.14E+00
	100.72	5.24	1.62E+00	5.68E-01	-1.08E+00	7.93E-01
	272.11	21.20	5.68E-01		2.41E-01	2.75E-01
HF-175	343.40	84.00	1.92E-01	1.92E-01	-4.48E-01	9.20E-02
LU-176	88.34	13.30	8.39E-01	1.15E-01	1.26E+00	4.13E-01
	201.83	86.00	1.24E-01		3.10E-03	6.00E-02
	306.78	94.00	1.15E-01		-5.00E-02	5.51E-02
TA-182	67.75	41.20	2.74E-01	2.74E-01	-4.73E-01	1.35E-01
	1121.30	34.90	8.55E-01		7.15E-01	4.01E-01
	1189.05	16.23	1.44E+00		2.25E-01	6.61E-01
	1221.41	26.98	9.49E-01		-1.47E-01	4.37E-01
	1231.02	11.44	2.32E+00		3.13E-01	1.07E+00
IR-192	308.46	29.68	5.07E-01	3.58E-01	2.62E-02	2.43E-01
	468.07	48.10	3.58E-01		-1.20E-01	1.70E-01
HG-203	279.19	77.30	2.35E-01	2.35E-01	3.79E-02	1.13E-01
BI-207	569.67	97.72	1.44E-01	1.44E-01	-2.68E-02	6.81E-02
	1063.62	74.90	1.87E-01		-4.33E-02	8.39E-02
+ TL-208	583.14	* 30.22	6.07E-01	3.95E-01	1.12E+00	2.90E-01
	860.37	4.48	4.00E+00		1.85E+00	1.87E+00
	2614.66	* 35.85	3.95E-01		1.03E+00	1.55E-01
BI-210M	262.00	45.00	2.31E-01	2.31E-01	-3.00E-02	1.11E-01
	300.00	23.00	5.82E-01		1.06E-01	2.82E-01
PB-210	46.50	4.25	1.42E+00	1.42E+00	3.74E-01	6.95E-01
PB-211	404.84	2.90	4.12E+00	4.12E+00	-2.75E+00	1.96E+00
	831.96	2.90	4.77E+00		-7.35E-01	2.19E+00
BI-212	727.17	11.80	1.40E+00	1.40E+00	1.10E+00	6.57E-01
	1620.62	2.75	4.30E+00		1.36E-01	1.76E+00
+ PB-212	238.63	* 44.60	4.07E-01	4.07E-01	1.86E+00	1.99E-01
	300.09	3.41	3.93E+00		7.12E-01	1.90E+00
+ BI-214	609.31	* 46.30	5.05E-01	2.49E-01	1.18E+00	2.43E-01
	1120.29	* 15.10	1.53E+00		1.77E+00	7.14E-01
	1764.49	* 15.80	2.49E-01		1.92E+00	5.21E-02
	2204.22	* 4.98	5.46E-01		2.83E+00	0.00E+00
+ PB-214	295.21	* 19.19	7.81E-01	5.33E-01	1.30E+00	3.80E-01
	351.92	* 37.19	5.33E-01		1.27E+00	2.60E-01
RN-219	401.80	6.50	1.86E+00	1.86E+00	7.61E-02	8.85E-01
RA-223	323.87	3.88	2.87E+00	2.87E+00	-3.57E-01	1.37E+00

Analysis Report for 1510087-06
CP5004S07-08

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RA-224	240.98	3.95	4.59E+00	4.59E+00	1.88E+01	2.25E+00
RA-225	40.00	31.00	7.79E-01	7.79E-01	-5.43E-01	3.81E-01
+ RA-226	186.21 *	3.28	4.62E+00	4.62E+00	6.65E+00	2.27E+00
TH-227	50.10	8.40	7.56E-01	7.56E-01	-2.89E-02	3.70E-01
	236.00	11.50	1.44E+00		3.16E+00	7.03E-01
	256.20	6.30	1.62E+00		4.78E-02	7.81E-01
AC-228	338.32	11.40	1.23E+00	8.57E-01	1.58E+00	5.95E-01
	911.07	27.70	8.57E-01		9.06E-01	4.06E-01
	969.11	16.60	1.51E+00		1.30E+00	7.15E-01
TH-230	48.44	16.90	3.68E-01	3.68E-01	6.75E-02	1.80E-01
	62.85	4.60	1.98E+00		4.01E+00	9.75E-01
	67.67	0.37	2.50E+01		-4.33E+01	1.23E+01
PA-231	283.67	1.60	6.75E+00	4.83E+00	-4.02E-01	3.25E+00
	302.67	2.30	4.83E+00		1.55E+00	2.32E+00
TH-231	25.64	14.70	3.14E-01	3.14E-01	-3.41E-01	1.53E-01
	84.21	6.40	1.47E+00		-3.05E-02	7.20E-01
PA-233	311.98	38.60	6.62E-01	6.62E-01	-4.50E-02	3.18E-01
PA-234	131.20	20.40	4.65E-01	4.65E-01	3.57E-02	2.27E-01
	733.99	8.80	1.60E+00		-6.79E-01	7.44E-01
	946.00	12.00	1.32E+00		5.34E-01	6.06E-01
PA-234M	1001.03	0.92	1.86E+01	1.86E+01	5.78E-01	8.53E+00
+ TH-234	63.29 *	3.80	2.92E+00	2.92E+00	4.36E+00	1.44E+00
U-235	143.76	10.50	9.20E-01	9.20E-01	6.76E-02	4.49E-01
	163.35	4.70	2.10E+00		9.95E-01	1.02E+00
	205.31	4.70	2.39E+00		-6.25E-02	1.16E+00
NP-237	86.50	12.60	8.00E-01	8.00E-01	8.81E-02	3.93E-01
NP-239	106.10	22.70	5.23E+03	5.23E+03	-3.13E+03	2.55E+03
	228.18	10.70	1.43E+04		-7.12E+02	6.91E+03
	277.60	14.10	1.16E+04		-4.38E+02	5.58E+03
AM-241	59.54	35.90	2.36E-01	2.36E-01	-5.58E-02	1.16E-01
AM-243	74.67	66.00	1.74E-01	1.74E-01	6.97E-01	8.56E-02
CM-243	209.75	3.29	3.51E+00	8.03E-01	3.10E+00	1.71E+00
	228.14	10.60	1.02E+00		1.05E-01	4.92E-01
	277.60	14.00	8.03E-01		-3.04E-02	3.87E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

Analysis Report for 1510087-06
CP5004S07-08

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

369: 18 15 23 18 16 19 17 18

Sample Title: CP5004S07-08

Channel	1	2	3	4	5	6	7	8
377:	13	22	17	23	10	11	22	19
385:	21	13	17	20	11	14	13	10
393:	10	11	15	16	17	19	18	20
401:	15	15	15	10	12	23	14	12
409:	28	19	14	13	14	17	14	17
417:	21	7	25	9	17	6	15	13
425:	13	15	16	19	17	19	11	10
433:	11	10	15	14	11	13	16	11
441:	6	11	12	18	16	12	15	15
449:	18	12	15	10	17	13	8	5
457:	12	11	13	8	10	25	23	12
465:	9	15	16	6	22	14	10	11
473:	8	12	13	4	12	11	10	13
481:	14	8	7	13	17	10	13	8
489:	6	12	16	15	7	8	7	7
497:	8	7	9	12	10	9	8	4
505:	12	13	19	15	18	36	40	28
513:	19	13	11	11	12	10	14	9
521:	11	13	10	15	9	11	8	6
529:	9	9	5	5	8	9	9	10
537:	13	7	8	9	12	8	8	9
545:	7	8	14	8	9	6	12	6
553:	6	9	9	12	9	11	13	8
561:	13	10	8	15	7	10	12	12
569:	13	9	12	11	9	12	13	11
577:	8	9	10	6	15	34	58	42
585:	14	7	10	7	9	13	10	7
593:	9	6	5	7	9	3	10	14
601:	7	8	12	9	12	7	19	56
609:	75	43	15	8	5	5	11	4
617:	8	5	9	9	5	3	10	5
625:	9	7	8	5	8	7	3	3
633:	3	11	9	9	7	3	5	10
641:	12	7	8	10	8	10	9	4
649:	9	2	12	7	6	7	6	9
657:	13	4	6	8	8	3	8	8
665:	12	13	5	10	7	10	7	3
673:	6	7	10	10	5	10	9	6
681:	8	4	7	4	5	7	8	7
689:	5	5	8	8	8	9	9	3
697:	9	5	3	7	8	9	9	9
705:	9	5	9	8	7	6	4	8
713:	4	6	4	7	6	6	9	4
721:	3	7	3	10	11	10	8	15
729:	10	8	5	5	6	5	2	8
737:	11	6	3	5	8	6	5	8
745:	4	3	5	11	12	4	6	9
753:	10	4	4	7	10	6	3	8
761:	5	7	8	7	4	12	4	17
769:	12	7	8	12	7	3	6	5
777:	7	7	5	8	8	8	6	11
785:	8	10	6	4	5	8	5	7
793:	4	11	13	9	4	11	3	5

801: 4 4 5 5 7 14 3 7

Sample Title: CP5004S07-08

Channel	1	2	3	4	5	6	7	8	9
809:	4	9	6	6	9	7	6	3	
817:	3	6	2	3	6	4	3	4	
825:	2	6	3	3	5	6	3	4	
833:	4	7	7	2	9	6	4	4	
841:	6	3	3	6	11	8	4	2	
849:	4	7	4	5	7	4	7	4	
857:	4	4	6	8	17	13	6	5	
865:	1	8	5	7	5	4	5	3	
873:	3	6	3	5	5	6	5	4	
881:	5	2	5	1	4	12	3	3	
889:	4	4	2	3	6	5	4	5	
897:	4	3	5	6	5	3	5	7	
905:	7	5	1	3	6	18	29	26	
913:	9	6	10	9	5	3	4	8	
921:	4	4	4	2	4	3	10	1	
929:	1	7	2	7	3	9	3	3	
937:	2	5	2	3	4	5	5	6	
945:	5	4	0	9	3	5	2	7	
953:	1	2	2	4	5	4	3	4	
961:	3	8	7	9	7	7	6	27	
969:	23	20	8	8	1	7	9	3	
977:	7	2	3	7	4	4	4	7	
985:	2	4	6	4	2	3	4	6	
993:	5	9	4	3	5	3	2	10	
1001:	6	6	4	5	3	3	4	6	
1009:	6	2	4	3	8	4	5	7	
1017:	8	7	2	4	3	6	2	4	
1025:	5	5	3	1	5	3	7	7	
1033:	6	4	5	8	5	4	0	2	
1041:	4	6	8	8	2	3	2	5	
1049:	4	3	5	1	6	11	5	6	
1057:	1	6	2	3	4	4	0	3	
1065:	5	2	2	4	3	9	5	7	
1073:	2	6	5	2	3	5	5	4	
1081:	3	2	8	3	4	2	6	3	
1089:	2	5	4	6	8	7	4	5	
1097:	7	9	6	7	2	3	5	7	
1105:	3	2	3	4	3	3	4	3	
1113:	8	4	1	6	3	7	9	13	
1121:	17	12	5	8	2	6	4	5	
1129:	5	2	6	6	5	1	4	0	
1137:	2	5	4	5	4	3	5	2	
1145:	4	3	3	6	3	1	4	5	
1153:	5	10	6	8	3	8	4	2	
1161:	7	4	3	2	6	4	6	8	
1169:	8	7	2	7	8	5	3	5	
1177:	4	7	2	4	5	4	7	3	
1185:	6	4	5	4	4	4	5	6	
1193:	2	3	5	2	4	5	3	1	
1201:	3	3	2	6	7	3	1	5	
1209:	0	9	8	4	4	3	4	3	
1217:	5	6	7	3	8	5	5	3	
1225:	4	5	9	8	9	5	2	3	

1233: 6 1 6 11 12 13 9 5

Sample Title: CP5004S07-08

Channel	1	2	3	4	5	6	7	8	9
1241:	4	4	2	4	1	6	4	5	
1249:	3	7	3	3	2	7	4	4	
1257:	1	6	3	4	1	4	2	2	
1265:	1	3	2	4	4	2	3	1	
1273:	5	2	4	1	3	5	1	2	
1281:	3	3	6	2	6	5	4	1	
1289:	3	1	5	1	2	2	1	7	
1297:	5	1	5	2	2	5	3	4	
1305:	2	5	5	5	5	0	3	2	
1313:	4	1	3	1	4	3	2	3	
1321:	5	1	0	1	4	2	6	5	
1329:	3	4	3	4	3	6	2	1	
1337:	2	1	2	2	3	1	2	3	
1345:	0	4	6	1	1	4	4	4	
1353:	4	0	2	4	3	1	4	2	
1361:	7	3	2	0	1	4	1	2	
1369:	1	0	0	1	4	0	7	1	
1377:	2	4	2	1	2	3	2	1	
1385:	2	3	1	0	0	4	1	1	
1393:	1	2	0	1	2	4	1	2	
1401:	5	1	3	1	0	2	2	4	
1409:	2	2	2	3	3	2	2	2	
1417:	2	0	4	3	1	3	2	0	
1425:	4	3	3	2	2	3	2	2	
1433:	0	2	3	1	2	0	2	2	
1441:	0	0	2	1	0	1	4	1	
1449:	0	3	3	2	0	4	6	1	
1457:	1	6	29	58	80	63	20	8	
1465:	1	0	2	2	3	1	2	1	
1473:	2	5	2	2	0	0	2	1	
1481:	1	0	1	1	2	2	2	1	
1489:	4	1	2	0	2	1	2	2	
1497:	2	2	0	0	1	0	2	1	
1505:	0	1	1	1	0	2	2	1	
1513:	1	3	0	1	1	0	2	2	
1521:	0	1	0	2	3	2	4	0	
1529:	0	1	2	2	1	1	0	2	
1537:	0	1	3	1	5	0	3	0	
1545:	2	1	1	1	0	1	2	3	
1553:	0	0	0	1	2	1	3	1	
1561:	0	1	1	1	0	0	1	0	
1569:	0	1	0	1	1	1	2	0	
1577:	0	1	0	2	4	1	0	1	
1585:	4	2	1	3	2	2	1	4	
1593:	0	4	1	0	0	2	1	2	
1601:	0	1	2	0	1	4	2	1	
1609:	0	0	2	3	1	0	1	0	
1617:	2	0	1	0	1	1	0	1	
1625:	1	0	1	2	0	2	1	2	
1633:	1	1	0	3	0	2	0	2	
1641:	0	0	2	1	1	1	0	1	
1649:	0	1	0	0	1	2	0	0	
1657:	1	1	3	3	1	0	1	0	

1665: 0 1 1 1 0 1 0 0

Sample Title: CP5004S07-08

Channel	1	2	3	4	5	6	7	8	9
1673:	2	0	2	1	0	1	1	0	
1681:	3	3	0	4	0	0	1	0	
1689:	0	0	1	1	1	2	0	0	
1697:	0	1	3	2	0	0	0	1	
1705:	1	1	2	0	1	0	0	1	
1713:	0	0	0	2	1	0	2	1	
1721:	0	1	0	1	0	1	3	1	
1729:	2	3	2	1	2	1	0	0	
1737:	0	2	0	0	2	1	0	1	
1745:	1	0	2	1	1	0	1	0	
1753:	0	1	2	0	0	1	1	1	
1761:	2	1	5	7	9	7	2	0	
1769:	0	0	2	0	0	0	0	0	
1777:	0	0	1	0	0	0	1	0	
1785:	1	0	2	0	0	0	2	0	
1793:	0	1	3	0	0	0	0	0	
1801:	1	2	0	0	1	2	1	0	
1809:	0	2	0	0	0	2	0	1	
1817:	0	1	0	0	0	1	1	0	
1825:	3	1	1	0	0	0	0	1	
1833:	0	1	0	1	0	1	0	0	
1841:	0	0	0	1	2	1	1	2	
1849:	2	3	1	1	2	0	0	1	
1857:	3	1	0	0	1	1	0	1	
1865:	0	0	3	1	1	1	3	1	
1873:	1	0	0	0	0	1	1	0	
1881:	0	0	0	2	2	2	0	2	
1889:	1	2	0	0	1	2	0	1	
1897:	2	0	0	1	0	0	1	1	
1905:	1	0	0	0	0	0	2	1	
1913:	0	1	1	0	0	2	0	1	
1921:	1	0	0	0	0	3	1	3	
1929:	0	0	1	1	1	0	3	0	
1937:	1	1	0	1	0	3	0	2	
1945:	0	0	2	0	0	2	2	2	
1953:	0	1	0	2	0	1	0	0	
1961:	1	1	0	1	0	3	1	1	
1969:	0	0	0	0	0	0	1	0	
1977:	1	1	1	0	1	0	2	0	
1985:	0	0	0	1	2	1	2	0	
1993:	0	3	0	0	0	1	0	0	
2001:	0	0	0	0	0	2	0	0	
2009:	0	0	0	1	1	0	1	1	
2017:	0	0	0	1	0	0	0	4	
2025:	2	0	1	0	0	0	1	0	
2033:	1	0	1	2	1	1	0	1	
2041:	0	1	1	1	0	1	0	0	
2049:	0	0	1	3	0	0	0	2	
2057:	0	2	1	1	0	0	0	0	
2065:	1	0	0	1	0	0	0	5	
2073:	3	1	0	0	3	0	0	0	
2081:	2	1	0	0	1	1	1	1	
2089:	0	0	3	0	1	0	2	0	

2097: 1 0 1 1 2 1 1 2

Sample Title: CP5004S07-08

Channel	1	0	1	1	2	1	1	2
2105:	1	0	2	0	0	0	0	0
2113:	2	0	2	1	0	1	1	0
2121:	1	1	1	3	1	1	1	1
2129:	0	1	0	0	0	1	0	0
2137:	0	0	1	0	0	0	0	0
2145:	1	0	0	0	0	0	0	0
2153:	0	1	1	2	0	0	0	1
2161:	0	0	3	1	0	1	0	2
2169:	0	0	1	0	0	0	0	0
2177:	0	1	2	0	0	0	0	0
2185:	1	1	1	1	0	0	0	1
2193:	0	0	4	0	1	0	0	0
2201:	0	3	1	1	6	3	0	0
2209:	0	1	1	1	0	0	0	0
2217:	2	2	3	0	1	0	1	1
2225:	1	0	1	0	1	0	0	0
2233:	1	0	0	2	1	0	0	1
2241:	2	1	1	0	1	2	0	2
2249:	0	1	0	0	1	1	1	0
2257:	1	0	1	1	1	3	2	0
2265:	0	1	0	0	1	2	1	0
2273:	0	0	0	1	0	0	2	0
2281:	0	1	1	0	2	0	0	0
2289:	3	1	1	1	0	0	0	0
2297:	1	0	1	2	0	0	1	0
2305:	1	1	0	0	0	2	1	3
2313:	1	0	2	1	1	0	1	1
2321:	0	1	0	0	3	1	1	1
2329:	0	0	0	0	0	0	0	1
2337:	0	0	2	0	2	1	2	2
2345:	2	2	0	1	0	0	0	0
2353:	0	1	0	2	3	1	1	2
2361:	2	0	1	0	0	0	2	0
2369:	0	0	1	0	1	1	0	0
2377:	1	0	0	1	0	0	1	0
2385:	0	0	0	0	0	1	0	1
2393:	1	0	0	0	0	1	2	0
2401:	1	0	0	0	1	0	1	4
2409:	1	0	0	0	1	0	0	0
2417:	1	0	0	0	0	0	0	1
2425:	0	0	0	0	2	0	2	0
2433:	0	0	2	1	0	0	0	0
2441:	1	1	0	0	0	0	1	2
2449:	0	1	1	0	0	0	0	2
2457:	1	1	0	0	0	0	0	0
2465:	2	1	0	1	0	0	0	0
2473:	0	0	0	0	1	0	1	1
2481:	0	0	1	0	2	0	1	0
2489:	1	1	2	0	0	1	0	0
2497:	0	0	2	2	1	1	0	0
2505:	0	0	1	0	0	0	1	0
2513:	0	0	0	1	1	0	1	0
2521:	0	0	2	0	0	0	0	1

2529: 0 1 0 0 0 0 0 0

Sample Title: CP5004S07-08

Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	1	0	0	0	0	0	0
2545:	0	0	0	0	0	0	0	1	1
2553:	0	0	0	0	0	0	0	0	0
2561:	0	0	0	0	0	0	0	0	0
2569:	0	0	1	0	0	0	0	0	1
2577:	0	0	0	0	0	0	0	0	0
2585:	0	0	0	0	0	0	1	1	0
2593:	0	0	1	1	0	0	0	0	1
2601:	1	1	2	1	0	0	0	0	0
2609:	0	0	0	0	5	6	3		17
2617:	4	1	0	1	0	1	0	0	0
2625:	0	0	0	0	0	0	0	0	0
2633:	0	0	0	0	0	0	0	0	0
2641:	0	0	0	0	0	0	0	0	0
2649:	0	0	0	0	0	1	0	0	0
2657:	0	0	0	0	0	0	0	0	1
2665:	0	0	0	0	1	0	0	0	0
2673:	0	0	1	0	0	0	0	0	1
2681:	0	0	0	0	1	0	0	0	0
2689:	0	2	0	0	0	0	0	0	1
2697:	0	1	0	0	1	0	0	0	0
2705:	0	0	0	0	0	0	0	0	1
2713:	0	0	1	0	0	0	0	0	0
2721:	0	0	0	0	0	0	0	0	0
2729:	0	1	0	0	1	0	0	0	0
2737:	2	0	0	0	0	0	0	0	2
2745:	0	0	0	0	0	0	0	0	0
2753:	0	0	0	0	2	0	0	0	0
2761:	0	0	0	0	0	0	0	0	1
2769:	0	1	0	0	0	0	0	0	0
2777:	0	1	2	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0	0
2793:	0	0	0	1	0	0	0	1	0
2801:	0	0	0	0	0	0	0	0	0
2809:	0	0	1	0	0	0	0	0	0
2817:	0	0	1	0	0	0	0	0	0
2825:	0	0	0	1	0	0	0	0	0
2833:	1	0	0	1	0	0	0	0	0
2841:	0	0	0	0	0	0	1	0	0
2849:	0	0	0	0	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0	0
2865:	0	0	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	1	0	0
2881:	0	0	0	0	0	0	1	2	0
2889:	0	0	0	0	2	0	0	0	0
2897:	0	0	0	0	0	0	1	0	0
2905:	0	0	0	0	0	0	0	1	0
2913:	0	0	0	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	1	0	0	0
2937:	2	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	0	0
2953:	1	0	0	0	0	1	0	0	0

2961: 0 0 0 0 0 0 0 0 0

Sample Title: CP5004S07-08

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2969:	0	0	1	0	0	1	0	0
2977:	0	0	0	0	0	0	0	0
2985:	0	0	0	0	0	0	0	0
2993:	1	0	1	0	1	0	1	0
3001:	0	0	0	0	0	0	0	0
3009:	0	1	0	0	0	0	0	1
3017:	0	0	0	0	0	0	1	0
3025:	0	0	1	0	0	0	0	1
3033:	0	0	0	0	0	0	1	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	0	1
3081:	0	0	0	0	0	1	2	0
3089:	0	1	1	0	0	0	0	0
3097:	0	1	0	0	1	0	0	0
3105:	1	0	1	2	0	1	0	0
3113:	0	0	0	0	0	0	0	0
3121:	1	1	0	0	0	0	0	0
3129:	0	1	0	0	0	0	0	0
3137:	1	1	0	0	0	1	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	1	0	0	0	1	0
3161:	1	0	0	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	0	1	0	0	0
3193:	0	0	0	0	0	0	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	1	0	0	0	0	1
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	1	0	0	0	1	0	0
3257:	1	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	1	0
3297:	0	0	0	1	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0
3321:	0	2	0	0	0	0	0	0
3329:	0	0	0	1	0	0	0	0
3337:	0	0	0	0	0	2	0	1
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	1	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	1	1	0	0	0
3385:	0	0	0	0	0	0	0	0

3393: 1 0 0 1 0 0 0 0

Sample Title: CP5004S07-08

Channel	0	0	0	0	0	0	0	0
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	1	1	0	0	1	0	0
3433:	0	0	0	0	0	1	0	0
3441:	0	1	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	1	0	0	1	0	0
3473:	0	0	0	0	0	0	0	1
3481:	0	0	0	0	0	0	0	0
3489:	1	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	1	0	0	1	0	1	0	0
3521:	0	0	0	0	0	1	0	0
3529:	0	0	1	0	0	0	0	0
3537:	0	0	0	0	0	1	0	0
3545:	0	0	1	0	0	0	0	0
3553:	0	0	0	1	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	1	0	0	0	1
3577:	0	0	0	0	0	0	0	0
3585:	0	0	1	0	1	0	0	0
3593:	0	0	0	1	0	1	0	0
3601:	0	0	0	0	0	0	0	1
3609:	0	0	1	0	0	0	0	0
3617:	1	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	1	0
3665:	1	0	0	0	0	0	0	0
3673:	0	1	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	1	0	0	1	1	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	1	0	0	0	0
3721:	0	0	0	1	0	0	0	0
3729:	1	0	0	0	1	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	1	0	2	0	0	0
3753:	0	0	1	0	1	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	2	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	1	0	0	0
3793:	0	0	0	0	0	1	0	0
3801:	0	0	0	0	0	0	1	0
3809:	0	0	0	1	0	0	0	0
3817:	0	0	0	0	0	0	0	1

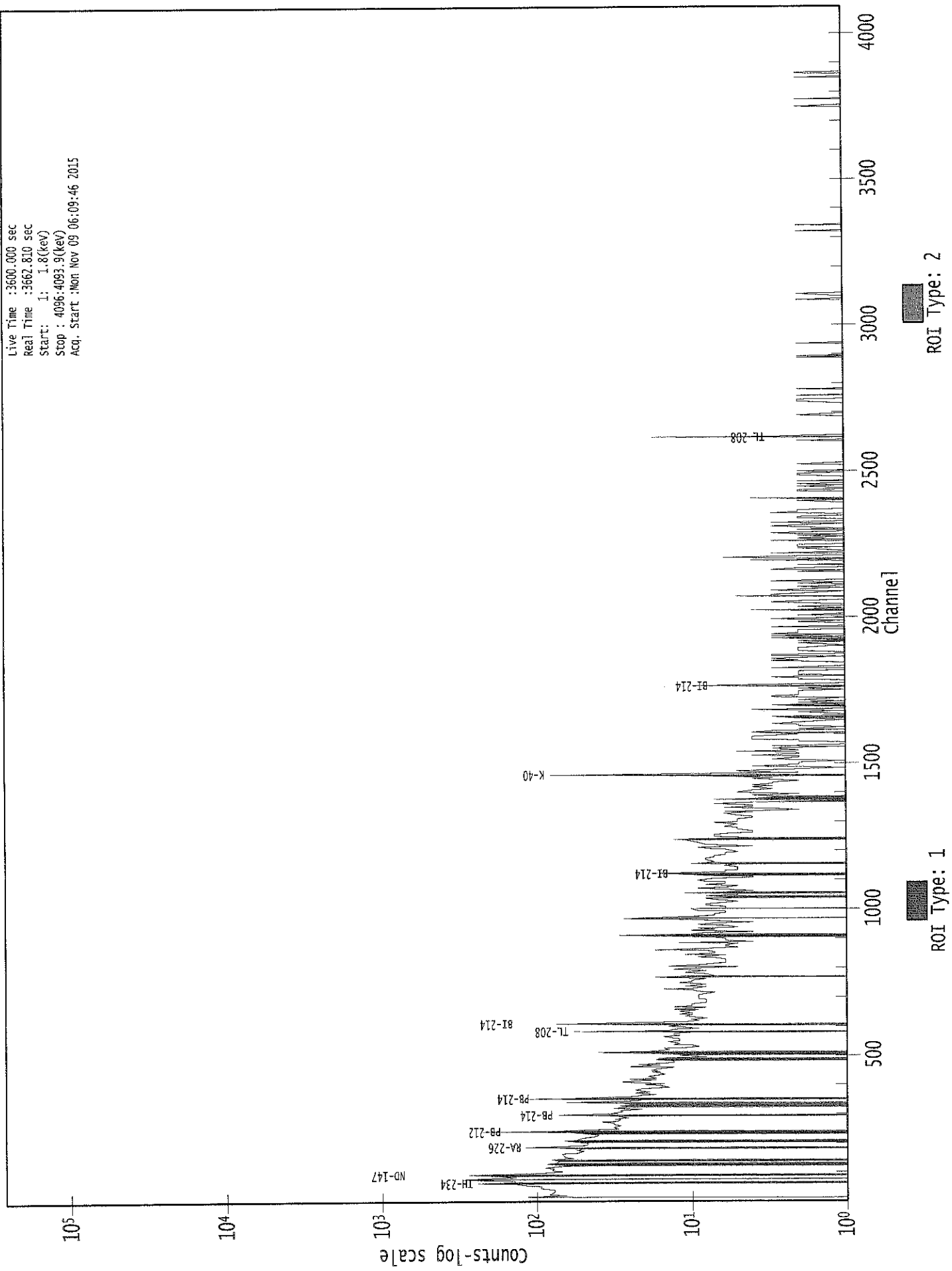
3825: 1 0 0 0 0 0 0 0

Sample Title: CP5004S07-08

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	1	0
3849:	2	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	2	0
3865:	0	1	2	1	1	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	1	0
3889:	0	0	0	0	0	0	0	0
3897:	0	1	0	0	0	0	1	0
3905:	0	0	0	0	1	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	1	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	1	0	0	0	1
3977:	0	0	0	0	1	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	1	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	1	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	1	0
4049:	1	0	0	0	0	0	0	0
4057:	0	0	1	0	0	0	0	0
4065:	1	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	1	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000029306.CNF

Live Time : 3600.000 sec
Real Time : 3662.810 sec
Start : 1; 1.8(keV)
Stop : 4096.4093.9(keV)
Acq. Start : Mon Nov 09 06:09:46 2015



Analysis Report for 1510087-07
CP5004S09-10

✓
1119

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-07
Sample Description : CP5004S09-10
Sample Type : SOIL

Sample Size : 5.571E+02 grams
Facility : Countroom

Sample Taken On : 10/7/2015 5:09:48PM
Acquisition Started : 11/9/2015 7:13:05AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.2 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 6 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 29309

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Ag
11/9/15

Analysis Report for 1510087-07
CP5004S09-10

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 8:13:21AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.32	46.42	0.0000	0.00
2	76.34	76.42	0.0000	0.00
3	84.25	84.33	0.0000	0.00
4	87.10	87.18	0.0000	0.00
5	105.17	105.24	0.0000	0.00
6	185.78	185.81	0.0000	0.00
7	209.43	209.45	0.0000	0.00
8	238.91	238.91	0.0000	0.00
9	242.06	242.06	0.0000	0.00
10	266.86	266.84	0.0000	0.00
11	270.15	270.13	0.0000	0.00
12	276.94	276.92	0.0000	0.00
13	295.31	295.27	0.0000	0.00
14	328.52	328.47	0.0000	0.00
15	338.63	338.58	0.0000	0.00
16	352.08	352.01	0.0000	0.00
17	403.27	403.18	0.0000	0.00
18	409.65	409.56	0.0000	0.00
19	438.21	438.10	0.0000	0.00
20	460.32	460.20	0.0000	0.00
21	463.34	463.22	0.0000	0.00
22	497.52	497.38	0.0000	0.00
23	510.87	510.72	0.0000	0.00
24	583.36	583.18	0.0000	0.00
25	609.49	609.30	0.0000	0.00
26	643.67	643.46	0.0000	0.00
27	651.18	650.97	0.0000	0.00
28	727.63	727.38	0.0000	0.00
29	763.64	763.38	0.0000	0.00
30	766.45	766.18	0.0000	0.00
31	816.10	815.81	0.0000	0.00
32	820.48	820.19	0.0000	0.00
33	861.33	861.03	0.0000	0.00
34	904.12	903.79	0.0000	0.00
35	911.41	911.09	0.0000	0.00
36	921.24	920.91	0.0000	0.00
37	969.42	969.07	0.0000	0.00
38	1003.49	1003.13	0.0000	0.00
39	1074.40	1074.01	0.0000	0.00
40	1120.53	1120.12	0.0000	0.00
41	1156.13	1155.70	0.0000	0.00
42	1202.23	1201.80	0.0000	0.00

Analysis Report for 1510087-07
CP5004S09-10

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1261.43	1260.97	0.0000	0.00
44	1429.67	1429.16	0.0000	0.00
45	1460.98	1460.46	0.0000	0.00
46	1508.51	1507.97	0.0000	0.00
47	1588.06	1587.50	0.0000	0.00
48	1591.64	1591.08	0.0000	0.00
49	1630.13	1629.56	0.0000	0.00
50	1729.93	1729.33	0.0000	0.00
51	1764.94	1764.33	0.0000	0.00
52	1847.78	1847.16	0.0000	0.00
53	2102.97	2102.30	0.0000	0.00
54	2118.65	2117.97	0.0000	0.00
55	2203.58	2202.89	0.0000	0.00
56	2363.97	2363.25	0.0000	0.00
57	2614.48	2613.74	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510087-07

CP5004S09-10

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)	
41	1156.13	1152 -	1161	1155.70	2.70E+01	31.91	1.30E+02	5.90	
42	1202.23	1198 -	1206	1201.80	2.39E+01	27.74	1.04E+02	3.35	
43	1261.43	1258 -	1263	1260.97	1.70E+01	16.67	4.20E+01	1.06	
44	1429.67	1426 -	1432	1429.16	1.45E+01	8.73	3.00E+00	4.73	
45	1460.98	1455 -	1465	1460.46	7.41E+02	57.39	4.37E+01	2.38	
46	1508.51	1502 -	1512	1507.97	2.12E+01	20.35	4.37E+01	4.98	
M	47	1588.06	1583 -	1595	1587.50	2.93E+01	16.04	2.65E+01	2.89
m	48	1591.64	1583 -	1595	1591.08	2.29E+01	17.92	1.93E+01	3.50
49	1630.13	1625 -	1632	1629.56	1.20E+01	12.96	2.00E+01	1.71	
50	1729.93	1725 -	1732	1729.33	2.00E+01	11.31	8.00E+00	3.04	
51	1764.94	1759 -	1770	1764.33	6.67E+01	23.49	3.46E+01	2.30	
52	1847.78	1842 -	1853	1847.16	1.37E+01	14.14	1.85E+01	3.07	
53	2102.97	2099 -	2105	2102.30	1.25E+01	9.41	7.00E+00	1.46	
54	2118.65	2115 -	2123	2117.97	1.21E+01	8.96	5.73E+00	2.17	
55	2203.58	2197 -	2206	2202.89	1.24E+01	12.45	1.53E+01	2.83	
56	2363.97	2357 -	2367	2363.25	1.76E+01	12.35	1.09E+01	1.31	
57	2614.48	2609 -	2618	2613.74	1.05E+02	20.49	0.00E+00	3.22	

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 8:13:21AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level	
1	46.32	43 -	49	1.59E+02	98.06	1.64E+03	7.79E+01	
2	76.34	72 -	80	1.00E+03	133.17	2.11E+03	9.63E+01	
M	3	84.25	83 -	89	6.90E+01	37.79	3.94E+02	3.26E+01
m	4	87.10	83 -	89	1.05E+02	66.72	1.01E+03	5.22E+01
5	105.17	103 -	108	5.64E+01	67.25	8.57E+02	5.39E+01	
6	185.78	181 -	189	2.72E+02	83.63	9.07E+02	6.32E+01	
7	209.43	206 -	212	7.02E+01	62.18	6.48E+02	4.92E+01	
M	8	238.91	230 -	249	7.75E+02	67.82	2.53E+02	2.61E+01
m	9	242.06	230 -	249	1.50E+02	45.17	2.35E+02	2.52E+01
M	10	266.86	265 -	272	2.54E+01	25.74	1.57E+02	2.06E+01
m	11	270.15	265 -	272	8.56E+01	40.18	2.66E+02	2.68E+01

Analysis Report for 1510087-07

CP5004S09-10

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
12	276.94	274 -	279	3.41E+01	42.32	3.28E+02	3.34E+01
13	295.31	292 -	299	2.05E+02	64.59	5.72E+02	4.76E+01
14	328.52	326 -	332	3.96E+01	46.41	3.67E+02	3.67E+01
15	338.63	335 -	343	2.39E+02	54.19	3.03E+02	3.66E+01
16	352.08	348 -	355	4.52E+02	62.00	3.37E+02	3.71E+01
17	403.27	399 -	406	4.32E+01	45.03	3.04E+02	3.54E+01
18	409.65	407 -	412	4.35E+01	32.74	1.79E+02	2.46E+01
19	438.21	435 -	441	2.83E+01	33.18	1.81E+02	2.58E+01
M	20	458 -	467	1.91E+01	20.49	8.40E+01	1.51E+01
m	21	458 -	467	7.03E+01	38.00	1.68E+02	2.13E+01
22	497.52	495 -	499	2.25E+01	21.17	7.91E+01	1.56E+01
23	510.87	506 -	515	1.77E+02	48.91	2.41E+02	3.37E+01
24	583.36	578 -	587	2.79E+02	52.21	2.30E+02	3.30E+01
25	609.49	605 -	612	3.36E+02	49.96	1.92E+02	2.79E+01
26	643.67	641 -	646	2.40E+01	23.75	9.00E+01	1.78E+01
27	651.18	647 -	656	3.29E+01	33.41	1.42E+02	2.58E+01
28	727.63	724 -	730	6.53E+01	31.13	1.27E+02	2.19E+01
M	29	762 -	780	1.35E+01	9.75	2.39E+01	8.04E+00
m	30	762 -	780	3.09E+01	23.90	7.06E+01	1.38E+01
M	31	813 -	827	1.72E+01	20.17	7.75E+01	1.45E+01
m	32	813 -	827	2.25E+01	20.37	6.88E+01	1.36E+01
33	861.33	857 -	865	2.75E+01	32.31	1.43E+02	2.51E+01
M	34	899 -	924	1.91E+01	22.39	9.31E+01	1.59E+01
m	35	899 -	924	2.09E+02	32.73	5.03E+01	1.17E+01
m	36	899 -	924	1.90E+01	21.29	5.22E+01	1.19E+01
37	969.42	966 -	973	9.24E+01	36.22	1.43E+02	2.52E+01
38	1003.49	999 -	1007	3.00E+01	27.08	9.40E+01	2.04E+01
39	1074.40	1072 -	1076	1.40E+01	14.19	3.19E+01	9.90E+00
40	1120.53	1115 -	1125	7.92E+01	37.29	1.44E+02	2.69E+01
41	1156.13	1152 -	1161	2.70E+01	31.91	1.30E+02	2.48E+01
42	1202.23	1198 -	1206	2.39E+01	27.74	1.04E+02	2.13E+01
43	1261.43	1258 -	1263	1.70E+01	16.67	4.20E+01	1.19E+01
44	1429.67	1426 -	1432	1.45E+01	8.73	3.00E+00	3.51E+00
45	1460.98	1455 -	1465	7.41E+02	57.39	4.37E+01	1.49E+01
46	1508.51	1502 -	1512	2.12E+01	20.35	4.37E+01	1.49E+01
M	47	1583 -	1595	2.93E+01	16.04	2.65E+01	8.46E+00
m	48	1583 -	1595	2.29E+01	17.92	1.93E+01	7.22E+00
49	1630.13	1625 -	1632	1.20E+01	12.96	2.00E+01	9.01E+00
50	1729.93	1725 -	1732	2.00E+01	11.31	8.00E+00	5.70E+00
51	1764.94	1759 -	1770	6.67E+01	23.49	3.46E+01	1.39E+01
52	1847.78	1842 -	1853	1.37E+01	14.14	1.85E+01	9.90E+00
53	2102.97	2099 -	2105	1.25E+01	9.41	7.00E+00	5.10E+00
54	2118.65	2115 -	2123	1.21E+01	8.96	5.73E+00	4.63E+00
55	2203.58	2197 -	2206	1.24E+01	12.45	1.53E+01	8.44E+00
56	2363.97	2357 -	2367	1.76E+01	12.35	1.09E+01	7.45E+00
57	2614.48	2609 -	2618	1.05E+02	20.49	0.00E+00	0.00E+00

Analysis Report for 1510087-07
CP5004S09-10

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 8:13:21AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	46.32	43 -	49	46.42	1.59E+02	98.06	1.64E+03	PB-210
2	76.34	72 -	80	76.42	1.00E+03	133.17	2.11E+03	.....
M 3	84.25	83 -	89	84.33	6.90E+01	37.79	3.94E+02	TH-231
m 4	87.10	83 -	89	87.18	1.05E+02	66.72	1.01E+03	SN-126 NP-237 EU-155 CD-109
5	105.17	103 -	108	105.24	5.64E+01	67.25	8.57E+02	EU-155 NP-239
6	185.78	181 -	189	185.81	2.72E+02	83.63	9.07E+02	RA-226
7	209.43	206 -	212	209.45	7.02E+01	62.18	6.48E+02	CM-243 GA-67
M 8	238.91	230 -	249	238.91	7.75E+02	67.82	2.53E+02	PB-212
m 9	242.06	230 -	249	242.06	1.50E+02	45.17	2.35E+02	.....
M 10	266.86	265 -	272	266.84	2.54E+01	25.74	1.57E+02	.....
m 11	270.15	265 -	272	270.13	8.56E+01	40.18	2.66E+02	.....
12	276.94	274 -	279	276.92	3.41E+01	42.32	3.28E+02	CM-243 NP-239
13	295.31	292 -	299	295.27	2.05E+02	64.59	5.72E+02	PB-214
14	328.52	326 -	332	328.47	3.96E+01	46.41	3.67E+02	LA-140
15	338.63	335 -	343	338.58	2.39E+02	54.19	3.03E+02	AC-228
16	352.08	348 -	355	352.01	4.52E+02	62.00	3.37E+02	PB-214
17	403.27	399 -	406	403.18	4.32E+01	45.03	3.04E+02	.....
18	409.65	407 -	412	409.56	4.35E+01	32.74	1.79E+02	.....
19	438.21	435 -	441	438.10	2.83E+01	33.18	1.81E+02	BA-140
M 20	460.32	458 -	467	460.20	1.91E+01	20.49	8.40E+01	.....
m 21	463.34	458 -	467	463.22	7.03E+01	38.00	1.68E+02	SB-125
22	497.52	495 -	499	497.38	2.25E+01	21.17	7.91E+01	RU-103
23	510.87	506 -	515	510.72	1.77E+02	48.91	2.41E+02	.....
24	583.36	578 -	587	583.18	2.79E+02	52.21	2.30E+02	TL-208

Analysis Report for 1510087-07

CP5004S09-10

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	25	609.49	605 -	612	609.30	3.36E+02	49.96	1.92E+02	BI-214
	26	643.67	641 -	646	643.46	2.40E+01	23.75	9.00E+01	.....
	27	651.18	647 -	656	650.97	3.29E+01	33.41	1.42E+02	.....
	28	727.63	724 -	730	727.38	6.53E+01	31.13	1.27E+02	BI-212
M	29	763.64	762 -	780	763.38	1.35E+01	9.75	2.39E+01	AG-110M
m	30	766.45	762 -	780	766.18	3.09E+01	23.90	7.06E+01	NB-95
M	31	816.10	813 -	827	815.81	1.72E+01	20.17	7.75E+01	LA-140
m	32	820.48	813 -	827	820.19	2.25E+01	20.37	6.88E+01	.....
	33	861.33	857 -	865	861.03	2.75E+01	32.31	1.43E+02	TL-208
M	34	904.12	899 -	924	903.79	1.91E+01	22.39	9.31E+01	.....
m	35	911.41	899 -	924	911.09	2.09E+02	32.73	5.03E+01	AC-228 LU-172
	36	921.24	899 -	924	920.91	1.90E+01	21.29	5.22E+01	.....
	37	969.42	966 -	973	969.07	9.24E+01	36.22	1.43E+02	AC-228
	38	1003.49	999 -	1007	1003.13	3.00E+01	27.08	9.40E+01	.....
	39	1074.40	1072 -	1076	1074.01	1.40E+01	14.19	3.19E+01	.....
	40	1120.53	1115 -	1125	1120.12	7.92E+01	37.29	1.44E+02	SC-46 BI-214 TA-182
	41	1156.13	1152 -	1161	1155.70	2.70E+01	31.91	1.30E+02	.....
	42	1202.23	1198 -	1206	1201.80	2.39E+01	27.74	1.04E+02	.....
	43	1261.43	1258 -	1263	1260.97	1.70E+01	16.67	4.20E+01	.....
	44	1429.67	1426 -	1432	1429.16	1.45E+01	8.73	3.00E+00	.....
	45	1460.98	1455 -	1465	1460.46	7.41E+02	57.39	4.37E+01	K-40
	46	1508.51	1502 -	1512	1507.97	2.12E+01	20.35	4.37E+01	.....
M	47	1588.06	1583 -	1595	1587.50	2.93E+01	16.04	2.65E+01	.....
m	48	1591.64	1583 -	1595	1591.08	2.29E+01	17.92	1.93E+01	.....
	49	1630.13	1625 -	1632	1629.56	1.20E+01	12.96	2.00E+01	.....
	50	1729.93	1725 -	1732	1729.33	2.00E+01	11.31	8.00E+00	.....
	51	1764.94	1759 -	1770	1764.33	6.67E+01	23.49	3.46E+01	BI-214
	52	1847.78	1842 -	1853	1847.16	1.37E+01	14.14	1.85E+01	.....
	53	2102.97	2099 -	2105	2102.30	1.25E+01	9.41	7.00E+00	.....
	54	2118.65	2115 -	2123	2117.97	1.21E+01	8.96	5.73E+00	.....
	55	2203.58	2197 -	2206	2202.89	1.24E+01	12.45	1.53E+01	BI-214
	56	2363.97	2357 -	2367	2363.25	1.76E+01	12.35	1.09E+01	.....
	57	2614.48	2609 -	2618	2613.74	1.05E+02	20.49	0.00E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 8:13:21AM

: 00529

Analysis Report for 1510087-07
CP5004S09-10

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.32	1.59E+02	98.06	1.32E-02	1.68E-03
	2	76.34	1.00E+03	133.17	2.74E-02	3.35E-03
M	3	84.25	6.90E+01	37.79	2.83E-02	4.13E-03
m	4	87.10	1.05E+02	66.72	2.84E-02	4.41E-03
	5	105.17	5.64E+01	67.25	2.80E-02	3.74E-03
	6	185.78	2.72E+02	83.63	2.11E-02	1.65E-03
	7	209.43	7.02E+01	62.18	1.95E-02	1.63E-03
M	8	238.91	7.75E+02	67.82	1.79E-02	1.60E-03
m	9	242.06	1.50E+02	45.17	1.77E-02	1.60E-03
M	10	266.86	2.54E+01	25.74	1.66E-02	1.57E-03
m	11	270.15	8.56E+01	40.18	1.64E-02	1.57E-03
	12	276.94	3.41E+01	42.32	1.62E-02	1.56E-03
	13	295.31	2.05E+02	64.59	1.55E-02	1.48E-03
	14	328.52	3.96E+01	46.41	1.44E-02	1.32E-03
	15	338.63	2.39E+02	54.19	1.41E-02	1.27E-03
	16	352.08	4.52E+02	62.00	1.37E-02	1.21E-03
	17	403.27	4.32E+01	45.03	1.25E-02	1.01E-03
	18	409.65	4.35E+01	32.74	1.24E-02	1.00E-03
	19	438.21	2.83E+01	33.18	1.18E-02	9.72E-04
M	20	460.32	1.91E+01	20.49	1.14E-02	9.50E-04
m	21	463.34	7.03E+01	38.00	1.13E-02	9.47E-04
	22	497.52	2.25E+01	21.17	1.08E-02	9.12E-04
	23	510.87	1.77E+02	48.91	1.06E-02	8.98E-04
	24	583.36	2.79E+02	52.21	9.58E-03	8.25E-04
	25	609.49	3.36E+02	49.96	9.27E-03	7.98E-04
	26	643.67	2.40E+01	23.75	8.89E-03	7.63E-04
	27	651.18	3.29E+01	33.41	8.81E-03	7.56E-04
	28	727.63	6.53E+01	31.13	8.08E-03	7.03E-04
M	29	763.64	1.35E+01	9.75	7.78E-03	6.80E-04
m	30	766.45	3.09E+01	23.90	7.76E-03	6.78E-04
M	31	816.10	1.72E+01	20.17	7.38E-03	6.46E-04
m	32	820.48	2.25E+01	20.37	7.34E-03	6.43E-04
	33	861.33	2.75E+01	32.31	7.06E-03	6.17E-04
M	34	904.12	1.91E+01	22.39	6.79E-03	5.90E-04
m	35	911.41	2.09E+02	32.73	6.74E-03	5.87E-04
m	36	921.24	1.90E+01	21.29	6.69E-03	5.81E-04
	37	969.42	9.24E+01	36.22	6.41E-03	5.57E-04
	38	1003.49	3.00E+01	27.08	6.23E-03	5.39E-04
	39	1074.40	1.40E+01	14.19	5.90E-03	5.03E-04
	40	1120.53	7.92E+01	37.29	5.70E-03	4.80E-04
	41	1156.13	2.70E+01	31.91	5.56E-03	4.62E-04
	42	1202.23	2.39E+01	27.74	5.39E-03	4.66E-04
	43	1261.43	1.70E+01	16.67	5.20E-03	4.94E-04
	44	1429.67	1.45E+01	8.73	4.74E-03	4.86E-04
	45	1460.98	7.41E+02	57.39	4.67E-03	4.73E-04
	46	1508.51	2.12E+01	20.35	4.57E-03	4.54E-04
M	47	1588.06	2.93E+01	16.04	4.43E-03	4.21E-04
m	48	1591.64	2.29E+01	17.92	4.42E-03	4.19E-04
	49	1630.13	1.20E+01	12.96	4.36E-03	4.03E-04
	50	1729.93	2.00E+01	11.31	4.23E-03	3.62E-04

Analysis Report for 1510087-07
 CP5004S09-10

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
51	1764.94	6.67E+01	23.49	4.18E-03	3.47E-04
52	1847.78	1.37E+01	14.14	4.10E-03	3.18E-04
53	2102.97	1.25E+01	9.41	3.95E-03	3.18E-04
54	2118.65	1.21E+01	8.96	3.95E-03	3.18E-04
55	2203.58	1.24E+01	12.45	3.93E-03	3.18E-04
56	2363.97	1.76E+01	12.35	3.94E-03	3.18E-04
57	2614.48	1.05E+02	20.49	4.05E-03	3.18E-04

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 8:13:21AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	1.59E+02	98.06	6.46E+01	1.16E+01	9.47E+01	9.88E+01
	2	1.00E+03	133.17			1.00E+03	1.33E+02
M	3	6.90E+01	37.79			6.90E+01	3.78E+01
m	4	1.05E+02	66.72	1.46E+00	7.88E+00	1.04E+02	6.72E+01
	5	5.64E+01	67.25			5.64E+01	6.73E+01
	6	2.72E+02	83.63	4.72E+01	7.97E+00	2.25E+02	8.40E+01
	7	7.02E+01	62.18			7.02E+01	6.22E+01
M	8	7.75E+02	67.82	2.36E+01	1.35E+01	7.51E+02	6.91E+01
m	9	1.50E+02	45.17	6.38E+00	3.91E+00	1.44E+02	4.53E+01
M	10	2.54E+01	25.74			2.54E+01	2.57E+01
m	11	8.56E+01	40.18			8.56E+01	4.02E+01
	12	3.41E+01	42.32			3.41E+01	4.23E+01
	13	2.05E+02	64.59	8.57E+00	6.10E+00	1.96E+02	6.49E+01
	14	3.96E+01	46.41	0.00E+00	0.00E+00	3.96E+01	4.64E+01
	15	2.39E+02	54.19			2.39E+02	5.42E+01
	16	4.52E+02	62.00	1.40E+01	5.55E+00	4.38E+02	6.22E+01
	17	4.32E+01	45.03			4.32E+01	4.50E+01
	18	4.35E+01	32.74			4.35E+01	3.27E+01
	19	2.83E+01	33.18			2.83E+01	3.32E+01
M	20	1.91E+01	20.49			1.91E+01	2.05E+01
m	21	7.03E+01	38.00			7.03E+01	3.80E+01
	22	2.25E+01	21.17			2.25E+01	2.12E+01
	23	1.77E+02	48.91	8.41E+01	5.50E+00	9.33E+01	4.92E+01

Analysis Report for 1510087-07

CP5004S09-10

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
24	583.36	2.79E+02	52.21	7.32E+00	4.08E+00	2.72E+02	5.24E+01
25	609.49	3.36E+02	49.96	1.30E+01	3.89E+00	3.23E+02	5.01E+01
26	643.67	2.40E+01	23.75			2.40E+01	2.37E+01
27	651.18	3.29E+01	33.41			3.29E+01	3.34E+01
28	727.63	6.53E+01	31.13			6.53E+01	3.11E+01
M 29	763.64	1.35E+01	9.75			1.35E+01	9.75E+00
m 30	766.45	3.09E+01	23.90			3.09E+01	2.39E+01
M 31	816.10	1.72E+01	20.17			1.72E+01	2.02E+01
m 32	820.48	2.25E+01	20.37			2.25E+01	2.04E+01
33	861.33	2.75E+01	32.31			2.75E+01	3.23E+01
M 34	904.12	1.91E+01	22.39			1.91E+01	2.24E+01
m 35	911.41	2.09E+02	32.73	5.60E+00	3.32E+00	2.04E+02	3.29E+01
m 36	921.24	1.90E+01	21.29			1.90E+01	2.13E+01
37	969.42	9.24E+01	36.22			9.24E+01	3.62E+01
38	1003.49	3.00E+01	27.08			3.00E+01	2.71E+01
39	1074.40	1.40E+01	14.19			1.40E+01	1.42E+01
40	1120.53	7.92E+01	37.29	3.93E+00	2.96E+00	7.52E+01	3.74E+01
41	1156.13	2.70E+01	31.91			2.70E+01	3.19E+01
42	1202.23	2.39E+01	27.74			2.39E+01	2.77E+01
43	1261.43	1.70E+01	16.67			1.70E+01	1.67E+01
44	1429.67	1.45E+01	8.73			1.45E+01	8.73E+00
45	1460.98	7.41E+02	57.39	1.12E+01	2.55E+00	7.30E+02	5.74E+01
46	1508.51	2.12E+01	20.35			2.12E+01	2.03E+01
M 47	1588.06	2.93E+01	16.04			2.93E+01	1.60E+01
m 48	1591.64	2.29E+01	17.92			2.29E+01	1.79E+01
49	1630.13	1.20E+01	12.96			1.20E+01	1.30E+01
50	1729.93	2.00E+01	11.31			2.00E+01	1.13E+01
51	1764.94	6.67E+01	23.49	4.23E+00	2.21E+00	6.25E+01	2.36E+01
52	1847.78	1.37E+01	14.14			1.37E+01	1.41E+01
53	2102.97	1.25E+01	9.41			1.25E+01	9.41E+00
54	2118.65	1.21E+01	8.96			1.21E+01	8.96E+00
55	2203.58	1.24E+01	12.45	5.94E-01	1.16E+00	1.18E+01	1.25E+01
56	2363.97	1.76E+01	12.35			1.76E+01	1.23E+01
57	2614.48	1.05E+02	20.49	7.38E+00	1.57E+00	9.76E+01	2.06E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1510087-07

CP5004S09-10

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 8:13:21AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
	1	46.32	1.59E+02	98.06	6.46E+01	1.16E+01	9.47E+01	9.88E+01
	2	76.34	1.00E+03	133.17			1.00E+03	1.33E+02
M	3	84.25	6.90E+01	37.79			6.90E+01	3.78E+01
m	4	87.10	1.05E+02	66.72	1.46E+00	7.88E+00	1.04E+02	6.72E+01
	5	105.17	5.64E+01	67.25			5.64E+01	6.73E+01
	6	185.78	2.72E+02	83.63	4.72E+01	7.97E+00	2.25E+02	8.40E+01
	7	209.43	7.02E+01	62.18			7.02E+01	6.22E+01
M	8	238.91	7.75E+02	67.82	2.36E+01	1.35E+01	7.51E+02	6.91E+01
m	9	242.06	1.50E+02	45.17	6.38E+00	3.91E+00	1.44E+02	4.53E+01
M	10	266.86	2.54E+01	25.74			2.54E+01	2.57E+01
m	11	270.15	8.56E+01	40.18			8.56E+01	4.02E+01
	12	276.94	3.41E+01	42.32			3.41E+01	4.23E+01
	13	295.31	2.05E+02	64.59	8.57E+00	6.10E+00	1.96E+02	6.49E+01
	14	328.52	3.96E+01	46.41	0.00E+00	0.00E+00	3.96E+01	4.64E+01
	15	338.63	2.39E+02	54.19			2.39E+02	5.42E+01
	16	352.08	4.52E+02	62.00	1.40E+01	5.55E+00	4.38E+02	6.22E+01
	17	403.27	4.32E+01	45.03			4.32E+01	4.50E+01
	18	409.65	4.35E+01	32.74			4.35E+01	3.27E+01
	19	438.21	2.83E+01	33.18			2.83E+01	3.32E+01
M	20	460.32	1.91E+01	20.49			1.91E+01	2.05E+01
m	21	463.34	7.03E+01	38.00			7.03E+01	3.80E+01
	22	497.52	2.25E+01	21.17			2.25E+01	2.12E+01
	23	510.87	1.77E+02	48.91	8.41E+01	5.50E+00	9.33E+01	4.92E+01
	24	583.36	2.79E+02	52.21	7.32E+00	4.08E+00	2.72E+02	5.24E+01
	25	609.49	3.36E+02	49.96	1.30E+01	3.89E+00	3.23E+02	5.01E+01
	26	643.67	2.40E+01	23.75			2.40E+01	2.37E+01
	27	651.18	3.29E+01	33.41			3.29E+01	3.34E+01
	28	727.63	6.53E+01	31.13			6.53E+01	3.11E+01
M	29	763.64	1.35E+01	9.75			1.35E+01	9.75E+00
m	30	766.45	3.09E+01	23.90			3.09E+01	2.39E+01
M	31	816.10	1.72E+01	20.17			1.72E+01	2.02E+01
m	32	820.48	2.25E+01	20.37			2.25E+01	2.04E+01
	33	861.33	2.75E+01	32.31			2.75E+01	3.23E+01
M	34	904.12	1.91E+01	22.39			1.91E+01	2.24E+01
m	35	911.41	2.09E+02	32.73	5.60E+00	3.32E+00	2.04E+02	3.29E+01
m	36	921.24	1.90E+01	21.29			1.90E+01	2.13E+01
	37	969.42	9.24E+01	36.22			9.24E+01	3.62E+01
	38	1003.49	3.00E+01	27.08			3.00E+01	2.71E+01
	39	1074.40	1.40E+01	14.19			1.40E+01	1.42E+01
	40	1120.53	7.92E+01	37.29	3.93E+00	2.96E+00	7.52E+01	3.74E+01
	41	1156.13	2.70E+01	31.91			2.70E+01	3.19E+01

Analysis Report for 1510087-07
CP5004S09-10

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1202.23	2.39E+01	27.74			2.39E+01	2.77E+01
43	1261.43	1.70E+01	16.67			1.70E+01	1.67E+01
44	1429.67	1.45E+01	8.73			1.45E+01	8.73E+00
45	1460.98	7.41E+02	57.39	1.12E+01	2.55E+00	7.30E+02	5.74E+01
46	1508.51	2.12E+01	20.35			2.12E+01	2.03E+01
M 47	1588.06	2.93E+01	16.04			2.93E+01	1.60E+01
m 48	1591.64	2.29E+01	17.92			2.29E+01	1.79E+01
49	1630.13	1.20E+01	12.96			1.20E+01	1.30E+01
50	1729.93	2.00E+01	11.31			2.00E+01	1.13E+01
51	1764.94	6.67E+01	23.49	4.23E+00	2.21E+00	6.25E+01	2.36E+01
52	1847.78	1.37E+01	14.14			1.37E+01	1.41E+01
53	2102.97	1.25E+01	9.41			1.25E+01	9.41E+00
54	2118.65	1.21E+01	8.96			1.21E+01	8.96E+00
55	2203.58	1.24E+01	12.45	5.94E-01	1.16E+00	1.18E+01	1.25E+01
56	2363.97	1.76E+01	12.35			1.76E+01	1.23E+01
57	2614.48	1.05E+02	20.49	7.38E+00	1.57E+00	9.76E+01	2.06E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.995	1460.81 *	10.67	1.97E+01	2.56E+00
NB-95	0.929	765.79 *	99.81	1.03E-01	7.98E-02
RU-103	0.967	497.08 *	89.00	5.61E-02	5.34E-02
EU-155	0.965	86.50 *	30.90	1.61E-01	1.07E-01
TL-208	0.985	105.30 *	20.70	1.33E-01	1.59E-01
		583.14 *	30.22	1.26E+00	2.67E-01
		860.37 *	4.48	1.17E+00	1.38E+00
PB-210	0.995	2614.66 *	35.85	9.06E-01	2.04E-01
		46.50 *	4.25	2.28E+00	2.39E+00
		727.17 *	11.80	9.23E-01	4.47E-01
BI-212	0.739	1620.62	2.75		
		238.63 *	44.60	1.27E+00	1.63E-01
PB-212	0.883	300.09	3.41		
		609.31 *	46.30	1.01E+00	1.80E-01
BI-214	0.986	1120.29 *	15.10	1.18E+00	5.94E-01

Analysis Report for 1510087-07
 CP5004S09-10

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.986	1764.49 *	15.80	1.27E+00	4.92E-01
		2204.22 *	4.98	8.11E-01	8.63E-01
PB-214	0.997	295.21 *	19.19	8.92E-01	3.07E-01
		351.92 *	37.19	1.16E+00	1.94E-01
RA-226	0.971	186.21 *	3.28	4.38E+00	8.19E+00
AC-228	0.983	338.32 *	11.40	2.00E+00	4.89E-01
		911.07 *	27.70	1.47E+00	2.69E-01
		969.11 *	16.60	1.17E+00	4.70E-01
		25.64	14.70		
TH-231	0.611	84.21 *	6.40	5.14E-01	2.91E-01
CM-243	0.338	209.75 *	3.29	1.48E+00	1.31E+00
		228.14	10.60		
		277.60 *	14.00	2.04E-01	2.53E-01

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 Energy Tolerance : 1.000 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 8:13:21AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	76.34	2.77811E-01		
m	9	242.06	3.98905E-02		
M	10	266.86	7.05716E-03		
m	11	270.15	2.37724E-02	Sum	
	14	328.52	1.09922E-02	Tol.	LA-140
	17	403.27	1.19957E-02		
	18	409.65	1.20906E-02		
	19	438.21	7.86765E-03	D-Esc	
M	20	460.32	5.29397E-03		
m	21	463.34	1.95309E-02	Sum	
	23	510.87	2.59254E-02		
	26	643.67	6.67069E-03		
	27	651.18	9.13996E-03		
M	29	763.64	3.75079E-03		
M	31	816.10	4.77009E-03	Tol.	LA-140
m	32	820.48	6.24963E-03		

Analysis Report for 1510087-07
 CP5004S09-10

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M 34	904.12	5.31181E-03	58.54	Sum	
m 36	921.24	5.28590E-03	55.94	Sum	
38	1003.49	8.32973E-03	45.15		
39	1074.40	3.90278E-03	50.48	Sum	
41	1156.13	7.50000E-03	59.09	Sum	
42	1202.23	6.63560E-03	58.07		
43	1261.43	4.72222E-03	49.04		
44	1429.67	4.02778E-03	30.11		
46	1508.51	5.88178E-03	48.05		
M 47	1588.06	8.12631E-03	27.41	Sum	
m 48	1591.64	6.35444E-03	39.16	D-Esc	
49	1630.13	3.32702E-03	54.11		
50	1729.93	5.55556E-03	28.28	Sum	
52	1847.78	3.81642E-03	51.47	Sum	
53	2102.97	3.47222E-03	37.63	S-Esc	
54	2118.65	3.37037E-03	36.92		
56	2363.97	4.87923E-03	35.15		

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	1.97E+01	2.56E+00
NB-95	0.92	765.79 *	99.81	1.03E-01	7.98E-02
RU-103	0.96	497.08 *	89.00	5.61E-02	5.34E-02
EU-155	0.96	86.50 *	30.90	1.61E-01	1.07E-01
		105.30 *	20.70	1.33E-01	1.59E-01
TL-208	0.98	583.14 *	30.22	1.26E+00	2.67E-01
		860.37 *	4.48	1.17E+00	1.38E+00
		2614.66 *	35.85	9.06E-01	2.04E-01
PB-210	0.99	46.50 *	4.25	2.28E+00	2.39E+00
BI-212	0.73	727.17 *	11.80	9.23E-01	4.47E-01
		1620.62	2.75		

Analysis Report for 1510087-07
CP5004S09-10

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-212	0.88	238.63 *	44.60	1.27E+00	1.63E-01
		300.09	3.41		
BI-214	0.98	609.31 *	46.30	1.01E+00	1.80E-01
		1120.29 *	15.10	1.18E+00	5.94E-01
		1764.49 *	15.80	1.27E+00	4.92E-01
		2204.22 *	4.98	8.11E-01	8.63E-01
PB-214	0.99	295.21 *	19.19	8.92E-01	3.07E-01
		351.92 *	37.19	1.16E+00	1.94E-01
RA-226	0.97	186.21 *	3.28	4.38E+00	8.19E+00
AC-228	0.98	338.32 *	11.40	2.00E+00	4.89E-01
		911.07 *	27.70	1.47E+00	2.69E-01
		969.11 *	16.60	1.17E+00	4.70E-01
TH-231	0.61	25.64	14.70		
		84.21 *	6.40	5.14E-01	2.91E-01
CM-243	0.33	209.75 *	3.29	1.48E+00	1.31E+00
		228.14	10.60		
		277.60 *	14.00	2.04E-01	2.53E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.995	1.97E+01	2.56E+00	
NB-95	0.929	1.03E-01	7.98E-02	
RU-103	0.967	5.61E-02	5.34E-02	
X CD-109	0.870			
X SN-126	0.965			
EU-155	0.965	1.52E-01	8.90E-02	
TL-208	0.985	1.04E+00	1.61E-01	
PB-210	0.995	2.28E+00	2.39E+00	
BI-212	0.739	9.23E-01	4.47E-01	
PB-212	0.883	1.27E+00	1.63E-01	

Analysis Report for 1510087-07
CP5004S09-10

<i>Nuclide Name</i>	<i>Nuclide Id Confidence</i>	<i>Wt mean Activity (pCi/grams)</i>	<i>Wt mean Activity Uncertainty</i>	<i>Comments</i>
BI-214	0.986	1.05E+00	1.60E-01	
PB-214	0.997	1.08E+00	1.64E-01	
RA-226	0.971	4.38E+00	8.19E+00	
AC-228	0.983	1.51E+00	2.11E-01	
TH-231	0.611	5.14E-01	2.91E-01	
X NP-237	0.945			
CM-243	0.338	2.49E-01	2.49E-01	

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1510087-07
 CP5004S09-10

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 8:13:21AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	76.34	2.77811E-01		
m	9	242.06	3.98905E-02		
M	10	266.86	7.05716E-03		
m	11	270.15	2.37724E-02	Sum	
	14	328.52	1.09922E-02	Tol.	LA-140
	17	403.27	1.19957E-02		
	18	409.65	1.20906E-02		
	19	438.21	7.86765E-03	D-Esc	
M	20	460.32	5.29397E-03		
m	21	463.34	1.95309E-02	Sum	
	23	510.87	2.59254E-02		
	26	643.67	6.67069E-03		
	27	651.18	9.13996E-03		
M	29	763.64	3.75079E-03		
M	31	816.10	4.77009E-03	Tol.	LA-140
m	32	820.48	6.24963E-03		
M	34	904.12	5.31181E-03	Sum	
m	36	921.24	5.28590E-03	Sum	
	38	1003.49	8.32973E-03		
	39	1074.40	3.90278E-03	Sum	
	41	1156.13	7.50000E-03	Sum	
	42	1202.23	6.63560E-03		
	43	1261.43	4.72222E-03		
	44	1429.67	4.02778E-03		
	46	1508.51	5.88178E-03		
M	47	1588.06	8.12631E-03	Sum	
m	48	1591.64	6.35444E-03	D-Esc	
	49	1630.13	3.32702E-03		
	50	1729.93	5.55556E-03	Sum	
	52	1847.78	3.81642E-03	Sum	
	53	2102.97	3.47222E-03	S-Esc	
	54	2118.65	3.37037E-03		
	56	2363.97	4.87923E-03		

Analysis Report for 1510087-07
CP5004S09-10

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
+	BE-7	477.59	10.42	6.18E-02	8.12E-01	8.12E-01
+	NA-22	1274.54	99.94	-4.24E-03	8.20E-02	8.20E-02
+	NA-24	1368.53	99.99	4.32E+13	2.32E+14	3.69E+14
		2754.09	99.86	9.85E+13		2.32E+14
+	AL-26	1808.65	99.76	-4.35E-03	5.18E-02	5.18E-02
+	K-40	1460.81	* 10.67	1.97E+01	9.41E-01	9.41E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.34E-02	5.12E-02	5.12E-02
		78.34	96.00	2.80E-01		7.33E-02
+	SC-46	889.25	99.98	-6.53E-02	8.43E-02	8.43E-02
		1120.51	99.99	2.46E-01		1.69E-01
+	V-48	983.52	99.98	-2.25E-02	2.75E-01	2.75E-01
		1312.10	97.50	1.18E-01		3.50E-01
+	CR-51	320.08	9.83	-3.25E-01	1.14E+00	1.14E+00
+	MN-54	834.83	99.97	-2.66E-02	8.44E-02	8.44E-02
+	CO-56	846.75	99.96	5.47E-04	9.34E-02	9.34E-02
		1037.75	14.03	-3.08E-01		6.78E-01
		1238.25	67.00	1.01E-01		2.14E-01
		1771.40	15.51	-4.16E-02		5.40E-01
		2598.48	16.90	-4.38E-02		2.44E-01
+	CO-57	122.06	85.51	-2.27E-02	5.72E-02	5.72E-02
		136.48	10.60	-6.24E-02		4.67E-01
+	CO-58	810.76	99.40	1.32E-02	9.60E-02	9.60E-02
+	FE-59	1099.22	56.50	1.62E-02	2.20E-01	2.20E-01
		1291.56	43.20	-1.15E-01		2.63E-01
+	CO-60	1173.22	100.00	-1.53E-02	7.94E-02	8.41E-02
		1332.49	100.00	-8.54E-03		7.94E-02
+	ZN-65	1115.52	50.75	-3.64E-04	1.85E-01	1.85E-01
+	GA-67	93.31	35.70	1.27E+02	1.73E+02	1.73E+02
		208.95	2.24	2.88E+03		2.65E+03
		300.22	16.00	1.37E+02		3.75E+02
+	SE-75	121.11	16.70	1.89E-02	9.41E-02	3.30E-01

Analysis Report for 1510087-07

CP5004S09-10

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
	SE-75	136.00	59.20	-1.58E-02	9.41E-02	9.41E-02
		264.65	59.80	-2.14E-02		9.93E-02
		279.53	25.20	6.63E-02		2.37E-01
		400.65	11.40	2.84E-01		6.41E-01
+	RB-82	776.52	13.00	1.29E-02	1.24E+00	1.24E+00
+	RB-83	520.41	46.00	2.57E-02	1.48E-01	1.48E-01
		529.64	30.30	-8.06E-02		2.04E-01
		552.65	16.40	-1.07E-01		4.55E-01
+	KR-85	513.99	0.43	-5.65E+00	1.57E+01	1.57E+01
+	SR-85	513.99	99.27	-3.48E-02	9.66E-02	9.66E-02
+	Y-88	898.02	93.40	1.13E-02	6.47E-02	9.22E-02
		1836.01	99.38	1.02E-02		6.47E-02
+	NB-93M	16.57	9.43	-9.32E+03	5.41E+03	5.41E+03
+	NB-94	702.63	100.00	1.35E-02	7.11E-02	7.23E-02
		871.10	100.00	1.82E-02		7.11E-02
+	NB-95	765.79	* 99.81	1.03E-01	2.66E-01	2.66E-01
+	NB-95M	235.69	25.00	-1.40E+03	1.58E+02	1.58E+02
+	ZR-95	724.18	43.70	5.89E-03	1.67E-01	2.76E-01
		756.72	55.30	-5.98E-02		1.67E-01
+	MO-99	181.06	6.20	-9.27E+01	2.06E+03	3.07E+03
		739.58	12.80	-4.75E+01		2.06E+03
		778.00	4.50	-7.11E+02		5.15E+03
+	RU-103	497.08	* 89.00	5.61E-02	8.45E-02	8.45E-02
+	RU-106	621.84	9.80	-1.22E-01	6.80E-01	6.80E-01
+	AG-108M	433.93	89.90	8.37E-03	5.50E-02	5.50E-02
		614.37	90.40	3.34E-03		7.78E-02
		722.95	90.50	-8.13E-03		7.43E-02
+	CD-109	88.03	* 3.72	1.39E+00	2.00E+00	2.00E+00
+	AG-110M	657.75	93.14	4.04E-02	7.64E-02	7.64E-02
		677.61	10.53	-3.09E-01		6.78E-01
		706.67	16.46	8.39E-02		4.77E-01
		763.93	21.98	-4.50E-01		3.73E-01
		884.67	71.63	5.58E-02		1.19E-01
		1384.27	23.94	4.40E-02		3.41E-01
+	CD-113M	263.70	0.02	-4.85E+01	2.09E+02	2.09E+02
+	SN-113	255.12	1.93	-8.08E-01	1.04E-01	3.20E+00
		391.69	64.90	6.55E-02		1.04E-01
+	TE123M	159.00	84.10	-6.46E-03	7.00E-02	7.00E-02
+	SB-124	602.71	97.87	-9.72E-04	9.99E-02	9.99E-02
		645.85	7.26	7.13E-01		1.36E+00
		722.78	11.10	-9.65E-02		8.81E-01
		1691.02	49.00	6.75E-02		1.88E-01
+	I-125	35.49	6.49	-5.75E-01	5.59E+00	5.59E+00
+	SB-125	176.33	6.89	1.71E-01	1.80E-01	7.44E-01
		427.89	29.33	-6.27E-02		1.80E-01
		463.38	10.35	5.22E-01		6.62E-01
		600.56	17.80	4.55E-02		3.83E-01
		635.90	11.32	4.71E-02		5.83E-01

Analysis Report for 1510087-07
CP5004S09-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	2.09E-02	3.91E-01	3.91E-01
		666.33	99.60	-7.36E-02		3.94E-01
		695.00	99.60	-1.09E-02		4.53E-01
		720.50	53.80	-1.33E-01		7.02E-01
+	SN-126	87.57	* 37.00	1.33E-01	1.91E-01	1.91E-01
+	SB-127	473.00	25.00	-5.88E+01	6.70E+01	6.88E+01
		685.20	35.70	-1.20E+01		6.70E+01
		783.80	14.70	2.13E+01		1.75E+02
+	I-129	29.78	57.00	2.54E-01	1.22E+00	1.22E+00
		33.60	13.20	-7.37E-01		2.44E+00
		39.58	7.52	-2.53E-02		2.12E+00
+	I-131	284.30	6.05	-5.21E+00	1.06E+00	1.29E+01
		364.48	81.20	-7.83E-02		1.06E+00
		636.97	7.26	-1.52E+00		1.43E+01
		722.89	1.80	-6.80E+00		6.21E+01
+	TE-132	49.72	13.10	-8.69E+01	6.03E+01	6.05E+02
		228.16	88.00	4.81E+01		6.03E+01
+	BA-133	81.00	33.00	3.59E-02	7.44E-02	1.24E-01
		302.84	17.80	-1.64E-01		3.18E-01
		356.01	60.00	-1.49E-02		7.44E-02
+	I-133	529.87	86.30	-4.22E+09	1.19E+10	1.19E+10
+	XE-133	81.00	38.00	2.31E+00	7.99E+00	7.99E+00
+	CS-134	563.23	8.38	3.32E-01	8.22E-02	7.15E-01
		569.32	15.43	1.06E-01		3.87E-01
		604.70	97.60	4.02E-05		8.22E-02
		795.84	85.40	2.97E-02		9.35E-02
		801.93	8.73	-1.13E-01		8.55E-01
+	CS-135	268.24	16.00	-1.32E-02	3.61E-01	3.61E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	5.18E-01	4.29E-01	3.78E+00
		163.89	4.61	-8.07E-01		5.91E+00
		176.55	13.56	1.02E+00		2.08E+00
		273.65	12.66	-2.98E+00		2.17E+00
		340.57	48.50	-4.97E-02		7.43E-01
		818.50	99.70	2.49E-01		4.29E-01
		1048.07	79.60	-1.13E-02		5.78E-01
		1235.34	19.70	1.66E+00		3.04E+00
+	CS-137	661.65	85.12	4.24E-04	7.74E-02	7.74E-02
+	LA-138	788.74	34.00	1.19E-01	7.83E-02	2.22E-01
		1435.80	66.00	6.28E-03		7.83E-02
+	CE-139	165.85	80.35	-1.57E-02	7.10E-02	7.10E-02
+	BA-140	162.64	6.70	1.31E+00	1.14E+00	4.28E+00
		304.84	4.50	4.14E-01		7.02E+00
		423.70	3.20	1.87E+00		9.72E+00
		437.55	2.00	5.42E+00		1.55E+01
		537.32	25.00	-5.45E-03		1.14E+00
+	LA-140	328.77	20.50	1.16E+00	4.30E-01	1.72E+00

Analysis Report for 1510087-07
CP5004S09-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	487.03	45.50	-1.35E-01	4.30E-01	6.78E-01
		815.85	23.50	-6.33E-01		1.72E+00
		1596.49	95.49	1.87E-02		4.30E-01
+	CE-141	145.44	48.40	1.03E-01	2.09E-01	2.09E-01
+	CE-143	57.36	11.80	-6.33E+06	2.36E+06	5.67E+06
		293.26	42.00	-8.79E+05		2.36E+06
		664.55	5.20	2.01E+06		1.77E+07
+	CE-144	133.54	10.80	-7.88E-02	4.75E-01	4.75E-01
+	PM-144	476.78	42.00	1.07E-02	7.23E-02	1.40E-01
		618.01	98.60	-1.72E-02		7.23E-02
		696.49	99.49	-5.02E-03		7.77E-02
+	PM-145	36.85	21.70	3.35E-01	5.10E-01	9.92E-01
		37.36	39.70	1.72E-01		5.10E-01
		42.30	15.10	2.42E-01		8.06E-01
		72.40	2.31	-9.65E-01		2.06E+00
+	PM-146	453.90	39.94	4.56E-02	1.28E-01	1.28E-01
		735.90	14.01	-1.71E-01		4.99E-01
		747.13	13.10	-1.05E-01		5.09E-01
+	ND-147	91.11	28.90	9.37E-01	1.68E+00	1.68E+00
		531.02	13.10	-8.30E-01		2.90E+00
+	PM-149	285.90	3.10	2.30E+04	4.58E+04	4.58E+04
+	EU-152	121.78	20.50	-8.76E-02	2.20E-01	2.20E-01
		244.69	5.40	-2.33E+00		1.00E+00
		344.27	19.13	-5.47E-02		2.57E-01
		778.89	9.20	-3.57E-02		6.84E-01
		964.01	10.40	4.35E-01		9.21E-01
		1085.78	7.22	-1.62E-01		1.02E+00
		1112.02	9.60	3.80E-01		8.83E-01
		1407.95	14.94	1.28E-01		5.00E-01
+	GD-153	97.43	31.30	6.61E-02	1.57E-01	1.57E-01
		103.18	22.20	-2.48E-02		2.24E-01
+	EU-154	123.07	40.50	5.41E-02	1.14E-01	1.14E-01
		723.30	19.70	-3.76E-02		3.44E-01
		873.19	11.50	-8.26E-02		5.96E-01
		996.32	10.30	-1.29E-01		6.67E-01
		1004.76	17.90	2.55E-01		4.93E-01
		1274.45	35.50	-1.17E-02		2.27E-01
+	EU-155	86.50	* 30.90	1.61E-01	2.32E-01	2.32E-01
		105.30	* 20.70	1.33E-01		2.60E-01
+	EU-156	811.77	10.40	2.83E-01	2.88E+00	2.88E+00
		1153.47	7.20	6.22E-01		6.27E+00
		1230.71	8.90	-1.46E+00		4.71E+00
+	HO-166M	184.41	72.60	4.97E-04	8.89E-02	8.89E-02
		280.45	29.60	4.69E-02		1.67E-01
		410.94	11.10	2.53E-01		5.26E-01
		711.69	54.10	7.83E-02		1.33E-01
+	TM-171	66.72	0.14	1.31E+01	3.71E+01	3.71E+01
+	HF-172	81.75	4.52	2.69E-01	4.26E-01	9.13E-01
		125.81	11.30	-5.23E-01		4.26E-01

Analysis Report for 1510087-07
CP5004S09-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	-5.08E+00	3.67E+00	7.24E+00
		810.06	16.63	1.67E+00		1.22E+01
		912.12	15.25	7.65E+01		2.91E+01
		1093.66	62.50	-7.89E-01		3.67E+00
+	LU-173	100.72	5.24	2.41E-02	2.86E-01	8.73E-01
		272.11	21.20	1.23E-01		2.86E-01
+	HF-175	343.40	84.00	-3.47E-02	7.89E-02	7.89E-02
+	LU-176	88.34	13.30	5.77E-01	5.30E-02	4.79E-01
		201.83	86.00	3.75E-02		6.37E-02
		306.78	94.00	-1.50E-02		5.30E-02
+	TA-182	67.75	41.20	-3.75E-02	1.43E-01	1.43E-01
		1121.30	34.90	6.54E-01		4.55E-01
		1189.05	16.23	-7.07E-02		6.18E-01
		1221.41	26.98	-9.34E-02		4.25E-01
		1231.02	11.44	-5.08E-01		1.00E+00
+	IR-192	308.46	29.68	-4.80E-02	1.46E-01	2.22E-01
		468.07	48.10	-2.33E-02		1.46E-01
+	HG-203	279.19	77.30	1.47E-02	1.08E-01	1.08E-01
+	BI-207	569.67	97.72	1.63E-02	5.94E-02	5.94E-02
		1063.62	74.90	1.86E-02		1.04E-01
+	TL-208	583.14	* 30.22	1.26E+00	1.11E-01	3.24E-01
		860.37	* 4.48	1.17E+00		2.26E+00
		2614.66	* 35.85	9.06E-01		1.11E-01
+	BI-210M	262.00	45.00	3.61E-03	1.10E-01	1.10E-01
		300.00	23.00	9.31E-02		2.55E-01
+	PB-210	46.50	* 4.25	2.28E+00	3.89E+00	3.89E+00
+	PB-211	404.84	2.90	3.31E-01	1.95E+00	1.95E+00
		831.96	2.90	9.28E-01		2.68E+00
+	BI-212	727.17	* 11.80	9.23E-01	6.57E-01	6.57E-01
		1620.62	2.75	-2.65E-01		2.75E+00
+	PB-212	238.63	* 44.60	1.27E+00	3.27E-01	3.27E-01
		300.09	3.41	6.28E-01		1.72E+00
+	BI-214	609.31	* 46.30	1.01E+00	1.89E-01	1.89E-01
		1120.29	* 15.10	1.18E+00		8.96E-01
		1764.49	* 15.80	1.27E+00		6.43E-01
		2204.22	* 4.98	8.11E-01		1.37E+00
+	PB-214	295.21	* 19.19	8.92E-01	2.07E-01	4.49E-01
		351.92	* 37.19	1.16E+00		2.07E-01
+	RN-219	401.80	6.50	1.00E-01	9.23E-01	9.23E-01
+	RA-223	323.87	3.88	4.55E-02	1.24E+00	1.24E+00
+	RA-224	240.98	3.95	1.13E+01	2.87E+00	2.87E+00
+	RA-225	40.00	31.00	-2.71E-02	2.28E+00	2.28E+00
+	RA-226	186.21	* 3.28	4.38E+00	2.57E+00	2.57E+00
+	TH-227	50.10	8.40	-1.29E-01	6.56E-01	9.00E-01
		236.00	11.50	-5.80E+00		6.56E-01
		256.20	6.30	-2.40E-01		7.91E-01
+	AC-228	338.32	* 11.40	2.00E+00	6.37E-01	6.37E-01
		911.07	* 27.70	1.47E+00		7.40E-01

Analysis Report for 1510087-07
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.17E+00	6.37E-01	6.73E-01
+	TH-230	48.44		16.90	-3.26E-01	4.96E-01	4.96E-01
		62.85		4.60	9.18E-01		1.22E+00
		67.67		0.37	-3.44E+00		1.31E+01
+	PA-231	283.67		1.60	-1.18E+00	2.45E+00	2.93E+00
		302.67		2.30	-1.26E+00		2.45E+00
+	TH-231	25.64		14.70	-3.15E+00	1.02E+00	1.41E+01
		84.21	*	6.40	5.14E-01		1.02E+00
+	PA-233	311.98		38.60	2.00E-01	2.92E-01	2.92E-01
+	PA-234	131.20		20.40	4.58E-02	2.49E-01	2.49E-01
		733.99		8.80	1.47E-01		8.20E-01
		946.00		12.00	-1.01E-01		5.82E-01
+	PA-234M	1001.03		0.92	-1.69E-01	9.01E+00	9.01E+00
+	TH-234	63.29		3.80	1.10E+00	1.47E+00	1.47E+00
+	U-235	143.76		10.50	8.01E-02	4.75E-01	4.75E-01
		163.35		4.70	3.19E-01		1.04E+00
		205.31		4.70	-2.25E-01		1.10E+00
+	NP-237	86.50	*	12.60	3.91E-01	5.61E-01	5.61E-01
+	NP-239	106.10		22.70	1.91E+03	3.05E+03	3.05E+03
		228.18		10.70	5.66E+03		7.09E+03
		277.60		14.10	2.16E+03		5.43E+03
+	AM-241	59.54		35.90	7.50E-03	1.47E-01	1.47E-01
+	AM-243	74.67		66.00	-1.88E-01	9.98E-02	9.98E-02
+	CM-243	209.75	*	3.29	1.48E+00	4.16E-01	2.13E+00
		228.14		10.60	3.89E-01		4.87E-01
		277.60	*	14.00	2.04E-01		4.16E-01

- + = Nuclide identified during the nuclide identification
- * = Energy line found in the spectrum
- > = MDA value not calculated
- @ = Half-life too short to be able to perform the decay correction
- ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Analysis Report for 1510087-07

CP5004S09-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	8.12E-01	8.12E-01	6.18E-02	3.82E-01
NA-22	1274.54	99.94	8.20E-02	8.20E-02	-4.24E-03	3.74E-02
NA-24	1368.53	99.99	3.69E+14	2.32E+14	4.32E+13	1.66E+14
	2754.09	99.86	2.32E+14		9.85E+13	9.36E+13
AL-26	1808.65	99.76	5.18E-02	5.18E-02	-4.35E-03	2.15E-02
+ K-40	1460.81	* 10.67	9.41E-01	9.41E-01	1.97E+01	4.34E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	5.12E-02	5.12E-02	-1.34E-02	2.49E-02
	78.34	96.00	7.33E-02		2.80E-01	3.60E-02
SC-46	889.25	99.98	8.43E-02	8.43E-02	-6.53E-02	3.87E-02
	1120.51	99.99	1.69E-01		2.46E-01	8.05E-02
V-48	983.52	99.98	2.75E-01	2.75E-01	-2.25E-02	1.26E-01
	1312.10	97.50	3.50E-01		1.18E-01	1.60E-01
CR-51	320.08	9.83	1.14E+00	1.14E+00	-3.25E-01	5.42E-01
MN-54	834.83	99.97	8.44E-02	8.44E-02	-2.66E-02	3.95E-02
CO-56	846.75	99.96	9.34E-02	9.34E-02	5.47E-04	4.33E-02
	1037.75	14.03	6.78E-01		-3.08E-01	3.10E-01
	1238.25	67.00	2.14E-01		1.01E-01	1.00E-01
	1771.40	15.51	5.40E-01		-4.16E-02	2.32E-01
	2598.48	16.90	2.44E-01		-4.38E-02	8.65E-02
CO-57	122.06	85.51	5.72E-02	5.72E-02	-2.27E-02	2.77E-02
	136.48	10.60	4.67E-01		-6.24E-02	2.26E-01
CO-58	810.76	99.40	9.60E-02	9.60E-02	1.32E-02	4.46E-02
FE-59	1099.22	56.50	2.20E-01	2.20E-01	1.62E-02	1.01E-01
	1291.56	43.20	2.63E-01		-1.15E-01	1.18E-01
CO-60	1173.22	100.00	8.41E-02	7.94E-02	-1.53E-02	3.87E-02
	1332.49	100.00	7.94E-02		-8.54E-03	3.60E-02
ZN-65	1115.52	50.75	1.85E-01	1.85E-01	-3.64E-04	8.54E-02
GA-67	93.31	35.70	1.73E+02	1.73E+02	1.27E+02	8.45E+01
	208.95	2.24	2.65E+03		2.88E+03	1.28E+03
	300.22	16.00	3.75E+02		1.37E+02	1.80E+02
SE-75	121.11	16.70	3.30E-01	9.41E-02	1.89E-02	1.60E-01
	136.00	59.20	9.41E-02		-1.58E-02	4.56E-02
	264.65	59.80	9.93E-02		-2.14E-02	4.75E-02
	279.53	25.20	2.37E-01		6.63E-02	1.13E-01
	400.65	11.40	6.41E-01		2.84E-01	3.05E-01
RB-82	776.52	13.00	1.24E+00	1.24E+00	1.29E-02	5.74E-01
RB-83	520.41	46.00	1.48E-01	1.48E-01	2.57E-02	6.90E-02
	529.64	30.30	2.04E-01		-8.06E-02	9.42E-02
	552.65	16.40	4.55E-01		-1.07E-01	2.13E-01
KR-85	513.99	0.43	1.57E+01	1.57E+01	-5.65E+00	7.44E+00
SR-85	513.99	99.27	9.66E-02	9.66E-02	-3.48E-02	4.58E-02
Y-88	898.02	93.40	9.22E-02	6.47E-02	1.13E-02	4.25E-02
	1836.01	99.38	6.47E-02		1.02E-02	2.68E-02
NB-93M	16.57	9.43	5.41E+03	5.41E+03	-9.32E+03	2.63E+03
NB-94	702.63	100.00	7.23E-02	7.11E-02	1.35E-02	3.40E-02
	871.10	100.00	7.11E-02		1.82E-02	3.29E-02
+ NB-95	765.79	* 99.81	2.66E-01	2.66E-01	1.03E-01	1.28E-01
NB-95M	235.69	25.00	1.58E+02	1.58E+02	-1.40E+03	7.68E+01
ZR-95	724.18	43.70	2.76E-01	1.67E-01	5.89E-03	1.31E-01
	756.72	55.30	1.67E-01		-5.98E-02	7.77E-02

Analysis Report for 1510087-07
CP5004S09-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
MO-99	181.06	6.20	3.07E+03	2.06E+03	-9.27E+01	1.48E+03	
	739.58	12.80	2.06E+03		-4.75E+01	9.64E+02	
	778.00	4.50	5.15E+03		-7.11E+02	2.38E+03	
+ RU-103	497.08	*	89.00	8.45E-02	8.45E-02	5.61E-02	3.89E-02
	RU-106	621.84	9.80	6.80E-01	6.80E-01	-1.22E-01	3.18E-01
	AG-108M	433.93	89.90	5.50E-02	5.50E-02	8.37E-03	2.58E-02
614.37		90.40	7.78E-02		3.34E-03	3.67E-02	
722.95		90.50	7.43E-02		-8.13E-03	3.47E-02	
CD-109	88.03	*	3.72	2.00E+00	2.00E+00	1.39E+00	9.80E-01
	AG-110M	657.75	93.14	7.64E-02	7.64E-02	4.04E-02	3.57E-02
		677.61	10.53	6.78E-01		-3.09E-01	3.17E-01
706.67		16.46	4.77E-01		8.39E-02	2.24E-01	
	763.93	21.98	3.73E-01		-4.50E-01	1.75E-01	
	884.67	71.63	1.19E-01		5.58E-02	5.55E-02	
	1384.27	23.94	3.41E-01		4.40E-02	1.54E-01	
CD-113M	263.70	0.02	2.09E+02	2.09E+02	-4.85E+01	9.97E+01	
SN-113	255.12	1.93	3.20E+00	1.04E-01	-8.08E-01	1.53E+00	
	391.69	64.90	1.04E-01		6.55E-02	4.95E-02	
TE123M	159.00	84.10	7.00E-02	7.00E-02	-6.46E-03	3.39E-02	
SB-124	602.71	97.87	9.99E-02	9.99E-02	-9.72E-04	4.71E-02	
	645.85	7.26	1.36E+00		7.13E-01	6.38E-01	
	722.78	11.10	8.81E-01		-9.65E-02	4.11E-01	
	1691.02	49.00	1.88E-01		6.75E-02	8.15E-02	
I-125	35.49	6.49	5.59E+00	5.59E+00	-5.75E-01	2.71E+00	
SB-125	176.33	6.89	7.44E-01	1.80E-01	1.71E-01	3.59E-01	
	427.89	29.33	1.80E-01		-6.27E-02	8.46E-02	
	463.38	10.35	6.62E-01		5.22E-01	3.15E-01	
	600.56	17.80	3.83E-01		4.55E-02	1.80E-01	
	635.90	11.32	5.83E-01		4.71E-02	2.73E-01	
SB-126	414.70	83.30	3.91E-01	3.91E-01	2.09E-02	1.84E-01	
	666.33	99.60	3.94E-01		-7.36E-02	1.84E-01	
	695.00	99.60	4.53E-01		-1.09E-02	2.13E-01	
	720.50	53.80	7.02E-01		-1.33E-01	3.25E-01	
SN-126	87.57	*	37.00	1.91E-01	1.91E-01	1.33E-01	9.38E-02
SB-127	473.00	25.00	6.88E+01	6.70E+01	-5.88E+01	3.21E+01	
	685.20	35.70	6.70E+01		-1.20E+01	3.14E+01	
	783.80	14.70	1.75E+02		2.13E+01	8.18E+01	
I-129	29.78	57.00	1.22E+00	1.22E+00	2.54E-01	5.91E-01	
	33.60	13.20	2.44E+00		-7.37E-01	1.18E+00	
	39.58	7.52	2.12E+00		-2.53E-02	1.03E+00	
I-131	284.30	6.05	1.29E+01	1.06E+00	-5.21E+00	6.14E+00	
	364.48	81.20	1.06E+00		-7.83E-02	5.03E-01	
	636.97	7.26	1.43E+01		-1.52E+00	6.70E+00	
	722.89	1.80	6.21E+01		-6.80E+00	2.90E+01	
TE-132	49.72	13.10	6.05E+02	6.03E+01	-8.69E+01	2.93E+02	
	228.16	88.00	6.03E+01		4.81E+01	2.90E+01	
BA-133	81.00	33.00	1.24E-01	7.44E-02	3.59E-02	6.01E-02	
	302.84	17.80	3.18E-01		-1.64E-01	1.52E-01	
	356.01	60.00	7.44E-02		-1.49E-02	3.50E-02	
I-133	529.87	86.30	1.19E+10	1.19E+10	-4.22E+09	5.49E+09	
XE-133	81.00	38.00	7.99E+00	7.99E+00	2.31E+00	3.86E+00	
CS-134	563.23	8.38	7.15E-01	8.22E-02	3.32E-01	3.35E-01	
	569.32	15.43	3.87E-01		1.06E-01	1.81E-01	

Analysis Report for 1510087-07
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)		
CS-134	604.70	97.60	8.22E-02	8.22E-02	4.02E-05	3.90E-02		
	795.84	85.40	9.35E-02		2.97E-02	4.38E-02		
	801.93	8.73	8.55E-01		-1.13E-01	3.99E-01		
CS-135	268.24	16.00	3.61E-01	3.61E-01	-1.32E-02	1.74E-01		
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20		
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20		
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20		
CS-136	153.22	7.46	3.78E+00	4.29E-01	5.18E-01	1.83E+00		
	163.89	4.61	5.91E+00		-8.07E-01	2.86E+00		
	176.55	13.56	2.08E+00		1.02E+00	1.01E+00		
	273.65	12.66	2.17E+00		-2.98E+00	1.03E+00		
	340.57	48.50	7.43E-01		-4.97E-02	3.56E-01		
	818.50	99.70	4.29E-01		2.49E-01	2.01E-01		
	1048.07	79.60	5.78E-01		-1.13E-02	2.68E-01		
	1235.34	19.70	3.04E+00		1.66E+00	1.42E+00		
	CS-137	661.65	85.12		7.74E-02	7.74E-02	4.24E-04	3.62E-02
	LA-138	788.74	34.00		2.22E-01	7.83E-02	1.19E-01	1.04E-01
1435.80		66.00	7.83E-02	6.28E-03	3.33E-02			
CE-139	165.85	80.35	7.10E-02	7.10E-02	-1.57E-02	3.43E-02		
BA-140	162.64	6.70	4.28E+00	1.14E+00	1.31E+00	2.07E+00		
	304.84	4.50	7.02E+00		4.14E-01	3.35E+00		
	423.70	3.20	9.72E+00		1.87E+00	4.58E+00		
	437.55	2.00	1.55E+01		5.42E+00	7.30E+00		
	537.32	25.00	1.14E+00		-5.45E-03	5.30E-01		
LA-140	328.77	20.50	1.72E+00	4.30E-01	1.16E+00	8.21E-01		
	487.03	45.50	6.78E-01		-1.35E-01	3.17E-01		
	815.85	23.50	1.72E+00		-6.33E-01	7.99E-01		
	1596.49	95.49	4.30E-01		1.87E-02	1.90E-01		
CE-141	145.44	48.40	2.09E-01	2.09E-01	1.03E-01	1.02E-01		
CE-143	57.36	11.80	5.67E+06	2.36E+06	-6.33E+06	2.73E+06		
	293.26	42.00	2.36E+06		-8.79E+05	1.14E+06		
	664.55	5.20	1.77E+07		2.01E+06	8.28E+06		
CE-144	133.54	10.80	4.75E-01	4.75E-01	-7.88E-02	2.30E-01		
PM-144	476.78	42.00	1.40E-01	7.23E-02	1.07E-02	6.60E-02		
	618.01	98.60	7.23E-02		-1.72E-02	3.40E-02		
	696.49	99.49	7.77E-02		-5.02E-03	3.65E-02		
PM-145	36.85	21.70	9.92E-01	5.10E-01	3.35E-01	4.81E-01		
	37.36	39.70	5.10E-01		1.72E-01	2.47E-01		
	42.30	15.10	8.06E-01		2.42E-01	3.91E-01		
	72.40	2.31	2.06E+00		-9.65E-01	1.00E+00		
PM-146	453.90	39.94	1.28E-01	1.28E-01	4.56E-02	5.98E-02		
	735.90	14.01	4.99E-01		-1.71E-01	2.33E-01		
	747.13	13.10	5.09E-01		-1.05E-01	2.37E-01		
ND-147	91.11	28.90	1.68E+00	1.68E+00	9.37E-01	8.21E-01		
	531.02	13.10	2.90E+00		-8.30E-01	1.34E+00		
PM-149	285.90	3.10	4.58E+04	4.58E+04	2.30E+04	2.19E+04		
EU-152	121.78	20.50	2.20E-01	2.20E-01	-8.76E-02	1.07E-01		
	244.69	5.40	1.00E+00		-2.33E+00	4.81E-01		
	344.27	19.13	2.57E-01		-5.47E-02	1.22E-01		
	778.89	9.20	6.84E-01		-3.57E-02	3.16E-01		
	964.01	10.40	9.21E-01		4.35E-01	4.33E-01		
	1085.78	7.22	1.02E+00		-1.62E-01	4.66E-01		
	1112.02	9.60	8.83E-01		3.80E-01	4.08E-01		

Analysis Report for 1510087-07
CP5004S09-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	1407.95	14.94	5.00E-01	2.20E-01	1.28E-01	2.24E-01
GD-153	97.43	31.30	1.57E-01	1.57E-01	6.61E-02	7.62E-02
	103.18	22.20	2.24E-01		-2.48E-02	1.09E-01
EU-154	123.07	40.50	1.14E-01	1.14E-01	5.41E-02	5.53E-02
	723.30	19.70	3.44E-01		-3.76E-02	1.60E-01
	873.19	11.50	5.96E-01		-8.26E-02	2.75E-01
	996.32	10.30	6.67E-01		-1.29E-01	3.05E-01
	1004.76	17.90	4.93E-01		2.55E-01	2.30E-01
	1274.45	35.50	2.27E-01		-1.17E-02	1.03E-01
+ EU-155	86.50	* 30.90	2.32E-01	2.32E-01	1.61E-01	1.14E-01
	105.30	* 20.70	2.60E-01		1.33E-01	1.27E-01
EU-156	811.77	10.40	2.88E+00	2.88E+00	2.83E-01	1.34E+00
	1153.47	7.20	6.27E+00		6.22E-01	2.94E+00
	1230.71	8.90	4.71E+00		-1.46E+00	2.18E+00
HO-166M	184.41	72.60	8.89E-02	8.89E-02	4.97E-04	4.33E-02
	280.45	29.60	1.67E-01		4.69E-02	7.99E-02
	410.94	11.10	5.26E-01		2.53E-01	2.50E-01
	711.69	54.10	1.33E-01		7.83E-02	6.26E-02
TM-171	66.72	0.14	3.71E+01	3.71E+01	1.31E+01	1.80E+01
HF-172	81.75	4.52	9.13E-01	4.26E-01	2.69E-01	4.42E-01
	125.81	11.30	4.26E-01		-5.23E-01	2.07E-01
LU-172	181.53	20.60	7.24E+00	3.67E+00	-5.08E+00	3.50E+00
	810.06	16.63	1.22E+01		1.67E+00	5.64E+00
	912.12	15.25	2.91E+01		7.65E+01	1.40E+01
	1093.66	62.50	3.67E+00		-7.89E-01	1.69E+00
LU-173	100.72	5.24	8.73E-01	2.86E-01	2.41E-02	4.24E-01
	272.11	21.20	2.86E-01		1.23E-01	1.37E-01
HF-175	343.40	84.00	7.89E-02	7.89E-02	-3.47E-02	3.73E-02
LU-176	88.34	13.30	4.79E-01	5.30E-02	5.77E-01	2.35E-01
	201.83	86.00	6.37E-02		3.75E-02	3.08E-02
	306.78	94.00	5.30E-02		-1.50E-02	2.52E-02
TA-182	67.75	41.20	1.43E-01	1.43E-01	-3.75E-02	6.94E-02
	1121.30	34.90	4.55E-01		6.54E-01	2.16E-01
	1189.05	16.23	6.18E-01		-7.07E-02	2.84E-01
	1221.41	26.98	4.25E-01		-9.34E-02	1.97E-01
	1231.02	11.44	1.00E+00		-5.08E-01	4.63E-01
IR-192	308.46	29.68	2.22E-01	1.46E-01	-4.80E-02	1.05E-01
	468.07	48.10	1.46E-01		-2.33E-02	6.85E-02
HG-203	279.19	77.30	1.08E-01	1.08E-01	1.47E-02	5.18E-02
BI-207	569.67	97.72	5.94E-02	5.94E-02	1.63E-02	2.78E-02
	1063.62	74.90	1.04E-01		1.86E-02	4.78E-02
+ TL-208	583.14	* 30.22	3.24E-01	1.11E-01	1.26E+00	1.56E-01
	860.37	* 4.48	2.26E+00		1.17E+00	1.07E+00
	2614.66	* 35.85	1.11E-01		9.06E-01	4.32E-02
BI-210M	262.00	45.00	1.10E-01	1.10E-01	3.61E-03	5.27E-02
	300.00	23.00	2.55E-01		9.31E-02	1.22E-01
+ PB-210	46.50	* 4.25	3.89E+00	3.89E+00	2.28E+00	1.91E+00
PB-211	404.84	2.90	1.95E+00	1.95E+00	3.31E-01	9.22E-01
	831.96	2.90	2.68E+00		9.28E-01	1.25E+00
+ BI-212	727.17	* 11.80	6.57E-01	6.57E-01	9.23E-01	3.09E-01
	1620.62	2.75	2.75E+00		-2.65E-01	1.22E+00
+ PB-212	238.63	* 44.60	3.27E-01	3.27E-01	1.27E+00	1.61E-01
	300.09	3.41	1.72E+00		6.28E-01	8.24E-01

Analysis Report for 1510087-07
CP5004S09-10

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	BI-214	609.31 *		46.30	1.89E-01	1.89E-01	1.01E+00	9.02E-02
		1120.29 *		15.10	8.96E-01		1.18E+00	4.27E-01
		1764.49 *		15.80	6.43E-01		1.27E+00	2.94E-01
		2204.22 *		4.98	1.37E+00		8.11E-01	5.92E-01
+	PB-214	295.21 *		19.19	4.49E-01	2.07E-01	8.92E-01	2.18E-01
		351.92 *		37.19	2.07E-01		1.16E+00	1.00E-01
	RN-219	401.80		6.50	9.23E-01	9.23E-01	1.00E-01	4.39E-01
	RA-223	323.87		3.88	1.24E+00	1.24E+00	4.55E-02	5.86E-01
	RA-224	240.98		3.95	2.87E+00	2.87E+00	1.13E+01	1.41E+00
	RA-225	40.00		31.00	2.28E+00	2.28E+00	-2.71E-02	1.10E+00
+	RA-226	186.21 *		3.28	2.57E+00	2.57E+00	4.38E+00	1.26E+00
	TH-227	50.10		8.40	9.00E-01	6.56E-01	-1.29E-01	4.37E-01
		236.00		11.50	6.56E-01		-5.80E+00	3.19E-01
		256.20		6.30	7.91E-01		-2.40E-01	3.79E-01
+	AC-228	338.32 *		11.40	6.37E-01	6.37E-01	2.00E+00	3.07E-01
		911.07 *		27.70	7.40E-01		1.47E+00	3.60E-01
		969.11 *		16.60	6.73E-01		1.17E+00	3.20E-01
	TH-230	48.44		16.90	4.96E-01	4.96E-01	-3.26E-01	2.41E-01
		62.85		4.60	1.22E+00		9.18E-01	5.95E-01
		67.67		0.37	1.31E+01		-3.44E+00	6.35E+00
	PA-231	283.67		1.60	2.93E+00	2.45E+00	-1.18E+00	1.39E+00
		302.67		2.30	2.45E+00		-1.26E+00	1.17E+00
+	TH-231	25.64		14.70	1.41E+01	1.02E+00	-3.15E+00	6.83E+00
		84.21 *		6.40	1.02E+00		5.14E-01	4.99E-01
	PA-233	311.98		38.60	2.92E-01	2.92E-01	2.00E-01	1.38E-01
	PA-234	131.20		20.40	2.49E-01	2.49E-01	4.58E-02	1.21E-01
		733.99		8.80	8.20E-01		1.47E-01	3.84E-01
		946.00		12.00	5.82E-01		-1.01E-01	2.68E-01
	PA-234M	1001.03		0.92	9.01E+00	9.01E+00	-1.69E-01	4.19E+00
	TH-234	63.29		3.80	1.47E+00	1.47E+00	1.10E+00	7.15E-01
	U-235	143.76		10.50	4.75E-01	4.75E-01	8.01E-02	2.30E-01
		163.35		4.70	1.04E+00		3.19E-01	5.05E-01
		205.31		4.70	1.10E+00		-2.25E-01	5.33E-01
	NP-237	86.50 *		12.60	5.61E-01	5.61E-01	3.91E-01	2.76E-01
	NP-239	106.10		22.70	3.05E+03	3.05E+03	1.91E+03	1.48E+03
		228.18		10.70	7.09E+03		5.66E+03	3.41E+03
		277.60		14.10	5.43E+03		2.16E+03	2.60E+03
	AM-241	59.54		35.90	1.47E-01	1.47E-01	7.50E-03	7.10E-02
	AM-243	74.67		66.00	9.98E-02	9.98E-02	-1.88E-01	4.89E-02
+	CM-243	209.75 *		3.29	2.13E+00	4.16E-01	1.48E+00	1.04E+00
		228.14		10.60	4.87E-01		3.89E-01	2.34E-01
		277.60 *		14.00	4.16E-01		2.04E-01	2.00E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

Analysis Report for 1510087-07
CP5004S09-10

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP5004S09-10

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	2	2	137
9:	514	1157	1131	473	496	1765	376	143
17:	139	126	105	129	111	119	125	114
25:	108	100	103	108	128	112	113	113
33:	120	103	108	122	119	128	115	135
41:	125	124	103	133	135	145	204	134
49:	123	116	117	123	103	105	98	75
57:	79	89	115	98	107	113	147	163
65:	122	133	118	130	113	126	136	110
73:	138	151	408	218	458	357	113	101
81:	123	86	90	148	134	104	207	192
89:	104	196	124	96	238	172	87	77
97:	64	84	76	86	57	79	68	90
105:	94	87	79	67	73	69	87	81
113:	80	83	67	88	69	73	83	60
121:	76	69	70	69	71	64	67	89
129:	112	77	74	72	77	73	62	68
137:	73	51	63	61	62	68	71	77
145:	72	73	74	62	60	71	70	58
153:	54	94	71	64	67	70	54	62
161:	53	62	68	53	64	50	67	52
169:	56	58	72	41	49	50	53	55
177:	71	55	56	50	54	66	63	52
185:	77	193	129	48	44	54	48	52
193:	58	51	43	40	50	52	45	57
201:	62	64	43	59	49	51	47	49
209:	87	71	52	37	50	46	48	51
217:	40	50	43	58	39	52	54	30
225:	34	44	53	45	40	30	48	53
233:	54	30	49	46	54	265	606	99
241:	91	138	56	38	36	39	41	37
249:	24	32	30	45	41	26	38	44
257:	26	34	35	31	43	37	28	22
265:	30	31	45	28	41	69	55	27
273:	27	33	34	28	40	45	18	33
281:	24	26	24	33	18	27	34	44
289:	26	29	26	24	29	43	177	125
297:	29	33	31	57	38	29	34	37
305:	33	30	21	31	15	25	23	28
313:	17	28	18	19	32	21	23	27
321:	30	20	24	23	26	18	24	57
329:	36	31	26	31	28	19	17	25
337:	29	126	102	24	29	21	17	15
345:	20	33	33	17	28	25	88	328
353:	102	17	16	19	11	19	21	29
361:	25	15	19	25	31	20	21	26

369: 23 16 29 23 19 22 19 25

Sample Title: CP5004S09-10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	16	24	18	28	25	17	19	18
385:	23	23	28	14	17	20	25	24
393:	30	16	16	24	17	27	20	23
401:	24	29	37	17	28	17	14	17
409:	36	36	18	12	17	24	16	15
417:	22	22	19	15	11	22	19	18
425:	18	16	15	23	17	15	20	24
433:	16	10	12	15	17	24	20	19
441:	12	17	15	16	21	18	17	12
449:	12	11	18	20	10	20	16	9
457:	12	9	20	13	21	25	45	21
465:	21	27	10	11	14	14	13	14
473:	15	12	11	27	20	15	12	15
481:	21	14	13	20	11	17	18	12
489:	16	19	14	16	11	9	8	12
497:	16	21	5	10	14	10	10	19
505:	14	4	15	7	24	59	91	55
513:	15	16	12	18	8	11	13	17
521:	16	9	11	11	13	16	12	11
529:	10	7	12	14	11	15	13	10
537:	9	13	9	7	12	17	18	9
545:	10	18	8	15	20	13	17	15
553:	15	13	18	14	17	14	8	11
561:	9	21	9	22	12	14	9	13
569:	15	20	14	9	13	12	11	10
577:	10	14	14	13	13	46	158	91
585:	19	15	11	11	8	11	9	12
593:	16	14	8	15	10	15	12	13
601:	13	15	10	13	11	14	12	46
609:	181	141	18	9	15	13	17	12
617:	11	15	11	12	7	14	13	9
625:	7	9	12	7	12	15	11	10
633:	14	12	7	7	7	14	14	9
641:	11	8	22	13	11	4	8	11
649:	12	12	3	16	16	11	8	7
657:	9	9	13	13	13	10	3	12
665:	10	14	13	10	5	5	15	12
673:	5	8	11	5	12	13	7	13
681:	17	15	12	14	7	8	8	9
689:	8	11	8	16	11	10	7	18
697:	15	7	15	13	12	11	13	5
705:	12	9	11	13	16	9	9	14
713:	5	13	7	5	10	5	8	3
721:	7	11	10	11	11	13	45	27
729:	15	7	9	15	6	8	14	11
737:	12	6	11	12	11	9	11	9
745:	9	5	9	14	4	10	12	7
753:	7	7	11	11	6	6	9	13
761:	8	4	14	9	11	19	11	27
769:	24	6	10	13	11	7	8	6
777:	7	5	13	5	6	8	6	9
785:	17	12	10	7	11	10	6	10
793:	4	15	20	13	8	7	9	11

801: 8 8 8 11 10 14 10 5

Sample Title: CP5004S09-10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	15	10	4	10	4	7	12	15
817:	6	6	7	17	8	8	7	6
825:	11	13	4	5	9	13	8	5
833:	15	6	15	15	7	9	13	14
841:	12	6	11	5	7	9	9	7
849:	7	5	9	8	6	5	6	10
857:	7	6	10	17	25	9	10	10
865:	5	10	5	6	10	6	7	10
873:	9	6	8	3	6	9	7	11
881:	6	14	7	11	7	7	12	4
889:	5	4	4	6	9	11	9	7
897:	4	9	5	3	12	6	10	16
905:	10	4	9	4	8	42	122	56
913:	7	5	8	7	7	3	6	8
921:	13	7	5	3	4	9	4	9
929:	9	5	9	7	13	13	10	6
937:	8	9	6	7	4	9	3	7
945:	6	6	9	3	11	8	8	3
953:	8	9	3	3	7	8	6	9
961:	7	8	11	16	23	8	12	33
969:	65	28	6	6	6	4	3	5
977:	11	5	6	6	4	7	6	6
985:	5	4	6	6	5	7	8	8
993:	4	4	5	7	8	6	5	6
1001:	12	10	13	7	10	9	5	5
1009:	9	9	8	5	7	12	5	9
1017:	10	6	4	8	5	6	2	6
1025:	5	9	5	6	10	12	8	5
1033:	8	5	4	4	6	7	8	6
1041:	11	7	7	7	6	5	13	7
1049:	6	6	11	8	9	9	8	8
1057:	7	3	9	5	8	8	12	4
1065:	5	4	7	4	8	4	3	4
1073:	7	9	8	2	4	8	7	6
1081:	5	6	1	6	5	10	5	6
1089:	10	4	6	9	4	5	10	7
1097:	4	10	5	4	5	5	4	4
1105:	6	9	4	2	9	6	10	6
1113:	8	7	5	8	5	13	16	41
1121:	28	12	10	7	6	8	5	10
1129:	9	4	7	11	6	8	7	8
1137:	11	4	6	8	8	7	6	9
1145:	5	4	5	9	5	12	7	6
1153:	9	15	15	8	8	8	13	6
1161:	4	9	5	11	8	11	9	7
1169:	7	7	11	7	4	3	7	6
1177:	5	10	9	9	10	9	12	7
1185:	7	10	8	5	5	4	3	8
1193:	8	5	11	5	5	6	6	11
1201:	14	5	18	8	5	3	9	7
1209:	8	6	8	8	12	7	1	6
1217:	11	4	9	6	8	11	8	9
1225:	8	11	8	4	15	9	4	9

1233: 6 7 12 10 16 12 9 6

Sample Title: CP5004S09-10

Channel	1	2	3	4	5	6	7	8	9
1241:	7	9	7	10	7	11	6	11	
1249:	8	5	10	8	10	6	7	6	
1257:	2	5	6	5	5	14	3	4	
1265:	4	7	11	6	6	6	5	9	
1273:	4	7	3	5	3	3	7	6	
1281:	7	5	6	4	5	6	9	2	
1289:	3	8	4	2	1	5	5	2	
1297:	4	4	1	4	6	7	5	8	
1305:	2	3	1	6	5	6	3	9	
1313:	4	5	5	4	4	2	7	5	
1321:	4	2	4	5	0	4	7	4	
1329:	3	4	1	2	11	6	5	5	
1337:	4	3	5	2	2	8	4	2	
1345:	8	1	4	1	4	2	4	3	
1353:	1	4	7	1	1	3	2	3	
1361:	3	1	1	5	0	6	6	3	
1369:	2	6	3	3	4	4	5	5	
1377:	6	8	9	2	4	2	4	4	
1385:	4	4	5	2	1	2	2	3	
1393:	3	1	4	3	1	2	3	2	
1401:	3	3	2	3	4	1	3	4	
1409:	5	6	3	3	2	0	1	0	
1417:	5	1	3	2	3	5	3	3	
1425:	0	1	3	2	3	3	4	0	
1433:	0	1	4	0	0	6	1	1	
1441:	1	3	2	2	3	3	2	7	
1449:	3	2	2	2	2	5	1	5	
1457:	4	15	97	277	260	90	13	1	
1465:	0	2	3	3	5	1	1	2	
1473:	2	2	1	0	2	2	3	0	
1481:	4	2	1	2	3	0	5	2	
1489:	1	1	4	1	2	2	5	3	
1497:	2	1	0	4	1	2	1	2	
1505:	5	0	7	8	8	5	5	0	
1513:	5	1	1	3	1	1	0	0	
1521:	3	2	2	3	0	2	6	1	
1529:	2	1	3	1	1	1	1	3	
1537:	2	1	3	2	0	2	2	2	
1545:	1	1	3	1	3	3	2	2	
1553:	2	2	0	0	4	2	1	2	
1561:	1	1	2	0	2	1	0	3	
1569:	1	3	1	3	1	2	1	1	
1577:	1	0	1	1	1	2	2	1	
1585:	0	5	7	13	4	3	4	10	
1593:	1	1	1	0	2	0	4	0	
1601:	0	2	0	1	0	1	2	2	
1609:	2	1	1	1	2	2	4	2	
1617:	5	1	2	3	3	1	4	1	
1625:	2	3	2	0	2	5	7	1	
1633:	1	4	1	3	2	4	2	0	
1641:	3	1	0	2	0	0	0	3	
1649:	2	1	1	1	2	2	0	2	
1657:	0	1	0	2	2	1	3	1	

1665: 2 1 1 2 2 1 0 1

Sample Title: CP5004S09-10

Channel	1	2	3	4	5	6	7	8
1673:	0	1	0	1	1	0	2	1
1681:	0	0	1	1	1	2	0	2
1689:	3	0	0	2	1	4	1	0
1697:	2	0	0	3	2	0	2	1
1705:	2	1	1	0	3	0	0	2
1713:	0	0	0	1	3	0	1	1
1721:	1	1	1	0	1	0	1	4
1729:	7	7	4	0	1	0	1	0
1737:	0	1	1	0	1	1	0	2
1745:	1	0	2	1	1	1	1	0
1753:	1	0	0	1	0	3	1	1
1761:	3	5	12	27	21	7	3	1
1769:	2	1	1	1	1	2	1	2
1777:	1	3	2	0	1	2	0	4
1785:	1	0	0	1	0	0	1	0
1793:	0	0	0	0	1	1	3	1
1801:	0	1	1	1	1	0	1	2
1809:	0	2	0	1	1	2	1	2
1817:	1	0	1	0	0	0	0	2
1825:	1	1	0	0	2	1	1	2
1833:	0	0	2	0	1	2	0	0
1841:	1	0	2	1	1	3	5	4
1849:	3	1	1	2	0	2	2	2
1857:	1	1	1	1	0	2	0	3
1865:	1	2	1	0	3	0	3	0
1873:	1	2	1	2	1	1	1	1
1881:	0	1	2	1	1	1	3	1
1889:	1	2	1	0	1	2	1	2
1897:	2	1	0	2	2	0	0	3
1905:	0	2	1	1	1	2	0	0
1913:	1	0	1	2	0	0	3	1
1921:	1	1	0	1	1	0	4	0
1929:	2	0	1	3	0	2	0	1
1937:	1	0	0	2	2	1	0	1
1945:	1	2	0	1	0	2	0	1
1953:	0	2	0	1	3	2	2	0
1961:	1	0	1	0	0	0	0	0
1969:	1	2	0	0	2	0	2	1
1977:	0	0	2	1	0	1	1	0
1985:	2	1	0	2	0	1	1	0
1993:	3	0	0	1	2	3	0	1
2001:	0	0	1	1	2	0	0	0
2009:	1	0	0	0	1	1	1	0
2017:	1	0	1	0	1	1	1	1
2025:	0	2	0	0	0	0	1	1
2033:	2	1	1	1	2	3	1	0
2041:	0	0	1	0	0	4	1	1
2049:	1	0	1	1	2	2	0	0
2057:	2	2	3	1	2	0	0	1
2065:	2	1	0	2	0	1	1	0
2073:	2	1	0	1	2	0	0	1
2081:	2	2	0	1	2	0	0	3
2089:	0	0	0	2	2	1	1	1

2097: 0 1 0 3 1 3 7 2

Sample Title: CP5004S09-10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2105:	0	1	1	3	1	0	0	3
2113:	0	0	0	1	5	4	2	1
2121:	1	1	0	1	1	3	1	0
2129:	0	1	0	0	1	1	2	1
2137:	0	1	0	3	0	0	1	0
2145:	1	1	0	1	1	1	1	0
2153:	1	0	0	2	1	1	1	1
2161:	1	0	1	0	0	0	1	1
2169:	1	1	0	0	3	2	0	0
2177:	1	2	2	2	1	0	1	1
2185:	1	2	0	1	0	0	1	0
2193:	1	0	1	1	1	0	1	1
2201:	1	7	3	5	1	0	1	0
2209:	1	1	1	1	0	0	0	1
2217:	0	0	0	2	1	0	2	0
2225:	0	0	3	1	1	0	0	2
2233:	0	0	3	1	1	1	0	1
2241:	1	1	1	1	0	0	0	0
2249:	2	0	1	0	1	0	0	2
2257:	0	1	2	3	0	0	2	1
2265:	1	1	2	0	3	3	0	2
2273:	0	1	0	0	0	0	1	1
2281:	1	0	0	0	1	1	1	1
2289:	3	0	1	2	1	1	2	3
2297:	1	1	1	0	0	0	0	2
2305:	1	1	3	0	2	2	1	0
2313:	1	1	0	0	0	1	0	0
2321:	1	1	0	0	0	0	0	2
2329:	2	0	0	0	1	0	0	1
2337:	0	2	1	0	0	3	1	1
2345:	2	1	2	3	1	1	4	1
2353:	0	3	0	1	1	1	2	1
2361:	2	2	7	2	2	3	0	0
2369:	1	1	0	2	0	1	1	1
2377:	2	2	1	0	2	1	0	3
2385:	2	1	3	1	1	1	1	0
2393:	3	2	1	1	1	0	0	2
2401:	2	1	0	2	4	0	0	2
2409:	2	1	1	0	1	0	0	0
2417:	1	0	4	0	1	0	0	0
2425:	1	2	0	2	0	1	3	1
2433:	1	2	0	1	1	0	0	0
2441:	0	1	1	1	1	1	1	4
2449:	1	0	0	2	0	0	0	2
2457:	1	0	1	0	1	0	0	0
2465:	0	1	0	0	0	0	0	1
2473:	0	1	0	2	1	0	0	0
2481:	0	0	1	0	0	0	1	0
2489:	1	2	1	1	2	1	0	2
2497:	2	1	0	0	1	0	1	1
2505:	0	0	0	0	0	0	0	1
2513:	0	1	0	0	1	0	0	0
2521:	1	0	0	0	0	0	0	0

2529: 0 0 1 0 0 0 1 1

Sample Title: CP5004S09-10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	3	1	0	1	0	1
2545:	0	0	1	0	0	0	0	0
2553:	1	0	0	1	1	1	1	0
2561:	0	0	0	0	0	0	0	0
2569:	0	0	1	0	0	1	1	0
2577:	0	1	0	0	2	0	0	0
2585:	2	0	1	0	1	1	0	0
2593:	0	0	0	1	0	0	1	0
2601:	0	0	1	0	1	0	0	0
2609:	0	1	3	14	30	27	19	8
2617:	3	0	0	1	0	1	0	0
2625:	0	0	2	1	0	0	0	0
2633:	0	0	0	0	0	0	1	1
2641:	0	0	0	0	0	0	1	0
2649:	1	0	0	0	0	0	0	0
2657:	0	0	1	1	0	0	0	0
2665:	1	0	0	0	0	0	0	2
2673:	1	1	0	0	0	1	0	0
2681:	1	1	1	1	0	0	0	0
2689:	0	0	1	1	0	1	0	1
2697:	0	0	1	0	0	0	1	0
2705:	1	0	1	0	1	0	0	0
2713:	2	2	1	0	0	0	0	0
2721:	0	0	0	0	1	0	0	0
2729:	0	0	0	1	0	0	0	2
2737:	0	0	0	0	0	1	1	1
2745:	0	0	0	0	0	1	0	1
2753:	1	0	2	0	1	0	0	0
2761:	1	0	0	0	0	0	1	0
2769:	0	0	0	0	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	1
2793:	1	0	0	0	0	1	0	0
2801:	0	0	0	0	0	1	0	0
2809:	0	0	2	1	0	0	1	0
2817:	2	0	0	0	0	1	0	0
2825:	1	0	1	1	0	0	0	0
2833:	0	0	1	0	1	0	0	0
2841:	0	1	0	0	0	0	0	0
2849:	0	0	0	1	0	0	0	0
2857:	0	0	0	0	1	1	0	0
2865:	0	1	0	0	0	1	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	0	0	0	1
2889:	0	1	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	1	0	1	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	1	0	0	0	0	2	1
2929:	0	1	1	0	0	0	1	0
2937:	1	0	0	0	0	0	2	0
2945:	0	0	0	0	0	0	0	1
2953:	0	1	0	0	0	0	0	2

2961: 1 1 0 0 0 1 0 2

Sample Title: CP5004S09-10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2969:	0	0	1	0	0	0	0	1
2977:	0	0	0	0	0	0	1	0
2985:	0	0	0	0	0	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	0	0	0	0	0	0	0
3009:	0	0	0	0	0	0	1	0
3017:	0	0	0	1	0	0	0	0
3025:	0	0	0	0	0	0	0	1
3033:	2	0	0	1	0	0	1	0
3041:	0	1	0	0	0	0	0	0
3049:	0	0	0	0	0	1	1	0
3057:	1	0	0	0	0	1	0	0
3065:	2	0	0	1	1	0	0	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	0	0	0	0	0	1
3089:	1	2	0	1	1	0	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	0	0	1	0	0	0
3113:	0	0	0	0	1	0	0	0
3121:	0	2	1	0	0	0	0	0
3129:	1	0	0	0	0	0	0	1
3137:	0	0	0	0	0	1	1	0
3145:	0	0	0	0	0	0	0	0
3153:	1	0	0	0	0	0	0	0
3161:	1	0	0	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	1
3185:	0	0	0	0	0	0	1	1
3193:	0	2	0	1	1	0	0	0
3201:	0	1	0	0	2	0	0	0
3209:	0	1	0	0	0	0	1	0
3217:	0	1	0	0	0	0	0	0
3225:	1	1	0	0	0	0	0	0
3233:	0	0	0	0	0	0	1	0
3241:	1	0	1	0	0	0	0	1
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	0	0	0	2	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	1	0	0	0
3281:	0	0	1	0	3	0	1	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	2	0	0	0	0	1	0	0
3321:	0	0	1	0	1	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	1	0	0	0
3345:	1	0	0	0	0	1	1	0
3353:	0	2	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	0	0	1	0	0
3385:	0	0	1	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0

Sample Title: CP5004S09-10

Channel	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	1	0	0	0	0
3409:	0	0	0	0	1	0	1
3417:	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0
3433:	1	1	1	0	0	0	0
3441:	0	0	0	1	0	0	0
3449:	1	0	0	1	1	0	0
3457:	0	0	0	0	0	0	0
3465:	0	0	1	0	1	0	0
3473:	0	0	0	0	0	0	0
3481:	0	0	0	0	1	0	1
3489:	0	0	0	0	1	0	0
3497:	1	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0
3513:	0	0	0	1	1	0	1
3521:	0	0	0	0	0	0	0
3529:	0	0	1	0	0	0	0
3537:	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0
3553:	0	1	0	0	1	0	1
3561:	0	0	0	0	0	0	1
3569:	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0
3585:	0	1	0	0	0	0	0
3593:	0	0	0	0	0	0	0
3601:	0	0	0	0	0	1	0
3609:	0	1	1	0	0	1	0
3617:	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	1
3633:	1	0	0	0	0	0	0
3641:	1	0	0	0	0	1	1
3649:	0	1	0	0	0	0	1
3657:	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0
3681:	1	0	0	0	0	0	1
3689:	0	0	0	0	0	2	0
3697:	0	0	0	0	0	0	1
3705:	0	0	0	0	0	0	0
3713:	1	0	0	0	0	1	0
3721:	1	0	0	1	0	0	0
3729:	0	0	0	0	1	0	0
3737:	0	0	0	0	0	0	0
3745:	0	0	0	0	1	0	1
3753:	0	1	0	0	0	1	0
3761:	0	1	0	0	0	0	2
3769:	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0
3793:	0	0	0	1	0	0	0
3801:	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	1
3817:	0	0	0	0	0	0	1

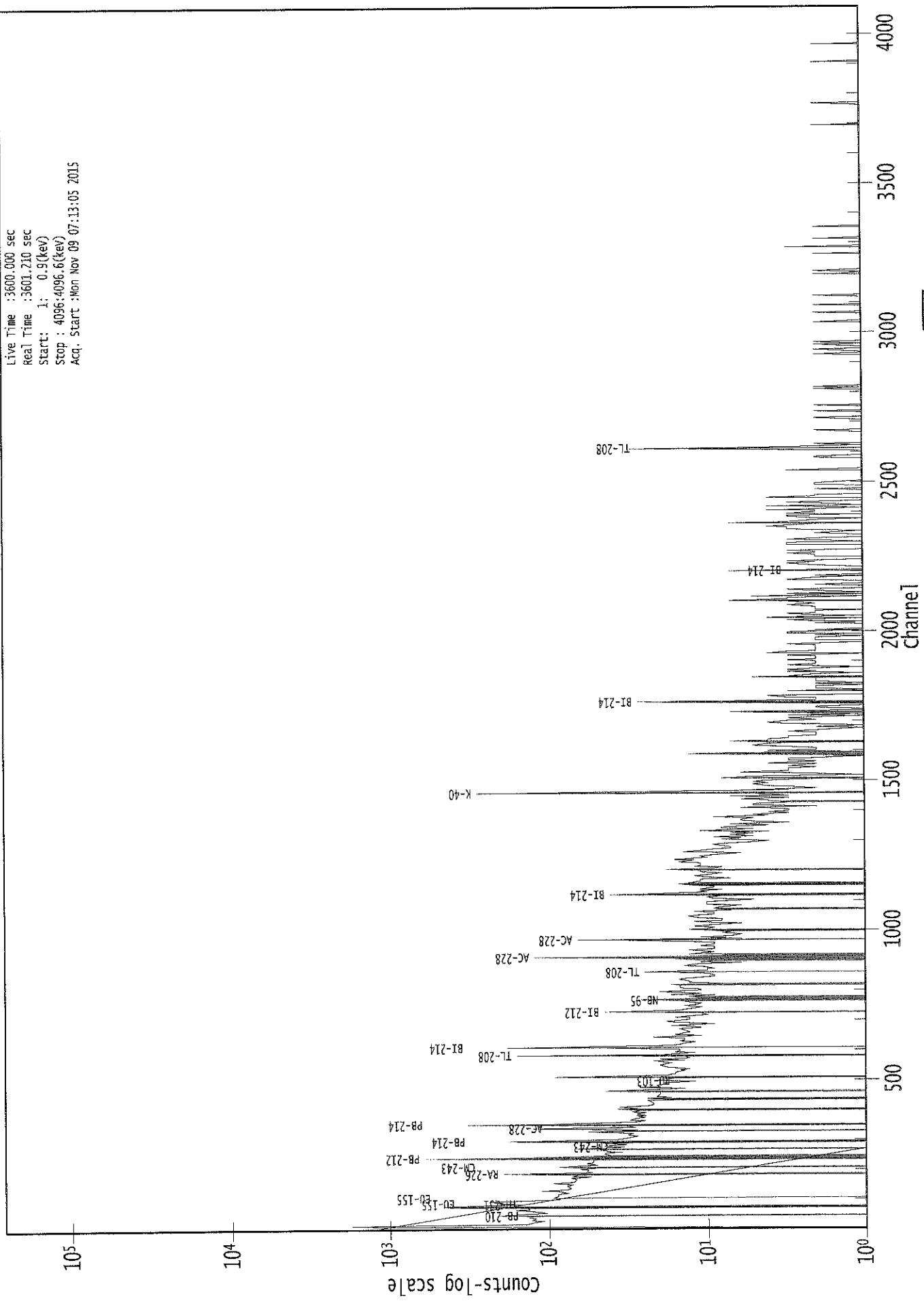
3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP5004S09-10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	1	0	0
3849:	0	0	0	0	1	0	0	0
3857:	0	0	0	0	0	0	1	0
3865:	1	0	0	0	0	0	0	0
3873:	0	0	0	1	0	0	0	0
3881:	0	0	0	0	0	0	0	1
3889:	1	0	0	0	1	0	0	1
3897:	0	0	0	0	0	0	0	0
3905:	2	0	1	0	0	0	1	0
3913:	0	0	0	0	0	1	0	1
3921:	0	0	0	0	0	0	1	0
3929:	0	0	0	0	0	0	0	0
3937:	1	0	0	0	0	0	0	0
3945:	0	0	0	0	1	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	2	0	0	0
3969:	0	0	0	0	1	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	1	0	0	0	0	1
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	1	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	1	0	0	0	1	0	1	0
4025:	0	0	0	0	1	0	1	0
4033:	0	1	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	1	0	0	0	0	0
4065:	0	0	1	0	0	1	0	0
4073:	0	0	0	0	1	0	0	0
4081:	0	0	0	0	0	0	1	0
4089:	0	0	0	0	0	0	0	1

0000029309.CNF

Live Time : 3600.000 sec
Real Time : 3601.210 sec
Start: 1: 0.5(keV)
Stop : 4096.4096.6(keV)
Acq. Start : Mon Nov 09 07:13:05 2015



ROI Type: 1

ROI Type: 2

Analysis Report for 1510087-08
CP5004S11-12

✓
1119

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-08
Sample Description : CP5004S11-12
Sample Type : SOIL

Sample Size : 5.691E+02 grams
Facility : Countroom

Sample Taken On : 10/7/2015 5:10:18PM
Acquisition Started : 11/9/2015 7:13:11AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3667.5 seconds

Dead Time : 1.84 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 15 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 11/8/2014
Efficiency Calibration Description :

Sample Number : 29310

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-08
CP5004S11-12

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 8:14:19AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096
 Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	75.92	75.18	0.0000	0.00
2	92.99	92.27	0.0000	0.00
3	164.30	163.61	0.0000	0.00
4	186.35	185.66	0.0000	0.00
5	239.51	238.85	0.0000	0.00
6	296.03	295.39	0.0000	0.00
7	339.05	338.43	0.0000	0.00
8	352.10	351.48	0.0000	0.00
9	463.48	462.92	0.0000	0.00
10	583.76	583.25	0.0000	0.00
11	609.41	608.92	0.0000	0.00
12	692.88	692.43	0.0000	0.00
13	701.00	700.56	0.0000	0.00
14	795.86	795.46	0.0000	0.00
15	826.18	825.80	0.0000	0.00
16	881.58	881.22	0.0000	0.00
17	911.55	911.21	0.0000	0.00
18	969.50	969.19	0.0000	0.00
19	986.50	986.20	0.0000	0.00
20	1004.02	1003.73	0.0000	0.00
21	1015.73	1015.45	0.0000	0.00
22	1120.89	1120.67	0.0000	0.00
23	1237.99	1237.83	0.0000	0.00
24	1280.43	1280.30	0.0000	0.00
25	1385.57	1385.49	0.0000	0.00
26	1392.71	1392.64	0.0000	0.00
27	1461.11	1461.08	0.0000	0.00
28	1509.93	1509.93	0.0000	0.00
29	1591.48	1591.53	0.0000	0.00
30	1764.80	1764.97	0.0000	0.00
31	2203.52	2203.98	0.0000	0.00
32	2615.20	2615.97	0.0000	0.00

? = Adjacent peak noted
 Errors quoted at 2.000sigma

Analysis Report for 1510087-08
CP5004S11-12

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 8:14:19AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	75.92	68 -	81	75.18	8.63E+02	165.30	2.65E+03	4.31
2	92.99	89 -	95	92.27	2.12E+02	85.17	1.11E+03	2.17
3	164.30	159 -	167	163.61	8.66E+01	72.98	7.59E+02	4.80
4	186.35	182 -	189	185.66	9.41E+01	70.20	7.56E+02	1.97
5	239.51	233 -	244	238.85	6.03E+02	89.78	7.00E+02	2.55
6	296.03	289 -	302	295.39	2.73E+02	74.04	4.81E+02	2.81
7	339.05	333 -	343	338.43	6.23E+01	63.09	4.89E+02	2.09
8	352.10	347 -	357	351.48	3.24E+02	59.73	3.05E+02	2.46
9	463.48	460 -	467	462.92	4.55E+01	31.24	1.33E+02	3.62
10	583.76	577 -	590	583.25	1.37E+02	52.41	2.41E+02	2.67
11	609.41	603 -	614	608.92	1.88E+02	49.32	2.10E+02	2.09
12	692.88	687 -	697	692.43	3.48E+01	31.00	1.08E+02	5.67
13	701.00	698 -	703	700.56	2.28E+01	17.75	4.45E+01	1.23
14	795.86	792 -	799	795.46	3.15E+01	19.18	4.11E+01	1.88
15	826.18	822 -	830	825.80	2.41E+01	21.80	5.79E+01	1.76
16	881.58	879 -	884	881.22	1.38E+01	13.75	2.63E+01	3.13
17	911.55	907 -	915	911.21	8.04E+01	27.56	6.71E+01	2.43
18	969.50	963 -	976	969.19	4.49E+01	37.84	1.36E+02	2.97
19	986.50	983 -	990	986.20	2.57E+01	18.44	3.87E+01	3.75
20	1004.02	997 -	1009	1003.73	3.72E+01	24.21	4.97E+01	6.60
21	1015.73	1009 -	1021	1015.45	3.96E+01	22.12	3.88E+01	9.70
22	1120.89	1116 -	1125	1120.67	4.71E+01	22.47	4.57E+01	2.77
23	1237.99	1233 -	1242	1237.83	2.54E+01	28.21	9.72E+01	2.90
24	1280.43	1276 -	1287	1280.30	1.98E+01	22.72	5.64E+01	7.25
25	1385.57	1381 -	1388	1385.49	9.08E+00	9.17	7.85E+00	2.83
26	1392.71	1389 -	1397	1392.64	1.54E+01	9.60	5.11E+00	1.89
27	1461.11	1456 -	1468	1461.08	2.50E+02	37.97	5.20E+01	2.96
28	1509.93	1505 -	1514	1509.93	1.15E+01	12.29	1.50E+01	5.62
29	1591.48	1585 -	1599	1591.53	1.74E+01	16.76	2.12E+01	3.02
30	1764.80	1760 -	1770	1764.97	2.60E+01	16.40	2.20E+01	3.83
31	2203.52	2200 -	2208	2203.98	9.74E+00	12.53	1.85E+01	2.11
32	2615.20	2611 -	2620	2615.97	3.60E+01	12.00	0.00E+00	2.28

Analysis Report for 1510087-08
CP5004S11-12

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 8:14:19AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	75.92	68 -	81	8.63E+02	165.30	2.65E+03	1.27E+02
2	92.99	89 -	95	2.12E+02	85.17	1.11E+03	6.58E+01
3	164.30	159 -	167	8.66E+01	72.98	7.59E+02	5.80E+01
4	186.35	182 -	189	9.41E+01	70.20	7.56E+02	5.55E+01
5	239.51	233 -	244	6.03E+02	89.78	7.00E+02	6.18E+01
6	296.03	289 -	302	2.73E+02	74.04	4.81E+02	5.45E+01
7	339.05	333 -	343	6.23E+01	63.09	4.89E+02	5.02E+01
8	352.10	347 -	357	3.24E+02	59.73	3.05E+02	3.92E+01
9	463.48	460 -	467	4.55E+01	31.24	1.33E+02	2.32E+01
10	583.76	577 -	590	1.37E+02	52.41	2.41E+02	3.85E+01
11	609.41	603 -	614	1.88E+02	49.32	2.10E+02	3.37E+01
12	692.88	687 -	697	3.48E+01	31.00	1.08E+02	2.36E+01
13	701.00	698 -	703	2.28E+01	17.75	4.45E+01	1.23E+01
14	795.86	792 -	799	3.15E+01	19.18	4.11E+01	1.28E+01
15	826.18	822 -	830	2.41E+01	21.80	5.79E+01	1.60E+01
16	881.58	879 -	884	1.38E+01	13.75	2.63E+01	9.50E+00
17	911.55	907 -	915	8.04E+01	27.56	6.71E+01	1.72E+01
18	969.50	963 -	976	4.49E+01	37.84	1.36E+02	2.91E+01
19	986.50	983 -	990	2.57E+01	18.44	3.87E+01	1.27E+01
20	1004.02	997 -	1009	3.72E+01	24.21	4.97E+01	1.72E+01
21	1015.73	1009 -	1021	3.96E+01	22.12	3.88E+01	1.50E+01
22	1120.89	1116 -	1125	4.71E+01	22.47	4.57E+01	1.46E+01
23	1237.99	1233 -	1242	2.54E+01	28.21	9.72E+01	2.17E+01
24	1280.43	1276 -	1287	1.98E+01	22.72	5.64E+01	1.72E+01
25	1385.57	1381 -	1388	9.08E+00	9.17	7.85E+00	5.68E+00
26	1392.71	1389 -	1397	1.54E+01	9.60	5.11E+00	4.54E+00
27	1461.11	1456 -	1468	2.50E+02	37.97	5.20E+01	1.73E+01
28	1509.93	1505 -	1514	1.15E+01	12.29	1.50E+01	8.42E+00
29	1591.48	1585 -	1599	1.74E+01	16.76	2.12E+01	1.19E+01
30	1764.80	1760 -	1770	2.60E+01	16.40	2.20E+01	1.06E+01
31	2203.52	2200 -	2208	9.74E+00	12.53	1.85E+01	8.93E+00

Analysis Report for 1510087-08

CP5004S11-12

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2615.20	2611 -	2620	3.60E+01	12.00	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 8:14:19AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	75.92	68 -	81	75.18	8.63E+02	165.30	2.65E+03	.....
2	92.99	89 -	95	92.27	2.12E+02	85.17	1.11E+03	GA-67
3	164.30	159 -	167	163.61	8.66E+01	72.98	7.59E+02	CS-136 U-235
4	186.35	182 -	189	185.66	9.41E+01	70.20	7.56E+02	RA-226
5	239.51	233 -	244	238.85	6.03E+02	89.78	7.00E+02	PB-212
6	296.03	289 -	302	295.39	2.73E+02	74.04	4.81E+02	PB-214
7	339.05	333 -	343	338.43	6.23E+01	63.09	4.89E+02	AC-228
8	352.10	347 -	357	351.48	3.24E+02	59.73	3.05E+02	PB-214
9	463.48	460 -	467	462.92	4.55E+01	31.24	1.33E+02	SB-125
10	583.76	577 -	590	583.25	1.37E+02	52.41	2.41E+02	TL-208
11	609.41	603 -	614	608.92	1.88E+02	49.32	2.10E+02	BI-214
12	692.88	687 -	697	692.43	3.48E+01	31.00	1.08E+02	.....
13	701.00	698 -	703	700.56	2.28E+01	17.75	4.45E+01	.....
14	795.86	792 -	799	795.46	3.15E+01	19.18	4.11E+01	CS-134
15	826.18	822 -	830	825.80	2.41E+01	21.80	5.79E+01	.....
16	881.58	879 -	884	881.22	1.38E+01	13.75	2.63E+01	.....
17	911.55	907 -	915	911.21	8.04E+01	27.56	6.71E+01	AC-228 LU-172
18	969.50	963 -	976	969.19	4.49E+01	37.84	1.36E+02	AC-228
19	986.50	983 -	990	986.20	2.57E+01	18.44	3.87E+01	.....
20	1004.02	997 -	1009	1003.73	3.72E+01	24.21	4.97E+01	EU-154
21	1015.73	1009 -	1021	1015.45	3.96E+01	22.12	3.88E+01	.....
22	1120.89	1116 -	1125	1120.67	4.71E+01	22.47	4.57E+01	SC-46 TA-182

: 00566

Analysis Report for 1510087-08
CP5004S11-12

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
								BI-214
23	1237.99	1233 -	1242	1237.83	2.54E+01	28.21	9.72E+01	CO-56
24	1280.43	1276 -	1287	1280.30	1.98E+01	22.72	5.64E+01	.....
25	1385.57	1381 -	1388	1385.49	9.08E+00	9.17	7.85E+00	.....
26	1392.71	1389 -	1397	1392.64	1.54E+01	9.60	5.11E+00	.....
27	1461.11	1456 -	1468	1461.08	2.50E+02	37.97	5.20E+01	K-40
28	1509.93	1505 -	1514	1509.93	1.15E+01	12.29	1.50E+01	.....
29	1591.48	1585 -	1599	1591.53	1.74E+01	16.76	2.12E+01	.....
30	1764.80	1760 -	1770	1764.97	2.60E+01	16.40	2.20E+01	BI-214
31	2203.52	2200 -	2208	2203.98	9.74E+00	12.53	1.85E+01	BI-214
32	2615.20	2611 -	2620	2615.97	3.60E+01	12.00	0.00E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 8:14:19AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	75.92	8.63E+02	165.30	2.13E-02	1.69E-03
2	92.99	2.12E+02	85.17	1.90E-02	1.62E-03
3	164.30	8.66E+01	72.98	1.28E-02	1.22E-03
4	186.35	9.41E+01	70.20	1.16E-02	1.15E-03
5	239.51	6.03E+02	89.78	9.39E-03	9.84E-04
6	296.03	2.73E+02	74.04	7.76E-03	8.42E-04
7	339.05	6.23E+01	63.09	6.85E-03	7.94E-04
8	352.10	3.24E+02	59.73	6.61E-03	7.80E-04
9	463.48	4.55E+01	31.24	5.07E-03	6.31E-04
10	583.76	1.37E+02	52.41	4.04E-03	4.54E-04
11	609.41	1.88E+02	49.32	3.87E-03	4.17E-04
12	692.88	3.48E+01	31.00	3.41E-03	3.23E-04
13	701.00	2.28E+01	17.75	3.37E-03	3.18E-04
14	795.86	3.15E+01	19.18	2.98E-03	2.65E-04
15	826.18	2.41E+01	21.80	2.87E-03	2.48E-04
16	881.58	1.38E+01	13.75	2.70E-03	2.17E-04
17	911.55	8.04E+01	27.56	2.61E-03	2.06E-04
18	969.50	4.49E+01	37.84	2.46E-03	1.99E-04
19	986.50	2.57E+01	18.44	2.42E-03	1.97E-04

: 00567

Analysis Report for 1510087-08
CP5004S11-12

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
20	1004.02	3.72E+01	24.21	2.38E-03	1.94E-04
21	1015.73	3.96E+01	22.12	2.35E-03	1.93E-04
22	1120.89	4.71E+01	22.47	2.14E-03	1.79E-04
23	1237.99	2.54E+01	28.21	1.95E-03	1.90E-04
24	1280.43	1.98E+01	22.72	1.89E-03	2.02E-04
25	1385.57	9.08E+00	9.17	1.76E-03	2.05E-04
26	1392.71	1.54E+01	9.60	1.76E-03	2.03E-04
27	1461.11	2.50E+02	37.97	1.68E-03	1.89E-04
28	1509.93	1.15E+01	12.29	1.64E-03	1.79E-04
29	1591.48	1.74E+01	16.76	1.56E-03	1.62E-04
30	1764.80	2.60E+01	16.40	1.43E-03	1.26E-04
31	2203.52	9.74E+00	12.53	1.21E-03	1.11E-04
32	2615.20	3.60E+01	12.00	1.07E-03	1.11E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 8:14:19AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	75.92	8.63E+02	165.30			8.63E+02	1.65E+02
2	92.99	2.12E+02	85.17	5.44E+01	8.36E+00	1.58E+02	8.56E+01
3	164.30	8.66E+01	72.98			8.66E+01	7.30E+01
4	186.35	9.41E+01	70.20	1.43E+01	7.33E+00	7.97E+01	7.06E+01
5	239.51	6.03E+02	89.78	1.09E+01	6.39E+00	5.92E+02	9.00E+01
6	296.03	2.73E+02	74.04			2.73E+02	7.40E+01
7	339.05	6.23E+01	63.09			6.23E+01	6.31E+01
8	352.10	3.24E+02	59.73	8.07E+00	5.01E+00	3.15E+02	5.99E+01
9	463.48	4.55E+01	31.24			4.55E+01	3.12E+01
10	583.76	1.37E+02	52.41			1.37E+02	5.24E+01
11	609.41	1.88E+02	49.32	5.16E+00	1.63E+00	1.83E+02	4.93E+01
12	692.88	3.48E+01	31.00			3.48E+01	3.10E+01
13	701.00	2.28E+01	17.75			2.28E+01	1.77E+01
14	795.86	3.15E+01	19.18			3.15E+01	1.92E+01
15	826.18	2.41E+01	21.80			2.41E+01	2.18E+01
16	881.58	1.38E+01	13.75			1.38E+01	1.37E+01
17	911.55	8.04E+01	27.56	1.01E+00	2.85E+00	7.94E+01	2.77E+01

Analysis Report for 1510087-08

CP5004S11-12

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
18	969.50	4.49E+01	37.84			4.49E+01	3.78E+01
19	986.50	2.57E+01	18.44			2.57E+01	1.84E+01
20	1004.02	3.72E+01	24.21			3.72E+01	2.42E+01
21	1015.73	3.96E+01	22.12			3.96E+01	2.21E+01
22	1120.89	4.71E+01	22.47			4.71E+01	2.25E+01
23	1237.99	2.54E+01	28.21			2.54E+01	2.82E+01
24	1280.43	1.98E+01	22.72			1.98E+01	2.27E+01
25	1385.57	9.08E+00	9.17			9.08E+00	9.17E+00
26	1392.71	1.54E+01	9.60			1.54E+01	9.60E+00
27	1461.11	2.50E+02	37.97			2.50E+02	3.80E+01
28	1509.93	1.15E+01	12.29			1.15E+01	1.23E+01
29	1591.48	1.74E+01	16.76			1.74E+01	1.68E+01
30	1764.80	2.60E+01	16.40	1.11E-01	9.77E-01	2.59E+01	1.64E+01
31	2203.52	9.74E+00	12.53			9.74E+00	1.25E+01
32	2615.20	3.60E+01	12.00			3.60E+01	1.20E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 8:14:19AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	75.92	8.63E+02	165.30			8.63E+02	1.65E+02
2	92.99	2.12E+02	85.17	5.44E+01	8.36E+00	1.58E+02	8.56E+01
3	164.30	8.66E+01	72.98			8.66E+01	7.30E+01
4	186.35	9.41E+01	70.20	1.43E+01	7.33E+00	7.97E+01	7.06E+01
5	239.51	6.03E+02	89.78	1.09E+01	6.39E+00	5.92E+02	9.00E+01
6	296.03	2.73E+02	74.04			2.73E+02	7.40E+01
7	339.05	6.23E+01	63.09			6.23E+01	6.31E+01
8	352.10	3.24E+02	59.73	8.07E+00	5.01E+00	3.15E+02	5.99E+01
9	463.48	4.55E+01	31.24			4.55E+01	3.12E+01
10	583.76	1.37E+02	52.41			1.37E+02	5.24E+01
11	609.41	1.88E+02	49.32	5.16E+00	1.63E+00	1.83E+02	4.93E+01
12	692.88	3.48E+01	31.00			3.48E+01	3.10E+01
13	701.00	2.28E+01	17.75			2.28E+01	1.77E+01

Analysis Report for 1510087-08

CP5004S11-12

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
14	795.86	3.15E+01	19.18			3.15E+01	1.92E+01
15	826.18	2.41E+01	21.80			2.41E+01	2.18E+01
16	881.58	1.38E+01	13.75			1.38E+01	1.37E+01
17	911.55	8.04E+01	27.56	1.01E+00	2.85E+00	7.94E+01	2.77E+01
18	969.50	4.49E+01	37.84			4.49E+01	3.78E+01
19	986.50	2.57E+01	18.44			2.57E+01	1.84E+01
20	1004.02	3.72E+01	24.21			3.72E+01	2.42E+01
21	1015.73	3.96E+01	22.12			3.96E+01	2.21E+01
22	1120.89	4.71E+01	22.47			4.71E+01	2.25E+01
23	1237.99	2.54E+01	28.21			2.54E+01	2.82E+01
24	1280.43	1.98E+01	22.72			1.98E+01	2.27E+01
25	1385.57	9.08E+00	9.17			9.08E+00	9.17E+00
26	1392.71	1.54E+01	9.60			1.54E+01	9.60E+00
27	1461.11	2.50E+02	37.97			2.50E+02	3.80E+01
28	1509.93	1.15E+01	12.29			1.15E+01	1.23E+01
29	1591.48	1.74E+01	16.76			1.74E+01	1.68E+01
30	1764.80	2.60E+01	16.40	1.11E-01	9.77E-01	2.59E+01	1.64E+01
31	2203.52	9.74E+00	12.53			9.74E+00	1.25E+01
32	2615.20	3.60E+01	12.00			3.60E+01	1.20E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.986	1460.81 *	10.67	1.84E+01	3.49E+00
GA-67	0.359	93.31 *	35.70	3.14E+02	1.39E+03
		208.95	2.24		
		300.22	16.00		
TL-208	0.838	583.14 *	30.22	1.48E+00	5.90E-01
		860.37	4.48		
		2614.66 *	35.85	1.24E+00	4.32E-01
PB-212	0.788	238.63 *	44.60	1.87E+00	3.45E-01
		300.09	3.41		
BI-214	0.981	609.31 *	46.30	1.34E+00	3.91E-01
		1120.29 *	15.10	1.92E+00	9.30E-01
		1764.49 *	15.80	1.51E+00	9.66E-01

: 00570

Analysis Report for 1510087-08
 CP5004S11-12

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.981	2204.22 *	4.98	2.14E+00	2.76E+00
PB-214	0.961	295.21 *	19.19	2.41E+00	7.06E-01
		351.92 *	37.19	1.69E+00	3.79E-01
RA-226	0.997	186.21 *	3.28	2.76E+00	5.62E+00
AC-228	0.958	338.32 *	11.40	1.05E+00	1.07E+00
		911.07 *	27.70	1.45E+00	5.19E-01
		969.11 *	16.60	1.45E+00	1.23E+00

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 Energy Tolerance : 1.000 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 8:14:19AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	75.92	2.39741E-01	9.58		
3	164.30	2.40653E-02	42.12	Tol.	CS-136 U-235
9	463.48	1.26513E-02	34.30	Tol.	SB-125
12	692.88	9.67853E-03	44.49		
13	701.00	6.32407E-03	38.98		
14	795.86	8.73932E-03	30.49	Sum	
15	826.18	6.68501E-03	45.29		
16	881.58	3.84259E-03	49.69		
19	986.50	7.12963E-03	35.92		
20	1004.02	1.03226E-02	32.57	Sum	
21	1015.73	1.09934E-02	27.95		
23	1237.99	7.05706E-03	55.53	Tol.	CO-56
24	1280.43	5.50347E-03	57.33		
25	1385.57	2.52137E-03	50.49		
26	1392.71	4.29012E-03	31.09		
28	1509.93	3.19444E-03	53.43		
29	1591.48	4.83631E-03	48.12		

Analysis Report for 1510087-08
CP5004S11-12

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.98	1460.81 *	10.67	1.84E+01	3.49E+00
GA-67	0.35	93.31 *	35.70	3.14E+02	1.39E+03
		208.95	2.24		
		300.22	16.00		
TL-208	0.83	583.14 *	30.22	1.48E+00	5.90E-01
		860.37	4.48		
		2614.66 *	35.85	1.24E+00	4.32E-01
PB-212	0.78	238.63 *	44.60	1.87E+00	3.45E-01
		300.09	3.41		
BI-214	0.98	609.31 *	46.30	1.34E+00	3.91E-01
		1120.29 *	15.10	1.92E+00	9.30E-01
		1764.49 *	15.80	1.51E+00	9.66E-01
		2204.22 *	4.98	2.14E+00	2.76E+00
PB-214	0.96	295.21 *	19.19	2.41E+00	7.06E-01
		351.92 *	37.19	1.69E+00	3.79E-01
RA-226	0.99	186.21 *	3.28	2.76E+00	5.62E+00
AC-228	0.95	338.32 *	11.40	1.05E+00	1.07E+00
		911.07 *	27.70	1.45E+00	5.19E-01
		969.11 *	16.60	1.45E+00	1.23E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

Analysis Report for 1510087-08

CP5004S11-12

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.986	1.84E+01	3.49E+00	
GA-67	0.359	3.14E+02	1.39E+03	
TL-208	0.838	1.32E+00	3.48E-01	
PB-212	0.788	1.87E+00	3.45E-01	
BI-214	0.981	1.45E+00	3.35E-01	
PB-214	0.961	1.85E+00	3.34E-01	
RA-226	0.997	2.76E+00	5.62E+00	
AC-228	0.958	1.38E+00	4.36E-01	

- ? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1510087-08
CP5004S11-12

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 8:14:19AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	75.92	2.39741E-01	9.58		
3	164.30	2.40653E-02	42.12	Tol.	CS-136 U-235
9	463.48	1.26513E-02	34.30	Tol.	SB-125
12	692.88	9.67853E-03	44.49		
13	701.00	6.32407E-03	38.98		
14	795.86	8.73932E-03	30.49	Sum	
15	826.18	6.68501E-03	45.29		
16	881.58	3.84259E-03	49.69		
19	986.50	7.12963E-03	35.92		
20	1004.02	1.03226E-02	32.57	Sum	
21	1015.73	1.09934E-02	27.95		
23	1237.99	7.05706E-03	55.53	Tol.	CO-56
24	1280.43	5.50347E-03	57.33		
25	1385.57	2.52137E-03	50.49		
26	1392.71	4.29012E-03	31.09		
28	1509.93	3.19444E-03	53.43		
29	1591.48	4.83631E-03	48.12		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
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: 00574

Analysis Report for 1510087-08
CP5004S11-12

+	BE-7	477.59	10.42	-4.08E-01	1.81E+00	1.81E+00
+	NA-22	1274.54	99.94	-1.71E-02	1.94E-01	1.94E-01
+	NA-24	1368.53	99.99	-3.31E+14	4.75E+14	7.77E+14
		2754.09	99.86	-1.08E+14		4.75E+14
+	AL-26	1808.65	99.76	6.27E-04	1.23E-01	1.23E-01
+	K-40	1460.81	*	10.67	1.84E+01	2.74E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	2.28E-02	9.23E-02	9.23E-02
		78.34	96.00	3.48E-01		1.23E-01
+	SC-46	889.25	99.98	1.10E-02	2.10E-01	2.10E-01
		1120.51	99.99	3.06E-01		3.31E-01
+	V-48	983.52	99.98	1.07E-03	7.95E-01	8.34E-01
		1312.10	97.50	3.74E-01		7.95E-01
+	CR-51	320.08	9.83	1.12E-01	2.87E+00	2.87E+00
+	MN-54	834.83	99.97	2.23E-02	1.71E-01	1.71E-01
+	CO-56	846.75	99.96	-4.07E-02	1.95E-01	1.95E-01
		1037.75	14.03	2.57E-01		1.75E+00
		1238.25	67.00	3.22E-01		5.55E-01
		1771.40	15.51	-8.59E-02		1.44E+00
		2598.48	16.90	4.83E-02		8.97E-01
+	CO-57	122.06	85.51	-1.60E-02	1.17E-01	1.17E-01
		136.48	10.60	-6.05E-01		9.93E-01
+	CO-58	810.76	99.40	1.10E-02	2.26E-01	2.26E-01
+	FE-59	1099.22	56.50	4.20E-01	6.32E-01	6.32E-01
		1291.56	43.20	5.68E-02		7.25E-01
+	CO-60	1173.22	100.00	5.85E-02	2.20E-01	2.20E-01
		1332.49	100.00	3.92E-02		2.24E-01
+	ZN-65	1115.52	50.75	2.94E-02	3.95E-01	3.95E-01
+	GA-67	93.31	*	35.70	3.14E+02	2.73E+02
		208.95	2.24	1.48E+03		5.32E+03
		300.22	16.00	-8.81E+01		8.41E+02
+	SE-75	121.11	16.70	-2.42E-01	2.00E-01	6.54E-01
		136.00	59.20	-7.68E-02		2.00E-01
		264.65	59.80	-3.28E-01		2.09E-01
		279.53	25.20	8.38E-02		5.71E-01
		400.65	11.40	3.85E-01		1.37E+00
+	RB-82	776.52	13.00	-7.35E-01	2.79E+00	2.79E+00
+	RB-83	520.41	46.00	3.06E-02	3.63E-01	3.63E-01
		529.64	30.30	-2.53E-02		5.73E-01
		552.65	16.40	4.58E-02		1.08E+00
+	KR-85	513.99	0.43	5.40E+01	4.17E+01	4.17E+01
+	SR-85	513.99	99.27	3.33E-01	2.57E-01	2.57E-01
+	Y-88	898.02	93.40	-6.69E-03	1.67E-01	2.28E-01
		1836.01	99.38	-1.77E-02		1.67E-01
+	NB-93M	16.57	9.43	8.89E-01	4.49E-01	4.49E-01
+	NB-94	702.63	100.00	-1.24E-02	1.55E-01	1.55E-01
		871.10	100.00	8.46E-02		1.75E-01
+	NB-95	765.79	99.81	1.13E-01	3.30E-01	3.30E-01
+	NB-95M	235.69	25.00	8.86E+00	3.73E+02	3.73E+02
+	ZR-95	724.18	43.70	4.38E-01	4.14E-01	5.86E-01
		756.72	55.30	4.72E-02		4.14E-01

Analysis Report for 1510087-08
CP5004S11-12

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	MO-99	181.06	6.20	2.68E+02	4.76E+03	6.64E+03
		739.58	12.80	1.14E+03		4.76E+03
		778.00	4.50	-1.26E+04		1.12E+04
+	RU-103	497.08	89.00	2.44E-02	2.59E-01	2.59E-01
+	RU-106	621.84	9.80	5.84E-01	1.75E+00	1.75E+00
+	AG-108M	433.93	89.90	-3.32E-02	1.44E-01	1.44E-01
		614.37	90.40	-3.77E-02		2.12E-01
		722.95	90.50	5.10E-02		1.92E-01
+	CD-109	88.03	3.72	1.76E+00	2.90E+00	2.90E+00
+	AG-110M	657.75	93.14	9.82E-03	1.86E-01	1.86E-01
		677.61	10.53	8.37E-01		1.79E+00
		706.67	16.46	-2.87E-01		1.02E+00
		763.93	21.98	2.54E-01		8.40E-01
		884.67	71.63	-1.97E-02		2.47E-01
		1384.27	23.94	-2.44E-01		6.87E-01
+	CD-113M	263.70	0.02	-6.91E+02	4.47E+02	4.47E+02
+	SN-113	255.12	1.93	3.54E+00	2.18E-01	7.01E+00
		391.69	64.90	-2.16E-01		2.18E-01
+	TE123M	159.00	84.10	4.81E-02	1.51E-01	1.51E-01
+	SB-124	602.71	97.87	1.02E-03	2.23E-01	2.23E-01
		645.85	7.26	9.83E-01		3.26E+00
		722.78	11.10	-8.82E-01		2.09E+00
		1691.02	49.00	7.91E-02		4.40E-01
+	I-125	35.49	6.49	3.14E-01	1.17E+00	1.17E+00
+	SB-125	176.33	6.89	1.48E-01	4.59E-01	1.56E+00
		427.89	29.33	-4.36E-03		4.59E-01
		463.38	10.35	2.28E-01		1.37E+00
		600.56	17.80	9.19E-03		8.59E-01
		635.90	11.32	4.25E-02		1.47E+00
+	SB-126	414.70	83.30	-2.24E-01	9.38E-01	9.38E-01
		666.33	99.60	-2.42E-01		9.68E-01
		695.00	99.60	-2.13E-01		1.03E+00
		720.50	53.80	-1.66E+00		1.69E+00
+	SN-126	87.57	37.00	1.68E-01	2.77E-01	2.77E-01
+	SB-127	473.00	25.00	-2.96E+01	1.45E+02	1.76E+02
		685.20	35.70	-1.86E+01		1.45E+02
		783.80	14.70	1.48E+02		4.04E+02
+	I-129	29.78	57.00	-2.02E-02	8.81E-02	8.81E-02
		33.60	13.20	-1.54E-01		3.83E-01
		39.58	7.52	-8.93E-01		7.03E-01
+	I-131	284.30	6.05	-7.78E+00	2.45E+00	3.27E+01
		364.48	81.20	1.07E+00		2.45E+00
		636.97	7.26	-2.50E+00		3.71E+01
		722.89	1.80	-6.21E+01		1.48E+02
+	TE-132	49.72	13.10	4.32E+02	1.41E+02	5.29E+02
		228.16	88.00	9.21E+01		1.41E+02
+	BA-133	81.00	33.00	-7.38E-02	3.23E-01	3.33E-01
		302.84	17.80	-3.43E-02		6.91E-01
		356.01	60.00	-2.54E-02		3.23E-01

Analysis Report for 1510087-08
CP5004S11-12

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-133	529.87	86.30	-1.45E+09	3.28E+10	3.28E+10
+	XE-133	81.00	38.00	-4.75E+00	2.14E+01	2.14E+01
+	CS-134	563.23	8.38	4.68E-01	1.95E-01	1.71E+00
		569.32	15.43	1.15E-01		9.42E-01
		604.70	97.60	-5.95E-03		2.02E-01
		795.84	85.40	2.54E-02		1.95E-01
		801.93	8.73	6.50E-01		1.94E+00
+	CS-135	268.24	16.00	6.02E-01	7.52E-01	7.52E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	7.83E-01	8.17E-01	7.58E+00
		163.89	4.61	7.51E+00		1.28E+01
		176.55	13.56	4.09E-01		4.32E+00
		273.65	12.66	2.30E+00		5.54E+00
		340.57	48.50	2.24E+00		1.72E+00
		818.50	99.70	-1.07E-01		8.17E-01
		1048.07	79.60	-2.70E-02		1.25E+00
		1235.34	19.70	4.30E-01		8.09E+00
+	CS-137	661.65	85.12	1.06E-02	1.87E-01	1.87E-01
+	LA-138	788.74	34.00	8.31E-03	2.20E-01	4.42E-01
		1435.80	66.00	-2.14E-02		2.20E-01
+	CE-139	165.85	80.35	-4.47E-03	1.55E-01	1.55E-01
+	BA-140	162.64	6.70	4.48E+00	3.28E+00	9.29E+00
		304.84	4.50	4.92E-01		1.51E+01
		423.70	3.20	7.41E+00		2.47E+01
		437.55	2.00	5.87E+00		3.92E+01
		537.32	25.00	-2.70E-01		3.28E+00
+	LA-140	328.77	20.50	1.06E+00	9.41E-01	3.83E+00
		487.03	45.50	-3.74E-01		1.61E+00
		815.85	23.50	1.20E+00		3.91E+00
		1596.49	95.49	-5.19E-02		9.41E-01
+	CE-141	145.44	48.40	2.18E-01	4.22E-01	4.22E-01
+	CE-143	57.36	11.80	-1.04E+07	5.18E+06	8.46E+06
		293.26	42.00	7.76E+06		5.18E+06
		664.55	5.20	1.06E+06		4.11E+07
+	CE-144	133.54	10.80	1.19E-01	9.91E-01	9.91E-01
+	PM-144	476.78	42.00	-1.48E-02	1.72E-01	3.16E-01
		618.01	98.60	3.71E-02		1.72E-01
		696.49	99.49	1.64E-03		1.80E-01
+	PM-145	36.85	21.70	3.37E-02	1.33E-01	2.42E-01
		37.36	39.70	-6.01E-03		1.33E-01
		42.30	15.10	4.77E-02		3.87E-01
		72.40	2.31	7.63E+00		4.79E+00
+	PM-146	453.90	39.94	4.06E-02	3.21E-01	3.21E-01
		735.90	14.01	-4.64E-01		1.11E+00
		747.13	13.10	-3.30E-01		1.22E+00
+	ND-147	91.11	28.90	1.52E+00	2.94E+00	2.94E+00
		531.02	13.10	1.82E-01		8.15E+00

Analysis Report for 1510087-08
CP5004S11-12

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-149	285.90	3.10	-3.78E+04	1.02E+05	1.02E+05
+	EU-152	121.78	20.50	-6.14E-02	4.50E-01	4.50E-01
		244.69	5.40	-4.33E-01		2.58E+00
		344.27	19.13	-1.27E-01		6.36E-01
		778.89	9.20	-1.68E+00		1.49E+00
		964.01	10.40	-3.66E-02		2.10E+00
		1085.78	7.22	4.59E-01		2.67E+00
		1112.02	9.60	1.24E-01		1.83E+00
		1407.95	14.94	2.38E-01		1.28E+00
+	GD-153	97.43	31.30	-9.39E-02	3.12E-01	3.12E-01
		103.18	22.20	7.86E-04		4.23E-01
+	EU-154	123.07	40.50	-7.90E-02	2.31E-01	2.31E-01
		723.30	19.70	2.36E-01		8.86E-01
		873.19	11.50	6.23E-01		1.54E+00
		996.32	10.30	3.79E-01		1.61E+00
		1004.76	17.90	8.12E-01		1.14E+00
		1274.45	35.50	-4.74E-02		5.37E-01
+	EU-155	86.50	30.90	2.13E-01	3.35E-01	3.35E-01
		105.30	20.70	1.29E-01		4.26E-01
+	EU-156	811.77	10.40	2.02E+00	6.97E+00	6.97E+00
		1153.47	7.20	5.65E+00		1.33E+01
		1230.71	8.90	-1.32E+00		1.13E+01
+	HO-166M	184.41	72.60	-3.90E-03	1.70E-01	1.70E-01
		280.45	29.60	8.14E-02		4.08E-01
		410.94	11.10	-6.28E-02		1.13E+00
		711.69	54.10	4.40E-02		2.84E-01
+	TM-171	66.72	0.14	3.44E+01	6.41E+01	6.41E+01
+	HF-172	81.75	4.52	-9.67E-01	9.06E-01	2.33E+00
		125.81	11.30	4.76E-01		9.06E-01
+	LU-172	181.53	20.60	-3.71E-01	9.23E+00	1.64E+01
		810.06	16.63	1.40E+00		2.87E+01
		912.12	15.25	6.38E+01		5.09E+01
		1093.66	62.50	-1.57E+00		9.23E+00
+	LU-173	100.72	5.24	-1.84E+00	6.09E-01	1.67E+00
		272.11	21.20	2.34E-01		6.09E-01
+	HF-175	343.40	84.00	-3.96E-02	2.08E-01	2.08E-01
+	LU-176	88.34	13.30	3.72E-01	1.22E-01	7.89E-01
		201.83	86.00	-3.51E-02		1.32E-01
		306.78	94.00	1.16E-02		1.22E-01
+	TA-182	67.75	41.20	6.36E-02	2.57E-01	2.57E-01
		1121.30	34.90	8.22E-01		8.89E-01
		1189.05	16.23	-1.92E-02		1.64E+00
		1221.41	26.98	3.91E-01		1.01E+00
		1231.02	11.44	-2.82E-01		2.43E+00
+	IR-192	308.46	29.68	-9.30E-03	3.73E-01	5.31E-01
		468.07	48.10	1.01E-01		3.73E-01
+	HG-203	279.19	77.30	3.67E-02	2.50E-01	2.50E-01
+	BI-207	569.67	97.72	1.77E-02	1.45E-01	1.45E-01
		1063.62	74.90	7.84E-03		2.34E-01

Analysis Report for 1510087-08
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	<i>Nuclide Name</i>	<i>Energy (keV)</i>		<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
+	TL-208	583.14	*	30.22	1.48E+00	9.29E-02	8.62E-01
		860.37		4.48	2.05E+00		3.94E+00
		2614.66	*	35.85	1.24E+00		9.29E-02
+	BI-210M	262.00		45.00	-2.98E-02	2.32E-01	2.32E-01
		300.00		23.00	2.81E-01		6.34E-01
+	PB-210	46.50		4.25	7.20E-01	1.50E+00	1.50E+00
+	PB-211	404.84		2.90	-1.50E+00	4.34E+00	4.34E+00
		831.96		2.90	4.48E-01		5.35E+00
+	BI-212	727.17		11.80	7.88E-01	1.50E+00	1.50E+00
		1620.62		2.75	1.92E+00		6.82E+00
+	PB-212	238.63	*	44.60	1.87E+00	4.01E-01	4.01E-01
		300.09		3.41	1.89E+00		4.28E+00
+	BI-214	609.31	*	46.30	1.34E+00	5.19E-01	5.19E-01
		1120.29	*	15.10	1.92E+00		1.30E+00
		1764.49	*	15.80	1.51E+00		1.39E+00
		2204.22	*	4.98	2.14E+00		4.52E+00
+	PB-214	295.21	*	19.19	2.41E+00	4.41E-01	9.89E-01
		351.92	*	37.19	1.69E+00		4.41E-01
+	RN-219	401.80		6.50	4.86E-01	2.01E+00	2.01E+00
+	RA-223	323.87		3.88	-1.88E+00	3.21E+00	3.21E+00
+	RA-224	240.98		3.95	1.95E+01	4.93E+00	4.93E+00
+	RA-225	40.00		31.00	-1.00E+00	7.88E-01	7.88E-01
+	RA-226	186.21	*	3.28	2.76E+00	3.99E+00	3.99E+00
+	TH-227	50.10		8.40	6.57E-01	8.05E-01	8.05E-01
		236.00		11.50	3.68E-02		1.55E+00
		256.20		6.30	8.80E-01		1.75E+00
+	AC-228	338.32	*	11.40	1.05E+00	6.86E-01	1.74E+00
		911.07	*	27.70	1.45E+00		6.86E-01
		969.11	*	16.60	1.45E+00		1.97E+00
+	TH-230	48.44		16.90	4.06E-01	3.91E-01	3.91E-01
		62.85		4.60	8.42E-01		1.79E+00
		67.67		0.37	5.80E+00		2.35E+01
+	PA-231	283.67		1.60	-1.42E-01	5.31E+00	7.45E+00
		302.67		2.30	-2.64E-01		5.31E+00
+	TH-231	25.64		14.70	-4.27E-02	3.46E-01	3.46E-01
		84.21		6.40	3.41E-01		1.51E+00
+	PA-233	311.98		38.60	-4.08E-01	6.97E-01	6.97E-01
+	PA-234	131.20		20.40	1.44E-01	4.95E-01	4.95E-01
		733.99		8.80	-1.15E+00		1.77E+00
		946.00		12.00	9.36E-01		1.64E+00
+	PA-234M	1001.03		0.92	3.63E+00	2.04E+01	2.04E+01
+	TH-234	63.29		3.80	1.03E+00	2.20E+00	2.20E+00
+	U-235	143.76		10.50	5.85E-01	9.78E-01	9.78E-01
		163.35		4.70	1.32E+00		2.25E+00
		205.31		4.70	8.87E-01		2.48E+00
+	NP-237	86.50		12.60	5.17E-01	8.10E-01	8.10E-01
+	NP-239	106.10		22.70	1.71E+03	5.67E+03	5.67E+03

Analysis Report for 1510087-08
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Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)	
	NP-239	228.18	10.70	4.95E+03	5.67E+03	1.65E+04
		277.60	14.10	-2.55E+03		1.25E+04
+	AM-241	59.54	35.90	1.30E-01	2.19E-01	2.19E-01
+	AM-243	74.67	66.00	7.41E-01	1.81E-01	1.81E-01
+	CM-243	209.75	3.29	5.47E-01	8.56E-01	3.55E+00
		228.14	10.60	7.44E-01		1.14E+00
		277.60	14.00	-1.75E-01		8.56E-01

- + = Nuclide identified during the nuclide identification
- * = Energy line found in the spectrum
- > = MDA value not calculated
- @ = Half-life too short to be able to perform the decay correction
- ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
	BE-7	477.59	10.42	1.81E+00	1.81E+00	-4.08E-01	8.51E-01
	NA-22	1274.54	99.94	1.94E-01	1.94E-01	-1.71E-02	8.75E-02
	NA-24	1368.53	99.99	7.77E+14	4.75E+14	-3.31E+14	3.38E+14
		2754.09	99.86	4.75E+14		-1.08E+14	1.50E+14
	AL-26	1808.65	99.76	1.23E-01	1.23E-01	6.27E-04	4.89E-02
+	K-40	1460.81	* 10.67	2.74E+00	2.74E+00	1.84E+01	1.27E+00
@	AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88	94.40	9.23E-02	9.23E-02	2.28E-02	4.53E-02
		78.34	96.00	1.23E-01		3.48E-01	6.05E-02
	SC-46	889.25	99.98	2.10E-01	2.10E-01	1.10E-02	9.63E-02
		1120.51	99.99	3.31E-01		3.06E-01	1.55E-01
	V-48	983.52	99.98	8.34E-01	7.95E-01	1.07E-03	3.86E-01
		1312.10	97.50	7.95E-01		3.74E-01	3.57E-01
	CR-51	320.08	9.83	2.87E+00	2.87E+00	1.12E-01	1.38E+00
	MN-54	834.83	99.97	1.71E-01	1.71E-01	2.23E-02	7.87E-02
	CO-56	846.75	99.96	1.95E-01	1.95E-01	-4.07E-02	8.88E-02

Analysis Report for 1510087-08
CP5004S11-12

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-56	1037.75	14.03	1.75E+00	1.95E-01	2.57E-01	8.00E-01
	1238.25	67.00	5.55E-01		3.22E-01	2.60E-01
	1771.40	15.51	1.44E+00		-8.59E-02	6.12E-01
	2598.48	16.90	8.97E-01		4.83E-02	3.18E-01
CO-57	122.06	85.51	1.17E-01	1.17E-01	-1.60E-02	5.70E-02
	136.48	10.60	9.93E-01		-6.05E-01	4.84E-01
CO-58	810.76	99.40	2.26E-01	2.26E-01	1.10E-02	1.05E-01
FE-59	1099.22	56.50	6.32E-01	6.32E-01	4.20E-01	2.92E-01
	1291.56	43.20	7.25E-01		5.68E-02	3.26E-01
CO-60	1173.22	100.00	2.20E-01	2.20E-01	5.85E-02	1.01E-01
	1332.49	100.00	2.24E-01		3.92E-02	1.02E-01
ZN-65	1115.52	50.75	3.95E-01	3.95E-01	2.94E-02	1.80E-01
+ GA-67	93.31	*	2.73E+02	2.73E+02	3.14E+02	1.34E+02
	208.95	2.24	5.32E+03		1.48E+03	2.58E+03
	300.22	16.00	8.41E+02		-8.81E+01	4.06E+02
SE-75	121.11	16.70	6.54E-01	2.00E-01	-2.42E-01	3.19E-01
	136.00	59.20	2.00E-01		-7.68E-02	9.74E-02
	264.65	59.80	2.09E-01		-3.28E-01	1.00E-01
	279.53	25.20	5.71E-01		8.38E-02	2.75E-01
RB-82	400.65	11.40	1.37E+00	2.79E+00	3.85E-01	6.54E-01
	776.52	13.00	2.79E+00		-7.35E-01	1.28E+00
RB-83	520.41	46.00	3.63E-01	3.63E-01	3.06E-02	1.70E-01
	529.64	30.30	5.73E-01		-2.53E-02	2.70E-01
	552.65	16.40	1.08E+00		4.58E-02	5.07E-01
KR-85	513.99	0.43	4.17E+01	4.17E+01	5.40E+01	1.99E+01
SR-85	513.99	99.27	2.57E-01	2.57E-01	3.33E-01	1.23E-01
Y-88	898.02	93.40	2.28E-01	1.67E-01	-6.69E-03	1.05E-01
	1836.01	99.38	1.67E-01		-1.77E-02	6.73E-02
NB-93M	16.57	9.43	4.49E-01	4.49E-01	8.89E-01	2.18E-01
NB-94	702.63	100.00	1.55E-01	1.55E-01	-1.24E-02	7.24E-02
	871.10	100.00	1.75E-01		8.46E-02	8.12E-02
NB-95	765.79	99.81	3.30E-01	3.30E-01	1.13E-01	1.54E-01
NB-95M	235.69	25.00	3.73E+02	3.73E+02	8.86E+00	1.83E+02
ZR-95	724.18	43.70	5.86E-01	4.14E-01	4.38E-01	2.75E-01
	756.72	55.30	4.14E-01		4.72E-02	1.92E-01
MO-99	181.06	6.20	6.64E+03	4.76E+03	2.68E+02	3.23E+03
	739.58	12.80	4.76E+03		1.14E+03	2.22E+03
	778.00	4.50	1.12E+04		-1.26E+04	5.11E+03
RU-103	497.08	89.00	2.59E-01	2.59E-01	2.44E-02	1.22E-01
RU-106	621.84	9.80	1.75E+00	1.75E+00	5.84E-01	8.22E-01
AG-108M	433.93	89.90	1.44E-01	1.44E-01	-3.32E-02	6.83E-02
	614.37	90.40	2.12E-01		-3.77E-02	1.01E-01
	722.95	90.50	1.92E-01		5.10E-02	8.98E-02
CD-109	88.03	3.72	2.90E+00	2.90E+00	1.76E+00	1.42E+00
AG-110M	657.75	93.14	1.86E-01	1.86E-01	9.82E-03	8.69E-02
	677.61	10.53	1.79E+00		8.37E-01	8.43E-01
	706.67	16.46	1.02E+00		-2.87E-01	4.72E-01
	763.93	21.98	8.40E-01		2.54E-01	3.91E-01
	884.67	71.63	2.47E-01		-1.97E-02	1.13E-01
	1384.27	23.94	6.87E-01		-2.44E-01	2.97E-01
CD-113M	263.70	0.02	4.47E+02	4.47E+02	-6.91E+02	2.14E+02
SN-113	255.12	1.93	7.01E+00	2.18E-01	3.54E+00	3.38E+00
	391.69	64.90	2.18E-01		-2.16E-01	1.03E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TE123M	159.00	84.10	1.51E-01	1.51E-01	4.81E-02	7.36E-02
SB-124	602.71	97.87	2.23E-01	2.23E-01	1.02E-03	1.05E-01
	645.85	7.26	3.26E+00		9.83E-01	1.53E+00
	722.78	11.10	2.09E+00		-8.82E-01	9.76E-01
	1691.02	49.00	4.40E-01		7.91E-02	1.84E-01
I-125	35.49	6.49	1.17E+00	1.17E+00	3.14E-01	5.70E-01
SB-125	176.33	6.89	1.56E+00	4.59E-01	1.48E-01	7.58E-01
	427.89	29.33	4.59E-01		-4.36E-03	2.18E-01
	463.38	10.35	1.37E+00		2.28E-01	6.52E-01
	600.56	17.80	8.59E-01		9.19E-03	4.04E-01
	635.90	11.32	1.47E+00		4.25E-02	6.92E-01
SB-126	414.70	83.30	9.38E-01	9.38E-01	-2.24E-01	4.46E-01
	666.33	99.60	9.68E-01		-2.42E-01	4.53E-01
	695.00	99.60	1.03E+00		-2.13E-01	4.82E-01
	720.50	53.80	1.69E+00		-1.66E+00	7.83E-01
SN-126	87.57	37.00	2.77E-01	2.77E-01	1.68E-01	1.36E-01
SB-127	473.00	25.00	1.76E+02	1.45E+02	-2.96E+01	8.30E+01
	685.20	35.70	1.45E+02		-1.86E+01	6.72E+01
	783.80	14.70	4.04E+02		1.48E+02	1.88E+02
I-129	29.78	57.00	8.81E-02	8.81E-02	-2.02E-02	4.30E-02
	33.60	13.20	3.83E-01		-1.54E-01	1.87E-01
	39.58	7.52	7.03E-01		-8.93E-01	3.43E-01
I-131	284.30	6.05	3.27E+01	2.45E+00	-7.78E+00	1.57E+01
	364.48	81.20	2.45E+00		1.07E+00	1.17E+00
	636.97	7.26	3.71E+01		-2.50E+00	1.75E+01
	722.89	1.80	1.48E+02		-6.21E+01	6.87E+01
TE-132	49.72	13.10	5.29E+02	1.41E+02	4.32E+02	2.59E+02
	228.16	88.00	1.41E+02		9.21E+01	6.84E+01
BA-133	81.00	33.00	3.33E-01	3.23E-01	-7.38E-02	1.64E-01
	302.84	17.80	6.91E-01		-3.43E-02	3.32E-01
	356.01	60.00	3.23E-01		-2.54E-02	1.57E-01
I-133	529.87	86.30	3.28E+10	3.28E+10	-1.45E+09	1.54E+10
XE-133	81.00	38.00	2.14E+01	2.14E+01	-4.75E+00	1.05E+01
CS-134	563.23	8.38	1.71E+00	1.95E-01	4.68E-01	8.01E-01
	569.32	15.43	9.42E-01		1.15E-01	4.42E-01
	604.70	97.60	2.02E-01		-5.95E-03	9.61E-02
	795.84	85.40	1.95E-01		2.54E-02	9.05E-02
	801.93	8.73	1.94E+00		6.50E-01	9.00E-01
CS-135	268.24	16.00	7.52E-01	7.52E-01	6.02E-01	3.63E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	7.58E+00	8.17E-01	7.83E-01	3.69E+00
	163.89	4.61	1.28E+01		7.51E+00	6.23E+00
	176.55	13.56	4.32E+00		4.09E-01	2.10E+00
	273.65	12.66	5.54E+00		2.30E+00	2.68E+00
	340.57	48.50	1.72E+00		2.24E+00	8.31E-01
	818.50	99.70	8.17E-01		-1.07E-01	3.74E-01
	1048.07	79.60	1.25E+00		-2.70E-02	5.72E-01
	1235.34	19.70	8.09E+00		4.30E-01	3.79E+00
CS-137	661.65	85.12	1.87E-01	1.87E-01	1.06E-02	8.76E-02
LA-138	788.74	34.00	4.42E-01	2.20E-01	8.31E-03	2.04E-01
	1435.80	66.00	2.20E-01		-2.14E-02	9.42E-02

Analysis Report for 1510087-08

CP5004S11-12

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CE-139	165.85	80.35	1.55E-01	1.55E-01	-4.47E-03	7.55E-02
BA-140	162.64	6.70	9.29E+00	3.28E+00	4.48E+00	4.53E+00
	304.84	4.50	1.51E+01		4.92E-01	7.26E+00
	423.70	3.20	2.47E+01		7.41E+00	1.17E+01
	437.55	2.00	3.92E+01		5.87E+00	1.87E+01
	537.32	25.00	3.28E+00		-2.70E-01	1.55E+00
LA-140	328.77	20.50	3.83E+00	9.41E-01	1.06E+00	1.84E+00
	487.03	45.50	1.61E+00		-3.74E-01	7.58E-01
	815.85	23.50	3.91E+00		1.20E+00	1.80E+00
	1596.49	95.49	9.41E-01		-5.19E-02	4.00E-01
CE-141	145.44	48.40	4.22E-01	4.22E-01	2.18E-01	2.06E-01
CE-143	57.36	11.80	8.46E+06	5.18E+06	-1.04E+07	4.14E+06
	293.26	42.00	5.18E+06		7.76E+06	2.52E+06
	664.55	5.20	4.11E+07		1.06E+06	1.92E+07
CE-144	133.54	10.80	9.91E-01	9.91E-01	1.19E-01	4.84E-01
PM-144	476.78	42.00	3.16E-01	1.72E-01	-1.48E-02	1.49E-01
	618.01	98.60	1.72E-01		3.71E-02	8.09E-02
	696.49	99.49	1.80E-01		1.64E-03	8.43E-02
PM-145	36.85	21.70	2.42E-01	1.33E-01	3.37E-02	1.18E-01
	37.36	39.70	1.33E-01		-6.01E-03	6.48E-02
	42.30	15.10	3.87E-01		4.77E-02	1.89E-01
	72.40	2.31	4.79E+00		7.63E+00	2.36E+00
PM-146	453.90	39.94	3.21E-01	3.21E-01	4.06E-02	1.52E-01
	735.90	14.01	1.11E+00		-4.64E-01	5.15E-01
	747.13	13.10	1.22E+00		-3.30E-01	5.64E-01
ND-147	91.11	28.90	2.94E+00	2.94E+00	1.52E+00	1.45E+00
	531.02	13.10	8.15E+00		1.82E-01	3.83E+00
PM-149	285.90	3.10	1.02E+05	1.02E+05	-3.78E+04	4.91E+04
EU-152	121.78	20.50	4.50E-01	4.50E-01	-6.14E-02	2.19E-01
	244.69	5.40	2.58E+00		-4.33E-01	1.25E+00
	344.27	19.13	6.36E-01		-1.27E-01	3.04E-01
	778.89	9.20	1.49E+00		-1.68E+00	6.79E-01
	964.01	10.40	2.10E+00		-3.66E-02	9.81E-01
	1085.78	7.22	2.67E+00		4.59E-01	1.22E+00
	1112.02	9.60	1.83E+00		1.24E-01	8.28E-01
	1407.95	14.94	1.28E+00		2.38E-01	5.69E-01
GD-153	97.43	31.30	3.12E-01	3.12E-01	-9.39E-02	1.53E-01
	103.18	22.20	4.23E-01		7.86E-04	2.06E-01
EU-154	123.07	40.50	2.31E-01	2.31E-01	-7.90E-02	1.13E-01
	723.30	19.70	8.86E-01		2.36E-01	4.15E-01
	873.19	11.50	1.54E+00		6.23E-01	7.12E-01
	996.32	10.30	1.61E+00		3.79E-01	7.30E-01
	1004.76	17.90	1.14E+00		8.12E-01	5.29E-01
	1274.45	35.50	5.37E-01		-4.74E-02	2.42E-01
EU-155	86.50	30.90	3.35E-01	3.35E-01	2.13E-01	1.64E-01
	105.30	20.70	4.26E-01		1.29E-01	2.08E-01
EU-156	811.77	10.40	6.97E+00	6.97E+00	2.02E+00	3.23E+00
	1153.47	7.20	1.33E+01		5.65E+00	6.14E+00
	1230.71	8.90	1.13E+01		-1.32E+00	5.21E+00
HO-166M	184.41	72.60	1.70E-01	1.70E-01	-3.90E-03	8.29E-02
	280.45	29.60	4.08E-01		8.14E-02	1.97E-01
	410.94	11.10	1.13E+00		-6.28E-02	5.38E-01
	711.69	54.10	2.84E-01		4.40E-02	1.32E-01

Analysis Report for 1510087-08

CP5004S11-12

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TM-171	66.72	0.14	6.41E+01	6.41E+01	3.44E+01	3.15E+01
HF-172	81.75	4.52	2.33E+00	9.06E-01	-9.67E-01	1.15E+00
	125.81	11.30	9.06E-01		4.76E-01	4.43E-01
LU-172	181.53	20.60	1.64E+01	9.23E+00	-3.71E-01	7.97E+00
	810.06	16.63	2.87E+01		1.40E+00	1.33E+01
	912.12	15.25	5.09E+01		6.38E+01	2.41E+01
	1093.66	62.50	9.23E+00		-1.57E+00	4.23E+00
LU-173	100.72	5.24	1.67E+00	6.09E-01	-1.84E+00	8.16E-01
	272.11	21.20	6.09E-01		2.34E-01	2.94E-01
HF-175	343.40	84.00	2.08E-01	2.08E-01	-3.96E-02	9.98E-02
LU-176	88.34	13.30	7.89E-01	1.22E-01	3.72E-01	3.88E-01
	201.83	86.00	1.32E-01		-3.51E-02	6.42E-02
	306.78	94.00	1.22E-01		1.16E-02	5.85E-02
TA-182	67.75	41.20	2.57E-01	2.57E-01	6.36E-02	1.26E-01
	1121.30	34.90	8.89E-01		8.22E-01	4.15E-01
	1189.05	16.23	1.64E+00		-1.92E-02	7.54E-01
	1221.41	26.98	1.01E+00		3.91E-01	4.65E-01
	1231.02	11.44	2.43E+00		-2.82E-01	1.12E+00
IR-192	308.46	29.68	5.31E-01	3.73E-01	-9.30E-03	2.55E-01
	468.07	48.10	3.73E-01		1.01E-01	1.77E-01
HG-203	279.19	77.30	2.50E-01	2.50E-01	3.67E-02	1.20E-01
BI-207	569.67	97.72	1.45E-01	1.45E-01	1.77E-02	6.80E-02
	1063.62	74.90	2.34E-01		7.84E-03	1.06E-01
+ TL-208	583.14	*	30.22	9.29E-02	1.48E+00	4.16E-01
	860.37		4.48		2.05E+00	1.82E+00
	2614.66	*	35.85		1.24E+00	0.00E+00
BI-210M	262.00	45.00	2.32E-01	2.32E-01	-2.98E-02	1.12E-01
	300.00	23.00	6.34E-01		2.81E-01	3.07E-01
PB-210	46.50	4.25	1.50E+00	1.50E+00	7.20E-01	7.32E-01
PB-211	404.84	2.90	4.34E+00	4.34E+00	-1.50E+00	2.06E+00
	831.96	2.90	5.35E+00		4.48E-01	2.46E+00
BI-212	727.17	11.80	1.50E+00	1.50E+00	7.88E-01	7.06E-01
	1620.62	2.75	6.82E+00		1.92E+00	2.99E+00
+ PB-212	238.63	*	44.60	4.01E-01	1.87E+00	1.96E-01
	300.09		3.41		1.89E+00	2.07E+00
+ BI-214	609.31	*	46.30	5.19E-01	1.34E+00	2.50E-01
	1120.29	*	15.10		1.92E+00	5.97E-01
	1764.49	*	15.80		1.51E+00	6.18E-01
	2204.22	*	4.98		2.14E+00	1.96E+00
+ PB-214	295.21	*	19.19	4.41E-01	2.41E+00	4.83E-01
	351.92	*	37.19		1.69E+00	2.13E-01
RN-219	401.80	6.50	2.01E+00	2.01E+00	4.86E-01	9.59E-01
RA-223	323.87	3.88	3.21E+00	3.21E+00	-1.88E+00	1.54E+00
RA-224	240.98	3.95	4.93E+00	4.93E+00	1.95E+01	2.42E+00
RA-225	40.00	31.00	7.88E-01	7.88E-01	-1.00E+00	3.84E-01
+ RA-226	186.21	*	3.28	3.99E+00	3.99E+00	2.76E+00
TH-227	50.10	8.40	8.05E-01	8.05E-01	6.57E-01	3.94E-01
	236.00	11.50	1.55E+00		3.68E-02	7.60E-01
	256.20	6.30	1.75E+00		8.80E-01	8.44E-01
+ AC-228	338.32	*	11.40	6.86E-01	1.05E+00	8.49E-01
	911.07	*	27.70		1.45E+00	3.18E-01
	969.11	*	16.60		1.45E+00	9.41E-01
TH-230	48.44	16.90	3.91E-01	3.91E-01	4.06E-01	1.91E-01

Analysis Report for 1510087-08
CP5004S11-12

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TH-230	62.85	4.60	1.79E+00	3.91E-01	8.42E-01	8.80E-01
	67.67	0.37	2.35E+01		5.80E+00	1.15E+01
PA-231	283.67	1.60	7.45E+00	5.31E+00	-1.42E-01	3.59E+00
	302.67	2.30	5.31E+00		-2.64E-01	2.55E+00
TH-231	25.64	14.70	3.46E-01	3.46E-01	-4.27E-02	1.69E-01
	84.21	6.40	1.51E+00		3.41E-01	7.43E-01
PA-233	311.98	38.60	6.97E-01	6.97E-01	-4.08E-01	3.34E-01
PA-234	131.20	20.40	4.95E-01	4.95E-01	1.44E-01	2.42E-01
	733.99	8.80	1.77E+00		-1.15E+00	8.24E-01
	946.00	12.00	1.64E+00		9.36E-01	7.60E-01
PA-234M	1001.03	0.92	2.04E+01	2.04E+01	3.63E+00	9.38E+00
TH-234	63.29	3.80	2.20E+00	2.20E+00	1.03E+00	1.08E+00
U-235	143.76	10.50	9.78E-01	9.78E-01	5.85E-01	4.77E-01
	163.35	4.70	2.25E+00		1.32E+00	1.09E+00
	205.31	4.70	2.48E+00		8.87E-01	1.21E+00
NP-237	86.50	12.60	8.10E-01	8.10E-01	5.17E-01	3.98E-01
NP-239	106.10	22.70	5.67E+03	5.67E+03	1.71E+03	2.77E+03
	228.18	10.70	1.65E+04		4.95E+03	7.99E+03
	277.60	14.10	1.25E+04		-2.55E+03	6.02E+03
AM-241	59.54	35.90	2.19E-01	2.19E-01	1.30E-01	1.07E-01
AM-243	74.67	66.00	1.81E-01	1.81E-01	7.41E-01	8.92E-02
CM-243	209.75	3.29	3.55E+00	8.56E-01	5.47E-01	1.73E+00
	228.14	10.60	1.14E+00		7.44E-01	5.53E-01
	277.60	14.00	8.56E-01		-1.75E-01	4.13E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

Analysis Report for 1510087-08
CP5004S11-12

No Data Review Comments Entered.

369: 10 16 10 15 15 13 14 20

Sample Title: CP5004S11-12

377:	10	18	15	17	16	14	14	18
385:	17	19	20	11	8	17	13	10
393:	6	13	17	16	24	17	11	10
401:	13	19	12	16	18	15	11	13
409:	17	17	12	17	11	10	16	12
417:	11	16	13	16	19	13	14	13
425:	11	15	20	14	14	11	13	12
433:	12	13	9	18	15	9	13	16
441:	19	12	17	12	14	7	12	15
449:	8	10	9	12	18	11	9	8
457:	17	14	7	9	15	23	17	22
465:	13	10	3	14	10	11	11	11
473:	8	9	9	7	9	14	14	8
481:	9	14	6	12	11	12	8	13
489:	5	5	8	10	15	6	12	9
497:	8	10	10	13	6	10	12	10
505:	7	6	9	13	20	42	30	25
513:	8	9	11	9	11	9	7	12
521:	9	8	5	9	8	6	9	11
529:	10	12	4	12	11	11	13	10
537:	11	7	11	3	12	16	8	9
545:	7	13	8	10	9	11	7	8
553:	9	8	9	8	10	6	8	9
561:	9	11	11	6	9	7	9	8
569:	8	5	11	13	10	7	3	12
577:	8	9	11	17	16	40	52	34
585:	20	8	17	10	9	7	8	11
593:	7	12	11	8	11	13	7	8
601:	10	8	9	7	10	9	23	50
609:	91	53	17	7	10	7	11	9
617:	7	9	12	17	11	4	10	9
625:	9	6	8	8	8	6	9	14
633:	10	9	5	11	5	14	9	8
641:	15	10	9	6	17	3	4	10
649:	9	3	8	7	8	6	11	11
657:	9	7	9	6	8	10	7	12
665:	7	9	4	8	8	6	8	9
673:	13	7	9	10	13	7	13	9
681:	4	5	6	9	7	10	2	4
689:	11	12	6	11	14	14	7	7
697:	1	7	7	8	7	13	3	4
705:	7	7	5	6	9	6	9	10
713:	5	5	5	10	4	4	7	5
721:	8	7	2	6	8	16	16	13
729:	6	6	5	6	7	4	8	9
737:	7	6	4	7	10	6	7	6
745:	8	5	8	8	4	6	5	8
753:	8	6	6	7	4	4	9	6
761:	4	10	6	9	10	2	9	7
769:	9	4	4	8	7	2	3	6
777:	5	6	3	7	5	1	14	8
785:	7	8	6	7	4	2	1	3
793:	4	7	10	16	5	6	1	5

801: 7 7 10 6 6 6 5 7

Sample Title: CP5004S11-12

Channel	1	2	3	4	5	6	7	8	9
809:	5	2	6	6	6	9	6	4	
817:	2	4	4	4	4	3	5	6	
825:	9	13	4	6	3	4	2	5	
833:	8	6	5	5	6	5	4	6	
841:	5	1	4	5	2	5	6	7	
849:	3	4	4	6	4	5	6	5	
857:	5	9	5	7	10	3	4	6	
865:	1	4	4	5	2	6	12	1	
873:	8	8	6	6	3	3	2	7	
881:	6	6	4	2	2	5	4	6	
889:	7	5	5	4	3	4	7	3	
897:	4	9	9	3	7	1	6	9	
905:	4	5	3	10	4	16	32	29	
913:	11	6	3	4	10	5	4	7	
921:	4	1	5	2	2	3	2	6	
929:	3	8	7	9	4	8	7	7	
937:	3	4	2	3	4	4	4	5	
945:	8	9	7	3	5	11	4	5	
953:	5	8	7	3	6	2	9	5	
961:	4	6	6	6	3	9	13	15	
969:	17	8	9	8	5	7	5	2	
977:	6	4	6	3	7	5	1	8	
985:	9	4	12	5	3	3	1	6	
993:	6	4	1	4	2	3	4	4	
1001:	7	10	7	4	4	8	7	2	
1009:	0	2	7	5	6	7	2	4	
1017:	6	3	5	11	1	3	3	4	
1025:	3	2	0	4	1	7	4	5	
1033:	5	4	2	6	3	5	5	4	
1041:	6	4	2	2	4	7	4	3	
1049:	5	6	3	3	4	4	5	7	
1057:	4	0	5	10	4	2	5	2	
1065:	2	4	0	2	2	7	5	4	
1073:	5	5	6	5	2	4	2	5	
1081:	4	3	1	5	3	6	8	4	
1089:	6	4	6	2	4	1	5	9	
1097:	5	7	5	2	9	4	4	2	
1105:	4	4	6	4	2	6	3	5	
1113:	3	6	1	1	4	3	8	12	
1121:	18	12	2	8	2	5	3	4	
1129:	2	4	9	5	5	5	3	3	
1137:	3	6	7	7	1	1	1	3	
1145:	6	3	4	5	3	4	5	8	
1153:	3	2	7	8	6	2	0	7	
1161:	7	4	5	6	6	4	5	3	
1169:	2	5	5	5	9	6	4	6	
1177:	3	2	8	2	1	3	3	10	
1185:	7	5	4	7	3	5	7	3	
1193:	3	2	6	6	6	4	8	6	
1201:	2	2	4	5	4	6	2	5	
1209:	3	4	2	7	7	8	1	4	
1217:	4	6	4	4	6	6	2	3	
1225:	9	1	3	4	2	5	6	7	

1233: 5 6 7 7 13 13 9 8

Sample Title: CP5004S11-12

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	4	2	6	5	2	7	4	5
1249:	5	3	3	1	2	2	1	2
1257:	3	6	2	5	3	4	4	1
1265:	4	0	4	0	4	3	3	1
1273:	3	5	2	1	4	6	7	5
1281:	5	3	2	7	2	4	2	4
1289:	4	1	3	1	9	2	1	5
1297:	2	2	6	8	3	4	4	3
1305:	1	4	2	1	3	5	2	2
1313:	2	2	3	6	1	1	0	2
1321:	4	3	3	4	3	5	4	5
1329:	3	4	8	4	3	2	3	4
1337:	2	2	5	3	6	4	1	6
1345:	4	2	2	2	2	2	2	3
1353:	1	2	1	1	2	1	1	1
1361:	0	5	2	1	1	2	1	0
1369:	2	4	3	1	3	3	3	3
1377:	4	3	3	1	1	0	1	2
1385:	4	3	2	0	0	2	2	4
1393:	6	0	1	2	1	0	4	0
1401:	1	1	3	1	4	1	4	3
1409:	4	2	2	2	2	5	0	1
1417:	4	3	2	1	0	2	0	0
1425:	0	1	4	2	1	3	3	0
1433:	0	2	0	1	3	2	2	2
1441:	0	1	0	0	0	1	1	1
1449:	2	3	3	2	3	1	3	1
1457:	4	6	19	58	83	63	27	6
1465:	2	2	2	3	1	2	1	4
1473:	1	2	3	1	0	1	2	0
1481:	1	0	3	3	3	1	1	0
1489:	2	3	0	0	0	0	2	2
1497:	2	1	0	3	4	0	1	0
1505:	1	0	0	5	3	2	2	2
1513:	4	0	2	0	0	1	3	1
1521:	0	1	4	0	0	1	1	2
1529:	4	1	4	4	2	2	3	1
1537:	1	1	0	1	1	0	2	1
1545:	3	2	1	2	4	0	2	2
1553:	2	1	2	0	0	0	1	0
1561:	0	1	1	1	1	1	2	0
1569:	0	1	2	2	3	1	0	2
1577:	0	1	2	2	1	1	1	1
1585:	1	1	1	3	3	3	3	3
1593:	5	1	1	1	1	1	0	1
1601:	0	0	2	1	1	2	1	0
1609:	1	0	1	1	0	1	0	0
1617:	1	2	0	3	2	3	4	1
1625:	1	3	1	2	1	1	0	2
1633:	1	0	0	3	0	1	3	1
1641:	3	0	2	0	1	2	0	0
1649:	1	1	1	1	0	0	0	1
1657:	1	2	2	0	2	2	1	1

1665: 0 2 1 1 1 2 2 0

Sample Title: CP5004S11-12

Channel	1	2	3	4	5	6	7	8
1673:	0	0	1	0	1	1	1	1
1681:	0	2	0	1	1	0	1	1
1689:	1	1	1	2	1	0	1	0
1697:	2	0	4	1	0	1	3	0
1705:	0	2	1	0	0	0	0	0
1713:	1	0	1	0	1	3	0	1
1721:	1	0	1	3	3	2	1	1
1729:	3	3	0	0	0	1	0	0
1737:	1	0	1	0	1	1	2	0
1745:	0	1	2	1	3	0	0	3
1753:	3	0	3	1	0	0	1	1
1761:	0	0	6	7	9	7	4	2
1769:	1	0	2	1	0	0	1	0
1777:	0	2	0	0	1	0	1	1
1785:	0	1	0	0	2	2	0	1
1793:	0	0	0	0	1	1	0	0
1801:	0	1	0	0	1	0	0	0
1809:	0	0	1	1	0	2	0	2
1817:	0	1	1	1	2	1	2	2
1825:	0	0	0	0	1	0	0	0
1833:	0	1	1	0	0	1	0	1
1841:	2	1	1	2	0	0	2	1
1849:	3	1	1	2	2	1	0	0
1857:	0	1	0	0	1	0	3	0
1865:	1	0	1	1	0	0	1	0
1873:	0	0	1	0	1	1	0	0
1881:	0	0	0	2	3	0	0	2
1889:	1	0	0	0	0	1	1	0
1897:	1	0	0	0	1	0	0	1
1905:	0	1	0	2	1	2	1	0
1913:	1	0	0	1	0	1	0	2
1921:	2	0	0	0	1	2	0	0
1929:	1	0	0	0	2	0	1	1
1937:	2	0	0	0	1	0	3	2
1945:	0	0	0	2	0	0	2	1
1953:	0	2	0	0	0	0	0	1
1961:	1	0	1	1	0	0	1	0
1969:	2	0	2	3	0	2	1	1
1977:	0	0	1	1	0	0	0	1
1985:	1	2	2	1	2	0	0	0
1993:	3	1	0	2	2	2	1	3
2001:	1	0	1	1	0	1	1	0
2009:	0	0	1	3	1	1	0	0
2017:	1	1	0	0	0	2	0	0
2025:	1	0	0	1	0	1	0	1
2033:	0	0	1	0	0	0	0	1
2041:	0	1	1	0	0	1	2	1
2049:	0	0	0	0	0	1	0	1
2057:	0	1	0	0	1	1	1	0
2065:	0	0	1	1	0	0	0	0
2073:	0	0	1	1	0	0	1	0
2081:	0	0	0	1	0	1	2	0
2089:	1	1	1	0	0	1	0	1

2097: 0 0 2 1 0 0 2 3

Sample Title: CP5004S11-12

Channel	1	2	2	0	1	0	1	2
2105:	1	2	2	0	1	0	1	2
2113:	1	1	0	0	2	0	2	1
2121:	0	2	0	0	0	0	1	0
2129:	1	1	0	0	1	0	0	1
2137:	1	0	0	1	1	1	1	1
2145:	1	0	0	1	0	0	0	0
2153:	1	0	0	1	1	0	1	3
2161:	0	0	1	2	0	0	0	0
2169:	0	0	1	0	1	0	1	0
2177:	2	1	0	0	1	0	1	1
2185:	0	0	1	0	1	0	0	2
2193:	0	1	1	1	1	0	0	0
2201:	1	1	2	6	5	3	1	0
2209:	4	0	0	0	0	0	1	1
2217:	1	0	3	2	0	1	0	0
2225:	0	0	0	0	2	0	1	0
2233:	0	0	0	0	2	0	0	0
2241:	0	0	0	2	1	1	0	0
2249:	1	0	0	1	0	0	0	3
2257:	1	0	1	0	1	2	1	0
2265:	2	0	0	0	1	0	0	1
2273:	0	3	1	0	0	0	1	1
2281:	0	1	1	2	0	1	1	2
2289:	0	0	1	0	3	1	0	0
2297:	1	0	2	1	1	0	0	0
2305:	0	0	2	0	1	0	1	3
2313:	1	0	1	0	1	2	2	2
2321:	0	1	0	0	1	2	0	0
2329:	1	0	0	2	1	1	0	0
2337:	1	1	0	1	0	1	0	1
2345:	0	0	1	1	1	0	0	1
2353:	1	0	1	1	1	1	0	0
2361:	0	2	2	1	0	1	0	1
2369:	0	1	0	0	2	1	2	2
2377:	2	0	0	0	1	0	0	0
2385:	2	0	0	0	1	0	1	1
2393:	0	0	0	1	0	1	1	1
2401:	0	0	0	0	0	0	1	0
2409:	1	0	0	0	0	0	2	0
2417:	1	0	0	0	1	1	0	2
2425:	1	0	1	0	1	0	0	1
2433:	0	0	0	0	1	0	1	1
2441:	1	0	0	0	0	1	0	1
2449:	0	2	1	2	0	0	1	2
2457:	0	0	0	1	0	1	1	0
2465:	1	2	1	0	0	0	0	0
2473:	0	0	2	0	0	0	0	0
2481:	0	0	0	0	0	1	2	1
2489:	0	1	1	1	0	0	0	0
2497:	0	0	0	0	0	0	0	1
2505:	1	0	0	0	0	0	0	0
2513:	1	0	1	0	0	0	0	0
2521:	0	0	0	0	0	1	0	0

2529: 0 0 0 0 0 0 0 0 1

Sample Title: CP5004S11-12

Channel	1	0	1	0	0	1	0	1
2537:	1	0	1	0	0	1	0	1
2545:	0	1	1	0	0	0	0	1
2553:	0	0	1	0	0	0	0	0
2561:	0	0	0	0	0	1	0	0
2569:	0	0	0	0	0	0	0	0
2577:	0	0	0	0	0	0	0	0
2585:	0	0	0	1	0	0	0	0
2593:	0	0	0	0	1	0	0	0
2601:	0	0	0	1	1	0	0	1
2609:	0	0	0	0	0	3	12	11
2617:	4	5	1	0	0	0	0	0
2625:	0	1	0	0	0	1	0	0
2633:	0	2	0	0	0	0	1	0
2641:	0	0	0	0	0	0	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	0	0	0	0	0
2665:	0	0	1	0	1	0	1	0
2673:	0	0	0	0	0	0	1	1
2681:	0	0	0	0	1	0	0	1
2689:	0	0	0	0	1	1	0	0
2697:	0	1	0	0	0	1	0	0
2705:	1	0	0	0	0	0	0	0
2713:	0	0	1	0	0	0	0	0
2721:	0	1	0	0	0	0	1	0
2729:	0	0	0	0	0	0	0	1
2737:	0	0	0	0	0	0	0	0
2745:	1	0	1	0	0	0	0	0
2753:	0	0	0	0	0	1	0	0
2761:	0	0	0	0	1	0	0	0
2769:	0	0	0	0	0	1	0	0
2777:	0	0	0	0	0	0	0	0
2785:	1	0	0	0	0	0	0	0
2793:	0	0	0	0	1	0	1	0
2801:	0	1	0	0	0	0	0	0
2809:	0	0	0	0	0	1	0	0
2817:	0	0	0	0	0	0	0	0
2825:	0	0	1	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	1	0	0	1	0	0
2849:	1	0	0	0	0	0	0	0
2857:	0	0	0	0	0	1	0	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	1	0	0	1
2889:	1	0	0	0	0	0	0	0
2897:	0	1	0	0	1	0	2	0
2905:	1	0	0	0	0	1	0	0
2913:	1	0	1	0	0	0	0	0
2921:	0	0	1	0	0	0	0	0
2929:	0	1	1	0	0	1	0	0
2937:	0	1	0	0	1	0	0	0
2945:	0	0	0	0	0	0	0	1
2953:	0	0	0	2	0	0	0	0

2961: 0 0 0 0 1 0 2 0

Sample Title: CP5004S11-12

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2969:	0	0	1	0	0	1	0	0
2977:	0	1	0	0	0	0	1	0
2985:	0	0	1	0	0	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	0	0	0	0	0	0	0
3009:	0	0	0	0	1	1	0	0
3017:	0	1	0	0	0	0	0	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	1	1	0	0	0	0
3041:	0	0	0	0	0	1	0	1
3049:	0	1	1	1	0	0	0	0
3057:	0	0	0	1	0	0	1	0
3065:	0	0	0	0	0	0	2	0
3073:	0	0	0	0	0	0	0	2
3081:	1	0	0	0	0	0	0	2
3089:	0	0	1	0	0	0	0	0
3097:	0	0	1	0	0	0	0	0
3105:	0	0	1	0	0	1	0	1
3113:	0	0	0	0	0	0	0	0
3121:	0	0	1	0	0	0	0	0
3129:	1	0	0	1	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	0	1	0	0	0	1	0	0
3153:	0	0	1	0	0	0	0	0
3161:	0	0	0	1	1	0	0	0
3169:	0	0	1	0	0	0	0	1
3177:	1	0	0	0	0	0	2	1
3185:	0	0	0	0	0	0	0	0
3193:	0	1	1	0	0	0	0	0
3201:	1	0	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	1	0	1
3225:	0	0	0	0	1	1	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	1	0	0	0	0	0	1
3249:	0	0	0	0	0	0	1	0
3257:	0	0	0	0	0	0	1	0
3265:	0	0	0	0	0	0	1	1
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	1	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0
3321:	1	0	0	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	1	0	0	0	0	0	0
3345:	0	1	0	0	0	0	0	0
3353:	0	0	0	1	0	1	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	1	0	0	0	2
3385:	0	0	0	0	0	0	1	0

3393: 0 0 0 0 0 1 0 0

Sample Title: CP5004S11-12

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	1	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	1	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	1	1	0	0	0	1	0	0
3481:	0	0	0	1	0	1	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	1	0	0
3505:	1	0	0	0	0	0	0	0
3513:	0	0	0	0	1	1	1	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	1	0	0	0
3545:	0	0	0	0	1	0	0	0
3553:	0	0	0	1	0	0	0	0
3561:	0	1	0	0	0	1	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	1	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	1	0	0	1	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	1	0	0	0	0	0
3641:	0	0	0	1	0	0	0	0
3649:	0	0	0	1	1	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	1	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	1	0	0	0	0
3705:	0	0	0	2	1	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	1	0	0
3729:	1	0	0	0	0	0	0	0
3737:	0	1	0	0	0	0	1	0
3745:	0	0	0	0	1	0	0	1
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	1	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	1	0	0	0	0	0	0	1
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	1	1
3817:	0	0	0	0	0	0	0	1

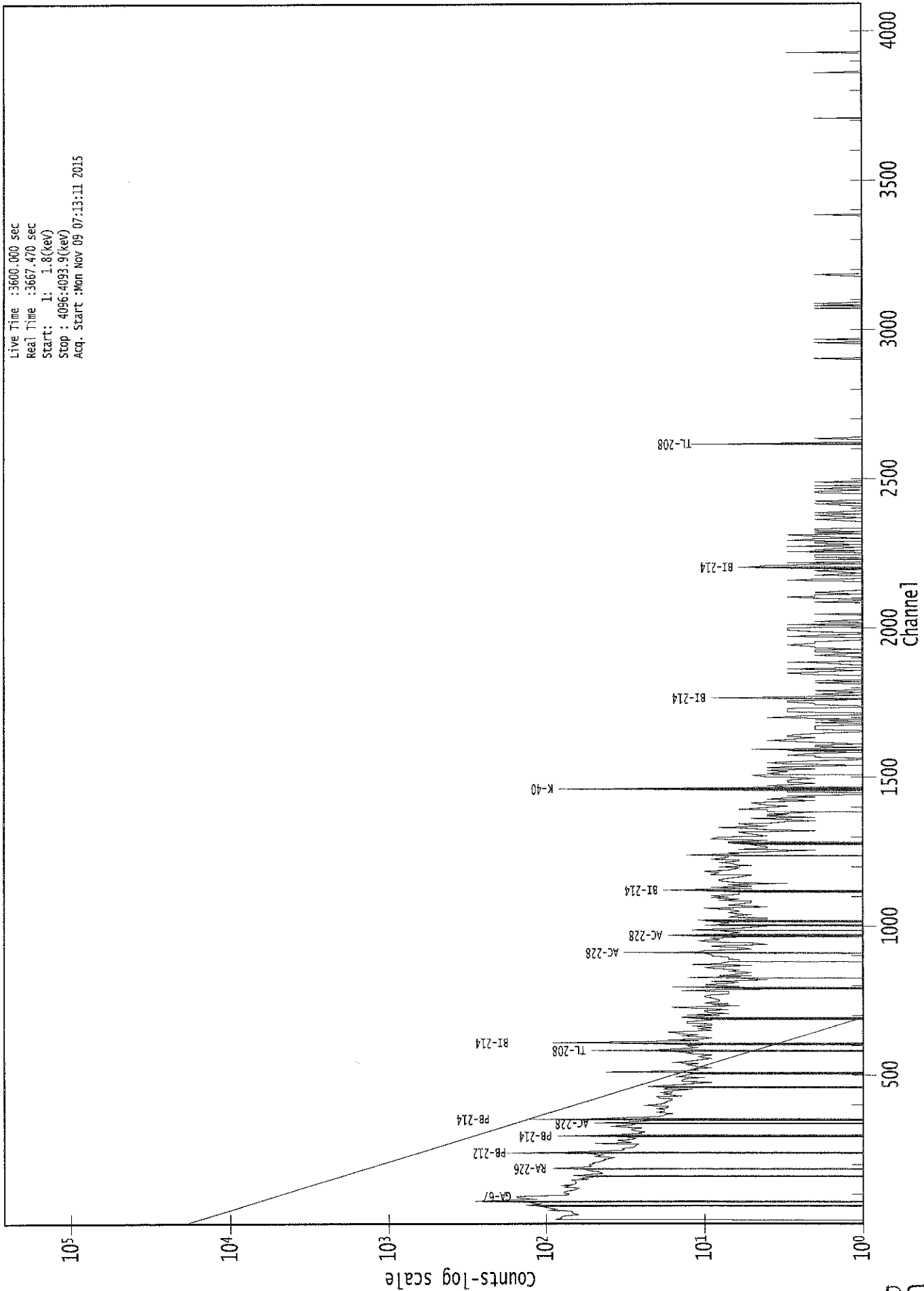
3825: 0 0 0 0 0 1 0 0

Sample Title: CP5004S11-12

Channel									
3833:	0	0	0	0	0	1	0	1	
3841:	0	0	0	0	0	0	0	0	
3849:	0	0	0	0	1	0	0	0	
3857:	0	0	0	0	2	0	0	0	
3865:	1	0	0	0	0	0	0	0	
3873:	0	0	0	0	1	0	1	0	
3881:	1	1	0	1	0	1	1	0	
3889:	0	0	0	0	0	0	0	0	
3897:	0	0	0	0	0	0	0	0	
3905:	0	0	0	0	0	0	0	1	
3913:	0	0	1	0	0	0	0	0	
3921:	0	0	0	0	0	0	0	3	
3929:	0	0	0	0	0	0	0	0	
3937:	0	0	0	0	0	0	0	0	
3945:	0	0	0	0	0	0	0	0	
3953:	0	0	0	1	0	0	0	0	
3961:	0	0	0	0	1	0	0	0	
3969:	1	0	0	0	0	0	0	0	
3977:	0	0	0	0	0	0	0	0	
3985:	0	0	0	0	0	0	0	0	
3993:	0	0	0	0	1	0	0	0	
4001:	0	0	0	0	0	0	0	0	
4009:	0	0	0	0	0	0	0	1	
4017:	0	0	0	1	0	0	0	0	
4025:	0	0	0	0	0	0	0	0	
4033:	0	0	0	1	0	0	0	0	
4041:	0	0	0	0	0	0	0	0	
4049:	0	0	0	0	0	0	0	0	
4057:	0	0	0	0	0	0	0	0	
4065:	0	0	0	0	1	0	0	0	
4073:	0	0	0	0	0	0	0	0	
4081:	0	0	0	1	0	1	0	0	
4089:	0	0	0	0	0	0	0	1	

0000029310.CNF

Live Time :3600.000 sec
Real Time :3667.470 sec
Start: 1: 1.8(keV)
Stop : 4096.4093.9(keV)
Acq. Start :Mon Nov 09 07:13:11 2015



A9650

ROI Type: 1

Analysis Report for 1510087-09
CP5004S14-15

C
1115

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-09
Sample Description : CP5004S14-15
Sample Type : SOIL

Sample Size : 5.286E+02 grams
Facility : Countroom

Sample Taken On : 10/7/2015 5:10:48PM
Acquisition Started : 11/9/2015 8:16:22AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.2 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 19 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 29316

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-09
CP5004S14-15

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 9:16:27AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.57	46.92	0.0000	0.00
2	63.31	63.65	0.0000	0.00
3	74.94	75.28	0.0000	0.00
4	77.41	77.75	0.0000	0.00
5	89.53	89.86	0.0000	0.00
6	92.79	93.12	0.0000	0.00
7	128.92	129.24	0.0000	0.00
8	153.42	153.73	0.0000	0.00
9	185.43	185.73	0.0000	0.00
10	209.44	209.73	0.0000	0.00
11	238.75	239.04	0.0000	0.00
12	241.87	242.16	0.0000	0.00
13	270.40	270.67	0.0000	0.00
14	277.74	278.02	0.0000	0.00
15	295.40	295.67	0.0000	0.00
16	299.72	299.99	0.0000	0.00
17	302.40	302.67	0.0000	0.00
18	338.65	338.91	0.0000	0.00
19	352.25	352.50	0.0000	0.00
20	463.02	463.23	0.0000	0.00
21	511.18	511.38	0.0000	0.00
22	583.26	583.43	0.0000	0.00
23	609.45	609.61	0.0000	0.00
24	727.56	727.68	0.0000	0.00
25	753.35	753.46	0.0000	0.00
26	769.08	769.18	0.0000	0.00
27	786.41	786.51	0.0000	0.00
28	794.75	794.85	0.0000	0.00
29	860.25	860.33	0.0000	0.00
30	880.89	880.95	0.0000	0.00
31	911.65	911.70	0.0000	0.00
32	934.16	934.21	0.0000	0.00
33	965.07	965.11	0.0000	0.00
34	969.34	969.38	0.0000	0.00
35	1011.44	1011.46	0.0000	0.00
36	1117.02	1117.00	0.0000	0.00
37	1121.02	1121.00	0.0000	0.00
38	1145.52	1145.49	0.0000	0.00
39	1238.94	1238.88	0.0000	0.00
40	1352.07	1351.97	0.0000	0.00
41	1379.05	1378.93	0.0000	0.00
42	1408.31	1408.19	0.0000	0.00

Analysis Report for 1510087-09
CP5004S14-15

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1461.28	1461.14	0.0000	0.00
44	1495.59	1495.44	0.0000	0.00
45	1498.62	1498.46	0.0000	0.00
46	1509.50	1509.34	0.0000	0.00
47	1592.66	1592.47	0.0000	0.00
48	1595.04	1594.85	0.0000	0.00
49	1622.08	1621.87	0.0000	0.00
50	1632.21	1632.00	0.0000	0.00
51	1730.96	1730.71	0.0000	0.00
52	1764.94	1764.69	0.0000	0.00
53	1783.40	1783.14	0.0000	0.00
54	1796.22	1795.95	0.0000	0.00
55	1848.40	1848.11	0.0000	0.00
56	1987.12	1986.78	0.0000	0.00
57	2004.63	2004.28	0.0000	0.00
58	2103.65	2103.27	0.0000	0.00
59	2118.37	2117.98	0.0000	0.00
60	2205.02	2204.60	0.0000	0.00
61	2293.75	2293.30	0.0000	0.00
62	2330.33	2329.86	0.0000	0.00
63	2335.10	2334.63	0.0000	0.00
64	2448.29	2447.78	0.0000	0.00
65	2614.87	2614.28	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510087-09

CP5004S14-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 9:16:27AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	46.57	44 -	49	46.92	1.22E+02	70.50	8.99E+02	1.13
2	63.31	60 -	66	63.65	2.34E+02	98.74	1.61E+03	1.32
M 3	74.94	72 -	81	75.28	4.53E+02	92.65	1.20E+03	1.60
m 4	77.41	72 -	81	77.75	6.57E+02	99.34	1.16E+03	1.61
m 5	89.53	83 -	96	89.86	1.34E+02	66.33	7.70E+02	1.49
m 6	92.79	83 -	96	93.12	3.05E+02	69.66	7.29E+02	1.49
7	128.92	126 -	133	129.24	9.15E+01	83.71	1.10E+03	2.77
8	153.42	151 -	156	153.73	6.51E+01	61.33	7.02E+02	2.02
9	185.43	180 -	188	185.73	2.70E+02	86.01	9.73E+02	1.70
10	209.44	205 -	214	209.73	1.44E+02	86.38	9.79E+02	2.20
M 11	238.75	235 -	248	239.04	9.45E+02	76.59	4.38E+02	1.63
m 12	241.87	235 -	248	242.16	3.09E+02	82.09	4.33E+02	2.15
13	270.40	266 -	274	270.67	1.19E+02	63.29	5.39E+02	2.50
14	277.74	275 -	282	278.02	5.43E+01	52.76	4.27E+02	2.50
M 15	295.40	286 -	305	295.67	3.56E+02	52.77	2.66E+02	1.84
m 16	299.72	286 -	305	299.99	8.03E+01	42.77	2.54E+02	1.91
m 17	302.40	286 -	305	302.67	4.19E+01	41.29	2.49E+02	1.92
18	338.65	335 -	342	338.91	1.92E+02	58.17	4.35E+02	1.35
19	352.25	348 -	357	352.50	5.31E+02	72.08	4.36E+02	1.89
20	463.02	459 -	466	463.23	4.00E+01	42.33	2.72E+02	1.89
21	511.18	507 -	516	511.38	1.97E+02	47.09	2.02E+02	2.58
22	583.26	577 -	588	583.43	3.41E+02	57.72	2.46E+02	2.06
23	609.45	604 -	615	609.61	3.26E+02	61.29	3.08E+02	1.97
24	727.56	723 -	732	727.68	9.03E+01	39.69	1.69E+02	1.80
25	753.35	750 -	757	753.46	2.27E+01	28.64	1.17E+02	2.68
26	769.08	765 -	773	769.18	3.34E+01	33.53	1.51E+02	1.74
27	786.41	783 -	789	786.51	2.69E+01	27.29	1.10E+02	1.38
28	794.75	791 -	800	794.85	4.21E+01	35.48	1.58E+02	2.20
29	860.25	857 -	864	860.33	5.50E+01	26.83	8.20E+01	2.21
30	880.89	878 -	885	880.95	2.30E+01	20.59	5.39E+01	4.39
31	911.65	907 -	917	911.70	1.80E+02	39.26	1.08E+02	2.11
32	934.16	931 -	938	934.21	2.50E+01	26.08	9.80E+01	1.16
M 33	965.07	961 -	973	965.11	3.27E+01	24.25	9.41E+01	1.98
m 34	969.34	961 -	973	969.38	1.18E+02	30.07	7.95E+01	2.03
35	1011.44	1008 -	1016	1011.46	2.04E+01	25.87	9.12E+01	1.15
M 36	1117.02	1116 -	1126	1117.00	1.48E+01	11.40	3.32E+01	2.05
m 37	1121.02	1116 -	1126	1121.00	7.85E+01	28.25	8.83E+01	2.06
38	1145.52	1140 -	1151	1145.49	4.22E+01	32.74	1.10E+02	5.79
39	1238.94	1234 -	1245	1238.88	3.91E+01	39.29	1.72E+02	2.53
40	1352.07	1349 -	1355	1351.97	1.26E+01	11.36	1.47E+01	2.12

Analysis Report for 1510087-09
CP5004S14-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1379.05	1374 -	1383	1378.93	3.40E+01	21.19	4.39E+01	1.52
42	1408.31	1405 -	1413	1408.19	2.85E+01	13.13	9.00E+00	3.48
43	1461.28	1457 -	1467	1461.14	7.98E+02	59.02	3.98E+01	2.42
M 44	1495.59	1494 -	1503	1495.44	7.95E+00	7.04	6.85E+00	2.36
m 45	1498.62	1494 -	1503	1498.46	1.47E+01	14.56	2.35E+01	2.67
46	1509.50	1504 -	1514	1509.34	1.62E+01	16.35	2.56E+01	2.06
M 47	1592.66	1591 -	1597	1592.47	9.52E+00	6.32	1.05E+01	2.06
m 48	1595.04	1591 -	1597	1594.85	8.88E+00	12.81	1.75E+01	3.29
49	1622.08	1619 -	1627	1621.87	2.00E+01	12.84	1.20E+01	2.80
50	1632.21	1628 -	1636	1632.00	1.09E+01	12.69	1.82E+01	2.22
51	1730.96	1725 -	1735	1730.71	1.30E+01	14.73	2.20E+01	2.77
52	1764.94	1761 -	1769	1764.69	7.68E+01	19.20	1.05E+01	2.77
53	1783.40	1780 -	1786	1783.14	7.50E+00	6.95	3.00E+00	3.33
54	1796.22	1794 -	1798	1795.95	5.14E+00	6.36	3.71E+00	1.42
55	1848.40	1844 -	1852	1848.11	9.31E+00	11.17	1.34E+01	1.58
56	1987.12	1984 -	1990	1986.78	5.00E+00	6.34	4.00E+00	1.68
57	2004.63	2000 -	2008	2004.28	1.10E+01	8.50	4.08E+00	4.65
58	2103.65	2100 -	2106	2103.27	1.10E+01	10.04	9.94E+00	2.68
59	2118.37	2115 -	2120	2117.98	6.45E+00	8.43	9.09E+00	1.10
60	2205.02	2200 -	2208	2204.60	2.25E+01	12.19	9.00E+00	3.20
61	2293.75	2290 -	2296	2293.30	5.21E+00	6.34	3.57E+00	1.85
62	2330.33	2326 -	2332	2329.86	7.00E+00	5.29	0.00E+00	1.66
63	2335.10	2333 -	2337	2334.63	8.00E+00	5.66	0.00E+00	1.92
64	2448.29	2444 -	2450	2447.78	5.44E+00	7.78	7.11E+00	1.86
65	2614.87	2609 -	2619	2614.28	1.09E+02	20.88	0.00E+00	3.04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 9:16:27AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	46.57	44 -	49	1.22E+02	70.50	8.99E+02	5.50E+01
2	63.31	60 -	66	2.34E+02	98.74	1.61E+03	7.72E+01
M 3	74.94	72 -	81	4.53E+02	92.65	1.20E+03	5.69E+01

Analysis Report for 1510087-09

CP5004S14-15

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	4	77.41	72 -	81	6.57E+02	99.34	1.16E+03	5.59E+01
m	5	89.53	83 -	96	1.34E+02	66.33	7.70E+02	4.56E+01
m	6	92.79	83 -	96	3.05E+02	69.66	7.29E+02	4.44E+01
	7	128.92	126 -	133	9.15E+01	83.71	1.10E+03	6.70E+01
	8	153.42	151 -	156	6.51E+01	61.33	7.02E+02	4.86E+01
	9	185.43	180 -	188	2.70E+02	86.01	9.73E+02	3.85E+01
	10	209.44	205 -	214	1.44E+02	86.38	9.79E+02	6.82E+01
M	11	238.75	235 -	248	9.45E+02	76.59	4.38E+02	3.44E+01
m	12	241.87	235 -	248	3.09E+02	82.09	4.33E+02	3.42E+01
	13	270.40	266 -	274	1.19E+02	63.29	5.39E+02	4.88E+01
	14	277.74	275 -	282	5.43E+01	52.76	4.27E+02	4.16E+01
M	15	295.40	286 -	305	3.56E+02	52.77	2.66E+02	2.68E+01
m	16	299.72	286 -	305	8.03E+01	42.77	2.54E+02	2.62E+01
m	17	302.40	286 -	305	4.19E+01	41.29	2.49E+02	2.59E+01
	18	338.65	335 -	342	1.92E+02	58.17	4.35E+02	4.20E+01
	19	352.25	348 -	357	5.31E+02	72.08	4.36E+02	4.56E+01
	20	463.02	459 -	466	4.00E+01	42.33	2.72E+02	3.32E+01
	21	511.18	507 -	516	1.97E+02	47.09	2.02E+02	3.11E+01
	22	583.26	577 -	588	3.41E+02	57.72	2.46E+02	3.65E+01
	23	609.45	604 -	615	3.26E+02	61.29	3.08E+02	4.07E+01
	24	727.56	723 -	732	9.03E+01	39.69	1.69E+02	2.86E+01
	25	753.35	750 -	757	2.27E+01	28.64	1.17E+02	2.22E+01
	26	769.08	765 -	773	3.34E+01	33.53	1.51E+02	2.59E+01
	27	786.41	783 -	789	2.69E+01	27.29	1.10E+02	2.07E+01
	28	794.75	791 -	800	4.21E+01	35.48	1.58E+02	2.71E+01
	29	860.25	857 -	864	5.50E+01	26.83	8.20E+01	1.84E+01
	30	880.89	878 -	885	2.30E+01	20.59	5.39E+01	1.50E+01
	31	911.65	907 -	917	1.80E+02	39.26	1.08E+02	2.36E+01
	32	934.16	931 -	938	2.50E+01	26.08	9.80E+01	1.98E+01
M	33	965.07	961 -	973	3.27E+01	24.25	9.41E+01	1.59E+01
m	34	969.34	961 -	973	1.18E+02	30.07	7.95E+01	1.47E+01
	35	1011.44	1008 -	1016	2.04E+01	25.87	9.12E+01	1.99E+01
M	36	1117.02	1116 -	1126	1.48E+01	11.40	3.32E+01	9.48E+00
m	37	1121.02	1116 -	1126	7.85E+01	28.25	8.83E+01	1.54E+01
	38	1145.52	1140 -	1151	4.22E+01	32.74	1.10E+02	2.47E+01
	39	1238.94	1234 -	1245	3.91E+01	39.29	1.72E+02	3.06E+01
	40	1352.07	1349 -	1355	1.26E+01	11.36	1.47E+01	7.28E+00
	41	1379.05	1374 -	1383	3.40E+01	21.19	4.39E+01	1.45E+01
	42	1408.31	1405 -	1413	2.85E+01	13.13	9.00E+00	6.29E+00
	43	1461.28	1457 -	1467	7.98E+02	59.02	3.98E+01	1.40E+01
M	44	1495.59	1494 -	1503	7.95E+00	7.04	6.85E+00	4.30E+00
m	45	1498.62	1494 -	1503	1.47E+01	14.56	2.35E+01	7.96E+00
	46	1509.50	1504 -	1514	1.62E+01	16.35	2.56E+01	1.17E+01
M	47	1592.66	1591 -	1597	9.52E+00	6.32	1.05E+01	5.33E+00
m	48	1595.04	1591 -	1597	8.88E+00	12.81	1.75E+01	6.88E+00
	49	1622.08	1619 -	1627	2.00E+01	12.84	1.20E+01	7.57E+00
	50	1632.21	1628 -	1636	1.09E+01	12.69	1.82E+01	8.91E+00
	51	1730.96	1725 -	1735	1.30E+01	14.73	2.20E+01	1.06E+01
	52	1764.94	1761 -	1769	7.68E+01	19.20	1.05E+01	6.44E+00
	53	1783.40	1780 -	1786	7.50E+00	6.95	3.00E+00	3.51E+00
	54	1796.22	1794 -	1798	5.14E+00	6.36	3.71E+00	3.67E+00

Analysis Report for 1510087-09
CP5004S14-15

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
55	1848.40	1844 -	1852	9.31E+00	11.17	1.34E+01	7.69E+00
56	1987.12	1984 -	1990	5.00E+00	6.34	4.00E+00	3.70E+00
57	2004.63	2000 -	2008	1.10E+01	8.50	4.08E+00	4.38E+00
58	2103.65	2100 -	2106	1.10E+01	10.04	9.94E+00	6.19E+00
59	2118.37	2115 -	2120	6.45E+00	8.43	9.09E+00	5.53E+00
60	2205.02	2200 -	2208	2.25E+01	12.19	9.00E+00	6.29E+00
61	2293.75	2290 -	2296	5.21E+00	6.34	3.57E+00	3.62E+00
62	2330.33	2326 -	2332	7.00E+00	5.29	0.00E+00	0.00E+00
63	2335.10	2333 -	2337	8.00E+00	5.66	0.00E+00	0.00E+00
64	2448.29	2444 -	2450	5.44E+00	7.78	7.11E+00	5.12E+00
65	2614.87	2609 -	2619	1.09E+02	20.88	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 9:16:27AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	46.57	44 -	49	46.92	1.22E+02	70.50	8.99E+02	PB-210
2	63.31	60 -	66	63.65	2.34E+02	98.74	1.61E+03	TH-234 TH-230
M 3	74.94	72 -	81	75.28	4.53E+02	92.65	1.20E+03	AM-243
m 4	77.41	72 -	81	77.75	6.57E+02	99.34	1.16E+03	TI-44
m 5	89.53	83 -	96	89.86	1.34E+02	66.33	7.70E+02	.....
m 6	92.79	83 -	96	93.12	3.05E+02	69.66	7.29E+02	GA-67
7	128.92	126 -	133	129.24	9.15E+01	83.71	1.10E+03	.....
8	153.42	151 -	156	153.73	6.51E+01	61.33	7.02E+02	CS-136
9	185.43	180 -	188	185.73	2.70E+02	86.01	9.73E+02	RA-226
10	209.44	205 -	214	209.73	1.44E+02	86.38	9.79E+02	CM-243 GA-67
M 11	238.75	235 -	248	239.04	9.45E+02	76.59	4.38E+02	PB-212
m 12	241.87	235 -	248	242.16	3.09E+02	82.09	4.33E+02	RA-224
13	270.40	266 -	274	270.67	1.19E+02	63.29	5.39E+02	.....

Analysis Report for 1510087-09

CP5004S14-15

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	14	277.74	275 -	282	278.02	5.43E+01	52.76	4.27E+02	CM-243 NP-239
M	15	295.40	286 -	305	295.67	3.56E+02	52.77	2.66E+02	PB-214
m	16	299.72	286 -	305	299.99	8.03E+01	42.77	2.54E+02	BI-210M PB-212 GA-67
m	17	302.40	286 -	305	302.67	4.19E+01	41.29	2.49E+02	PA-231 BA-133
	18	338.65	335 -	342	338.91	1.92E+02	58.17	4.35E+02	AC-228
	19	352.25	348 -	357	352.50	5.31E+02	72.08	4.36E+02	PB-214
	20	463.02	459 -	466	463.23	4.00E+01	42.33	2.72E+02	SB-125
	21	511.18	507 -	516	511.38	1.97E+02	47.09	2.02E+02	.....
	22	583.26	577 -	588	583.43	3.41E+02	57.72	2.46E+02	TL-208
	23	609.45	604 -	615	609.61	3.26E+02	61.29	3.08E+02	BI-214
	24	727.56	723 -	732	727.68	9.03E+01	39.69	1.69E+02	BI-212
	25	753.35	750 -	757	753.46	2.27E+01	28.64	1.17E+02	.....
	26	769.08	765 -	773	769.18	3.34E+01	33.53	1.51E+02	.....
	27	786.41	783 -	789	786.51	2.69E+01	27.29	1.10E+02	.....
	28	794.75	791 -	800	794.85	4.21E+01	35.48	1.58E+02	.....
	29	860.25	857 -	864	860.33	5.50E+01	26.83	8.20E+01	TL-208
	30	880.89	878 -	885	880.95	2.30E+01	20.59	5.39E+01	.....
	31	911.65	907 -	917	911.70	1.80E+02	39.26	1.08E+02	LU-172 AC-228
	32	934.16	931 -	938	934.21	2.50E+01	26.08	9.80E+01	.....
M	33	965.07	961 -	973	965.11	3.27E+01	24.25	9.41E+01	.....
m	34	969.34	961 -	973	969.38	1.18E+02	30.07	7.95E+01	AC-228
	35	1011.44	1008 -	1016	1011.46	2.04E+01	25.87	9.12E+01	.....
M	36	1117.02	1116 -	1126	1117.00	1.48E+01	11.40	3.32E+01	.....
m	37	1121.02	1116 -	1126	1121.00	7.85E+01	28.25	8.83E+01	TA-182 SC-46 BI-214
	38	1145.52	1140 -	1151	1145.49	4.22E+01	32.74	1.10E+02	.....
	39	1238.94	1234 -	1245	1238.88	3.91E+01	39.29	1.72E+02	CO-56
	40	1352.07	1349 -	1355	1351.97	1.26E+01	11.36	1.47E+01	.....
	41	1379.05	1374 -	1383	1378.93	3.40E+01	21.19	4.39E+01	.....
	42	1408.31	1405 -	1413	1408.19	2.85E+01	13.13	9.00E+00	EU-152
	43	1461.28	1457 -	1467	1461.14	7.98E+02	59.02	3.98E+01	K-40
M	44	1495.59	1494 -	1503	1495.44	7.95E+00	7.04	6.85E+00	.....
m	45	1498.62	1494 -	1503	1498.46	1.47E+01	14.56	2.35E+01	.....
	46	1509.50	1504 -	1514	1509.34	1.62E+01	16.35	2.56E+01	.....
M	47	1592.66	1591 -	1597	1592.47	9.52E+00	6.32	1.05E+01	.....
m	48	1595.04	1591 -	1597	1594.85	8.88E+00	12.81	1.75E+01	.....
	49	1622.08	1619 -	1627	1621.87	2.00E+01	12.84	1.20E+01	.....
	50	1632.21	1628 -	1636	1632.00	1.09E+01	12.69	1.82E+01	.....
	51	1730.96	1725 -	1735	1730.71	1.30E+01	14.73	2.20E+01	.....
	52	1764.94	1761 -	1769	1764.69	7.68E+01	19.20	1.05E+01	BI-214
	53	1783.40	1780 -	1786	1783.14	7.50E+00	6.95	3.00E+00	.....
	54	1796.22	1794 -	1798	1795.95	5.14E+00	6.36	3.71E+00	.....
	55	1848.40	1844 -	1852	1848.11	9.31E+00	11.17	1.34E+01	.....
	56	1987.12	1984 -	1990	1986.78	5.00E+00	6.34	4.00E+00	.....
	57	2004.63	2000 -	2008	2004.28	1.10E+01	8.50	4.08E+00	.....
	58	2103.65	2100 -	2106	2103.27	1.10E+01	10.04	9.94E+00	.....
	59	2118.37	2115 -	2120	2117.98	6.45E+00	8.43	9.09E+00	.....
	60	2205.02	2200 -	2208	2204.60	2.25E+01	12.19	9.00E+00	BI-214

Analysis Report for 1510087-09
CP5004S14-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
61	2293.75	2290 -	2296	2293.30	5.21E+00	6.34	3.57E+00	.....
62	2330.33	2326 -	2332	2329.86	7.00E+00	5.29	0.00E+00	.....
63	2335.10	2333 -	2337	2334.63	8.00E+00	5.66	0.00E+00	.....
64	2448.29	2444 -	2450	2447.78	5.44E+00	7.78	7.11E+00	.....
65	2614.87	2609 -	2619	2614.28	1.09E+02	20.88	0.00E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 9:16:27AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.57	1.22E+02	70.50	1.68E-02
	2	63.31	2.34E+02	98.74	2.49E-02
M	3	74.94	4.53E+02	92.65	2.75E-02
m	4	77.41	6.57E+02	99.34	2.78E-02
m	5	89.53	1.34E+02	66.33	2.85E-02
m	6	92.79	3.05E+02	69.66	2.86E-02
	7	128.92	9.15E+01	83.71	2.67E-02
	8	153.42	6.51E+01	61.33	2.48E-02
	9	185.43	2.70E+02	86.01	2.24E-02
	10	209.44	1.44E+02	86.38	2.09E-02
M	11	238.75	9.45E+02	76.59	1.92E-02
m	12	241.87	3.09E+02	82.09	1.91E-02
	13	270.40	1.19E+02	63.29	1.77E-02
	14	277.74	5.43E+01	52.76	1.74E-02
M	15	295.40	3.56E+02	52.77	1.67E-02
m	16	299.72	8.03E+01	42.77	1.65E-02
m	17	302.40	4.19E+01	41.29	1.64E-02
	18	338.65	1.92E+02	58.17	1.52E-02
	19	352.25	5.31E+02	72.08	1.48E-02
	20	463.02	4.00E+01	42.33	1.21E-02
	21	511.18	1.97E+02	47.09	1.12E-02
	22	583.26	3.41E+02	57.72	1.02E-02
	23	609.45	3.26E+02	61.29	9.82E-03
	24	727.56	9.03E+01	39.69	8.55E-03
	25	753.35	2.27E+01	28.64	8.32E-03

Analysis Report for 1510087-09
CP5004S14-15

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	26	769.08	3.34E+01	33.53	8.18E-03	7.38E-04
	27	786.41	2.69E+01	27.29	8.04E-03	7.22E-04
	28	794.75	4.21E+01	35.48	7.97E-03	7.15E-04
	29	860.25	5.50E+01	26.83	7.48E-03	6.56E-04
	30	880.89	2.30E+01	20.59	7.34E-03	6.38E-04
	31	911.65	1.80E+02	39.26	7.14E-03	6.15E-04
	32	934.16	2.50E+01	26.08	7.01E-03	6.04E-04
M	33	965.07	3.27E+01	24.25	6.83E-03	5.87E-04
m	34	969.34	1.18E+02	30.07	6.80E-03	5.85E-04
	35	1011.44	2.04E+01	25.87	6.58E-03	5.63E-04
M	36	1117.02	1.48E+01	11.40	6.08E-03	5.08E-04
m	37	1121.02	7.85E+01	28.25	6.06E-03	5.06E-04
	38	1145.52	4.22E+01	32.74	5.96E-03	4.94E-04
	39	1238.94	3.91E+01	39.29	5.61E-03	4.68E-04
	40	1352.07	1.26E+01	11.36	5.26E-03	4.46E-04
	41	1379.05	3.40E+01	21.19	5.18E-03	4.40E-04
	42	1408.31	2.85E+01	13.13	5.10E-03	4.32E-04
	43	1461.28	7.98E+02	59.02	4.97E-03	4.19E-04
M	44	1495.59	7.95E+00	7.04	4.89E-03	4.11E-04
m	45	1498.62	1.47E+01	14.56	4.88E-03	4.10E-04
	46	1509.50	1.62E+01	16.35	4.86E-03	4.07E-04
M	47	1592.66	9.52E+00	6.32	4.69E-03	3.86E-04
m	48	1595.04	8.88E+00	12.81	4.68E-03	3.86E-04
	49	1622.08	2.00E+01	12.84	4.63E-03	3.79E-04
	50	1632.21	1.09E+01	12.69	4.61E-03	3.77E-04
	51	1730.96	1.30E+01	14.73	4.45E-03	3.52E-04
	52	1764.94	7.68E+01	19.20	4.40E-03	3.44E-04
	53	1783.40	7.50E+00	6.95	4.37E-03	3.39E-04
	54	1796.22	5.14E+00	6.36	4.35E-03	3.36E-04
	55	1848.40	9.31E+00	11.17	4.28E-03	3.26E-04
	56	1987.12	5.00E+00	6.34	4.12E-03	3.26E-04
	57	2004.63	1.10E+01	8.50	4.11E-03	3.26E-04
	58	2103.65	1.10E+01	10.04	4.02E-03	3.26E-04
	59	2118.37	6.45E+00	8.43	4.01E-03	3.26E-04
	60	2205.02	2.25E+01	12.19	3.95E-03	3.26E-04
	61	2293.75	5.21E+00	6.34	3.90E-03	3.26E-04
	62	2330.33	7.00E+00	5.29	3.88E-03	3.26E-04
	63	2335.10	8.00E+00	5.66	3.88E-03	3.26E-04
	64	2448.29	5.44E+00	7.78	3.83E-03	3.26E-04
	65	2614.87	1.09E+02	20.88	3.79E-03	3.26E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

Analysis Report for 1510087-09
CP5004S14-15

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 9:16:27AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	1.22E+02	70.50	4.50E+01	8.46E+00	7.75E+01	7.10E+01
	2	2.34E+02	98.74	7.80E+01	1.33E+01	1.56E+02	9.96E+01
M	3	4.53E+02	92.65	5.09E+00	4.37E+00	4.47E+02	9.28E+01
m	4	6.57E+02	99.34	9.75E+00	8.28E+00	6.47E+02	9.97E+01
m	5	1.34E+02	66.33			1.34E+02	6.63E+01
m	6	3.05E+02	69.66	1.34E+02	9.83E+00	1.71E+02	7.03E+01
	7	9.15E+01	83.71			9.15E+01	8.37E+01
	8	6.51E+01	61.33			6.51E+01	6.13E+01
	9	2.70E+02	86.01	6.41E+01	7.38E+00	2.06E+02	8.63E+01
	10	1.44E+02	86.38			1.44E+02	8.64E+01
M	11	9.45E+02	76.59	2.34E+01	6.34E+00	9.22E+02	7.69E+01
m	12	3.09E+02	82.09			3.09E+02	8.21E+01
	13	1.19E+02	63.29			1.19E+02	6.33E+01
	14	5.43E+01	52.76			5.43E+01	5.28E+01
M	15	3.56E+02	52.77	4.17E+00	5.50E+00	3.52E+02	5.31E+01
m	16	8.03E+01	42.77			8.03E+01	4.28E+01
m	17	4.19E+01	41.29			4.19E+01	4.13E+01
	18	1.92E+02	58.17	2.22E-01	4.54E+00	1.92E+02	5.83E+01
	19	5.31E+02	72.08	8.83E+00	4.91E+00	5.22E+02	7.23E+01
	20	4.00E+01	42.33			4.00E+01	4.23E+01
	21	1.97E+02	47.09	8.12E+01	5.49E+00	1.16E+02	4.74E+01
	22	3.41E+02	57.72	6.34E+00	3.74E+00	3.35E+02	5.78E+01
	23	3.26E+02	61.29	5.20E+00	3.69E+00	3.21E+02	6.14E+01
	24	9.03E+01	39.69			9.03E+01	3.97E+01
	25	2.27E+01	28.64			2.27E+01	2.86E+01
	26	3.34E+01	33.53			3.34E+01	3.35E+01
	27	2.69E+01	27.29			2.69E+01	2.73E+01
	28	4.21E+01	35.48			4.21E+01	3.55E+01
	29	5.50E+01	26.83			5.50E+01	2.68E+01
	30	2.30E+01	20.59			2.30E+01	2.06E+01
	31	1.80E+02	39.26	3.28E+00	2.53E+00	1.77E+02	3.93E+01
	32	2.50E+01	26.08			2.50E+01	2.61E+01
M	33	3.27E+01	24.25			3.27E+01	2.42E+01
m	34	1.18E+02	30.07			1.18E+02	3.01E+01
	35	2.04E+01	25.87			2.04E+01	2.59E+01
M	36	1.117.02	11.40			1.48E+01	1.14E+01
m	37	7.85E+01	28.25	2.28E+00	2.55E+00	7.62E+01	2.84E+01
	38	4.22E+01	32.74			4.22E+01	3.27E+01
	39	3.91E+01	39.29			3.91E+01	3.93E+01
	40	1.26E+01	11.36			1.26E+01	1.14E+01
	41	3.40E+01	21.19			3.40E+01	2.12E+01
	42	2.85E+01	13.13			2.85E+01	1.31E+01
	43	7.98E+02	59.02	6.46E+00	2.33E+00	7.92E+02	5.91E+01
M	44	7.95E+00	7.04			7.95E+00	7.04E+00

Analysis Report for 1510087-09
CP5004S14-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	45	1498.62	1.47E+01	14.56			1.47E+01	1.46E+01
	46	1509.50	1.62E+01	16.35			1.62E+01	1.63E+01
M	47	1592.66	9.52E+00	6.32			9.52E+00	6.32E+00
m	48	1595.04	8.88E+00	12.81			8.88E+00	1.28E+01
	49	1622.08	2.00E+01	12.84			2.00E+01	1.28E+01
	50	1632.21	1.09E+01	12.69			1.09E+01	1.27E+01
	51	1730.96	1.30E+01	14.73			1.30E+01	1.47E+01
	52	1764.94	7.68E+01	19.20			7.68E+01	1.92E+01
	53	1783.40	7.50E+00	6.95			7.50E+00	6.95E+00
	54	1796.22	5.14E+00	6.36			5.14E+00	6.36E+00
	55	1848.40	9.31E+00	11.17			9.31E+00	1.12E+01
	56	1987.12	5.00E+00	6.34			5.00E+00	6.34E+00
	57	2004.63	1.10E+01	8.50			1.10E+01	8.50E+00
	58	2103.65	1.10E+01	10.04			1.10E+01	1.00E+01
	59	2118.37	6.45E+00	8.43			6.45E+00	8.43E+00
	60	2205.02	2.25E+01	12.19			2.25E+01	1.22E+01
	61	2293.75	5.21E+00	6.34			5.21E+00	6.34E+00
	62	2330.33	7.00E+00	5.29			7.00E+00	5.29E+00
	63	2335.10	8.00E+00	5.66			8.00E+00	5.66E+00
	64	2448.29	5.44E+00	7.78			5.44E+00	7.78E+00
	65	2614.87	1.09E+02	20.88	3.47E+00	1.48E+00	1.06E+02	2.09E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 9:16:27AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.57	1.22E+02	70.50	4.50E+01	8.46E+00	7.75E+01	7.10E+01
	2	63.31	2.34E+02	98.74	7.80E+01	1.33E+01	1.56E+02	9.96E+01
M	3	74.94	4.53E+02	92.65	5.09E+00	4.37E+00	4.47E+02	9.28E+01
m	4	77.41	6.57E+02	99.34	9.75E+00	8.28E+00	6.47E+02	9.97E+01
m	5	89.53	1.34E+02	66.33			1.34E+02	6.63E+01
m	6	92.79	3.05E+02	69.66	1.34E+02	9.83E+00	1.71E+02	7.03E+01
	7	128.92	9.15E+01	83.71			9.15E+01	8.37E+01

Analysis Report for 1510087-09

CP5004S14-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	8	153.42	6.51E+01	61.33			6.51E+01	6.13E+01
	9	185.43	2.70E+02	86.01	6.41E+01	7.38E+00	2.06E+02	8.63E+01
	10	209.44	1.44E+02	86.38			1.44E+02	8.64E+01
M	11	238.75	9.45E+02	76.59	2.34E+01	6.34E+00	9.22E+02	7.69E+01
m	12	241.87	3.09E+02	82.09			3.09E+02	8.21E+01
	13	270.40	1.19E+02	63.29			1.19E+02	6.33E+01
	14	277.74	5.43E+01	52.76			5.43E+01	5.28E+01
M	15	295.40	3.56E+02	52.77	4.17E+00	5.50E+00	3.52E+02	5.31E+01
m	16	299.72	8.03E+01	42.77			8.03E+01	4.28E+01
m	17	302.40	4.19E+01	41.29			4.19E+01	4.13E+01
	18	338.65	1.92E+02	58.17	2.22E-01	4.54E+00	1.92E+02	5.83E+01
	19	352.25	5.31E+02	72.08	8.83E+00	4.91E+00	5.22E+02	7.23E+01
	20	463.02	4.00E+01	42.33			4.00E+01	4.23E+01
	21	511.18	1.97E+02	47.09	8.12E+01	5.49E+00	1.16E+02	4.74E+01
	22	583.26	3.41E+02	57.72	6.34E+00	3.74E+00	3.35E+02	5.78E+01
	23	609.45	3.26E+02	61.29	5.20E+00	3.69E+00	3.21E+02	6.14E+01
	24	727.56	9.03E+01	39.69			9.03E+01	3.97E+01
	25	753.35	2.27E+01	28.64			2.27E+01	2.86E+01
	26	769.08	3.34E+01	33.53			3.34E+01	3.35E+01
	27	786.41	2.69E+01	27.29			2.69E+01	2.73E+01
	28	794.75	4.21E+01	35.48			4.21E+01	3.55E+01
	29	860.25	5.50E+01	26.83			5.50E+01	2.68E+01
	30	880.89	2.30E+01	20.59			2.30E+01	2.06E+01
	31	911.65	1.80E+02	39.26	3.28E+00	2.53E+00	1.77E+02	3.93E+01
	32	934.16	2.50E+01	26.08			2.50E+01	2.61E+01
M	33	965.07	3.27E+01	24.25			3.27E+01	2.42E+01
m	34	969.34	1.18E+02	30.07			1.18E+02	3.01E+01
	35	1011.44	2.04E+01	25.87			2.04E+01	2.59E+01
M	36	1117.02	1.48E+01	11.40			1.48E+01	1.14E+01
m	37	1121.02	7.85E+01	28.25	2.28E+00	2.55E+00	7.62E+01	2.84E+01
	38	1145.52	4.22E+01	32.74			4.22E+01	3.27E+01
	39	1238.94	3.91E+01	39.29			3.91E+01	3.93E+01
	40	1352.07	1.26E+01	11.36			1.26E+01	1.14E+01
	41	1379.05	3.40E+01	21.19			3.40E+01	2.12E+01
	42	1408.31	2.85E+01	13.13			2.85E+01	1.31E+01
	43	1461.28	7.98E+02	59.02	6.46E+00	2.33E+00	7.92E+02	5.91E+01
M	44	1495.59	7.95E+00	7.04			7.95E+00	7.04E+00
m	45	1498.62	1.47E+01	14.56			1.47E+01	1.46E+01
	46	1509.50	1.62E+01	16.35			1.62E+01	1.63E+01
M	47	1592.66	9.52E+00	6.32			9.52E+00	6.32E+00
m	48	1595.04	8.88E+00	12.81			8.88E+00	1.28E+01
	49	1622.08	2.00E+01	12.84			2.00E+01	1.28E+01
	50	1632.21	1.09E+01	12.69			1.09E+01	1.27E+01
	51	1730.96	1.30E+01	14.73			1.30E+01	1.47E+01
	52	1764.94	7.68E+01	19.20			7.68E+01	1.92E+01
	53	1783.40	7.50E+00	6.95			7.50E+00	6.95E+00
	54	1796.22	5.14E+00	6.36			5.14E+00	6.36E+00
	55	1848.40	9.31E+00	11.17			9.31E+00	1.12E+01
	56	1987.12	5.00E+00	6.34			5.00E+00	6.34E+00
	57	2004.63	1.10E+01	8.50			1.10E+01	8.50E+00
	58	2103.65	1.10E+01	10.04			1.10E+01	1.00E+01
	59	2118.37	6.45E+00	8.43			6.45E+00	8.43E+00
	60	2205.02	2.25E+01	12.19			2.25E+01	1.22E+01
	61	2293.75	5.21E+00	6.34			5.21E+00	6.34E+00

Analysis Report for 1510087-09
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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
62	2330.33	7.00E+00	5.29			7.00E+00	5.29E+00
63	2335.10	8.00E+00	5.66			8.00E+00	5.66E+00
64	2448.29	5.44E+00	7.78			5.44E+00	7.78E+00
65	2614.87	1.09E+02	20.88	3.47E+00	1.48E+00	1.06E+02	2.09E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.966	1460.81 *	10.67	2.12E+01	2.43E+00
GA-67	0.581	93.31 *	35.70	2.46E+02	1.09E+03
		208.95 *	2.24	4.53E+03	1.95E+04
		300.22 *	16.00	4.46E+02	1.98E+03
TL-208	0.995	583.14 *	30.22	1.55E+00	3.02E-01
		860.37 *	4.48	2.33E+00	1.15E+00
		2614.66 *	35.85	1.10E+00	2.38E-01
PB-210	0.999	46.50 *	4.25	1.54E+00	1.42E+00
BI-212	0.746	727.17 *	11.80	1.27E+00	5.70E-01
		1620.62	2.75		
PB-212	0.996	238.63 *	44.60	1.53E+00	1.82E-01
		300.09 *	3.41	2.03E+00	1.09E+00
BI-214	0.970	609.31 *	46.30	1.00E+00	2.12E-01
		1120.29 *	15.10	1.18E+00	4.51E-01
		1764.49 *	15.80	1.57E+00	4.11E-01
		2204.22 *	4.98	1.63E+00	8.90E-01
PB-214	0.987	295.21 *	19.19	1.56E+00	2.65E-01
		351.92 *	37.19	1.35E+00	2.17E-01
RA-224	0.880	240.98 *	3.95	5.84E+00	1.63E+00
RA-226	0.907	186.21 *	3.28	3.97E+00	7.46E+00
AC-228	0.968	338.32 *	11.40	1.58E+00	4.96E-01
		911.07 *	27.70	1.27E+00	3.03E-01
		969.11 *	16.60	1.49E+00	3.99E-01
PA-231	0.328	283.67	1.60		
		302.67 *	2.30	1.58E+00	1.56E+00
TH-234	1.000	63.29 *	3.80	2.34E+00	1.50E+00
AM-243	0.989	74.67 *	66.00	3.50E-01	7.83E-02

Analysis Report for 1510087-09
 CP5004S14-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CM-243	0.371	209.75 *	3.29	2.99E+00	1.81E+00
		228.14	10.60		
		277.60 *	14.00	3.18E-01	3.09E-01

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 Energy Tolerance : 1.000 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 9:16:27AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 4	77.41	1.79758E-01	7.70	Tol.	TI-44
m 5	89.53	3.72631E-02	24.72		
7	128.92	2.54238E-02	45.73		
8	153.42	1.80726E-02	47.13	Tol.	CS-136
13	270.40	3.31384E-02	26.53		
20	463.02	1.11111E-02	52.92	Sum	
21	511.18	3.21918E-02	20.45	Sum	
25	753.35	6.31173E-03	63.01		
26	769.08	9.27498E-03	50.22	Sum	
27	786.41	7.45935E-03	50.80		
28	794.75	1.16988E-02	42.12	Sum	
30	880.89	6.40000E-03	44.69		
32	934.16	6.94069E-03	52.18		
M 33	965.07	9.09437E-03	37.03		
35	1011.44	5.67340E-03	63.32		
M 36	1117.02	4.09894E-03	38.63		
38	1145.52	1.17268E-02	38.78		
39	1238.94	1.08556E-02	50.27		
40	1352.07	3.51389E-03	44.89		
41	1379.05	9.45436E-03	31.13		
42	1408.31	7.91667E-03	23.04	Tol.	EU-152
M 44	1495.59	2.20942E-03	44.23	Sum	
m 45	1498.62	4.08170E-03	49.54		
46	1509.50	4.50192E-03	50.43		
M 47	1592.66	2.64511E-03	33.21	D-Esc	
m 48	1595.04	2.46697E-03	72.10		

Analysis Report for 1510087-09
CP5004S14-15

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
49	1622.08	5.55556E-03	32.09		
50	1632.21	3.02778E-03	58.20		
51	1730.96	3.61111E-03	56.66	Sum	
53	1783.40	2.08333E-03	46.31		
54	1796.22	1.42857E-03	61.87		
55	1848.40	2.58681E-03	59.97	Sum	
56	1987.12	1.38889E-03	63.44		
57	2004.63	3.04487E-03	38.77	Sum	
58	2103.65	3.06424E-03	45.50	S-Esc	
59	2118.37	1.79293E-03	65.27		
61	2293.75	1.44841E-03	60.84		
62	2330.33	1.94444E-03	37.80		
63	2335.10	2.22222E-03	35.36		
64	2448.29	1.51235E-03	71.43		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.96	1460.81 *	10.67	2.12E+01	2.43E+00
GA-67	0.58	93.31 *	35.70	2.46E+02	1.09E+03
		208.95 *	2.24	4.53E+03	1.95E+04
		300.22 *	16.00	4.46E+02	1.98E+03
TL-208	0.99	583.14 *	30.22	1.55E+00	3.02E-01
		860.37 *	4.48	2.33E+00	1.15E+00
		2614.66 *	35.85	1.10E+00	2.38E-01
PB-210	0.99	46.50 *	4.25	1.54E+00	1.42E+00
BI-212	0.74	727.17 *	11.80	1.27E+00	5.70E-01
		1620.62 *	2.75		
PB-212	0.99	238.63 *	44.60	1.53E+00	1.82E-01
		300.09 *	3.41	2.03E+00	1.09E+00
BI-214	0.97	609.31 *	46.30	1.00E+00	2.12E-01
		1120.29 *	15.10	1.18E+00	4.51E-01

Analysis Report for 1510087-09
CP5004S14-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.97	1764.49 *	15.80	1.57E+00	4.11E-01
		2204.22 *	4.98	1.63E+00	8.90E-01
PB-214	0.98	295.21 *	19.19	1.56E+00	2.65E-01
		351.92 *	37.19	1.35E+00	2.17E-01
RA-224	0.88	240.98 *	3.95	5.84E+00	1.63E+00
RA-226	0.90	186.21 *	3.28	3.97E+00	7.46E+00
AC-228	0.96	338.32 *	11.40	1.58E+00	4.96E-01
		911.07 *	27.70	1.27E+00	3.03E-01
		969.11 *	16.60	1.49E+00	3.99E-01
PA-231	0.32	283.67	1.60		
		302.67 *	2.30	1.58E+00	1.56E+00
TH-234	1.00	63.29 *	3.80	2.34E+00	1.50E+00
AM-243	0.98	74.67 *	66.00	3.50E-01	7.83E-02
CM-243	0.37	209.75 *	3.29	2.99E+00	1.81E+00
		228.14	10.60		
		277.60 *	14.00	3.18E-01	3.09E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.966	2.12E+01	2.43E+00	
GA-67	0.581	2.30E+02	9.83E+02	
TL-208	0.995	1.30E+00	1.85E-01	
PB-210	0.999	1.54E+00	1.42E+00	
BI-212	0.746	1.27E+00	5.70E-01	
PB-212	0.996	1.51E+00	1.80E-01	
BI-214	0.970	1.15E+00	1.71E-01	
PB-214	0.987	1.44E+00	1.68E-01	
RA-224	0.880	5.84E+00	1.63E+00	
RA-226	0.907	3.97E+00	7.46E+00	
AC-228	0.968	1.39E+00	2.17E-01	

Analysis Report for 1510087-09
CP5004S14-15

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
PA-231	0.328	1.58E+00	1.56E+00	
TH-234	1.000	2.34E+00	1.50E+00	
AM-243	0.989	3.50E-01	7.83E-02	
CM-243	0.371	3.89E-01	3.05E-01	

- ? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1510087-09
CP5004S14-15

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 9:16:27AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	4	77.41	1.79758E-01	7.70	Tol.	TI-44
m	5	89.53	3.72631E-02	24.72		
	7	128.92	2.54238E-02	45.73		
	8	153.42	1.80726E-02	47.13	Tol.	CS-136
	13	270.40	3.31384E-02	26.53		
	20	463.02	1.11111E-02	52.92	Sum	
	21	511.18	3.21918E-02	20.45	Sum	
	25	753.35	6.31173E-03	63.01		
	26	769.08	9.27498E-03	50.22	Sum	
	27	786.41	7.45935E-03	50.80		
	28	794.75	1.16988E-02	42.12	Sum	
	30	880.89	6.40000E-03	44.69		
	32	934.16	6.94069E-03	52.18		
M	33	965.07	9.09437E-03	37.03		
	35	1011.44	5.67340E-03	63.32		
M	36	1117.02	4.09894E-03	38.63		
	38	1145.52	1.17268E-02	38.78		
	39	1238.94	1.08556E-02	50.27		
	40	1352.07	3.51389E-03	44.89		
	41	1379.05	9.45436E-03	31.13		
	42	1408.31	7.91667E-03	23.04	Tol.	EU-152
M	44	1495.59	2.20942E-03	44.23	Sum	
m	45	1498.62	4.08170E-03	49.54		
	46	1509.50	4.50192E-03	50.43		
M	47	1592.66	2.64511E-03	33.21	D-Esc	
m	48	1595.04	2.46697E-03	72.10		
	49	1622.08	5.55556E-03	32.09		
	50	1632.21	3.02778E-03	58.20		
	51	1730.96	3.61111E-03	56.66	Sum	
	53	1783.40	2.08333E-03	46.31		
	54	1796.22	1.42857E-03	61.87		
	55	1848.40	2.58681E-03	59.97	Sum	
	56	1987.12	1.38889E-03	63.44		
	57	2004.63	3.04487E-03	38.77	Sum	
	58	2103.65	3.06424E-03	45.50	S-Esc	

Analysis Report for 1510087-09
CP5004S14-15

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
59	2118.37	1.79293E-03	65.27		
61	2293.75	1.44841E-03	60.84		
62	2330.33	1.94444E-03	37.80		
63	2335.10	2.22222E-03	35.36		
64	2448.29	1.51235E-03	71.43		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	1.79E-01	9.22E-01	9.22E-01
+	NA-22	1274.54	99.94	-2.49E-03	8.61E-02	8.61E-02
+	NA-24	1368.53	99.99	7.25E+13	2.15E+14	4.27E+14
		2754.09	99.86	2.44E+13		2.15E+14
+	AL-26	1808.65	99.76	2.33E-02	5.72E-02	5.72E-02
+	K-40	1460.81	* 10.67	2.12E+01	8.64E-01	8.64E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	1.08E-02	6.96E-02	6.96E-02
		78.34	96.00	2.21E-01		8.87E-02
+	SC-46	889.25	99.98	4.97E-02	9.17E-02	9.17E-02
		1120.51	99.99	2.74E-01		1.81E-01
+	V-48	983.52	99.98	6.12E-02	2.93E-01	2.93E-01
		1312.10	97.50	-7.83E-02		3.06E-01
+	CR-51	320.08	9.83	1.89E-02	1.19E+00	1.19E+00
+	MN-54	834.83	99.97	-2.82E-02	7.35E-02	7.35E-02
+	CO-56	846.75	99.96	-5.12E-03	9.90E-02	9.90E-02
		1037.75	14.03	-1.34E-01		6.80E-01
		1238.25	67.00	2.15E-01		2.39E-01
		1771.40	15.51	5.91E-02		4.64E-01
		2598.48	16.90	-2.95E-02		2.17E-01
+	CO-57	122.06	85.51	5.61E-03	6.10E-02	6.10E-02
		136.48	10.60	-1.06E-01		5.13E-01
+	CO-58	810.76	99.40	-2.41E-02	1.03E-01	1.03E-01
+	FE-59	1099.22	56.50	3.95E-02	2.41E-01	2.41E-01

Analysis Report for 1510087-09
CP5004S14-15

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	FE-59	1291.56	43.20	1.40E-01	2.41E-01	3.15E-01
+	CO-60	1173.22	100.00	2.59E-02	7.27E-02	9.37E-02
		1332.49	100.00	-4.09E-02		7.27E-02
+	ZN-65	1115.52	50.75	-4.30E-02	2.14E-01	2.14E-01
+	GA-67	93.31	* 35.70	2.46E+02	3.47E+02	3.47E+02
		208.95	* 2.24	4.53E+03		4.37E+03
		300.22	* 16.00	4.46E+02		9.01E+02
+	SE-75	121.11	16.70	2.29E-01	9.95E-02	3.51E-01
		136.00	59.20	1.24E-01		1.05E-01
		264.65	59.80	-3.46E-03		9.95E-02
		279.53	25.20	3.52E-03		2.46E-01
		400.65	11.40	4.55E-01		6.03E-01
+	RB-82	776.52	13.00	-5.25E-01	1.25E+00	1.25E+00
+	RB-83	520.41	46.00	1.34E-01	1.80E-01	1.80E-01
		529.64	30.30	1.47E-01		2.81E-01
		552.65	16.40	-1.01E-01		5.08E-01
+	KR-85	513.99	0.43	2.35E+01	2.08E+01	2.08E+01
+	SR-85	513.99	99.27	1.45E-01	1.28E-01	1.28E-01
+	Y-88	898.02	93.40	-1.13E-02	8.27E-02	1.02E-01
		1836.01	99.38	2.03E-02		8.27E-02
+	NB-93M	16.57	9.43	-7.63E+01	6.69E+01	6.69E+01
+	NB-94	702.63	100.00	-1.38E-02	6.76E-02	6.95E-02
		871.10	100.00	1.74E-02		6.76E-02
+	NB-95	765.79	99.81	2.18E-02	1.58E-01	1.58E-01
+	NB-95M	235.69	25.00	-1.16E+03	1.47E+02	1.47E+02
+	ZR-95	724.18	43.70	4.62E-02	1.68E-01	2.84E-01
		756.72	55.30	-1.92E-02		1.68E-01
+	MO-99	181.06	6.20	1.59E+03	2.10E+03	3.20E+03
		739.58	12.80	1.06E+02		2.10E+03
		778.00	4.50	-1.67E+03		5.60E+03
+	RU-103	497.08	89.00	-1.46E-02	1.25E-01	1.25E-01
+	RU-106	621.84	9.80	-3.25E-01	6.36E-01	6.36E-01
+	AG-108M	433.93	89.90	-6.05E-03	7.30E-02	7.34E-02
		614.37	90.40	2.09E-02		7.30E-02
		722.95	90.50	2.28E-02		8.87E-02
+	CD-109	88.03	3.72	-9.75E-02	1.94E+00	1.94E+00
+	AG-110M	657.75	93.14	3.17E-04	7.70E-02	7.70E-02
		677.61	10.53	2.91E-02		7.19E-01
		706.67	16.46	4.62E-02		4.64E-01
		763.93	21.98	1.12E-01		3.65E-01
		884.67	71.63	8.21E-03		8.73E-02
		1384.27	23.94	-6.29E-02		3.15E-01
+	CD-113M	263.70	0.02	6.44E+01	2.22E+02	2.22E+02
+	SN-113	255.12	1.93	-3.80E-01	1.02E-01	3.37E+00
		391.69	64.90	2.52E-02		1.02E-01
+	TE123M	159.00	84.10	-4.85E-02	6.86E-02	6.86E-02
+	SB-124	602.71	97.87	-1.65E-02	9.11E-02	9.11E-02
		645.85	7.26	7.24E-01		1.34E+00

Analysis Report for 1510087-09
CP5004S14-15

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-124	722.78	11.10	2.71E-01	9.11E-02	1.05E+00
		1691.02	49.00	3.64E-03		1.56E-01
+	I-125	35.49	6.49	-2.81E-01	3.22E+00	3.22E+00
+	SB-125	176.33	6.89	1.58E-01	2.17E-01	7.51E-01
		427.89	29.33	-1.36E-02		2.17E-01
		463.38	10.35	4.32E-01		7.10E-01
		600.56	17.80	-9.65E-02		3.57E-01
		635.90	11.32	-5.71E-02		5.27E-01
+	SB-126	414.70	83.30	-1.59E-01	4.33E-01	4.61E-01
		666.33	99.60	9.24E-02		4.33E-01
		695.00	99.60	-7.82E-02		4.62E-01
		720.50	53.80	2.02E-01		8.57E-01
+	SN-126	87.57	37.00	-9.34E-03	1.85E-01	1.85E-01
+	SB-127	473.00	25.00	3.62E+01	6.81E+01	9.25E+01
		685.20	35.70	-1.71E+00		6.81E+01
		783.80	14.70	5.71E+00		1.97E+02
+	I-129	29.78	57.00	6.48E-02	4.85E-01	4.85E-01
		33.60	13.20	1.65E-01		1.33E+00
		39.58	7.52	-2.20E-01		1.41E+00
+	I-131	284.30	6.05	2.30E+00	1.02E+00	1.30E+01
		364.48	81.20	-3.41E-01		1.02E+00
		636.97	7.26	-1.67E+00		1.29E+01
		722.89	1.80	1.92E+01		7.43E+01
+	TE-132	49.72	13.10	5.53E+01	5.85E+01	5.87E+02
		228.16	88.00	-3.19E+01		5.85E+01
+	BA-133	81.00	33.00	-1.14E+00	9.06E-02	1.77E-01
		302.84	17.80	6.67E-02		3.07E-01
		356.01	60.00	-5.94E-01		9.06E-02
+	I-133	529.87	86.30	8.68E+09	1.66E+10	1.66E+10
+	XE-133	81.00	38.00	-7.38E+01	1.15E+01	1.15E+01
+	CS-134	563.23	8.38	-4.18E-01	6.96E-02	7.41E-01
		569.32	15.43	1.37E-01		4.49E-01
		604.70	97.60	-8.70E-03		6.96E-02
		795.84	85.40	7.18E-02		1.03E-01
		801.93	8.73	-4.15E-01		8.64E-01
+	CS-135	268.24	16.00	2.64E-01	3.76E-01	3.76E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	3.42E+00	3.99E-01	3.91E+00
		163.89	4.61	2.72E+00		6.28E+00
		176.55	13.56	4.38E-01		2.09E+00
		273.65	12.66	-3.11E+00		2.26E+00
		340.57	48.50	1.41E+00		8.67E-01
		818.50	99.70	7.96E-02		3.99E-01
		1048.07	79.60	4.27E-01		6.13E-01
		1235.34	19.70	6.24E-01		3.00E+00
+	CS-137	661.65	85.12	-2.74E-02	7.80E-02	7.80E-02
+	LA-138	788.74	34.00	-8.27E-02	1.11E-01	2.20E-01

Analysis Report for 1510087-09
CP5004S14-15

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-138	1435.80	66.00	3.90E-02	1.11E-01	1.11E-01
+	CE-139	165.85	80.35	1.96E-02	7.53E-02	7.53E-02
+	BA-140	162.64	6.70	9.09E-01	1.63E+00	4.44E+00
		304.84	4.50	7.75E-01		6.37E+00
		423.70	3.20	-3.05E+00		1.10E+01
		437.55	2.00	1.40E+00		1.96E+01
		537.32	25.00	1.01E+00		1.63E+00
+	LA-140	328.77	20.50	8.89E-01	4.48E-01	1.71E+00
		487.03	45.50	-1.55E-01		7.63E-01
		815.85	23.50	-7.63E-01		1.65E+00
		1596.49	95.49	6.16E-02		4.48E-01
+	CE-141	145.44	48.40	4.28E-02	2.16E-01	2.16E-01
+	CE-143	57.36	11.80	-2.44E+06	2.84E+06	8.12E+06
		293.26	42.00	6.54E+06		2.84E+06
		664.55	5.20	8.19E+06		1.93E+07
+	CE-144	133.54	10.80	7.42E-02	4.93E-01	4.93E-01
+	PM-144	476.78	42.00	7.78E-02	6.87E-02	1.61E-01
		618.01	98.60	1.58E-02		6.87E-02
		696.49	99.49	1.23E-02		7.87E-02
+	PM-145	36.85	21.70	-1.78E-01	3.14E-01	5.92E-01
		37.36	39.70	-7.42E-02		3.14E-01
		42.30	15.10	-3.40E-02		6.24E-01
		72.40	2.31	-3.35E+00		3.34E+00
+	PM-146	453.90	39.94	7.27E-02	1.66E-01	1.66E-01
		735.90	14.01	-2.33E-01		4.46E-01
		747.13	13.10	-1.33E-01		5.23E-01
+	ND-147	91.11	28.90	-4.41E+00	1.91E+00	1.91E+00
		531.02	13.10	8.21E-01		3.86E+00
+	PM-149	285.90	3.10	3.98E+03	4.27E+04	4.27E+04
+	EU-152	121.78	20.50	2.16E-02	2.35E-01	2.35E-01
		244.69	5.40	-2.53E-01		1.12E+00
		344.27	19.13	-6.06E-02		2.72E-01
		778.89	9.20	1.42E-01		7.76E-01
		964.01	10.40	-1.35E+00		9.45E-01
		1085.78	7.22	2.44E-01		1.02E+00
		1112.02	9.60	-2.28E-01		8.99E-01
		1407.95	14.94	4.15E-01		5.43E-01
+	GD-153	97.43	31.30	3.18E-02	1.77E-01	1.77E-01
		103.18	22.20	-9.65E-03		2.44E-01
+	EU-154	123.07	40.50	-3.46E-02	1.17E-01	1.17E-01
		723.30	19.70	1.06E-01		4.10E-01
		873.19	11.50	2.91E-01		6.04E-01
		996.32	10.30	-2.35E-01		7.70E-01
		1004.76	17.90	1.36E-01		4.26E-01
		1274.45	35.50	-6.89E-03		2.38E-01
+	EU-155	86.50	30.90	9.86E-02	2.25E-01	2.25E-01
		105.30	20.70	1.23E-01		2.45E-01
+	EU-156	811.77	10.40	-1.14E+00	3.09E+00	3.09E+00
		1153.47	7.20	6.11E-01		4.90E+00

Analysis Report for 1510087-09
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-156	1230.71	8.90	8.46E-01	3.09E+00	4.47E+00
+	HO-166M	184.41	72.60	2.15E-01	9.52E-02	9.52E-02
		280.45	29.60	-6.26E-02		1.66E-01
		410.94	11.10	4.06E-02		5.67E-01
		711.69	54.10	-2.30E-02		1.23E-01
+	TM-171	66.72	0.14	1.40E+01	4.96E+01	4.96E+01
+	HF-172	81.75	4.52	-2.53E+00	4.47E-01	1.31E+00
		125.81	11.30	-5.62E-02		4.47E-01
+	LU-172	181.53	20.60	-1.37E+00	3.80E+00	7.53E+00
		810.06	16.63	7.21E+00		1.40E+01
		912.12	15.25	6.05E+01		2.66E+01
		1093.66	62.50	1.68E+00		3.80E+00
+	LU-173	100.72	5.24	6.89E-02	2.96E-01	9.89E-01
		272.11	21.20	2.78E-01		2.96E-01
+	HF-175	343.40	84.00	-1.42E-02	8.64E-02	8.64E-02
+	LU-176	88.34	13.30	9.83E-01	4.64E-02	5.31E-01
		201.83	86.00	1.57E-02		6.12E-02
		306.78	94.00	-1.62E-02		4.64E-02
+	TA-182	67.75	41.20	3.02E-02	1.94E-01	1.94E-01
		1121.30	34.90	6.56E-01		4.76E-01
		1189.05	16.23	2.06E-01		6.50E-01
		1221.41	26.98	5.17E-02		4.24E-01
		1231.02	11.44	1.81E-01		9.55E-01
+	IR-192	308.46	29.68	5.60E-02	1.85E-01	2.11E-01
		468.07	48.10	5.79E-02		1.85E-01
+	HG-203	279.19	77.30	8.96E-02	1.15E-01	1.15E-01
+	BI-207	569.67	97.72	-8.90E-03	6.79E-02	6.79E-02
		1063.62	74.90	-5.20E-03		1.05E-01
+	TL-208	583.14	* 30.22	1.55E+00	9.71E-02	3.53E-01
		860.37	* 4.48	2.33E+00		1.67E+00
		2614.66	* 35.85	1.10E+00		9.71E-02
+	BI-210M	262.00	45.00	-4.09E-02	1.11E-01	1.11E-01
		300.00	23.00	-5.38E-01		2.58E-01
+	PB-210	46.50	* 4.25	1.54E+00	2.31E+00	2.31E+00
+	PB-211	404.84	2.90	-3.94E-01	1.75E+00	1.75E+00
		831.96	2.90	5.42E-01		2.45E+00
+	BI-212	727.17	* 11.80	1.27E+00	8.45E-01	8.45E-01
		1620.62	2.75	4.46E-02		3.00E+00
+	PB-212	238.63	* 44.60	1.53E+00	2.68E-01	2.68E-01
		300.09	* 3.41	2.03E+00		4.09E+00
+	BI-214	609.31	* 46.30	1.00E+00	2.65E-01	2.65E-01
		1120.29	* 15.10	1.18E+00		8.88E-01
		1764.49	* 15.80	1.57E+00		3.19E-01
		2204.22	* 4.98	1.63E+00		1.10E+00
+	PB-214	295.21	* 19.19	1.56E+00	2.45E-01	7.23E-01
		351.92	* 37.19	1.35E+00		2.45E-01
+	RN-219	401.80	6.50	-1.88E-02	8.38E-01	8.38E-01
+	RA-223	323.87	3.88	-1.03E+00	1.32E+00	1.32E+00

Analysis Report for 1510087-09
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98	*	3.95	5.84E+00	3.03E+00	3.03E+00
+	RA-225	40.00		31.00	-2.40E-01	1.54E+00	1.54E+00
+	RA-226	186.21	*	3.28	3.97E+00	2.64E+00	2.64E+00
+	TH-227	50.10		8.40	8.20E-02	6.05E-01	8.71E-01
		236.00		11.50	-4.78E+00		6.05E-01
		256.20		6.30	2.18E-01		8.54E-01
+	AC-228	338.32	*	11.40	1.58E+00	3.62E-01	7.16E-01
		911.07	*	27.70	1.27E+00		3.62E-01
		969.11	*	16.60	1.49E+00		7.92E-01
+	TH-230	48.44		16.90	1.60E-01	5.08E-01	5.08E-01
		62.85		4.60	3.03E+00		1.68E+00
		67.67		0.37	2.76E+00		1.78E+01
+	PA-231	283.67		1.60	5.21E-01	2.91E+00	2.91E+00
		302.67	*	2.30	1.58E+00		6.10E+00
+	TH-231	25.64		14.70	1.51E+00	9.81E-01	3.96E+00
		84.21		6.40	-1.85E+00		9.81E-01
+	PA-233	311.98		38.60	3.88E-02	2.85E-01	2.85E-01
+	PA-234	131.20		20.40	-8.21E-02	2.47E-01	2.47E-01
		733.99		8.80	1.53E-01		7.36E-01
		946.00		12.00	-6.09E-02		6.40E-01
+	PA-234M	1001.03		0.92	1.41E+00	9.30E+00	9.30E+00
+	TH-234	63.29	*	3.80	2.34E+00	2.42E+00	2.42E+00
+	U-235	143.76		10.50	3.34E-01	5.05E-01	5.05E-01
		163.35		4.70	4.78E-01		1.10E+00
		205.31		4.70	-1.62E+00		1.15E+00
+	NP-237	86.50		12.60	2.39E-01	5.44E-01	5.44E-01
+	NP-239	106.10		22.70	1.65E+03	3.29E+03	3.29E+03
		228.18		10.70	-3.77E+03		6.90E+03
		277.60		14.10	5.01E+03		5.77E+03
+	AM-241	59.54		35.90	-3.02E-02	1.90E-01	1.90E-01
+	AM-243	74.67	*	66.00	3.50E-01	1.56E-01	1.56E-01
+	CM-243	209.75	*	3.29	2.99E+00	4.68E-01	2.89E+00
		228.14		10.60	-2.56E-01		4.68E-01
		277.60	*	14.00	3.18E-01		5.03E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1510087-09
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NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	9.22E-01	9.22E-01	1.79E-01	4.37E-01
NA-22	1274.54	99.94	8.61E-02	8.61E-02	-2.49E-03	3.95E-02
NA-24	1368.53	99.99	4.27E+14	2.15E+14	7.25E+13	1.94E+14
	2754.09	99.86	2.15E+14		2.44E+13	8.05E+13
AL-26	1808.65	99.76	5.72E-02	5.72E-02	2.33E-02	2.42E-02
+ K-40	1460.81	* 10.67	8.64E-01	8.64E-01	2.12E+01	3.96E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	6.96E-02	6.96E-02	1.08E-02	3.40E-02
	78.34	96.00	8.87E-02		2.21E-01	4.36E-02
SC-46	889.25	99.98	9.17E-02	9.17E-02	4.97E-02	4.24E-02
	1120.51	99.99	1.81E-01		2.74E-01	8.65E-02
V-48	983.52	99.98	2.93E-01	2.93E-01	6.12E-02	1.34E-01
	1312.10	97.50	3.06E-01		-7.83E-02	1.38E-01
CR-51	320.08	9.83	1.19E+00	1.19E+00	1.89E-02	5.66E-01
MN-54	834.83	99.97	7.35E-02	7.35E-02	-2.82E-02	3.41E-02
CO-56	846.75	99.96	9.90E-02	9.90E-02	-5.12E-03	4.61E-02
	1037.75	14.03	6.80E-01		-1.34E-01	3.12E-01
	1238.25	67.00	2.39E-01		2.15E-01	1.13E-01
	1771.40	15.51	4.64E-01		5.91E-02	1.94E-01
	2598.48	16.90	2.17E-01		-2.95E-02	6.86E-02
CO-57	122.06	85.51	6.10E-02	6.10E-02	5.61E-03	2.96E-02
	136.48	10.60	5.13E-01		-1.06E-01	2.49E-01
CO-58	810.76	99.40	1.03E-01	1.03E-01	-2.41E-02	4.81E-02
FE-59	1099.22	56.50	2.41E-01	2.41E-01	3.95E-02	1.12E-01
	1291.56	43.20	3.15E-01		1.40E-01	1.44E-01
CO-60	1173.22	100.00	9.37E-02	7.27E-02	2.59E-02	4.35E-02
	1332.49	100.00	7.27E-02		-4.09E-02	3.27E-02
ZN-65	1115.52	50.75	2.14E-01	2.14E-01	-4.30E-02	1.00E-01
+ GA-67	93.31	* 35.70	3.47E+02	3.47E+02	2.46E+02	1.71E+02
	208.95	* 2.24	4.37E+03		4.53E+03	2.14E+03
	300.22	* 16.00	9.01E+02		4.46E+02	4.43E+02
SE-75	121.11	16.70	3.51E-01	9.95E-02	2.29E-01	1.70E-01
	136.00	59.20	1.05E-01		1.24E-01	5.10E-02
	264.65	59.80	9.95E-02		-3.46E-03	4.76E-02
	279.53	25.20	2.46E-01		3.52E-03	1.18E-01
	400.65	11.40	6.03E-01		4.55E-01	2.86E-01
RB-82	776.52	13.00	1.25E+00	1.25E+00	-5.25E-01	5.83E-01
RB-83	520.41	46.00	1.80E-01	1.80E-01	1.34E-01	8.51E-02
	529.64	30.30	2.81E-01		1.47E-01	1.33E-01
	552.65	16.40	5.08E-01		-1.01E-01	2.40E-01
KR-85	513.99	0.43	2.08E+01	2.08E+01	2.35E+01	9.98E+00
SR-85	513.99	99.27	1.28E-01	1.28E-01	1.45E-01	6.15E-02

Analysis Report for 1510087-09
CP5004S14-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
Y-88	898.02	93.40	1.02E-01	8.27E-02	-1.13E-02	4.72E-02
	1836.01	99.38	8.27E-02		2.03E-02	3.58E-02
NB-93M	16.57	9.43	6.69E+01	6.69E+01	-7.63E+01	3.09E+01
NB-94	702.63	100.00	6.95E-02	6.76E-02	-1.38E-02	3.25E-02
	871.10	100.00	6.76E-02		1.74E-02	3.12E-02
NB-95	765.79	99.81	1.58E-01	1.58E-01	2.18E-02	7.45E-02
NB-95M	235.69	25.00	1.47E+02	1.47E+02	-1.16E+03	7.13E+01
ZR-95	724.18	43.70	2.84E-01	1.68E-01	4.62E-02	1.35E-01
	756.72	55.30	1.68E-01		-1.92E-02	7.82E-02
MO-99	181.06	6.20	3.20E+03	2.10E+03	1.59E+03	1.55E+03
	739.58	12.80	2.10E+03		1.06E+02	9.84E+02
	778.00	4.50	5.60E+03		-1.67E+03	2.60E+03
RU-103	497.08	89.00	1.25E-01	1.25E-01	-1.46E-02	5.92E-02
RU-106	621.84	9.80	6.36E-01	6.36E-01	-3.25E-01	2.97E-01
AG-108M	433.93	89.90	7.34E-02	7.30E-02	-6.05E-03	3.50E-02
	614.37	90.40	7.30E-02		2.09E-02	3.43E-02
	722.95	90.50	8.87E-02		2.28E-02	4.19E-02
CD-109	88.03	3.72	1.94E+00	1.94E+00	-9.75E-02	9.49E-01
AG-110M	657.75	93.14	7.70E-02	7.70E-02	3.17E-04	3.61E-02
	677.61	10.53	7.19E-01		2.91E-02	3.38E-01
	706.67	16.46	4.64E-01		4.62E-02	2.17E-01
	763.93	21.98	3.65E-01		1.12E-01	1.71E-01
	884.67	71.63	8.73E-02		8.21E-03	3.96E-02
	1384.27	23.94	3.15E-01		-6.29E-02	1.40E-01
CD-113M	263.70	0.02	2.22E+02	2.22E+02	6.44E+01	1.06E+02
SN-113	255.12	1.93	3.37E+00	1.02E-01	-3.80E-01	1.62E+00
	391.69	64.90	1.02E-01		2.52E-02	4.82E-02
TE123M	159.00	84.10	6.86E-02	6.86E-02	-4.85E-02	3.32E-02
SB-124	602.71	97.87	9.11E-02	9.11E-02	-1.65E-02	4.27E-02
	645.85	7.26	1.34E+00		7.24E-01	6.27E-01
	722.78	11.10	1.05E+00		2.71E-01	4.97E-01
	1691.02	49.00	1.56E-01		3.64E-03	6.53E-02
I-125	35.49	6.49	3.22E+00	3.22E+00	-2.81E-01	1.56E+00
SB-125	176.33	6.89	7.51E-01	2.17E-01	1.58E-01	3.63E-01
	427.89	29.33	2.17E-01		-1.36E-02	1.03E-01
	463.38	10.35	7.10E-01		4.32E-01	3.39E-01
	600.56	17.80	3.57E-01		-9.65E-02	1.68E-01
	635.90	11.32	5.27E-01		-5.71E-02	2.45E-01
SB-126	414.70	83.30	4.61E-01	4.33E-01	-1.59E-01	2.19E-01
	666.33	99.60	4.33E-01		9.24E-02	2.03E-01
	695.00	99.60	4.62E-01		-7.82E-02	2.18E-01
	720.50	53.80	8.57E-01		2.02E-01	4.03E-01
SN-126	87.57	37.00	1.85E-01	1.85E-01	-9.34E-03	9.09E-02
SB-127	473.00	25.00	9.25E+01	6.81E+01	3.62E+01	4.39E+01
	685.20	35.70	6.81E+01		-1.71E+00	3.19E+01
	783.80	14.70	1.97E+02		5.71E+00	9.29E+01
I-129	29.78	57.00	4.85E-01	4.85E-01	6.48E-02	2.35E-01
	33.60	13.20	1.33E+00		1.65E-01	6.44E-01
	39.58	7.52	1.41E+00		-2.20E-01	6.83E-01
I-131	284.30	6.05	1.30E+01	1.02E+00	2.30E+00	6.21E+00
	364.48	81.20	1.02E+00		-3.41E-01	4.81E-01
	636.97	7.26	1.29E+01		-1.67E+00	5.99E+00
	722.89	1.80	7.43E+01		1.92E+01	3.51E+01

Analysis Report for 1510087-09
CP5004S14-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TE-132	49.72	13.10	5.87E+02	5.85E+01	5.53E+01	2.86E+02
	228.16	88.00	5.85E+01		-3.19E+01	2.81E+01
BA-133	81.00	33.00	1.77E-01	9.06E-02	-1.14E+00	8.64E-02
	302.84	17.80	3.07E-01		6.67E-02	1.47E-01
	356.01	60.00	9.06E-02		-5.94E-01	4.31E-02
I-133	529.87	86.30	1.66E+10	1.66E+10	8.68E+09	7.86E+09
XE-133	81.00	38.00	1.15E+01	1.15E+01	-7.38E+01	5.59E+00
CS-134	563.23	8.38	7.41E-01	6.96E-02	-4.18E-01	3.48E-01
	569.32	15.43	4.49E-01		1.37E-01	2.12E-01
	604.70	97.60	6.96E-02		-8.70E-03	3.27E-02
	795.84	85.40	1.03E-01		7.18E-02	4.88E-02
	801.93	8.73	8.64E-01		-4.15E-01	4.03E-01
CS-135	268.24	16.00	3.76E-01	3.76E-01	2.64E-01	1.81E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.91E+00	3.99E-01	3.42E+00	1.90E+00
	163.89	4.61	6.28E+00		2.72E+00	3.04E+00
	176.55	13.56	2.09E+00		4.38E-01	1.01E+00
	273.65	12.66	2.26E+00		-3.11E+00	1.08E+00
	340.57	48.50	8.67E-01		1.41E+00	4.19E-01
	818.50	99.70	3.99E-01		7.96E-02	1.86E-01
	1048.07	79.60	6.13E-01		4.27E-01	2.85E-01
	1235.34	19.70	3.00E+00		6.24E-01	1.40E+00
CS-137	661.65	85.12	7.80E-02	7.80E-02	-2.74E-02	3.66E-02
LA-138	788.74	34.00	2.20E-01	1.11E-01	-8.27E-02	1.03E-01
	1435.80	66.00	1.11E-01		3.90E-02	4.97E-02
CE-139	165.85	80.35	7.53E-02	7.53E-02	1.96E-02	3.65E-02
BA-140	162.64	6.70	4.44E+00	1.63E+00	9.09E-01	2.15E+00
	304.84	4.50	6.37E+00		7.75E-01	3.03E+00
	423.70	3.20	1.10E+01		-3.05E+00	5.22E+00
	437.55	2.00	1.96E+01		1.40E+00	9.35E+00
	537.32	25.00	1.63E+00		1.01E+00	7.72E-01
LA-140	328.77	20.50	1.71E+00	4.48E-01	8.89E-01	8.19E-01
	487.03	45.50	7.63E-01		-1.55E-01	3.60E-01
	815.85	23.50	1.65E+00		-7.63E-01	7.62E-01
	1596.49	95.49	4.48E-01		6.16E-02	1.99E-01
CE-141	145.44	48.40	2.16E-01	2.16E-01	4.28E-02	1.05E-01
CE-143	57.36	11.80	8.12E+06	2.84E+06	-2.44E+06	3.96E+06
	293.26	42.00	2.84E+06		6.54E+06	1.38E+06
	664.55	5.20	1.93E+07		8.19E+06	9.07E+06
CE-144	133.54	10.80	4.93E-01	4.93E-01	7.42E-02	2.39E-01
PM-144	476.78	42.00	1.61E-01	6.87E-02	7.78E-02	7.62E-02
	618.01	98.60	6.87E-02		1.58E-02	3.22E-02
	696.49	99.49	7.87E-02		1.23E-02	3.70E-02
PM-145	36.85	21.70	5.92E-01	3.14E-01	-1.78E-01	2.87E-01
	37.36	39.70	3.14E-01		-7.42E-02	1.52E-01
	42.30	15.10	6.24E-01		-3.40E-02	3.03E-01
	72.40	2.31	3.34E+00		-3.35E+00	1.64E+00
PM-146	453.90	39.94	1.66E-01	1.66E-01	7.27E-02	7.91E-02
	735.90	14.01	4.46E-01		-2.33E-01	2.07E-01
	747.13	13.10	5.23E-01		-1.33E-01	2.44E-01
ND-147	91.11	28.90	1.91E+00	1.91E+00	-4.41E+00	9.36E-01

Analysis Report for 1510087-09
CP5004S14-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
ND-147	531.02	13.10	3.86E+00	1.91E+00	8.21E-01	1.82E+00
PM-149	285.90	3.10	4.27E+04	4.27E+04	3.98E+03	2.03E+04
EU-152	121.78	20.50	2.35E-01	2.35E-01	2.16E-02	1.14E-01
	244.69	5.40	1.12E+00		-2.53E-01	5.41E-01
	344.27	19.13	2.72E-01		-6.06E-02	1.29E-01
	778.89	9.20	7.76E-01		1.42E-01	3.62E-01
	964.01	10.40	9.45E-01		-1.35E+00	4.46E-01
	1085.78	7.22	1.02E+00		2.44E-01	4.68E-01
	1112.02	9.60	8.99E-01		-2.28E-01	4.16E-01
	1407.95	14.94	5.43E-01		4.15E-01	2.46E-01
GD-153	97.43	31.30	1.77E-01	1.77E-01	3.18E-02	8.63E-02
	103.18	22.20	2.44E-01		-9.65E-03	1.19E-01
EU-154	123.07	40.50	1.17E-01	1.17E-01	-3.46E-02	5.69E-02
	723.30	19.70	4.10E-01		1.06E-01	1.94E-01
	873.19	11.50	6.04E-01		2.91E-01	2.79E-01
	996.32	10.30	7.70E-01		-2.35E-01	3.57E-01
	1004.76	17.90	4.26E-01		1.36E-01	1.97E-01
	1274.45	35.50	2.38E-01		-6.89E-03	1.09E-01
EU-155	86.50	30.90	2.25E-01	2.25E-01	9.86E-02	1.10E-01
	105.30	20.70	2.45E-01		1.23E-01	1.19E-01
EU-156	811.77	10.40	3.09E+00	3.09E+00	-1.14E+00	1.44E+00
	1153.47	7.20	4.90E+00		6.11E-01	2.25E+00
	1230.71	8.90	4.47E+00		8.46E-01	2.06E+00
HO-166M	184.41	72.60	9.52E-02	9.52E-02	2.15E-01	4.64E-02
	280.45	29.60	1.66E-01		-6.26E-02	7.91E-02
	410.94	11.10	5.67E-01		4.06E-02	2.70E-01
	711.69	54.10	1.23E-01		-2.30E-02	5.74E-02
TM-171	66.72	0.14	4.96E+01	4.96E+01	1.40E+01	2.42E+01
HF-172	81.75	4.52	1.31E+00	4.47E-01	-2.53E+00	6.40E-01
	125.81	11.30	4.47E-01		-5.62E-02	2.17E-01
LU-172	181.53	20.60	7.53E+00	3.80E+00	-1.37E+00	3.65E+00
	810.06	16.63	1.40E+01		7.21E+00	6.59E+00
	912.12	15.25	2.66E+01		6.05E+01	1.28E+01
	1093.66	62.50	3.80E+00		1.68E+00	1.75E+00
LU-173	100.72	5.24	9.89E-01	2.96E-01	6.89E-02	4.81E-01
	272.11	21.20	2.96E-01		2.78E-01	1.43E-01
HF-175	343.40	84.00	8.64E-02	8.64E-02	-1.42E-02	4.11E-02
LU-176	88.34	13.30	5.31E-01	4.64E-02	9.83E-01	2.61E-01
	201.83	86.00	6.12E-02		1.57E-02	2.95E-02
	306.78	94.00	4.64E-02		-1.62E-02	2.19E-02
TA-182	67.75	41.20	1.94E-01	1.94E-01	3.02E-02	9.50E-02
	1121.30	34.90	4.76E-01		6.56E-01	2.27E-01
	1189.05	16.23	6.50E-01		2.06E-01	3.00E-01
	1221.41	26.98	4.24E-01		5.17E-02	1.97E-01
	1231.02	11.44	9.55E-01		1.81E-01	4.41E-01
IR-192	308.46	29.68	2.11E-01	1.85E-01	5.60E-02	1.00E-01
	468.07	48.10	1.85E-01		5.79E-02	8.79E-02
HG-203	279.19	77.30	1.15E-01	1.15E-01	8.96E-02	5.50E-02
BI-207	569.67	97.72	6.79E-02	6.79E-02	-8.90E-03	3.21E-02
	1063.62	74.90	1.05E-01		-5.20E-03	4.85E-02
+ TL-208	583.14	* 30.22	3.53E-01	9.71E-02	1.55E+00	1.70E-01
	860.37	* 4.48	1.67E+00		2.33E+00	7.79E-01
	2614.66	* 35.85	9.71E-02		1.10E+00	3.44E-02

Analysis Report for 1510087-09
CP5004S14-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BI-210M	262.00	45.00	1.11E-01	1.11E-01	-4.09E-02	5.31E-02
	300.00	23.00	2.58E-01		-5.38E-01	1.24E-01
+ PB-210	46.50 *	4.25	2.31E+00	2.31E+00	1.54E+00	1.13E+00
PB-211	404.84	2.90	1.75E+00	1.75E+00	-3.94E-01	8.27E-01
	831.96	2.90	2.45E+00		5.42E-01	1.14E+00
+ BI-212	727.17 *	11.80	8.45E-01	8.45E-01	1.27E+00	4.03E-01
	1620.62	2.75	3.00E+00		4.46E-02	1.35E+00
+ PB-212	238.63 *	44.60	2.68E-01	2.68E-01	1.53E+00	1.32E-01
	300.09 *	3.41	4.09E+00		2.03E+00	2.01E+00
+ BI-214	609.31 *	46.30	2.65E-01	2.65E-01	1.00E+00	1.28E-01
	1120.29 *	15.10	8.88E-01		1.18E+00	4.23E-01
	1764.49 *	15.80	3.19E-01		1.57E+00	1.32E-01
	2204.22 *	4.98	1.10E+00		1.63E+00	4.54E-01
+ PB-214	295.21 *	19.19	7.23E-01	2.45E-01	1.56E+00	3.55E-01
	351.92 *	37.19	2.45E-01		1.35E+00	1.19E-01
RN-219	401.80	6.50	8.38E-01	8.38E-01	-1.88E-02	3.97E-01
RA-223	323.87	3.88	1.32E+00	1.32E+00	-1.03E+00	6.27E-01
+ RA-224	240.98 *	3.95	3.03E+00	3.03E+00	5.84E+00	1.49E+00
RA-225	40.00	31.00	1.54E+00	1.54E+00	-2.40E-01	7.44E-01
+ RA-226	186.21 *	3.28	2.64E+00	2.64E+00	3.97E+00	1.29E+00
TH-227	50.10	8.40	8.71E-01	6.05E-01	8.20E-02	4.24E-01
	236.00	11.50	6.05E-01		-4.78E+00	2.94E-01
	256.20	6.30	8.54E-01		2.18E-01	4.10E-01
+ AC-228	338.32 *	11.40	7.16E-01	3.62E-01	1.58E+00	3.47E-01
	911.07 *	27.70	3.62E-01		1.27E+00	1.71E-01
	969.11 *	16.60	7.92E-01		1.49E+00	3.79E-01
TH-230	48.44	16.90	5.08E-01	5.08E-01	1.60E-01	2.48E-01
	62.85	4.60	1.68E+00		3.03E+00	8.26E-01
	67.67	0.37	1.78E+01		2.76E+00	8.69E+00
+ PA-231	283.67	1.60	2.91E+00	2.91E+00	5.21E-01	1.38E+00
	302.67 *	2.30	6.10E+00		1.58E+00	3.00E+00
TH-231	25.64	14.70	3.96E+00	9.81E-01	1.51E+00	1.92E+00
	84.21	6.40	9.81E-01		-1.85E+00	4.80E-01
PA-233	311.98	38.60	2.85E-01	2.85E-01	3.88E-02	1.36E-01
PA-234	131.20	20.40	2.47E-01	2.47E-01	-8.21E-02	1.20E-01
	733.99	8.80	7.36E-01		1.53E-01	3.42E-01
	946.00	12.00	6.40E-01		-6.09E-02	2.97E-01
PA-234M	1001.03	0.92	9.30E+00	9.30E+00	1.41E+00	4.33E+00
+ TH-234	63.29 *	3.80	2.42E+00	2.42E+00	2.34E+00	1.19E+00
U-235	143.76	10.50	5.05E-01	5.05E-01	3.34E-01	2.46E-01
	163.35	4.70	1.10E+00		4.78E-01	5.34E-01
	205.31	4.70	1.15E+00		-1.62E+00	5.55E-01
NP-237	86.50	12.60	5.44E-01	5.44E-01	2.39E-01	2.67E-01
NP-239	106.10	22.70	3.29E+03	3.29E+03	1.65E+03	1.60E+03
	228.18	10.70	6.90E+03		-3.77E+03	3.32E+03
	277.60	14.10	5.77E+03		5.01E+03	2.77E+03
AM-241	59.54	35.90	1.90E-01	1.90E-01	-3.02E-02	9.28E-02
+ AM-243	74.67 *	66.00	1.56E-01	1.56E-01	3.50E-01	7.68E-02
+ CM-243	209.75 *	3.29	2.89E+00	4.68E-01	2.99E+00	1.41E+00
	228.14	10.60	4.68E-01		-2.56E-01	2.25E-01
	277.60 *	14.00	5.03E-01		3.18E-01	2.44E-01

Analysis Report for 1510087-09
CP5004S14-15

- + = Nuclide identified during the nuclide identification
 - * = Energy line found in the spectrum
 - > = MDA value not calculated
 - @ = Half-life too short to be able to perform the decay correction
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No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP5004S14-15

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	1	9	17	25	33	41	49	57	65	73	81	89	97	105	113	121	129	137	145	153	161	169	177	185	193	201	209	217	225	233	241	249	257	265	273	281	289	297	305	313	321	329	337	345	353	361																																																																																																																																																																																																																																																																																																																																																				
1:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																
9:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																															
17:	0	0	51	92	57	67	68	73	73	66	63	58	69	67	73	62	68	67	70	65	57	70	73	180	96	49:	62	93	91	79	95	109	107	89	57:	113	105	103	113	115	131	158	263	65:	144	114	127	134	143	128	137	113	73:	152	165	390	320	383	496	142	121	81:	106	115	99	130	169	117	180	243	89:	128	173	170	132	283	242	125	78	97:	94	97	90	92	95	75	78	77	105:	86	107	78	86	76	97	87	80	113:	85	96	87	98	89	61	75	84	121:	76	63	80	65	70	71	82	86	129:	94	100	78	74	59	77	78	74	91	137:	78	85	54	78	73	78	74	91	145:	85	70	63	70	71	60	53	69	153:	71	87	75	61	59	64	63	45	161:	59	75	68	50	69	71	59	73	169:	54	56	69	52	74	58	65	55	177:	61	53	58	53	64	63	75	55	185:	70	191	136	49	56	57	69	53	193:	64	54	49	58	48	65	46	74	201:	43	46	54	52	52	52	56	66	209:	96	97	56	54	52	53	40	46	217:	55	39	44	40	51	41	42	65	225:	43	36	38	45	44	40	48	40	233:	46	60	49	48	68	167	628	228	241:	110	164	126	46	30	35	40	29	249:	32	36	39	33	38	47	38	45	257:	36	40	53	25	37	43	33	33	265:	35	32	31	40	48	56	69	45	273:	40	28	26	31	45	46	36	32	281:	29	23	30	31	25	23	27	31	289:	33	40	43	27	38	32	157	185	297:	55	29	33	60	53	27	41	25	305:	20	21	25	20	17	26	27	20	313:	20	28	23	28	22	28	31	24	321:	26	29	31	27	22	24	32	51	329:	35	29	33	37	29	25	31	31	337:	30	66	140	45	39	28	25	30	345:	18	28	24	24	23	27	60	282	353:	216	37	26	27	27	13	30	22	361:	30	16	23	15	22	19	25	24

369: 26 14 26 29 13 26 20 23

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377:	18	23	21	22	23	21	17	17
385:	18	27	24	19	28	21	22	21
393:	23	26	18	17	10	19	28	30
401:	16	24	23	17	17	26	11	20
409:	23	27	21	14	16	23	20	22
417:	18	24	23	19	15	16	23	14
425:	17	25	14	18	20	22	16	18
433:	22	26	21	23	20	20	24	21
441:	19	16	20	14	20	9	11	11
449:	11	17	15	24	19	23	20	17
457:	17	17	17	21	19	18	30	36
465:	21	14	20	13	19	25	16	19
473:	8	15	21	19	14	13	19	15
481:	13	12	22	11	18	13	14	17
489:	12	12	13	15	14	14	15	17
497:	19	21	10	10	18	16	10	12
505:	21	14	9	17	27	37	70	67
513:	32	12	14	13	5	23	8	13
521:	15	16	7	20	8	11	13	14
529:	19	18	12	19	10	9	16	11
537:	16	13	21	19	20	15	13	11
545:	14	20	14	14	15	11	15	12
553:	13	16	16	11	13	17	17	10
561:	10	16	14	6	12	12	16	11
569:	14	15	12	19	9	20	13	8
577:	12	13	14	16	5	37	132	156
585:	38	18	14	9	12	16	7	7
593:	15	9	8	13	15	14	10	8
601:	14	8	9	14	9	12	15	19
609:	140	177	50	13	13	7	11	17
617:	13	10	8	10	8	10	9	9
625:	10	7	18	8	9	19	14	11
633:	11	7	8	12	4	9	10	6
641:	8	6	13	9	18	7	7	14
649:	11	13	4	7	14	6	9	10
657:	8	13	11	12	11	14	8	8
665:	11	20	9	17	9	7	10	8
673:	8	17	10	12	12	14	13	10
681:	8	11	9	22	8	9	11	5
689:	13	11	17	13	16	15	15	11
697:	8	10	15	12	7	11	11	13
705:	11	10	11	12	9	9	12	7
713:	8	11	11	9	11	9	10	13
721:	17	13	9	12	17	16	31	45
729:	14	14	10	7	6	4	9	11
737:	13	7	4	11	13	10	16	12
745:	9	9	10	4	11	9	10	12
753:	15	14	9	7	5	6	8	9
761:	10	12	11	14	5	12	9	18
769:	25	12	6	14	8	7	7	14
777:	5	5	9	12	7	14	10	9
785:	12	23	12	10	6	4	9	8
793:	7	20	24	15	10	8	11	9

801: 9 11 7 12 8 13 18 10

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	9	12	7	15	8	7	6	10
817:	9	6	6	9	9	12	5	12
825:	12	10	5	6	11	4	12	4
833:	12	7	9	9	8	5	11	11
841:	11	9	8	8	8	7	5	15
849:	9	11	9	11	8	7	4	8
857:	4	12	13	19	27	13	4	4
865:	5	1	7	5	7	12	6	5
873:	5	9	5	9	5	3	8	11
881:	10	6	9	2	1	5	4	6
889:	6	5	12	13	6	10	5	8
897:	10	9	13	4	12	11	10	12
905:	13	5	6	6	10	17	75	72
913:	20	3	10	11	4	5	6	5
921:	8	9	7	8	6	7	8	8
929:	6	5	4	3	9	26	8	10
937:	8	6	9	5	5	14	5	7
945:	4	11	8	8	13	5	10	8
953:	7	7	9	9	10	10	7	10
961:	7	8	9	11	27	19	10	12
969:	62	46	14	4	5	6	7	7
977:	6	6	3	4	6	9	4	9
985:	5	5	6	5	8	7	7	9
993:	6	5	6	10	10	11	6	9
1001:	12	10	5	11	7	7	7	2
1009:	4	16	8	10	9	9	4	4
1017:	7	6	10	7	3	5	7	3
1025:	7	8	4	4	5	8	5	9
1033:	3	10	6	7	2	5	6	8
1041:	7	3	11	5	6	14	7	5
1049:	11	8	11	1	4	7	7	7
1057:	8	10	4	9	6	8	6	11
1065:	8	6	3	6	9	10	3	3
1073:	5	6	5	5	1	4	5	12
1081:	9	3	5	6	5	3	8	10
1089:	3	5	2	10	5	6	10	7
1097:	9	7	4	6	8	9	4	6
1105:	8	7	5	4	4	13	9	5
1113:	5	11	7	10	15	5	20	42
1121:	43	18	4	10	6	7	6	9
1129:	12	8	5	9	5	6	10	13
1137:	8	7	7	5	7	11	6	12
1145:	13	10	13	5	7	6	2	5
1153:	6	8	6	10	8	8	10	8
1161:	4	6	9	7	7	6	7	10
1169:	9	6	9	5	12	6	14	6
1177:	5	4	7	9	9	7	8	7
1185:	5	9	9	2	9	7	8	5
1193:	6	4	6	6	11	8	8	4
1201:	9	7	7	7	12	11	11	9
1209:	6	8	8	10	11	13	7	6
1217:	12	9	5	7	9	9	8	9
1225:	10	2	10	6	11	5	3	9

1233: 12 4 10 11 8 17 22 17

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Channel	1	2	3	4	5	6	7	8
1241:	8	6	7	8	7	6	6	10
1249:	11	7	3	7	6	6	5	7
1257:	1	4	3	0	6	3	6	5
1265:	8	5	4	9	7	6	5	7
1273:	3	3	6	7	10	4	7	4
1281:	11	5	3	5	8	5	0	6
1289:	7	9	3	5	3	5	3	5
1297:	7	8	2	5	8	3	5	6
1305:	8	5	7	3	6	1	6	2
1313:	4	3	6	3	7	4	7	7
1321:	1	3	2	5	1	4	5	9
1329:	5	5	4	5	4	3	1	9
1337:	2	1	3	3	3	2	7	3
1345:	3	4	2	0	1	2	3	6
1353:	4	3	1	2	2	4	5	3
1361:	6	2	1	7	7	2	7	4
1369:	5	3	5	3	5	1	6	3
1377:	4	10	18	4	1	6	3	0
1385:	5	5	3	3	6	3	0	5
1393:	2	3	1	2	3	3	1	0
1401:	4	5	4	1	0	5	8	7
1409:	5	3	4	1	0	1	4	0
1417:	5	5	1	3	1	3	3	2
1425:	3	0	2	0	1	2	2	2
1433:	3	3	3	2	7	4	3	0
1441:	5	3	2	5	5	2	2	1
1449:	4	2	2	1	1	1	1	3
1457:	0	7	18	177	328	231	41	9
1465:	2	3	2	2	2	3	3	2
1473:	1	3	1	1	2	3	2	7
1481:	4	2	2	1	3	1	0	2
1489:	0	4	1	1	2	0	5	4
1497:	2	8	4	4	2	3	1	3
1505:	0	2	4	2	6	5	2	3
1513:	1	1	0	2	1	1	1	4
1521:	0	3	0	3	0	1	0	4
1529:	2	2	1	3	3	0	2	2
1537:	0	1	5	7	1	3	1	4
1545:	2	1	2	3	5	3	1	1
1553:	1	1	3	0	2	3	0	0
1561:	2	3	1	0	0	2	1	1
1569:	0	2	2	1	0	3	1	2
1577:	2	0	3	1	1	2	3	3
1585:	1	4	5	12	5	5	1	7
1593:	6	4	5	1	0	2	3	2
1601:	0	2	1	1	0	1	0	3
1609:	1	2	1	2	0	0	1	2
1617:	3	2	0	5	6	8	3	1
1625:	1	2	0	1	0	1	5	4
1633:	3	3	2	1	2	0	4	2
1641:	0	1	0	2	0	1	1	0
1649:	1	1	1	1	1	0	1	2
1657:	2	1	3	2	1	2	1	1

1665: 0 1 1 2 0 1 1 1

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Channel	1	2	3	4	5	6	7	8
1673:	0	1	0	1	1	1	2	3
1681:	0	2	2	1	2	3	2	1
1689:	3	1	2	0	0	2	0	1
1697:	0	0	3	1	1	0	0	1
1705:	1	1	2	0	0	2	2	3
1713:	0	0	0	0	0	1	0	3
1721:	1	1	1	1	1	3	0	1
1729:	1	5	4	4	1	2	2	0
1737:	1	3	1	1	0	0	1	1
1745:	0	0	2	1	2	1	4	1
1753:	2	1	1	1	2	1	1	0
1761:	0	3	4	27	26	20	1	1
1769:	0	2	3	0	2	1	0	3
1777:	1	1	1	0	1	3	1	3
1785:	1	0	0	0	0	2	3	1
1793:	2	0	2	4	1	0	0	0
1801:	1	3	2	0	2	1	1	1
1809:	3	1	1	0	0	1	0	0
1817:	1	0	0	0	1	1	4	2
1825:	1	0	2	1	1	1	2	0
1833:	2	3	2	2	0	3	2	2
1841:	1	0	1	0	0	0	6	4
1849:	1	1	3	1	1	0	2	1
1857:	0	1	3	1	2	1	1	0
1865:	0	0	0	1	1	1	3	1
1873:	1	2	2	2	2	1	1	2
1881:	0	2	2	1	0	1	0	0
1889:	0	1	1	1	0	0	2	0
1897:	2	0	0	0	1	0	1	0
1905:	2	1	2	1	1	0	1	1
1913:	0	0	2	0	0	1	0	1
1921:	1	0	0	1	2	1	1	2
1929:	0	0	1	0	1	1	1	1
1937:	1	1	1	1	1	1	1	1
1945:	3	2	0	1	0	0	1	0
1953:	2	2	0	1	3	3	0	1
1961:	0	1	0	1	0	2	4	0
1969:	2	0	1	0	0	0	1	2
1977:	2	1	2	0	1	1	0	0
1985:	0	3	2	1	1	0	1	2
1993:	0	1	2	0	0	0	1	0
2001:	1	1	4	2	2	1	2	0
2009:	0	0	2	4	0	2	0	1
2017:	1	0	0	0	0	1	2	2
2025:	0	1	4	1	0	2	0	0
2033:	3	2	1	2	0	2	0	0
2041:	2	1	1	0	1	2	0	3
2049:	1	0	1	0	3	1	0	0
2057:	0	2	0	2	0	1	1	1
2065:	2	0	2	0	0	3	0	1
2073:	0	1	2	1	0	1	0	2
2081:	1	0	0	0	0	2	2	2
2089:	1	0	2	0	0	0	3	0

2097: 2 2 1 1 1 4 3 6

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Channel	1	2	3	4	5	6	7	8
2105:	1	0	1	1	0	2	1	2
2113:	1	1	0	2	2	2	5	0
2121:	2	0	1	1	2	0	1	1
2129:	1	2	2	0	2	0	0	0
2137:	0	1	0	0	1	0	2	2
2145:	1	0	1	1	0	1	2	1
2153:	3	0	2	1	1	1	0	0
2161:	0	0	0	1	0	2	1	2
2169:	0	0	1	0	0	0	3	1
2177:	1	1	1	0	0	0	0	2
2185:	1	2	2	1	0	0	1	0
2193:	0	2	3	0	0	1	1	0
2201:	1	3	2	8	4	6	3	0
2209:	1	2	0	0	0	2	0	1
2217:	1	0	2	2	2	1	1	0
2225:	1	0	2	0	3	1	0	0
2233:	0	0	1	0	0	1	3	1
2241:	1	0	1	2	2	0	2	0
2249:	1	1	0	0	0	0	2	1
2257:	2	3	0	1	0	2	3	1
2265:	1	0	1	3	1	2	1	0
2273:	1	0	0	0	0	1	1	0
2281:	0	2	2	1	0	2	1	2
2289:	0	0	1	0	2	3	1	0
2297:	1	0	1	1	0	1	1	0
2305:	0	2	1	0	0	2	1	1
2313:	1	1	0	1	1	3	3	2
2321:	1	0	2	0	0	0	0	0
2329:	2	4	1	0	0	4	3	1
2337:	0	0	1	1	0	3	0	0
2345:	0	1	2	0	2	2	2	0
2353:	2	0	4	4	1	3	1	1
2361:	2	2	0	2	1	0	0	0
2369:	1	3	0	2	2	0	0	0
2377:	2	1	0	3	1	1	2	1
2385:	2	1	1	0	0	1	0	0
2393:	0	0	1	1	3	2	1	2
2401:	0	1	2	0	1	1	2	2
2409:	0	0	1	2	0	0	0	0
2417:	0	1	2	0	2	0	2	0
2425:	1	2	2	0	1	0	0	0
2433:	3	1	1	2	3	0	0	1
2441:	0	0	2	0	0	1	3	4
2449:	1	0	0	0	0	1	2	2
2457:	0	0	1	0	2	1	0	1
2465:	0	0	1	0	1	1	0	0
2473:	0	0	0	0	1	0	1	1
2481:	0	0	0	1	1	0	1	1
2489:	0	1	2	0	0	1	0	1
2497:	1	0	1	0	0	1	0	2
2505:	1	0	0	0	0	1	0	0
2513:	1	2	0	0	0	0	0	1
2521:	1	0	0	0	1	0	0	1

2529: 1 0 0 1 0 1 0 1

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Channel	1	2	3	4	5	6	7	8	9
2537:	2	1	1	0	0	0	0	0	0
2545:	0	0	0	0	0	1	1	0	0
2553:	0	0	1	0	0	0	0	1	0
2561:	0	2	0	1	0	1	1	0	0
2569:	0	0	0	0	1	0	1	1	0
2577:	0	1	0	0	0	0	2	0	0
2585:	0	0	0	0	0	0	1	0	0
2593:	0	0	0	0	0	0	0	1	0
2601:	0	0	0	0	0	1	3	0	0
2609:	0	2	2	2	21	34	30	15	0
2617:	2	1	0	0	0	0	1	0	0
2625:	1	0	0	1	0	0	0	0	0
2633:	0	0	0	0	0	0	1	1	0
2641:	1	0	0	0	0	0	0	0	0
2649:	0	1	0	0	0	0	1	0	0
2657:	0	1	0	0	1	0	0	0	0
2665:	0	0	0	0	0	0	0	0	0
2673:	0	0	2	0	0	0	0	1	0
2681:	1	0	0	0	0	2	1	1	0
2689:	0	0	0	0	1	0	0	1	0
2697:	0	0	0	0	0	0	0	0	0
2705:	0	0	0	0	1	0	0	1	0
2713:	0	0	0	2	0	1	0	0	0
2721:	0	0	1	0	0	0	0	1	0
2729:	1	1	0	0	0	0	0	0	0
2737:	3	0	1	0	3	0	0	0	0
2745:	2	0	0	0	0	0	0	1	0
2753:	0	0	0	0	2	0	2	0	0
2761:	0	1	0	0	0	1	1	0	0
2769:	0	0	0	0	0	0	0	2	0
2777:	0	0	0	0	0	0	0	0	0
2785:	0	1	0	0	0	0	0	1	0
2793:	0	0	0	0	1	0	0	0	0
2801:	0	0	0	0	0	0	0	0	0
2809:	0	0	0	0	0	2	1	1	0
2817:	0	0	0	0	2	1	0	0	0
2825:	0	0	0	1	0	0	0	1	0
2833:	0	0	0	0	1	0	0	0	0
2841:	0	0	0	0	0	1	0	0	0
2849:	0	0	0	0	0	0	0	0	0
2857:	0	1	0	0	1	0	0	0	0
2865:	0	0	0	0	0	0	0	0	0
2873:	1	0	1	2	0	1	1	0	0
2881:	0	1	1	0	0	0	0	1	0
2889:	1	0	0	0	1	0	1	0	0
2897:	0	0	0	0	0	1	0	1	0
2905:	0	0	0	0	2	0	0	0	0
2913:	0	0	0	0	2	0	0	0	0
2921:	0	0	0	0	0	0	0	1	0
2929:	0	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0	0
2945:	0	1	0	0	0	0	0	0	0
2953:	0	1	1	1	0	0	0	0	0

2961: 1 0 0 0 0 0 0 0

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Channel	1	2	3	4	5	6	7	8
2969:	0	0	1	1	0	0	0	0
2977:	0	1	0	0	0	0	0	1
2985:	0	0	0	1	0	0	0	0
2993:	0	1	0	1	0	0	0	0
3001:	0	0	1	0	0	0	1	0
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	1	0
3025:	0	0	0	0	0	2	0	0
3033:	0	0	0	0	0	1	0	1
3041:	0	0	0	0	0	0	1	0
3049:	0	0	0	0	0	1	1	0
3057:	0	0	0	0	0	0	0	0
3065:	1	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	2	1
3081:	0	0	1	0	0	1	1	0
3089:	0	0	0	1	0	0	0	0
3097:	0	0	0	1	0	0	0	1
3105:	0	0	0	0	0	0	1	0
3113:	0	0	0	1	1	0	0	0
3121:	1	1	0	0	0	1	0	1
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	1	1	0	0	0	1	1	1
3153:	0	0	0	0	0	1	0	0
3161:	1	0	0	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	2	1	0	0	0	0	0	1
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	0	0	1
3201:	0	0	0	1	0	0	1	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	1	1	0	0	0	0
3233:	0	0	0	1	0	2	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	0	0	0	1	0
3265:	0	0	1	0	0	0	0	0
3273:	1	0	1	0	0	0	1	1
3281:	0	0	0	0	0	0	1	0
3289:	0	0	0	0	1	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	1	0	0	0	1	0	0
3313:	0	0	0	1	0	0	0	0
3321:	0	1	0	1	0	0	0	0
3329:	0	0	0	1	0	0	0	0
3337:	0	0	0	0	0	0	0	1
3345:	0	0	0	0	0	0	2	0
3353:	0	0	0	0	0	0	0	0
3361:	1	0	0	0	0	1	0	0
3369:	1	0	0	0	0	0	0	1
3377:	0	1	0	1	0	0	0	2
3385:	0	2	0	0	0	1	0	0

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP5004S14-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	2	1	0	0	0	0	0
3409:	0	1	0	0	1	0	0	0
3417:	1	0	0	1	1	0	0	0
3425:	0	0	1	0	0	1	0	0
3433:	0	0	0	0	0	0	0	1
3441:	0	0	0	0	1	0	0	0
3449:	0	0	0	1	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	1
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	1	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	1	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	1	0
3529:	0	0	1	1	0	0	0	0
3537:	0	0	0	0	0	0	1	0
3545:	0	0	0	1	2	1	1	0
3553:	0	1	1	0	0	0	0	0
3561:	0	0	0	0	1	0	0	1
3569:	0	0	0	1	0	0	0	0
3577:	0	0	0	1	0	2	0	0
3585:	0	0	0	0	1	0	0	1
3593:	0	0	1	0	0	0	0	0
3601:	1	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	2	0	0	0	0	0	0
3641:	1	0	0	0	1	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	1	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	1	0	1	1	0	0	0	0
3721:	0	0	0	1	0	0	0	0
3729:	0	0	0	0	0	1	0	0
3737:	0	0	0	0	0	1	0	0
3745:	0	0	0	0	0	1	0	0
3753:	0	0	0	1	0	0	0	0
3761:	0	0	1	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	1	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	1	0	1	0	0	0
3801:	0	0	0	0	0	1	0	0
3809:	0	0	0	0	0	0	0	0
3817:	1	0	0	0	0	0	0	0

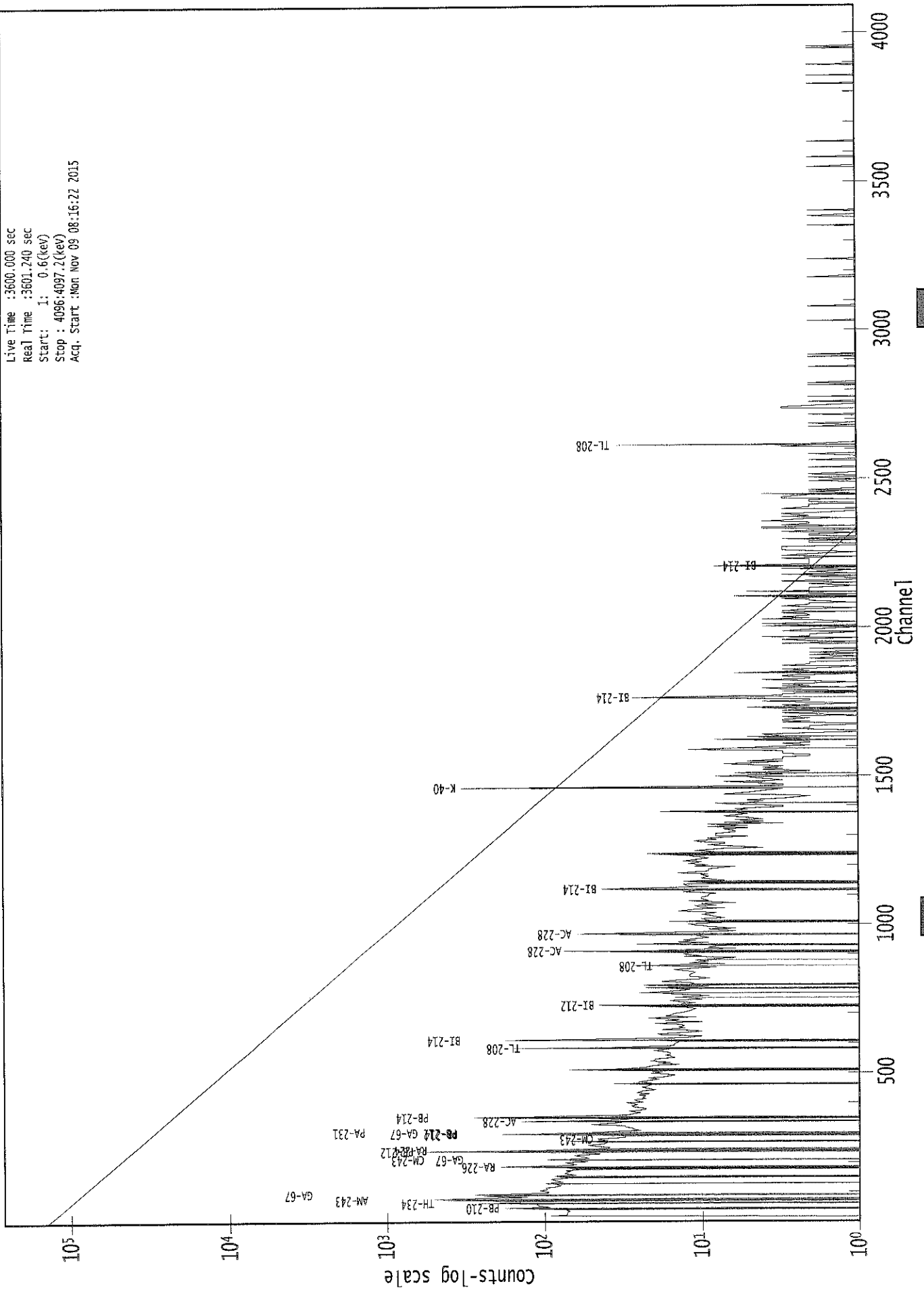
3825: 0 0 2 0 0 0 0 0

Sample Title: CP5004S14-15

Channel	1	2	3	4	5	6	7	8
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	1	0	0	0
3849:	0	0	0	0	0	2	0	0
3857:	1	0	0	0	0	0	0	0
3865:	0	0	0	0	0	1	0	1
3873:	0	0	0	0	1	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	2	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	1	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	1	0	0	0	0
3929:	0	0	0	0	1	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	1	2	1	0	0	1	0	0
3953:	2	0	0	0	0	0	0	0
3961:	0	0	1	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	1	0	0	0	0	0
3993:	0	1	0	0	0	0	1	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	1	0	1	0	0	1
4017:	0	0	0	0	0	0	0	0
4025:	0	0	1	0	0	1	1	0
4033:	0	0	0	0	0	0	0	0
4041:	1	0	0	0	0	0	0	0
4049:	0	1	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	1	0	1	0	0	0	0	0
4073:	0	0	0	0	0	0	0	1
4081:	0	1	0	0	0	0	0	1
4089:	0	0	0	0	0	0	0	0

0000029316.CNF

Live Time : 3600.000 sec
Real Time : 3601.740 sec
Start : 1: 0.6 (keV)
Stop : 4096.4097.2 (keV)
Acq. Start : Mon Nov 09 08:16:22 2015



Analysis Report for 1510087-10
CP5004S16-17

✓
1119

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-10
Sample Description : CP5004S16-17
Sample Type : SOIL

Sample Size : 5.677E+02 grams
Facility : Countroom

Sample Taken On : 10/7/2015 5:11:17PM
Acquisition Started : 11/9/2015 8:16:30AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.2 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 8 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 29317

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-10
CP5004S16-17

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 9:16:46AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	38.48	38.59	0.0000	0.00
2	46.67	46.77	0.0000	0.00
3	52.71	52.81	0.0000	0.00
4	63.37	63.47	0.0000	0.00
5	76.39	76.47	0.0000	0.00
6	92.75	92.83	0.0000	0.00
7	186.02	186.04	0.0000	0.00
8	209.62	209.64	0.0000	0.00
9	238.83	238.83	0.0000	0.00
10	241.74	241.74	0.0000	0.00
11	269.67	269.65	0.0000	0.00
12	275.90	275.88	0.0000	0.00
13	295.31	295.27	0.0000	0.00
14	300.00	299.96	0.0000	0.00
15	327.70	327.65	0.0000	0.00
16	338.65	338.59	0.0000	0.00
17	351.99	351.93	0.0000	0.00
18	380.41	380.33	0.0000	0.00
19	399.74	399.65	0.0000	0.00
20	409.89	409.79	0.0000	0.00
21	463.13	463.01	0.0000	0.00
22	466.96	466.84	0.0000	0.00
23	482.81	482.68	0.0000	0.00
24	497.45	497.31	0.0000	0.00
25	511.26	511.12	0.0000	0.00
26	583.15	582.97	0.0000	0.00
27	609.40	609.21	0.0000	0.00
28	727.43	727.18	0.0000	0.00
29	768.29	768.02	0.0000	0.00
30	794.87	794.60	0.0000	0.00
31	838.00	837.71	0.0000	0.00
32	911.44	911.12	0.0000	0.00
33	933.88	933.54	0.0000	0.00
34	957.97	957.62	0.0000	0.00
35	964.71	964.36	0.0000	0.00
36	968.99	968.64	0.0000	0.00
37	1068.03	1067.64	0.0000	0.00
38	1095.13	1094.73	0.0000	0.00
39	1100.38	1099.98	0.0000	0.00
40	1120.61	1120.20	0.0000	0.00
41	1239.84	1239.39	0.0000	0.00
42	1246.82	1246.37	0.0000	0.00

Analysis Report for 1510087-10
CP5004S16-17

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1296.78	1296.31	0.0000	0.00
44	1338.08	1337.59	0.0000	0.00
45	1378.92	1378.42	0.0000	0.00
46	1397.73	1397.23	0.0000	0.00
47	1401.39	1400.88	0.0000	0.00
48	1408.00	1407.49	0.0000	0.00
49	1455.52	1455.00	0.0000	0.00
50	1461.01	1460.48	0.0000	0.00
51	1502.33	1501.80	0.0000	0.00
52	1510.85	1510.31	0.0000	0.00
53	1552.59	1552.04	0.0000	0.00
54	1590.02	1589.46	0.0000	0.00
55	1617.23	1616.67	0.0000	0.00
56	1620.86	1620.29	0.0000	0.00
57	1638.22	1637.65	0.0000	0.00
58	1678.97	1678.38	0.0000	0.00
59	1729.55	1728.96	0.0000	0.00
60	1764.89	1764.28	0.0000	0.00
61	1837.53	1836.91	0.0000	0.00
62	1848.71	1848.08	0.0000	0.00
63	1896.56	1895.92	0.0000	0.00
64	2059.86	2059.19	0.0000	0.00
65	2103.41	2102.74	0.0000	0.00
66	2203.91	2203.22	0.0000	0.00
67	2268.45	2267.75	0.0000	0.00
68	2383.09	2382.38	0.0000	0.00
69	2558.54	2557.80	0.0000	0.00
70	2614.27	2613.53	0.0000	0.00
71	3753.10	3752.40	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510087-10
CP5004S16-17

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 9:16:46AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)	
1	38.48	35 -	41	38.59	8.71E+01	97.71	1.68E+03	1.33	
2	46.67	44 -	50	46.77	2.02E+02	95.84	1.51E+03	2.34	
3	52.71	51 -	55	52.81	8.61E+01	65.77	8.72E+02	3.09	
4	63.37	61 -	65	63.47	1.07E+02	74.81	1.15E+03	1.45	
5	76.39	72 -	82	76.47	1.05E+03	153.75	2.55E+03	3.81	
6	92.75	89 -	96	92.83	2.67E+02	108.55	1.70E+03	1.49	
7	186.02	184 -	188	186.04	2.00E+02	56.67	5.34E+02	1.48	
8	209.62	206 -	213	209.64	6.61E+01	73.05	8.40E+02	1.35	
M	9	238.83	235 -	255	238.83	8.60E+02	74.22	4.54E+02	1.53
m	10	241.74	235 -	255	241.74	2.11E+02	85.49	5.90E+02	2.28
11	269.67	265 -	273	269.65	8.65E+01	60.67	5.13E+02	1.87	
12	275.90	274 -	279	275.88	5.26E+01	48.20	4.31E+02	4.92	
M	13	295.31	290 -	304	295.27	2.97E+02	48.76	2.66E+02	1.65
m	14	300.00	290 -	304	299.96	7.62E+01	37.60	2.32E+02	1.66
15	327.70	323 -	331	327.65	5.89E+01	55.06	4.26E+02	2.16	
16	338.65	335 -	343	338.59	2.32E+02	57.76	3.73E+02	1.91	
17	351.99	348 -	355	351.93	5.22E+02	63.34	3.21E+02	1.50	
18	380.41	377 -	384	380.33	4.21E+01	42.61	2.72E+02	3.84	
19	399.74	398 -	401	399.65	2.68E+01	23.75	1.14E+02	1.49	
20	409.89	408 -	412	409.79	3.52E+01	30.70	1.70E+02	1.72	
M	21	463.13	459 -	470	463.01	6.84E+01	32.42	1.42E+02	1.88
m	22	466.96	459 -	470	466.84	2.50E+01	30.12	1.39E+02	1.89
23	482.81	476 -	488	482.68	5.10E+01	55.96	3.44E+02	8.05	
24	497.45	495 -	501	497.31	2.79E+01	30.04	1.44E+02	2.93	
25	511.26	506 -	517	511.12	1.83E+02	59.57	3.46E+02	2.29	
26	583.15	578 -	587	582.97	2.72E+02	52.96	2.46E+02	1.53	
27	609.40	604 -	613	609.21	3.37E+02	57.80	2.85E+02	1.67	
28	727.43	724 -	730	727.18	3.40E+01	30.37	1.42E+02	1.29	
29	768.29	764 -	771	768.02	4.30E+01	36.39	1.92E+02	1.72	
30	794.87	792 -	797	794.60	2.42E+01	23.39	8.56E+01	1.86	
31	838.00	834 -	841	837.71	3.18E+01	28.64	1.14E+02	4.53	
32	911.44	907 -	915	911.12	1.94E+02	38.02	1.02E+02	1.54	
33	933.88	930 -	937	933.54	2.63E+01	24.74	8.53E+01	3.11	
34	957.97	954 -	961	957.62	3.12E+01	20.10	4.37E+01	4.57	
M	35	964.71	961 -	972	964.36	4.59E+01	21.47	4.37E+01	2.12
m	36	968.99	961 -	972	968.64	1.17E+02	32.31	9.58E+01	2.52
37	1068.03	1060 -	1075	1067.64	3.97E+01	40.00	1.45E+02	10.78	
M	38	1095.13	1090 -	1102	1094.73	1.90E+01	27.33	9.79E+01	3.35
m	39	1100.38	1090 -	1102	1099.98	1.61E+01	18.08	5.13E+01	2.57
40	1120.61	1115 -	1125	1120.20	9.97E+01	35.00	1.11E+02	1.87	

Analysis Report for 1510087-10
CP5004S16-17

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1239.84	1235 - 1243		1239.39	3.28E+01	28.10	9.64E+01	5.56
42	1246.82	1244 - 1250		1246.37	2.13E+01	19.38	5.34E+01	2.26
43	1296.78	1293 - 1299		1296.31	1.10E+01	14.07	2.80E+01	1.07
44	1338.08	1327 - 1348		1337.59	4.11E+01	37.75	8.57E+01	10.82
45	1378.92	1374 - 1382		1378.42	1.81E+01	21.71	5.78E+01	1.96
M	46	1397.73	1396 - 1403	1397.23	8.57E+00	5.00	5.81E+00	2.50
m	47	1401.39	1396 - 1403	1400.88	1.62E+01	13.01	1.67E+01	2.44
	48	1408.00	1404 - 1411	1407.49	2.43E+01	12.96	1.13E+01	3.88
M	49	1455.52	1453 - 1466	1455.00	9.68E+00	8.94	1.60E+01	2.54
m	50	1461.01	1453 - 1466	1460.48	7.17E+02	55.19	3.15E+01	2.29
	51	1502.33	1499 - 1504	1501.80	9.39E+00	9.11	9.21E+00	2.50
	52	1510.85	1506 - 1517	1510.31	2.16E+01	16.49	2.08E+01	3.38
	53	1552.59	1547 - 1555	1552.04	8.50E+00	10.99	1.30E+01	1.74
	54	1590.02	1584 - 1596	1589.46	2.87E+01	22.36	4.45E+01	6.97
M	55	1617.23	1615 - 1623	1616.67	9.22E+00	5.55	1.00E+00	2.19
m	56	1620.86	1615 - 1623	1620.29	9.30E+00	10.95	1.43E+01	3.20
	57	1638.22	1635 - 1639	1637.65	4.75E+00	5.50	2.50E+00	1.10
	58	1678.97	1675 - 1682	1678.38	7.42E+00	10.00	1.12E+01	0.97
	59	1729.55	1723 - 1734	1728.96	2.64E+01	14.14	1.12E+01	6.16
	60	1764.89	1760 - 1771	1764.28	5.85E+01	24.58	4.10E+01	3.10
	61	1837.53	1833 - 1839	1836.91	7.22E+00	6.95	3.56E+00	1.38
	62	1848.71	1843 - 1851	1848.08	9.64E+00	9.82	8.71E+00	3.75
	63	1896.56	1892 - 1899	1895.92	1.06E+01	9.38	6.71E+00	3.50
	64	2059.86	2056 - 2062	2059.19	9.14E+00	7.50	3.73E+00	3.57
	65	2103.41	2097 - 2108	2102.74	2.62E+01	12.33	5.55E+00	4.30
	66	2203.91	2199 - 2207	2203.22	1.80E+01	10.01	4.05E+00	2.12
	67	2268.45	2265 - 2270	2267.75	8.00E+00	5.66	0.00E+00	1.00
	68	2383.09	2378 - 2386	2382.38	8.00E+00	5.66	0.00E+00	1.16
	69	2558.54	2554 - 2560	2557.80	5.00E+00	4.47	0.00E+00	2.41
	70	2614.27	2608 - 2618	2613.53	1.13E+02	23.08	1.10E+01	2.51
	71	3753.10	3749 - 3755	3752.40	5.00E+00	4.47	0.00E+00	1.70

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 9:16:46AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Analysis Report for 1510087-10

CP5004S16-17

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	38.48	35 -	41	8.71E+01	97.71	1.68E+03	7.88E+01
2	46.67	44 -	50	2.02E+02	95.84	1.51E+03	7.52E+01
3	52.71	51 -	55	8.61E+01	65.77	8.72E+02	5.19E+01
4	63.37	61 -	65	1.07E+02	74.81	1.15E+03	5.91E+01
5	76.39	72 -	82	1.05E+03	153.75	2.55E+03	1.15E+02
6	92.75	89 -	96	2.67E+02	108.55	1.70E+03	8.51E+01
7	186.02	184 -	188	2.00E+02	56.67	5.34E+02	4.04E+01
8	209.62	206 -	213	6.61E+01	73.05	8.40E+02	5.85E+01
M 9	238.83	235 -	255	8.60E+02	74.22	4.54E+02	3.50E+01
m 10	241.74	235 -	255	2.11E+02	85.49	5.90E+02	3.99E+01
11	269.67	265 -	273	8.65E+01	60.67	5.13E+02	4.75E+01
12	275.90	274 -	279	5.26E+01	48.20	4.31E+02	3.78E+01
M 13	295.31	290 -	304	2.97E+02	48.76	2.66E+02	2.68E+01
m 14	300.00	290 -	304	7.62E+01	37.60	2.32E+02	2.50E+01
15	327.70	323 -	331	5.89E+01	55.06	4.26E+02	4.35E+01
16	338.65	335 -	343	2.32E+02	57.76	3.73E+02	4.03E+01
17	351.99	348 -	355	5.22E+02	63.34	3.21E+02	3.60E+01
18	380.41	377 -	384	4.21E+01	42.61	2.72E+02	3.34E+01
19	399.74	398 -	401	2.68E+01	23.75	1.14E+02	1.76E+01
20	409.89	408 -	412	3.52E+01	30.70	1.70E+02	2.33E+01
M 21	463.13	459 -	470	6.84E+01	32.42	1.42E+02	1.96E+01
m 22	466.96	459 -	470	2.50E+01	30.12	1.39E+02	1.94E+01
23	482.81	476 -	488	5.10E+01	55.96	3.44E+02	4.45E+01
24	497.45	495 -	501	2.79E+01	30.04	1.44E+02	2.31E+01
25	511.26	506 -	517	1.83E+02	59.57	3.46E+02	4.36E+01
26	583.15	578 -	587	2.72E+02	52.96	2.46E+02	3.41E+01
27	609.40	604 -	613	3.37E+02	57.80	2.85E+02	3.67E+01
28	727.43	724 -	730	3.40E+01	30.37	1.42E+02	2.30E+01
29	768.29	764 -	771	4.30E+01	36.39	1.92E+02	2.79E+01
30	794.87	792 -	797	2.42E+01	23.39	8.56E+01	1.74E+01
31	838.00	834 -	841	3.18E+01	28.64	1.14E+02	2.16E+01
32	911.44	907 -	915	1.94E+02	38.02	1.02E+02	2.13E+01
33	933.88	930 -	937	2.63E+01	24.74	8.53E+01	1.85E+01
34	957.97	954 -	961	3.12E+01	20.10	4.37E+01	1.37E+01
M 35	964.71	961 -	972	4.59E+01	21.47	4.37E+01	1.09E+01
m 36	968.99	961 -	972	1.17E+02	32.31	9.58E+01	1.61E+01
37	1068.03	1060 -	1075	3.97E+01	40.00	1.45E+02	3.12E+01
M 38	1095.13	1090 -	1102	1.90E+01	27.33	9.79E+01	1.63E+01
m 39	1100.38	1090 -	1102	1.61E+01	18.08	5.13E+01	1.18E+01
40	1120.61	1115 -	1125	9.97E+01	35.00	1.11E+02	2.36E+01
41	1239.84	1235 -	1243	3.28E+01	28.10	9.64E+01	2.11E+01
42	1246.82	1244 -	1250	2.13E+01	19.38	5.34E+01	1.40E+01
43	1296.78	1293 -	1299	1.10E+01	14.07	2.80E+01	1.02E+01
44	1338.08	1327 -	1348	4.11E+01	37.75	8.57E+01	2.92E+01
45	1378.92	1374 -	1382	1.81E+01	21.71	5.78E+01	1.64E+01
M 46	1397.73	1396 -	1403	8.57E+00	5.00	5.81E+00	3.96E+00
m 47	1401.39	1396 -	1403	1.62E+01	13.01	1.67E+01	6.71E+00
48	1408.00	1404 -	1411	2.43E+01	12.96	1.13E+01	6.91E+00
M 49	1455.52	1453 -	1466	9.68E+00	8.94	1.60E+01	6.58E+00
m 50	1461.01	1453 -	1466	7.17E+02	55.19	3.15E+01	9.23E+00
51	1502.33	1499 -	1504	9.39E+00	9.11	9.21E+00	5.54E+00

Analysis Report for 1510087-10
CP5004S16-17

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
52	1510.85	1506 -	1517	2.16E+01	16.49	2.08E+01	1.12E+01
53	1552.59	1547 -	1555	8.50E+00	10.99	1.30E+01	7.66E+00
54	1590.02	1584 -	1596	2.87E+01	22.36	4.45E+01	1.61E+01
M 55	1617.23	1615 -	1623	9.22E+00	5.55	1.00E+00	1.64E+00
m 56	1620.86	1615 -	1623	9.30E+00	10.95	1.43E+01	6.22E+00
57	1638.22	1635 -	1639	4.75E+00	5.50	2.50E+00	2.76E+00
58	1678.97	1675 -	1682	7.42E+00	10.00	1.12E+01	6.89E+00
59	1729.55	1723 -	1734	2.64E+01	14.14	1.12E+01	7.99E+00
60	1764.89	1760 -	1771	5.85E+01	24.58	4.10E+01	1.58E+01
61	1837.53	1833 -	1839	7.22E+00	6.95	3.56E+00	3.62E+00
62	1848.71	1843 -	1851	9.64E+00	9.82	8.71E+00	6.26E+00
63	1896.56	1892 -	1899	1.06E+01	9.38	6.71E+00	5.54E+00
64	2059.86	2056 -	2062	9.14E+00	7.50	3.73E+00	3.65E+00
65	2103.41	2097 -	2108	2.62E+01	12.33	5.55E+00	5.64E+00
66	2203.91	2199 -	2207	1.80E+01	10.01	4.05E+00	4.38E+00
67	2268.45	2265 -	2270	8.00E+00	5.66	0.00E+00	0.00E+00
68	2383.09	2378 -	2386	8.00E+00	5.66	0.00E+00	0.00E+00
69	2558.54	2554 -	2560	5.00E+00	4.47	0.00E+00	0.00E+00
70	2614.27	2608 -	2618	1.13E+02	23.08	1.10E+01	7.47E+00
71	3753.10	3749 -	3755	5.00E+00	4.47	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 9:16:46AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	38.48	35 -	41	38.59	8.71E+01	97.71	1.68E+03	.....
2	46.67	44 -	50	46.77	2.02E+02	95.84	1.51E+03	PB-210
3	52.71	51 -	55	52.81	8.61E+01	65.77	8.72E+02	.....
4	63.37	61 -	65	63.47	1.07E+02	74.81	1.15E+03	TH-234 TH-230

Analysis Report for 1510087-10

CP5004S16-17

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	5	76.39	72 -	82	76.47	1.05E+03	153.75	2.55E+03	.....
	6	92.75	89 -	96	92.83	2.67E+02	108.55	1.70E+03	GA-67
	7	186.02	184 -	188	186.04	2.00E+02	56.67	5.34E+02	RA-226
	8	209.62	206 -	213	209.64	6.61E+01	73.05	8.40E+02	CM-243 GA-67
M	9	238.83	235 -	255	238.83	8.60E+02	74.22	4.54E+02	PB-212
m	10	241.74	235 -	255	241.74	2.11E+02	85.49	5.90E+02	RA-224
	11	269.67	265 -	273	269.65	8.65E+01	60.67	5.13E+02	.....
	12	275.90	274 -	279	275.88	5.26E+01	48.20	4.31E+02	.....
M	13	295.31	290 -	304	295.27	2.97E+02	48.76	2.66E+02	PB-214
m	14	300.00	290 -	304	299.96	7.62E+01	37.60	2.32E+02	BI-210M PB-212 GA-67
	15	327.70	323 -	331	327.65	5.89E+01	55.06	4.26E+02	.....
	16	338.65	335 -	343	338.59	2.32E+02	57.76	3.73E+02	AC-228
	17	351.99	348 -	355	351.93	5.22E+02	63.34	3.21E+02	PB-214
	18	380.41	377 -	384	380.33	4.21E+01	42.61	2.72E+02	.....
	19	399.74	398 -	401	399.65	2.68E+01	23.75	1.14E+02	SE-75
	20	409.89	408 -	412	409.79	3.52E+01	30.70	1.70E+02	.....
M	21	463.13	459 -	470	463.01	6.84E+01	32.42	1.42E+02	SB-125
m	22	466.96	459 -	470	466.84	2.50E+01	30.12	1.39E+02	.....
	23	482.81	476 -	488	482.68	5.10E+01	55.96	3.44E+02	.....
	24	497.45	495 -	501	497.31	2.79E+01	30.04	1.44E+02	RU-103
	25	511.26	506 -	517	511.12	1.83E+02	59.57	3.46E+02	.....
	26	583.15	578 -	587	582.97	2.72E+02	52.96	2.46E+02	TL-208
	27	609.40	604 -	613	609.21	3.37E+02	57.80	2.85E+02	BI-214
	28	727.43	724 -	730	727.18	3.40E+01	30.37	1.42E+02	BI-212
	29	768.29	764 -	771	768.02	4.30E+01	36.39	1.92E+02	.....
	30	794.87	792 -	797	794.60	2.42E+01	23.39	8.56E+01	CS-134
	31	838.00	834 -	841	837.71	3.18E+01	28.64	1.14E+02	.....
	32	911.44	907 -	915	911.12	1.94E+02	38.02	1.02E+02	AC-228 LU-172
	33	933.88	930 -	937	933.54	2.63E+01	24.74	8.53E+01	.....
	34	957.97	954 -	961	957.62	3.12E+01	20.10	4.37E+01	.....
M	35	964.71	961 -	972	964.36	4.59E+01	21.47	4.37E+01	EU-152
m	36	968.99	961 -	972	968.64	1.17E+02	32.31	9.58E+01	AC-228
	37	1068.03	1060 -	1075	1067.64	3.97E+01	40.00	1.45E+02	.....
M	38	1095.13	1090 -	1102	1094.73	1.90E+01	27.33	9.79E+01	.....
m	39	1100.38	1090 -	1102	1099.98	1.61E+01	18.08	5.13E+01	.....
	40	1120.61	1115 -	1125	1120.20	9.97E+01	35.00	1.11E+02	SC-46 BI-214 TA-182
	41	1239.84	1235 -	1243	1239.39	3.28E+01	28.10	9.64E+01	.....
	42	1246.82	1244 -	1250	1246.37	2.13E+01	19.38	5.34E+01	.....
	43	1296.78	1293 -	1299	1296.31	1.10E+01	14.07	2.80E+01	.....
	44	1338.08	1327 -	1348	1337.59	4.11E+01	37.75	8.57E+01	.....
	45	1378.92	1374 -	1382	1378.42	1.81E+01	21.71	5.78E+01	.....
M	46	1397.73	1396 -	1403	1397.23	8.57E+00	5.00	5.81E+00	.....
m	47	1401.39	1396 -	1403	1400.88	1.62E+01	13.01	1.67E+01	.....
	48	1408.00	1404 -	1411	1407.49	2.43E+01	12.96	1.13E+01	EU-152
M	49	1455.52	1453 -	1466	1455.00	9.68E+00	8.94	1.60E+01	.....
m	50	1461.01	1453 -	1466	1460.48	7.17E+02	55.19	3.15E+01	K-40
	51	1502.33	1499 -	1504	1501.80	9.39E+00	9.11	9.21E+00	.....
	52	1510.85	1506 -	1517	1510.31	2.16E+01	16.49	2.08E+01	.....

Analysis Report for 1510087-10
CP5004S16-17

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	53	1552.59	1547 - 1555	1552.04	8.50E+00	10.99	1.30E+01	.....
m	54	1590.02	1584 - 1596	1589.46	2.87E+01	22.36	4.45E+01	.....
	55	1617.23	1615 - 1623	1616.67	9.22E+00	5.55	1.00E+00	.....
	56	1620.86	1615 - 1623	1620.29	9.30E+00	10.95	1.43E+01	BI-212
	57	1638.22	1635 - 1639	1637.65	4.75E+00	5.50	2.50E+00	.....
	58	1678.97	1675 - 1682	1678.38	7.42E+00	10.00	1.12E+01	I-135
	59	1729.55	1723 - 1734	1728.96	2.64E+01	14.14	1.12E+01	.....
	60	1764.89	1760 - 1771	1764.28	5.85E+01	24.58	4.10E+01	BI-214
	61	1837.53	1833 - 1839	1836.91	7.22E+00	6.95	3.56E+00	.....
	62	1848.71	1843 - 1851	1848.08	9.64E+00	9.82	8.71E+00	.....
	63	1896.56	1892 - 1899	1895.92	1.06E+01	9.38	6.71E+00	.....
	64	2059.86	2056 - 2062	2059.19	9.14E+00	7.50	3.73E+00	.....
	65	2103.41	2097 - 2108	2102.74	2.62E+01	12.33	5.55E+00	.....
	66	2203.91	2199 - 2207	2203.22	1.80E+01	10.01	4.05E+00	BI-214
	67	2268.45	2265 - 2270	2267.75	8.00E+00	5.66	0.00E+00	.....
	68	2383.09	2378 - 2386	2382.38	8.00E+00	5.66	0.00E+00	.....
	69	2558.54	2554 - 2560	2557.80	5.00E+00	4.47	0.00E+00	.....
	70	2614.27	2608 - 2618	2613.53	1.13E+02	23.08	1.10E+01	TL-208
	71	3753.10	3749 - 3755	3752.40	5.00E+00	4.47	0.00E+00	.....

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 9:16:46AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
	1	38.48	8.71E+01	97.71	6.99E-03	1.68E-03
	2	46.67	2.02E+02	95.84	1.35E-02	1.68E-03
	3	52.71	8.61E+01	65.77	1.80E-02	1.68E-03
	4	63.37	1.07E+02	74.81	2.38E-02	2.06E-03
	5	76.39	1.05E+03	153.75	2.74E-02	3.35E-03
	6	92.75	2.67E+02	108.55	2.85E-02	4.29E-03
	7	186.02	2.00E+02	56.67	2.11E-02	1.65E-03
	8	209.62	6.61E+01	73.05	1.95E-02	1.63E-03
M	9	238.83	8.60E+02	74.22	1.79E-02	1.60E-03
m	10	241.74	2.11E+02	85.49	1.77E-02	1.60E-03
	11	269.67	8.65E+01	60.67	1.65E-02	1.57E-03

Analysis Report for 1510087-10
CP5004S16-17

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	12	275.90	5.26E+01	48.20	1.62E-02	1.56E-03
M	13	295.31	2.97E+02	48.76	1.55E-02	1.48E-03
m	14	300.00	7.62E+01	37.60	1.53E-02	1.46E-03
	15	327.70	5.89E+01	55.06	1.44E-02	1.33E-03
	16	338.65	2.32E+02	57.76	1.41E-02	1.27E-03
	17	351.99	5.22E+02	63.34	1.37E-02	1.21E-03
	18	380.41	4.21E+01	42.61	1.30E-02	1.07E-03
	19	399.74	2.68E+01	23.75	1.26E-02	1.01E-03
	20	409.89	3.52E+01	30.70	1.24E-02	1.00E-03
M	21	463.13	6.84E+01	32.42	1.13E-02	9.47E-04
m	22	466.96	2.50E+01	30.12	1.13E-02	9.43E-04
	23	482.81	5.10E+01	55.96	1.10E-02	9.27E-04
	24	497.45	2.79E+01	30.04	1.08E-02	9.12E-04
	25	511.26	1.83E+02	59.57	1.06E-02	8.98E-04
	26	583.15	2.72E+02	52.96	9.58E-03	8.25E-04
	27	609.40	3.37E+02	57.80	9.27E-03	7.98E-04
	28	727.43	3.40E+01	30.37	8.08E-03	7.03E-04
	29	768.29	4.30E+01	36.39	7.74E-03	6.77E-04
	30	794.87	2.42E+01	23.39	7.53E-03	6.60E-04
	31	838.00	3.18E+01	28.64	7.22E-03	6.32E-04
	32	911.44	1.94E+02	38.02	6.74E-03	5.86E-04
	33	933.88	2.63E+01	24.74	6.61E-03	5.75E-04
	34	957.97	3.12E+01	20.10	6.48E-03	5.63E-04
M	35	964.71	4.59E+01	21.47	6.44E-03	5.59E-04
m	36	968.99	1.17E+02	32.31	6.42E-03	5.57E-04
	37	1068.03	3.97E+01	40.00	5.93E-03	5.07E-04
M	38	1095.13	1.90E+01	27.33	5.81E-03	4.93E-04
m	39	1100.38	1.61E+01	18.08	5.79E-03	4.90E-04
	40	1120.61	9.97E+01	35.00	5.70E-03	4.80E-04
	41	1239.84	3.28E+01	28.10	5.27E-03	4.84E-04
	42	1246.82	2.13E+01	19.38	5.24E-03	4.87E-04
	43	1296.78	1.10E+01	14.07	5.09E-03	5.10E-04
	44	1338.08	4.11E+01	37.75	4.97E-03	5.24E-04
	45	1378.92	1.81E+01	21.71	4.86E-03	5.07E-04
M	46	1397.73	8.57E+00	5.00	4.82E-03	4.99E-04
m	47	1401.39	1.62E+01	13.01	4.81E-03	4.98E-04
	48	1408.00	2.43E+01	12.96	4.79E-03	4.95E-04
M	49	1455.52	9.68E+00	8.94	4.68E-03	4.75E-04
m	50	1461.01	7.17E+02	55.19	4.67E-03	4.73E-04
	51	1502.33	9.39E+00	9.11	4.59E-03	4.56E-04
	52	1510.85	2.16E+01	16.49	4.57E-03	4.53E-04
	53	1552.59	8.50E+00	10.99	4.49E-03	4.35E-04
	54	1590.02	2.87E+01	22.36	4.43E-03	4.20E-04
M	55	1617.23	9.22E+00	5.55	4.38E-03	4.08E-04
m	56	1620.86	9.30E+00	10.95	4.38E-03	4.07E-04
	57	1638.22	4.75E+00	5.50	4.35E-03	4.00E-04
	58	1678.97	7.42E+00	10.00	4.29E-03	3.83E-04
	59	1729.55	2.64E+01	14.14	4.23E-03	3.62E-04
	60	1764.89	5.85E+01	24.58	4.18E-03	3.47E-04
	61	1837.53	7.22E+00	6.95	4.11E-03	3.18E-04
	62	1848.71	9.64E+00	9.82	4.10E-03	3.18E-04
	63	1896.56	1.06E+01	9.38	4.06E-03	3.18E-04
	64	2059.86	9.14E+00	7.50	3.97E-03	3.18E-04

Analysis Report for 1510087-10
CP5004S16-17

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
65	2103.41	2.62E+01	12.33	3.95E-03	3.18E-04
66	2203.91	1.80E+01	10.01	3.93E-03	3.18E-04
67	2268.45	8.00E+00	5.66	3.93E-03	3.18E-04
68	2383.09	8.00E+00	5.66	3.94E-03	3.18E-04
69	2558.54	5.00E+00	4.47	4.02E-03	3.18E-04
70	2614.27	1.13E+02	23.08	4.05E-03	3.18E-04
71	3753.10	5.00E+00	4.47	6.26E-03	3.18E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 9:16:46AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	38.48	8.71E+01	97.71			8.71E+01	9.77E+01
2	46.67	2.02E+02	95.84	6.46E+01	1.16E+01	1.38E+02	9.65E+01
3	52.71	8.61E+01	65.77			8.61E+01	6.58E+01
4	63.37	1.07E+02	74.81	4.34E+01	1.15E+01	6.34E+01	7.57E+01
5	76.39	1.05E+03	153.75			1.05E+03	1.54E+02
6	92.75	2.67E+02	108.55	5.70E+01	9.03E+00	2.10E+02	1.09E+02
7	186.02	2.00E+02	56.67	4.72E+01	7.97E+00	1.53E+02	5.72E+01
8	209.62	6.61E+01	73.05			6.61E+01	7.30E+01
M	9	238.83	8.60E+02	2.36E+01	1.35E+01	8.37E+02	7.54E+01
m	10	241.74	2.11E+02	6.38E+00	3.91E+00	2.05E+02	8.56E+01
	11	269.67	8.65E+01	60.67		8.65E+01	6.07E+01
	12	275.90	5.26E+01	48.20		5.26E+01	4.82E+01
M	13	295.31	2.97E+02	48.76	8.57E+00	2.89E+02	4.91E+01
m	14	300.00	7.62E+01	37.60		7.62E+01	3.76E+01
	15	327.70	5.89E+01	55.06	0.00E+00	5.89E+01	5.51E+01
	16	338.65	2.32E+02	57.76		2.32E+02	5.78E+01
	17	351.99	5.22E+02	63.34	1.40E+01	5.09E+02	6.36E+01
	18	380.41	4.21E+01	42.61		4.21E+01	4.26E+01
	19	399.74	2.68E+01	23.75		2.68E+01	2.37E+01
	20	409.89	3.52E+01	30.70		3.52E+01	3.07E+01
M	21	463.13	6.84E+01	32.42		6.84E+01	3.24E+01
m	22	466.96	2.50E+01	30.12		2.50E+01	3.01E+01
	23	482.81	5.10E+01	55.96		5.10E+01	5.60E+01

Analysis Report for 1510087-10

CP5004S16-17

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
24	497.45	2.79E+01	30.04			2.79E+01	3.00E+01
25	511.26	1.83E+02	59.57	8.41E+01	5.50E+00	9.87E+01	5.98E+01
26	583.15	2.72E+02	52.96	7.32E+00	4.08E+00	2.65E+02	5.31E+01
27	609.40	3.37E+02	57.80	1.30E+01	3.89E+00	3.24E+02	5.79E+01
28	727.43	3.40E+01	30.37			3.40E+01	3.04E+01
29	768.29	4.30E+01	36.39			4.30E+01	3.64E+01
30	794.87	2.42E+01	23.39			2.42E+01	2.34E+01
31	838.00	3.18E+01	28.64			3.18E+01	2.86E+01
32	911.44	1.94E+02	38.02	5.60E+00	3.32E+00	1.88E+02	3.82E+01
33	933.88	2.63E+01	24.74			2.63E+01	2.47E+01
34	957.97	3.12E+01	20.10			3.12E+01	2.01E+01
M 35	964.71	4.59E+01	21.47			4.59E+01	2.15E+01
m 36	968.99	1.17E+02	32.31			1.17E+02	3.23E+01
37	1068.03	3.97E+01	40.00			3.97E+01	4.00E+01
M 38	1095.13	1.90E+01	27.33			1.90E+01	2.73E+01
m 39	1100.38	1.61E+01	18.08			1.61E+01	1.81E+01
40	1120.61	9.97E+01	35.00	3.93E+00	2.96E+00	9.58E+01	3.51E+01
41	1239.84	3.28E+01	28.10			3.28E+01	2.81E+01
42	1246.82	2.13E+01	19.38			2.13E+01	1.94E+01
43	1296.78	1.10E+01	14.07			1.10E+01	1.41E+01
44	1338.08	4.11E+01	37.75			4.11E+01	3.77E+01
45	1378.92	1.81E+01	21.71			1.81E+01	2.17E+01
M 46	1397.73	8.57E+00	5.00			8.57E+00	5.00E+00
m 47	1401.39	1.62E+01	13.01			1.62E+01	1.30E+01
48	1408.00	2.43E+01	12.96			2.43E+01	1.30E+01
M 49	1455.52	9.68E+00	8.94			9.68E+00	8.94E+00
m 50	1461.01	7.17E+02	55.19	1.12E+01	2.55E+00	7.06E+02	5.53E+01
51	1502.33	9.39E+00	9.11			9.39E+00	9.11E+00
52	1510.85	2.16E+01	16.49			2.16E+01	1.65E+01
53	1552.59	8.50E+00	10.99			8.50E+00	1.10E+01
54	1590.02	2.87E+01	22.36			2.87E+01	2.24E+01
M 55	1617.23	9.22E+00	5.55			9.22E+00	5.55E+00
m 56	1620.86	9.30E+00	10.95			9.30E+00	1.10E+01
57	1638.22	4.75E+00	5.50			4.75E+00	5.50E+00
58	1678.97	7.42E+00	10.00			7.42E+00	1.00E+01
59	1729.55	2.64E+01	14.14			2.64E+01	1.41E+01
60	1764.89	5.85E+01	24.58	4.23E+00	2.21E+00	5.43E+01	2.47E+01
61	1837.53	7.22E+00	6.95			7.22E+00	6.95E+00
62	1848.71	9.64E+00	9.82			9.64E+00	9.82E+00
63	1896.56	1.06E+01	9.38			1.06E+01	9.38E+00
64	2059.86	9.14E+00	7.50			9.14E+00	7.50E+00
65	2103.41	2.62E+01	12.33			2.62E+01	1.23E+01
66	2203.91	1.80E+01	10.01	5.94E-01	1.16E+00	1.74E+01	1.01E+01
67	2268.45	8.00E+00	5.66			8.00E+00	5.66E+00
68	2383.09	8.00E+00	5.66			8.00E+00	5.66E+00
69	2558.54	5.00E+00	4.47			5.00E+00	4.47E+00
70	2614.27	1.13E+02	23.08	7.38E+00	1.57E+00	1.05E+02	2.31E+01
71	3753.10	5.00E+00	4.47			5.00E+00	4.47E+00

Analysis Report for 1510087-10
CP5004S16-17

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 9:16:46AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
1	38.48	8.71E+01	97.71			8.71E+01	9.77E+01	
2	46.67	2.02E+02	95.84	6.46E+01	1.16E+01	1.38E+02	9.65E+01	
3	52.71	8.61E+01	65.77			8.61E+01	6.58E+01	
4	63.37	1.07E+02	74.81	4.34E+01	1.15E+01	6.34E+01	7.57E+01	
5	76.39	1.05E+03	153.75			1.05E+03	1.54E+02	
6	92.75	2.67E+02	108.55	5.70E+01	9.03E+00	2.10E+02	1.09E+02	
7	186.02	2.00E+02	56.67	4.72E+01	7.97E+00	1.53E+02	5.72E+01	
8	209.62	6.61E+01	73.05			6.61E+01	7.30E+01	
M	9	238.83	8.60E+02	74.22	2.36E+01	1.35E+01	8.37E+02	7.54E+01
m	10	241.74	2.11E+02	85.49	6.38E+00	3.91E+00	2.05E+02	8.56E+01
	11	269.67	8.65E+01	60.67			8.65E+01	6.07E+01
	12	275.90	5.26E+01	48.20			5.26E+01	4.82E+01
M	13	295.31	2.97E+02	48.76	8.57E+00	6.10E+00	2.89E+02	4.91E+01
m	14	300.00	7.62E+01	37.60			7.62E+01	3.76E+01
	15	327.70	5.89E+01	55.06	0.00E+00	0.00E+00	5.89E+01	5.51E+01
	16	338.65	2.32E+02	57.76			2.32E+02	5.78E+01
	17	351.99	5.22E+02	63.34	1.40E+01	5.55E+00	5.09E+02	6.36E+01
	18	380.41	4.21E+01	42.61			4.21E+01	4.26E+01
	19	399.74	2.68E+01	23.75			2.68E+01	2.37E+01
	20	409.89	3.52E+01	30.70			3.52E+01	3.07E+01
M	21	463.13	6.84E+01	32.42			6.84E+01	3.24E+01
m	22	466.96	2.50E+01	30.12			2.50E+01	3.01E+01
	23	482.81	5.10E+01	55.96			5.10E+01	5.60E+01
	24	497.45	2.79E+01	30.04			2.79E+01	3.00E+01
	25	511.26	1.83E+02	59.57	8.41E+01	5.50E+00	9.87E+01	5.98E+01
	26	583.15	2.72E+02	52.96	7.32E+00	4.08E+00	2.65E+02	5.31E+01
	27	609.40	3.37E+02	57.80	1.30E+01	3.89E+00	3.24E+02	5.79E+01
	28	727.43	3.40E+01	30.37			3.40E+01	3.04E+01
	29	768.29	4.30E+01	36.39			4.30E+01	3.64E+01
	30	794.87	2.42E+01	23.39			2.42E+01	2.34E+01
	31	838.00	3.18E+01	28.64			3.18E+01	2.86E+01
	32	911.44	1.94E+02	38.02	5.60E+00	3.32E+00	1.88E+02	3.82E+01

Analysis Report for 1510087-10

CP5004S16-17

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	33	933.88	2.63E+01	24.74			2.63E+01	2.47E+01
	34	957.97	3.12E+01	20.10			3.12E+01	2.01E+01
M	35	964.71	4.59E+01	21.47			4.59E+01	2.15E+01
m	36	968.99	1.17E+02	32.31			1.17E+02	3.23E+01
	37	1068.03	3.97E+01	40.00			3.97E+01	4.00E+01
M	38	1095.13	1.90E+01	27.33			1.90E+01	2.73E+01
m	39	1100.38	1.61E+01	18.08			1.61E+01	1.81E+01
	40	1120.61	9.97E+01	35.00	3.93E+00	2.96E+00	9.58E+01	3.51E+01
	41	1239.84	3.28E+01	28.10			3.28E+01	2.81E+01
	42	1246.82	2.13E+01	19.38			2.13E+01	1.94E+01
	43	1296.78	1.10E+01	14.07			1.10E+01	1.41E+01
	44	1338.08	4.11E+01	37.75			4.11E+01	3.77E+01
	45	1378.92	1.81E+01	21.71			1.81E+01	2.17E+01
M	46	1397.73	8.57E+00	5.00			8.57E+00	5.00E+00
m	47	1401.39	1.62E+01	13.01			1.62E+01	1.30E+01
	48	1408.00	2.43E+01	12.96			2.43E+01	1.30E+01
M	49	1455.52	9.68E+00	8.94			9.68E+00	8.94E+00
m	50	1461.01	7.17E+02	55.19	1.12E+01	2.55E+00	7.06E+02	5.53E+01
	51	1502.33	9.39E+00	9.11			9.39E+00	9.11E+00
	52	1510.85	2.16E+01	16.49			2.16E+01	1.65E+01
	53	1552.59	8.50E+00	10.99			8.50E+00	1.10E+01
	54	1590.02	2.87E+01	22.36			2.87E+01	2.24E+01
M	55	1617.23	9.22E+00	5.55			9.22E+00	5.55E+00
m	56	1620.86	9.30E+00	10.95			9.30E+00	1.10E+01
	57	1638.22	4.75E+00	5.50			4.75E+00	5.50E+00
	58	1678.97	7.42E+00	10.00			7.42E+00	1.00E+01
	59	1729.55	2.64E+01	14.14			2.64E+01	1.41E+01
	60	1764.89	5.85E+01	24.58	4.23E+00	2.21E+00	5.43E+01	2.47E+01
	61	1837.53	7.22E+00	6.95			7.22E+00	6.95E+00
	62	1848.71	9.64E+00	9.82			9.64E+00	9.82E+00
	63	1896.56	1.06E+01	9.38			1.06E+01	9.38E+00
	64	2059.86	9.14E+00	7.50			9.14E+00	7.50E+00
	65	2103.41	2.62E+01	12.33			2.62E+01	1.23E+01
	66	2203.91	1.80E+01	10.01	5.94E-01	1.16E+00	1.74E+01	1.01E+01
	67	2268.45	8.00E+00	5.66			8.00E+00	5.66E+00
	68	2383.09	8.00E+00	5.66			8.00E+00	5.66E+00
	69	2558.54	5.00E+00	4.47			5.00E+00	4.47E+00
	70	2614.27	1.13E+02	23.08	7.38E+00	1.57E+00	1.05E+02	2.31E+01
	71	3753.10	5.00E+00	4.47			5.00E+00	4.47E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1510087-10
CP5004S16-17

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.994	1460.81 *	10.67	1.87E+01	2.43E+00
GA-67	0.584	93.31 *	35.70	2.82E+02	1.25E+03
		208.95 *	2.24	2.07E+03	9.09E+03
		300.22 *	16.00	4.25E+02	1.88E+03
RU-103	0.975	497.08 *	89.00	6.83E-02	7.43E-02
TL-208	0.880	583.14 *	30.22	1.21E+00	2.64E-01
		860.37	4.48		
		2614.66 *	35.85	9.57E-01	2.24E-01
PB-210	0.996	46.50 *	4.25	3.18E+00	2.27E+00
BI-212	0.990	727.17 *	11.80	4.72E-01	4.23E-01
		1620.62 *	2.75	1.02E+00	1.21E+00
PB-212	0.994	238.63 *	44.60	1.39E+00	1.76E-01
		300.09 *	3.41	1.93E+00	9.71E-01
BI-214	0.991	609.31 *	46.30	9.97E-01	1.98E-01
		1120.29 *	15.10	1.47E+00	5.54E-01
		1764.49 *	15.80	1.09E+00	5.02E-01
		2204.22 *	4.98	1.17E+00	6.88E-01
PB-214	0.999	295.21 *	19.19	1.29E+00	2.51E-01
		351.92 *	37.19	1.32E+00	2.02E-01
RA-224	0.912	240.98 *	3.95	3.87E+00	1.65E+00
RA-226	0.994	186.21 *	3.28	2.92E+00	5.46E+00
AC-228	0.985	338.32 *	11.40	1.91E+00	5.06E-01
		911.07 *	27.70	1.33E+00	2.94E-01
		969.11 *	16.60	1.45E+00	4.21E-01
TH-234	0.999	63.29 *	3.80	9.28E-01	1.11E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

Analysis Report for 1510087-10
CP5004S16-17

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 9:16:46AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
1	38.48	2.41913E-02	56.10			
3	52.71	2.39299E-02	38.17			
5	76.39	2.91326E-01	7.33			
11	269.67	2.40278E-02	35.07			
12	275.90	1.46103E-02	45.82			
15	327.70	1.63521E-02	46.77			
18	380.41	1.16955E-02	50.61			
19	399.74	7.44874E-03	44.28	Tol.	SE-75	
20	409.89	9.77778E-03	43.61			
M	21	463.13	1.89972E-02	23.70	Tol.	SB-125
m	22	466.96	6.94556E-03	60.22		
23	482.81	1.41586E-02	54.89	Sum		
25	511.26	2.74075E-02	30.31			
29	768.29	1.19444E-02	42.31	Sum		
30	794.87	6.72056E-03	48.33	Sum		
31	838.00	8.83583E-03	45.01			
33	933.88	7.31884E-03	46.95			
34	957.97	8.65304E-03	32.26	Sum		
M	35	964.71	1.27554E-02	23.38	Tol.	EU-152
37	1068.03	1.10169E-02	50.43			
M	38	1095.13	5.28662E-03	71.80		
m	39	1100.38	4.46751E-03	56.22		
41	1239.84	9.10494E-03	42.87			
42	1246.82	5.91146E-03	45.54			
43	1296.78	3.05556E-03	63.96			
44	1338.08	1.14236E-02	45.90			
45	1378.92	5.02660E-03	60.00			
M	46	1397.73	2.38034E-03	29.17		
m	47	1401.39	4.49174E-03	40.23		
48	1408.00	6.75926E-03	26.63	Sum		
M	49	1455.52	2.68771E-03	46.22	Sum	
51	1502.33	2.60913E-03	48.50			
52	1510.85	6.00694E-03	38.13			
53	1552.59	2.36111E-03	64.64	Sum		
54	1590.02	7.98475E-03	38.89			
M	55	1617.23	2.56085E-03	30.07	Sum	
57	1638.22	1.31944E-03	57.89	Sum		
58	1678.97	2.06197E-03	67.36	Tol.	I-135	
59	1729.55	7.33507E-03	26.78	Sum		
61	1837.53	2.00617E-03	48.09			
62	1848.71	2.67857E-03	50.94	Sum		
63	1896.56	2.95635E-03	44.07			
64	2059.86	2.53788E-03	41.04	Sum		
65	2103.41	7.28448E-03	23.51	S-Esc		
67	2268.45	2.22222E-03	35.36			

Analysis Report for 1510087-10
CP5004S16-17

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
68	2383.09	2.22222E-03	35.36		
69	2558.54	1.38889E-03	44.72		
71	3753.10	1.38889E-03	44.72		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	1.87E+01	2.43E+00
GA-67	0.58	93.31 *	35.70	2.82E+02	1.25E+03
		208.95 *	2.24	2.07E+03	9.09E+03
		300.22 *	16.00	4.25E+02	1.88E+03
RU-103	0.97	497.08 *	89.00	6.83E-02	7.43E-02
TL-208	0.88	583.14 *	30.22	1.21E+00	2.64E-01
		860.37	4.48		
		2614.66 *	35.85	9.57E-01	2.24E-01
PB-210	0.99	46.50 *	4.25	3.18E+00	2.27E+00
BI-212	0.99	727.17 *	11.80	4.72E-01	4.23E-01
		1620.62 *	2.75	1.02E+00	1.21E+00
PB-212	0.99	238.63 *	44.60	1.39E+00	1.76E-01
		300.09 *	3.41	1.93E+00	9.71E-01
BI-214	0.99	609.31 *	46.30	9.97E-01	1.98E-01
		1120.29 *	15.10	1.47E+00	5.54E-01
		1764.49 *	15.80	1.09E+00	5.02E-01
		2204.22 *	4.98	1.17E+00	6.88E-01
PB-214	0.99	295.21 *	19.19	1.29E+00	2.51E-01
		351.92 *	37.19	1.32E+00	2.02E-01
RA-224	0.91	240.98 *	3.95	3.87E+00	1.65E+00
RA-226	0.99	186.21 *	3.28	2.92E+00	5.46E+00
AC-228	0.98	338.32 *	11.40	1.91E+00	5.06E-01
		911.07 *	27.70	1.33E+00	2.94E-01
		969.11 *	16.60	1.45E+00	4.21E-01
TH-234	0.99	63.29 *	3.80	9.28E-01	1.11E+00

Analysis Report for 1510087-10
CP5004S16-17

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.994	1.87E+01	2.43E+00	
GA-67	0.584	2.34E+02	1.00E+03	
RU-103	0.975	6.83E-02	7.43E-02	
TL-208	0.880	1.06E+00	1.71E-01	
PB-210	0.996	3.18E+00	2.27E+00	
BI-212	0.990	5.32E-01	3.99E-01	
PB-212	0.994	1.37E+00	1.75E-01	
BI-214	0.991	1.06E+00	1.69E-01	
PB-214	0.999	1.31E+00	1.57E-01	
RA-224	0.912	3.87E+00	1.65E+00	
RA-226	0.994	2.92E+00	5.46E+00	
AC-228	0.985	1.47E+00	2.18E-01	
TH-234	0.999	9.28E-01	1.11E+00	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1510087-10
CP5004S16-17

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 9:16:46AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
1	38.48	2.41913E-02	56.10			
3	52.71	2.39299E-02	38.17			
5	76.39	2.91326E-01	7.33			
11	269.67	2.40278E-02	35.07			
12	275.90	1.46103E-02	45.82			
15	327.70	1.63521E-02	46.77			
18	380.41	1.16955E-02	50.61			
19	399.74	7.44874E-03	44.28	Tol.	SE-75	
20	409.89	9.77778E-03	43.61			
M	21	463.13	1.89972E-02	23.70	Tol.	SB-125
m	22	466.96	6.94556E-03	60.22		
23	482.81	1.41586E-02	54.89	Sum		
25	511.26	2.74075E-02	30.31			
29	768.29	1.19444E-02	42.31	Sum		
30	794.87	6.72056E-03	48.33	Sum		
31	838.00	8.83583E-03	45.01			
33	933.88	7.31884E-03	46.95			
34	957.97	8.65304E-03	32.26	Sum		
M	35	964.71	1.27554E-02	23.38	Tol.	EU-152
37	1068.03	1.10169E-02	50.43			
M	38	1095.13	5.28662E-03	71.80		
m	39	1100.38	4.46751E-03	56.22		
41	1239.84	9.10494E-03	42.87			
42	1246.82	5.91146E-03	45.54			
43	1296.78	3.05556E-03	63.96			
44	1338.08	1.14236E-02	45.90			
45	1378.92	5.02660E-03	60.00			
M	46	1397.73	2.38034E-03	29.17		
m	47	1401.39	4.49174E-03	40.23		
48	1408.00	6.75926E-03	26.63	Sum		
M	49	1455.52	2.68771E-03	46.22	Sum	
51	1502.33	2.60913E-03	48.50			
52	1510.85	6.00694E-03	38.13			
53	1552.59	2.36111E-03	64.64	Sum		
54	1590.02	7.98475E-03	38.89			

Analysis Report for 1510087-10
 CP5004S16-17

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M 55	1617.23	2.56085E-03	30.07	Sum	
57	1638.22	1.31944E-03	57.89	Sum	
58	1678.97	2.06197E-03	67.36	Tol.	I-135
59	1729.55	7.33507E-03	26.78	Sum	
61	1837.53	2.00617E-03	48.09		
62	1848.71	2.67857E-03	50.94	Sum	
63	1896.56	2.95635E-03	44.07		
64	2059.86	2.53788E-03	41.04	Sum	
65	2103.41	7.28448E-03	23.51	S-Esc	
67	2268.45	2.22222E-03	35.36		
68	2383.09	2.22222E-03	35.36		
69	2558.54	1.38889E-03	44.72		
71	3753.10	1.38889E-03	44.72		

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-2.18E-01	7.52E-01	7.52E-01
+	NA-22	1274.54	99.94	4.11E-02	8.45E-02	8.45E-02
+	NA-24	1368.53	99.99	-1.02E+14	1.24E+14	3.38E+14
		2754.09	99.86	-3.38E+13		1.24E+14
+	AL-26	1808.65	99.76	-9.15E-04	4.81E-02	4.81E-02
+	K-40	1460.81	* 10.67	1.87E+01	1.10E+00	1.10E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	6.03E-03	5.06E-02	5.06E-02
		78.34	96.00	2.45E-01		7.16E-02
+	SC-46	889.25	99.98	-1.49E-02	8.97E-02	8.97E-02
		1120.51	99.99	2.00E-01		1.65E-01
+	V-48	983.52	99.98	-8.03E-02	2.70E-01	2.70E-01
		1312.10	97.50	-6.93E-02		3.03E-01
+	CR-51	320.08	9.83	8.98E-01	1.26E+00	1.26E+00
+	MN-54	834.83	99.97	-3.47E-03	8.50E-02	8.50E-02

Analysis Report for 1510087-10
CP5004S16-17

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-56	846.75	99.96	3.38E-02	9.01E-02	9.01E-02
		1037.75	14.03	7.76E-02		7.44E-01
		1238.25	67.00	8.57E-02		2.08E-01
		1771.40	15.51	-3.74E-02		4.53E-01
		2598.48	16.90	6.02E-02		3.10E-01
+	CO-57	122.06	85.51	-7.79E-03	5.61E-02	5.61E-02
		136.48	10.60	-4.80E-02		4.87E-01
+	CO-58	810.76	99.40	-4.65E-02	8.29E-02	8.29E-02
+	FE-59	1099.22	56.50	-1.13E-01	2.24E-01	2.30E-01
		1291.56	43.20	6.22E-04		2.24E-01
+	CO-60	1173.22	100.00	5.23E-02	7.90E-02	9.93E-02
		1332.49	100.00	3.50E-02		7.90E-02
+	ZN-65	1115.52	50.75	-1.72E-02	1.69E-01	1.69E-01
+	GA-67	93.31	* 35.70	2.82E+02	2.36E+02	2.36E+02
		208.95	* 2.24	2.07E+03		3.75E+03
		300.22	* 16.00	4.25E+02		7.44E+02
+	SE-75	121.11	16.70	1.11E-01	9.60E-02	3.23E-01
		136.00	59.20	1.03E-02		9.65E-02
		264.65	59.80	5.46E-03		9.60E-02
		279.53	25.20	6.76E-02		2.72E-01
		400.65	11.40	9.09E-02		5.80E-01
+	RB-82	776.52	13.00	-1.00E-03	1.28E+00	1.28E+00
+	RB-83	520.41	46.00	3.98E-03	1.47E-01	1.47E-01
		529.64	30.30	-6.34E-03		2.14E-01
		552.65	16.40	-2.88E-02		4.17E-01
+	KR-85	513.99	0.43	-2.07E+00	1.59E+01	1.59E+01
+	SR-85	513.99	99.27	-1.28E-02	9.83E-02	9.83E-02
+	Y-88	898.02	93.40	1.04E-02	6.97E-02	9.22E-02
		1836.01	99.38	-1.33E-03		6.97E-02
+	NB-93M	16.57	9.43	-1.11E+04	5.38E+03	5.38E+03
+	NB-94	702.63	100.00	5.09E-02	6.79E-02	7.84E-02
		871.10	100.00	8.58E-03		6.79E-02
+	NB-95	765.79	99.81	1.82E-01	1.82E-01	1.82E-01
+	NB-95M	235.69	25.00	-1.50E+03	1.59E+02	1.59E+02
+	ZR-95	724.18	43.70	8.38E-03	1.79E-01	2.62E-01
		756.72	55.30	-2.41E-02		1.79E-01
+	MO-99	181.06	6.20	-4.13E+02	1.99E+03	3.03E+03
		739.58	12.80	-6.44E+02		1.99E+03
		778.00	4.50	-4.30E+03		5.25E+03
+	RU-103	497.08	* 89.00	6.83E-02	1.20E-01	1.20E-01
+	RU-106	621.84	9.80	-2.85E-01	6.50E-01	6.50E-01
+	AG-108M	433.93	89.90	1.55E-02	6.08E-02	6.08E-02
		614.37	90.40	2.15E-02		7.40E-02
		722.95	90.50	-4.69E-03		7.59E-02
+	CD-109	88.03	3.72	1.58E+00	1.74E+00	1.74E+00
+	AG-110M	657.75	93.14	-1.30E-02	7.79E-02	7.79E-02
		677.61	10.53	-2.10E-01		6.70E-01
		706.67	16.46	-3.09E-01		4.66E-01

Analysis Report for 1510087-10

CP5004S16-17

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AG-110M	763.93	21.98	-3.13E-02	7.79E-02	3.97E-01
		884.67	71.63	-8.86E-03		1.08E-01
		1384.27	23.94	-1.16E-01		2.73E-01
+	CD-113M	263.70	0.02	-4.59E+01	1.96E+02	1.96E+02
+	SN-113	255.12	1.93	-7.39E-01	1.00E-01	3.18E+00
		391.69	64.90	4.31E-02		1.00E-01
+	TE123M	159.00	84.10	4.56E-03	6.79E-02	6.79E-02
+	SB-124	602.71	97.87	6.76E-03	1.05E-01	1.05E-01
		645.85	7.26	2.86E-01		1.37E+00
		722.78	11.10	-5.57E-02		9.01E-01
		1691.02	49.00	-1.23E-02		1.53E-01
+	I-125	35.49	6.49	-4.46E+00	5.58E+00	5.58E+00
+	SB-125	176.33	6.89	7.13E-01	1.96E-01	7.72E-01
		427.89	29.33	8.44E-02		1.96E-01
		463.38	10.35	4.57E-01		6.62E-01
		600.56	17.80	9.10E-03		3.95E-01
		635.90	11.32	-1.33E-02		5.62E-01
+	SB-126	414.70	83.30	2.60E-02	3.67E-01	3.67E-01
		666.33	99.60	1.41E-01		4.53E-01
		695.00	99.60	-1.63E-01		3.95E-01
		720.50	53.80	-2.32E-01		7.42E-01
+	SN-126	87.57	37.00	1.51E-01	1.66E-01	1.66E-01
+	SB-127	473.00	25.00	-2.79E+00	6.80E+01	7.23E+01
		685.20	35.70	-9.99E+00		6.80E+01
		783.80	14.70	-3.73E+01		1.68E+02
+	I-129	29.78	57.00	1.86E-01	1.20E+00	1.20E+00
		33.60	13.20	6.83E-02		2.46E+00
		39.58	7.52	3.79E-01		2.16E+00
+	I-131	284.30	6.05	-4.63E+00	1.06E+00	1.46E+01
		364.48	81.20	3.99E-02		1.06E+00
		636.97	7.26	-6.62E-01		1.42E+01
		722.89	1.80	-3.94E+00		6.37E+01
+	TE-132	49.72	13.10	-4.91E+02	6.25E+01	5.55E+02
		228.16	88.00	-1.87E+01		6.25E+01
+	BA-133	81.00	33.00	6.19E-03	8.24E-02	1.24E-01
		302.84	17.80	-3.10E-01		2.75E-01
		356.01	60.00	1.64E-02		8.24E-02
+	I-133	529.87	86.30	2.54E+08	1.29E+10	1.29E+10
+	XE-133	81.00	38.00	4.00E-01	8.05E+00	8.05E+00
+	CS-134	563.23	8.38	2.26E-01	8.41E-02	6.89E-01
		569.32	15.43	-3.07E-02		3.69E-01
		604.70	97.60	-4.16E-03		8.41E-02
		795.84	85.40	2.68E-03		9.12E-02
		801.93	8.73	4.40E-01		8.97E-01
+	CS-135	268.24	16.00	1.08E-01	3.54E-01	3.54E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	-1.82E-01	3.81E-01	3.59E+00

Analysis Report for 1510087-10
CP5004S16-17

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-136	163.89	4.61	-7.96E-01	3.81E-01	5.79E+00
		176.55	13.56	-1.99E-01		2.08E+00
		273.65	12.66	-2.69E+00		2.37E+00
		340.57	48.50	-4.57E-01		7.66E-01
		818.50	99.70	1.83E-02		3.81E-01
		1048.07	79.60	-1.03E-01		5.28E-01
		1235.34	19.70	3.82E-01		2.85E+00
+	CS-137	661.65	85.12	-2.83E-02	8.06E-02	8.06E-02
+	LA-138	788.74	34.00	7.89E-02	9.03E-02	2.15E-01
		1435.80	66.00	7.95E-03		9.03E-02
+	CE-139	165.85	80.35	-3.77E-02	7.03E-02	7.03E-02
+	BA-140	162.64	6.70	2.87E-03	1.23E+00	4.20E+00
		304.84	4.50	1.39E+00		6.40E+00
		423.70	3.20	-4.65E+00		9.27E+00
		437.55	2.00	-2.16E+00		1.56E+01
		537.32	25.00	-5.30E-02		1.23E+00
+	LA-140	328.77	20.50	2.49E-01	4.60E-01	1.61E+00
		487.03	45.50	-9.85E-02		6.95E-01
		815.85	23.50	2.18E-01		1.65E+00
		1596.49	95.49	9.20E-02		4.60E-01
+	CE-141	145.44	48.40	1.37E-01	2.08E-01	2.08E-01
+	CE-143	57.36	11.80	-2.48E+06	2.48E+06	5.89E+06
		293.26	42.00	-5.58E+05		2.48E+06
		664.55	5.20	6.68E+06		1.99E+07
+	CE-144	133.54	10.80	2.03E-01	4.78E-01	4.78E-01
+	PM-144	476.78	42.00	-3.76E-02	6.90E-02	1.30E-01
		618.01	98.60	-5.75E-03		6.90E-02
		696.49	99.49	2.59E-02		7.36E-02
+	PM-145	36.85	21.70	2.53E-01	5.24E-01	1.02E+00
		37.36	39.70	1.30E-01		5.24E-01
		42.30	15.10	7.99E-02		8.20E-01
		72.40	2.31	-1.90E-01		2.12E+00
+	PM-146	453.90	39.94	4.81E-02	1.34E-01	1.34E-01
		735.90	14.01	-5.10E-02		4.58E-01
		747.13	13.10	-4.28E-02		5.44E-01
+	ND-147	91.11	28.90	-1.51E+00	1.69E+00	1.69E+00
		531.02	13.10	7.11E-01		3.06E+00
+	PM-149	285.90	3.10	8.52E+03	4.70E+04	4.70E+04
+	EU-152	121.78	20.50	-3.00E-02	2.16E-01	2.16E-01
		244.69	5.40	-1.75E+00		1.01E+00
		344.27	19.13	1.55E-01		2.79E-01
		778.89	9.20	5.74E-02		7.36E-01
		964.01	10.40	-2.03E+00		8.94E-01
		1085.78	7.22	-5.33E-01		9.26E-01
		1112.02	9.60	2.09E-01		8.18E-01
		1407.95	14.94	4.30E-01		5.23E-01
+	GD-153	97.43	31.30	1.43E-02	1.55E-01	1.55E-01
		103.18	22.20	-2.73E-02		2.28E-01
+	EU-154	123.07	40.50	-1.11E-01	1.08E-01	1.08E-01

Analysis Report for 1510087-10

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	723.30	19.70	-2.17E-02	1.08E-01	3.51E-01
		873.19	11.50	-2.33E-01		5.85E-01
		996.32	10.30	-3.32E-01		6.99E-01
		1004.76	17.90	-1.10E-01		4.17E-01
		1274.45	35.50	1.14E-01		2.34E-01
+	EU-155	86.50	30.90	2.17E-01	1.98E-01	1.98E-01
		105.30	20.70	-1.27E-01		2.23E-01
+	EU-156	811.77	10.40	-1.98E+00	2.50E+00	2.50E+00
		1153.47	7.20	3.33E+00		5.92E+00
		1230.71	8.90	-6.93E-01		4.51E+00
+	HO-166M	184.41	72.60	4.40E-03	8.59E-02	8.59E-02
		280.45	29.60	4.77E-02		1.92E-01
		410.94	11.10	2.12E-01		5.13E-01
		711.69	54.10	1.63E-02		1.29E-01
+	TM-171	66.72	0.14	1.53E+01	3.63E+01	3.63E+01
+	HF-172	81.75	4.52	-9.31E-01	4.26E-01	9.18E-01
		125.81	11.30	-2.30E-01		4.26E-01
+	LU-172	181.53	20.60	4.47E+00	3.76E+00	7.20E+00
		810.06	16.63	-5.92E+00		1.05E+01
		912.12	15.25	6.87E+01		2.76E+01
		1093.66	62.50	1.31E+00		3.76E+00
+	LU-173	100.72	5.24	-2.56E-01	2.81E-01	9.11E-01
		272.11	21.20	-4.54E-02		2.81E-01
+	HF-175	343.40	84.00	1.74E-02	8.94E-02	8.94E-02
+	LU-176	88.34	13.30	4.20E-01	5.09E-02	4.63E-01
		201.83	86.00	-2.61E-02		6.08E-02
		306.78	94.00	-4.42E-03		5.09E-02
+	TA-182	67.75	41.20	1.69E-02	1.41E-01	1.41E-01
		1121.30	34.90	7.03E-01		4.50E-01
		1189.05	16.23	-8.33E-02		6.79E-01
		1221.41	26.98	-2.80E-02		4.24E-01
		1231.02	11.44	-5.12E-03		9.65E-01
+	IR-192	308.46	29.68	2.64E-02	1.53E-01	2.27E-01
		468.07	48.10	9.99E-03		1.53E-01
+	HG-203	279.19	77.30	3.47E-02	1.25E-01	1.25E-01
+	BI-207	569.67	97.72	-4.72E-03	5.67E-02	5.67E-02
		1063.62	74.90	6.36E-02		1.09E-01
+	TL-208	583.14	* 30.22	1.21E+00	1.85E-01	3.28E-01
		860.37	4.48	5.13E-01		1.76E+00
		2614.66	* 35.85	9.57E-01		1.85E-01
+	BI-210M	262.00	45.00	1.28E-02	1.06E-01	1.06E-01
		300.00	23.00	1.16E-01		2.46E-01
+	PB-210	46.50	* 4.25	3.18E+00	3.62E+00	3.62E+00
+	PB-211	404.84	2.90	1.11E+00	1.91E+00	1.91E+00
		831.96	2.90	5.39E-01		2.60E+00
+	BI-212	727.17	* 11.80	4.72E-01	6.77E-01	6.77E-01
		1620.62	* 2.75	1.02E+00		2.01E+00
+	PB-212	238.63	* 44.60	1.39E+00	3.96E-01	3.96E-01
		300.09	* 3.41	1.93E+00		3.38E+00

Analysis Report for 1510087-10
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BI-214	609.31	*	46.30	9.97E-01	2.39E-01	2.39E-01
		1120.29	*	15.10	1.47E+00		7.78E-01
		1764.49	*	15.80	1.09E+00		7.05E-01
		2204.22	*	4.98	1.17E+00		8.12E-01
+	PB-214	295.21	*	19.19	1.29E+00	1.98E-01	6.01E-01
		351.92	*	37.19	1.32E+00		1.98E-01
+	RN-219	401.80		6.50	-1.50E-01	8.04E-01	8.04E-01
+	RA-223	323.87		3.88	1.84E-02	1.40E+00	1.40E+00
+	RA-224	240.98	*	3.95	3.87E+00	4.52E+00	4.52E+00
+	RA-225	40.00		31.00	4.07E-01	2.32E+00	2.32E+00
+	RA-226	186.21	*	3.28	2.92E+00	1.68E+00	1.68E+00
+	TH-227	50.10		8.40	-7.25E-01	6.55E-01	8.19E-01
		236.00		11.50	-6.19E+00		6.55E-01
		256.20		6.30	1.88E-01		8.13E-01
+	AC-228	338.32	*	11.40	1.91E+00	3.28E-01	6.87E-01
		911.07	*	27.70	1.33E+00		3.28E-01
		969.11	*	16.60	1.45E+00		6.62E-01
+	TH-230	48.44		16.90	-2.92E-01	4.67E-01	4.67E-01
		62.85		4.60	1.83E+00		1.26E+00
		67.67		0.37	1.54E+00		1.29E+01
+	PA-231	283.67		1.60	-1.05E+00	2.12E+00	3.30E+00
		302.67		2.30	-2.39E+00		2.12E+00
+	TH-231	25.64		14.70	-4.78E-01	6.93E-01	1.44E+01
		84.21		6.40	5.87E-01		6.93E-01
+	PA-233	311.98		38.60	1.38E-02	2.99E-01	2.99E-01
+	PA-234	131.20		20.40	1.08E-01	2.39E-01	2.39E-01
		733.99		8.80	-2.62E-01		7.02E-01
		946.00		12.00	-7.31E-02		6.11E-01
+	PA-234M	1001.03		0.92	5.64E+00	8.63E+00	8.63E+00
+	TH-234	63.29	*	3.80	9.28E-01	1.82E+00	1.82E+00
+	U-235	143.76		10.50	-5.79E-02	4.69E-01	4.69E-01
		163.35		4.70	6.99E-04		1.02E+00
		205.31		4.70	-3.84E-01		1.12E+00
+	NP-237	86.50		12.60	5.26E-01	4.79E-01	4.79E-01
+	NP-239	106.10		22.70	-4.79E+02	3.06E+03	3.06E+03
		228.18		10.70	-2.21E+03		7.38E+03
		277.60		14.10	5.44E+02		6.27E+03
+	AM-241	59.54		35.90	2.87E-02	1.47E-01	1.47E-01
+	AM-243	74.67		66.00	-1.46E-01	9.95E-02	9.95E-02
+	CM-243	209.75		3.29	1.55E+00	4.25E-01	1.79E+00
		228.14		10.60	-1.50E-01		5.00E-01
		277.60		14.00	3.69E-02		4.25E-01

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- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	7.52E-01	7.52E-01	-2.18E-01	3.52E-01
NA-22	1274.54	99.94	8.45E-02	8.45E-02	4.11E-02	3.87E-02
NA-24	1368.53	99.99	3.38E+14	1.24E+14	-1.02E+14	1.50E+14
	2754.09	99.86	1.24E+14		-3.38E+13	3.93E+13
AL-26	1808.65	99.76	4.81E-02	4.81E-02	-9.15E-04	1.97E-02
+ K-40	1460.81	* 10.67	1.10E+00	1.10E+00	1.87E+01	5.14E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	5.06E-02	5.06E-02	6.03E-03	2.46E-02
	78.34	96.00	7.16E-02		2.45E-01	3.51E-02
SC-46	889.25	99.98	8.97E-02	8.97E-02	-1.49E-02	4.14E-02
	1120.51	99.99	1.65E-01		2.00E-01	7.84E-02
V-48	983.52	99.98	2.70E-01	2.70E-01	-8.03E-02	1.23E-01
	1312.10	97.50	3.03E-01		-6.93E-02	1.37E-01
CR-51	320.08	9.83	1.26E+00	1.26E+00	8.98E-01	6.02E-01
MN-54	834.83	99.97	8.50E-02	8.50E-02	-3.47E-03	3.98E-02
CO-56	846.75	99.96	9.01E-02	9.01E-02	3.38E-02	4.17E-02
	1037.75	14.03	7.44E-01		7.76E-02	3.44E-01
	1238.25	67.00	2.08E-01		8.57E-02	9.72E-02
	1771.40	15.51	4.53E-01		-3.74E-02	1.90E-01
	2598.48	16.90	3.10E-01		6.02E-02	1.20E-01
CO-57	122.06	85.51	5.61E-02	5.61E-02	-7.79E-03	2.72E-02
	136.48	10.60	4.87E-01		-4.80E-02	2.36E-01
CO-58	810.76	99.40	8.29E-02	8.29E-02	-4.65E-02	3.81E-02
FE-59	1099.22	56.50	2.30E-01	2.24E-01	-1.13E-01	1.06E-01
	1291.56	43.20	2.24E-01		6.22E-04	9.83E-02
CO-60	1173.22	100.00	9.93E-02	7.90E-02	5.23E-02	4.63E-02
	1332.49	100.00	7.90E-02		3.50E-02	3.59E-02
ZN-65	1115.52	50.75	1.69E-01	1.69E-01	-1.72E-02	7.80E-02
+ GA-67	93.31	* 35.70	2.36E+02	2.36E+02	2.82E+02	1.16E+02

Analysis Report for 1510087-10

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Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)		
GA-67	208.95	*	2.24	3.75E+03	2.36E+02	2.07E+03	1.83E+03		
	300.22	*	16.00	7.44E+02		4.25E+02	3.65E+02		
SE-75	121.11		16.70	3.23E-01	9.60E-02	1.11E-01	1.56E-01		
	136.00		59.20	9.65E-02		1.03E-02	4.68E-02		
	264.65		59.80	9.60E-02		5.46E-03	4.58E-02		
	279.53		25.20	2.72E-01		6.76E-02	1.31E-01		
	400.65		11.40	5.80E-01		9.09E-02	2.75E-01		
RB-82	776.52		13.00	1.28E+00	1.28E+00	-1.00E-03	5.98E-01		
RB-83	520.41		46.00	1.47E-01	1.47E-01	3.98E-03	6.88E-02		
	529.64		30.30	2.14E-01		-6.34E-03	9.94E-02		
	552.65		16.40	4.17E-01		-2.88E-02	1.94E-01		
KR-85	513.99		0.43	1.59E+01	1.59E+01	-2.07E+00	7.58E+00		
SR-85	513.99		99.27	9.83E-02	9.83E-02	-1.28E-02	4.67E-02		
Y-88	898.02		93.40	9.22E-02	6.97E-02	1.04E-02	4.26E-02		
	1836.01		99.38	6.97E-02		-1.33E-03	2.94E-02		
NB-93M	16.57		9.43	5.38E+03	5.38E+03	-1.11E+04	2.62E+03		
NB-94	702.63		100.00	7.84E-02	6.79E-02	5.09E-02	3.70E-02		
	871.10		100.00	6.79E-02		8.58E-03	3.14E-02		
NB-95	765.79		99.81	1.82E-01	1.82E-01	1.82E-01	8.67E-02		
NB-95M	235.69		25.00	1.59E+02	1.59E+02	-1.50E+03	7.74E+01		
ZR-95	724.18		43.70	2.62E-01	1.79E-01	8.38E-03	1.24E-01		
	756.72		55.30	1.79E-01		-2.41E-02	8.34E-02		
MO-99	181.06		6.20	3.03E+03	1.99E+03	-4.13E+02	1.46E+03		
	739.58		12.80	1.99E+03		-6.44E+02	9.29E+02		
	778.00		4.50	5.25E+03		-4.30E+03	2.43E+03		
+ RU-103	497.08	*	89.00	1.20E-01	1.20E-01	6.83E-02	5.67E-02		
	RU-106		9.80	6.50E-01		6.50E-01	-2.85E-01	3.04E-01	
	AG-108M	433.93		89.90		6.08E-02	6.08E-02	1.55E-02	2.87E-02
		614.37		90.40		7.40E-02		2.15E-02	3.49E-02
	722.95		90.50	7.59E-02		-4.69E-03	3.55E-02		
CD-109	88.03		3.72	1.74E+00	1.74E+00	1.58E+00	8.51E-01		
AG-110M	657.75		93.14	7.79E-02	7.79E-02	-1.30E-02	3.65E-02		
	677.61		10.53	6.70E-01		-2.10E-01	3.13E-01		
	706.67		16.46	4.66E-01		-3.09E-01	2.19E-01		
	763.93		21.98	3.97E-01		-3.13E-02	1.87E-01		
	884.67		71.63	1.08E-01		-8.86E-03	5.00E-02		
	1384.27		23.94	2.73E-01		-1.16E-01	1.20E-01		
	263.70		0.02	1.96E+02		1.96E+02	-4.59E+01	9.31E+01	
SN-113	255.12		1.93	3.18E+00	1.00E-01	-7.39E-01	1.52E+00		
	391.69		64.90	1.00E-01		4.31E-02	4.75E-02		
TE123M	159.00		84.10	6.79E-02	6.79E-02	4.56E-03	3.29E-02		
SB-124	602.71		97.87	1.05E-01	1.05E-01	6.76E-03	4.95E-02		
	645.85		7.26	1.37E+00		2.86E-01	6.45E-01		
	722.78		11.10	9.01E-01		-5.57E-02	4.22E-01		
	1691.02		49.00	1.53E-01		-1.23E-02	6.42E-02		
	I-125	35.49		6.49		5.58E+00	5.58E+00	-4.46E+00	2.71E+00
SB-125	176.33		6.89	7.72E-01	1.96E-01	7.13E-01	3.74E-01		
	427.89		29.33	1.96E-01		8.44E-02	9.30E-02		
	463.38		10.35	6.62E-01		4.57E-01	3.15E-01		
	600.56		17.80	3.95E-01		9.10E-03	1.87E-01		
	635.90		11.32	5.62E-01		-1.33E-02	2.63E-01		
	SB-126	414.70		83.30		3.67E-01	3.67E-01	2.60E-02	1.72E-01
666.33			99.60	4.53E-01	1.41E-01	2.13E-01			

Analysis Report for 1510087-10
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-126	695.00	99.60	3.95E-01	3.67E-01	-1.63E-01	1.84E-01
	720.50	53.80	7.42E-01		-2.32E-01	3.46E-01
SN-126	87.57	37.00	1.66E-01	1.66E-01	1.51E-01	8.15E-02
SB-127	473.00	25.00	7.23E+01	6.80E+01	-2.79E+00	3.39E+01
	685.20	35.70	6.80E+01		-9.99E+00	3.19E+01
	783.80	14.70	1.68E+02		-3.73E+01	7.85E+01
I-129	29.78	57.00	1.20E+00	1.20E+00	1.86E-01	5.81E-01
	33.60	13.20	2.46E+00		6.83E-02	1.19E+00
	39.58	7.52	2.16E+00		3.79E-01	1.05E+00
I-131	284.30	6.05	1.46E+01	1.06E+00	-4.63E+00	6.99E+00
	364.48	81.20	1.06E+00		3.99E-02	5.04E-01
	636.97	7.26	1.42E+01		-6.62E-01	6.65E+00
	722.89	1.80	6.37E+01		-3.94E+00	2.98E+01
TE-132	49.72	13.10	5.55E+02	6.25E+01	-4.91E+02	2.68E+02
	228.16	88.00	6.25E+01		-1.87E+01	3.01E+01
BA-133	81.00	33.00	1.24E-01	8.24E-02	6.19E-03	6.03E-02
	302.84	17.80	2.75E-01		-3.10E-01	1.31E-01
	356.01	60.00	8.24E-02		1.64E-02	3.90E-02
I-133	529.87	86.30	1.29E+10	1.29E+10	2.54E+08	6.03E+09
XE-133	81.00	38.00	8.05E+00	8.05E+00	4.00E-01	3.90E+00
CS-134	563.23	8.38	6.89E-01	8.41E-02	2.26E-01	3.22E-01
	569.32	15.43	3.69E-01		-3.07E-02	1.72E-01
	604.70	97.60	8.41E-02		-4.16E-03	4.00E-02
	795.84	85.40	9.12E-02		2.68E-03	4.27E-02
	801.93	8.73	8.97E-01		4.40E-01	4.20E-01
CS-135	268.24	16.00	3.54E-01	3.54E-01	1.08E-01	1.70E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.59E+00	3.81E-01	-1.82E-01	1.74E+00
	163.89	4.61	5.79E+00		-7.96E-01	2.80E+00
	176.55	13.56	2.08E+00		-1.99E-01	1.01E+00
	273.65	12.66	2.37E+00		-2.69E+00	1.14E+00
	340.57	48.50	7.66E-01		-4.57E-01	3.68E-01
	818.50	99.70	3.81E-01		1.83E-02	1.77E-01
	1048.07	79.60	5.28E-01		-1.03E-01	2.43E-01
	1235.34	19.70	2.85E+00		3.82E-01	1.33E+00
	CS-137	661.65	85.12		8.06E-02	8.06E-02	-2.83E-02	3.79E-02
LA-138	788.74	34.00	2.15E-01	9.03E-02	7.89E-02	1.01E-01
	1435.80	66.00	9.03E-02		7.95E-03	3.94E-02
CE-139	165.85	80.35	7.03E-02	7.03E-02	-3.77E-02	3.40E-02
BA-140	162.64	6.70	4.20E+00	1.23E+00	2.87E-03	2.03E+00
	304.84	4.50	6.40E+00		1.39E+00	3.05E+00
	423.70	3.20	9.27E+00		-4.65E+00	4.36E+00
	437.55	2.00	1.56E+01		-2.16E+00	7.34E+00
	537.32	25.00	1.23E+00		-5.30E-02	5.72E-01
LA-140	328.77	20.50	1.61E+00	4.60E-01	2.49E-01	7.70E-01
	487.03	45.50	6.95E-01		-9.85E-02	3.27E-01
	815.85	23.50	1.65E+00		2.18E-01	7.65E-01
	1596.49	95.49	4.60E-01		9.20E-02	2.05E-01
CE-141	145.44	48.40	2.08E-01	2.08E-01	1.37E-01	1.01E-01
CE-143	57.36	11.80	5.89E+06	2.48E+06	-2.48E+06	2.84E+06
	293.26	42.00	2.48E+06		-5.58E+05	1.20E+06

Analysis Report for 1510087-10

CP5004S16-17

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CE-143	664.55	5.20	1.99E+07	2.48E+06	6.68E+06	9.39E+06
CE-144	133.54	10.80	4.78E-01	4.78E-01	2.03E-01	2.32E-01
PM-144	476.78	42.00	1.30E-01	6.90E-02	-3.76E-02	6.08E-02
	618.01	98.60	6.90E-02		-5.75E-03	3.24E-02
	696.49	99.49	7.36E-02		2.59E-02	3.45E-02
PM-145	36.85	21.70	1.02E+00	5.24E-01	2.53E-01	4.96E-01
	37.36	39.70	5.24E-01		1.30E-01	2.55E-01
	42.30	15.10	8.20E-01		7.99E-02	3.98E-01
	72.40	2.31	2.12E+00		-1.90E-01	1.03E+00
PM-146	453.90	39.94	1.34E-01	1.34E-01	4.81E-02	6.32E-02
	735.90	14.01	4.58E-01		-5.10E-02	2.13E-01
	747.13	13.10	5.44E-01		-4.28E-02	2.55E-01
ND-147	91.11	28.90	1.69E+00	1.69E+00	-1.51E+00	8.30E-01
	531.02	13.10	3.06E+00		7.11E-01	1.43E+00
PM-149	285.90	3.10	4.70E+04	4.70E+04	8.52E+03	2.25E+04
EU-152	121.78	20.50	2.16E-01	2.16E-01	-3.00E-02	1.05E-01
	244.69	5.40	1.01E+00		-1.75E+00	4.86E-01
	344.27	19.13	2.79E-01		1.55E-01	1.33E-01
	778.89	9.20	7.36E-01		5.74E-02	3.43E-01
	964.01	10.40	8.94E-01		-2.03E+00	4.20E-01
	1085.78	7.22	9.26E-01		-5.33E-01	4.20E-01
	1112.02	9.60	8.18E-01		2.09E-01	3.76E-01
	1407.95	14.94	5.23E-01		4.30E-01	2.36E-01
GD-153	97.43	31.30	1.55E-01	1.55E-01	1.43E-02	7.52E-02
	103.18	22.20	2.28E-01		-2.73E-02	1.11E-01
EU-154	123.07	40.50	1.08E-01	1.08E-01	-1.11E-01	5.23E-02
	723.30	19.70	3.51E-01		-2.17E-02	1.64E-01
	873.19	11.50	5.85E-01		-2.33E-01	2.70E-01
	996.32	10.30	6.99E-01		-3.32E-01	3.22E-01
	1004.76	17.90	4.17E-01		-1.10E-01	1.93E-01
	1274.45	35.50	2.34E-01		1.14E-01	1.07E-01
EU-155	86.50	30.90	1.98E-01	1.98E-01	2.17E-01	9.68E-02
	105.30	20.70	2.23E-01		-1.27E-01	1.09E-01
EU-156	811.77	10.40	2.50E+00	2.50E+00	-1.98E+00	1.15E+00
	1153.47	7.20	5.92E+00		3.33E+00	2.76E+00
	1230.71	8.90	4.51E+00		-6.93E-01	2.09E+00
HO-166M	184.41	72.60	8.59E-02	8.59E-02	4.40E-03	4.18E-02
	280.45	29.60	1.92E-01		4.77E-02	9.22E-02
	410.94	11.10	5.13E-01		2.12E-01	2.43E-01
	711.69	54.10	1.29E-01		1.63E-02	6.03E-02
TM-171	66.72	0.14	3.63E+01	3.63E+01	1.53E+01	1.76E+01
HF-172	81.75	4.52	9.18E-01	4.26E-01	-9.31E-01	4.44E-01
	125.81	11.30	4.26E-01		-2.30E-01	2.07E-01
LU-172	181.53	20.60	7.20E+00	3.76E+00	4.47E+00	3.48E+00
	810.06	16.63	1.05E+01		-5.92E+00	4.85E+00
	912.12	15.25	2.76E+01		6.87E+01	1.33E+01
	1093.66	62.50	3.76E+00		1.31E+00	1.74E+00
LU-173	100.72	5.24	9.11E-01	2.81E-01	-2.56E-01	4.43E-01
	272.11	21.20	2.81E-01		-4.54E-02	1.35E-01
HF-175	343.40	84.00	8.94E-02	8.94E-02	1.74E-02	4.26E-02
LU-176	88.34	13.30	4.63E-01	5.09E-02	4.20E-01	2.27E-01
	201.83	86.00	6.08E-02		-2.61E-02	2.94E-02
	306.78	94.00	5.09E-02		-4.42E-03	2.42E-02

Analysis Report for 1510087-10

CP5004S16-17

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TA-182	67.75	41.20	1.41E-01	1.41E-01	1.69E-02	6.86E-02
	1121.30	34.90	4.50E-01		7.03E-01	2.14E-01
	1189.05	16.23	6.79E-01		-8.33E-02	3.15E-01
	1221.41	26.98	4.24E-01		-2.80E-02	1.97E-01
	1231.02	11.44	9.65E-01		-5.12E-03	4.46E-01
IR-192	308.46	29.68	2.27E-01	1.53E-01	2.64E-02	1.08E-01
	468.07	48.10	1.53E-01		9.99E-03	7.20E-02
HG-203	279.19	77.30	1.25E-01	1.25E-01	3.47E-02	6.01E-02
BI-207	569.67	97.72	5.67E-02	5.67E-02	-4.72E-03	2.65E-02
	1063.62	74.90	1.09E-01		6.36E-02	5.04E-02
+ TL-208	583.14	*	30.22	3.28E-01	1.85E-01	1.21E+00
	860.37		4.48	1.76E+00		5.13E-01
	2614.66	*	35.85	1.85E-01		9.57E-01
BI-210M	262.00		45.00	1.06E-01	1.06E-01	1.28E-02
	300.00		23.00	2.46E-01		1.18E-01
+ PB-210	46.50	*	4.25	3.62E+00	3.62E+00	3.18E+00
	404.84		2.90	1.91E+00	1.91E+00	1.11E+00
+ PB-211	831.96		2.90	2.60E+00		5.39E-01
	727.17	*	11.80	6.77E-01	6.77E-01	4.72E-01
	1620.62	*	2.75	2.01E+00		1.02E+00
+ PB-212	238.63	*	44.60	3.96E-01	3.96E-01	1.39E+00
	300.09	*	3.41	3.38E+00		1.93E+00
+ BI-214	609.31	*	46.30	2.39E-01	2.39E-01	9.97E-01
	1120.29	*	15.10	7.78E-01		1.47E+00
	1764.49	*	15.80	7.05E-01		1.09E+00
	2204.22	*	4.98	8.12E-01		1.17E+00
	295.21	*	19.19	6.01E-01	1.98E-01	1.29E+00
+ PB-214	351.92	*	37.19	1.98E-01		1.32E+00
	401.80		6.50	8.04E-01	8.04E-01	-1.50E-01
RN-219	323.87		3.88	1.40E+00	1.40E+00	1.84E-02
+ RA-224	240.98	*	3.95	4.52E+00	4.52E+00	3.87E+00
	40.00		31.00	2.32E+00	2.32E+00	4.07E-01
+ RA-225	186.21	*	3.28	1.68E+00	1.68E+00	2.92E+00
	50.10		8.40	8.19E-01	6.55E-01	-7.25E-01
TH-227	236.00		11.50	6.55E-01		-6.19E+00
	256.20		6.30	8.13E-01		1.88E-01
	338.32	*	11.40	6.87E-01	3.28E-01	1.91E+00
	911.07	*	27.70	3.28E-01		1.33E+00
+ AC-228	969.11	*	16.60	6.62E-01		1.45E+00
	48.44		16.90	4.67E-01	4.67E-01	-2.92E-01
	62.85		4.60	1.26E+00		1.83E+00
TH-230	67.67		0.37	1.29E+01		1.54E+00
	283.67		1.60	3.30E+00	2.12E+00	-1.05E+00
PA-231	302.67		2.30	2.12E+00		-2.39E+00
	25.64		14.70	1.44E+01	6.93E-01	-4.78E-01
TH-231	84.21		6.40	6.93E-01		5.87E-01
	311.98		38.60	2.99E-01	2.99E-01	1.38E-02
PA-233	131.20		20.40	2.39E-01	2.39E-01	1.08E-01
	733.99		8.80	7.02E-01		-2.62E-01
PA-234	946.00		12.00	6.11E-01		-7.31E-02
	1001.03		0.92	8.63E+00	8.63E+00	5.64E+00
+ PA-234M	63.29	*	3.80	1.82E+00	1.82E+00	9.28E-01
	143.76		10.50	4.69E-01	4.69E-01	-5.79E-02
U-235						2.28E-01

Analysis Report for 1510087-10
CP5004S16-17

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
U-235	163.35	4.70	1.02E+00	4.69E-01	6.99E-04	4.95E-01
	205.31	4.70	1.12E+00		-3.84E-01	5.42E-01
NP-237	86.50	12.60	4.79E-01	4.79E-01	5.26E-01	2.34E-01
NP-239	106.10	22.70	3.06E+03	3.06E+03	-4.79E+02	1.49E+03
	228.18	10.70	7.38E+03		-2.21E+03	3.55E+03
	277.60	14.10	6.27E+03		5.44E+02	3.02E+03
AM-241	59.54	35.90	1.47E-01	1.47E-01	2.87E-02	7.13E-02
AM-243	74.67	66.00	9.95E-02	9.95E-02	-1.46E-01	4.88E-02
CM-243	209.75	3.29	1.79E+00	4.25E-01	1.55E+00	8.68E-01
	228.14	10.60	5.00E-01		-1.50E-01	2.41E-01
	277.60	14.00	4.25E-01		3.69E-02	2.04E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP5004S16-17

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	132
9:	512	1174	1186	458	520	1801	397	157
17:	146	117	126	122	106	124	116	117
25:	119	105	114	112	112	129	113	114
33:	119	113	115	122	124	161	135	133
41:	136	113	130	110	136	171	196	146
49:	106	90	108	116	103	117	78	82
57:	78	101	109	119	107	128	153	188
65:	106	127	114	136	116	114	143	125
73:	154	159	397	247	439	368	112	114
81:	108	102	104	143	145	105	176	208
89:	108	179	134	122	256	163	81	75
97:	66	80	89	81	78	87	80	94
105:	81	90	63	96	93	68	67	76
113:	94	58	57	87	71	59	78	81
121:	65	59	71	68	67	86	76	78
129:	95	76	68	85	72	66	68	79
137:	65	80	68	79	79	63	72	85
145:	74	72	73	63	64	67	63	59
153:	56	64	80	64	59	54	58	70
161:	58	55	70	62	54	53	63	59
169:	65	44	66	53	52	63	58	52
177:	72	74	45	61	67	51	62	49
185:	92	183	99	44	60	58	57	51
193:	58	56	51	62	80	36	69	49
201:	52	66	55	47	55	59	52	43
209:	95	73	55	60	49	49	58	56
217:	70	52	52	53	55	49	47	44
225:	54	47	53	34	48	51	49	51
233:	50	57	48	54	59	243	594	100
241:	106	130	75	40	33	40	35	40
249:	36	42	37	37	42	34	32	39
257:	33	47	36	31	42	26	22	32
265:	25	29	43	42	35	65	50	39
273:	15	42	49	41	54	47	35	47
281:	40	33	34	36	27	41	37	25
289:	29	33	29	28	33	52	188	127
297:	32	29	22	71	37	23	29	24
305:	18	22	39	21	24	27	30	29
313:	26	20	27	24	27	27	32	29
321:	32	35	19	31	31	33	28	45
329:	44	27	14	28	27	22	16	22
337:	38	130	104	26	30	34	19	25
345:	30	23	14	23	26	26	117	325
353:	127	25	14	29	18	20	21	17
361:	20	22	21	24	30	17	24	19

369: 25 14 10 26 23 20 18 22

Sample Title: CP5004S16-17

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	16	26	20	30	31	22	16	17
385:	14	20	24	16	17	16	22	24
393:	27	21	18	20	19	9	26	36
401:	13	16	21	15	24	22	31	17
409:	33	39	19	12	14	17	17	16
417:	21	15	19	25	22	16	19	13
425:	22	17	21	21	28	21	16	18
433:	20	23	19	19	16	17	21	15
441:	22	19	17	21	17	20	17	16
449:	16	18	15	18	17	20	11	21
457:	13	12	12	19	14	32	46	29
465:	17	18	27	14	16	12	11	16
473:	11	21	15	12	20	13	15	13
481:	24	18	25	20	19	18	18	8
489:	18	18	11	21	20	9	11	23
497:	12	21	10	15	8	13	7	15
505:	20	14	16	17	26	55	90	60
513:	23	16	14	12	13	12	11	15
521:	20	10	17	11	12	7	9	16
529:	12	14	9	12	16	14	5	12
537:	22	14	12	15	9	16	23	16
545:	15	16	9	15	13	11	11	15
553:	9	17	15	10	19	15	11	11
561:	9	14	13	17	17	10	13	10
569:	17	11	16	16	13	7	17	14
577:	10	11	16	8	16	55	177	81
585:	9	10	12	16	13	16	16	15
593:	11	14	13	13	13	14	12	13
601:	19	13	14	15	14	14	8	54
609:	218	123	18	8	7	21	12	12
617:	11	15	9	8	13	8	13	3
625:	15	15	9	18	13	13	12	10
633:	13	9	9	9	10	10	12	12
641:	8	11	10	14	13	13	14	7
649:	15	12	12	11	7	13	8	10
657:	13	14	9	11	13	15	13	8
665:	19	13	15	12	13	11	7	13
673:	7	10	8	10	5	13	10	14
681:	11	16	6	13	9	11	12	10
689:	12	11	7	6	11	4	11	13
697:	11	9	18	10	12	16	14	16
705:	14	9	10	7	8	18	14	12
713:	9	8	9	12	9	5	12	5
721:	10	11	11	11	11	13	33	17
729:	11	9	10	7	4	10	10	7
737:	8	13	7	14	5	14	15	11
745:	11	9	8	12	13	8	10	6
753:	7	11	10	12	8	8	12	18
761:	7	14	14	10	13	13	19	37
769:	25	12	10	14	15	11	5	10
777:	11	3	9	9	6	13	9	8
785:	7	13	8	11	12	8	12	9
793:	6	21	20	7	4	6	11	9

801: 9 11 8 13 14 12 8 5

Sample Title: CP5004S16-17

Channel	1	2	3	4	5	6	7	8
809:	7	6	4	6	8	6	6	13
817:	7	9	5	12	5	6	11	10
825:	6	7	7	11	12	12	11	7
833:	10	6	11	13	17	12	12	14
841:	4	9	5	9	14	6	5	8
849:	6	6	4	8	8	3	9	7
857:	8	5	5	19	19	7	9	10
865:	8	10	7	5	7	7	10	5
873:	6	11	5	5	10	12	9	4
881:	8	14	7	8	10	5	2	11
889:	7	6	10	9	8	6	8	5
897:	11	5	9	9	4	5	8	10
905:	7	6	7	8	10	35	111	49
913:	13	7	5	5	8	7	6	6
921:	5	10	6	1	8	9	7	8
929:	5	3	4	10	14	15	11	7
937:	5	8	6	4	12	8	6	9
945:	9	5	7	5	11	5	8	3
953:	6	3	7	9	9	10	9	5
961:	1	2	13	20	23	9	15	32
969:	67	21	6	4	11	5	6	5
977:	6	8	4	3	3	4	6	11
985:	8	3	6	9	8	6	8	7
993:	12	4	7	5	4	6	7	10
1001:	9	13	4	7	4	5	6	10
1009:	6	9	10	5	7	7	5	4
1017:	7	8	4	9	3	8	11	2
1025:	2	7	2	4	3	7	6	7
1033:	9	12	8	6	5	6	9	5
1041:	5	7	5	7	11	7	6	4
1049:	4	5	9	8	9	10	7	5
1057:	3	7	3	5	5	3	9	12
1065:	8	11	6	2	6	7	11	3
1073:	13	7	4	6	9	10	10	8
1081:	10	2	9	2	2	6	7	5
1089:	7	4	5	7	4	14	8	7
1097:	7	2	10	8	9	3	5	10
1105:	5	4	5	2	9	6	9	6
1113:	6	5	4	9	5	10	22	45
1121:	25	9	7	11	8	3	7	7
1129:	4	3	6	9	7	9	5	1
1137:	14	6	8	8	5	5	7	5
1145:	4	6	4	7	3	7	14	10
1153:	7	12	9	7	9	5	3	3
1161:	5	6	9	9	5	6	12	7
1169:	6	10	10	12	12	5	10	8
1177:	7	6	5	12	5	8	7	6
1185:	7	6	6	12	6	13	8	4
1193:	8	12	7	6	8	8	13	7
1201:	10	4	4	11	13	8	10	10
1209:	14	8	5	8	6	6	10	7
1217:	10	6	7	10	7	7	9	11
1225:	9	8	9	7	4	8	7	6

1233: 11 9 7 6 13 13 13 8

Sample Title: CP5004S16-17

Channel	1	2	3	4	5	6	7	8	9
1241:	10	10	1	6	7	9	13	8	
1249:	3	2	6	8	7	4	7	4	
1257:	5	5	4	9	6	5	5	10	
1265:	14	10	1	9	3	5	2	6	
1273:	7	3	10	6	6	6	0	9	
1281:	8	7	7	8	4	5	11	6	
1289:	2	3	3	2	2	0	6	3	
1297:	10	2	2	2	6	5	5	2	
1305:	3	8	7	6	4	3	2	5	
1313:	5	5	4	3	4	1	7	1	
1321:	4	5	6	4	2	5	3	2	
1329:	7	8	5	6	4	2	1	5	
1337:	1	8	8	4	3	3	2	4	
1345:	3	3	2	0	1	5	3	1	
1353:	4	2	4	4	0	3	1	1	
1361:	2	3	2	3	3	1	6	2	
1369:	1	2	5	2	8	3	3	6	
1377:	7	12	8	2	3	3	0	3	
1385:	3	3	2	4	6	4	5	2	
1393:	2	0	3	0	5	3	2	6	
1401:	8	3	0	2	4	3	8	4	
1409:	4	5	0	1	2	4	0	0	
1417:	1	6	1	0	1	3	2	3	
1425:	1	5	2	1	3	0	1	4	
1433:	2	2	2	0	4	2	1	5	
1441:	2	1	2	0	1	3	0	4	
1449:	1	0	3	3	1	2	6	2	
1457:	2	11	98	259	265	84	15	2	
1465:	4	1	4	1	3	1	3	2	
1473:	1	0	3	3	3	2	1	3	
1481:	4	2	2	3	1	0	1	2	
1489:	2	3	1	6	0	3	3	1	
1497:	1	1	0	2	3	5	4	0	
1505:	2	1	0	6	7	6	4	1	
1513:	2	3	1	1	0	1	2	3	
1521:	0	1	0	3	3	4	3	4	
1529:	3	4	1	0	1	2	1	1	
1537:	4	2	2	2	1	1	5	0	
1545:	2	2	1	2	0	0	3	5	
1553:	2	2	0	0	0	1	3	1	
1561:	1	3	3	3	3	3	5	1	
1569:	2	1	2	1	1	3	0	4	
1577:	0	1	1	3	2	2	2	2	
1585:	0	5	7	7	8	3	5	4	
1593:	5	3	2	0	3	1	1	4	
1601:	1	1	3	1	1	1	1	2	
1609:	2	0	2	1	4	0	0	0	
1617:	6	1	2	5	1	2	1	2	
1625:	2	1	0	0	2	0	3	1	
1633:	0	1	0	1	1	4	0	0	
1641:	0	1	3	0	2	0	1	0	
1649:	2	0	0	1	1	5	0	3	
1657:	3	0	3	1	4	3	1	3	

1665: 2 3 1 2 1 3 1 1

Sample Title: CP5004S16-17

Channel	1	2	3	4	5	6	7	8
1673:	1	1	1	2	0	6	1	1
1681:	2	0	1	1	3	2	1	1
1689:	0	0	1	1	3	0	0	1
1697:	0	2	4	1	2	2	1	1
1705:	1	0	4	2	1	1	2	0
1713:	1	0	0	0	1	0	0	1
1721:	0	2	0	2	2	3	4	4
1729:	4	5	4	3	1	0	0	1
1737:	0	2	0	0	1	4	1	2
1745:	3	1	0	2	2	1	0	1
1753:	1	0	1	0	1	2	3	3
1761:	2	4	16	22	17	10	1	1
1769:	1	1	1	1	1	2	0	1
1777:	2	2	2	1	1	0	0	2
1785:	0	1	2	0	1	0	1	1
1793:	0	3	0	3	2	1	0	0
1801:	0	3	0	1	0	2	1	0
1809:	0	2	0	1	1	0	1	2
1817:	1	2	0	1	1	4	2	2
1825:	0	1	1	0	1	1	1	0
1833:	1	1	0	1	2	4	0	0
1841:	1	1	1	1	0	1	5	2
1849:	1	3	0	0	1	1	1	1
1857:	0	2	1	0	0	0	0	1
1865:	0	0	2	0	0	0	0	1
1873:	0	0	0	2	1	0	0	1
1881:	2	2	0	1	3	1	0	2
1889:	2	2	1	1	1	2	3	3
1897:	3	1	0	0	0	0	0	1
1905:	1	2	0	1	1	1	0	1
1913:	0	0	2	1	0	1	1	2
1921:	1	0	1	2	3	1	1	2
1929:	3	1	0	1	2	3	1	3
1937:	0	1	2	0	1	0	1	3
1945:	2	0	1	2	1	3	2	1
1953:	1	0	1	2	2	2	1	0
1961:	0	1	1	1	2	0	1	1
1969:	2	1	0	1	3	2	1	0
1977:	0	2	2	0	0	1	0	1
1985:	2	0	1	0	0	0	0	3
1993:	1	1	2	1	1	0	0	1
2001:	1	0	2	1	1	0	3	1
2009:	1	0	1	0	0	0	0	1
2017:	1	1	1	0	0	1	0	0
2025:	0	1	0	2	5	2	0	4
2033:	0	1	0	0	1	0	1	0
2041:	1	1	1	1	1	1	0	0
2049:	0	0	0	2	1	2	0	0
2057:	1	2	3	3	2	0	1	1
2065:	0	1	1	1	0	1	0	1
2073:	0	0	1	1	0	0	0	1
2081:	1	0	0	0	0	1	1	0
2089:	1	0	0	1	1	2	2	1

2097: 0 2 1 3 4 3 5 6

Sample Title: CP5004S16-17

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2105:	2	1	2	0	0	1	1	1
2113:	1	0	3	0	4	1	1	2
2121:	1	3	2	3	2	0	0	0
2129:	0	0	0	0	1	3	2	0
2137:	1	2	2	1	0	2	0	3
2145:	1	1	1	1	1	3	1	1
2153:	0	0	0	0	0	1	0	1
2161:	2	1	1	2	1	0	0	0
2169:	0	1	1	2	1	2	1	3
2177:	1	1	1	2	2	0	1	0
2185:	2	4	2	0	2	1	1	0
2193:	1	0	2	1	3	0	1	0
2201:	2	3	5	7	1	1	0	0
2209:	0	2	1	0	3	2	1	1
2217:	0	0	1	2	1	1	0	1
2225:	0	1	1	0	0	1	2	0
2233:	1	0	0	2	1	1	1	0
2241:	1	1	1	2	1	2	0	1
2249:	2	2	1	0	0	1	4	3
2257:	1	0	2	2	1	2	2	0
2265:	0	2	2	0	4	0	0	0
2273:	1	1	0	1	1	0	0	0
2281:	0	0	1	1	1	2	1	0
2289:	1	1	2	0	1	3	1	1
2297:	1	1	1	1	0	2	1	0
2305:	2	3	0	0	0	0	3	2
2313:	1	2	2	0	3	1	1	4
2321:	1	3	1	2	1	3	1	0
2329:	2	1	1	2	1	5	1	1
2337:	1	2	2	0	2	2	1	1
2345:	2	0	0	0	0	0	1	1
2353:	1	0	2	1	1	3	0	1
2361:	0	2	2	1	2	1	0	1
2369:	0	2	2	1	1	1	1	0
2377:	0	0	1	0	0	4	1	1
2385:	1	0	0	0	2	0	1	1
2393:	3	1	0	0	1	0	0	0
2401:	1	1	1	1	0	2	3	0
2409:	1	0	2	0	0	0	1	0
2417:	3	1	0	1	2	1	0	0
2425:	1	0	2	1	3	2	0	1
2433:	0	0	0	1	0	0	0	1
2441:	3	0	2	0	1	1	2	1
2449:	3	1	0	0	1	3	1	0
2457:	0	0	1	2	0	0	0	1
2465:	0	0	1	1	1	0	1	0
2473:	0	0	0	1	0	2	1	1
2481:	0	2	1	1	0	1	1	2
2489:	0	1	0	1	0	0	0	0
2497:	1	0	0	0	0	0	1	0
2505:	0	0	0	0	0	0	1	2
2513:	1	0	1	1	0	1	1	0
2521:	0	0	1	1	1	1	0	2

2529: 1 1 0 0 1 0 0 0

Sample Title: CP5004S16-17

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	1	0	0	0	0	0	0	1
2545:	0	1	0	0	2	0	0	0
2553:	0	0	0	0	2	2	1	0
2561:	0	0	0	0	0	0	1	0
2569:	1	0	0	0	1	0	2	0
2577:	0	1	1	1	0	1	0	1
2585:	2	1	0	0	0	1	0	0
2593:	0	0	1	0	0	1	1	1
2601:	0	0	0	0	1	1	1	0
2609:	1	1	9	13	32	37	16	7
2617:	2	0	1	1	0	0	0	0
2625:	0	0	0	0	0	0	0	1
2633:	0	0	0	0	1	1	2	1
2641:	0	0	0	0	0	0	0	0
2649:	0	0	0	0	1	0	1	1
2657:	0	0	0	1	0	0	1	0
2665:	1	0	0	0	1	0	0	0
2673:	1	2	1	0	0	1	0	0
2681:	0	0	0	1	2	1	0	0
2689:	0	0	0	0	1	0	1	0
2697:	0	0	0	1	0	1	0	2
2705:	0	0	0	0	0	0	1	1
2713:	0	1	0	0	0	1	1	0
2721:	0	0	1	0	1	0	1	0
2729:	0	0	0	1	0	1	0	0
2737:	0	0	1	0	0	0	2	0
2745:	0	0	0	1	0	0	0	0
2753:	0	0	0	1	0	0	0	1
2761:	1	0	0	0	0	0	0	0
2769:	0	1	0	0	1	0	1	0
2777:	0	0	0	0	0	1	0	0
2785:	0	0	0	1	0	0	0	0
2793:	1	0	0	0	0	0	0	0
2801:	0	0	1	1	0	1	0	1
2809:	0	0	0	0	0	1	0	0
2817:	0	0	0	0	0	1	0	1
2825:	0	0	0	0	0	0	0	0
2833:	3	0	0	1	0	0	0	0
2841:	1	0	0	1	0	0	1	0
2849:	0	0	0	0	0	0	1	0
2857:	0	0	0	0	1	0	0	0
2865:	0	0	0	0	2	1	0	1
2873:	0	0	1	0	0	0	0	0
2881:	0	0	2	0	0	0	0	0
2889:	0	0	0	1	0	0	0	0
2897:	0	0	0	0	0	0	2	0
2905:	0	0	1	0	0	0	1	1
2913:	1	0	0	0	0	0	0	0
2921:	1	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	1	0	0	0	1	0	2	0
2945:	0	2	0	0	0	0	0	0
2953:	0	0	0	1	0	0	0	1

2961: 0 0 0 0 0 0 0 0 1

Sample Title: CP5004S16-17

Channel								
2969:	0	0	0	0	0	0	1	0
2977:	0	1	0	0	0	0	0	0
2985:	0	0	1	0	0	0	0	1
2993:	0	1	0	0	1	0	0	0
3001:	1	0	0	0	0	1	0	0
3009:	1	0	0	0	0	0	2	0
3017:	0	0	0	0	0	0	0	1
3025:	0	0	0	0	0	0	0	0
3033:	0	0	0	1	0	1	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	1	1	0	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	1	0	1	0	0
3073:	1	0	0	1	1	0	1	0
3081:	0	1	0	0	0	0	0	1
3089:	0	0	0	0	0	1	0	1
3097:	2	0	0	0	0	0	0	0
3105:	0	1	0	0	0	0	0	0
3113:	0	1	0	1	0	0	0	0
3121:	1	0	0	0	0	0	1	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	0	0	1	0	0	0	0	2
3153:	0	0	0	1	0	1	0	0
3161:	1	1	0	0	1	0	0	1
3169:	1	0	0	0	0	0	0	0
3177:	0	1	0	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	1	2	0	0	1	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	0	1	1	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	0	1	1	0	1	0
3233:	0	0	1	0	0	0	0	0
3241:	1	1	1	0	1	0	1	0
3249:	0	0	2	0	0	0	0	1
3257:	0	0	0	0	0	0	0	1
3265:	0	0	1	0	0	0	1	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	1
3289:	0	1	0	0	0	0	0	1
3297:	0	0	0	1	0	0	0	0
3305:	1	0	0	0	0	0	0	1
3313:	0	0	0	0	0	0	0	0
3321:	0	0	1	0	0	0	0	0
3329:	0	0	1	0	0	0	0	0
3337:	0	0	1	0	0	0	1	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	1	0
3369:	0	0	0	0	1	1	0	0
3377:	1	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP5004S16-17

Channel	1	0	1	0	0	1	0	0
3401:	1	0	1	0	0	1	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	1	0	0
3425:	0	1	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	1	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	1	0	0	0	0	0	0	0
3481:	0	0	0	2	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	1
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	1	0	0
3529:	0	0	0	0	0	2	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	2
3553:	0	0	0	0	0	0	0	1
3561:	0	0	0	1	1	0	0	0
3569:	0	0	1	0	0	0	0	0
3577:	0	0	0	0	0	0	0	1
3585:	0	0	0	0	0	0	0	0
3593:	0	1	2	0	1	0	0	0
3601:	0	0	0	0	0	1	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	1	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	1	1	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	1
3649:	0	0	1	1	0	1	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	2	0	0	1	0	0	0
3673:	0	0	1	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	1	0	0	0	0	1
3697:	0	0	0	1	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	1	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	1	0	0	0
3737:	0	0	0	0	0	1	0	0
3745:	0	0	0	0	0	0	0	3
3753:	2	0	0	0	0	0	0	1
3761:	1	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	1	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	1	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

3825: 0 0 0 1 0 0 1 0

Sample Title: CP5004S16-17

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	1	0	0	0	0
3857:	0	0	2	0	0	0	0	0
3865:	0	0	0	1	0	1	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	1	0	0	0	0
3913:	0	0	0	2	0	0	1	0
3921:	0	0	0	0	1	0	0	0
3929:	0	0	0	1	0	0	0	1
3937:	1	0	0	0	0	0	0	0
3945:	0	0	0	0	0	1	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	1	0	2	0	0	0	0
3977:	0	0	1	0	0	0	1	0
3985:	0	0	0	0	0	0	0	0
3993:	0	1	1	0	0	0	1	1
4001:	1	0	0	0	0	0	0	0
4009:	0	0	1	0	1	0	1	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	1	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	1	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	1	0	0	0	0	0	1
4065:	0	0	0	0	1	1	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	1	1	0	1	0

Analysis Report for 1510087-11
CP4106S03-04

✓
11/9

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-11
Sample Description : CP4106S03-04
Sample Type : SOIL

Sample Size : 5.570E+02 grams
Facility : Countroom

Sample Taken On : 10/7/2015 5:11:48PM
Acquisition Started : 11/9/2015 8:16:41AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3662.5 seconds

Dead Time : 1.71 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 15 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 11/8/2014
Efficiency Calibration Description :

Sample Number : 29318

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-11
CP4106S03-04

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 9:17:44AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.91	46.16	0.0000	0.00
2	62.09	61.35	0.0000	0.00
3	76.32	75.59	0.0000	0.00
4	87.65	86.92	0.0000	0.00
5	93.54	92.81	0.0000	0.00
6	185.99	185.30	0.0000	0.00
7	239.22	238.55	0.0000	0.00
8	295.42	294.78	0.0000	0.00
9	338.32	337.70	0.0000	0.00
10	352.06	351.44	0.0000	0.00
11	387.46	386.86	0.0000	0.00
12	510.86	510.32	0.0000	0.00
13	583.45	582.95	0.0000	0.00
14	609.25	608.76	0.0000	0.00
15	727.31	726.87	0.0000	0.00
16	911.77	911.43	0.0000	0.00
17	967.73	967.42	0.0000	0.00
18	990.46	990.16	0.0000	0.00
19	995.55	995.25	0.0000	0.00
20	1001.26	1000.96	0.0000	0.00
21	1099.09	1098.85	0.0000	0.00
22	1105.72	1105.48	0.0000	0.00
23	1120.55	1120.32	0.0000	0.00
24	1401.85	1401.79	0.0000	0.00
25	1461.30	1461.27	0.0000	0.00
26	1479.65	1479.64	0.0000	0.00
27	1511.20	1511.20	0.0000	0.00
28	1593.05	1593.10	0.0000	0.00
29	1628.37	1628.44	0.0000	0.00
30	1637.77	1637.86	0.0000	0.00
31	1712.28	1712.41	0.0000	0.00
32	1719.67	1719.80	0.0000	0.00
33	1731.30	1731.44	0.0000	0.00
34	1765.73	1765.89	0.0000	0.00
35	1802.61	1802.80	0.0000	0.00
36	2383.90	2384.50	0.0000	0.00
37	2614.99	2615.76	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510087-11
CP4106S03-04

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 9:17:44AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	46.91	43 -	50	46.16	1.05E+02	82.22	1.06E+03	1.72
2	62.09	56 -	65	61.35	1.61E+02	112.69	1.73E+03	3.23
3	76.32	69 -	80	75.59	7.49E+02	145.95	2.28E+03	4.30
M 4	87.65	81 -	96	86.92	4.33E+02	123.98	1.70E+03	6.09
m 5	93.54	81 -	96	92.81	2.09E+02	88.18	9.75E+02	2.57
6	185.99	181 -	190	185.30	1.58E+02	79.49	8.17E+02	2.68
7	239.22	232 -	245	238.55	5.82E+02	98.47	8.19E+02	2.79
8	295.42	290 -	299	294.78	7.38E+01	66.56	5.92E+02	1.51
9	338.32	333 -	342	337.70	1.04E+02	50.66	2.99E+02	3.05
10	352.06	346 -	356	351.44	2.04E+02	62.89	4.20E+02	2.22
11	387.46	383 -	392	386.86	3.63E+01	41.58	2.29E+02	2.50
12	510.86	504 -	517	510.32	1.04E+02	47.38	2.04E+02	1.53
13	583.45	578 -	588	582.95	1.19E+02	41.42	1.67E+02	2.94
14	609.25	602 -	615	608.76	2.10E+02	49.08	1.72E+02	2.39
15	727.31	720 -	733	726.87	5.04E+01	42.11	1.73E+02	2.96
16	911.77	905 -	917	911.43	6.99E+01	34.06	1.02E+02	2.43
17	967.73	961 -	975	967.42	5.29E+01	36.82	1.22E+02	5.86
M 18	990.46	984 -	997	990.16	1.35E+01	19.35	4.87E+01	3.15
m 19	995.55	984 -	997	995.25	1.42E+01	13.78	2.21E+01	2.65
20	1001.26	998 -	1005	1000.96	1.61E+01	17.55	4.17E+01	2.62
21	1099.09	1095 -	1101	1098.85	1.86E+01	16.82	3.68E+01	2.86
22	1105.72	1102 -	1109	1105.48	1.55E+01	16.00	3.29E+01	0.99
23	1120.55	1115 -	1125	1120.32	5.85E+01	26.96	6.50E+01	3.62
24	1401.85	1397 -	1406	1401.79	1.10E+01	13.56	2.00E+01	2.73
25	1461.30	1455 -	1465	1461.27	2.56E+02	33.23	1.10E+01	3.04
26	1479.65	1475 -	1484	1479.64	1.18E+01	10.68	8.38E+00	3.35
27	1511.20	1506 -	1517	1511.20	1.71E+01	12.65	9.73E+00	7.58
28	1593.05	1589 -	1597	1593.10	1.96E+01	12.84	1.28E+01	1.87
29	1628.37	1623 -	1632	1628.44	8.00E+00	10.10	1.00E+01	2.96
30	1637.77	1635 -	1640	1637.86	7.00E+00	5.29	0.00E+00	1.98
31	1712.28	1707 -	1716	1712.41	9.21E+00	10.30	9.57E+00	6.70
32	1719.67	1717 -	1722	1719.80	5.00E+00	4.47	0.00E+00	2.41
33	1731.30	1727 -	1736	1731.44	9.83E+00	8.54	4.33E+00	2.02
34	1765.73	1762 -	1770	1765.89	2.15E+01	10.78	4.92E+00	3.29
35	1802.61	1799 -	1805	1802.80	5.00E+00	4.47	0.00E+00	2.41
36	2383.90	2379 -	2388	2384.50	1.00E+01	6.32	0.00E+00	1.47
37	2614.99	2611 -	2620	2615.76	2.50E+01	13.04	1.01E+01	2.82

Analysis Report for 1510087-11
CP4106S03-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 9:17:44AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	46.91	43 -	50	1.05E+02	82.22	1.06E+03	6.55E+01
2	62.09	56 -	65	1.61E+02	112.69	1.73E+03	9.03E+01
3	76.32	69 -	80	7.49E+02	145.95	2.28E+03	1.11E+02
M 4	87.65	81 -	96	4.33E+02	123.98	1.70E+03	6.77E+01
m 5	93.54	81 -	96	2.09E+02	88.18	9.75E+02	5.13E+01
6	185.99	181 -	190	1.58E+02	79.49	8.17E+02	6.20E+01
7	239.22	232 -	245	5.82E+02	98.47	8.19E+02	7.06E+01
8	295.42	290 -	299	7.38E+01	66.56	5.92E+02	5.29E+01
9	338.32	333 -	342	1.04E+02	50.66	2.99E+02	3.81E+01
10	352.06	346 -	356	2.04E+02	62.89	4.20E+02	4.60E+01
11	387.46	383 -	392	3.63E+01	41.58	2.29E+02	3.27E+01
12	510.86	504 -	517	1.04E+02	47.38	2.04E+02	3.51E+01
13	583.45	578 -	588	1.19E+02	41.42	1.67E+02	2.90E+01
14	609.25	602 -	615	2.10E+02	49.08	1.72E+02	3.26E+01
15	727.31	720 -	733	5.04E+01	42.11	1.73E+02	3.26E+01
16	911.77	905 -	917	6.99E+01	34.06	1.02E+02	2.44E+01
17	967.73	961 -	975	5.29E+01	36.82	1.22E+02	2.78E+01
M 18	990.46	984 -	997	1.35E+01	19.35	4.87E+01	1.15E+01
m 19	995.55	984 -	997	1.42E+01	13.78	2.21E+01	7.73E+00
20	1001.26	998 -	1005	1.61E+01	17.55	4.17E+01	1.28E+01
21	1099.09	1095 -	1101	1.86E+01	16.82	3.68E+01	1.19E+01
22	1105.72	1102 -	1109	1.55E+01	16.00	3.29E+01	1.14E+01
23	1120.55	1115 -	1125	5.85E+01	26.96	6.50E+01	1.83E+01
24	1401.85	1397 -	1406	1.10E+01	13.56	2.00E+01	9.73E+00
25	1461.30	1455 -	1465	2.56E+02	33.23	1.10E+01	7.47E+00
26	1479.65	1475 -	1484	1.18E+01	10.68	8.38E+00	6.72E+00
27	1511.20	1506 -	1517	1.71E+01	12.65	9.73E+00	7.86E+00
28	1593.05	1589 -	1597	1.96E+01	12.84	1.28E+01	7.64E+00
29	1628.37	1623 -	1632	8.00E+00	10.10	1.00E+01	6.88E+00
30	1637.77	1635 -	1640	7.00E+00	5.29	0.00E+00	0.00E+00
31	1712.28	1707 -	1716	9.21E+00	10.30	9.57E+00	6.84E+00

Analysis Report for 1510087-11

CP4106S03-04

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	1719.67	1717 -	1722	5.00E+00	4.47	0.00E+00	0.00E+00
33	1731.30	1727 -	1736	9.83E+00	8.54	4.33E+00	4.77E+00
34	1765.73	1762 -	1770	2.15E+01	10.78	4.92E+00	4.51E+00
35	1802.61	1799 -	1805	5.00E+00	4.47	0.00E+00	0.00E+00
36	2383.90	2379 -	2388	1.00E+01	6.32	0.00E+00	0.00E+00
37	2614.99	2611 -	2620	2.50E+01	13.04	1.01E+01	6.88E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 9:17:44AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	46.91	43 -	50	46.16	1.05E+02	82.22	1.06E+03	PB-210
2	62.09	56 -	65	61.35	1.61E+02	112.69	1.73E+03	TH-230
3	76.32	69 -	80	75.59	7.49E+02	145.95	2.28E+03	.....
M 4	87.65	81 -	96	86.92	4.33E+02	123.98	1.70E+03	SN-126 CD-109 LU-176
m 5	93.54	81 -	96	92.81	2.09E+02	88.18	9.75E+02	GA-67
6	185.99	181 -	190	185.30	1.58E+02	79.49	8.17E+02	RA-226
7	239.22	232 -	245	238.55	5.82E+02	98.47	8.19E+02	PB-212
8	295.42	290 -	299	294.78	7.38E+01	66.56	5.92E+02	PB-214
9	338.32	333 -	342	337.70	1.04E+02	50.66	2.99E+02	AC-228
10	352.06	346 -	356	351.44	2.04E+02	62.89	4.20E+02	PB-214
11	387.46	383 -	392	386.86	3.63E+01	41.58	2.29E+02	.....
12	510.86	504 -	517	510.32	1.04E+02	47.38	2.04E+02	.....
13	583.45	578 -	588	582.95	1.19E+02	41.42	1.67E+02	TL-208
14	609.25	602 -	615	608.76	2.10E+02	49.08	1.72E+02	BI-214
15	727.31	720 -	733	726.87	5.04E+01	42.11	1.73E+02	BI-212
16	911.77	905 -	917	911.43	6.99E+01	34.06	1.02E+02	LU-172 AC-228
17	967.73	961 -	975	967.42	5.29E+01	36.82	1.22E+02	.....

: 00684

Analysis Report for 1510087-11
 CP4106S03-04

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	18	990.46	984 -	997	990.16	1.35E+01	19.35	4.87E+01	.....
m	19	995.55	984 -	997	995.25	1.42E+01	13.78	2.21E+01	EU-154
	20	1001.26	998 -	1005	1000.96	1.61E+01	17.55	4.17E+01	PA-234M
	21	1099.09	1095 -	1101	1098.85	1.86E+01	16.82	3.68E+01	FE-59
	22	1105.72	1102 -	1109	1105.48	1.55E+01	16.00	3.29E+01	.....
	23	1120.55	1115 -	1125	1120.32	5.85E+01	26.96	6.50E+01	SC-46 BI-214 TA-182
	24	1401.85	1397 -	1406	1401.79	1.10E+01	13.56	2.00E+01	.....
	25	1461.30	1455 -	1465	1461.27	2.56E+02	33.23	1.10E+01	K-40
	26	1479.65	1475 -	1484	1479.64	1.18E+01	10.68	8.38E+00	.....
	27	1511.20	1506 -	1517	1511.20	1.71E+01	12.65	9.73E+00	.....
	28	1593.05	1589 -	1597	1593.10	1.96E+01	12.84	1.28E+01	.....
	29	1628.37	1623 -	1632	1628.44	8.00E+00	10.10	1.00E+01	.....
	30	1637.77	1635 -	1640	1637.86	7.00E+00	5.29	0.00E+00	.....
	31	1712.28	1707 -	1716	1712.41	9.21E+00	10.30	9.57E+00	.....
	32	1719.67	1717 -	1722	1719.80	5.00E+00	4.47	0.00E+00	.....
	33	1731.30	1727 -	1736	1731.44	9.83E+00	8.54	4.33E+00	.....
	34	1765.73	1762 -	1770	1765.89	2.15E+01	10.78	4.92E+00	.....
	35	1802.61	1799 -	1805	1802.80	5.00E+00	4.47	0.00E+00	.....
	36	2383.90	2379 -	2388	2384.50	1.00E+01	6.32	0.00E+00	.....
	37	2614.99	2611 -	2620	2615.76	2.50E+01	13.04	1.01E+01	TL-208

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 9:17:44AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.91	1.05E+02	82.22	2.62E-02	1.78E-03
	2	62.09	1.61E+02	112.69	2.35E-02	1.77E-03
	3	76.32	7.49E+02	145.95	2.12E-02	1.69E-03
M	4	87.65	4.33E+02	123.98	1.97E-02	1.63E-03
m	5	93.54	2.09E+02	88.18	1.89E-02	1.61E-03
	6	185.99	1.58E+02	79.49	1.16E-02	1.15E-03
	7	239.22	5.82E+02	98.47	9.40E-03	9.85E-04
	8	295.42	7.38E+01	66.56	7.78E-03	8.43E-04

Analysis Report for 1510087-11
CP4106S03-04

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
9	338.32	1.04E+02	50.66	6.86E-03	7.95E-04
10	352.06	2.04E+02	62.89	6.61E-03	7.80E-04
11	387.46	3.63E+01	41.58	6.03E-03	7.41E-04
12	510.86	1.04E+02	47.38	4.61E-03	5.61E-04
13	583.45	1.19E+02	41.42	4.04E-03	4.55E-04
14	609.25	2.10E+02	49.08	3.88E-03	4.17E-04
15	727.31	5.04E+01	42.11	3.25E-03	3.04E-04
16	911.77	6.99E+01	34.06	2.61E-03	2.06E-04
17	967.73	5.29E+01	36.82	2.46E-03	1.99E-04
M 18	990.46	1.35E+01	19.35	2.41E-03	1.96E-04
m 19	995.55	1.42E+01	13.78	2.40E-03	1.95E-04
20	1001.26	1.61E+01	17.55	2.38E-03	1.95E-04
21	1099.09	1.86E+01	16.82	2.18E-03	1.82E-04
22	1105.72	1.55E+01	16.00	2.17E-03	1.81E-04
23	1120.55	5.85E+01	26.96	2.14E-03	1.79E-04
24	1401.85	1.10E+01	13.56	1.75E-03	2.01E-04
25	1461.30	2.56E+02	33.23	1.68E-03	1.89E-04
26	1479.65	1.18E+01	10.68	1.67E-03	1.85E-04
27	1511.20	1.71E+01	12.65	1.63E-03	1.79E-04
28	1593.05	1.96E+01	12.84	1.56E-03	1.62E-04
29	1628.37	8.00E+00	10.10	1.53E-03	1.54E-04
30	1637.77	7.00E+00	5.29	1.53E-03	1.52E-04
31	1712.28	9.21E+00	10.30	1.47E-03	1.37E-04
32	1719.67	5.00E+00	4.47	1.47E-03	1.35E-04
33	1731.30	9.83E+00	8.54	1.46E-03	1.33E-04
34	1765.73	2.15E+01	10.78	1.43E-03	1.26E-04
35	1802.61	5.00E+00	4.47	1.41E-03	1.18E-04
36	2383.90	1.00E+01	6.32	1.14E-03	1.11E-04
37	2614.99	2.50E+01	13.04	1.07E-03	1.11E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 9:17:44AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	46.91	1.05E+02	82.22	2.00E+01	7.38E+00	8.48E+01	8.25E+01

Analysis Report for 1510087-11

CP4106S03-04

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	2	62.09	1.61E+02	112.69			1.61E+02	1.13E+02
	3	76.32	7.49E+02	145.95			7.49E+02	1.46E+02
M	4	87.65	4.33E+02	123.98			4.33E+02	1.24E+02
m	5	93.54	2.09E+02	88.18	5.44E+01	8.36E+00	1.55E+02	8.86E+01
	6	185.99	1.58E+02	79.49	1.43E+01	7.33E+00	1.44E+02	7.98E+01
	7	239.22	5.82E+02	98.47	1.09E+01	6.39E+00	5.71E+02	9.87E+01
	8	295.42	7.38E+01	66.56			7.38E+01	6.66E+01
	9	338.32	1.04E+02	50.66			1.04E+02	5.07E+01
	10	352.06	2.04E+02	62.89	8.07E+00	5.01E+00	1.96E+02	6.31E+01
	11	387.46	3.63E+01	41.58			3.63E+01	4.16E+01
	12	510.86	1.04E+02	47.38	4.21E+01	4.92E+00	6.20E+01	4.76E+01
	13	583.45	1.19E+02	41.42			1.19E+02	4.14E+01
	14	609.25	2.10E+02	49.08	5.16E+00	1.63E+00	2.05E+02	4.91E+01
	15	727.31	5.04E+01	42.11			5.04E+01	4.21E+01
	16	911.77	6.99E+01	34.06	1.01E+00	2.85E+00	6.88E+01	3.42E+01
	17	967.73	5.29E+01	36.82			5.29E+01	3.68E+01
M	18	990.46	1.35E+01	19.35			1.35E+01	1.94E+01
m	19	995.55	1.42E+01	13.78			1.42E+01	1.38E+01
	20	1001.26	1.61E+01	17.55	5.63E-01	2.30E+00	1.56E+01	1.77E+01
	21	1099.09	1.86E+01	16.82			1.86E+01	1.68E+01
	22	1105.72	1.55E+01	16.00			1.55E+01	1.60E+01
	23	1120.55	5.85E+01	26.96			5.85E+01	2.70E+01
	24	1401.85	1.10E+01	13.56			1.10E+01	1.36E+01
	25	1461.30	2.56E+02	33.23			2.56E+02	3.32E+01
	26	1479.65	1.18E+01	10.68			1.18E+01	1.07E+01
	27	1511.20	1.71E+01	12.65			1.71E+01	1.26E+01
	28	1593.05	1.96E+01	12.84			1.96E+01	1.28E+01
	29	1628.37	8.00E+00	10.10			8.00E+00	1.01E+01
	30	1637.77	7.00E+00	5.29			7.00E+00	5.29E+00
	31	1712.28	9.21E+00	10.30			9.21E+00	1.03E+01
	32	1719.67	5.00E+00	4.47			5.00E+00	4.47E+00
	33	1731.30	9.83E+00	8.54			9.83E+00	8.54E+00
	34	1765.73	2.15E+01	10.78			2.15E+01	1.08E+01
	35	1802.61	5.00E+00	4.47			5.00E+00	4.47E+00
	36	2383.90	1.00E+01	6.32			1.00E+01	6.32E+00
	37	2614.99	2.50E+01	13.04	1.20E+00	1.02E+00	2.38E+01	1.31E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1510087-11

CP4106S03-04

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 9:17:44AM

Ref. Peak Energy : 0.00 Reference Date :

Peak Ratio : 0.00 Uncertainty : 0.00

Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
1	46.91	1.05E+02	82.22	2.00E+01	7.38E+00	8.48E+01	8.25E+01	
2	62.09	1.61E+02	112.69			1.61E+02	1.13E+02	
3	76.32	7.49E+02	145.95			7.49E+02	1.46E+02	
M	4	87.65	4.33E+02	123.98		4.33E+02	1.24E+02	
m	5	93.54	2.09E+02	88.18	5.44E+01	8.36E+00	1.55E+02	8.86E+01
6	185.99	1.58E+02	79.49	1.43E+01	7.33E+00	1.44E+02	7.98E+01	
7	239.22	5.82E+02	98.47	1.09E+01	6.39E+00	5.71E+02	9.87E+01	
8	295.42	7.38E+01	66.56			7.38E+01	6.66E+01	
9	338.32	1.04E+02	50.66			1.04E+02	5.07E+01	
10	352.06	2.04E+02	62.89	8.07E+00	5.01E+00	1.96E+02	6.31E+01	
11	387.46	3.63E+01	41.58			3.63E+01	4.16E+01	
12	510.86	1.04E+02	47.38	4.21E+01	4.92E+00	6.20E+01	4.76E+01	
13	583.45	1.19E+02	41.42			1.19E+02	4.14E+01	
14	609.25	2.10E+02	49.08	5.16E+00	1.63E+00	2.05E+02	4.91E+01	
15	727.31	5.04E+01	42.11			5.04E+01	4.21E+01	
16	911.77	6.99E+01	34.06	1.01E+00	2.85E+00	6.88E+01	3.42E+01	
17	967.73	5.29E+01	36.82			5.29E+01	3.68E+01	
M	18	990.46	1.35E+01	19.35		1.35E+01	1.94E+01	
m	19	995.55	1.42E+01	13.78		1.42E+01	1.38E+01	
20	1001.26	1.61E+01	17.55	5.63E-01	2.30E+00	1.56E+01	1.77E+01	
21	1099.09	1.86E+01	16.82			1.86E+01	1.68E+01	
22	1105.72	1.55E+01	16.00			1.55E+01	1.60E+01	
23	1120.55	5.85E+01	26.96			5.85E+01	2.70E+01	
24	1401.85	1.10E+01	13.56			1.10E+01	1.36E+01	
25	1461.30	2.56E+02	33.23			2.56E+02	3.32E+01	
26	1479.65	1.18E+01	10.68			1.18E+01	1.07E+01	
27	1511.20	1.71E+01	12.65			1.71E+01	1.26E+01	
28	1593.05	1.96E+01	12.84			1.96E+01	1.28E+01	
29	1628.37	8.00E+00	10.10			8.00E+00	1.01E+01	
30	1637.77	7.00E+00	5.29			7.00E+00	5.29E+00	
31	1712.28	9.21E+00	10.30			9.21E+00	1.03E+01	
32	1719.67	5.00E+00	4.47			5.00E+00	4.47E+00	
33	1731.30	9.83E+00	8.54			9.83E+00	8.54E+00	
34	1765.73	2.15E+01	10.78			2.15E+01	1.08E+01	
35	1802.61	5.00E+00	4.47			5.00E+00	4.47E+00	
36	2383.90	1.00E+01	6.32			1.00E+01	6.32E+00	
37	2614.99	2.50E+01	13.04	1.20E+00	1.02E+00	2.38E+01	1.31E+01	

Analysis Report for 1510087-11

CP4106S03-04

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.962	1460.81 *	10.67	1.92E+01	3.32E+00
FE-59	0.333	1099.22 *	56.50	3.37E-01	3.07E-01
		1291.56	43.20		
GA-67	0.361	93.31 *	35.70	3.19E+02	1.42E+03
		208.95	2.24		
		300.22	16.00		
CD-109	0.977	88.03 *	3.72	8.38E+00	2.55E+00
SN-126	0.999	87.57 *	37.00	8.03E-01	2.39E-01
TL-208	0.871	583.14 *	30.22	1.31E+00	4.80E-01
		860.37	4.48		
		2614.66 *	35.85	8.34E-01	4.67E-01
PB-210	0.974	46.50 *	4.25	1.03E+00	1.00E+00
BI-212	0.776	727.17 *	11.80	1.77E+00	1.49E+00
		1620.62	2.75		
PB-212	0.847	238.63 *	44.60	1.84E+00	3.71E-01
		300.09	3.41		
BI-214	0.714	609.31 *	46.30	1.54E+00	4.04E-01
		1120.29 *	15.10	2.44E+00	1.14E+00
		1764.49	15.80		
		2204.22	4.98		
PB-214	0.996	295.21 *	19.19	6.66E-01	6.05E-01
		351.92 *	37.19	1.08E+00	3.69E-01
RA-226	0.992	186.21 *	3.28	5.10E+00	9.75E+00
AC-228	0.547	338.32 *	11.40	1.80E+00	8.98E-01
		911.07 *	27.70	1.28E+00	6.46E-01
		969.11	16.60		
PA-234M	0.992	1001.03 *	0.92	9.57E+00	1.09E+01

Analysis Report for 1510087-11

CP4106S03-04

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 9:17:44AM

Peak Locate From Channel : 1

Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	62.09	4.47301E-02	34.99	Tol.	TH-230
3	76.32	2.07988E-01	9.75	D-Esc	
11	387.46	1.00699E-02	57.35		
12	510.86	1.72247E-02	38.41		
17	967.73	1.47076E-02	34.77		
M 18	990.46	3.74725E-03	71.73		
m 19	995.55	3.95382E-03	48.42	Tol.	EU-154
22	1105.72	4.31424E-03	51.51		
24	1401.85	3.05556E-03	61.66		
26	1479.65	3.28125E-03	45.19		
27	1511.20	4.76010E-03	36.91		
28	1593.05	5.43803E-03	32.78	D-Esc	
29	1628.37	2.22222E-03	63.12		
30	1637.77	1.94444E-03	37.80		
31	1712.28	2.55952E-03	55.87		
32	1719.67	1.38889E-03	44.72		
33	1731.30	2.73148E-03	43.44		
34	1765.73	5.98380E-03	25.03		
35	1802.61	1.38889E-03	44.72		
36	2383.90	2.77778E-03	31.62		

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1510087-11

CP4106S03-04

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.96	1460.81 *	10.67	1.92E+01	3.32E+00
FE-59	0.33	1099.22 *	56.50	3.37E-01	3.07E-01
		1291.56	43.20		
GA-67	0.36	93.31 *	35.70	3.19E+02	1.42E+03
		208.95	2.24		
		300.22	16.00		
CD-109	0.97	88.03 *	3.72	8.38E+00	2.55E+00
SN-126	0.99	87.57 *	37.00	8.03E-01	2.39E-01
TL-208	0.87	583.14 *	30.22	1.31E+00	4.80E-01
		860.37	4.48		
		2614.66 *	35.85	8.34E-01	4.67E-01
PB-210	0.97	46.50 *	4.25	1.03E+00	1.00E+00
BI-212	0.77	727.17 *	11.80	1.77E+00	1.49E+00
		1620.62	2.75		
PB-212	0.84	238.63 *	44.60	1.84E+00	3.71E-01
		300.09	3.41		
BI-214	0.71	609.31 *	46.30	1.54E+00	4.04E-01
		1120.29 *	15.10	2.44E+00	1.14E+00
		1764.49	15.80		
		2204.22	4.98		
PB-214	0.99	295.21 *	19.19	6.66E-01	6.05E-01
		351.92 *	37.19	1.08E+00	3.69E-01
RA-226	0.99	186.21 *	3.28	5.10E+00	9.75E+00
AC-228	0.54	338.32 *	11.40	1.80E+00	8.98E-01
		911.07 *	27.70	1.28E+00	6.46E-01
		969.11	16.60		
PA-234M	0.99	1001.03 *	0.92	9.57E+00	1.09E+01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

Analysis Report for 1510087-11
CP4106S03-04

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.962	1.92E+01	3.32E+00	
FE-59	0.333	3.37E-01	3.07E-01	
GA-67	0.361	3.19E+02	1.42E+03	
? CD-109	0.977	8.38E+00	2.55E+00	
? SN-126	0.999	8.03E-01	2.39E-01	
TL-208	0.871	1.06E+00	3.35E-01	
PB-210	0.974	1.03E+00	1.00E+00	
BI-212	0.776	1.77E+00	1.49E+00	
PB-212	0.847	1.84E+00	3.71E-01	
BI-214	0.714	1.64E+00	3.81E-01	
PB-214	0.996	9.65E-01	3.15E-01	
RA-226	0.992	5.10E+00	9.75E+00	
AC-228	0.547	1.46E+00	5.24E-01	
PA-234M	0.992	9.57E+00	1.09E+01	

- ? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1510087-11
CP4106S03-04

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 9:17:44AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	62.09	4.47301E-02	34.99	Tol.	TH-230
3	76.32	2.07988E-01	9.75	D-Esc	
11	387.46	1.00699E-02	57.35		
12	510.86	1.72247E-02	38.41		
17	967.73	1.47076E-02	34.77		
M 18	990.46	3.74725E-03	71.73		
m 19	995.55	3.95382E-03	48.42	Tol.	EU-154
22	1105.72	4.31424E-03	51.51		
24	1401.85	3.05556E-03	61.66		
26	1479.65	3.28125E-03	45.19		
27	1511.20	4.76010E-03	36.91		
28	1593.05	5.43803E-03	32.78	D-Esc	
29	1628.37	2.22222E-03	63.12		
30	1637.77	1.94444E-03	37.80		
31	1712.28	2.55952E-03	55.87		
32	1719.67	1.38889E-03	44.72		
33	1731.30	2.73148E-03	43.44		
34	1765.73	5.98380E-03	25.03		
35	1802.61	1.38889E-03	44.72		
36	2383.90	2.77778E-03	31.62		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Analysis Report for 1510087-11
CP4106S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	3.21E-01	1.90E+00	1.90E+00
+	NA-22	1274.54	99.94	-6.56E-02	1.95E-01	1.95E-01
+	NA-24	1368.53	99.99	1.81E+14	8.31E+14	9.23E+14
		2754.09	99.86	1.15E+14		8.31E+14
+	AL-26	1808.65	99.76	-7.69E-02	1.15E-01	1.15E-01
+	K-40	1460.81	* 10.67	1.92E+01	1.32E+00	1.32E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-5.04E-03	9.36E-02	9.36E-02
		78.34	96.00	2.96E-01		1.21E-01
+	SC-46	889.25	99.98	-2.92E-02	2.12E-01	2.12E-01
		1120.51	99.99	4.34E-01		3.80E-01
+	V-48	983.52	99.98	-9.13E-02	6.75E-01	6.75E-01
		1312.10	97.50	1.10E-02		8.54E-01
+	CR-51	320.08	9.83	3.39E-01	2.81E+00	2.81E+00
+	MN-54	834.83	99.97	-1.53E-02	1.82E-01	1.82E-01
+	CO-56	846.75	99.96	-2.11E-02	2.24E-01	2.24E-01
		1037.75	14.03	2.07E-01		1.70E+00
		1238.25	67.00	1.56E-01		5.15E-01
		1771.40	15.51	-2.11E-01		1.73E+00
		2598.48	16.90	7.13E-02		1.39E+00
+	CO-57	122.06	85.51	-2.43E-03	1.15E-01	1.15E-01
		136.48	10.60	2.96E-02		1.00E+00
+	CO-58	810.76	99.40	2.92E-02	2.27E-01	2.27E-01
+	FE-59	1099.22	* 56.50	3.37E-01	4.80E-01	4.80E-01
		1291.56	43.20	6.89E-02		7.53E-01
+	CO-60	1173.22	100.00	1.12E-01	2.14E-01	2.41E-01
		1332.49	100.00	9.48E-02		2.14E-01
+	ZN-65	1115.52	50.75	-6.07E-02	4.68E-01	4.68E-01
+	GA-67	93.31	* 35.70	3.19E+02	4.82E+02	4.82E+02
		208.95	2.24	4.54E+03		5.61E+03
		300.22	16.00	2.53E+02		8.82E+02
+	SE-75	121.11	16.70	-1.36E-02	1.99E-01	6.52E-01
		136.00	59.20	-1.72E-02		1.99E-01
		264.65	59.80	-1.45E-01		2.30E-01
		279.53	25.20	3.65E-02		5.63E-01
		400.65	11.40	5.33E-01		1.48E+00
+	RB-82	776.52	13.00	1.61E-01	3.04E+00	3.04E+00
+	RB-83	520.41	46.00	6.38E-02	3.75E-01	3.75E-01
		529.64	30.30	-9.11E-02		5.89E-01
		552.65	16.40	6.36E-01		1.11E+00
+	KR-85	513.99	0.43	3.94E+01	4.07E+01	4.07E+01
+	SR-85	513.99	99.27	2.43E-01	2.51E-01	2.51E-01
+	Y-88	898.02	93.40	7.29E-02	1.58E-01	2.40E-01
		1836.01	99.38	-7.25E-02		1.58E-01
+	NB-93M	16.57	9.43	9.36E-01	4.58E-01	4.58E-01
+	NB-94	702.63	100.00	-4.18E-02	1.61E-01	1.69E-01
		871.10	100.00	1.45E-02		1.61E-01

Analysis Report for 1510087-11
CP4106S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-95	765.79	99.81	9.99E-02	3.58E-01	3.58E-01
+	NB-95M	235.69	25.00	9.20E+02	3.82E+02	3.82E+02
+	ZR-95	724.18	43.70	4.65E-01	4.33E-01	6.68E-01
		756.72	55.30	9.15E-02		4.33E-01
+	MO-99	181.06	6.20	3.01E+02	4.54E+03	6.69E+03
		739.58	12.80	5.29E+02		4.54E+03
		778.00	4.50	-4.66E+03		1.26E+04
+	RU-103	497.08	89.00	1.23E-01	2.77E-01	2.77E-01
+	RU-106	621.84	9.80	2.53E-01	1.48E+00	1.48E+00
+	AG-108M	433.93	89.90	-7.38E-02	1.48E-01	1.48E-01
		614.37	90.40	-2.33E-02		2.00E-01
		722.95	90.50	2.95E-02		2.14E-01
+	CD-109	88.03	* 3.72	8.38E+00	4.66E+00	4.66E+00
+	AG-110M	657.75	93.14	-2.52E-02	1.65E-01	1.65E-01
		677.61	10.53	-5.04E-01		1.57E+00
		706.67	16.46	2.24E-01		1.17E+00
		763.93	21.98	4.56E-01		9.48E-01
		884.67	71.63	3.36E-02		2.73E-01
		1384.27	23.94	-4.52E-01		7.02E-01
+	CD-113M	263.70	0.02	-1.99E+02	4.98E+02	4.98E+02
+	SN-113	255.12	1.93	1.71E+00	2.41E-01	7.37E+00
		391.69	64.90	3.08E-02		2.41E-01
+	TE123M	159.00	84.10	4.93E-02	1.55E-01	1.55E-01
+	SB-124	602.71	97.87	-3.11E-02	2.41E-01	2.41E-01
		645.85	7.26	4.16E-01		2.82E+00
		722.78	11.10	-6.30E-02		2.38E+00
		1691.02	49.00	3.51E-02		4.70E-01
+	I-125	35.49	6.49	-5.87E-01	1.13E+00	1.13E+00
+	SB-125	176.33	6.89	-1.60E-02	4.43E-01	1.58E+00
		427.89	29.33	-1.66E-01		4.43E-01
		463.38	10.35	3.77E-01		1.43E+00
		600.56	17.80	-1.78E-01		9.08E-01
		635.90	11.32	1.19E-01		1.26E+00
+	SB-126	414.70	83.30	3.69E-01	9.59E-01	1.01E+00
		666.33	99.60	9.59E-02		9.59E-01
		695.00	99.60	-4.52E-02		1.01E+00
		720.50	53.80	1.66E-01		2.00E+00
+	SN-126	87.57	* 37.00	8.03E-01	4.46E-01	4.46E-01
+	SB-127	473.00	25.00	-4.26E+01	1.64E+02	1.85E+02
		685.20	35.70	-1.25E+01		1.64E+02
		783.80	14.70	-5.27E+01		3.60E+02
+	I-129	29.78	57.00	-2.05E-02	8.53E-02	8.53E-02
		33.60	13.20	-1.16E-01		3.74E-01
		39.58	7.52	-2.14E-01		7.19E-01
+	I-131	284.30	6.05	4.00E+00	2.17E+00	3.22E+01
		364.48	81.20	-2.85E+00		2.17E+00
		636.97	7.26	3.74E+00		3.19E+01
		722.89	1.80	-4.45E+00		1.68E+02

Analysis Report for 1510087-11
CP4106S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE-132	49.72	13.10	4.59E+01	1.29E+02	5.31E+02
		228.16	88.00	-6.21E+01		1.29E+02
+	BA-133	81.00	33.00	-3.09E-01	3.11E-01	3.31E-01
		302.84	17.80	3.61E-02		7.28E-01
		356.01	60.00	6.73E-02		3.11E-01
+	I-133	529.87	86.30	-5.39E+09	3.49E+10	3.49E+10
+	XE-133	81.00	38.00	-2.00E+01	2.14E+01	2.14E+01
+	CS-134	563.23	8.38	-3.68E-01	2.11E-01	1.68E+00
		569.32	15.43	4.13E-01		1.02E+00
		604.70	97.60	-1.54E-02		2.11E-01
		795.84	85.40	6.86E-02		2.26E-01
		801.93	8.73	-6.48E-01		2.12E+00
+	CS-135	268.24	16.00	-3.97E-02	7.41E-01	7.41E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	2.20E+00	8.37E-01	7.88E+00
		163.89	4.61	2.49E-01		1.27E+01
		176.55	13.56	-4.44E-02		4.39E+00
		273.65	12.66	2.88E+00		5.53E+00
		340.57	48.50	8.48E-02		1.65E+00
		818.50	99.70	-2.12E-01		8.37E-01
		1048.07	79.60	3.47E-01		1.28E+00
		1235.34	19.70	3.00E+00		7.50E+00
+	CS-137	661.65	85.12	1.91E-02	1.80E-01	1.80E-01
+	LA-138	788.74	34.00	-2.20E-01	2.25E-01	4.65E-01
		1435.80	66.00	6.50E-02		2.25E-01
+	CE-139	165.85	80.35	-4.16E-02	1.51E-01	1.51E-01
+	BA-140	162.64	6.70	2.88E+00	3.00E+00	9.26E+00
		304.84	4.50	9.65E-01		1.61E+01
		423.70	3.20	-1.03E+01		2.38E+01
		437.55	2.00	2.77E+01		4.27E+01
		537.32	25.00	-1.10E+00		3.00E+00
+	LA-140	328.77	20.50	2.81E-01	1.22E+00	3.80E+00
		487.03	45.50	2.27E-02		1.69E+00
		815.85	23.50	-1.88E+00		3.68E+00
		1596.49	95.49	3.54E-02		1.22E+00
+	CE-141	145.44	48.40	-2.30E-01	4.05E-01	4.05E-01
+	CE-143	57.36	11.80	-5.89E+05	5.09E+06	8.80E+06
		293.26	42.00	4.92E+06		5.09E+06
		664.55	5.20	1.07E+07		4.21E+07
+	CE-144	133.54	10.80	-6.39E-03	9.79E-01	9.79E-01
+	PM-144	476.78	42.00	1.13E-01	1.38E-01	3.34E-01
		618.01	98.60	-4.37E-02		1.38E-01
		696.49	99.49	-1.53E-02		1.73E-01
+	PM-145	36.85	21.70	-1.36E-01	1.31E-01	2.35E-01
		37.36	39.70	-7.81E-02		1.31E-01
		42.30	15.10	-6.10E-02		4.01E-01
		72.40	2.31	7.83E+00		4.80E+00

Analysis Report for 1510087-11
CP4106S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-146	453.90	39.94	-1.14E-01	3.26E-01	3.26E-01
		735.90	14.01	-9.81E-02		1.11E+00
		747.13	13.10	1.87E-01		1.22E+00
+	ND-147	91.11	28.90	7.42E+00	3.02E+00	3.02E+00
		531.02	13.10	9.65E-01		8.21E+00
+	PM-149	285.90	3.10	7.97E+03	1.05E+05	1.05E+05
+	EU-152	121.78	20.50	-9.36E-03	4.43E-01	4.43E-01
		244.69	5.40	3.59E-01		2.57E+00
		344.27	19.13	4.95E-02		6.08E-01
		778.89	9.20	-6.13E-01		1.66E+00
		964.01	10.40	-1.21E-01		2.10E+00
		1085.78	7.22	1.10E+00		2.63E+00
		1112.02	9.60	-2.91E-01		1.92E+00
		1407.95	14.94	3.22E-01		1.14E+00
+	GD-153	97.43	31.30	1.02E-01	3.20E-01	3.20E-01
		103.18	22.20	-3.74E-02		4.18E-01
+	EU-154	123.07	40.50	-7.00E-02	2.26E-01	2.26E-01
		723.30	19.70	1.36E-01		9.92E-01
		873.19	11.50	-4.29E-01		1.38E+00
		996.32	10.30	-1.30E+00		1.68E+00
		1004.76	17.90	-7.45E-02		1.04E+00
		1274.45	35.50	-1.82E-01		5.40E-01
+	EU-155	86.50	30.90	8.47E-02	3.40E-01	3.40E-01
		105.30	20.70	-1.72E-01		4.14E-01
+	EU-156	811.77	10.40	5.25E-01	6.88E+00	6.88E+00
		1153.47	7.20	1.48E+00		1.32E+01
		1230.71	8.90	-1.22E+01		1.14E+01
+	HO-166M	184.41	72.60	1.92E-01	1.73E-01	1.73E-01
		280.45	29.60	3.50E-02		4.00E-01
		410.94	11.10	-4.36E-01		1.16E+00
		711.69	54.10	-2.25E-02		3.10E-01
+	TM-171	66.72	0.14	-3.48E+00	6.53E+01	6.53E+01
+	HF-172	81.75	4.52	-7.19E+00	8.69E-01	2.33E+00
		125.81	11.30	4.30E-01		8.69E-01
+	LU-172	181.53	20.60	4.64E-01	8.94E+00	1.64E+01
		810.06	16.63	3.72E+00		2.89E+01
		912.12	15.25	6.92E+01		5.00E+01
		1093.66	62.50	2.88E-01		8.94E+00
+	LU-173	100.72	5.24	-7.47E-01	6.02E-01	1.63E+00
		272.11	21.20	6.49E-02		6.02E-01
+	HF-175	343.40	84.00	1.55E-02	2.00E-01	2.00E-01
+	LU-176	88.34	13.30	8.98E-01	1.26E-01	8.07E-01
		201.83	86.00	1.00E-02		1.35E-01
		306.78	94.00	-5.14E-02		1.26E-01
+	TA-182	67.75	41.20	-1.40E-02	2.61E-01	2.61E-01
		1121.30	34.90	7.77E-01		9.80E-01
		1189.05	16.23	5.13E-01		1.73E+00
		1221.41	26.98	-2.31E-02		1.08E+00
		1231.02	11.44	-2.60E+00		2.43E+00

Analysis Report for 1510087-11
CP4106S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	IR-192	308.46	29.68	-2.20E-01	3.82E-01	5.17E-01
		468.07	48.10	-2.35E-02		3.82E-01
+	HG-203	279.19	77.30	1.60E-02	2.47E-01	2.47E-01
+	BI-207	569.67	97.72	6.34E-02	1.57E-01	1.57E-01
		1063.62	74.90	2.87E-02		2.45E-01
+	TL-208	583.14	* 30.22	1.31E+00	5.98E-01	6.69E-01
		860.37	4.48	5.60E-01		3.95E+00
		2614.66	* 35.85	8.34E-01		5.98E-01
+	BI-210M	262.00	45.00	-1.92E-02	2.54E-01	2.54E-01
		300.00	23.00	1.90E-01		6.69E-01
+	PB-210	46.50	* 4.25	1.03E+00	1.64E+00	1.64E+00
+	PB-211	404.84	2.90	1.28E+00	4.71E+00	4.71E+00
		831.96	2.90	1.17E+00		5.86E+00
+	BI-212	727.17	* 11.80	1.77E+00	2.38E+00	2.38E+00
		1620.62	2.75	1.27E-01		4.78E+00
+	PB-212	238.63	* 44.60	1.84E+00	4.65E-01	4.65E-01
		300.09	3.41	1.28E+00		4.52E+00
+	BI-214	609.31	* 46.30	1.54E+00	5.14E-01	5.14E-01
		1120.29	* 15.10	2.44E+00		1.63E+00
		1764.49	15.80	-9.91E-02		1.54E+00
		2204.22	4.98	1.05E+00		4.22E+00
+	PB-214	295.21	* 19.19	6.66E-01	5.25E-01	9.80E-01
		351.92	* 37.19	1.08E+00		5.25E-01
+	RN-219	401.80	6.50	1.13E+00	2.15E+00	2.15E+00
+	RA-223	323.87	3.88	-4.26E-01	3.30E+00	3.30E+00
+	RA-224	240.98	3.95	2.07E+01	5.02E+00	5.02E+00
+	RA-225	40.00	31.00	-2.40E-01	8.08E-01	8.08E-01
+	RA-226	186.21	* 3.28	5.10E+00	4.52E+00	4.52E+00
+	TH-227	50.10	8.40	6.91E-02	7.99E-01	7.99E-01
		236.00	11.50	3.79E+00		1.58E+00
		256.20	6.30	7.58E-01		1.89E+00
+	AC-228	338.32	* 11.40	1.80E+00	9.67E-01	1.36E+00
		911.07	* 27.70	1.28E+00		9.67E-01
		969.11	16.60	1.25E+00		1.50E+00
+	TH-230	48.44	16.90	1.57E-02	3.94E-01	3.94E-01
		62.85	4.60	1.57E+00		1.85E+00
		67.67	0.37	-1.28E+00		2.38E+01
+	PA-231	283.67	1.60	-4.15E+00	5.60E+00	7.13E+00
		302.67	2.30	2.77E-01		5.60E+00
+	TH-231	25.64	14.70	-7.49E-02	3.40E-01	3.40E-01
		84.21	6.40	-6.02E+00		1.52E+00
+	PA-233	311.98	38.60	-1.99E-02	6.86E-01	6.86E-01
+	PA-234	131.20	20.40	6.84E-02	4.75E-01	4.75E-01
		733.99	8.80	2.07E-01		1.81E+00
		946.00	12.00	1.78E-01		1.43E+00
+	PA-234M	1001.03	* 0.92	9.57E+00	1.77E+01	1.77E+01
+	TH-234	63.29	3.80	-3.15E-01	2.26E+00	2.26E+00

Analysis Report for 1510087-11
CP4106S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	U-235	143.76	10.50	4.41E-03	9.47E-01	9.47E-01
		163.35	4.70	4.36E-02		2.22E+00
		205.31	4.70	5.19E-01		2.54E+00
+	NP-237	86.50	12.60	2.05E-01	8.23E-01	8.23E-01
+	NP-239	106.10	22.70	-2.32E+03	5.58E+03	5.58E+03
		228.18	10.70	-3.18E+03		1.52E+04
		277.60	14.10	1.50E+02		1.27E+04
+	AM-241	59.54	35.90	1.51E-01	2.24E-01	2.24E-01
+	AM-243	74.67	66.00	7.40E-01	1.81E-01	1.81E-01
+	CM-243	209.75	3.29	1.08E+00	8.62E-01	3.65E+00
		228.14	10.60	-4.97E-01		1.04E+00
		277.60	14.00	1.02E-02		8.62E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59	10.42	1.90E+00	1.90E+00	3.21E-01	8.95E-01
	NA-22	1274.54	99.94	1.95E-01	1.95E-01	-6.56E-02	8.78E-02
	NA-24	1368.53	99.99	9.23E+14	8.31E+14	1.81E+14	4.07E+14
		2754.09	99.86	8.31E+14		1.15E+14	3.22E+14
	AL-26	1808.65	99.76	1.15E-01	1.15E-01	-7.69E-02	4.47E-02
+	K-40	1460.81	* 10.67	1.32E+00	1.32E+00	1.92E+01	5.61E-01
@	AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88	94.40	9.36E-02	9.36E-02	-5.04E-03	4.60E-02
		78.34	96.00	1.21E-01		2.96E-01	5.98E-02
	SC-46	889.25	99.98	2.12E-01	2.12E-01	-2.92E-02	9.72E-02

Analysis Report for 1510087-11

CP4106S03-04

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SC-46	1120.51	99.99	3.80E-01	2.12E-01	4.34E-01	1.79E-01
V-48	983.52	99.98	6.75E-01	6.75E-01	-9.13E-02	3.06E-01
	1312.10	97.50	8.54E-01		1.10E-02	3.86E-01
CR-51	320.08	9.83	2.81E+00	2.81E+00	3.39E-01	1.35E+00
MN-54	834.83	99.97	1.82E-01	1.82E-01	-1.53E-02	8.39E-02
CO-56	846.75	99.96	2.24E-01	2.24E-01	-2.11E-02	1.03E-01
	1037.75	14.03	1.70E+00		2.07E-01	7.76E-01
	1238.25	67.00	5.15E-01		1.56E-01	2.39E-01
	1771.40	15.51	1.73E+00		-2.11E-01	7.54E-01
	2598.48	16.90	1.39E+00		7.13E-02	5.63E-01
CO-57	122.06	85.51	1.15E-01	1.15E-01	-2.43E-03	5.61E-02
	136.48	10.60	1.00E+00		2.96E-02	4.90E-01
CO-58	810.76	99.40	2.27E-01	2.27E-01	2.92E-02	1.05E-01
+ FE-59	1099.22 *	56.50	4.80E-01	4.80E-01	3.37E-01	2.15E-01
	1291.56	43.20	7.53E-01		6.89E-02	3.39E-01
CO-60	1173.22	100.00	2.41E-01	2.14E-01	1.12E-01	1.11E-01
	1332.49	100.00	2.14E-01		9.48E-02	9.67E-02
ZN-65	1115.52	50.75	4.68E-01	4.68E-01	-6.07E-02	2.16E-01
+ GA-67	93.31 *	35.70	4.82E+02	4.82E+02	3.19E+02	2.38E+02
	208.95	2.24	5.61E+03		4.54E+03	2.73E+03
	300.22	16.00	8.82E+02		2.53E+02	4.26E+02
SE-75	121.11	16.70	6.52E-01	1.99E-01	-1.36E-02	3.18E-01
	136.00	59.20	1.99E-01		-1.72E-02	9.68E-02
	264.65	59.80	2.30E-01		-1.45E-01	1.11E-01
	279.53	25.20	5.63E-01		3.65E-02	2.71E-01
	400.65	11.40	1.48E+00		5.33E-01	7.08E-01
RB-82	776.52	13.00	3.04E+00	3.04E+00	1.61E-01	1.41E+00
RB-83	520.41	46.00	3.75E-01	3.75E-01	6.38E-02	1.76E-01
	529.64	30.30	5.89E-01		-9.11E-02	2.77E-01
	552.65	16.40	1.11E+00		6.36E-01	5.21E-01
KR-85	513.99	0.43	4.07E+01	4.07E+01	3.94E+01	1.94E+01
SR-85	513.99	99.27	2.51E-01	2.51E-01	2.43E-01	1.20E-01
Y-88	898.02	93.40	2.40E-01	1.58E-01	7.29E-02	1.11E-01
	1836.01	99.38	1.58E-01		-7.25E-02	6.28E-02
NB-93M	16.57	9.43	4.58E-01	4.58E-01	9.36E-01	2.23E-01
NB-94	702.63	100.00	1.69E-01	1.61E-01	-4.18E-02	7.90E-02
	871.10	100.00	1.61E-01		1.45E-02	7.36E-02
NB-95	765.79	99.81	3.58E-01	3.58E-01	9.99E-02	1.68E-01
NB-95M	235.69	25.00	3.82E+02	3.82E+02	9.20E+02	1.87E+02
ZR-95	724.18	43.70	6.68E-01	4.33E-01	4.65E-01	3.16E-01
	756.72	55.30	4.33E-01		9.15E-02	2.02E-01
MO-99	181.06	6.20	6.69E+03	4.54E+03	3.01E+02	3.25E+03
	739.58	12.80	4.54E+03		5.29E+02	2.10E+03
	778.00	4.50	1.26E+04		-4.66E+03	5.80E+03
RU-103	497.08	89.00	2.77E-01	2.77E-01	1.23E-01	1.31E-01
RU-106	621.84	9.80	1.48E+00	1.48E+00	2.53E-01	6.88E-01
AG-108M	433.93	89.90	1.48E-01	1.48E-01	-7.38E-02	7.01E-02
	614.37	90.40	2.00E-01		-2.33E-02	9.47E-02
	722.95	90.50	2.14E-01		2.95E-02	1.01E-01
+ CD-109	88.03 *	3.72	4.66E+00	4.66E+00	8.38E+00	2.30E+00
AG-110M	657.75	93.14	1.65E-01	1.65E-01	-2.52E-02	7.68E-02
	677.61	10.53	1.57E+00		-5.04E-01	7.30E-01
	706.67	16.46	1.17E+00		2.24E-01	5.50E-01

Analysis Report for 1510087-11
CP4106S03-04

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AG-110M	763.93	21.98	9.48E-01	1.65E-01	4.56E-01	4.45E-01
	884.67	71.63	2.73E-01		3.36E-02	1.26E-01
	1384.27	23.94	7.02E-01		-4.52E-01	3.04E-01
CD-113M	263.70	0.02	4.98E+02	4.98E+02	-1.99E+02	2.40E+02
SN-113	255.12	1.93	7.37E+00	2.41E-01	1.71E+00	3.56E+00
	391.69	64.90	2.41E-01		3.08E-02	1.15E-01
TE123M	159.00	84.10	1.55E-01	1.55E-01	4.93E-02	7.56E-02
SB-124	602.71	97.87	2.41E-01	2.41E-01	-3.11E-02	1.14E-01
	645.85	7.26	2.82E+00		4.16E-01	1.31E+00
	722.78	11.10	2.38E+00		-6.30E-02	1.12E+00
	1691.02	49.00	4.70E-01		3.51E-02	1.98E-01
I-125	35.49	6.49	1.13E+00	1.13E+00	-5.87E-01	5.50E-01
SB-125	176.33	6.89	1.58E+00	4.43E-01	-1.60E-02	7.67E-01
	427.89	29.33	4.43E-01		-1.66E-01	2.10E-01
	463.38	10.35	1.43E+00		3.77E-01	6.77E-01
	600.56	17.80	9.08E-01		-1.78E-01	4.27E-01
	635.90	11.32	1.26E+00		1.19E-01	5.86E-01
SB-126	414.70	83.30	1.01E+00	9.59E-01	3.69E-01	4.82E-01
	666.33	99.60	9.59E-01		9.59E-02	4.47E-01
	695.00	99.60	1.01E+00		-4.52E-02	4.70E-01
	720.50	53.80	2.00E+00		1.66E-01	9.34E-01
+ SN-126	87.57	* 37.00	4.46E-01	4.46E-01	8.03E-01	2.20E-01
SB-127	473.00	25.00	1.85E+02	1.64E+02	-4.26E+01	8.74E+01
	685.20	35.70	1.64E+02		-1.25E+01	7.66E+01
	783.80	14.70	3.60E+02		-5.27E+01	1.65E+02
I-129	29.78	57.00	8.53E-02	8.53E-02	-2.05E-02	4.16E-02
	33.60	13.20	3.74E-01		-1.16E-01	1.82E-01
	39.58	7.52	7.19E-01		-2.14E-01	3.51E-01
I-131	284.30	6.05	3.22E+01	2.17E+00	4.00E+00	1.55E+01
	364.48	81.20	2.17E+00		-2.85E+00	1.03E+00
	636.97	7.26	3.19E+01		3.74E+00	1.48E+01
	722.89	1.80	1.68E+02		-4.45E+00	7.89E+01
TE-132	49.72	13.10	5.31E+02	1.29E+02	4.59E+01	2.60E+02
	228.16	88.00	1.29E+02		-6.21E+01	6.24E+01
BA-133	81.00	33.00	3.31E-01	3.11E-01	-3.09E-01	1.63E-01
	302.84	17.80	7.28E-01		3.61E-02	3.50E-01
	356.01	60.00	3.11E-01		6.73E-02	1.51E-01
I-133	529.87	86.30	3.49E+10	3.49E+10	-5.39E+09	1.64E+10
XE-133	81.00	38.00	2.14E+01	2.14E+01	-2.00E+01	1.05E+01
CS-134	563.23	8.38	1.68E+00	2.11E-01	-3.68E-01	7.87E-01
	569.32	15.43	1.02E+00		4.13E-01	4.82E-01
	604.70	97.60	2.11E-01		-1.54E-02	1.00E-01
	795.84	85.40	2.26E-01		6.86E-02	1.06E-01
	801.93	8.73	2.12E+00		-6.48E-01	9.86E-01
CS-135	268.24	16.00	7.41E-01	7.41E-01	-3.97E-02	3.57E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	7.88E+00	8.37E-01	2.20E+00	3.84E+00
	163.89	4.61	1.27E+01		2.49E-01	6.16E+00
	176.55	13.56	4.39E+00		-4.44E-02	2.13E+00
	273.65	12.66	5.53E+00		2.88E+00	2.67E+00
	340.57	48.50	1.65E+00		8.48E-02	7.94E-01

Analysis Report for 1510087-11

CP4106S03-04

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-136	818.50	99.70	8.37E-01	8.37E-01	-2.12E-01	3.83E-01
	1048.07	79.60	1.28E+00		3.47E-01	5.86E-01
	1235.34	19.70	7.50E+00		3.00E+00	3.49E+00
CS-137	661.65	85.12	1.80E-01	1.80E-01	1.91E-02	8.39E-02
LA-138	788.74	34.00	4.65E-01	2.25E-01	-2.20E-01	2.15E-01
	1435.80	66.00	2.25E-01		6.50E-02	9.63E-02
CE-139	165.85	80.35	1.51E-01	1.51E-01	-4.16E-02	7.34E-02
BA-140	162.64	6.70	9.26E+00	3.00E+00	2.88E+00	4.51E+00
	304.84	4.50	1.61E+01		9.65E-01	7.73E+00
	423.70	3.20	2.38E+01		-1.03E+01	1.13E+01
	437.55	2.00	4.27E+01		2.77E+01	2.04E+01
	537.32	25.00	3.00E+00		-1.10E+00	1.40E+00
LA-140	328.77	20.50	3.80E+00	1.22E+00	2.81E-01	1.82E+00
	487.03	45.50	1.69E+00		2.27E-02	7.94E-01
	815.85	23.50	3.68E+00		-1.88E+00	1.68E+00
	1596.49	95.49	1.22E+00		3.54E-02	5.39E-01
CE-141	145.44	48.40	4.05E-01	4.05E-01	-2.30E-01	1.97E-01
CE-143	57.36	11.80	8.80E+06	5.09E+06	-5.89E+05	4.31E+06
	293.26	42.00	5.09E+06		4.92E+06	2.47E+06
	664.55	5.20	4.21E+07		1.07E+07	1.97E+07
CE-144	133.54	10.80	9.79E-01	9.79E-01	-6.39E-03	4.77E-01
PM-144	476.78	42.00	3.34E-01	1.38E-01	1.13E-01	1.58E-01
	618.01	98.60	1.38E-01		-4.37E-02	6.39E-02
	696.49	99.49	1.73E-01		-1.53E-02	8.09E-02
PM-145	36.85	21.70	2.35E-01	1.31E-01	-1.36E-01	1.15E-01
	37.36	39.70	1.31E-01		-7.81E-02	6.38E-02
	42.30	15.10	4.01E-01		-6.10E-02	1.96E-01
	72.40	2.31	4.80E+00		7.83E+00	2.36E+00
PM-146	453.90	39.94	3.26E-01	3.26E-01	-1.14E-01	1.54E-01
	735.90	14.01	1.11E+00		-9.81E-02	5.12E-01
	747.13	13.10	1.22E+00		1.87E-01	5.66E-01
ND-147	91.11	28.90	3.02E+00	3.02E+00	7.42E+00	1.48E+00
	531.02	13.10	8.21E+00		9.65E-01	3.86E+00
PM-149	285.90	3.10	1.05E+05	1.05E+05	7.97E+03	5.05E+04
EU-152	121.78	20.50	4.43E-01	4.43E-01	-9.36E-03	2.16E-01
	244.69	5.40	2.57E+00		3.59E-01	1.25E+00
	344.27	19.13	6.08E-01		4.95E-02	2.90E-01
	778.89	9.20	1.66E+00		-6.13E-01	7.64E-01
	964.01	10.40	2.10E+00		-1.21E-01	9.80E-01
	1085.78	7.22	2.63E+00		1.10E+00	1.20E+00
	1112.02	9.60	1.92E+00		-2.91E-01	8.73E-01
	1407.95	14.94	1.14E+00		3.22E-01	5.00E-01
GD-153	97.43	31.30	3.20E-01	3.20E-01	1.02E-01	1.57E-01
	103.18	22.20	4.18E-01		-3.74E-02	2.04E-01
EU-154	123.07	40.50	2.26E-01	2.26E-01	-7.00E-02	1.10E-01
	723.30	19.70	9.92E-01		1.36E-01	4.67E-01
	873.19	11.50	1.38E+00		-4.29E-01	6.30E-01
	996.32	10.30	1.68E+00		-1.30E+00	7.68E-01
	1004.76	17.90	1.04E+00		-7.45E-02	4.75E-01
	1274.45	35.50	5.40E-01		-1.82E-01	2.43E-01
EU-155	86.50	30.90	3.40E-01	3.40E-01	8.47E-02	1.67E-01
	105.30	20.70	4.14E-01		-1.72E-01	2.02E-01
EU-156	811.77	10.40	6.88E+00	6.88E+00	5.25E-01	3.17E+00

Analysis Report for 1510087-11

CP4106S03-04

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
EU-156	1153.47	7.20	1.32E+01	6.88E+00	1.48E+00	6.07E+00	
	1230.71	8.90	1.14E+01		-1.22E+01	5.22E+00	
HO-166M	184.41	72.60	1.73E-01	1.73E-01	1.92E-01	8.44E-02	
	280.45	29.60	4.00E-01		3.50E-02	1.93E-01	
	410.94	11.10	1.16E+00		-4.36E-01	5.50E-01	
	711.69	54.10	3.10E-01		-2.25E-02	1.45E-01	
TM-171	66.72	0.14	6.53E+01	6.53E+01	-3.48E+00	3.20E+01	
HF-172	81.75	4.52	2.33E+00	8.69E-01	-7.19E+00	1.15E+00	
	125.81	11.30	8.69E-01		4.30E-01	4.24E-01	
LU-172	181.53	20.60	1.64E+01	8.94E+00	4.64E-01	7.98E+00	
	810.06	16.63	2.89E+01		3.72E+00	1.33E+01	
	912.12	15.25	5.00E+01		6.92E+01	2.37E+01	
LU-173	1093.66	62.50	8.94E+00	6.02E-01	2.88E-01	4.08E+00	
	100.72	5.24	1.63E+00		-7.47E-01	7.97E-01	
	272.11	21.20	6.02E-01		6.49E-02	2.90E-01	
HF-175	343.40	84.00	2.00E-01	2.00E-01	1.55E-02	9.55E-02	
LU-176	88.34	13.30	8.07E-01	1.26E-01	8.98E-01	3.96E-01	
	201.83	86.00	1.35E-01		1.00E-02	6.53E-02	
	306.78	94.00	1.26E-01		-5.14E-02	6.04E-02	
TA-182	67.75	41.20	2.61E-01	2.61E-01	-1.40E-02	1.28E-01	
	1121.30	34.90	9.80E-01		7.77E-01	4.60E-01	
	1189.05	16.23	1.73E+00		5.13E-01	7.96E-01	
	1221.41	26.98	1.08E+00		-2.31E-02	4.96E-01	
	1231.02	11.44	2.43E+00		-2.60E+00	1.12E+00	
IR-192	308.46	29.68	5.17E-01	3.82E-01	-2.20E-01	2.47E-01	
	468.07	48.10	3.82E-01		-2.35E-02	1.81E-01	
HG-203	279.19	77.30	2.47E-01	2.47E-01	1.60E-02	1.19E-01	
BI-207	569.67	97.72	1.57E-01	1.57E-01	6.34E-02	7.40E-02	
	1063.62	74.90	2.45E-01		2.87E-02	1.12E-01	
+ TL-208	583.14	*	30.22	5.98E-01	1.31E+00	3.19E-01	
	860.37		4.48		3.95E+00	5.60E-01	1.83E+00
	2614.66	*	35.85		5.98E-01	8.34E-01	2.52E-01
BI-210M	262.00	45.00	2.54E-01	2.54E-01	-1.92E-02	1.22E-01	
	300.00	23.00	6.69E-01		1.90E-01	3.24E-01	
+ PB-210	46.50	*	1.64E+00	1.64E+00	1.03E+00	8.03E-01	
PB-211	404.84	2.90	4.71E+00	4.71E+00	1.28E+00	2.24E+00	
	831.96	2.90	5.86E+00		1.17E+00	2.71E+00	
+ BI-212	727.17	*	11.80	2.38E+00	1.77E+00	1.14E+00	
	1620.62		2.75		4.78E+00	1.27E-01	1.96E+00
+ PB-212	238.63	*	44.60	4.65E-01	1.84E+00	2.28E-01	
	300.09		3.41		4.52E+00	1.28E+00	2.19E+00
+ BI-214	609.31	*	46.30	5.14E-01	1.54E+00	2.47E-01	
	1120.29	*	15.10		1.63E+00	2.44E+00	7.61E-01
	1764.49		15.80		1.54E+00	-9.91E-02	6.92E-01
+ PB-214	2204.22		4.98	5.25E-01	1.05E+00	1.81E+00	
	295.21	*	19.19		9.80E-01	6.66E-01	4.78E-01
	351.92	*	37.19	5.25E-01	1.08E+00	2.55E-01	
RN-219	401.80	6.50	2.15E+00	2.15E+00	1.13E+00	1.02E+00	
RA-223	323.87	3.88	3.30E+00	3.30E+00	-4.26E-01	1.58E+00	
RA-224	240.98	3.95	5.02E+00	5.02E+00	2.07E+01	2.46E+00	
RA-225	40.00	31.00	8.08E-01	8.08E-01	-2.40E-01	3.94E-01	
+ RA-226	186.21	*	3.28	4.52E+00	5.10E+00	2.21E+00	
TH-227	50.10	8.40	7.99E-01	7.99E-01	6.91E-02	3.91E-01	

Analysis Report for 1510087-11

CP4106S03-04

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TH-227	236.00	11.50	1.58E+00	7.99E-01	3.79E+00	7.72E-01
	256.20	6.30	1.89E+00		7.58E-01	9.11E-01
+ AC-228	338.32 *	11.40	1.36E+00	9.67E-01	1.80E+00	6.57E-01
	911.07 *	27.70	9.67E-01		1.28E+00	4.58E-01
	969.11	16.60	1.50E+00		1.25E+00	7.04E-01
TH-230	48.44	16.90	3.94E-01	3.94E-01	1.57E-02	1.93E-01
	62.85	4.60	1.85E+00		1.57E+00	9.08E-01
	67.67	0.37	2.38E+01		-1.28E+00	1.17E+01
PA-231	283.67	1.60	7.13E+00	5.60E+00	-4.15E+00	3.42E+00
	302.67	2.30	5.60E+00		2.77E-01	2.69E+00
TH-231	25.64	14.70	3.40E-01	3.40E-01	-7.49E-02	1.66E-01
	84.21	6.40	1.52E+00		-6.02E+00	7.47E-01
PA-233	311.98	38.60	6.86E-01	6.86E-01	-1.99E-02	3.28E-01
PA-234	131.20	20.40	4.75E-01	4.75E-01	6.84E-02	2.31E-01
	733.99	8.80	1.81E+00		2.07E-01	8.42E-01
	946.00	12.00	1.43E+00		1.78E-01	6.56E-01
+ PA-234M	1001.03 *	0.92	1.77E+01	1.77E+01	9.57E+00	8.01E+00
TH-234	63.29	3.80	2.26E+00	2.26E+00	-3.15E-01	1.11E+00
U-235	143.76	10.50	9.47E-01	9.47E-01	4.41E-03	4.61E-01
	163.35	4.70	2.22E+00		4.36E-02	1.08E+00
	205.31	4.70	2.54E+00		5.19E-01	1.23E+00
NP-237	86.50	12.60	8.23E-01	8.23E-01	2.05E-01	4.04E-01
NP-239	106.10	22.70	5.58E+03	5.58E+03	-2.32E+03	2.72E+03
	228.18	10.70	1.52E+04		-3.18E+03	7.35E+03
	277.60	14.10	1.27E+04		1.50E+02	6.13E+03
AM-241	59.54	35.90	2.24E-01	2.24E-01	1.51E-01	1.10E-01
AM-243	74.67	66.00	1.81E-01	1.81E-01	7.40E-01	8.90E-02
CM-243	209.75	3.29	3.65E+00	8.62E-01	1.08E+00	1.77E+00
	228.14	10.60	1.04E+00		-4.97E-01	5.00E-01
	277.60	14.00	8.62E-01		1.02E-02	4.15E-01

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

: 00704

Analysis Report for 1510087-11
CP4106S03-04

No Data Review Comments Entered.

369: 19 20 13 19 10 16 20 12

Sample Title: CP4106S03-04

Channel	1	2	3	4	5	6	7	8
377:	15	20	19	10	15	7	12	8
385:	18	24	20	15	18	15	15	6
393:	20	18	9	15	10	16	22	14
401:	18	23	17	20	13	13	16	10
409:	15	10	14	18	10	17	15	20
417:	11	21	13	8	15	21	11	12
425:	13	13	12	15	12	16	7	18
433:	12	13	9	18	13	17	24	14
441:	21	10	9	9	6	14	10	11
449:	14	11	11	13	5	11	10	12
457:	14	17	21	5	8	18	20	16
465:	11	12	12	11	15	5	13	10
473:	8	7	14	11	14	11	10	11
481:	6	11	4	13	13	9	14	10
489:	5	11	8	10	14	12	13	10
497:	10	10	11	10	8	9	7	7
505:	10	10	18	11	19	22	43	17
513:	17	13	9	7	3	12	7	8
521:	7	15	10	12	11	12	11	8
529:	12	8	8	8	6	10	4	12
537:	5	11	9	5	8	11	11	10
545:	5	6	5	9	5	13	7	13
553:	8	5	11	9	7	6	7	8
561:	8	11	9	4	7	7	12	18
569:	7	7	10	13	10	8	7	9
577:	5	8	7	8	12	41	43	45
585:	10	10	9	9	8	8	12	8
593:	8	10	6	9	8	10	7	12
601:	6	9	16	10	11	10	22	44
609:	76	47	24	9	3	7	8	2
617:	3	7	2	6	10	7	5	9
625:	10	8	5	5	4	10	5	6
633:	6	8	8	9	3	7	7	4
641:	6	8	3	6	10	6	4	8
649:	7	6	6	5	4	5	6	5
657:	6	7	9	10	4	13	6	5
665:	6	7	8	9	7	5	5	13
673:	1	6	8	7	5	12	10	7
681:	5	3	15	8	4	11	11	8
689:	6	11	6	4	8	8	9	9
697:	5	6	12	6	9	6	9	8
705:	11	5	13	11	7	8	5	7
713:	8	2	8	9	8	7	7	7
721:	8	7	11	8	9	15	19	18
729:	9	6	8	5	7	4	9	5
737:	6	8	1	4	9	4	8	4
745:	6	7	7	7	5	3	8	8
753:	3	5	9	7	8	7	3	11
761:	2	8	9	8	7	5	10	18
769:	8	5	7	9	11	6	5	8
777:	5	4	3	3	4	8	4	4
785:	6	10	1	4	4	7	6	7
793:	8	5	14	7	6	10	6	6

801: 8 8 4 7 6 7 6 9

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Channel	1	2	3	4	5	6	7	8	9
809:	8	2	3	6	8	1	5	5	
817:	4	3	4	4	6	8	8	3	
825:	4	6	3	6	6	6	4	7	
833:	2	5	4	11	8	3	5	10	
841:	5	8	7	3	5	7	1	6	
849:	4	7	5	3	7	7	5	2	
857:	4	5	4	8	10	5	8	6	
865:	2	3	7	3	4	4	4	6	
873:	4	4	5	2	6	6	5	8	
881:	8	4	7	2	6	5	4	6	
889:	3	4	7	2	3	7	4	5	
897:	6	3	5	5	8	7	4	4	
905:	6	3	4	5	7	16	29	24	
913:	9	4	6	5	3	3	5	6	
921:	7	6	1	8	3	6	3	2	
929:	3	6	5	6	8	10	4	5	
937:	5	6	3	6	3	3	4	9	
945:	4	8	3	3	3	3	2	6	
953:	4	3	4	8	8	1	3	3	
961:	3	4	4	11	9	11	7	12	
969:	17	8	10	4	6	3	5	5	
977:	6	6	2	5	3	2	6	1	
985:	3	6	5	2	7	7	7	4	
993:	2	3	8	7	1	2	4	5	
1001:	8	7	4	3	4	3	4	3	
1009:	4	4	5	6	4	6	4	1	
1017:	2	5	7	2	4	4	5	5	
1025:	5	2	2	7	3	4	4	4	
1033:	6	6	4	4	4	0	5	5	
1041:	2	5	2	3	5	4	5	4	
1049:	2	4	5	5	5	1	4	8	
1057:	5	6	5	5	2	3	2	6	
1065:	6	1	6	3	1	0	3	8	
1073:	5	4	4	6	2	2	4	2	
1081:	2	3	5	2	3	3	6	3	
1089:	5	7	4	3	1	5	3	4	
1097:	5	8	7	9	1	2	4	5	
1105:	1	11	3	5	1	4	1	3	
1113:	5	4	3	7	6	7	11	16	
1121:	16	12	5	7	1	4	6	6	
1129:	3	4	4	4	2	9	7	4	
1137:	5	6	8	3	3	0	5	7	
1145:	3	5	4	2	3	2	7	7	
1153:	5	3	5	6	5	4	5	6	
1161:	4	2	5	7	4	3	4	3	
1169:	8	7	3	5	8	2	4	10	
1177:	5	5	3	5	4	8	6	2	
1185:	7	7	5	5	8	5	4	3	
1193:	3	2	6	2	10	11	4	4	
1201:	3	9	6	6	7	11	2	7	
1209:	2	2	4	4	8	3	5	5	
1217:	5	4	6	6	5	5	6	5	
1225:	6	9	6	4	5	7	8	4	

1233: 4 4 1 8 12 10 8 6

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Channel	1	2	3	4	5	6	7	8	9
1241:	3	4	5	4	5	4	4	5	
1249:	4	2	7	4	4	6	3	3	
1257:	2	4	6	5	1	3	1	2	
1265:	1	2	5	6	4	4	2	1	
1273:	4	1	2	5	2	6	3	2	
1281:	4	4	6	6	1	3	3	2	
1289:	2	3	3	4	3	3	5	2	
1297:	2	3	6	1	2	3	2	3	
1305:	4	1	2	3	4	2	3	2	
1313:	3	2	4	6	2	5	5	3	
1321:	0	2	2	6	2	1	6	5	
1329:	3	3	3	4	3	5	2	3	
1337:	2	0	2	0	0	2	1	4	
1345:	3	0	2	1	3	2	0	2	
1353:	1	2	1	1	3	3	2	2	
1361:	3	2	1	3	1	1	2	5	
1369:	3	2	1	1	1	1	2	2	
1377:	1	5	4	1	1	1	2	2	
1385:	2	2	1	2	5	2	1	2	
1393:	0	4	1	2	0	2	3	0	
1401:	4	3	5	1	3	0	2	1	
1409:	4	3	1	2	2	0	1	0	
1417:	4	3	1	0	4	1	2	1	
1425:	5	3	1	4	0	0	0	2	
1433:	1	0	2	3	0	0	2	2	
1441:	0	1	3	2	3	3	4	1	
1449:	2	1	1	2	0	1	0	1	
1457:	2	2	15	49	80	69	34	9	
1465:	0	1	1	1	1	0	3	2	
1473:	0	0	2	0	1	2	4	2	
1481:	3	1	1	0	0	0	2	4	
1489:	1	0	6	1	2	0	2	4	
1497:	2	1	0	1	1	4	3	0	
1505:	2	0	1	4	3	4	1	3	
1513:	2	1	2	1	0	0	0	3	
1521:	2	1	2	0	0	0	1	1	
1529:	4	0	1	1	2	2	1	0	
1537:	2	1	5	3	0	1	3	1	
1545:	0	2	0	1	1	1	1	0	
1553:	1	1	0	2	0	0	0	2	
1561:	0	1	1	3	1	0	0	2	
1569:	0	2	1	1	2	0	1	1	
1577:	1	1	0	1	3	1	2	1	
1585:	2	1	3	0	2	1	1	8	
1593:	6	2	3	3	0	1	0	3	
1601:	1	0	0	1	1	1	1	3	
1609:	1	0	1	1	0	1	0	2	
1617:	2	1	0	1	0	1	0	1	
1625:	1	1	1	3	1	4	1	0	
1633:	1	0	0	1	1	3	2	0	
1641:	0	1	3	1	1	2	1	2	
1649:	0	0	1	0	2	2	2	0	
1657:	1	2	1	1	2	0	1	1	

1665: 1 0 1 2 3 1 1 1

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Channel	1	2	3	4	5	6	7	8	9
1673:	0	0	0	0	1	0	1	1	
1681:	0	2	0	0	0	1	1	1	
1689:	3	0	1	2	2	0	0	1	
1697:	2	1	2	0	0	2	0	1	
1705:	1	2	0	1	3	1	1	1	
1713:	3	2	2	0	0	0	2	2	
1721:	1	0	0	0	0	1	0	0	
1729:	1	4	3	1	1	1	1	0	
1737:	0	1	1	2	1	0	1	0	
1745:	0	0	0	0	0	0	0	0	
1753:	1	1	0	0	0	1	2	1	
1761:	0	0	2	2	6	3	7	2	
1769:	1	1	0	3	1	0	1	0	
1777:	0	1	1	1	1	0	1	0	
1785:	0	0	0	1	1	1	1	0	
1793:	0	0	1	0	0	0	0	0	
1801:	0	2	2	1	0	0	0	2	
1809:	0	0	1	0	0	0	3	1	
1817:	0	2	1	0	0	1	1	0	
1825:	1	1	1	1	0	2	0	0	
1833:	1	0	1	0	0	1	0	2	
1841:	0	1	0	2	1	0	1	0	
1849:	0	2	1	0	1	2	0	0	
1857:	1	1	2	1	0	0	1	0	
1865:	2	0	0	2	0	1	0	0	
1873:	0	1	1	1	1	1	0	1	
1881:	0	0	0	0	0	2	1	2	
1889:	0	1	2	1	0	0	0	2	
1897:	0	1	1	1	0	0	0	0	
1905:	2	0	1	0	0	1	2	0	
1913:	2	1	0	1	0	0	0	1	
1921:	3	0	0	1	0	0	0	0	
1929:	1	0	0	0	1	0	0	1	
1937:	2	0	0	0	0	1	3	0	
1945:	0	2	1	0	0	1	0	0	
1953:	1	2	1	1	2	2	0	1	
1961:	2	0	1	0	0	0	0	1	
1969:	0	0	0	1	0	3	0	0	
1977:	0	0	0	1	0	0	1	0	
1985:	0	0	0	1	0	0	1	1	
1993:	1	1	1	0	0	1	1	1	
2001:	1	0	0	1	1	0	1	0	
2009:	0	1	1	0	0	0	0	1	
2017:	1	1	0	0	0	3	0	0	
2025:	0	0	1	1	0	0	1	0	
2033:	0	2	0	1	1	0	0	0	
2041:	2	0	1	0	0	0	1	1	
2049:	0	0	0	0	0	0	1	0	
2057:	2	0	0	0	0	0	1	0	
2065:	1	0	0	2	0	0	0	0	
2073:	1	0	1	0	0	0	1	0	
2081:	2	1	0	0	0	0	1	1	
2089:	0	0	0	2	0	1	0	2	

2097: 2 0 3 2 1 0 2 2

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Channel	1	2	3	4	5	6	7	8
2105:	2	2	0	1	1	0	0	0
2113:	0	1	2	0	0	1	1	0
2121:	1	2	2	0	1	0	2	2
2129:	0	0	0	0	0	0	1	0
2137:	0	1	0	1	1	2	0	0
2145:	1	1	1	1	2	0	1	0
2153:	0	1	1	1	1	0	2	1
2161:	0	1	1	1	0	0	0	1
2169:	0	0	0	0	0	0	0	0
2177:	0	0	1	1	0	0	0	2
2185:	1	0	0	0	0	1	0	1
2193:	1	0	1	1	1	0	1	0
2201:	0	1	3	1	2	1	0	3
2209:	0	1	1	0	1	2	0	1
2217:	0	1	0	0	0	1	0	0
2225:	0	0	0	1	0	2	1	0
2233:	1	0	0	0	0	0	1	2
2241:	0	0	2	0	1	0	1	0
2249:	2	0	0	1	0	0	0	0
2257:	1	1	2	1	0	0	0	0
2265:	2	0	1	1	0	0	0	0
2273:	0	0	1	0	0	0	0	0
2281:	0	0	0	0	0	2	0	0
2289:	1	2	0	0	0	0	2	1
2297:	1	1	0	0	1	1	0	1
2305:	4	0	1	0	1	0	1	0
2313:	0	0	0	0	2	1	0	0
2321:	0	0	1	1	0	0	2	3
2329:	0	1	0	0	2	0	0	2
2337:	2	1	0	2	0	1	0	1
2345:	1	0	1	0	1	1	2	0
2353:	1	0	2	3	0	0	0	1
2361:	1	2	1	2	1	3	0	0
2369:	1	1	1	0	0	0	0	0
2377:	1	0	0	1	0	0	0	4
2385:	2	2	1	0	0	0	1	1
2393:	1	0	0	0	0	0	0	0
2401:	1	0	1	1	0	0	0	0
2409:	2	0	0	1	0	0	0	1
2417:	0	0	1	0	0	0	1	0
2425:	1	0	2	0	1	0	1	0
2433:	0	1	1	0	0	0	0	1
2441:	0	0	1	0	0	0	0	1
2449:	3	1	1	3	1	1	0	0
2457:	2	1	0	1	1	1	0	1
2465:	0	1	1	0	2	0	0	0
2473:	0	2	1	1	1	0	0	0
2481:	1	0	0	2	0	1	0	0
2489:	2	0	0	0	0	0	1	0
2497:	1	0	0	1	0	0	1	0
2505:	0	1	1	2	1	0	0	0
2513:	0	0	0	1	0	0	0	0
2521:	0	0	0	0	2	0	0	0

2529: 0 0 0 0 0 1 0 1

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Channel	1	2	3	4	5	6	7	8
2537:	0	1	0	1	0	0	1	0
2545:	0	0	1	0	0	0	0	0
2553:	0	2	0	0	1	0	0	0
2561:	2	1	0	0	0	0	0	0
2569:	0	0	0	0	0	0	0	0
2577:	0	0	1	1	0	0	0	1
2585:	0	0	0	1	0	0	0	1
2593:	1	1	1	0	1	0	0	1
2601:	0	0	1	1	1	0	0	0
2609:	1	0	0	0	1	1	11	6
2617:	8	2	1	0	2	0	0	0
2625:	0	0	1	0	0	0	0	0
2633:	1	1	1	0	0	0	0	0
2641:	0	1	0	0	0	0	0	1
2649:	0	0	1	0	1	0	0	0
2657:	1	0	1	0	0	0	0	0
2665:	1	0	0	0	0	0	1	0
2673:	0	0	0	0	0	0	0	0
2681:	0	0	0	0	0	0	0	0
2689:	0	1	2	0	0	0	0	2
2697:	0	0	0	0	0	0	1	0
2705:	0	0	0	0	0	1	0	0
2713:	0	0	0	0	1	0	0	0
2721:	0	0	0	1	0	1	0	0
2729:	0	0	0	0	0	0	1	0
2737:	0	0	0	0	0	1	0	0
2745:	0	0	0	0	1	0	0	0
2753:	1	0	0	1	0	0	1	1
2761:	0	0	0	0	0	0	0	0
2769:	0	0	0	1	0	0	1	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	1	1	0	0
2793:	1	0	0	0	1	0	0	0
2801:	1	0	0	0	1	0	1	0
2809:	0	0	0	2	0	0	0	0
2817:	0	0	0	0	1	0	0	0
2825:	1	0	0	0	0	0	0	0
2833:	0	1	1	0	1	0	0	0
2841:	0	2	0	1	1	0	0	0
2849:	0	0	0	0	0	0	0	0
2857:	2	0	0	0	0	0	0	0
2865:	0	0	0	1	0	0	0	0
2873:	0	0	0	0	0	0	0	1
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	1	0	0	0	0	1
2905:	1	0	0	0	0	0	1	0
2913:	0	0	1	0	0	1	1	1
2921:	0	0	0	0	0	0	0	1
2929:	0	1	1	0	0	1	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	1	0
2953:	0	0	0	0	0	0	0	0

2961: 0 0 0 0 0 0 0 0 1

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Channel								
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	1	1	0	0	1
2985:	0	0	0	0	0	0	0	0
2993:	0	0	0	0	0	0	1	0
3001:	1	0	1	0	0	0	1	0
3009:	0	0	0	0	0	0	0	0
3017:	0	1	0	0	0	0	0	0
3025:	0	1	0	0	0	0	0	0
3033:	0	0	0	1	0	1	0	0
3041:	0	1	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	1	0	0	0	0	0	0
3065:	0	0	0	0	0	1	0	1
3073:	0	0	0	0	0	0	0	0
3081:	0	0	0	0	0	0	1	1
3089:	0	0	0	0	0	0	0	0
3097:	0	1	0	0	0	1	0	0
3105:	0	1	0	0	0	0	0	1
3113:	1	0	0	0	0	1	1	0
3121:	0	0	0	0	0	0	1	1
3129:	0	0	0	0	0	0	0	0
3137:	0	0	1	0	0	0	0	0
3145:	0	0	0	0	0	1	1	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	1
3185:	0	0	1	0	0	0	0	0
3193:	0	0	0	0	0	0	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	1	0	0	0	0	0	0	0
3225:	0	0	0	0	2	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	0	0	1
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	1
3273:	0	0	0	0	0	0	0	0
3281:	0	1	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	1	0	1	0	0
3313:	1	0	0	0	0	0	1	0
3321:	0	0	0	0	0	0	0	0
3329:	1	0	1	0	0	0	0	0
3337:	0	1	0	0	0	1	0	1
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	1	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	1	0	0	0	0	0	0
3385:	0	0	0	2	0	0	0	0

3393: 0 0 0 0 0 0 0 0 0

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	0	0
3409:	1	0	0	0	0	0	1	0
3417:	0	1	0	0	0	0	0	0
3425:	0	1	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	1	0	0
3457:	0	0	0	0	0	1	0	0
3465:	0	0	1	0	0	0	1	0
3473:	0	0	0	0	0	0	0	0
3481:	1	0	0	0	0	0	0	0
3489:	1	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	1	0	1
3513:	0	0	1	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	1	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	1	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	2
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	1	0	0	0	1	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	1	0	0	0	0	1
3609:	0	0	0	0	1	0	0	0
3617:	1	0	0	0	0	0	1	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	1	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	1	0	0	0	0	1
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	1	1	0	0	0	0	0	0
3689:	0	1	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	1	1	0	0	0	0	0
3721:	0	0	0	1	0	0	0	0
3729:	0	0	0	0	0	1	0	2
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	1	0	0	1	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	1	0	0	0	0	0	0	1
3801:	0	0	0	1	0	0	0	1
3809:	0	0	1	0	1	0	0	0
3817:	0	1	0	0	0	0	0	0

3825: 0 0 0 0 0 0 0 0

Sample Title: CP4106S03-04

Channel	1	2	3	4	5	6	7	8
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	1	0	0	0	0
3865:	0	0	0	0	0	0	0	2
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	1	0	0	0	0
3969:	0	0	0	0	1	0	0	0
3977:	0	0	0	0	0	0	0	1
3985:	0	0	0	0	0	1	0	0
3993:	0	0	0	0	0	0	1	0
4001:	0	0	0	0	0	0	1	0
4009:	0	0	0	0	0	0	0	1
4017:	0	1	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	1	1
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	1	0	0
4065:	1	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	1	0	0	0	0
4089:	0	0	0	0	0	0	0	0

Analysis Report for 1510087-12
CP4106S05-06

✓
11/9

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-12
Sample Description : CP4106S05-06
Sample Type : SOIL

Sample Size : 5.310E+02 grams
Facility : Countroom

Sample Taken On : 10/7/2015 5:12:19PM
Acquisition Started : 11/9/2015 9:19:06AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.3 seconds

Dead Time : 0.04 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 19 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 29320

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-12
 CP4106S05-06

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 10:19:10AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096
 Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.64	47.00	0.0000	0.00
2	63.36	63.71	0.0000	0.00
3	74.94	75.28	0.0000	0.00
4	77.41	77.75	0.0000	0.00
5	88.25	88.59	0.0000	0.00
6	130.02	130.34	0.0000	0.00
7	144.21	144.53	0.0000	0.00
8	186.10	186.40	0.0000	0.00
9	238.77	239.06	0.0000	0.00
10	241.87	242.15	0.0000	0.00
11	270.55	270.83	0.0000	0.00
12	286.81	287.08	0.0000	0.00
13	295.43	295.70	0.0000	0.00
14	300.67	300.94	0.0000	0.00
15	327.99	328.25	0.0000	0.00
16	338.51	338.76	0.0000	0.00
17	352.03	352.28	0.0000	0.00
18	463.74	463.95	0.0000	0.00
19	481.54	481.75	0.0000	0.00
20	511.36	511.55	0.0000	0.00
21	521.15	521.34	0.0000	0.00
22	583.36	583.53	0.0000	0.00
23	609.68	609.84	0.0000	0.00
24	665.54	665.69	0.0000	0.00
25	727.77	727.89	0.0000	0.00
26	768.61	768.71	0.0000	0.00
27	796.07	796.17	0.0000	0.00
28	860.58	860.65	0.0000	0.00
29	864.38	864.45	0.0000	0.00
30	880.30	880.37	0.0000	0.00
31	911.50	911.56	0.0000	0.00
32	934.27	934.32	0.0000	0.00
33	969.41	969.45	0.0000	0.00
34	1112.03	1112.01	0.0000	0.00
35	1117.20	1117.18	0.0000	0.00
36	1120.70	1120.68	0.0000	0.00
37	1166.10	1166.07	0.0000	0.00
38	1239.49	1239.43	0.0000	0.00
39	1378.01	1377.90	0.0000	0.00
40	1409.31	1409.18	0.0000	0.00
41	1417.69	1417.56	0.0000	0.00
42	1434.80	1434.67	0.0000	0.00

Analysis Report for 1510087-12
CP4106S05-06

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1461.30	1461.16	0.0000	0.00
44	1465.42	1465.27	0.0000	0.00
45	1511.33	1511.17	0.0000	0.00
46	1520.63	1520.46	0.0000	0.00
47	1529.80	1529.63	0.0000	0.00
48	1539.84	1539.67	0.0000	0.00
49	1555.66	1555.48	0.0000	0.00
50	1588.27	1588.08	0.0000	0.00
51	1593.54	1593.34	0.0000	0.00
52	1620.93	1620.73	0.0000	0.00
53	1638.34	1638.13	0.0000	0.00
54	1729.98	1729.74	0.0000	0.00
55	1765.10	1764.84	0.0000	0.00
56	1799.83	1799.57	0.0000	0.00
57	1839.26	1838.97	0.0000	0.00
58	1847.88	1847.60	0.0000	0.00
59	1874.01	1873.71	0.0000	0.00
60	1882.61	1882.31	0.0000	0.00
61	1949.03	1948.70	0.0000	0.00
62	1961.08	1960.75	0.0000	0.00
63	2044.81	2044.44	0.0000	0.00
64	2061.62	2061.25	0.0000	0.00
65	2105.07	2104.68	0.0000	0.00
66	2120.01	2119.62	0.0000	0.00
67	2204.05	2203.62	0.0000	0.00
68	2223.23	2222.80	0.0000	0.00
69	2308.11	2307.65	0.0000	0.00
70	2385.68	2385.19	0.0000	0.00
71	2446.81	2446.29	0.0000	0.00
72	2472.03	2471.50	0.0000	0.00
73	2615.21	2614.63	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510087-12

CP4106S05-06

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 10:19:10AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	44 -	50	47.00	1.91E+02	82.57	1.11E+03	1.30
	2	60 -	66	63.71	2.14E+02	106.91	1.93E+03	1.41
M	3	71 -	81	75.28	4.80E+02	98.11	1.34E+03	1.60
m	4	71 -	81	77.75	7.54E+02	104.39	1.32E+03	1.61
	5	86 -	91	88.59	1.54E+02	97.13	1.77E+03	2.90
	6	126 -	134	130.34	1.09E+02	95.05	1.30E+03	1.96
	7	143 -	147	144.53	5.73E+01	57.07	6.79E+02	1.75
	8	183 -	190	186.40	2.16E+02	86.95	1.11E+03	1.82
M	9	235 -	246	239.06	9.99E+02	77.75	4.40E+02	1.68
m	10	235 -	246	242.15	2.06E+02	61.85	4.15E+02	1.68
	11	266 -	275	270.83	1.09E+02	71.83	6.75E+02	2.10
	12	285 -	290	287.08	4.07E+01	42.79	3.35E+02	2.86
M	13	290 -	306	295.70	3.74E+02	53.34	2.97E+02	1.74
m	14	290 -	306	300.94	8.53E+01	45.72	3.47E+02	1.91
	15	325 -	331	328.25	7.95E+01	48.36	3.67E+02	2.10
	16	335 -	343	338.76	2.01E+02	62.50	4.78E+02	1.55
	17	348 -	355	352.28	5.57E+02	66.78	3.72E+02	1.83
	18	461 -	467	463.95	6.10E+01	36.08	1.92E+02	2.16
	19	479 -	485	481.75	4.64E+01	34.07	1.75E+02	4.28
	20	507 -	517	511.55	2.43E+02	51.91	2.26E+02	2.14
	21	518 -	525	521.34	3.23E+01	33.82	1.71E+02	4.84
	22	578 -	588	583.53	3.68E+02	56.25	2.26E+02	2.15
	23	606 -	614	609.84	4.18E+02	56.72	2.35E+02	1.82
	24	664 -	668	665.69	2.22E+01	21.64	8.36E+01	1.96
	25	725 -	733	727.89	7.04E+01	37.28	1.69E+02	2.00
	26	766 -	771	768.71	3.85E+01	29.10	1.35E+02	2.06
	27	793 -	800	796.17	3.18E+01	30.53	1.30E+02	1.58
M	28	858 -	866	860.65	3.64E+01	22.14	6.28E+01	2.54
m	29	858 -	866	864.45	1.69E+01	18.37	6.14E+01	1.65
	30	877 -	883	880.37	2.38E+01	24.63	9.04E+01	2.43
	31	907 -	916	911.56	2.30E+02	40.66	1.05E+02	2.01
	32	928 -	939	934.32	6.73E+01	33.65	1.07E+02	2.87
	33	966 -	974	969.45	9.06E+01	45.86	2.43E+02	2.07
	34	1109 -	1115	1112.01	1.82E+01	19.07	5.36E+01	3.34
M	35	1116 -	1127	1117.18	1.54E+01	9.38	1.82E+01	2.74
m	36	1116 -	1127	1120.68	1.23E+02	31.62	7.99E+01	2.74
	37	1161 -	1171	1166.07	3.45E+01	31.67	1.15E+02	1.83
	38	1235 -	1244	1239.43	6.77E+01	32.22	1.09E+02	1.90
	39	1371 -	1383	1377.90	3.29E+01	31.87	1.04E+02	2.59
	40	1405 -	1413	1409.18	2.65E+01	14.73	1.49E+01	2.55

Analysis Report for 1510087-12

CP4106S05-06

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1417.69	1415 - 1421		1417.56	1.09E+01	11.88	1.82E+01	2.00
	42	1434.80	1432 - 1437		1434.67	9.68E+00	12.65	2.46E+01	1.99
M	43	1461.30	1455 - 1468		1461.16	8.09E+02	58.08	2.78E+01	2.12
m	44	1465.42	1455 - 1468		1465.27	1.36E+01	35.42	1.46E+01	2.93
	45	1511.33	1505 - 1517		1511.17	3.36E+01	17.28	1.89E+01	6.08
	46	1520.63	1517 - 1523		1520.46	1.20E+01	11.18	1.40E+01	3.82
	47	1529.80	1525 - 1533		1529.63	1.37E+01	16.05	3.05E+01	1.25
	48	1539.84	1534 - 1546		1539.67	2.30E+01	17.69	2.60E+01	7.58
	49	1555.66	1552 - 1559		1555.48	1.10E+01	13.71	2.40E+01	3.24
M	50	1588.27	1585 - 1598		1588.08	2.61E+01	12.19	7.00E+00	2.91
m	51	1593.54	1585 - 1598		1593.34	1.60E+01	12.00	8.00E+00	2.56
	52	1620.93	1617 - 1624		1620.73	1.48E+01	11.49	1.23E+01	1.48
	53	1638.34	1636 - 1640		1638.13	6.50E+00	6.96	5.00E+00	2.11
	54	1729.98	1725 - 1734		1729.74	1.55E+01	12.92	1.50E+01	3.23
	55	1765.10	1759 - 1770		1764.84	7.99E+01	23.66	3.02E+01	1.89
	56	1799.83	1797 - 1801		1799.57	5.75E+00	6.67	4.50E+00	1.61
	57	1839.26	1837 - 1841		1838.97	4.94E+00	7.40	8.11E+00	2.79
	58	1847.88	1844 - 1850		1847.60	1.08E+01	10.04	1.05E+01	2.88
	59	1874.01	1871 - 1876		1873.71	8.73E+00	8.89	8.54E+00	2.10
	60	1882.61	1879 - 1885		1882.31	6.38E+00	6.65	3.25E+00	2.67
	61	1949.03	1945 - 1951		1948.70	1.00E+01	6.32	0.00E+00	3.67
	62	1961.08	1957 - 1963		1960.75	5.89E+00	7.78	6.22E+00	2.67
	63	2044.81	2041 - 2048		2044.44	9.00E+00	6.00	0.00E+00	2.92
	64	2061.62	2058 - 2064		2061.25	8.00E+00	5.66	0.00E+00	2.75
	65	2105.07	2099 - 2111		2104.68	2.05E+01	15.45	1.50E+01	2.71
	66	2120.01	2117 - 2123		2119.62	7.50E+00	8.03	5.00E+00	3.00
	67	2204.05	2200 - 2210		2203.62	2.21E+01	14.79	1.99E+01	2.57
	68	2223.23	2218 - 2226		2222.80	1.00E+01	6.32	0.00E+00	2.98
	69	2308.11	2305 - 2310		2307.65	8.35E+00	7.00	3.30E+00	3.67
	70	2385.68	2383 - 2387		2385.19	5.93E+00	5.85	2.14E+00	2.72
	71	2446.81	2442 - 2450		2446.29	1.03E+01	11.35	1.34E+01	2.11
	72	2472.03	2468 - 2474		2471.50	8.00E+00	5.66	0.00E+00	2.98
	73	2615.21	2610 - 2619		2614.63	1.37E+02	23.41	0.00E+00	2.15

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 10:19:10AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

: 00721

Analysis Report for 1510087-12

CP4106S05-06

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.64	44 -	50	1.91E+02	82.57	1.11E+03	6.40E+01
	2	63.36	60 -	66	2.14E+02	106.91	1.93E+03	8.45E+01
M	3	74.94	71 -	81	4.80E+02	98.11	1.34E+03	6.01E+01
m	4	77.41	71 -	81	7.54E+02	104.39	1.32E+03	5.96E+01
	5	88.25	86 -	91	1.54E+02	97.13	1.77E+03	7.72E+01
	6	130.02	126 -	134	1.09E+02	95.05	1.30E+03	7.62E+01
	7	144.21	143 -	147	5.73E+01	57.07	6.79E+02	4.52E+01
	8	186.10	183 -	190	2.16E+02	86.95	1.11E+03	6.73E+01
M	9	238.77	235 -	246	9.99E+02	77.75	4.40E+02	3.45E+01
m	10	241.87	235 -	246	2.06E+02	61.85	4.15E+02	3.35E+01
	11	270.55	266 -	275	1.09E+02	71.83	6.75E+02	5.65E+01
	12	286.81	285 -	290	4.07E+01	42.79	3.35E+02	3.36E+01
M	13	295.43	290 -	306	3.74E+02	53.34	2.97E+02	2.84E+01
m	14	300.67	290 -	306	8.53E+01	45.72	3.47E+02	3.06E+01
	15	327.99	325 -	331	7.95E+01	48.36	3.67E+02	3.69E+01
	16	338.51	335 -	343	2.01E+02	62.50	4.78E+02	4.58E+01
	17	352.03	348 -	355	5.57E+02	66.78	3.72E+02	3.88E+01
	18	463.74	461 -	467	6.10E+01	36.08	1.92E+02	2.67E+01
	19	481.54	479 -	485	4.64E+01	34.07	1.75E+02	2.57E+01
	20	511.36	507 -	517	2.43E+02	51.91	2.26E+02	3.41E+01
	21	521.15	518 -	525	3.23E+01	33.82	1.71E+02	2.62E+01
	22	583.36	578 -	588	3.68E+02	56.25	2.26E+02	3.38E+01
	23	609.68	606 -	614	4.18E+02	56.72	2.35E+02	3.23E+01
	24	665.54	664 -	668	2.22E+01	21.64	8.36E+01	1.60E+01
	25	727.77	725 -	733	7.04E+01	37.28	1.69E+02	2.74E+01
	26	768.61	766 -	771	3.85E+01	29.10	1.35E+02	2.16E+01
	27	796.07	793 -	800	3.18E+01	30.53	1.30E+02	2.33E+01
M	28	860.58	858 -	866	3.64E+01	22.14	6.28E+01	1.30E+01
m	29	864.38	858 -	866	1.69E+01	18.37	6.14E+01	1.29E+01
	30	880.30	877 -	883	2.38E+01	24.63	9.04E+01	1.86E+01
	31	911.50	907 -	916	2.30E+02	40.66	1.05E+02	2.23E+01
	32	934.27	928 -	939	6.73E+01	33.65	1.07E+02	2.41E+01
	33	969.41	966 -	974	9.06E+01	45.86	2.43E+02	3.43E+01
	34	1112.03	1109 -	1115	1.82E+01	19.07	5.36E+01	1.40E+01
M	35	1117.20	1116 -	1127	1.54E+01	9.38	1.82E+01	7.02E+00
m	36	1120.70	1116 -	1127	1.23E+02	31.62	7.99E+01	1.47E+01
	37	1166.10	1161 -	1171	3.45E+01	31.67	1.15E+02	2.42E+01
	38	1239.49	1235 -	1244	6.77E+01	32.22	1.09E+02	2.28E+01
	39	1378.01	1371 -	1383	3.29E+01	31.87	1.04E+02	2.44E+01
	40	1409.31	1405 -	1413	2.65E+01	14.73	1.49E+01	8.66E+00
	41	1417.69	1415 -	1421	1.09E+01	11.88	1.82E+01	8.12E+00
	42	1434.80	1432 -	1437	9.68E+00	12.65	2.46E+01	9.05E+00
M	43	1461.30	1455 -	1468	8.09E+02	58.08	2.78E+01	8.67E+00
m	44	1465.42	1455 -	1468	1.36E+01	35.42	1.46E+01	6.29E+00
	45	1511.33	1505 -	1517	3.36E+01	17.28	1.89E+01	1.05E+01
	46	1520.63	1517 -	1523	1.20E+01	11.18	1.40E+01	7.21E+00
	47	1529.80	1525 -	1533	1.37E+01	16.05	3.05E+01	1.17E+01
	48	1539.84	1534 -	1546	2.30E+01	17.69	2.60E+01	1.22E+01
	49	1555.66	1552 -	1559	1.10E+01	13.71	2.40E+01	9.86E+00
M	50	1588.27	1585 -	1598	2.61E+01	12.19	7.00E+00	4.35E+00
m	51	1593.54	1585 -	1598	1.60E+01	12.00	8.00E+00	4.65E+00

Analysis Report for 1510087-12

CP4106S05-06

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
52	1620.93	1617 -	1624	1.48E+01	11.49	1.23E+01	7.01E+00
53	1638.34	1636 -	1640	6.50E+00	6.96	5.00E+00	3.90E+00
54	1729.98	1725 -	1734	1.55E+01	12.92	1.50E+01	8.42E+00
55	1765.10	1759 -	1770	7.99E+01	23.66	3.02E+01	1.27E+01
56	1799.83	1797 -	1801	5.75E+00	6.67	4.50E+00	3.81E+00
57	1839.26	1837 -	1841	4.94E+00	7.40	8.11E+00	4.86E+00
58	1847.88	1844 -	1850	1.08E+01	10.04	1.05E+01	6.25E+00
59	1874.01	1871 -	1876	8.73E+00	8.89	8.54E+00	5.46E+00
60	1882.61	1879 -	1885	6.38E+00	6.65	3.25E+00	3.56E+00
61	1949.03	1945 -	1951	1.00E+01	6.32	0.00E+00	0.00E+00
62	1961.08	1957 -	1963	5.89E+00	7.78	6.22E+00	5.00E+00
63	2044.81	2041 -	2048	9.00E+00	6.00	0.00E+00	0.00E+00
64	2061.62	2058 -	2064	8.00E+00	5.66	0.00E+00	0.00E+00
65	2105.07	2099 -	2111	2.05E+01	15.45	1.50E+01	1.03E+01
66	2120.01	2117 -	2123	7.50E+00	8.03	5.00E+00	4.83E+00
67	2204.05	2200 -	2210	2.21E+01	14.79	1.99E+01	9.39E+00
68	2223.23	2218 -	2226	1.00E+01	6.32	0.00E+00	0.00E+00
69	2308.11	2305 -	2310	8.35E+00	7.00	3.30E+00	3.25E+00
70	2385.68	2383 -	2387	5.93E+00	5.85	2.14E+00	2.67E+00
71	2446.81	2442 -	2450	1.03E+01	11.35	1.34E+01	7.69E+00
72	2472.03	2468 -	2474	8.00E+00	5.66	0.00E+00	0.00E+00
73	2615.21	2610 -	2619	1.37E+02	23.41	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 10:19:10AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	46.64	44 -	50	47.00	1.91E+02	82.57	1.11E+03	PB-210
2	63.36	60 -	66	63.71	2.14E+02	106.91	1.93E+03	TH-234 TH-230

: 00723

Analysis Report for 1510087-12

CP4106S05-06

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	3	74.94	71 -	81	75.28	4.80E+02	98.11	1.34E+03	AM-243
m	4	77.41	71 -	81	77.75	7.54E+02	104.39	1.32E+03	TI-44
	5	88.25	86 -	91	88.59	1.54E+02	97.13	1.77E+03	LU-176 CD-109 SN-126
	6	130.02	126 -	134	130.34	1.09E+02	95.05	1.30E+03	.....
	7	144.21	143 -	147	144.53	5.73E+01	57.07	6.79E+02	U-235
	8	186.10	183 -	190	186.40	2.16E+02	86.95	1.11E+03	RA-226
M	9	238.77	235 -	246	239.06	9.99E+02	77.75	4.40E+02	PB-212
m	10	241.87	235 -	246	242.15	2.06E+02	61.85	4.15E+02	RA-224
	11	270.55	266 -	275	270.83	1.09E+02	71.83	6.75E+02	.....
	12	286.81	285 -	290	287.08	4.07E+01	42.79	3.35E+02	PM-149
M	13	295.43	290 -	306	295.70	3.74E+02	53.34	2.97E+02	PB-214
m	14	300.67	290 -	306	300.94	8.53E+01	45.72	3.47E+02	GA-67 PB-212 BI-210M
	15	327.99	325 -	331	328.25	7.95E+01	48.36	3.67E+02	LA-140
	16	338.51	335 -	343	338.76	2.01E+02	62.50	4.78E+02	AC-228
	17	352.03	348 -	355	352.28	5.57E+02	66.78	3.72E+02	PB-214
	18	463.74	461 -	467	463.95	6.10E+01	36.08	1.92E+02	SB-125
	19	481.54	479 -	485	481.75	4.64E+01	34.07	1.75E+02	.....
	20	511.36	507 -	517	511.55	2.43E+02	51.91	2.26E+02	.....
	21	521.15	518 -	525	521.34	3.23E+01	33.82	1.71E+02	RB-83
	22	583.36	578 -	588	583.53	3.68E+02	56.25	2.26E+02	TL-208
	23	609.68	606 -	614	609.84	4.18E+02	56.72	2.35E+02	BI-214
	24	665.54	664 -	668	665.69	2.22E+01	21.64	8.36E+01	SB-126 CE-143
	25	727.77	725 -	733	727.89	7.04E+01	37.28	1.69E+02	BI-212
	26	768.61	766 -	771	768.71	3.85E+01	29.10	1.35E+02	.....
	27	796.07	793 -	800	796.17	3.18E+01	30.53	1.30E+02	CS-134
M	28	860.58	858 -	866	860.65	3.64E+01	22.14	6.28E+01	TL-208
m	29	864.38	858 -	866	864.45	1.69E+01	18.37	6.14E+01	.....
	30	880.30	877 -	883	880.37	2.38E+01	24.63	9.04E+01	.....
	31	911.50	907 -	916	911.56	2.30E+02	40.66	1.05E+02	AC-228 LU-172
	32	934.27	928 -	939	934.32	6.73E+01	33.65	1.07E+02	.....
	33	969.41	966 -	974	969.45	9.06E+01	45.86	2.43E+02	AC-228
	34	1112.03	1109 -	1115	1112.01	1.82E+01	19.07	5.36E+01	EU-152
M	35	1117.20	1116 -	1127	1117.18	1.54E+01	9.38	1.82E+01	.....
m	36	1120.70	1116 -	1127	1120.68	1.23E+02	31.62	7.99E+01	SC-46 BI-214 TA-182
	37	1166.10	1161 -	1171	1166.07	3.45E+01	31.67	1.15E+02	.....
	38	1239.49	1235 -	1244	1239.43	6.77E+01	32.22	1.09E+02	.....
	39	1378.01	1371 -	1383	1377.90	3.29E+01	31.87	1.04E+02	.....
	40	1409.31	1405 -	1413	1409.18	2.65E+01	14.73	1.49E+01	.....
	41	1417.69	1415 -	1421	1417.56	1.09E+01	11.88	1.82E+01	.....
	42	1434.80	1432 -	1437	1434.67	9.68E+00	12.65	2.46E+01	LA-138
M	43	1461.30	1455 -	1468	1461.16	8.09E+02	58.08	2.78E+01	K-40
m	44	1465.42	1455 -	1468	1465.27	1.36E+01	35.42	1.46E+01	.....
	45	1511.33	1505 -	1517	1511.17	3.36E+01	17.28	1.89E+01	.....
	46	1520.63	1517 -	1523	1520.46	1.20E+01	11.18	1.40E+01	.....
	47	1529.80	1525 -	1533	1529.63	1.37E+01	16.05	3.05E+01	.....
	48	1539.84	1534 -	1546	1539.67	2.30E+01	17.69	2.60E+01	.....

Analysis Report for 1510087-12

CP4106S05-06

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	49	1555.66	1552 -	1559	1555.48	1.10E+01	13.71	2.40E+01	.....
M	50	1588.27	1585 -	1598	1588.08	2.61E+01	12.19	7.00E+00	.....
m	51	1593.54	1585 -	1598	1593.34	1.60E+01	12.00	8.00E+00	.....
	52	1620.93	1617 -	1624	1620.73	1.48E+01	11.49	1.23E+01	BI-212
	53	1638.34	1636 -	1640	1638.13	6.50E+00	6.96	5.00E+00	.....
	54	1729.98	1725 -	1734	1729.74	1.55E+01	12.92	1.50E+01	.....
	55	1765.10	1759 -	1770	1764.84	7.99E+01	23.66	3.02E+01	BI-214
	56	1799.83	1797 -	1801	1799.57	5.75E+00	6.67	4.50E+00	.....
	57	1839.26	1837 -	1841	1838.97	4.94E+00	7.40	8.11E+00	.....
	58	1847.88	1844 -	1850	1847.60	1.08E+01	10.04	1.05E+01	.....
	59	1874.01	1871 -	1876	1873.71	8.73E+00	8.89	8.54E+00	.....
	60	1882.61	1879 -	1885	1882.31	6.38E+00	6.65	3.25E+00	.....
	61	1949.03	1945 -	1951	1948.70	1.00E+01	6.32	0.00E+00	.....
	62	1961.08	1957 -	1963	1960.75	5.89E+00	7.78	6.22E+00	.....
	63	2044.81	2041 -	2048	2044.44	9.00E+00	6.00	0.00E+00	.....
	64	2061.62	2058 -	2064	2061.25	8.00E+00	5.66	0.00E+00	.....
	65	2105.07	2099 -	2111	2104.68	2.05E+01	15.45	1.50E+01	.....
	66	2120.01	2117 -	2123	2119.62	7.50E+00	8.03	5.00E+00	.....
	67	2204.05	2200 -	2210	2203.62	2.21E+01	14.79	1.99E+01	BI-214
	68	2223.23	2218 -	2226	2222.80	1.00E+01	6.32	0.00E+00	.....
	69	2308.11	2305 -	2310	2307.65	8.35E+00	7.00	3.30E+00	.....
	70	2385.68	2383 -	2387	2385.19	5.93E+00	5.85	2.14E+00	.....
	71	2446.81	2442 -	2450	2446.29	1.03E+01	11.35	1.34E+01	.....
	72	2472.03	2468 -	2474	2471.50	8.00E+00	5.66	0.00E+00	.....
	73	2615.21	2610 -	2619	2614.63	1.37E+02	23.41	0.00E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 10:19:10AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.64	1.91E+02	82.57	1.69E-02	1.78E-03
	2	63.36	2.14E+02	106.91	2.49E-02	1.91E-03
M	3	74.94	4.80E+02	98.11	2.75E-02	2.30E-03
m	4	77.41	7.54E+02	104.39	2.78E-02	2.38E-03
	5	88.25	1.54E+02	97.13	2.85E-02	2.74E-03

: 00725

Analysis Report for 1510087-12
CP4106S05-06

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	6	130.02	1.09E+02	95.05	2.66E-02	2.09E-03
	7	144.21	5.73E+01	57.07	2.55E-02	2.12E-03
	8	186.10	2.16E+02	86.95	2.24E-02	2.03E-03
M	9	238.77	9.99E+02	77.75	1.92E-02	1.64E-03
m	10	241.87	2.06E+02	61.85	1.91E-02	1.61E-03
	11	270.55	1.09E+02	71.83	1.77E-02	1.40E-03
	12	286.81	4.07E+01	42.79	1.70E-02	1.32E-03
M	13	295.43	3.74E+02	53.34	1.67E-02	1.31E-03
m	14	300.67	8.53E+01	45.72	1.65E-02	1.30E-03
	15	327.99	7.95E+01	48.36	1.55E-02	1.24E-03
	16	338.51	2.01E+02	62.50	1.52E-02	1.22E-03
	17	352.03	5.57E+02	66.78	1.48E-02	1.19E-03
	18	463.74	6.10E+01	36.08	1.21E-02	1.04E-03
	19	481.54	4.64E+01	34.07	1.18E-02	1.02E-03
	20	511.36	2.43E+02	51.91	1.12E-02	9.90E-04
	21	521.15	3.23E+01	33.82	1.11E-02	9.80E-04
	22	583.36	3.68E+02	56.25	1.02E-02	9.15E-04
	23	609.68	4.18E+02	56.72	9.82E-03	8.88E-04
	24	665.54	2.22E+01	21.64	9.17E-03	8.31E-04
	25	727.77	7.04E+01	37.28	8.55E-03	7.75E-04
	26	768.61	3.85E+01	29.10	8.19E-03	7.38E-04
	27	796.07	3.18E+01	30.53	7.96E-03	7.14E-04
M	28	860.58	3.64E+01	22.14	7.48E-03	6.56E-04
m	29	864.38	1.69E+01	18.37	7.46E-03	6.52E-04
	30	880.30	2.38E+01	24.63	7.35E-03	6.38E-04
	31	911.50	2.30E+02	40.66	7.15E-03	6.15E-04
	32	934.27	6.73E+01	33.65	7.01E-03	6.03E-04
	33	969.41	9.06E+01	45.86	6.80E-03	5.85E-04
	34	1112.03	1.82E+01	19.07	6.10E-03	5.11E-04
M	35	1117.20	1.54E+01	9.38	6.08E-03	5.08E-04
m	36	1120.70	1.23E+02	31.62	6.06E-03	5.06E-04
	37	1166.10	3.45E+01	31.67	5.88E-03	4.83E-04
	38	1239.49	6.77E+01	32.22	5.61E-03	4.68E-04
	39	1378.01	3.29E+01	31.87	5.18E-03	4.40E-04
	40	1409.31	2.65E+01	14.73	5.10E-03	4.32E-04
	41	1417.69	1.09E+01	11.88	5.08E-03	4.30E-04
	42	1434.80	9.68E+00	12.65	5.03E-03	4.26E-04
M	43	1461.30	8.09E+02	58.08	4.97E-03	4.19E-04
m	44	1465.42	1.36E+01	35.42	4.96E-03	4.18E-04
	45	1511.33	3.36E+01	17.28	4.85E-03	4.07E-04
	46	1520.63	1.20E+01	11.18	4.83E-03	4.04E-04
	47	1529.80	1.37E+01	16.05	4.81E-03	4.02E-04
	48	1539.84	2.30E+01	17.69	4.79E-03	4.00E-04
	49	1555.66	1.10E+01	13.71	4.76E-03	3.96E-04
M	50	1588.27	2.61E+01	12.19	4.69E-03	3.88E-04
m	51	1593.54	1.60E+01	12.00	4.68E-03	3.86E-04
	52	1620.93	1.48E+01	11.49	4.63E-03	3.79E-04
	53	1638.34	6.50E+00	6.96	4.60E-03	3.75E-04
	54	1729.98	1.55E+01	12.92	4.45E-03	3.52E-04
	55	1765.10	7.99E+01	23.66	4.39E-03	3.43E-04
	56	1799.83	5.75E+00	6.67	4.35E-03	3.35E-04
	57	1839.26	4.94E+00	7.40	4.29E-03	3.26E-04
	58	1847.88	1.08E+01	10.04	4.28E-03	3.26E-04

Analysis Report for 1510087-12
 CP4106S05-06

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
59	1874.01	8.73E+00	8.89	4.25E-03	3.26E-04
60	1882.61	6.38E+00	6.65	4.24E-03	3.26E-04
61	1949.03	1.00E+01	6.32	4.16E-03	3.26E-04
62	1961.08	5.89E+00	7.78	4.15E-03	3.26E-04
63	2044.81	9.00E+00	6.00	4.07E-03	3.26E-04
64	2061.62	8.00E+00	5.66	4.06E-03	3.26E-04
65	2105.07	2.05E+01	15.45	4.02E-03	3.26E-04
66	2120.01	7.50E+00	8.03	4.01E-03	3.26E-04
67	2204.05	2.21E+01	14.79	3.95E-03	3.26E-04
68	2223.23	1.00E+01	6.32	3.94E-03	3.26E-04
69	2308.11	8.35E+00	7.00	3.89E-03	3.26E-04
70	2385.68	5.93E+00	5.85	3.85E-03	3.26E-04
71	2446.81	1.03E+01	11.35	3.83E-03	3.26E-04
72	2472.03	8.00E+00	5.66	3.82E-03	3.26E-04
73	2615.21	1.37E+02	23.41	3.79E-03	3.26E-04

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 10:19:10AM
 Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	46.64	1.91E+02	82.57	4.50E+01	8.46E+00	1.46E+02	8.30E+01	
2	63.36	2.14E+02	106.91	7.80E+01	1.33E+01	1.36E+02	1.08E+02	
M	3	74.94	4.80E+02	98.11	5.09E+00	4.37E+00	4.75E+02	9.82E+01
m	4	77.41	7.54E+02	104.39	9.75E+00	8.28E+00	7.44E+02	1.05E+02
5	88.25	1.54E+02	97.13			1.54E+02	9.71E+01	
6	130.02	1.09E+02	95.05			1.09E+02	9.50E+01	
7	144.21	5.73E+01	57.07	7.18E+00	7.25E+00	5.01E+01	5.75E+01	
8	186.10	2.16E+02	86.95	6.41E+01	7.38E+00	1.52E+02	8.73E+01	
M	9	238.77	9.99E+02	77.75	2.34E+01	6.34E+00	9.76E+02	7.80E+01
m	10	241.87	2.06E+02	61.85		2.06E+02	6.19E+01	
11	270.55	1.09E+02	71.83			1.09E+02	7.18E+01	
12	286.81	4.07E+01	42.79			4.07E+01	4.28E+01	
M	13	295.43	3.74E+02	53.34	4.17E+00	5.50E+00	3.70E+02	5.36E+01
m	14	300.67	8.53E+01	45.72		8.53E+01	4.57E+01	
15	327.99	7.95E+01	48.36			7.95E+01	4.84E+01	

Analysis Report for 1510087-12

CP4106S05-06

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
16	338.51	2.01E+02	62.50	2.22E-01	4.54E+00	2.01E+02	6.27E+01
17	352.03	5.57E+02	66.78	8.83E+00	4.91E+00	5.48E+02	6.70E+01
18	463.74	6.10E+01	36.08			6.10E+01	3.61E+01
19	481.54	4.64E+01	34.07			4.64E+01	3.41E+01
20	511.36	2.43E+02	51.91	8.12E+01	5.49E+00	1.62E+02	5.22E+01
21	521.15	3.23E+01	33.82			3.23E+01	3.38E+01
22	583.36	3.68E+02	56.25	6.34E+00	3.74E+00	3.62E+02	5.64E+01
23	609.68	4.18E+02	56.72	5.20E+00	3.69E+00	4.13E+02	5.68E+01
24	665.54	2.22E+01	21.64			2.22E+01	2.16E+01
25	727.77	7.04E+01	37.28			7.04E+01	3.73E+01
26	768.61	3.85E+01	29.10			3.85E+01	2.91E+01
27	796.07	3.18E+01	30.53			3.18E+01	3.05E+01
M 28	860.58	3.64E+01	22.14			3.64E+01	2.21E+01
m 29	864.38	1.69E+01	18.37			1.69E+01	1.84E+01
30	880.30	2.38E+01	24.63			2.38E+01	2.46E+01
31	911.50	2.30E+02	40.66	3.28E+00	2.53E+00	2.26E+02	4.07E+01
32	934.27	6.73E+01	33.65			6.73E+01	3.36E+01
33	969.41	9.06E+01	45.86			9.06E+01	4.59E+01
34	1112.03	1.82E+01	19.07			1.82E+01	1.91E+01
M 35	1117.20	1.54E+01	9.38			1.54E+01	9.38E+00
m 36	1120.70	1.23E+02	31.62	2.28E+00	2.55E+00	1.21E+02	3.17E+01
37	1166.10	3.45E+01	31.67			3.45E+01	3.17E+01
38	1239.49	6.77E+01	32.22			6.77E+01	3.22E+01
39	1378.01	3.29E+01	31.87			3.29E+01	3.19E+01
40	1409.31	2.65E+01	14.73			2.65E+01	1.47E+01
41	1417.69	1.09E+01	11.88			1.09E+01	1.19E+01
42	1434.80	9.68E+00	12.65			9.68E+00	1.26E+01
M 43	1461.30	8.09E+02	58.08	6.46E+00	2.33E+00	8.03E+02	5.81E+01
m 44	1465.42	1.36E+01	35.42			1.36E+01	3.54E+01
45	1511.33	3.36E+01	17.28			3.36E+01	1.73E+01
46	1520.63	1.20E+01	11.18			1.20E+01	1.12E+01
47	1529.80	1.37E+01	16.05			1.37E+01	1.61E+01
48	1539.84	2.30E+01	17.69			2.30E+01	1.77E+01
49	1555.66	1.10E+01	13.71			1.10E+01	1.37E+01
M 50	1588.27	2.61E+01	12.19			2.61E+01	1.22E+01
m 51	1593.54	1.60E+01	12.00			1.60E+01	1.20E+01
52	1620.93	1.48E+01	11.49			1.48E+01	1.15E+01
53	1638.34	6.50E+00	6.96			6.50E+00	6.96E+00
54	1729.98	1.55E+01	12.92			1.55E+01	1.29E+01
55	1765.10	7.99E+01	23.66			7.99E+01	2.37E+01
56	1799.83	5.75E+00	6.67			5.75E+00	6.67E+00
57	1839.26	4.94E+00	7.40			4.94E+00	7.40E+00
58	1847.88	1.08E+01	10.04			1.08E+01	1.00E+01
59	1874.01	8.73E+00	8.89			8.73E+00	8.89E+00
60	1882.61	6.38E+00	6.65			6.38E+00	6.65E+00
61	1949.03	1.00E+01	6.32			1.00E+01	6.32E+00
62	1961.08	5.89E+00	7.78			5.89E+00	7.78E+00
63	2044.81	9.00E+00	6.00			9.00E+00	6.00E+00
64	2061.62	8.00E+00	5.66			8.00E+00	5.66E+00
65	2105.07	2.05E+01	15.45			2.05E+01	1.55E+01
66	2120.01	7.50E+00	8.03			7.50E+00	8.03E+00
67	2204.05	2.21E+01	14.79			2.21E+01	1.48E+01
68	2223.23	1.00E+01	6.32	2.83E+00	1.71E+00	7.17E+00	6.55E+00
69	2308.11	8.35E+00	7.00			8.35E+00	7.00E+00

Analysis Report for 1510087-12
 CP4106S05-06

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
70	2385.68	5.93E+00	5.85			5.93E+00	5.85E+00
71	2446.81	1.03E+01	11.35			1.03E+01	1.13E+01
72	2472.03	8.00E+00	5.66			8.00E+00	5.66E+00
73	2615.21	1.37E+02	23.41	3.47E+00	1.48E+00	1.34E+02	2.35E+01

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 10:19:10AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
	1	46.64	1.91E+02	82.57	4.50E+01	8.46E+00	1.46E+02	8.30E+01
	2	63.36	2.14E+02	106.91	7.80E+01	1.33E+01	1.36E+02	1.08E+02
M	3	74.94	4.80E+02	98.11	5.09E+00	4.37E+00	4.75E+02	9.82E+01
m	4	77.41	7.54E+02	104.39	9.75E+00	8.28E+00	7.44E+02	1.05E+02
	5	88.25	1.54E+02	97.13			1.54E+02	9.71E+01
	6	130.02	1.09E+02	95.05			1.09E+02	9.50E+01
	7	144.21	5.73E+01	57.07	7.18E+00	7.25E+00	5.01E+01	5.75E+01
	8	186.10	2.16E+02	86.95	6.41E+01	7.38E+00	1.52E+02	8.73E+01
M	9	238.77	9.99E+02	77.75	2.34E+01	6.34E+00	9.76E+02	7.80E+01
m	10	241.87	2.06E+02	61.85			2.06E+02	6.19E+01
	11	270.55	1.09E+02	71.83			1.09E+02	7.18E+01
	12	286.81	4.07E+01	42.79			4.07E+01	4.28E+01
M	13	295.43	3.74E+02	53.34	4.17E+00	5.50E+00	3.70E+02	5.36E+01
m	14	300.67	8.53E+01	45.72			8.53E+01	4.57E+01
	15	327.99	7.95E+01	48.36			7.95E+01	4.84E+01
	16	338.51	2.01E+02	62.50	2.22E-01	4.54E+00	2.01E+02	6.27E+01
	17	352.03	5.57E+02	66.78	8.83E+00	4.91E+00	5.48E+02	6.70E+01
	18	463.74	6.10E+01	36.08			6.10E+01	3.61E+01
	19	481.54	4.64E+01	34.07			4.64E+01	3.41E+01
	20	511.36	2.43E+02	51.91	8.12E+01	5.49E+00	1.62E+02	5.22E+01
	21	521.15	3.23E+01	33.82			3.23E+01	3.38E+01
	22	583.36	3.68E+02	56.25	6.34E+00	3.74E+00	3.62E+02	5.64E+01
	23	609.68	4.18E+02	56.72	5.20E+00	3.69E+00	4.13E+02	5.68E+01
	24	665.54	2.22E+01	21.64			2.22E+01	2.16E+01

Analysis Report for 1510087-12

CP4106S05-06

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	25	727.77	7.04E+01	37.28			7.04E+01	3.73E+01
	26	768.61	3.85E+01	29.10			3.85E+01	2.91E+01
	27	796.07	3.18E+01	30.53			3.18E+01	3.05E+01
M	28	860.58	3.64E+01	22.14			3.64E+01	2.21E+01
m	29	864.38	1.69E+01	18.37			1.69E+01	1.84E+01
	30	880.30	2.38E+01	24.63			2.38E+01	2.46E+01
	31	911.50	2.30E+02	40.66	3.28E+00	2.53E+00	2.26E+02	4.07E+01
	32	934.27	6.73E+01	33.65			6.73E+01	3.36E+01
	33	969.41	9.06E+01	45.86			9.06E+01	4.59E+01
	34	1112.03	1.82E+01	19.07			1.82E+01	1.91E+01
M	35	1117.20	1.54E+01	9.38			1.54E+01	9.38E+00
m	36	1120.70	1.23E+02	31.62	2.28E+00	2.55E+00	1.21E+02	3.17E+01
	37	1166.10	3.45E+01	31.67			3.45E+01	3.17E+01
	38	1239.49	6.77E+01	32.22			6.77E+01	3.22E+01
	39	1378.01	3.29E+01	31.87			3.29E+01	3.19E+01
	40	1409.31	2.65E+01	14.73			2.65E+01	1.47E+01
	41	1417.69	1.09E+01	11.88			1.09E+01	1.19E+01
	42	1434.80	9.68E+00	12.65			9.68E+00	1.26E+01
M	43	1461.30	8.09E+02	58.08	6.46E+00	2.33E+00	8.03E+02	5.81E+01
m	44	1465.42	1.36E+01	35.42			1.36E+01	3.54E+01
	45	1511.33	3.36E+01	17.28			3.36E+01	1.73E+01
	46	1520.63	1.20E+01	11.18			1.20E+01	1.12E+01
	47	1529.80	1.37E+01	16.05			1.37E+01	1.61E+01
	48	1539.84	2.30E+01	17.69			2.30E+01	1.77E+01
	49	1555.66	1.10E+01	13.71			1.10E+01	1.37E+01
M	50	1588.27	2.61E+01	12.19			2.61E+01	1.22E+01
m	51	1593.54	1.60E+01	12.00			1.60E+01	1.20E+01
	52	1620.93	1.48E+01	11.49			1.48E+01	1.15E+01
	53	1638.34	6.50E+00	6.96			6.50E+00	6.96E+00
	54	1729.98	1.55E+01	12.92			1.55E+01	1.29E+01
	55	1765.10	7.99E+01	23.66			7.99E+01	2.37E+01
	56	1799.83	5.75E+00	6.67			5.75E+00	6.67E+00
	57	1839.26	4.94E+00	7.40			4.94E+00	7.40E+00
	58	1847.88	1.08E+01	10.04			1.08E+01	1.00E+01
	59	1874.01	8.73E+00	8.89			8.73E+00	8.89E+00
	60	1882.61	6.38E+00	6.65			6.38E+00	6.65E+00
	61	1949.03	1.00E+01	6.32			1.00E+01	6.32E+00
	62	1961.08	5.89E+00	7.78			5.89E+00	7.78E+00
	63	2044.81	9.00E+00	6.00			9.00E+00	6.00E+00
	64	2061.62	8.00E+00	5.66			8.00E+00	5.66E+00
	65	2105.07	2.05E+01	15.45			2.05E+01	1.55E+01
	66	2120.01	7.50E+00	8.03			7.50E+00	8.03E+00
	67	2204.05	2.21E+01	14.79			2.21E+01	1.48E+01
	68	2223.23	1.00E+01	6.32	2.83E+00	1.71E+00	7.17E+00	6.55E+00
	69	2308.11	8.35E+00	7.00			8.35E+00	7.00E+00
	70	2385.68	5.93E+00	5.85			5.93E+00	5.85E+00
	71	2446.81	1.03E+01	11.35			1.03E+01	1.13E+01
	72	2472.03	8.00E+00	5.66			8.00E+00	5.66E+00
	73	2615.21	1.37E+02	23.41	3.47E+00	1.48E+00	1.34E+02	2.35E+01

Analysis Report for 1510087-12

CP4106S05-06

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.962	1460.81 *	10.67	2.14E+01	2.42E+00
CD-109	0.992	88.03 *	3.72	2.16E+00	1.38E+00
SN-126	0.928	87.57 *	37.00	2.07E-01	1.32E-01
TL-208	0.972	583.14 *	30.22	1.67E+00	3.00E-01
		860.37 *	4.48	1.53E+00	9.43E-01
		2614.66 *	35.85	1.39E+00	2.71E-01
PB-210	0.997	46.50 *	4.25	2.88E+00	1.67E+00
BI-212	0.951	727.17 *	11.80	9.87E-01	5.30E-01
		1620.62 *	2.75	1.65E+00	1.28E+00
PB-212	0.993	238.63 *	44.60	1.61E+00	1.88E-01
		300.09 *	3.41	2.15E+00	1.16E+00
BI-214	0.972	609.31 *	46.30	1.28E+00	2.11E-01
		1120.29 *	15.10	1.87E+00	5.14E-01
		1764.49 *	15.80	1.63E+00	4.98E-01
		2204.22 *	4.98	1.59E+00	1.07E+00
PB-214	0.996	295.21 *	19.19	1.63E+00	2.69E-01
		351.92 *	37.19	1.41E+00	2.07E-01
RA-224	0.882	240.98 *	3.95	3.86E+00	1.21E+00
RA-226	0.998	186.21 *	3.28	2.92E+00	5.60E+00
AC-228	0.980	338.32 *	11.40	1.64E+00	5.29E-01
		911.07 *	27.70	1.62E+00	3.23E-01
		969.11 *	16.60	1.13E+00	5.82E-01
TH-234	0.999	63.29 *	3.80	2.03E+00	1.61E+00
AM-243	0.989	74.67 *	66.00	3.70E-01	8.26E-02

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

Analysis Report for 1510087-12
CP4106S05-06

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 10:19:10AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 4	77.41	2.06618E-01	7.04	Tol.	TI-44
6	130.02	3.01477E-02	43.79		
7	144.21	1.39220E-02	57.39	Tol.	U-235
11	270.55	3.01903E-02	33.04		
12	286.81	1.13074E-02	52.56		
15	327.99	2.20844E-02	30.41	Sum	
18	463.74	1.69533E-02	29.56	Tol.	SB-125
19	481.54	1.28970E-02	36.69	Sum	
20	511.36	4.50027E-02	16.11		
21	521.15	8.98540E-03	52.28	Tol.	RB-83
24	665.54	6.16753E-03	48.74	Tol.	SB-126 CE-143
26	768.61	1.06971E-02	37.79	Sum	
27	796.07	8.82302E-03	48.06	Sum	
m 29	864.38	4.68908E-03	54.41		
30	880.30	6.61232E-03	51.74		
32	934.27	1.87075E-02	24.98		
34	1112.03	5.05556E-03	52.40	Tol.	EU-152
M 35	1117.20	4.28587E-03	30.40		
37	1166.10	9.59239E-03	45.86	Sum	
38	1239.49	1.87933E-02	23.81		
39	1378.01	9.14216E-03	48.42		
40	1409.31	7.36928E-03	27.76		
41	1417.69	3.02778E-03	54.52		
42	1434.80	2.68939E-03	65.32	Tol.	LA-138
m 44	1465.42	3.76464E-03	130.66		
45	1511.33	9.32494E-03	25.74		
46	1520.63	3.33333E-03	46.58	Sum	
47	1529.80	3.81705E-03	58.42		
48	1539.84	6.38889E-03	38.46		
49	1555.66	3.05556E-03	62.32		
M 50	1588.27	7.24929E-03	23.35	Sum	
m 51	1593.54	4.44557E-03	37.49	D-Esc	
53	1638.34	1.80556E-03	53.57	Sum	
54	1729.98	4.30556E-03	41.69	Sum	
56	1799.83	1.59722E-03	58.01	Sum	
57	1839.26	1.37346E-03	74.82	Sum	
58	1847.88	2.98611E-03	46.69	Sum	
59	1874.01	2.42521E-03	50.90		
60	1882.61	1.77083E-03	52.17		
61	1949.03	2.77778E-03	31.62		
62	1961.08	1.63580E-03	66.04		

Analysis Report for 1510087-12
CP4106S05-06

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
63	2044.81	2.50000E-03	33.33	Sum	
64	2061.62	2.22222E-03	35.36		
65	2105.07	5.69444E-03	37.69	S-Esc	
66	2120.01	2.08333E-03	53.54		
68	2223.23	1.99153E-03	45.69		
69	2308.11	2.31944E-03	41.92		
70	2385.68	1.64683E-03	49.36		
71	2446.81	2.85948E-03	55.11	Sum	
72	2472.03	2.22222E-03	35.36		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.96	1460.81 *	10.67	2.14E+01	2.42E+00
CD-109	0.99	88.03 *	3.72	2.16E+00	1.38E+00
SN-126	0.92	87.57 *	37.00	2.07E-01	1.32E-01
TL-208	0.97	583.14 *	30.22	1.67E+00	3.00E-01
		860.37 *	4.48	1.53E+00	9.43E-01
		2614.66 *	35.85	1.39E+00	2.71E-01
PB-210	0.99	46.50 *	4.25	2.88E+00	1.67E+00
BI-212	0.95	727.17 *	11.80	9.87E-01	5.30E-01
		1620.62 *	2.75	1.65E+00	1.28E+00
PB-212	0.99	238.63 *	44.60	1.61E+00	1.88E-01
		300.09 *	3.41	2.15E+00	1.16E+00
BI-214	0.97	609.31 *	46.30	1.28E+00	2.11E-01
		1120.29 *	15.10	1.87E+00	5.14E-01
		1764.49 *	15.80	1.63E+00	4.98E-01
		2204.22 *	4.98	1.59E+00	1.07E+00
PB-214	0.99	295.21 *	19.19	1.63E+00	2.69E-01
		351.92 *	37.19	1.41E+00	2.07E-01
RA-224	0.88	240.98 *	3.95	3.86E+00	1.21E+00
RA-226	0.99	186.21 *	3.28	2.92E+00	5.60E+00

Analysis Report for 1510087-12

CP4106S05-06

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AC-228	0.98	338.32 *	11.40	1.64E+00	5.29E-01
		911.07 *	27.70	1.62E+00	3.23E-01
		969.11 *	16.60	1.13E+00	5.82E-01
TH-234	0.99	63.29 *	3.80	2.03E+00	1.61E+00
AM-243	0.98	74.67 *	66.00	3.70E-01	8.26E-02

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.962	2.14E+01	2.42E+00
?	CD-109	0.992	2.16E+00	1.38E+00
?	SN-126	0.928	2.07E-01	1.32E-01
	TL-208	0.972	1.51E+00	1.97E-01
	PB-210	0.997	2.88E+00	1.67E+00
	BI-212	0.951	1.08E+00	4.90E-01
	PB-212	0.993	1.62E+00	1.86E-01
	BI-214	0.972	1.41E+00	1.79E-01
	PB-214	0.996	1.49E+00	1.64E-01
	RA-224	0.882	3.86E+00	1.21E+00
	RA-226	0.998	2.92E+00	5.60E+00
	AC-228	0.980	1.53E+00	2.49E-01
	TH-234	0.999	2.03E+00	1.61E+00
	AM-243	0.989	3.70E-01	8.26E-02

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1510087-12
CP4106S05-06

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 10:19:10AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 4	77.41	2.06618E-01	7.04	Tol.	TI-44
6	130.02	3.01477E-02	43.79		
7	144.21	1.39220E-02	57.39	Tol.	U-235
11	270.55	3.01903E-02	33.04		
12	286.81	1.13074E-02	52.56		
15	327.99	2.20844E-02	30.41	Sum	
18	463.74	1.69533E-02	29.56	Tol.	SB-125
19	481.54	1.28970E-02	36.69	Sum	
20	511.36	4.50027E-02	16.11		
21	521.15	8.98540E-03	52.28	Tol.	RB-83
24	665.54	6.16753E-03	48.74	Tol.	SB-126 CE-143
26	768.61	1.06971E-02	37.79	Sum	
27	796.07	8.82302E-03	48.06	Sum	
m 29	864.38	4.68908E-03	54.41		
30	880.30	6.61232E-03	51.74		
32	934.27	1.87075E-02	24.98		
34	1112.03	5.05556E-03	52.40	Tol.	EU-152
M 35	1117.20	4.28587E-03	30.40		
37	1166.10	9.59239E-03	45.86	Sum	
38	1239.49	1.87933E-02	23.81		
39	1378.01	9.14216E-03	48.42		
40	1409.31	7.36928E-03	27.76		
41	1417.69	3.02778E-03	54.52		
42	1434.80	2.68939E-03	65.32	Tol.	LA-138
m 44	1465.42	3.76464E-03	130.66		
45	1511.33	9.32494E-03	25.74		
46	1520.63	3.33333E-03	46.58	Sum	
47	1529.80	3.81705E-03	58.42		
48	1539.84	6.38889E-03	38.46		
49	1555.66	3.05556E-03	62.32		
M 50	1588.27	7.24929E-03	23.35	Sum	
m 51	1593.54	4.44557E-03	37.49	D-Esc	
53	1638.34	1.80556E-03	53.57	Sum	
54	1729.98	4.30556E-03	41.69	Sum	

Analysis Report for 1510087-12
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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
56	1799.83	1.59722E-03	58.01	Sum	
57	1839.26	1.37346E-03	74.82	Sum	
58	1847.88	2.98611E-03	46.69	Sum	
59	1874.01	2.42521E-03	50.90		
60	1882.61	1.77083E-03	52.17		
61	1949.03	2.77778E-03	31.62		
62	1961.08	1.63580E-03	66.04		
63	2044.81	2.50000E-03	33.33	Sum	
64	2061.62	2.22222E-03	35.36		
65	2105.07	5.69444E-03	37.69	S-Esc	
66	2120.01	2.08333E-03	53.54		
68	2223.23	1.99153E-03	45.69		
69	2308.11	2.31944E-03	41.92		
70	2385.68	1.64683E-03	49.36		
71	2446.81	2.85948E-03	55.11	Sum	
72	2472.03	2.22222E-03	35.36		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-2.59E-01	9.56E-01	9.56E-01
+	NA-22	1274.54	99.94	-4.37E-02	6.73E-02	6.73E-02
+	NA-24	1368.53	99.99	8.07E+13	1.53E+14	4.20E+14
		2754.09	99.86	-1.25E+14		1.53E+14
+	AL-26	1808.65	99.76	1.09E-03	4.61E-02	4.61E-02
+	K-40	1460.81	* 10.67	2.14E+01	1.08E+00	1.08E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	1.46E-02	7.38E-02	7.38E-02
		78.34	96.00	2.20E-01		9.20E-02
+	SC-46	889.25	99.98	-1.50E-02	9.46E-02	9.46E-02
		1120.51	99.99	3.33E-01		1.89E-01
+	V-48	983.52	99.98	9.39E-02	3.21E-01	3.21E-01

Analysis Report for 1510087-12

CP4106S05-06

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	V-48	1312.10	97.50	2.80E-02	3.21E-01	3.50E-01
+	CR-51	320.08	9.83	-2.69E-01	1.20E+00	1.20E+00
+	MN-54	834.83	99.97	-4.87E-02	7.44E-02	7.44E-02
+	CO-56	846.75	99.96	3.21E-02	1.01E-01	1.01E-01
		1037.75	14.03	-6.57E-02		6.93E-01
		1238.25	67.00	1.83E-01		2.41E-01
		1771.40	15.51	-1.45E-01		4.16E-01
		2598.48	16.90	-4.90E-02		2.73E-01
+	CO-57	122.06	85.51	-3.67E-02	6.21E-02	6.21E-02
		136.48	10.60	7.32E-02		4.99E-01
+	CO-58	810.76	99.40	4.36E-02	1.01E-01	1.01E-01
+	FE-59	1099.22	56.50	1.11E-01	2.49E-01	2.49E-01
		1291.56	43.20	0.00E+00		3.02E-01
+	CO-60	1173.22	100.00	2.93E-02	7.82E-02	9.02E-02
		1332.49	100.00	-4.04E-03		7.82E-02
+	ZN-65	1115.52	50.75	-7.03E-01	1.90E-01	1.90E-01
+	GA-67	93.31	35.70	4.72E+02	2.04E+02	2.04E+02
		208.95	2.24	-1.32E+03		2.75E+03
		300.22	16.00	-1.02E+03		4.05E+02
+	SE-75	121.11	16.70	-4.98E-02	9.75E-02	3.53E-01
		136.00	59.20	3.43E-02		9.75E-02
		264.65	59.80	-8.44E-03		1.01E-01
		279.53	25.20	-4.28E-02		2.49E-01
		400.65	11.40	1.25E-01		6.07E-01
+	RB-82	776.52	13.00	-5.95E-01	1.25E+00	1.25E+00
+	RB-83	520.41	46.00	9.15E-02	1.86E-01	1.86E-01
		529.64	30.30	4.36E-02		2.73E-01
		552.65	16.40	4.91E-02		4.96E-01
+	KR-85	513.99	0.43	3.90E+01	2.27E+01	2.27E+01
+	SR-85	513.99	99.27	2.41E-01	1.40E-01	1.40E-01
+	Y-88	898.02	93.40	-1.52E-02	6.82E-02	1.03E-01
		1836.01	99.38	-1.64E-02		6.82E-02
+	NB-93M	16.57	9.43	-6.11E+01	7.01E+01	7.01E+01
+	NB-94	702.63	100.00	3.39E-02	7.65E-02	7.65E-02
		871.10	100.00	6.37E-02		8.20E-02
+	NB-95	765.79	99.81	2.82E-02	1.79E-01	1.79E-01
+	NB-95M	235.69	25.00	-1.33E+03	1.43E+02	1.43E+02
+	ZR-95	724.18	43.70	1.13E-01	1.88E-01	2.78E-01
		756.72	55.30	8.10E-02		1.88E-01
+	MO-99	181.06	6.20	5.95E+02	1.86E+03	3.46E+03
		739.58	12.80	-1.43E+03		1.86E+03
		778.00	4.50	-6.13E+03		5.54E+03
+	RU-103	497.08	89.00	5.80E-03	1.22E-01	1.22E-01
+	RU-106	621.84	9.80	1.02E-01	7.58E-01	7.58E-01
+	AG-108M	433.93	89.90	7.22E-03	6.86E-02	6.86E-02
		614.37	90.40	-4.59E-02		7.31E-02
		722.95	90.50	7.08E-02		8.69E-02

Analysis Report for 1510087-12
CP4106S05-06

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CD-109	88.03	*	3.72	2.16E+00	2.20E+00	2.20E+00
+	AG-110M	657.75		93.14	1.54E-02	8.58E-02	8.58E-02
		677.61		10.53	2.52E-01		7.57E-01
		706.67		16.46	9.98E-02		5.09E-01
		763.93		21.98	-1.65E-02		3.93E-01
		884.67		71.63	1.77E-02		1.10E-01
		1384.27		23.94	-1.08E-02		3.47E-01
+	CD-113M	263.70		0.02	-3.10E+01	2.14E+02	2.14E+02
+	SN-113	255.12		1.93	-3.48E-01	1.09E-01	3.09E+00
		391.69		64.90	2.47E-02		1.09E-01
+	TE123M	159.00		84.10	2.21E-02	7.60E-02	7.60E-02
+	SB-124	602.71		97.87	1.12E-02	1.03E-01	1.03E-01
		645.85		7.26	-1.64E-01		1.33E+00
		722.78		11.10	8.41E-01		1.03E+00
		1691.02		49.00	3.73E-02		1.69E-01
+	I-125	35.49		6.49	9.67E-01	3.31E+00	3.31E+00
+	SB-125	176.33		6.89	-4.63E-02	2.20E-01	8.01E-01
		427.89		29.33	-2.34E-02		2.20E-01
		463.38		10.35	3.98E-01		7.05E-01
		600.56		17.80	7.32E-03		4.04E-01
		635.90		11.32	-6.72E-02		5.92E-01
+	SB-126	414.70		83.30	-2.73E-01	4.42E-01	4.80E-01
		666.33		99.60	-1.21E-01		4.42E-01
		695.00		99.60	1.96E-01		4.76E-01
		720.50		53.80	5.13E-01		9.02E-01
+	SN-126	87.57	*	37.00	2.07E-01	2.11E-01	2.11E-01
+	SB-127	473.00		25.00	1.53E+01	7.05E+01	9.21E+01
		685.20		35.70	-4.06E+01		7.05E+01
		783.80		14.70	7.08E+01		1.94E+02
+	I-129	29.78		57.00	5.80E-02	4.81E-01	4.81E-01
		33.60		13.20	9.26E-01		1.36E+00
		39.58		7.52	1.52E+00		1.52E+00
+	I-131	284.30		6.05	-1.47E-01	1.08E+00	1.46E+01
		364.48		81.20	-4.17E-03		1.08E+00
		636.97		7.26	2.20E+00		1.50E+01
		722.89		1.80	5.96E+01		7.32E+01
+	TE-132	49.72		13.10	9.86E+01	6.89E+01	6.22E+02
		228.16		88.00	2.85E+00		6.89E+01
+	BA-133	81.00		33.00	-7.15E-02	9.63E-02	1.81E-01
		302.84		17.80	1.68E-01		3.35E-01
		356.01		60.00	1.59E-02		9.63E-02
+	I-133	529.87		86.30	2.67E+09	1.67E+10	1.67E+10
+	XE-133	81.00		38.00	-4.65E+00	1.18E+01	1.18E+01
+	CS-134	563.23		8.38	2.30E-01	7.04E-02	8.58E-01
		569.32		15.43	-1.35E-01		4.66E-01
		604.70		97.60	9.06E-03		7.04E-02
		795.84		85.40	7.45E-02		1.01E-01
		801.93		8.73	-1.22E-01		8.23E-01
+	CS-135	268.24		16.00	2.87E-01	3.81E-01	3.81E-01

Analysis Report for 1510087-12
CP4106S05-06

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	-1.67E+00	4.04E-01	4.11E+00
		163.89	4.61	2.86E+00		6.41E+00
		176.55	13.56	-1.29E-01		2.23E+00
		273.65	12.66	-3.19E+00		2.41E+00
		340.57	48.50	1.14E+00		8.54E-01
		818.50	99.70	1.72E-01		4.04E-01
		1048.07	79.60	1.44E-01		5.64E-01
		1235.34	19.70	2.16E-01		2.99E+00
+	CS-137	661.65	85.12	6.65E-03	8.85E-02	8.85E-02
+	LA-138	788.74	34.00	4.63E-02	1.14E-01	2.20E-01
		1435.80	66.00	7.30E-03		1.14E-01
+	CE-139	165.85	80.35	7.49E-03	7.69E-02	7.69E-02
+	BA-140	162.64	6.70	-1.10E+00	1.53E+00	4.55E+00
		304.84	4.50	-2.01E+00		6.82E+00
		423.70	3.20	-6.24E+00		1.13E+01
		437.55	2.00	-1.91E+00		1.75E+01
		537.32	25.00	2.61E-01		1.53E+00
+	LA-140	328.77	20.50	1.03E+00	4.38E-01	1.80E+00
		487.03	45.50	-1.12E-01		7.72E-01
		815.85	23.50	-5.84E-01		1.64E+00
		1596.49	95.49	3.40E-02		4.38E-01
+	CE-141	145.44	48.40	8.64E-02	2.26E-01	2.26E-01
+	CE-143	57.36	11.80	1.17E+05	3.08E+06	8.81E+06
		293.26	42.00	9.06E+06		3.08E+06
		664.55	5.20	-3.39E+05		2.00E+07
+	CE-144	133.54	10.80	-3.30E-02	4.77E-01	4.77E-01
+	PM-144	476.78	42.00	-1.06E-02	7.44E-02	1.64E-01
		618.01	98.60	1.87E-02		7.47E-02
		696.49	99.49	-4.32E-02		7.44E-02
+	PM-145	36.85	21.70	-7.32E-01	3.22E-01	5.91E-01
		37.36	39.70	-2.54E-01		3.22E-01
		42.30	15.10	-4.31E-02		6.28E-01
		72.40	2.31	-1.44E+00		3.57E+00
+	PM-146	453.90	39.94	4.89E-03	1.69E-01	1.69E-01
		735.90	14.01	8.20E-02		4.81E-01
		747.13	13.10	1.60E-01		5.71E-01
+	ND-147	91.11	28.90	-1.62E-01	1.94E+00	1.94E+00
		531.02	13.10	-2.85E-01		3.87E+00
+	PM-149	285.90	3.10	7.72E+03	4.87E+04	4.87E+04
+	EU-152	121.78	20.50	-1.41E-01	2.39E-01	2.39E-01
		244.69	5.40	-7.93E-01		1.13E+00
		344.27	19.13	3.61E-02		2.78E-01
		778.89	9.20	-3.66E-01		7.44E-01
		964.01	10.40	2.58E-01		9.60E-01
		1085.78	7.22	-6.62E-01		1.20E+00
		1112.02	9.60	2.83E-02		8.22E-01

Analysis Report for 1510087-12

CP4106S05-06

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
	EU-152	1407.95	14.94	3.82E-01	2.39E-01	5.33E-01
+	GD-153	97.43	31.30	-3.98E-02	1.82E-01	1.82E-01
		103.18	22.20	1.13E-01		2.53E-01
+	EU-154	123.07	40.50	4.85E-02	1.25E-01	1.25E-01
		723.30	19.70	3.28E-01		4.02E-01
		873.19	11.50	-1.96E-01		6.59E-01
		996.32	10.30	-2.15E-01		7.98E-01
		1004.76	17.90	1.00E-01		5.08E-01
		1274.45	35.50	-1.21E-01		1.86E-01
+	EU-155	86.50	30.90	-1.21E-01	2.23E-01	2.23E-01
		105.30	20.70	5.16E-02		2.51E-01
+	EU-156	811.77	10.40	-7.01E-01	2.94E+00	2.94E+00
		1153.47	7.20	3.58E+00		5.83E+00
		1230.71	8.90	6.89E-01		5.03E+00
+	HO-166M	184.41	72.60	2.02E-01	9.94E-02	9.94E-02
		280.45	29.60	-7.12E-02		1.70E-01
		410.94	11.10	4.88E-01		6.14E-01
		711.69	54.10	-5.03E-03		1.28E-01
+	TM-171	66.72	0.14	1.42E+01	5.28E+01	5.28E+01
+	HF-172	81.75	4.52	-5.95E-01	4.71E-01	1.39E+00
		125.81	11.30	1.09E-01		4.71E-01
+	LU-172	181.53	20.60	8.15E-01	4.30E+00	8.25E+00
		810.06	16.63	7.31E+00		1.34E+01
		912.12	15.25	8.85E+01		3.01E+01
		1093.66	62.50	1.46E-01		4.30E+00
+	LU-173	100.72	5.24	3.14E-01	3.12E-01	1.02E+00
		272.11	21.20	3.75E-01		3.12E-01
+	HF-175	343.40	84.00	2.08E-02	8.85E-02	8.85E-02
+	LU-176	88.34	13.30	1.13E+00	5.16E-02	5.37E-01
		201.83	86.00	-1.01E-02		6.27E-02
		306.78	94.00	-9.35E-03		5.16E-02
+	TA-182	67.75	41.20	4.07E-02	2.06E-01	2.06E-01
		1121.30	34.90	7.18E-01		4.98E-01
		1189.05	16.23	-7.43E-01		6.09E-01
		1221.41	26.98	-1.88E-01		3.93E-01
		1231.02	11.44	1.47E-01		1.07E+00
+	IR-192	308.46	29.68	-2.62E-02	1.85E-01	2.32E-01
		468.07	48.10	6.81E-02		1.85E-01
+	HG-203	279.19	77.30	9.90E-03	1.13E-01	1.13E-01
+	BI-207	569.67	97.72	-1.88E-02	7.24E-02	7.24E-02
		1063.62	74.90	5.23E-02		1.08E-01
+	TL-208	583.14	* 30.22	1.67E+00	9.67E-02	3.28E-01
		860.37	* 4.48	1.53E+00		1.77E+00
		2614.66	* 35.85	1.39E+00		9.67E-02
+	BI-210M	262.00	45.00	3.72E-04	1.12E-01	1.12E-01
		300.00	23.00	-6.82E-01		2.70E-01
+	PB-210	46.50	* 4.25	2.88E+00	2.63E+00	2.63E+00
+	PB-211	404.84	2.90	-3.21E-01	1.83E+00	1.83E+00
		831.96	2.90	6.34E-02		2.42E+00

Analysis Report for 1510087-12

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BI-212	727.17	*	11.80	9.87E-01	8.05E-01	8.05E-01
		1620.62	*	2.75	1.65E+00		1.86E+00
+	PB-212	238.63	*	44.60	1.61E+00	2.37E-01	2.37E-01
		300.09	*	3.41	2.15E+00		4.04E+00
+	BI-214	609.31	*	46.30	1.28E+00	2.12E-01	2.12E-01
		1120.29	*	15.10	1.87E+00		8.02E-01
		1764.49	*	15.80	1.63E+00		5.74E-01
		2204.22	*	4.98	1.59E+00		1.55E+00
+	PB-214	295.21	*	19.19	1.63E+00	2.10E-01	7.08E-01
		351.92	*	37.19	1.41E+00		2.10E-01
+	RN-219	401.80		6.50	7.29E-02	8.76E-01	8.76E-01
+	RA-223	323.87		3.88	-7.55E-02	1.39E+00	1.39E+00
+	RA-224	240.98	*	3.95	3.86E+00	2.66E+00	2.66E+00
+	RA-225	40.00		31.00	1.66E+00	1.65E+00	1.65E+00
+	RA-226	186.21	*	3.28	2.92E+00	2.70E+00	2.70E+00
+	TH-227	50.10		8.40	1.45E-01	5.86E-01	9.15E-01
		236.00		11.50	-5.43E+00		5.86E-01
		256.20		6.30	2.18E-01		8.01E-01
+	AC-228	338.32	*	11.40	1.64E+00	3.42E-01	7.74E-01
		911.07	*	27.70	1.62E+00		3.42E-01
		969.11	*	16.60	1.13E+00		8.93E-01
+	TH-230	48.44		16.90	5.18E-01	5.34E-01	5.34E-01
		62.85		4.60	2.58E+00		1.77E+00
		67.67		0.37	3.72E+00		1.89E+01
+	PA-231	283.67		1.60	1.87E-01	2.57E+00	3.33E+00
		302.67		2.30	1.29E+00		2.57E+00
+	TH-231	25.64		14.70	7.00E-01	1.01E+00	3.97E+00
		84.21		6.40	4.96E-01		1.01E+00
+	PA-233	311.98		38.60	8.65E-02	3.16E-01	3.16E-01
+	PA-234	131.20		20.40	7.03E-02	2.56E-01	2.56E-01
		733.99		8.80	3.12E-02		7.72E-01
		946.00		12.00	-3.58E-02		5.88E-01
+	PA-234M	1001.03		0.92	1.93E+00	9.84E+00	9.84E+00
+	TH-234	63.29	*	3.80	2.03E+00	2.62E+00	2.62E+00
+	U-235	143.76		10.50	1.91E-01	5.01E-01	5.01E-01
		163.35		4.70	5.00E-01		1.12E+00
		205.31		4.70	3.40E-01		1.26E+00
+	NP-237	86.50		12.60	-2.93E-01	5.41E-01	5.41E-01
+	NP-239	106.10		22.70	7.02E+02	3.42E+03	3.42E+03
		228.18		10.70	3.37E+02		8.17E+03
		277.60		14.10	1.75E+03		5.80E+03
+	AM-241	59.54		35.90	-2.89E-03	2.02E-01	2.02E-01
+	AM-243	74.67	*	66.00	3.70E-01	1.78E-01	1.78E-01
+	CM-243	209.75		3.29	1.09E+00	3.88E-01	1.83E+00
		228.14		10.60	2.26E-02		5.47E-01
		277.60		14.00	1.17E-01		3.88E-01

Analysis Report for 1510087-12

CP4106S05-06

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	9.56E-01	9.56E-01	-2.59E-01	4.54E-01
NA-22	1274.54	99.94	6.73E-02	6.73E-02	-4.37E-02	3.01E-02
NA-24	1368.53	99.99	4.20E+14	1.53E+14	8.07E+13	1.90E+14
	2754.09	99.86	1.53E+14		-1.25E+14	4.85E+13
AL-26	1808.65	99.76	4.61E-02	4.61E-02	1.09E-03	1.86E-02
+ K-40	1460.81	* 10.67	1.08E+00	1.08E+00	2.14E+01	5.04E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	7.38E-02	7.38E-02	1.46E-02	3.61E-02
	78.34	96.00	9.20E-02		2.20E-01	4.53E-02
SC-46	889.25	99.98	9.46E-02	9.46E-02	-1.50E-02	4.39E-02
	1120.51	99.99	1.89E-01		3.33E-01	9.04E-02
V-48	983.52	99.98	3.21E-01	3.21E-01	9.39E-02	1.49E-01
	1312.10	97.50	3.50E-01		2.80E-02	1.60E-01
CR-51	320.08	9.83	1.20E+00	1.20E+00	-2.69E-01	5.70E-01
MN-54	834.83	99.97	7.44E-02	7.44E-02	-4.87E-02	3.45E-02
CO-56	846.75	99.96	1.01E-01	1.01E-01	3.21E-02	4.70E-02
	1037.75	14.03	6.93E-01		-6.57E-02	3.18E-01
	1238.25	67.00	2.41E-01		1.83E-01	1.14E-01
	1771.40	15.51	4.16E-01		-1.45E-01	1.71E-01
	2598.48	16.90	2.73E-01		-4.90E-02	9.67E-02
CO-57	122.06	85.51	6.21E-02	6.21E-02	-3.67E-02	3.02E-02
	136.48	10.60	4.99E-01		7.32E-02	2.42E-01
CO-58	810.76	99.40	1.01E-01	1.01E-01	4.36E-02	4.72E-02
FE-59	1099.22	56.50	2.49E-01	2.49E-01	1.11E-01	1.15E-01
	1291.56	43.20	3.02E-01		0.00E+00	1.38E-01
CO-60	1173.22	100.00	9.02E-02	7.82E-02	2.93E-02	4.18E-02
	1332.49	100.00	7.82E-02		-4.04E-03	3.54E-02
ZN-65	1115.52	50.75	1.90E-01	1.90E-01	-7.03E-01	8.82E-02
GA-67	93.31	35.70	2.04E+02	2.04E+02	4.72E+02	1.00E+02

: 00742

Analysis Report for 1510087-12

CP4106S05-06

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
GA-67	208.95	2.24	2.75E+03	2.04E+02	-1.32E+03	1.33E+03
	300.22	16.00	4.05E+02		-1.02E+03	1.95E+02
SE-75	121.11	16.70	3.53E-01	9.75E-02	-4.98E-02	1.71E-01
	136.00	59.20	9.75E-02		3.43E-02	4.73E-02
	264.65	59.80	1.01E-01		-8.44E-03	4.85E-02
	279.53	25.20	2.49E-01		-4.28E-02	1.19E-01
	400.65	11.40	6.07E-01		1.25E-01	2.88E-01
RB-82	776.52	13.00	1.25E+00	1.25E+00	-5.95E-01	5.81E-01
RB-83	520.41	46.00	1.86E-01	1.86E-01	9.15E-02	8.84E-02
	529.64	30.30	2.73E-01		4.36E-02	1.29E-01
	552.65	16.40	4.96E-01		4.91E-02	2.34E-01
KR-85	513.99	0.43	2.27E+01	2.27E+01	3.90E+01	1.10E+01
SR-85	513.99	99.27	1.40E-01	1.40E-01	2.41E-01	6.76E-02
Y-88	898.02	93.40	1.03E-01	6.82E-02	-1.52E-02	4.82E-02
	1836.01	99.38	6.82E-02		-1.64E-02	2.86E-02
NB-93M	16.57	9.43	7.01E+01	7.01E+01	-6.11E+01	3.25E+01
NB-94	702.63	100.00	7.65E-02	7.65E-02	3.39E-02	3.61E-02
	871.10	100.00	8.20E-02		6.37E-02	3.84E-02
NB-95	765.79	99.81	1.79E-01	1.79E-01	2.82E-02	8.53E-02
NB-95M	235.69	25.00	1.43E+02	1.43E+02	-1.33E+03	6.95E+01
ZR-95	724.18	43.70	2.78E-01	1.88E-01	1.13E-01	1.32E-01
	756.72	55.30	1.88E-01		8.10E-02	8.79E-02
MO-99	181.06	6.20	3.46E+03	1.86E+03	5.95E+02	1.68E+03
	739.58	12.80	1.86E+03		-1.43E+03	8.61E+02
	778.00	4.50	5.54E+03		-6.13E+03	2.57E+03
RU-103	497.08	89.00	1.22E-01	1.22E-01	5.80E-03	5.78E-02
RU-106	621.84	9.80	7.58E-01	7.58E-01	1.02E-01	3.58E-01
AG-108M	433.93	89.90	6.86E-02	6.86E-02	7.22E-03	3.26E-02
	614.37	90.40	7.31E-02		-4.59E-02	3.44E-02
	722.95	90.50	8.69E-02		7.08E-02	4.10E-02
+ CD-109	88.03	* 3.72	2.20E+00	2.20E+00	2.16E+00	1.08E+00
AG-110M	657.75	93.14	8.58E-02	8.58E-02	1.54E-02	4.05E-02
	677.61	10.53	7.57E-01		2.52E-01	3.57E-01
	706.67	16.46	5.09E-01		9.98E-02	2.40E-01
	763.93	21.98	3.93E-01		-1.65E-02	1.85E-01
	884.67	71.63	1.10E-01		1.77E-02	5.09E-02
	1384.27	23.94	3.47E-01		-1.08E-02	1.57E-01
CD-113M	263.70	0.02	2.14E+02	2.14E+02	-3.10E+01	1.02E+02
SN-113	255.12	1.93	3.09E+00	1.09E-01	-3.48E-01	1.48E+00
	391.69	64.90	1.09E-01		2.47E-02	5.20E-02
TE123M	159.00	84.10	7.60E-02	7.60E-02	2.21E-02	3.69E-02
SB-124	602.71	97.87	1.03E-01	1.03E-01	1.12E-02	4.87E-02
	645.85	7.26	1.33E+00		-1.64E-01	6.25E-01
	722.78	11.10	1.03E+00		8.41E-01	4.87E-01
	1691.02	49.00	1.69E-01		3.73E-02	7.19E-02
I-125	35.49	6.49	3.31E+00	3.31E+00	9.67E-01	1.61E+00
SB-125	176.33	6.89	8.01E-01	2.20E-01	-4.63E-02	3.88E-01
	427.89	29.33	2.20E-01		-2.34E-02	1.05E-01
	463.38	10.35	7.05E-01		3.98E-01	3.37E-01
	600.56	17.80	4.04E-01		7.32E-03	1.91E-01
	635.90	11.32	5.92E-01		-6.72E-02	2.78E-01
SB-126	414.70	83.30	4.80E-01	4.42E-01	-2.73E-01	2.29E-01
	666.33	99.60	4.42E-01		-1.21E-01	2.08E-01

Analysis Report for 1510087-12
CP4106S05-06

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-126	695.00	99.60	4.76E-01	4.42E-01	1.96E-01	2.25E-01
	720.50	53.80	9.02E-01		5.13E-01	4.25E-01
+ SN-126	87.57	* 37.00	2.11E-01	2.11E-01	2.07E-01	1.04E-01
SB-127	473.00	25.00	9.21E+01	7.05E+01	1.53E+01	4.37E+01
	685.20	35.70	7.05E+01		-4.06E+01	3.31E+01
	783.80	14.70	1.94E+02		7.08E+01	9.10E+01
I-129	29.78	57.00	4.81E-01	4.81E-01	5.80E-02	2.33E-01
	33.60	13.20	1.36E+00		9.26E-01	6.62E-01
	39.58	7.52	1.52E+00		1.52E+00	7.36E-01
I-131	284.30	6.05	1.46E+01	1.08E+00	-1.47E-01	7.00E+00
	364.48	81.20	1.08E+00		-4.17E-03	5.14E-01
	636.97	7.26	1.50E+01		2.20E+00	7.06E+00
	722.89	1.80	7.32E+01		5.96E+01	3.45E+01
TE-132	49.72	13.10	6.22E+02	6.89E+01	9.86E+01	3.03E+02
	228.16	88.00	6.89E+01		2.85E+00	3.33E+01
BA-133	81.00	33.00	1.81E-01	9.63E-02	-7.15E-02	8.85E-02
	302.84	17.80	3.35E-01		1.68E-01	1.61E-01
	356.01	60.00	9.63E-02		1.59E-02	4.60E-02
I-133	529.87	86.30	1.67E+10	1.67E+10	2.67E+09	7.90E+09
XE-133	81.00	38.00	1.18E+01	1.18E+01	-4.65E+00	5.76E+00
CS-134	563.23	8.38	8.58E-01	7.04E-02	2.30E-01	4.06E-01
	569.32	15.43	4.66E-01		-1.35E-01	2.20E-01
	604.70	97.60	7.04E-02		9.06E-03	3.31E-02
	795.84	85.40	1.01E-01		7.45E-02	4.75E-02
	801.93	8.73	8.23E-01		-1.22E-01	3.83E-01
CS-135	268.24	16.00	3.81E-01	3.81E-01	2.87E-01	1.84E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	4.11E+00	4.04E-01	-1.67E+00	2.00E+00
	163.89	4.61	6.41E+00		2.86E+00	3.11E+00
	176.55	13.56	2.23E+00		-1.29E-01	1.08E+00
	273.65	12.66	2.41E+00		-3.19E+00	1.16E+00
	340.57	48.50	8.54E-01		1.14E+00	4.13E-01
	818.50	99.70	4.04E-01		1.72E-01	1.88E-01
	1048.07	79.60	5.64E-01		1.44E-01	2.61E-01
	1235.34	19.70	2.99E+00		2.16E-01	1.40E+00
CS-137	661.65	85.12	8.85E-02	8.85E-02	6.65E-03	4.18E-02
LA-138	788.74	34.00	2.20E-01	1.14E-01	4.63E-02	1.03E-01
	1435.80	66.00	1.14E-01		7.30E-03	5.15E-02
CE-139	165.85	80.35	7.69E-02	7.69E-02	7.49E-03	3.73E-02
BA-140	162.64	6.70	4.55E+00	1.53E+00	-1.10E+00	2.21E+00
	304.84	4.50	6.82E+00		-2.01E+00	3.26E+00
	423.70	3.20	1.13E+01		-6.24E+00	5.38E+00
	437.55	2.00	1.75E+01		-1.91E+00	8.33E+00
	537.32	25.00	1.53E+00		2.61E-01	7.26E-01
LA-140	328.77	20.50	1.80E+00	4.38E-01	1.03E+00	8.64E-01
	487.03	45.50	7.72E-01		-1.12E-01	3.65E-01
	815.85	23.50	1.64E+00		-5.84E-01	7.60E-01
	1596.49	95.49	4.38E-01		3.40E-02	1.94E-01
CE-141	145.44	48.40	2.26E-01	2.26E-01	8.64E-02	1.10E-01
CE-143	57.36	11.80	8.81E+06	3.08E+06	1.17E+05	4.30E+06
	293.26	42.00	3.08E+06		9.06E+06	1.50E+06

Analysis Report for 1510087-12

CP4106S05-06

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CE-143	664.55	5.20	2.00E+07	3.08E+06	-3.39E+05	9.44E+06
CE-144	133.54	10.80	4.77E-01	4.77E-01	-3.30E-02	2.31E-01
PM-144	476.78	42.00	1.64E-01	7.44E-02	-1.06E-02	7.78E-02
	618.01	98.60	7.47E-02		1.87E-02	3.52E-02
	696.49	99.49	7.44E-02		-4.32E-02	3.49E-02
PM-145	36.85	21.70	5.91E-01	3.22E-01	-7.32E-01	2.86E-01
	37.36	39.70	3.22E-01		-2.54E-01	1.56E-01
	42.30	15.10	6.28E-01		-4.31E-02	3.05E-01
	72.40	2.31	3.57E+00		-1.44E+00	1.75E+00
PM-146	453.90	39.94	1.69E-01	1.69E-01	4.89E-03	8.08E-02
	735.90	14.01	4.81E-01		8.20E-02	2.24E-01
	747.13	13.10	5.71E-01		1.60E-01	2.68E-01
ND-147	91.11	28.90	1.94E+00	1.94E+00	-1.62E-01	9.53E-01
	531.02	13.10	3.87E+00		-2.85E-01	1.83E+00
PM-149	285.90	3.10	4.87E+04	4.87E+04	7.72E+03	2.33E+04
EU-152	121.78	20.50	2.39E-01	2.39E-01	-1.41E-01	1.16E-01
	244.69	5.40	1.13E+00		-7.93E-01	5.46E-01
	344.27	19.13	2.78E-01		3.61E-02	1.32E-01
	778.89	9.20	7.44E-01		-3.66E-01	3.46E-01
	964.01	10.40	9.60E-01		2.58E-01	4.53E-01
	1085.78	7.22	1.20E+00		-6.62E-01	5.56E-01
	1112.02	9.60	8.22E-01		2.83E-02	3.78E-01
	1407.95	14.94	5.33E-01		3.82E-01	2.41E-01
GD-153	97.43	31.30	1.82E-01	1.82E-01	-3.98E-02	8.85E-02
	103.18	22.20	2.53E-01		1.13E-01	1.23E-01
EU-154	123.07	40.50	1.25E-01	1.25E-01	4.85E-02	6.09E-02
	723.30	19.70	4.02E-01		3.28E-01	1.90E-01
	873.19	11.50	6.59E-01		-1.96E-01	3.07E-01
	996.32	10.30	7.98E-01		-2.15E-01	3.71E-01
	1004.76	17.90	5.08E-01		1.00E-01	2.37E-01
	1274.45	35.50	1.86E-01		-1.21E-01	8.32E-02
EU-155	86.50	30.90	2.23E-01	2.23E-01	-1.21E-01	1.10E-01
	105.30	20.70	2.51E-01		5.16E-02	1.22E-01
EU-156	811.77	10.40	2.94E+00	2.94E+00	-7.01E-01	1.37E+00
	1153.47	7.20	5.83E+00		3.58E+00	2.72E+00
	1230.71	8.90	5.03E+00		6.89E-01	2.35E+00
HO-166M	184.41	72.60	9.94E-02	9.94E-02	2.02E-01	4.85E-02
	280.45	29.60	1.70E-01		-7.12E-02	8.11E-02
	410.94	11.10	6.14E-01		4.88E-01	2.94E-01
	711.69	54.10	1.28E-01		-5.03E-03	6.01E-02
TM-171	66.72	0.14	5.28E+01	5.28E+01	1.42E+01	2.58E+01
HF-172	81.75	4.52	1.39E+00	4.71E-01	-5.95E-01	6.80E-01
	125.81	11.30	4.71E-01		1.09E-01	2.29E-01
LU-172	181.53	20.60	8.25E+00	4.30E+00	8.15E-01	4.00E+00
	810.06	16.63	1.34E+01		7.31E+00	6.29E+00
	912.12	15.25	3.01E+01		8.85E+01	1.46E+01
	1093.66	62.50	4.30E+00		1.46E-01	2.00E+00
LU-173	100.72	5.24	1.02E+00	3.12E-01	3.14E-01	4.99E-01
	272.11	21.20	3.12E-01		3.75E-01	1.51E-01
HF-175	343.40	84.00	8.85E-02	8.85E-02	2.08E-02	4.22E-02
LU-176	88.34	13.30	5.37E-01	5.16E-02	1.13E+00	2.64E-01
	201.83	86.00	6.27E-02		-1.01E-02	3.03E-02
	306.78	94.00	5.16E-02		-9.35E-03	2.45E-02

Analysis Report for 1510087-12

CP4106S05-06

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
TA-182	67.75	41.20	2.06E-01	2.06E-01	4.07E-02	1.01E-01	
	1121.30	34.90	4.98E-01		7.18E-01	2.38E-01	
	1189.05	16.23	6.09E-01		-7.43E-01	2.80E-01	
	1221.41	26.98	3.93E-01		-1.88E-01	1.81E-01	
	1231.02	11.44	1.07E+00		1.47E-01	5.01E-01	
IR-192	308.46	29.68	2.32E-01	1.85E-01	-2.62E-02	1.11E-01	
	468.07	48.10	1.85E-01		6.81E-02	8.82E-02	
HG-203	279.19	77.30	1.13E-01	1.13E-01	9.90E-03	5.43E-02	
BI-207	569.67	97.72	7.24E-02	7.24E-02	-1.88E-02	3.43E-02	
	1063.62	74.90	1.08E-01		5.23E-02	4.97E-02	
+ TL-208	583.14	*	30.22	9.67E-02	1.67E+00	1.58E-01	
	860.37	*	4.48	1.77E+00	1.53E+00	8.29E-01	
	2614.66	*	35.85	9.67E-02	1.39E+00	3.43E-02	
BI-210M	262.00	45.00	1.12E-01	1.12E-01	3.72E-04	5.35E-02	
	300.00	23.00	2.70E-01		-6.82E-01	1.30E-01	
+ PB-210	46.50	*	4.25	2.63E+00	2.88E+00	1.29E+00	
	PB-211	404.84	2.90	1.83E+00	1.83E+00	-3.21E-01	8.66E-01
		831.96	2.90	2.42E+00		6.34E-02	1.12E+00
+ BI-212	727.17	*	11.80	8.05E-01	8.05E-01	9.87E-01	3.84E-01
	1620.62	*	2.75	1.86E+00		1.65E+00	7.78E-01
+ PB-212	238.63	*	44.60	2.37E-01	2.37E-01	1.61E+00	1.16E-01
	300.09	*	3.41	4.04E+00		2.15E+00	1.99E+00
+ BI-214	609.31	*	46.30	2.12E-01	2.12E-01	1.28E+00	1.02E-01
	1120.29	*	15.10	8.02E-01		1.87E+00	3.80E-01
	1764.49	*	15.80	5.74E-01		1.63E+00	2.60E-01
	2204.22	*	4.98	1.55E+00		1.59E+00	6.76E-01
+ PB-214	295.21	*	19.19	7.08E-01	2.10E-01	1.63E+00	3.48E-01
	351.92	*	37.19	2.10E-01		1.41E+00	1.01E-01
RN-219	401.80	6.50	8.76E-01	8.76E-01	7.29E-02	4.16E-01	
RA-223	323.87	3.88	1.39E+00	1.39E+00	-7.55E+00	6.61E-01	
+ RA-224	240.98	*	3.95	2.66E+00	2.66E+00	3.86E+00	1.30E+00
	RA-225	40.00	31.00	1.65E+00	1.65E+00	1.66E+00	8.04E-01
+ RA-226	186.21	*	3.28	2.70E+00	2.70E+00	2.92E+00	1.33E+00
	TH-227	50.10	8.40	9.15E-01	5.86E-01	1.45E-01	4.46E-01
236.00		11.50	5.86E-01		-5.43E+00	2.84E-01	
256.20		6.30	8.01E-01		2.18E-01	3.84E-01	
+ AC-228	338.32	*	11.40	7.74E-01	3.42E-01	1.64E+00	3.76E-01
	911.07	*	27.70	3.42E-01		1.62E+00	1.61E-01
	969.11	*	16.60	8.93E-01		1.13E+00	4.30E-01
TH-230	48.44	16.90	5.34E-01	5.34E-01	5.18E-01	2.61E-01	
	62.85	4.60	1.77E+00		2.58E+00	8.67E-01	
	67.67	0.37	1.89E+01		3.72E+00	9.23E+00	
PA-231	283.67	1.60	3.33E+00	2.57E+00	1.87E-01	1.60E+00	
	302.67	2.30	2.57E+00		1.29E+00	1.24E+00	
TH-231	25.64	14.70	3.97E+00	1.01E+00	7.00E-01	1.92E+00	
	84.21	6.40	1.01E+00		4.96E-01	4.92E-01	
PA-233	311.98	38.60	3.16E-01	3.16E-01	8.65E-02	1.51E-01	
PA-234	131.20	20.40	2.56E-01	2.56E-01	7.03E-02	1.24E-01	
	733.99	8.80	7.72E-01		3.12E-02	3.60E-01	
	946.00	12.00	5.88E-01		-3.58E-02	2.71E-01	
PA-234M	1001.03	0.92	9.84E+00	9.84E+00	1.93E+00	4.61E+00	
+ TH-234	63.29	*	3.80	2.62E+00	2.62E+00	2.03E+00	1.29E+00
	U-235	143.76	10.50	5.01E-01	5.01E-01	1.91E-01	2.43E-01

Analysis Report for 1510087-12
 CP4106S05-06

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
U-235	163.35	4.70	1.12E+00	5.01E-01	5.00E-01	5.44E-01
	205.31	4.70	1.26E+00		3.40E-01	6.08E-01
NP-237	86.50	12.60	5.41E-01	5.41E-01	-2.93E-01	2.65E-01
NP-239	106.10	22.70	3.42E+03	3.42E+03	7.02E+02	1.66E+03
	228.18	10.70	8.17E+03		3.37E+02	3.95E+03
	277.60	14.10	5.80E+03		1.75E+03	2.78E+03
AM-241	59.54	35.90	2.02E-01	2.02E-01	-2.89E-03	9.89E-02
+ AM-243	74.67	* 66.00	1.78E-01	1.78E-01	3.70E-01	8.79E-02
CM-243	209.75	3.29	1.83E+00	3.88E-01	1.09E+00	8.85E-01
	228.14	10.60	5.47E-01		2.26E-02	2.64E-01
	277.60	14.00	3.88E-01		1.17E-01	1.86E-01

- + = Nuclide identified during the nuclide identification
- * = Energy line found in the spectrum
- > = MDA value not calculated
- @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP4106S05-06

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	57	90	82	78	74	80
25:	74	73	60	61	62	69	62	74
33:	66	84	64	75	59	68	64	90
41:	101	70	60	75	66	107	204	108
49:	95	91	87	89	76	121	94	117
57:	104	120	125	130	137	138	192	275
65:	161	146	147	168	138	136	138	154
73:	175	197	442	339	422	566	124	125
81:	119	139	110	156	170	115	186	242
89:	123	200	172	130	296	244	128	90
97:	81	90	96	121	79	81	89	85
105:	97	109	86	83	87	85	96	83
113:	85	89	93	75	88	75	83	69
121:	84	79	71	83	92	78	84	84
129:	95	115	91	81	76	56	70	59
137:	71	84	68	76	78	65	57	102
145:	96	75	67	78	87	80	85	72
153:	80	97	86	69	91	68	68	75
161:	60	66	74	74	65	70	63	67
169:	61	54	52	66	82	66	66	71
177:	72	61	67	70	76	76	73	79
185:	72	188	169	63	60	66	65	68
193:	64	66	55	60	69	57	58	62
201:	53	67	37	67	61	92	56	61
209:	79	89	47	63	58	61	66	59
217:	52	58	54	43	54	45	52	59
225:	48	55	65	54	54	55	67	48
233:	56	53	41	53	69	154	652	263
241:	100	163	107	50	47	42	39	40
249:	43	36	37	33	25	34	36	34
257:	43	35	38	33	45	33	32	32
265:	39	29	40	33	41	74	65	45
273:	42	42	35	32	47	53	31	26
281:	28	34	40	30	24	49	30	44
289:	32	29	28	41	45	37	161	217
297:	67	33	30	57	68	37	32	36
305:	28	23	34	19	26	40	23	32
313:	33	23	23	36	31	28	28	29
321:	27	29	36	22	31	31	31	61
329:	53	37	19	33	33	25	27	30
337:	29	84	143	42	34	27	24	30
345:	23	33	22	25	25	27	72	318
353:	218	38	20	26	34	31	25	27
361:	23	29	27	24	24	20	24	22

369: 23 21 20 15 25 18 24 24

Sample Title: CP4106S05-06

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	20	21	25	15	21	23	26	22
385:	26	19	22	22	23	25	38	24
393:	18	28	30	20	17	24	23	22
401:	25	31	23	21	27	20	13	20
409:	19	38	24	19	29	23	22	14
417:	24	19	19	27	21	20	10	26
425:	19	19	17	27	20	19	17	26
433:	19	18	9	16	23	13	19	28
441:	10	17	17	22	11	21	18	24
449:	16	23	17	21	13	24	23	24
457:	20	21	20	15	13	16	33	41
465:	25	18	11	16	19	26	15	13
473:	14	22	17	14	13	17	11	28
481:	24	18	25	19	9	14	14	19
489:	12	13	17	17	17	10	11	12
497:	12	21	16	20	13	10	14	15
505:	18	12	12	9	23	53	101	61
513:	34	26	12	17	8	10	15	15
521:	19	18	20	14	7	17	12	18
529:	16	13	14	14	13	14	14	17
537:	12	14	19	12	15	12	15	15
545:	17	14	14	15	10	18	17	11
553:	12	8	6	18	13	11	13	16
561:	10	22	17	18	16	11	15	15
569:	14	20	18	15	14	22	20	20
577:	9	9	13	13	11	36	148	160
585:	49	18	14	10	13	11	11	13
593:	7	5	14	15	13	16	17	14
601:	15	15	12	12	15	14	7	14
609:	154	239	65	15	17	11	13	11
617:	9	9	22	17	12	7	12	16
625:	8	14	15	11	15	13	15	9
633:	12	9	8	14	15	5	16	11
641:	13	7	16	6	12	15	10	8
649:	12	19	8	7	10	11	14	11
657:	13	12	17	19	8	16	11	7
665:	21	19	12	5	11	12	19	10
673:	13	8	16	14	10	9	11	15
681:	14	14	7	15	11	9	13	11
689:	15	16	11	12	23	17	16	9
697:	7	10	10	8	15	11	15	20
705:	11	13	5	16	15	12	10	12
713:	7	8	10	10	12	10	5	19
721:	17	12	14	16	4	12	36	45
729:	19	9	10	9	11	7	6	16
737:	8	7	9	5	7	15	5	15
745:	11	13	8	13	10	8	11	7
753:	10	8	12	11	11	12	9	11
761:	5	10	10	16	17	12	16	24
769:	29	16	9	9	16	8	10	11
777:	7	4	11	8	6	14	17	10
785:	14	12	10	10	9	12	5	15
793:	6	8	26	18	11	11	11	6

801: 7 10 9 8 10 9 13 12

Sample Title: CP4106S05-06

Channel	1	2	3	4	5	6	7	8
809:	11	9	11	11	5	7	4	5
817:	11	10	10	8	7	12	5	10
825:	15	6	4	6	8	8	14	2
833:	9	6	11	9	12	7	10	14
841:	12	9	8	14	7	11	10	8
849:	6	10	7	7	12	10	8	13
857:	5	4	8	11	35	10	5	18
865:	11	6	7	9	15	10	7	9
873:	8	17	4	7	10	9	9	11
881:	14	11	5	5	7	12	5	10
889:	7	4	10	7	8	13	7	9
897:	9	10	2	11	16	6	13	13
905:	10	10	1	10	4	27	89	109
913:	18	11	10	3	7	10	4	5
921:	9	6	8	5	6	7	8	3
929:	6	7	11	11	12	18	20	12
937:	9	9	3	4	7	5	6	4
945:	5	6	10	6	10	10	6	8
953:	9	5	4	10	8	7	7	12
961:	10	10	8	14	27	20	6	30
969:	63	53	16	8	9	7	8	8
977:	6	7	8	6	9	6	9	5
985:	6	8	11	4	7	7	7	6
993:	11	9	8	9	10	7	5	8
1001:	16	17	11	9	14	4	10	7
1009:	6	9	4	3	6	5	7	6
1017:	8	11	5	7	4	7	10	7
1025:	6	4	6	5	8	8	8	3
1033:	9	6	10	4	8	6	1	7
1041:	7	8	4	7	13	4	6	9
1049:	6	6	8	7	6	6	6	6
1057:	5	8	6	3	6	11	8	6
1065:	2	12	6	3	7	6	9	8
1073:	6	3	4	5	7	7	5	5
1081:	8	11	6	7	8	11	8	8
1089:	9	14	11	9	4	10	9	15
1097:	6	7	7	5	7	7	4	2
1105:	8	7	4	3	3	5	9	8
1113:	10	6	4	5	12	7	13	46
1121:	46	26	12	8	13	9	2	9
1129:	7	10	5	4	11	12	7	9
1137:	4	12	6	5	9	9	5	4
1145:	6	6	6	7	3	6	8	8
1153:	9	9	14	9	8	4	10	7
1161:	4	6	8	12	17	8	9	5
1169:	11	9	3	7	7	7	10	11
1177:	7	5	6	9	9	11	9	7
1185:	7	11	6	6	8	3	5	4
1193:	17	12	8	7	12	10	13	9
1201:	5	6	11	11	9	13	7	8
1209:	8	11	8	12	6	8	4	12
1217:	7	9	2	3	10	8	6	10
1225:	7	11	9	12	6	8	12	17

1233: 4 6 6 9 10 19 29 13

Sample Title: CP4106S05-06

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	9	11	12	4	6	10	8	8
1249:	5	6	3	3	9	4	9	12
1257:	5	6	9	7	11	6	10	4
1265:	3	5	6	5	7	7	3	4
1273:	4	5	3	2	3	2	8	6
1281:	9	6	8	3	7	6	4	2
1289:	6	6	8	6	4	3	5	5
1297:	6	6	4	4	2	7	2	5
1305:	11	7	5	7	5	7	6	6
1313:	8	4	2	1	8	4	5	5
1321:	4	5	8	3	5	2	5	8
1329:	4	5	5	4	4	7	3	3
1337:	4	4	2	5	7	1	0	5
1345:	2	4	2	2	3	2	6	4
1353:	2	6	4	6	5	3	3	2
1361:	0	4	4	5	4	6	6	1
1369:	5	5	2	4	3	7	6	5
1377:	13	16	12	3	3	10	1	8
1385:	2	3	2	4	3	3	3	1
1393:	1	2	2	4	3	3	1	3
1401:	5	4	1	2	2	1	5	7
1409:	9	4	3	3	0	0	2	1
1417:	6	5	3	2	1	2	3	2
1425:	5	1	2	1	5	1	1	2
1433:	2	5	7	4	2	3	4	3
1441:	2	6	4	3	5	3	0	1
1449:	3	4	5	4	1	4	3	2
1457:	2	5	25	149	376	219	49	6
1465:	4	7	1	0	2	2	1	5
1473:	4	2	7	0	6	5	1	2
1481:	1	4	1	1	2	1	1	2
1489:	4	2	1	3	3	0	1	6
1497:	1	4	3	3	2	2	1	1
1505:	1	2	1	3	7	8	5	2
1513:	4	7	1	2	0	1	5	3
1521:	5	4	1	1	4	1	1	3
1529:	4	9	2	4	1	1	3	1
1537:	6	6	2	4	1	2	4	4
1545:	2	0	2	1	6	2	1	2
1553:	2	4	3	6	4	2	0	3
1561:	0	1	1	2	3	4	2	0
1569:	2	2	2	2	1	2	0	0
1577:	1	0	1	3	2	3	2	1
1585:	0	0	6	11	7	3	4	2
1593:	8	6	2	1	2	0	1	4
1601:	1	0	0	3	2	0	1	3
1609:	4	1	3	3	4	1	1	0
1617:	1	1	3	2	8	4	2	0
1625:	2	3	1	1	3	1	5	2
1633:	1	1	1	0	2	4	3	0
1641:	1	2	2	0	4	0	1	1
1649:	0	1	2	3	0	0	0	4
1657:	2	2	2	1	4	2	1	1

1665: 0 0 0 2 2 0 1 0

Sample Title: CP4106S05-06

Channel	1	2	3	4	5	6	7	8
1673:	0	5	1	2	1	3	0	2
1681:	1	0	2	1	1	2	0	3
1689:	2	0	1	2	1	2	1	1
1697:	1	0	0	1	3	2	0	1
1705:	1	1	1	5	0	1	0	0
1713:	2	2	1	1	1	0	2	0
1721:	1	2	1	1	0	1	1	2
1729:	7	1	7	2	1	1	1	1
1737:	2	0	3	1	1	0	2	1
1745:	3	1	0	1	2	2	0	0
1753:	3	4	1	3	1	1	1	2
1761:	2	1	6	19	38	18	5	1
1769:	1	1	2	2	0	0	1	4
1777:	2	0	2	1	1	1	2	2
1785:	2	1	2	1	2	1	0	1
1793:	2	2	1	1	1	0	3	4
1801:	0	0	1	0	0	2	1	1
1809:	1	1	0	2	0	0	1	1
1817:	1	1	3	3	1	1	1	1
1825:	3	1	1	1	3	1	3	1
1833:	2	1	1	0	1	3	1	4
1841:	0	2	0	1	0	2	4	5
1849:	4	0	2	0	0	4	1	1
1857:	1	1	2	1	2	1	0	1
1865:	3	0	0	3	2	0	2	0
1873:	3	5	3	0	1	1	0	0
1881:	2	3	2	1	0	0	0	2
1889:	1	0	0	1	0	1	1	1
1897:	2	1	1	2	1	0	0	0
1905:	1	0	0	2	1	0	2	2
1913:	0	1	1	1	4	1	1	1
1921:	4	0	2	0	0	0	2	1
1929:	0	0	1	1	1	3	0	2
1937:	0	2	1	2	0	0	2	0
1945:	0	0	3	2	0	5	0	0
1953:	0	1	0	1	1	1	0	3
1961:	2	2	0	0	1	0	1	0
1969:	3	3	0	1	1	0	1	1
1977:	0	0	2	1	1	0	1	1
1985:	0	1	2	2	3	1	1	3
1993:	1	0	2	0	0	2	0	1
2001:	0	0	0	0	0	0	3	1
2009:	0	1	0	0	1	1	1	0
2017:	0	1	0	1	2	1	1	2
2025:	0	0	1	0	0	0	1	0
2033:	3	0	1	1	3	0	2	0
2041:	0	0	3	2	2	1	1	0
2049:	0	2	0	0	1	2	0	0
2057:	0	0	0	2	3	2	1	0
2065:	0	1	1	2	1	0	1	0
2073:	1	0	1	0	0	0	0	0
2081:	1	1	2	0	1	2	1	0
2089:	0	0	1	0	0	1	0	1

2097: 1 2 1 2 1 2 7 5

Sample Title: CP4106S05-06

Channel	1	2	1	2	1	2	7	5
2105:	4	1	2	1	1	1	0	0
2113:	1	0	2	2	0	3	2	3
2121:	1	1	0	0	1	1	0	0
2129:	0	1	1	3	1	1	0	1
2137:	2	1	1	1	1	1	0	2
2145:	1	0	1	0	3	0	0	3
2153:	0	0	0	3	0	0	1	1
2161:	1	0	1	1	1	2	2	0
2169:	1	1	0	1	2	0	1	0
2177:	1	2	1	1	1	0	2	1
2185:	2	1	0	1	0	1	0	2
2193:	0	2	0	2	2	1	0	0
2201:	0	4	7	10	5	2	1	1
2209:	1	1	2	0	0	0	0	0
2217:	0	0	1	1	0	1	3	2
2225:	2	0	0	2	1	1	0	0
2233:	0	2	1	1	0	0	1	0
2241:	1	1	0	0	0	1	1	0
2249:	1	1	1	2	1	1	1	2
2257:	2	0	2	0	0	2	2	1
2265:	3	2	3	1	0	1	1	0
2273:	0	1	0	1	0	0	1	0
2281:	1	0	1	1	2	0	1	1
2289:	1	1	0	1	1	1	0	3
2297:	2	0	2	0	0	2	3	0
2305:	0	2	2	3	3	0	1	2
2313:	0	0	1	0	1	1	1	5
2321:	1	0	2	2	5	1	0	3
2329:	0	1	2	1	0	2	1	2
2337:	0	3	2	1	3	1	0	2
2345:	3	0	2	0	1	1	2	1
2353:	2	0	0	1	1	0	2	2
2361:	2	3	0	2	1	2	2	1
2369:	2	3	3	1	2	3	3	0
2377:	0	1	1	1	1	1	0	3
2385:	0	4	0	0	1	0	3	2
2393:	0	1	0	1	0	0	3	1
2401:	0	0	0	1	1	1	0	0
2409:	3	1	1	0	2	1	0	3
2417:	0	2	2	1	2	1	1	0
2425:	1	0	2	0	2	1	0	3
2433:	1	1	1	1	0	0	2	2
2441:	0	0	2	1	1	2	5	5
2449:	1	0	3	0	1	0	2	0
2457:	0	2	1	0	2	1	2	0
2465:	2	1	0	0	1	1	2	1
2473:	3	0	0	0	2	1	0	1
2481:	0	0	0	0	0	1	0	1
2489:	0	0	1	0	3	0	0	2
2497:	0	0	0	1	3	0	0	0
2505:	1	0	1	1	0	0	0	1
2513:	0	2	0	0	0	1	0	0
2521:	0	0	0	0	0	0	0	0

2529: 0 1 0 0 1 1 0 2

Sample Title: CP4106S05-06

Channel	1	2	3	4	5	6	7	8
2537:	0	1	0	0	0	0	1	1
2545:	1	2	0	1	1	0	1	0
2553:	0	0	1	0	0	0	1	0
2561:	0	1	0	0	0	0	0	0
2569:	0	0	1	0	1	0	0	0
2577:	0	0	0	0	0	0	1	1
2585:	1	0	0	1	0	2	1	0
2593:	1	0	1	0	1	0	0	0
2601:	0	0	0	1	0	0	0	0
2609:	0	0	2	4	11	38	57	22
2617:	2	1	0	0	0	0	0	0
2625:	0	1	0	1	0	0	0	0
2633:	0	0	0	0	0	0	0	0
2641:	1	0	0	2	0	1	0	0
2649:	1	0	0	0	0	1	0	1
2657:	1	0	1	0	0	1	0	0
2665:	0	0	0	0	0	0	2	0
2673:	0	0	0	1	0	0	1	0
2681:	0	0	0	0	0	0	0	1
2689:	0	0	0	0	0	0	0	1
2697:	0	0	0	0	1	1	1	1
2705:	2	1	0	0	0	0	1	0
2713:	2	1	0	0	1	0	1	0
2721:	0	0	0	1	1	0	1	1
2729:	0	0	1	0	0	0	0	0
2737:	1	0	1	1	0	2	0	0
2745:	0	0	0	2	0	0	0	0
2753:	0	0	1	0	0	2	0	1
2761:	0	0	0	0	0	1	1	0
2769:	1	0	0	0	0	0	2	0
2777:	0	0	0	0	2	0	0	0
2785:	0	0	1	0	0	1	0	0
2793:	1	0	0	0	0	0	0	1
2801:	0	0	0	0	0	1	0	0
2809:	0	0	0	0	0	0	0	0
2817:	1	0	0	1	0	0	0	0
2825:	0	0	0	0	0	1	0	0
2833:	0	0	0	1	0	0	1	0
2841:	1	0	0	0	0	0	0	0
2849:	0	0	0	2	0	0	0	1
2857:	0	0	2	1	0	0	1	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	1	0	0	0
2881:	1	0	0	1	1	1	0	1
2889:	0	2	0	0	2	0	0	1
2897:	0	0	0	1	0	0	0	0
2905:	0	3	0	0	0	0	0	0
2913:	0	0	0	0	0	0	1	0
2921:	1	0	2	0	1	0	1	1
2929:	0	0	1	0	0	0	0	1
2937:	0	1	1	0	0	0	0	0
2945:	0	1	0	1	0	0	0	0
2953:	0	0	0	0	1	0	0	0

2961: 0 0 1 0 0 0 0 0

Sample Title: CP4106S05-06

Channel	1	2	3	4	5	6	7	8
2969:	1	1	0	0	0	0	0	0
2977:	0	0	1	0	0	0	1	0
2985:	1	0	1	0	0	0	0	0
2993:	1	0	0	0	0	1	0	0
3001:	1	0	0	0	0	0	0	0
3009:	1	0	0	0	0	0	1	0
3017:	0	0	1	0	1	1	0	0
3025:	0	2	0	0	0	0	0	1
3033:	0	0	0	0	0	0	0	0
3041:	0	1	0	1	0	1	0	1
3049:	0	0	0	0	0	1	0	0
3057:	0	1	0	1	0	0	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	0	0	2	0	0	0
3089:	0	0	0	0	1	0	0	0
3097:	0	1	0	0	1	1	0	1
3105:	0	0	2	1	0	0	1	0
3113:	0	0	0	0	0	1	0	0
3121:	0	0	0	0	1	1	1	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	1	0	0	0	0	0	0	0
3153:	0	0	0	1	0	0	0	0
3161:	0	0	0	0	0	0	0	1
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	1	0	0	0	0
3193:	0	0	0	4	1	0	1	0
3201:	0	0	0	0	0	0	0	1
3209:	0	0	0	1	0	0	0	0
3217:	0	0	1	0	0	0	0	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	1	0	0	0
3241:	0	0	0	0	1	0	0	0
3249:	0	0	0	2	0	1	0	0
3257:	0	0	0	1	0	0	0	0
3265:	0	0	1	0	0	1	2	0
3273:	0	0	2	0	0	0	1	0
3281:	1	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	1	0	0	2	0	0	1	0
3305:	0	1	0	0	0	0	1	0
3313:	0	0	0	0	1	0	0	0
3321:	0	0	0	0	0	0	0	1
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	2	0	0
3345:	0	0	0	0	0	0	3	0
3353:	0	0	0	0	0	0	0	0
3361:	0	1	0	0	0	1	0	1
3369:	0	1	0	0	1	1	0	0
3377:	0	1	0	0	1	0	1	0
3385:	0	0	0	0	0	1	0	0

3393: 0 0 0 0 1 0 0 0

Sample Title: CP4106S05-06

Channel	1	2	3	4	5	6	7	8	9
3401:	1	1	0	0	0	0	0	0	0
3409:	0	0	0	0	0	1	0	0	0
3417:	0	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	1	1	1	0
3433:	1	0	0	0	0	0	0	0	0
3441:	0	0	0	1	0	0	0	0	0
3449:	0	0	1	0	0	0	0	0	0
3457:	0	1	0	0	0	0	0	0	0
3465:	0	0	0	1	0	0	0	0	1
3473:	0	0	0	0	0	1	0	0	0
3481:	0	0	0	0	0	0	1	1	0
3489:	1	0	0	0	0	0	0	1	0
3497:	1	0	0	1	0	0	0	0	0
3505:	0	0	0	0	0	0	0	1	0
3513:	0	0	1	0	0	0	0	0	0
3521:	0	0	0	1	0	0	0	0	0
3529:	0	1	0	1	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0	0
3545:	0	1	0	1	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	1	0	0	0
3577:	0	0	0	0	0	0	0	0	0
3585:	0	0	2	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	1	0	1
3609:	0	0	1	0	0	0	0	0	0
3617:	0	1	0	0	0	0	0	0	0
3625:	1	1	0	0	0	0	0	0	0
3633:	0	1	0	0	0	0	0	0	0
3641:	0	0	0	1	0	0	1	0	0
3649:	0	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0	0
3681:	0	1	1	0	0	0	0	0	0
3689:	0	0	0	0	0	1	0	1	0
3697:	0	0	0	0	0	0	0	0	0
3705:	0	1	1	0	0	0	0	0	1
3713:	0	0	0	1	1	0	0	0	0
3721:	0	0	0	0	0	0	0	1	0
3729:	0	0	0	0	0	0	0	0	1
3737:	0	0	0	0	0	0	1	0	0
3745:	0	0	0	0	0	0	0	0	0
3753:	0	0	1	0	1	0	0	1	0
3761:	0	0	0	1	0	0	0	0	0
3769:	1	0	0	1	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0	0
3785:	0	1	1	1	0	1	0	0	0
3793:	0	1	0	1	0	0	0	1	1
3801:	0	0	0	0	1	0	0	0	0
3809:	0	0	0	0	1	0	0	0	0
3817:	0	0	0	0	0	0	1	0	0

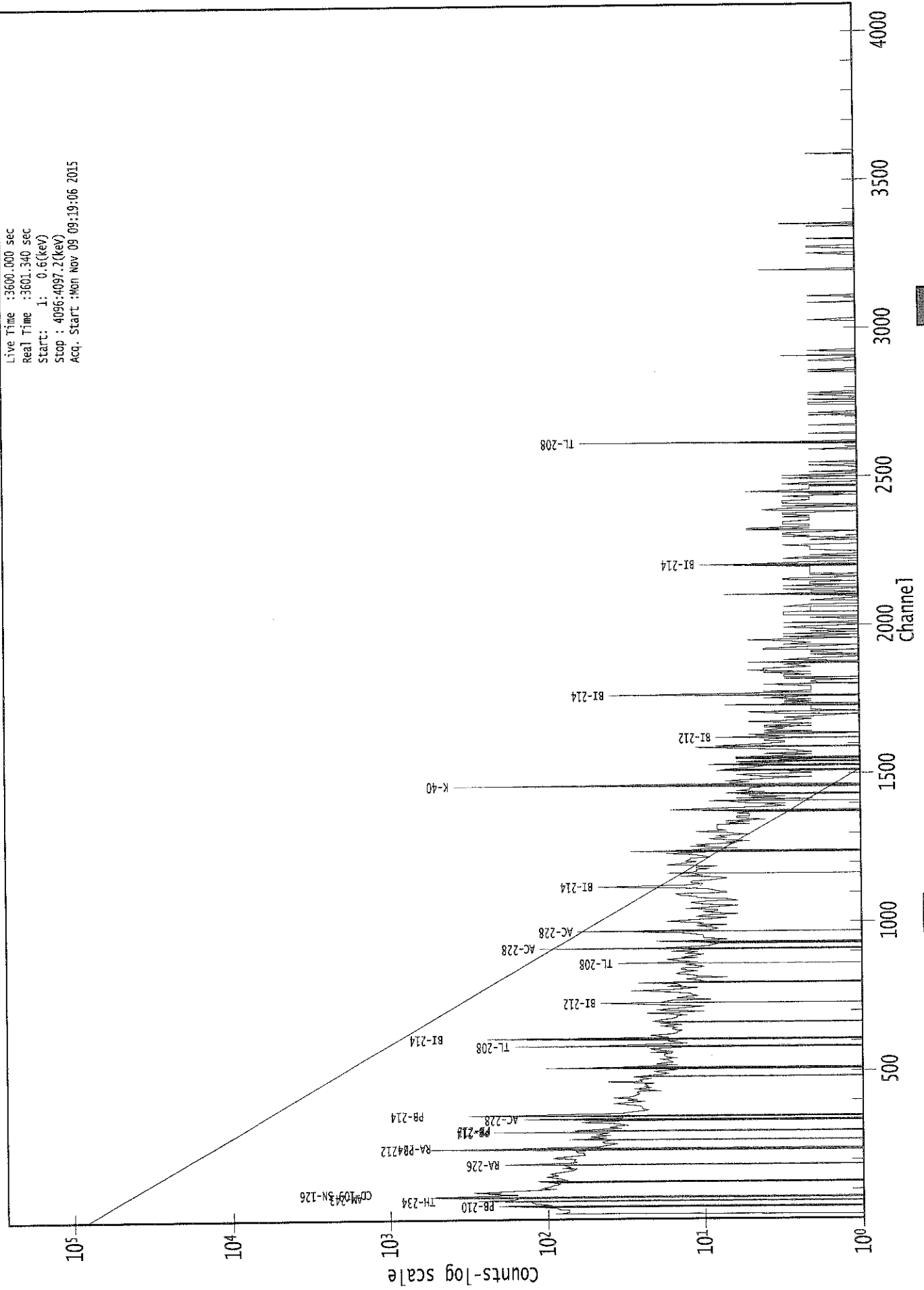
3825: 0 0 0 0 0 1 0 0

Sample Title: CP4106S05-06

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	1	0	0	0
3849:	1	0	0	0	0	0	0	0
3857:	1	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	1	1	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	1	0	0	1	0	0
3897:	0	0	1	0	0	0	0	0
3905:	0	1	0	0	0	0	0	0
3913:	0	1	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	1	0	0	1	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	1	0	0	0	0
3961:	0	0	1	1	0	0	0	0
3969:	0	0	0	0	0	0	0	1
3977:	0	1	0	0	0	0	1	0
3985:	0	0	0	0	0	0	0	0
3993:	0	1	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	1	0	1	0	1	0	1
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	1	0	0	0	0	0	1
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	1	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	1	0	0	1	0

0000029320.CNF

Live Time :3600.000 sec
Real Time :3601.340 sec
Start: 1: 0.6(keV)
Stop : 4096:4097.2(keV)
Acq. Start :Mon Nov 09 09:19:06 2015



Analysis Report for 1510087-13
CP4106S08-09

1119

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-13
Sample Description : CP4106S08-09
Sample Type : SOIL

Sample Size : 5.473E+02 grams
Facility : Countroom

Sample Taken On : 10/7/2015 5:12:50PM
Acquisition Started : 11/9/2015 9:19:15AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.2 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 8 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 29321

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-13
CP4106S08-09

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 10:19:30AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	41.02	41.13	0.0000	0.00
2	46.53	46.64	0.0000	0.00
3	53.50	53.60	0.0000	0.00
4	68.57	68.66	0.0000	0.00
5	76.42	76.51	0.0000	0.00
6	87.42	87.50	0.0000	0.00
7	149.31	149.36	0.0000	0.00
8	174.07	174.10	0.0000	0.00
9	186.04	186.06	0.0000	0.00
10	208.92	208.94	0.0000	0.00
11	238.79	238.79	0.0000	0.00
12	241.92	241.91	0.0000	0.00
13	270.21	270.18	0.0000	0.00
14	277.89	277.86	0.0000	0.00
15	295.32	295.29	0.0000	0.00
16	300.09	300.05	0.0000	0.00
17	338.44	338.39	0.0000	0.00
18	342.05	341.99	0.0000	0.00
19	352.09	352.03	0.0000	0.00
20	364.85	364.78	0.0000	0.00
21	410.09	409.99	0.0000	0.00
22	445.69	445.58	0.0000	0.00
23	462.70	462.58	0.0000	0.00
24	486.74	486.61	0.0000	0.00
25	511.13	510.99	0.0000	0.00
26	532.36	532.20	0.0000	0.00
27	555.29	555.12	0.0000	0.00
28	583.36	583.18	0.0000	0.00
29	609.82	609.63	0.0000	0.00
30	723.62	723.38	0.0000	0.00
31	727.62	727.38	0.0000	0.00
32	738.36	738.10	0.0000	0.00
33	782.27	782.00	0.0000	0.00
34	794.89	794.61	0.0000	0.00
35	860.11	859.80	0.0000	0.00
36	911.31	910.98	0.0000	0.00
37	934.88	934.55	0.0000	0.00
38	965.32	964.97	0.0000	0.00
39	969.10	968.75	0.0000	0.00
40	1121.02	1120.61	0.0000	0.00
41	1235.17	1234.72	0.0000	0.00
42	1239.17	1238.72	0.0000	0.00

Analysis Report for 1510087-13
CP4106S08-09

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1322.46	1321.98	0.0000	0.00
44	1461.02	1460.50	0.0000	0.00
45	1509.03	1508.49	0.0000	0.00
46	1512.12	1511.58	0.0000	0.00
47	1525.87	1525.33	0.0000	0.00
48	1544.78	1544.24	0.0000	0.00
49	1588.50	1587.94	0.0000	0.00
50	1599.85	1599.29	0.0000	0.00
51	1625.97	1625.40	0.0000	0.00
52	1649.24	1648.66	0.0000	0.00
53	1661.68	1661.11	0.0000	0.00
54	1729.25	1728.66	0.0000	0.00
55	1764.79	1764.18	0.0000	0.00
56	1807.62	1807.00	0.0000	0.00
57	1847.85	1847.22	0.0000	0.00
58	1867.55	1866.92	0.0000	0.00
59	2012.46	2011.80	0.0000	0.00
60	2055.42	2054.75	0.0000	0.00
61	2104.50	2103.82	0.0000	0.00
62	2117.68	2117.00	0.0000	0.00
63	2203.95	2203.26	0.0000	0.00
64	2262.16	2261.45	0.0000	0.00
65	2414.15	2413.43	0.0000	0.00
66	2530.19	2529.45	0.0000	0.00
67	2614.31	2613.57	0.0000	0.00
68	3612.72	3612.00	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510087-13
CP4106S08-09

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 10:19:30AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)	
1	41.02	39 -	43	41.13	6.42E+01	74.89	1.19E+03	1.83	
2	46.53	44 -	49	46.64	1.58E+02	86.08	1.35E+03	1.81	
3	53.50	51 -	56	53.60	8.88E+01	80.76	1.22E+03	3.01	
4	68.57	67 -	71	68.66	6.93E+01	74.43	1.18E+03	2.39	
5	76.42	72 -	81	76.51	1.13E+03	143.46	2.28E+03	3.73	
6	87.42	86 -	89	87.50	8.46E+01	66.00	1.01E+03	1.60	
7	149.31	147 -	151	149.36	5.60E+01	52.91	5.72E+02	2.66	
8	174.07	172 -	176	174.10	4.80E+01	51.44	5.46E+02	2.75	
9	186.04	182 -	190	186.06	2.07E+02	84.84	9.79E+02	1.48	
10	208.92	205 -	211	208.94	1.04E+02	62.53	6.32E+02	1.60	
M	11	238.79	235 -	252	238.79	8.87E+02	72.49	4.09E+02	1.57
m	12	241.92	235 -	252	241.91	2.17E+02	89.47	6.34E+02	2.51
13	270.21	267 -	272	270.18	6.87E+01	47.95	4.05E+02	1.63	
14	277.89	274 -	281	277.86	4.78E+01	58.69	5.38E+02	3.50	
M	15	295.32	291 -	302	295.29	3.14E+02	48.49	2.36E+02	1.65
m	16	300.09	291 -	302	300.05	7.11E+01	36.27	2.31E+02	1.66
M	17	338.44	333 -	344	338.39	2.26E+02	42.23	2.12E+02	1.69
m	18	342.05	333 -	344	341.99	3.00E+01	41.34	2.35E+02	1.89
19	352.09	347 -	356	352.03	4.35E+02	75.21	5.59E+02	1.49	
20	364.85	361 -	367	364.78	3.20E+01	39.99	2.64E+02	3.69	
21	410.09	407 -	413	409.99	3.32E+01	41.73	2.90E+02	1.30	
22	445.69	442 -	449	445.58	3.91E+01	36.77	1.98E+02	3.93	
23	462.70	459 -	466	462.58	6.38E+01	35.89	1.72E+02	2.23	
24	486.74	484 -	489	486.61	2.75E+01	28.41	1.37E+02	1.35	
25	511.13	505 -	517	510.99	2.29E+02	59.24	3.04E+02	2.33	
26	532.36	530 -	534	532.20	1.87E+01	23.12	9.86E+01	2.55	
27	555.29	552 -	558	555.12	2.85E+01	28.87	1.27E+02	3.80	
28	583.36	578 -	588	583.18	2.79E+02	57.11	2.87E+02	1.94	
29	609.82	606 -	620	609.63	4.01E+02	65.86	2.70E+02	1.77	
M	30	723.62	722 -	731	723.38	1.85E+01	14.25	4.89E+01	2.18
m	31	727.62	722 -	731	727.38	1.11E+02	31.54	9.36E+01	2.18
32	738.36	735 -	740	738.10	1.76E+01	22.67	8.68E+01	1.62	
M	33	782.27	781 -	798	782.00	1.52E+01	11.22	3.34E+01	1.85
m	34	794.89	781 -	798	794.61	3.72E+01	26.97	9.74E+01	2.25
35	860.11	854 -	863	859.80	4.30E+01	33.94	1.40E+02	2.00	
36	911.31	908 -	913	910.98	1.94E+02	32.80	5.96E+01	1.71	
37	934.88	931 -	939	934.55	2.22E+01	24.75	7.96E+01	2.52	
M	38	965.32	959 -	975	964.97	4.27E+01	25.80	9.02E+01	2.41
m	39	969.10	959 -	975	968.75	1.15E+02	32.09	7.74E+01	2.41
40	1121.02	1116 -	1127	1120.61	8.41E+01	42.52	1.78E+02	2.21	

Analysis Report for 1510087-13
CP4106S08-09

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	1235.17	1232 - 1245		1234.72	1.51E+01	19.65	6.20E+01	3.18
m	42	1239.17	1232 - 1245		1238.72	3.25E+01	29.62	9.83E+01	2.90
	43	1322.46	1316 - 1329		1321.98	2.61E+01	28.27	7.78E+01	2.64
	44	1461.02	1457 - 1465		1460.50	7.84E+02	57.49	2.50E+01	2.27
M	45	1509.03	1505 - 1514		1508.49	1.51E+01	10.44	1.00E+01	2.83
m	46	1512.12	1505 - 1514		1511.58	1.00E+01	12.70	2.15E+01	2.84
	47	1525.87	1523 - 1528		1525.33	5.85E+00	8.19	8.30E+00	1.19
	48	1544.78	1538 - 1548		1544.24	1.13E+01	14.32	1.94E+01	1.13
	49	1588.50	1583 - 1592		1587.94	1.30E+01	16.19	3.00E+01	3.11
	50	1599.85	1597 - 1601		1599.29	8.82E+00	7.52	4.36E+00	2.03
	51	1625.97	1616 - 1632		1625.40	2.71E+01	19.41	2.58E+01	10.12
	52	1649.24	1645 - 1651		1648.66	5.89E+00	7.78	6.22E+00	1.43
	53	1661.68	1658 - 1664		1661.11	8.50E+00	8.51	7.00E+00	2.23
	54	1729.25	1724 - 1732		1728.66	2.57E+01	11.50	4.57E+00	3.60
	55	1764.79	1758 - 1767		1764.18	6.91E+01	21.28	2.59E+01	2.57
	56	1807.62	1805 - 1809		1807.00	8.00E+00	5.66	0.00E+00	2.96
	57	1847.85	1843 - 1850		1847.22	1.04E+01	10.58	1.13E+01	4.05
	58	1867.55	1863 - 1870		1866.92	6.19E+00	6.93	3.63E+00	1.11
	59	2012.46	2008 - 2014		2011.80	5.00E+00	4.47	0.00E+00	2.75
	60	2055.42	2051 - 2059		2054.75	8.50E+00	8.02	5.00E+00	3.33
	61	2104.50	2099 - 2107		2103.82	1.53E+01	13.30	1.75E+01	3.83
	62	2117.68	2113 - 2119		2117.00	9.00E+00	6.00	0.00E+00	2.88
	63	2203.95	2195 - 2207		2203.26	1.34E+01	16.64	2.71E+01	2.99
	64	2262.16	2259 - 2265		2261.45	7.00E+00	8.28	8.00E+00	1.65
	65	2414.15	2410 - 2417		2413.43	6.38E+00	6.93	3.25E+00	0.95
	66	2530.19	2525 - 2532		2529.45	5.88E+00	6.93	4.25E+00	2.94
	67	2614.31	2607 - 2617		2613.57	1.09E+02	21.87	6.51E+00	2.34
	68	3612.72	3608 - 3614		3612.00	5.00E+00	4.47	0.00E+00	1.50

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 10:19:30AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
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Analysis Report for 1510087-13
CP4106S08-09

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	41.02	39 -	43	6.42E+01	74.89	1.19E+03	6.01E+01
2	46.53	44 -	49	1.58E+02	86.08	1.35E+03	6.77E+01
3	53.50	51 -	56	8.88E+01	80.76	1.22E+03	6.46E+01
4	68.57	67 -	71	6.93E+01	74.43	1.18E+03	5.96E+01
5	76.42	72 -	81	1.13E+03	143.46	2.28E+03	1.04E+02
6	87.42	86 -	89	8.46E+01	66.00	1.01E+03	5.21E+01
7	149.31	147 -	151	5.60E+01	52.91	5.72E+02	4.17E+01
8	174.07	172 -	176	4.80E+01	51.44	5.46E+02	4.07E+01
9	186.04	182 -	190	2.07E+02	84.84	9.79E+02	6.56E+01
10	208.92	205 -	211	1.04E+02	62.53	6.32E+02	4.86E+01
M 11	238.79	235 -	252	8.87E+02	72.49	4.09E+02	3.32E+01
m 12	241.92	235 -	252	2.17E+02	89.47	6.34E+02	4.14E+01
13	270.21	267 -	272	6.87E+01	47.95	4.05E+02	3.70E+01
14	277.89	274 -	281	4.78E+01	58.69	5.38E+02	4.69E+01
M 15	295.32	291 -	302	3.14E+02	48.49	2.36E+02	2.52E+01
m 16	300.09	291 -	302	7.11E+01	36.27	2.31E+02	2.50E+01
M 17	338.44	333 -	344	2.26E+02	42.23	2.12E+02	2.40E+01
m 18	342.05	333 -	344	3.00E+01	41.34	2.35E+02	2.52E+01
19	352.09	347 -	356	4.35E+02	75.21	5.59E+02	5.15E+01
20	364.85	361 -	367	3.20E+01	39.99	2.64E+02	3.15E+01
21	410.09	407 -	413	3.32E+01	41.73	2.90E+02	3.30E+01
22	445.69	442 -	449	3.91E+01	36.77	1.98E+02	2.84E+01
23	462.70	459 -	466	6.38E+01	35.89	1.72E+02	2.64E+01
24	486.74	484 -	489	2.75E+01	28.41	1.37E+02	2.17E+01
25	511.13	505 -	517	2.29E+02	59.24	3.04E+02	4.19E+01
26	532.36	530 -	534	1.87E+01	23.12	9.86E+01	1.76E+01
27	555.29	552 -	558	2.85E+01	28.87	1.27E+02	2.20E+01
28	583.36	578 -	588	2.79E+02	57.11	2.87E+02	3.81E+01
29	609.82	606 -	620	4.01E+02	65.86	2.70E+02	1.63E+01
M 30	723.62	722 -	731	1.85E+01	14.25	4.89E+01	1.15E+01
m 31	727.62	722 -	731	1.11E+02	31.54	9.36E+01	1.59E+01
32	738.36	735 -	740	1.76E+01	22.67	8.68E+01	1.73E+01
M 33	782.27	781 -	798	1.52E+01	11.22	3.34E+01	9.50E+00
m 34	794.89	781 -	798	3.72E+01	26.97	9.74E+01	1.62E+01
35	860.11	854 -	863	4.30E+01	33.94	1.40E+02	2.57E+01
36	911.31	908 -	913	1.94E+02	32.80	5.96E+01	1.42E+01
37	934.88	931 -	939	2.22E+01	24.75	7.96E+01	1.88E+01
M 38	965.32	959 -	975	4.27E+01	25.80	9.02E+01	1.56E+01
m 39	969.10	959 -	975	1.15E+02	32.09	7.74E+01	1.45E+01
40	1121.02	1116 -	1127	8.41E+01	42.52	1.78E+02	3.15E+01
M 41	1235.17	1232 -	1245	1.51E+01	19.65	6.20E+01	1.29E+01
m 42	1239.17	1232 -	1245	3.25E+01	29.62	9.83E+01	1.63E+01
43	1322.46	1316 -	1329	2.61E+01	28.27	7.78E+01	2.17E+01
44	1461.02	1457 -	1465	7.84E+02	57.49	2.50E+01	1.08E+01
M 45	1509.03	1505 -	1514	1.51E+01	10.44	1.00E+01	5.21E+00
m 46	1512.12	1505 -	1514	1.00E+01	12.70	2.15E+01	7.63E+00
47	1525.87	1523 -	1528	5.85E+00	8.19	8.30E+00	5.43E+00
48	1544.78	1538 -	1548	1.13E+01	14.32	1.94E+01	1.04E+01
49	1588.50	1583 -	1592	1.30E+01	16.19	3.00E+01	1.19E+01
50	1599.85	1597 -	1601	8.82E+00	7.52	4.36E+00	3.79E+00
51	1625.97	1616 -	1632	2.71E+01	19.41	2.58E+01	1.35E+01

Analysis Report for 1510087-13
CP4106S08-09

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
52	1649.24	1645 -	1651	5.89E+00	7.78	6.22E+00	5.00E+00
53	1661.68	1658 -	1664	8.50E+00	8.51	7.00E+00	5.10E+00
54	1729.25	1724 -	1732	2.57E+01	11.50	4.57E+00	4.46E+00
55	1764.79	1758 -	1767	6.91E+01	21.28	2.59E+01	1.09E+01
56	1807.62	1805 -	1809	8.00E+00	5.66	0.00E+00	0.00E+00
57	1847.85	1843 -	1850	1.04E+01	10.58	1.13E+01	6.90E+00
58	1867.55	1863 -	1870	6.19E+00	6.93	3.63E+00	3.96E+00
59	2012.46	2008 -	2014	5.00E+00	4.47	0.00E+00	0.00E+00
60	2055.42	2051 -	2059	8.50E+00	8.02	5.00E+00	4.52E+00
61	2104.50	2099 -	2107	1.53E+01	13.30	1.75E+01	8.85E+00
62	2117.68	2113 -	2119	9.00E+00	6.00	0.00E+00	0.00E+00
63	2203.95	2195 -	2207	1.34E+01	16.64	2.71E+01	1.23E+01
64	2262.16	2259 -	2265	7.00E+00	8.28	8.00E+00	5.23E+00
65	2414.15	2410 -	2417	6.38E+00	6.93	3.25E+00	3.90E+00
66	2530.19	2525 -	2532	5.88E+00	6.93	4.25E+00	4.07E+00
67	2614.31	2607 -	2617	1.09E+02	21.87	6.51E+00	5.41E+00
68	3612.72	3608 -	3614	5.00E+00	4.47	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 10:19:30AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	41.02	39 -	43	41.13	6.42E+01	74.89	1.19E+03	.....
2	46.53	44 -	49	46.64	1.58E+02	86.08	1.35E+03	PB-210
3	53.50	51 -	56	53.60	8.88E+01	80.76	1.22E+03	.....
4	68.57	67 -	71	68.66	6.93E+01	74.43	1.18E+03	TI-44 TA-182 TH-230
5	76.42	72 -	81	76.51	1.13E+03	143.46	2.28E+03	.....
6	87.42	86 -	89	87.50	8.46E+01	66.00	1.01E+03	SN-126

0764A

Analysis Report for 1510087-13
CP4106S08-09

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
								CD-109
								NP-237
								EU-155
								LU-176
	7	149.31	147 - 151	149.36	5.60E+01	52.91	5.72E+02	.....
	8	174.07	172 - 176	174.10	4.80E+01	51.44	5.46E+02	.....
	9	186.04	182 - 190	186.06	2.07E+02	84.84	9.79E+02	RA-226
	10	208.92	205 - 211	208.94	1.04E+02	62.53	6.32E+02	GA-67
								CM-243
M	11	238.79	235 - 252	238.79	8.87E+02	72.49	4.09E+02	PB-212
m	12	241.92	235 - 252	241.91	2.17E+02	89.47	6.34E+02	RA-224
	13	270.21	267 - 272	270.18	6.87E+01	47.95	4.05E+02	.....
	14	277.89	274 - 281	277.86	4.78E+01	58.69	5.38E+02	CM-243
								NP-239
M	15	295.32	291 - 302	295.29	3.14E+02	48.49	2.36E+02	PB-214
m	16	300.09	291 - 302	300.05	7.11E+01	36.27	2.31E+02	PB-212
								BI-210M
								GA-67
M	17	338.44	333 - 344	338.39	2.26E+02	42.23	2.12E+02	AC-228
m	18	342.05	333 - 344	341.99	3.00E+01	41.34	2.35E+02	.....
	19	352.09	347 - 356	352.03	4.35E+02	75.21	5.59E+02	PB-214
	20	364.85	361 - 367	364.78	3.20E+01	39.99	2.64E+02	I-131
	21	410.09	407 - 413	409.99	3.32E+01	41.73	2.90E+02	HO-166M
	22	445.69	442 - 449	445.58	3.91E+01	36.77	1.98E+02	.....
	23	462.70	459 - 466	462.58	6.38E+01	35.89	1.72E+02	SB-125
	24	486.74	484 - 489	486.61	2.75E+01	28.41	1.37E+02	LA-140
	25	511.13	505 - 517	510.99	2.29E+02	59.24	3.04E+02	.....
	26	532.36	530 - 534	532.20	1.87E+01	23.12	9.86E+01	.....
	27	555.29	552 - 558	555.12	2.85E+01	28.87	1.27E+02	.....
	28	583.36	578 - 588	583.18	2.79E+02	57.11	2.87E+02	TL-208
	29	609.82	606 - 620	609.63	4.01E+02	65.86	2.70E+02	BI-214
M	30	723.62	722 - 731	723.38	1.85E+01	14.25	4.89E+01	EU-154
								ZR-95
								AG-108M
								I-131
								SB-124
m	31	727.62	722 - 731	727.38	1.11E+02	31.54	9.36E+01	BI-212
	32	738.36	735 - 740	738.10	1.76E+01	22.67	8.68E+01	.....
M	33	782.27	781 - 798	782.00	1.52E+01	11.22	3.34E+01	.....
m	34	794.89	781 - 798	794.61	3.72E+01	26.97	9.74E+01	CS-134
	35	860.11	854 - 863	859.80	4.30E+01	33.94	1.40E+02	TL-208
	36	911.31	908 - 913	910.98	1.94E+02	32.80	5.96E+01	AC-228
								LU-172
	37	934.88	931 - 939	934.55	2.22E+01	24.75	7.96E+01	.....
M	38	965.32	959 - 975	964.97	4.27E+01	25.80	9.02E+01	.....
m	39	969.10	959 - 975	968.75	1.15E+02	32.09	7.74E+01	AC-228
	40	1121.02	1116 - 1127	1120.61	8.41E+01	42.52	1.78E+02	TA-182
								SC-46
								BI-214
M	41	1235.17	1232 - 1245	1234.72	1.51E+01	19.65	6.20E+01	CS-136
m	42	1239.17	1232 - 1245	1238.72	3.25E+01	29.62	9.83E+01	CO-56
	43	1322.46	1316 - 1329	1321.98	2.61E+01	28.27	7.78E+01	.....
	44	1461.02	1457 - 1465	1460.50	7.84E+02	57.49	2.50E+01	K-40
M	45	1509.03	1505 - 1514	1508.49	1.51E+01	10.44	1.00E+01	.....

Analysis Report for 1510087-13
CP4106S08-09

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	46	1512.12	1505 -	1514	1511.58	1.00E+01	12.70	2.15E+01	.....
	47	1525.87	1523 -	1528	1525.33	5.85E+00	8.19	8.30E+00	.....
	48	1544.78	1538 -	1548	1544.24	1.13E+01	14.32	1.94E+01	.....
	49	1588.50	1583 -	1592	1587.94	1.30E+01	16.19	3.00E+01	.....
	50	1599.85	1597 -	1601	1599.29	8.82E+00	7.52	4.36E+00	.....
	51	1625.97	1616 -	1632	1625.40	2.71E+01	19.41	2.58E+01	.....
	52	1649.24	1645 -	1651	1648.66	5.89E+00	7.78	6.22E+00	.....
	53	1661.68	1658 -	1664	1661.11	8.50E+00	8.51	7.00E+00	.....
	54	1729.25	1724 -	1732	1728.66	2.57E+01	11.50	4.57E+00	.....
	55	1764.79	1758 -	1767	1764.18	6.91E+01	21.28	2.59E+01	BI-214
	56	1807.62	1805 -	1809	1807.00	8.00E+00	5.66	0.00E+00	.....
	57	1847.85	1843 -	1850	1847.22	1.04E+01	10.58	1.13E+01	.....
	58	1867.55	1863 -	1870	1866.92	6.19E+00	6.93	3.63E+00	.....
	59	2012.46	2008 -	2014	2011.80	5.00E+00	4.47	0.00E+00	.....
	60	2055.42	2051 -	2059	2054.75	8.50E+00	8.02	5.00E+00	.....
	61	2104.50	2099 -	2107	2103.82	1.53E+01	13.30	1.75E+01	.....
	62	2117.68	2113 -	2119	2117.00	9.00E+00	6.00	0.00E+00	.....
	63	2203.95	2195 -	2207	2203.26	1.34E+01	16.64	2.71E+01	BI-214
	64	2262.16	2259 -	2265	2261.45	7.00E+00	8.28	8.00E+00	.....
	65	2414.15	2410 -	2417	2413.43	6.38E+00	6.93	3.25E+00	.....
	66	2530.19	2525 -	2532	2529.45	5.88E+00	6.93	4.25E+00	.....
	67	2614.31	2607 -	2617	2613.57	1.09E+02	21.87	6.51E+00	TL-208
	68	3612.72	3608 -	3614	3612.00	5.00E+00	4.47	0.00E+00	.....

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 10:19:30AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	41.02	6.42E+01	74.89	8.98E-03	1.68E-03
2	46.53	1.58E+02	86.08	1.34E-02	1.68E-03
3	53.50	8.88E+01	80.76	1.85E-02	1.68E-03
4	68.57	6.93E+01	74.43	2.56E-02	2.58E-03
5	76.42	1.13E+03	143.46	2.74E-02	3.35E-03
6	87.42	8.46E+01	66.00	2.84E-02	4.44E-03
7	149.31	5.60E+01	52.91	2.41E-02	2.17E-03

Analysis Report for 1510087-13
CP4106S08-09

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	8	174.07	4.80E+01	51.44	2.20E-02	1.67E-03
	9	186.04	2.07E+02	84.84	2.11E-02	1.65E-03
	10	208.92	1.04E+02	62.53	1.95E-02	1.63E-03
M	11	238.79	8.87E+02	72.49	1.79E-02	1.60E-03
m	12	241.92	2.17E+02	89.47	1.77E-02	1.60E-03
	13	270.21	6.87E+01	47.95	1.64E-02	1.57E-03
	14	277.89	4.78E+01	58.69	1.61E-02	1.56E-03
M	15	295.32	3.14E+02	48.49	1.55E-02	1.48E-03
m	16	300.09	7.11E+01	36.27	1.53E-02	1.46E-03
M	17	338.44	2.26E+02	42.23	1.41E-02	1.27E-03
m	18	342.05	3.00E+01	41.34	1.40E-02	1.26E-03
	19	352.09	4.35E+02	75.21	1.37E-02	1.21E-03
	20	364.85	3.20E+01	39.99	1.34E-02	1.15E-03
	21	410.09	3.32E+01	41.73	1.23E-02	1.00E-03
	22	445.69	3.91E+01	36.77	1.16E-02	9.65E-04
	23	462.70	6.38E+01	35.89	1.13E-02	9.47E-04
	24	486.74	2.75E+01	28.41	1.09E-02	9.23E-04
	25	511.13	2.29E+02	59.24	1.06E-02	8.98E-04
	26	532.36	1.87E+01	23.12	1.03E-02	8.77E-04
	27	555.29	2.85E+01	28.87	9.94E-03	8.53E-04
	28	583.36	2.79E+02	57.11	9.58E-03	8.25E-04
	29	609.82	4.01E+02	65.86	9.27E-03	7.98E-04
M	30	723.62	1.85E+01	14.25	8.12E-03	7.05E-04
m	31	727.62	1.11E+02	31.54	8.08E-03	7.03E-04
	32	738.36	1.76E+01	22.67	7.99E-03	6.96E-04
M	33	782.27	1.52E+01	11.22	7.63E-03	6.68E-04
m	34	794.89	3.72E+01	26.97	7.53E-03	6.60E-04
	35	860.11	4.30E+01	33.94	7.07E-03	6.18E-04
	36	911.31	1.94E+02	32.80	6.74E-03	5.87E-04
	37	934.88	2.22E+01	24.75	6.61E-03	5.75E-04
M	38	965.32	4.27E+01	25.80	6.44E-03	5.59E-04
m	39	969.10	1.15E+02	32.09	6.41E-03	5.57E-04
	40	1121.02	8.41E+01	42.52	5.70E-03	4.79E-04
M	41	1235.17	1.51E+01	19.65	5.28E-03	4.81E-04
m	42	1239.17	3.25E+01	29.62	5.27E-03	4.83E-04
	43	1322.46	2.61E+01	28.27	5.02E-03	5.22E-04
	44	1461.02	7.84E+02	57.49	4.67E-03	4.73E-04
M	45	1509.03	1.51E+01	10.44	4.57E-03	4.53E-04
m	46	1512.12	1.00E+01	12.70	4.57E-03	4.52E-04
	47	1525.87	5.85E+00	8.19	4.54E-03	4.46E-04
	48	1544.78	1.13E+01	14.32	4.51E-03	4.38E-04
	49	1588.50	1.30E+01	16.19	4.43E-03	4.20E-04
	50	1599.85	8.82E+00	7.52	4.41E-03	4.16E-04
	51	1625.97	2.71E+01	19.41	4.37E-03	4.05E-04
	52	1649.24	5.89E+00	7.78	4.33E-03	3.95E-04
	53	1661.68	8.50E+00	8.51	4.32E-03	3.90E-04
	54	1729.25	2.57E+01	11.50	4.23E-03	3.62E-04
	55	1764.79	6.91E+01	21.28	4.18E-03	3.47E-04
	56	1807.62	8.00E+00	5.66	4.14E-03	3.30E-04
	57	1847.85	1.04E+01	10.58	4.10E-03	3.18E-04
	58	1867.55	6.19E+00	6.93	4.08E-03	3.18E-04
	59	2012.46	5.00E+00	4.47	3.99E-03	3.18E-04
	60	2055.42	8.50E+00	8.02	3.97E-03	3.18E-04

Analysis Report for 1510087-13
CP4106S08-09

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
61	2104.50	1.53E+01	13.30	3.95E-03	3.18E-04
62	2117.68	9.00E+00	6.00	3.95E-03	3.18E-04
63	2203.95	1.34E+01	16.64	3.93E-03	3.18E-04
64	2262.16	7.00E+00	8.28	3.93E-03	3.18E-04
65	2414.15	6.38E+00	6.93	3.95E-03	3.18E-04
66	2530.19	5.88E+00	6.93	4.00E-03	3.18E-04
67	2614.31	1.09E+02	21.87	4.05E-03	3.18E-04
68	3612.72	5.00E+00	4.47	5.79E-03	3.18E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 10:19:30AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	41.02	6.42E+01	74.89			6.42E+01	7.49E+01
2	46.53	1.58E+02	86.08	6.46E+01	1.16E+01	9.31E+01	8.69E+01
3	53.50	8.88E+01	80.76			8.88E+01	8.08E+01
4	68.57	6.93E+01	74.43			6.93E+01	7.44E+01
5	76.42	1.13E+03	143.46			1.13E+03	1.43E+02
6	87.42	8.46E+01	66.00	1.46E+00	7.88E+00	8.32E+01	6.65E+01
7	149.31	5.60E+01	52.91			5.60E+01	5.29E+01
8	174.07	4.80E+01	51.44			4.80E+01	5.14E+01
9	186.04	2.07E+02	84.84	4.72E+01	7.97E+00	1.59E+02	8.52E+01
10	208.92	1.04E+02	62.53			1.04E+02	6.25E+01
M	11	238.79	8.87E+02	2.36E+01	1.35E+01	8.63E+02	7.37E+01
m	12	241.92	2.17E+02	6.38E+00	3.91E+00	2.11E+02	8.96E+01
	13	270.21	6.87E+01	47.95		6.87E+01	4.79E+01
	14	277.89	4.78E+01	58.69		4.78E+01	5.87E+01
M	15	295.32	3.14E+02	48.49	8.57E+00	3.06E+02	4.89E+01
m	16	300.09	7.11E+01	36.27		7.11E+01	3.63E+01
M	17	338.44	2.26E+02	42.23		2.26E+02	4.22E+01
m	18	342.05	3.00E+01	41.34		3.00E+01	4.13E+01
	19	352.09	4.35E+02	75.21	1.40E+01	4.21E+02	7.54E+01
	20	364.85	3.20E+01	39.99		3.20E+01	4.00E+01
	21	410.09	3.32E+01	41.73		3.32E+01	4.17E+01
	22	445.69	3.91E+01	36.77		3.91E+01	3.68E+01

Analysis Report for 1510087-13

CP4106S08-09

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
23	462.70	6.38E+01	35.89			6.38E+01	3.59E+01
24	486.74	2.75E+01	28.41			2.75E+01	2.84E+01
25	511.13	2.29E+02	59.24	8.41E+01	5.50E+00	1.45E+02	5.95E+01
26	532.36	1.87E+01	23.12			1.87E+01	2.31E+01
27	555.29	2.85E+01	28.87			2.85E+01	2.89E+01
28	583.36	2.79E+02	57.11	7.32E+00	4.08E+00	2.71E+02	5.73E+01
29	609.82	4.01E+02	65.86	1.30E+01	3.89E+00	3.88E+02	6.60E+01
M 30	723.62	1.85E+01	14.25			1.85E+01	1.42E+01
m 31	727.62	1.11E+02	31.54			1.11E+02	3.15E+01
32	738.36	1.76E+01	22.67			1.76E+01	2.27E+01
M 33	782.27	1.52E+01	11.22			1.52E+01	1.12E+01
m 34	794.89	3.72E+01	26.97			3.72E+01	2.70E+01
35	860.11	4.30E+01	33.94			4.30E+01	3.39E+01
36	911.31	1.94E+02	32.80	5.60E+00	3.32E+00	1.89E+02	3.30E+01
37	934.88	2.22E+01	24.75			2.22E+01	2.47E+01
M 38	965.32	4.27E+01	25.80			4.27E+01	2.58E+01
m 39	969.10	1.15E+02	32.09			1.15E+02	3.21E+01
40	1121.02	8.41E+01	42.52	3.93E+00	2.96E+00	8.02E+01	4.26E+01
M 41	1235.17	1.51E+01	19.65			1.51E+01	1.96E+01
m 42	1239.17	3.25E+01	29.62			3.25E+01	2.96E+01
43	1322.46	2.61E+01	28.27			2.61E+01	2.83E+01
44	1461.02	7.84E+02	57.49	1.12E+01	2.55E+00	7.72E+02	5.75E+01
M 45	1509.03	1.51E+01	10.44			1.51E+01	1.04E+01
m 46	1512.12	1.00E+01	12.70			1.00E+01	1.27E+01
47	1525.87	5.85E+00	8.19			5.85E+00	8.19E+00
48	1544.78	1.13E+01	14.32			1.13E+01	1.43E+01
49	1588.50	1.30E+01	16.19			1.30E+01	1.62E+01
50	1599.85	8.82E+00	7.52			8.82E+00	7.52E+00
51	1625.97	2.71E+01	19.41			2.71E+01	1.94E+01
52	1649.24	5.89E+00	7.78			5.89E+00	7.78E+00
53	1661.68	8.50E+00	8.51			8.50E+00	8.51E+00
54	1729.25	2.57E+01	11.50			2.57E+01	1.15E+01
55	1764.79	6.91E+01	21.28	4.23E+00	2.21E+00	6.48E+01	2.14E+01
56	1807.62	8.00E+00	5.66			8.00E+00	5.66E+00
57	1847.85	1.04E+01	10.58			1.04E+01	1.06E+01
58	1867.55	6.19E+00	6.93			6.19E+00	6.93E+00
59	2012.46	5.00E+00	4.47			5.00E+00	4.47E+00
60	2055.42	8.50E+00	8.02			8.50E+00	8.02E+00
61	2104.50	1.53E+01	13.30			1.53E+01	1.33E+01
62	2117.68	9.00E+00	6.00			9.00E+00	6.00E+00
63	2203.95	1.34E+01	16.64	5.94E-01	1.16E+00	1.29E+01	1.67E+01
64	2262.16	7.00E+00	8.28			7.00E+00	8.28E+00
65	2414.15	6.38E+00	6.93			6.38E+00	6.93E+00
66	2530.19	5.88E+00	6.93			5.88E+00	6.93E+00
67	2614.31	1.09E+02	21.87	7.38E+00	1.57E+00	1.01E+02	2.19E+01
68	3612.72	5.00E+00	4.47			5.00E+00	4.47E+00

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1510087-13
CP4106S08-09

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 10:19:30AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
1	41.02	6.42E+01	74.89			6.42E+01	7.49E+01	
2	46.53	1.58E+02	86.08	6.46E+01	1.16E+01	9.31E+01	8.69E+01	
3	53.50	8.88E+01	80.76			8.88E+01	8.08E+01	
4	68.57	6.93E+01	74.43			6.93E+01	7.44E+01	
5	76.42	1.13E+03	143.46			1.13E+03	1.43E+02	
6	87.42	8.46E+01	66.00	1.46E+00	7.88E+00	8.32E+01	6.65E+01	
7	149.31	5.60E+01	52.91			5.60E+01	5.29E+01	
8	174.07	4.80E+01	51.44			4.80E+01	5.14E+01	
9	186.04	2.07E+02	84.84	4.72E+01	7.97E+00	1.59E+02	8.52E+01	
10	208.92	1.04E+02	62.53			1.04E+02	6.25E+01	
M	11	238.79	8.87E+02	72.49	2.36E+01	1.35E+01	8.63E+02	7.37E+01
m	12	241.92	2.17E+02	89.47	6.38E+00	3.91E+00	2.11E+02	8.96E+01
	13	270.21	6.87E+01	47.95		6.87E+01	4.79E+01	
	14	277.89	4.78E+01	58.69		4.78E+01	5.87E+01	
M	15	295.32	3.14E+02	48.49	8.57E+00	6.10E+00	3.06E+02	4.89E+01
m	16	300.09	7.11E+01	36.27		7.11E+01	3.63E+01	
M	17	338.44	2.26E+02	42.23		2.26E+02	4.22E+01	
m	18	342.05	3.00E+01	41.34		3.00E+01	4.13E+01	
	19	352.09	4.35E+02	75.21	1.40E+01	5.55E+00	4.21E+02	7.54E+01
	20	364.85	3.20E+01	39.99		3.20E+01	4.00E+01	
	21	410.09	3.32E+01	41.73		3.32E+01	4.17E+01	
	22	445.69	3.91E+01	36.77		3.91E+01	3.68E+01	
	23	462.70	6.38E+01	35.89		6.38E+01	3.59E+01	
	24	486.74	2.75E+01	28.41		2.75E+01	2.84E+01	
	25	511.13	2.29E+02	59.24	8.41E+01	5.50E+00	1.45E+02	5.95E+01
	26	532.36	1.87E+01	23.12		1.87E+01	2.31E+01	
	27	555.29	2.85E+01	28.87		2.85E+01	2.89E+01	
	28	583.36	2.79E+02	57.11	7.32E+00	4.08E+00	2.71E+02	5.73E+01
	29	609.82	4.01E+02	65.86	1.30E+01	3.89E+00	3.88E+02	6.60E+01
M	30	723.62	1.85E+01	14.25		1.85E+01	1.42E+01	
m	31	727.62	1.11E+02	31.54		1.11E+02	3.15E+01	
	32	738.36	1.76E+01	22.67		1.76E+01	2.27E+01	
M	33	782.27	1.52E+01	11.22		1.52E+01	1.12E+01	
m	34	794.89	3.72E+01	26.97		3.72E+01	2.70E+01	
	35	860.11	4.30E+01	33.94		4.30E+01	3.39E+01	
	36	911.31	1.94E+02	32.80	5.60E+00	3.32E+00	1.89E+02	3.30E+01
	37	934.88	2.22E+01	24.75		2.22E+01	2.47E+01	
M	38	965.32	4.27E+01	25.80		4.27E+01	2.58E+01	
m	39	969.10	1.15E+02	32.09		1.15E+02	3.21E+01	

Analysis Report for 1510087-13
CP4106S08-09

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	40	1121.02	8.41E+01	42.52	3.93E+00	2.96E+00	8.02E+01	4.26E+01
M	41	1235.17	1.51E+01	19.65			1.51E+01	1.96E+01
m	42	1239.17	3.25E+01	29.62			3.25E+01	2.96E+01
	43	1322.46	2.61E+01	28.27			2.61E+01	2.83E+01
	44	1461.02	7.84E+02	57.49	1.12E+01	2.55E+00	7.72E+02	5.75E+01
M	45	1509.03	1.51E+01	10.44			1.51E+01	1.04E+01
m	46	1512.12	1.00E+01	12.70			1.00E+01	1.27E+01
	47	1525.87	5.85E+00	8.19			5.85E+00	8.19E+00
	48	1544.78	1.13E+01	14.32			1.13E+01	1.43E+01
	49	1588.50	1.30E+01	16.19			1.30E+01	1.62E+01
	50	1599.85	8.82E+00	7.52			8.82E+00	7.52E+00
	51	1625.97	2.71E+01	19.41			2.71E+01	1.94E+01
	52	1649.24	5.89E+00	7.78			5.89E+00	7.78E+00
	53	1661.68	8.50E+00	8.51			8.50E+00	8.51E+00
	54	1729.25	2.57E+01	11.50			2.57E+01	1.15E+01
	55	1764.79	6.91E+01	21.28	4.23E+00	2.21E+00	6.48E+01	2.14E+01
	56	1807.62	8.00E+00	5.66			8.00E+00	5.66E+00
	57	1847.85	1.04E+01	10.58			1.04E+01	1.06E+01
	58	1867.55	6.19E+00	6.93			6.19E+00	6.93E+00
	59	2012.46	5.00E+00	4.47			5.00E+00	4.47E+00
	60	2055.42	8.50E+00	8.02			8.50E+00	8.02E+00
	61	2104.50	1.53E+01	13.30			1.53E+01	1.33E+01
	62	2117.68	9.00E+00	6.00			9.00E+00	6.00E+00
	63	2203.95	1.34E+01	16.64	5.94E-01	1.16E+00	1.29E+01	1.67E+01
	64	2262.16	7.00E+00	8.28			7.00E+00	8.28E+00
	65	2414.15	6.38E+00	6.93			6.38E+00	6.93E+00
	66	2530.19	5.88E+00	6.93			5.88E+00	6.93E+00
	67	2614.31	1.09E+02	21.87	7.38E+00	1.57E+00	1.01E+02	2.19E+01
	68	3612.72	5.00E+00	4.47			5.00E+00	4.47E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.993	1460.81	* 10.67	2.12E+01	2.71E+00
CD-109	0.941	88.03	* 3.72	1.13E+00	9.25E-01

: 00771

Analysis Report for 1510087-13
CP4106S08-09

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
SN-126	0.996	87.57 *	37.00	1.09E-01	8.84E-02
I-131	0.708	284.30	6.05		
		364.48 *	81.20	6.76E-01	8.47E-01
		636.97	7.26		
		722.89 *	1.80	2.91E+01	2.25E+01
TA-182	0.478	67.75 *	41.20	1.10E-01	1.18E-01
		1121.30 *	34.90	6.74E-01	3.63E-01
		1189.05	16.23		
		1221.41	26.98		
		1231.02	11.44		
TL-208	0.986	583.14 *	30.22	1.29E+00	2.93E-01
		860.37 *	4.48	1.86E+00	1.48E+00
		2614.66 *	35.85	9.57E-01	2.20E-01
PB-210	1.000	46.50 *	4.25	2.25E+00	2.12E+00
BI-212	0.740	727.17 *	11.80	1.60E+00	4.74E-01
		1620.62	2.75		
PB-212	0.996	238.63 *	44.60	1.49E+00	1.84E-01
		300.09 *	3.41	1.87E+00	9.70E-01
BI-214	0.958	609.31 *	46.30	1.24E+00	2.36E-01
		1120.29 *	15.10	1.28E+00	6.88E-01
		1764.49 *	15.80	1.35E+00	4.58E-01
		2204.22 *	4.98	9.01E-01	1.17E+00
PB-214	0.996	295.21 *	19.19	1.41E+00	2.63E-01
		351.92 *	37.19	1.13E+00	2.26E-01
RA-224	0.869	240.98 *	3.95	4.14E+00	1.80E+00
RA-226	0.995	186.21 *	3.28	3.16E+00	6.03E+00
AC-228	0.995	338.32 *	11.40	1.93E+00	4.00E-01
		911.07 *	27.70	1.38E+00	2.70E-01
		969.11 *	16.60	1.48E+00	4.33E-01
NP-237	0.875	86.50 *	12.60	3.19E-01	2.59E-01
CM-243	0.354	209.75 *	3.29	2.23E+00	1.35E+00
		228.14	10.60		
		277.60 *	14.00	2.91E-01	3.59E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 10:19:30AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1510087-13
CP4106S08-09

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
1	41.02	1.78365E-02	58.32			
3	53.50	2.46642E-02	45.48			
5	76.42	3.12793E-01	6.37			
7	149.31	1.55478E-02	47.26			
8	174.07	1.33368E-02	53.57	Sum		
13	270.21	1.90744E-02	34.91			
m	18	342.05	8.32798E-03	Sum		
21	410.09	9.21661E-03	62.88	Tol.	HO-166M	
22	445.69	1.08575E-02	47.04			
23	462.70	1.77130E-02	28.14	Tol.	SB-125	
24	486.74	7.64034E-03	51.64	Sum		
25	511.13	4.02715E-02	20.52			
26	532.36	5.18791E-03	61.89			
27	555.29	7.92874E-03	50.57	Sum		
32	738.36	4.89526E-03	64.32			
M	33	782.27	4.20971E-03	37.03		
m	34	794.89	1.03443E-02	36.21	Sum	
37	934.88	6.16039E-03	55.80	Sum		
M	38	965.32	1.18637E-02	30.21	Sum	
M	41	1235.17	4.20735E-03	64.86	Tol.	CS-136
m	42	1239.17	9.03437E-03	45.54		
43	1322.46	7.25427E-03	54.12			
M	45	1509.03	4.18835E-03	34.62		
m	46	1512.12	2.78056E-03	63.43		
47	1525.87	1.62500E-03	69.96			
48	1544.78	3.13492E-03	63.43			
49	1588.50	3.61111E-03	62.26	Sum		
50	1599.85	2.44950E-03	42.62			
51	1625.97	7.53125E-03	35.80			
52	1649.24	1.63580E-03	66.04			
53	1661.68	2.36111E-03	50.09			
54	1729.25	7.14286E-03	22.36			
56	1807.62	2.22222E-03	35.36			
57	1847.85	2.88194E-03	51.00	Sum		
58	1867.55	1.71875E-03	55.99			
59	2012.46	1.38889E-03	44.72			
60	2055.42	2.36111E-03	47.15			
61	2104.50	4.23611E-03	43.62			
62	2117.68	2.50000E-03	33.33	Sum		
64	2262.16	1.94444E-03	59.12			
65	2414.15	1.77083E-03	54.34			
66	2530.19	1.63194E-03	58.96			
68	3612.72	1.38889E-03	44.72			

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1510087-13

CP4106S08-09

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	2.12E+01	2.71E+00
CD-109	0.94	88.03 *	3.72	1.13E+00	9.25E-01
SN-126	0.99	87.57 *	37.00	1.09E-01	8.84E-02
I-131	0.70	284.30	6.05		
		364.48 *	81.20	6.76E-01	8.47E-01
		636.97	7.26		
		722.89 *	1.80	2.91E+01	2.25E+01
TA-182	0.47	67.75 *	41.20	1.10E-01	1.18E-01
		1121.30 *	34.90	6.74E-01	3.63E-01
		1189.05	16.23		
		1221.41	26.98		
		1231.02	11.44		
TL-208	0.98	583.14 *	30.22	1.29E+00	2.93E-01
		860.37 *	4.48	1.86E+00	1.48E+00
		2614.66 *	35.85	9.57E-01	2.20E-01
PB-210	1.00	46.50 *	4.25	2.25E+00	2.12E+00
BI-212	0.74	727.17 *	11.80	1.60E+00	4.74E-01
		1620.62	2.75		
PB-212	0.99	238.63 *	44.60	1.49E+00	1.84E-01
		300.09 *	3.41	1.87E+00	9.70E-01
BI-214	0.95	609.31 *	46.30	1.24E+00	2.36E-01
		1120.29 *	15.10	1.28E+00	6.88E-01
		1764.49 *	15.80	1.35E+00	4.58E-01
		2204.22 *	4.98	9.01E-01	1.17E+00
PB-214	0.99	295.21 *	19.19	1.41E+00	2.63E-01
		351.92 *	37.19	1.13E+00	2.26E-01
RA-224	0.86	240.98 *	3.95	4.14E+00	1.80E+00
RA-226	0.99	186.21 *	3.28	3.16E+00	6.03E+00
AC-228	0.99	338.32 *	11.40	1.93E+00	4.00E-01
		911.07 *	27.70	1.38E+00	2.70E-01
		969.11 *	16.60	1.48E+00	4.33E-01
NP-237	0.87	86.50 *	12.60	3.19E-01	2.59E-01
CM-243	0.35	209.75 *	3.29	2.23E+00	1.35E+00
		228.14	10.60		
		277.60 *	14.00	2.91E-01	3.59E-01

Analysis Report for 1510087-13
CP4106S08-09

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.993	2.12E+01	2.71E+00	
?	CD-109	0.941	1.13E+00	9.25E-01	
?	SN-126	0.996	1.09E-01	8.84E-02	
	I-131	0.708	7.16E-01	8.47E-01	
	TA-182	0.478	1.01E-01	1.13E-01	
	TL-208	0.986	1.09E+00	1.75E-01	
	PB-210	1.000	2.25E+00	2.12E+00	
	BI-212	0.740	1.60E+00	4.74E-01	
	PB-212	0.996	1.50E+00	1.81E-01	
	BI-214	0.958	1.24E+00	1.99E-01	
	PB-214	0.996	1.25E+00	1.71E-01	
	RA-224	0.869	4.14E+00	1.80E+00	
	RA-226	0.995	3.16E+00	6.03E+00	
	AC-228	0.995	1.54E+00	1.99E-01	
?	NP-237	0.875	3.19E-01	2.59E-01	
	CM-243	0.354	4.19E-01	3.47E-01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1510087-13
CP4106S08-09

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 10:19:30AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	41.02	1.78365E-02	58.32		
3	53.50	2.46642E-02	45.48		
5	76.42	3.12793E-01	6.37		
7	149.31	1.55478E-02	47.26		
8	174.07	1.33368E-02	53.57	Sum	
13	270.21	1.90744E-02	34.91		
m 18	342.05	8.32798E-03	68.94	Sum	
21	410.09	9.21661E-03	62.88	Tol.	HO-166M
22	445.69	1.08575E-02	47.04		
23	462.70	1.77130E-02	28.14	Tol.	SB-125
24	486.74	7.64034E-03	51.64	Sum	
25	511.13	4.02715E-02	20.52		
26	532.36	5.18791E-03	61.89		
27	555.29	7.92874E-03	50.57	Sum	
32	738.36	4.89526E-03	64.32		
M 33	782.27	4.20971E-03	37.03		
m 34	794.89	1.03443E-02	36.21	Sum	
37	934.88	6.16039E-03	55.80	Sum	
M 38	965.32	1.18637E-02	30.21	Sum	
M 41	1235.17	4.20735E-03	64.86	Tol.	CS-136
m 42	1239.17	9.03437E-03	45.54		
43	1322.46	7.25427E-03	54.12		
M 45	1509.03	4.18835E-03	34.62		
m 46	1512.12	2.78056E-03	63.43		
47	1525.87	1.62500E-03	69.96		
48	1544.78	3.13492E-03	63.43		
49	1588.50	3.61111E-03	62.26	Sum	
50	1599.85	2.44950E-03	42.62		
51	1625.97	7.53125E-03	35.80		
52	1649.24	1.63580E-03	66.04		
53	1661.68	2.36111E-03	50.09		
54	1729.25	7.14286E-03	22.36		
56	1807.62	2.22222E-03	35.36		
57	1847.85	2.88194E-03	51.00	Sum	
58	1867.55	1.71875E-03	55.99		

Analysis Report for 1510087-13
CP4106S08-09

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
59	2012.46	1.38889E-03	44.72		
60	2055.42	2.36111E-03	47.15		
61	2104.50	4.23611E-03	43.62		
62	2117.68	2.50000E-03	33.33	Sum	
64	2262.16	1.94444E-03	59.12		
65	2414.15	1.77083E-03	54.34		
66	2530.19	1.63194E-03	58.96		
68	3612.72	1.38889E-03	44.72		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-3.79E-01	7.75E-01	7.75E-01
+	NA-22	1274.54	99.94	-4.08E-02	7.80E-02	7.80E-02
+	NA-24	1368.53	99.99	1.25E+14	1.71E+14	4.34E+14
		2754.09	99.86	-6.43E+13		1.71E+14
+	AL-26	1808.65	99.76	-3.99E-03	5.79E-02	5.79E-02
+	K-40	1460.81	* 10.67	2.12E+01	7.50E-01	7.50E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	2.50E-02	5.46E-02	5.46E-02
		78.34	96.00	2.72E-01		7.56E-02
+	SC-46	889.25	99.98	2.61E-03	8.68E-02	8.68E-02
		1120.51	99.99	2.31E-01		1.78E-01
+	V-48	983.52	99.98	8.38E-02	2.83E-01	3.33E-01
		1312.10	97.50	-3.48E-02		2.83E-01
+	CR-51	320.08	9.83	2.69E-01	1.20E+00	1.20E+00
+	MN-54	834.83	99.97	8.99E-03	9.19E-02	9.19E-02
+	CO-56	846.75	99.96	-1.90E-02	8.49E-02	8.49E-02
		1037.75	14.03	2.46E-02		6.98E-01
		1238.25	67.00	8.17E-02		2.37E-01
		1771.40	15.51	-2.80E-01		4.24E-01
		2598.48	16.90	-1.79E-02		2.88E-01

Analysis Report for 1510087-13
CP4106S08-09

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-57	122.06	85.51	-4.01E-03	5.84E-02	5.84E-02
		136.48	10.60	-7.84E-02		4.79E-01
+	CO-58	810.76	99.40	5.73E-02	1.04E-01	1.04E-01
+	FE-59	1099.22	56.50	-1.06E-01	2.16E-01	2.16E-01
		1291.56	43.20	-1.00E-01		3.17E-01
+	CO-60	1173.22	100.00	-3.78E-02	7.85E-02	8.65E-02
		1332.49	100.00	9.51E-03		7.85E-02
+	ZN-65	1115.52	50.75	-1.18E-02	1.86E-01	1.86E-01
+	GA-67	93.31	35.70	2.08E+02	1.82E+02	1.82E+02
		208.95	2.24	2.25E+03		2.77E+03
		300.22	16.00	1.04E+02		3.82E+02
+	SE-75	121.11	16.70	-2.66E-01	9.56E-02	3.20E-01
		136.00	59.20	-2.84E-02		9.56E-02
		264.65	59.80	7.50E-03		1.08E-01
		279.53	25.20	2.46E-02		2.78E-01
		400.65	11.40	-2.44E-01		5.65E-01
+	RB-82	776.52	13.00	-2.49E-03	1.36E+00	1.36E+00
+	RB-83	520.41	46.00	-2.10E-02	1.53E-01	1.53E-01
		529.64	30.30	-4.66E-02		2.18E-01
		552.65	16.40	1.17E-02		4.51E-01
+	KR-85	513.99	0.43	-5.15E+00	1.65E+01	1.65E+01
+	SR-85	513.99	99.27	-3.17E-02	1.02E-01	1.02E-01
+	Y-88	898.02	93.40	5.59E-02	8.60E-02	1.05E-01
		1836.01	99.38	0.00E+00		8.60E-02
+	NB-93M	16.57	9.43	-1.34E+04	5.27E+03	5.27E+03
+	NB-94	702.63	100.00	-4.02E-02	6.97E-02	6.97E-02
		871.10	100.00	2.42E-03		7.04E-02
+	NB-95	765.79	99.81	8.33E-02	1.55E-01	1.55E-01
+	NB-95M	235.69	25.00	-1.31E+03	1.65E+02	1.65E+02
+	ZR-95	724.18	43.70	6.47E-02	1.90E-01	3.14E-01
		756.72	55.30	2.77E-02		1.90E-01
+	MO-99	181.06	6.20	-4.56E+02	2.06E+03	3.18E+03
		739.58	12.80	-3.35E+02		2.06E+03
		778.00	4.50	-6.79E+02		6.13E+03
+	RU-103	497.08	89.00	-3.28E-02	1.06E-01	1.06E-01
+	RU-106	621.84	9.80	2.52E-01	6.79E-01	6.79E-01
+	AG-108M	433.93	89.90	-5.69E-03	5.87E-02	5.87E-02
		614.37	90.40	-7.12E-01		7.47E-02
		722.95	90.50	-4.75E-03		8.84E-02
+	CD-109	88.03	3.72	1.13E+00	1.47E+00	1.47E+00
+	AG-110M	657.75	93.14	-2.09E-02	7.93E-02	7.93E-02
		677.61	10.53	-1.90E-02		7.18E-01
		706.67	16.46	-2.06E-01		4.95E-01
		763.93	21.98	-3.70E-01		3.48E-01
		884.67	71.63	-8.77E-04		1.03E-01
		1384.27	23.94	7.76E-03		3.04E-01
+	CD-113M	263.70	0.02	1.69E+01	2.30E+02	2.30E+02

Analysis Report for 1510087-13
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SN-113	255.12	1.93	1.00E+00	9.89E-02	3.57E+00
		391.69	64.90	-1.64E-02		9.89E-02
+	TE123M	159.00	84.10	6.55E-02	7.63E-02	7.63E-02
+	SB-124	602.71	97.87	3.32E-02	1.06E-01	1.06E-01
		645.85	7.26	-4.62E-01		1.27E+00
		722.78	11.10	-5.64E-02		1.05E+00
		1691.02	49.00	4.34E-02		1.73E-01
+	I-125	35.49	6.49	-4.93E-01	5.56E+00	5.56E+00
+	SB-125	176.33	6.89	1.61E-01	1.83E-01	8.04E-01
		427.89	29.33	-2.78E-02		1.83E-01
		463.38	10.35	6.84E-01		6.29E-01
		600.56	17.80	1.29E-01		4.16E-01
		635.90	11.32	-1.22E-01		5.79E-01
+	SB-126	414.70	83.30	2.17E-02	3.98E-01	3.98E-01
		666.33	99.60	1.28E-01		4.61E-01
		695.00	99.60	-3.55E-02		4.23E-01
		720.50	53.80	-1.27E-01		8.68E-01
+	SN-126	87.57	* 37.00	1.09E-01	1.41E-01	1.41E-01
+	SB-127	473.00	25.00	6.18E+01	7.15E+01	8.58E+01
		685.20	35.70	4.84E+01		7.15E+01
		783.80	14.70	1.03E+02		2.02E+02
+	I-129	29.78	57.00	-8.88E-01	1.20E+00	1.20E+00
		33.60	13.20	-7.48E-01		2.43E+00
		39.58	7.52	3.84E-01		2.22E+00
+	I-131	284.30	6.05	1.11E-01	1.39E+00	1.43E+01
		364.48	* 81.20	6.76E-01		1.39E+00
		636.97	7.26	2.56E+00		1.55E+01
		722.89	* 1.80	2.91E+01		7.73E+01
+	TE-132	49.72	13.10	-3.60E+02	6.55E+01	6.01E+02
		228.16	88.00	1.76E+01		6.55E+01
+	BA-133	81.00	33.00	8.52E-03	8.99E-02	1.28E-01
		302.84	17.80	-4.62E-02		2.99E-01
		356.01	60.00	9.50E-03		8.99E-02
+	I-133	529.87	86.30	-2.44E+08	1.40E+10	1.40E+10
+	XE-133	81.00	38.00	5.54E-01	8.35E+00	8.35E+00
+	CS-134	563.23	8.38	1.02E-01	8.66E-02	7.33E-01
		569.32	15.43	-2.02E-01		3.64E-01
		604.70	97.60	2.11E-02		8.66E-02
		795.84	85.40	7.37E-02		1.01E-01
		801.93	8.73	-6.85E-02		8.39E-01
+	CS-135	268.24	16.00	-6.30E-02	3.67E-01	3.67E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	2.07E+00	4.02E-01	3.88E+00
		163.89	4.61	-2.78E+00		6.12E+00
		176.55	13.56	3.34E-01		2.23E+00
		273.65	12.66	-3.27E+00		2.40E+00
		340.57	48.50	-7.49E-02		8.07E-01

Analysis Report for 1510087-13
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-136	818.50	99.70	1.75E-01	4.02E-01	4.02E-01
		1048.07	79.60	1.06E-01		5.86E-01
		1235.34	19.70	-4.31E-01		3.01E+00
+	CS-137	661.65	85.12	-1.24E-02	8.32E-02	8.32E-02
+	LA-138	788.74	34.00	4.29E-03	1.08E-01	2.25E-01
		1435.80	66.00	-3.11E-02		1.08E-01
+	CE-139	165.85	80.35	-1.67E-02	7.41E-02	7.41E-02
+	BA-140	162.64	6.70	2.95E-02	1.19E+00	4.54E+00
		304.84	4.50	8.24E+00		7.09E+00
		423.70	3.20	-1.94E-01		9.53E+00
		437.55	2.00	6.39E+00		1.62E+01
		537.32	25.00	-4.36E-02		1.19E+00
+	LA-140	328.77	20.50	9.48E-01	4.60E-01	1.71E+00
		487.03	45.50	2.36E-01		7.15E-01
		815.85	23.50	-3.55E-01		1.69E+00
		1596.49	95.49	1.15E-01		4.60E-01
+	CE-141	145.44	48.40	1.93E-02	2.01E-01	2.01E-01
+	CE-143	57.36	11.80	-4.19E+06	2.56E+06	6.52E+06
		293.26	42.00	-1.33E+06		2.56E+06
		664.55	5.20	7.42E+06		2.09E+07
+	CE-144	133.54	10.80	1.74E-01	4.84E-01	4.84E-01
+	PM-144	476.78	42.00	-6.55E-02	6.86E-02	1.34E-01
		618.01	98.60	1.27E-02		6.86E-02
		696.49	99.49	-2.64E-02		7.16E-02
+	PM-145	36.85	21.70	1.89E-01	5.03E-01	9.79E-01
		37.36	39.70	9.71E-02		5.03E-01
		42.30	15.10	3.95E-01		8.76E-01
		72.40	2.31	-1.53E+00		2.09E+00
+	PM-146	453.90	39.94	-3.47E-02	1.27E-01	1.27E-01
		735.90	14.01	3.06E-02		5.35E-01
		747.13	13.10	3.05E-02		5.46E-01
+	ND-147	91.11	28.90	1.13E+00	1.71E+00	1.71E+00
		531.02	13.10	3.75E+00		3.58E+00
+	PM-149	285.90	3.10	-9.41E+03	4.64E+04	4.64E+04
+	EU-152	121.78	20.50	-1.54E-02	2.25E-01	2.25E-01
		244.69	5.40	-1.32E+00		1.10E+00
		344.27	19.13	9.42E-02		2.95E-01
		778.89	9.20	-1.87E-01		8.09E-01
		964.01	10.40	-1.87E+00		9.93E-01
		1085.78	7.22	7.45E-01		1.14E+00
		1112.02	9.60	-2.34E-01		8.49E-01
		1407.95	14.94	2.09E-01		4.81E-01
+	GD-153	97.43	31.30	-7.54E-02	1.64E-01	1.64E-01
		103.18	22.20	-2.58E-01		2.24E-01
+	EU-154	123.07	40.50	5.94E-02	1.17E-01	1.17E-01
		723.30	19.70	-2.20E-02		4.09E-01
		873.19	11.50	2.06E-02		5.83E-01
		996.32	10.30	1.03E-01		8.48E-01
		1004.76	17.90	-1.11E-01		4.33E-01

Analysis Report for 1510087-13
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	1274.45	35.50	-1.13E-01	1.17E-01	2.16E-01
+	EU-155	86.50	30.90	-3.97E-02	2.02E-01	2.02E-01
		105.30	20.70	1.48E-01		2.31E-01
+	EU-156	811.77	10.40	-5.96E-01	2.95E+00	2.95E+00
		1153.47	7.20	1.12E+00		5.36E+00
		1230.71	8.90	1.63E+00		4.65E+00
+	HO-166M	184.41	72.60	1.92E-02	8.77E-02	8.77E-02
		280.45	29.60	1.74E-02		1.96E-01
		410.94	11.10	3.99E-01		5.77E-01
		711.69	54.10	-2.82E-02		1.42E-01
+	TM-171	66.72	0.14	-2.10E+01	3.60E+01	3.60E+01
+	HF-172	81.75	4.52	-4.19E-01	4.44E-01	9.40E-01
		125.81	11.30	-4.63E-01		4.44E-01
+	LU-172	181.53	20.60	-9.15E-02	3.40E+00	7.61E+00
		810.06	16.63	7.32E+00		1.33E+01
		912.12	15.25	-2.71E+00		2.93E+01
		1093.66	62.50	-4.68E-01		3.40E+00
+	LU-173	100.72	5.24	1.78E-01	3.08E-01	9.21E-01
		272.11	21.20	1.66E-01		3.08E-01
+	HF-175	343.40	84.00	-6.95E-02	8.75E-02	8.75E-02
+	LU-176	88.34	13.30	2.89E-01	5.48E-02	4.75E-01
		201.83	86.00	-1.96E-02		6.09E-02
		306.78	94.00	-1.37E-02		5.48E-02
+	TA-182	67.75	* 41.20	1.10E-01	1.93E-01	1.93E-01
		1121.30	* 34.90	6.74E-01		5.58E-01
		1189.05	16.23	-1.04E-01		6.55E-01
		1221.41	26.98	9.29E-02		4.51E-01
		1231.02	11.44	1.68E-01		1.00E+00
+	IR-192	308.46	29.68	9.55E-02	1.35E-01	2.42E-01
		468.07	48.10	-3.19E-02		1.35E-01
+	HG-203	279.19	77.30	6.08E-02	1.25E-01	1.25E-01
+	BI-207	569.67	97.72	-3.10E-02	5.59E-02	5.59E-02
		1063.62	74.90	-3.74E-02		1.07E-01
+	TL-208	583.14	* 30.22	1.29E+00	1.60E-01	3.78E-01
		860.37	* 4.48	1.86E+00		2.35E+00
		2614.66	* 35.85	9.57E-01		1.60E-01
+	BI-210M	262.00	45.00	-2.85E-02	1.16E-01	1.16E-01
		300.00	23.00	6.94E-02		2.55E-01
+	PB-210	46.50	* 4.25	2.25E+00	3.43E+00	3.43E+00
+	PB-211	404.84	2.90	3.12E-01	1.91E+00	1.91E+00
		831.96	2.90	-5.70E-01		2.85E+00
+	BI-212	727.17	* 11.80	1.60E+00	7.44E-01	7.44E-01
		1620.62	2.75	1.09E+00		2.74E+00
+	PB-212	238.63	* 44.60	1.49E+00	3.41E-01	3.41E-01
		300.09	* 3.41	1.87E+00		2.75E+00
+	BI-214	609.31	* 46.30	1.24E+00	2.87E-01	2.87E-01
		1120.29	* 15.10	1.28E+00		1.06E+00
		1764.49	* 15.80	1.35E+00		5.37E-01

Analysis Report for 1510087-13
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	2204.22	*	4.98	9.01E-01	2.87E-01	1.93E+00
+	PB-214	295.21	*	19.19	1.41E+00	2.87E-01	4.89E-01
		351.92	*	37.19	1.13E+00		2.87E-01
+	RN-219	401.80		6.50	1.87E-01	8.49E-01	8.49E-01
+	RA-223	323.87		3.88	-1.22E-01	1.36E+00	1.36E+00
+	RA-224	240.98	*	3.95	4.14E+00	3.92E+00	3.92E+00
+	RA-225	40.00		31.00	4.13E-01	2.39E+00	2.39E+00
+	RA-226	186.21	*	3.28	3.16E+00	2.71E+00	2.71E+00
+	TH-227	50.10		8.40	-5.27E-01	6.73E-01	8.78E-01
		236.00		11.50	-5.37E+00		6.73E-01
		256.20		6.30	-4.22E-01		8.92E-01
+	AC-228	338.32	*	11.40	1.93E+00	2.40E-01	8.52E-01
		911.07	*	27.70	1.38E+00		2.40E-01
		969.11	*	16.60	1.48E+00		9.38E-01
+	TH-230	48.44		16.90	-4.72E-01	4.81E-01	4.81E-01
		62.85		4.60	1.24E+00		1.28E+00
		67.67		0.37	6.40E+00		1.40E+01
+	PA-231	283.67		1.60	2.50E-02	2.30E+00	3.23E+00
		302.67		2.30	-3.55E-01		2.30E+00
+	TH-231	25.64		14.70	2.54E+00	6.84E-01	1.52E+01
		84.21		6.40	4.68E-01		6.84E-01
+	PA-233	311.98		38.60	2.28E-01	3.18E-01	3.18E-01
+	PA-234	131.20		20.40	1.29E-01	2.53E-01	2.53E-01
		733.99		8.80	1.36E-02		7.29E-01
		946.00		12.00	-1.12E-01		6.28E-01
+	PA-234M	1001.03		0.92	-1.10E+00	9.03E+00	9.03E+00
+	TH-234	63.29		3.80	1.49E+00	1.54E+00	1.54E+00
+	U-235	143.76		10.50	2.36E-01	4.71E-01	4.71E-01
		163.35		4.70	7.17E-03		1.10E+00
		205.31		4.70	-2.22E-01		1.12E+00
+	NP-237	86.50	*	12.60	3.19E-01	4.13E-01	4.13E-01
+	NP-239	106.10		22.70	4.63E+02	3.15E+03	3.15E+03
		228.18		10.70	2.08E+03		7.76E+03
		277.60		14.10	4.83E+03		6.41E+03
+	AM-241	59.54		35.90	3.59E-02	1.59E-01	1.59E-01
+	AM-243	74.67		66.00	-1.52E-01	1.06E-01	1.06E-01
+	CM-243	209.75	*	3.29	2.23E+00	5.20E-01	2.14E+00
		228.14		10.60	1.39E-01		5.20E-01
		277.60	*	14.00	2.91E-01		5.88E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1510087-13
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NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	7.75E-01	7.75E-01	-3.79E-01	3.63E-01
NA-22	1274.54	99.94	7.80E-02	7.80E-02	-4.08E-02	3.53E-02
NA-24	1368.53	99.99	4.34E+14	1.71E+14	1.25E+14	1.96E+14
	2754.09	99.86	1.71E+14		-6.43E+13	6.05E+13
AL-26	1808.65	99.76	5.79E-02	5.79E-02	-3.99E-03	2.44E-02
+ K-40	1460.81	* 10.67	7.50E-01	7.50E-01	2.12E+01	3.38E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	5.46E-02	5.46E-02	2.50E-02	2.65E-02
	78.34	96.00	7.56E-02		2.72E-01	3.71E-02
SC-46	889.25	99.98	8.68E-02	8.68E-02	2.61E-03	3.99E-02
	1120.51	99.99	1.78E-01		2.31E-01	8.49E-02
V-48	983.52	99.98	3.33E-01	2.83E-01	8.38E-02	1.54E-01
	1312.10	97.50	2.83E-01		-3.48E-02	1.26E-01
CR-51	320.08	9.83	1.20E+00	1.20E+00	2.69E-01	5.68E-01
MN-54	834.83	99.97	9.19E-02	9.19E-02	8.99E-03	4.32E-02
CO-56	846.75	99.96	8.49E-02	8.49E-02	-1.90E-02	3.90E-02
	1037.75	14.03	6.98E-01		2.46E-02	3.20E-01
	1238.25	67.00	2.37E-01		8.17E-02	1.12E-01
	1771.40	15.51	4.24E-01		-2.80E-01	1.74E-01
	2598.48	16.90	2.88E-01		-1.79E-02	1.08E-01
CO-57	122.06	85.51	5.84E-02	5.84E-02	-4.01E-03	2.83E-02
	136.48	10.60	4.79E-01		-7.84E-02	2.32E-01
CO-58	810.76	99.40	1.04E-01	1.04E-01	5.73E-02	4.84E-02
FE-59	1099.22	56.50	2.16E-01	2.16E-01	-1.06E-01	9.86E-02
	1291.56	43.20	3.17E-01		-1.00E-01	1.44E-01
CO-60	1173.22	100.00	8.65E-02	7.85E-02	-3.78E-02	3.98E-02
	1332.49	100.00	7.85E-02		9.51E-03	3.55E-02
ZN-65	1115.52	50.75	1.86E-01	1.86E-01	-1.18E-02	8.61E-02
GA-67	93.31	35.70	1.82E+02	1.82E+02	2.08E+02	8.90E+01
	208.95	2.24	2.77E+03		2.25E+03	1.34E+03
	300.22	16.00	3.82E+02		1.04E+02	1.83E+02
SE-75	121.11	16.70	3.20E-01	9.56E-02	-2.66E-01	1.55E-01
	136.00	59.20	9.56E-02		-2.84E-02	4.63E-02
	264.65	59.80	1.08E-01		7.50E-03	5.18E-02
	279.53	25.20	2.78E-01		2.46E-02	1.33E-01
	400.65	11.40	5.65E-01		-2.44E-01	2.67E-01
RB-82	776.52	13.00	1.36E+00	1.36E+00	-2.49E-03	6.35E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RB-83	520.41	46.00	1.53E-01	1.53E-01	-2.10E-02	7.14E-02
	529.64	30.30	2.18E-01		-4.66E-02	1.01E-01
	552.65	16.40	4.51E-01		1.17E-02	2.11E-01
KR-85	513.99	0.43	1.65E+01	1.65E+01	-5.15E+00	7.83E+00
SR-85	513.99	99.27	1.02E-01	1.02E-01	-3.17E-02	4.83E-02
Y-88	898.02	93.40	1.05E-01	8.60E-02	5.59E-02	4.91E-02
	1836.01	99.38	8.60E-02		0.00E+00	3.74E-02
NB-93M	16.57	9.43	5.27E+03	5.27E+03	-1.34E+04	2.56E+03
NB-94	702.63	100.00	6.97E-02	6.97E-02	-4.02E-02	3.26E-02
	871.10	100.00	7.04E-02		2.42E-03	3.26E-02
NB-95	765.79	99.81	1.55E-01	1.55E-01	8.33E-02	7.29E-02
NB-95M	235.69	25.00	1.65E+02	1.65E+02	-1.31E+03	8.01E+01
ZR-95	724.18	43.70	3.14E-01	1.90E-01	6.47E-02	1.50E-01
	756.72	55.30	1.90E-01		2.77E-02	8.90E-02
MO-99	181.06	6.20	3.18E+03	2.06E+03	-4.56E+02	1.54E+03
	739.58	12.80	2.06E+03		-3.35E+02	9.60E+02
	778.00	4.50	6.13E+03		-6.79E+02	2.86E+03
RU-103	497.08	89.00	1.06E-01	1.06E-01	-3.28E-02	4.95E-02
RU-106	621.84	9.80	6.79E-01	6.79E-01	2.52E-01	3.17E-01
AG-108M	433.93	89.90	5.87E-02	5.87E-02	-5.69E-03	2.76E-02
	614.37	90.40	7.47E-02		-7.12E-01	3.51E-02
	722.95	90.50	8.84E-02		-4.75E-03	4.17E-02
+ CD-109	88.03	* 3.72	1.47E+00	1.47E+00	1.13E+00	7.16E-01
AG-110M	657.75	93.14	7.93E-02	7.93E-02	-2.09E-02	3.72E-02
	677.61	10.53	7.18E-01		-1.90E-02	3.36E-01
	706.67	16.46	4.95E-01		-2.06E-01	2.32E-01
	763.93	21.98	3.48E-01		-3.70E-01	1.62E-01
	884.67	71.63	1.03E-01		-8.77E-04	4.74E-02
	1384.27	23.94	3.04E-01		7.76E-03	1.35E-01
CD-113M	263.70	0.02	2.30E+02	2.30E+02	1.69E+01	1.10E+02
SN-113	255.12	1.93	3.57E+00	9.89E-02	1.00E+00	1.72E+00
	391.69	64.90	9.89E-02		-1.64E-02	4.67E-02
TE123M	159.00	84.10	7.63E-02	7.63E-02	6.55E-02	3.70E-02
SB-124	602.71	97.87	1.06E-01	1.06E-01	3.32E-02	5.01E-02
	645.85	7.26	1.27E+00		-4.62E-01	5.95E-01
	722.78	11.10	1.05E+00		-5.64E-02	4.94E-01
	1691.02	49.00	1.73E-01		4.34E-02	7.36E-02
I-125	35.49	6.49	5.56E+00	5.56E+00	-4.93E-01	2.69E+00
SB-125	176.33	6.89	8.04E-01	1.83E-01	1.61E-01	3.90E-01
	427.89	29.33	1.83E-01		-2.78E-02	8.61E-02
	463.38	10.35	6.29E-01		6.84E-01	2.98E-01
	600.56	17.80	4.16E-01		1.29E-01	1.97E-01
	635.90	11.32	5.79E-01		-1.22E-01	2.71E-01
SB-126	414.70	83.30	3.98E-01	3.98E-01	2.17E-02	1.88E-01
	666.33	99.60	4.61E-01		1.28E-01	2.17E-01
	695.00	99.60	4.23E-01		-3.55E-02	1.97E-01
	720.50	53.80	8.68E-01		-1.27E-01	4.07E-01
+ SN-126	87.57	* 37.00	1.41E-01	1.41E-01	1.09E-01	6.86E-02
SB-127	473.00	25.00	8.58E+01	7.15E+01	6.18E+01	4.05E+01
	685.20	35.70	7.15E+01		4.84E+01	3.35E+01
	783.80	14.70	2.02E+02		1.03E+02	9.51E+01
I-129	29.78	57.00	1.20E+00	1.20E+00	-8.88E-01	5.81E-01
	33.60	13.20	2.43E+00		-7.48E-01	1.18E+00

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-129	39.58	7.52	2.22E+00	1.20E+00	3.84E-01	1.08E+00
+ I-131	284.30	6.05	1.43E+01	1.39E+00	1.11E-01	6.84E+00
	364.48 *	81.20	1.39E+00		6.76E-01	6.67E-01
	636.97	7.26	1.55E+01		2.56E+00	7.25E+00
	722.89 *	1.80	7.73E+01		2.91E+01	3.65E+01
TE-132	49.72	13.10	6.01E+02	6.55E+01	-3.60E+02	2.91E+02
	228.16	88.00	6.55E+01		1.76E+01	3.16E+01
BA-133	81.00	33.00	1.28E-01	8.99E-02	8.52E-03	6.22E-02
	302.84	17.80	2.99E-01		-4.62E-02	1.43E-01
	356.01	60.00	8.99E-02		9.50E-03	4.27E-02
I-133	529.87	86.30	1.40E+10	1.40E+10	-2.44E+08	6.52E+09
XE-133	81.00	38.00	8.35E+00	8.35E+00	5.54E-01	4.04E+00
CS-134	563.23	8.38	7.33E-01	8.66E-02	1.02E-01	3.43E-01
	569.32	15.43	3.64E-01		-2.02E-01	1.69E-01
	604.70	97.60	8.66E-02		2.11E-02	4.12E-02
	795.84	85.40	1.01E-01		7.37E-02	4.74E-02
	801.93	8.73	8.39E-01		-6.85E-02	3.90E-01
CS-135	268.24	16.00	3.67E-01	3.67E-01	-6.30E-02	1.76E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.88E+00	4.02E-01	2.07E+00	1.88E+00
	163.89	4.61	6.12E+00		-2.78E+00	2.96E+00
	176.55	13.56	2.23E+00		3.34E-01	1.08E+00
	273.65	12.66	2.40E+00		-3.27E+00	1.15E+00
	340.57	48.50	8.07E-01		-7.49E-02	3.88E-01
	818.50	99.70	4.02E-01		1.75E-01	1.87E-01
	1048.07	79.60	5.86E-01		1.06E-01	2.71E-01
	1235.34	19.70	3.01E+00		-4.31E-01	1.40E+00
CS-137	661.65	85.12	8.32E-02	8.32E-02	-1.24E-02	3.91E-02
LA-138	788.74	34.00	2.25E-01	1.08E-01	4.29E-03	1.05E-01
	1435.80	66.00	1.08E-01		-3.11E-02	4.80E-02
CE-139	165.85	80.35	7.41E-02	7.41E-02	-1.67E-02	3.58E-02
BA-140	162.64	6.70	4.54E+00	1.19E+00	2.95E-02	2.20E+00
	304.84	4.50	7.09E+00		8.24E+00	3.39E+00
	423.70	3.20	9.53E+00		-1.94E-01	4.48E+00
	437.55	2.00	1.62E+01		6.39E+00	7.63E+00
	537.32	25.00	1.19E+00		-4.36E-02	5.52E-01
LA-140	328.77	20.50	1.71E+00	4.60E-01	9.48E-01	8.15E-01
	487.03	45.50	7.15E-01		2.36E-01	3.35E-01
	815.85	23.50	1.69E+00		-3.55E-01	7.81E-01
	1596.49	95.49	4.60E-01		1.15E-01	2.04E-01
CE-141	145.44	48.40	2.01E-01	2.01E-01	1.93E-02	9.74E-02
CE-143	57.36	11.80	6.52E+06	2.56E+06	-4.19E+06	3.15E+06
	293.26	42.00	2.56E+06		-1.33E+06	1.24E+06
	664.55	5.20	2.09E+07		7.42E+06	9.85E+06
CE-144	133.54	10.80	4.84E-01	4.84E-01	1.74E-01	2.35E-01
PM-144	476.78	42.00	1.34E-01	6.86E-02	-6.55E-02	6.27E-02
	618.01	98.60	6.86E-02		1.27E-02	3.21E-02
	696.49	99.49	7.16E-02		-2.64E-02	3.34E-02
PM-145	36.85	21.70	9.79E-01	5.03E-01	1.89E-01	4.75E-01
	37.36	39.70	5.03E-01		9.71E-02	2.44E-01
	42.30	15.10	8.76E-01		3.95E-01	4.26E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-145	72.40	2.31	2.09E+00	5.03E-01	-1.53E+00	1.01E+00
PM-146	453.90	39.94	1.27E-01	1.27E-01	-3.47E-02	5.92E-02
	735.90	14.01	5.35E-01		3.06E-02	2.51E-01
	747.13	13.10	5.46E-01		3.05E-02	2.55E-01
ND-147	91.11	28.90	1.71E+00	1.71E+00	1.13E+00	8.35E-01
	531.02	13.10	3.58E+00		3.75E+00	1.68E+00
PM-149	285.90	3.10	4.64E+04	4.64E+04	-9.41E+03	2.22E+04
EU-152	121.78	20.50	2.25E-01	2.25E-01	-1.54E-02	1.09E-01
	244.69	5.40	1.10E+00		-1.32E+00	5.29E-01
	344.27	19.13	2.95E-01		9.42E-02	1.40E-01
	778.89	9.20	8.09E-01		-1.87E-01	3.78E-01
	964.01	10.40	9.93E-01		-1.87E+00	4.69E-01
	1085.78	7.22	1.14E+00		7.45E-01	5.26E-01
	1112.02	9.60	8.49E-01		-2.34E-01	3.90E-01
	1407.95	14.94	4.81E-01		2.09E-01	2.15E-01
GD-153	97.43	31.30	1.64E-01	1.64E-01	-7.54E-02	7.98E-02
	103.18	22.20	2.24E-01		-2.58E-01	1.09E-01
EU-154	123.07	40.50	1.17E-01	1.17E-01	5.94E-02	5.69E-02
	723.30	19.70	4.09E-01		-2.20E-02	1.93E-01
	873.19	11.50	5.83E-01		2.06E-02	2.68E-01
	996.32	10.30	8.48E-01		1.03E-01	3.95E-01
	1004.76	17.90	4.33E-01		-1.11E-01	2.00E-01
	1274.45	35.50	2.16E-01		-1.13E-01	9.78E-02
EU-155	86.50	30.90	2.02E-01	2.02E-01	-3.97E-02	9.91E-02
	105.30	20.70	2.31E-01		1.48E-01	1.12E-01
EU-156	811.77	10.40	2.95E+00	2.95E+00	-5.96E-01	1.37E+00
	1153.47	7.20	5.36E+00		1.12E+00	2.47E+00
	1230.71	8.90	4.65E+00		1.63E+00	2.15E+00
HO-166M	184.41	72.60	8.77E-02	8.77E-02	1.92E-02	4.26E-02
	280.45	29.60	1.96E-01		1.74E-02	9.42E-02
	410.94	11.10	5.77E-01		3.99E-01	2.75E-01
	711.69	54.10	1.42E-01		-2.82E-02	6.69E-02
TM-171	66.72	0.14	3.60E+01	3.60E+01	-2.10E+01	1.75E+01
HF-172	81.75	4.52	9.40E-01	4.44E-01	-4.19E-01	4.55E-01
	125.81	11.30	4.44E-01		-4.63E-01	2.15E-01
LU-172	181.53	20.60	7.61E+00	3.40E+00	-9.15E-02	3.68E+00
	810.06	16.63	1.33E+01		7.32E+00	6.18E+00
	912.12	15.25	2.93E+01		-2.71E+00	1.41E+01
	1093.66	62.50	3.40E+00		-4.68E-01	1.55E+00
LU-173	100.72	5.24	9.21E-01	3.08E-01	1.78E-01	4.48E-01
	272.11	21.20	3.08E-01		1.66E-01	1.48E-01
HF-175	343.40	84.00	8.75E-02	8.75E-02	-6.95E-02	4.16E-02
LU-176	88.34	13.30	4.75E-01	5.48E-02	2.89E-01	2.33E-01
	201.83	86.00	6.09E-02		-1.96E-02	2.94E-02
	306.78	94.00	5.48E-02		-1.37E-02	2.61E-02
+ TA-182	67.75	* 41.20	1.93E-01	1.93E-01	1.10E-01	9.45E-02
	1121.30	* 34.90	5.58E-01		6.74E-01	2.67E-01
	1189.05	16.23	6.55E-01		-1.04E-01	3.02E-01
	1221.41	26.98	4.51E-01		9.29E-02	2.10E-01
	1231.02	11.44	1.00E+00		1.68E-01	4.63E-01
IR-192	308.46	29.68	2.42E-01	1.35E-01	9.55E-02	1.15E-01
	468.07	48.10	1.35E-01		-3.19E-02	6.31E-02
HG-203	279.19	77.30	1.25E-01	1.25E-01	6.08E-02	6.03E-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BI-207	569.67	97.72	5.59E-02	5.59E-02	-3.10E-02	2.60E-02
	1063.62	74.90	1.07E-01		-3.74E-02	4.92E-02
+ TL-208	583.14 *	30.22	3.78E-01	1.60E-01	1.29E+00	1.82E-01
	860.37 *	4.48	2.35E+00		1.86E+00	1.12E+00
	2614.66 *	35.85	1.60E-01		9.57E-01	6.74E-02
BI-210M	262.00	45.00	1.16E-01	1.16E-01	-2.85E-02	5.58E-02
	300.00	23.00	2.55E-01		6.94E-02	1.22E-01
+ PB-210	46.50 *	4.25	3.43E+00	3.43E+00	2.25E+00	1.68E+00
PB-211	404.84	2.90	1.91E+00	1.91E+00	3.12E-01	9.05E-01
	831.96	2.90	2.85E+00		-5.70E-01	1.34E+00
+ BI-212	727.17 *	11.80	7.44E-01	7.44E-01	1.60E+00	3.52E-01
	1620.62	2.75	2.74E+00		1.09E+00	1.21E+00
+ PB-212	238.63 *	44.60	3.41E-01	3.41E-01	1.49E+00	1.68E-01
	300.09 *	3.41	2.75E+00		1.87E+00	1.34E+00
+ BI-214	609.31 *	46.30	2.87E-01	2.87E-01	1.24E+00	1.39E-01
	1120.29 *	15.10	1.06E+00		1.28E+00	5.07E-01
	1764.49 *	15.80	5.37E-01		1.35E+00	2.40E-01
	2204.22 *	4.98	1.93E+00		9.01E-01	8.68E-01
+ PB-214	295.21 *	19.19	4.89E-01	2.87E-01	1.41E+00	2.38E-01
	351.92 *	37.19	2.87E-01		1.13E+00	1.40E-01
RN-219	401.80	6.50	8.49E-01	8.49E-01	1.87E-01	4.02E-01
RA-223	323.87	3.88	1.36E+00	1.36E+00	-1.22E-01	6.46E-01
+ RA-224	240.98 *	3.95	3.92E+00	3.92E+00	4.14E+00	1.93E+00
RA-225	40.00	31.00	2.39E+00	2.39E+00	4.13E-01	1.16E+00
+ RA-226	186.21 *	3.28	2.71E+00	2.71E+00	3.16E+00	1.33E+00
TH-227	50.10	8.40	8.78E-01	6.73E-01	-5.27E-01	4.25E-01
	236.00	11.50	6.73E-01		-5.37E+00	3.27E-01
	256.20	6.30	8.92E-01		-4.22E-01	4.29E-01
+ AC-228	338.32 *	11.40	8.52E-01	2.40E-01	1.93E+00	4.15E-01
	911.07 *	27.70	2.40E-01		1.38E+00	1.10E-01
	969.11 *	16.60	9.38E-01		1.48E+00	4.52E-01
TH-230	48.44	16.90	4.81E-01	4.81E-01	-4.72E-01	2.33E-01
	62.85	4.60	1.28E+00		1.24E+00	6.22E-01
	67.67	0.37	1.40E+01		6.40E+00	6.78E+00
PA-231	283.67	1.60	3.23E+00	2.30E+00	2.50E-02	1.54E+00
	302.67	2.30	2.30E+00		-3.55E-01	1.10E+00
TH-231	25.64	14.70	1.52E+01	6.84E-01	2.54E+00	7.35E+00
	84.21	6.40	6.84E-01		4.68E-01	3.32E-01
PA-233	311.98	38.60	3.18E-01	3.18E-01	2.28E-01	1.51E-01
PA-234	131.20	20.40	2.53E-01	2.53E-01	1.29E-01	1.23E-01
	733.99	8.80	7.29E-01		1.36E-02	3.38E-01
	946.00	12.00	6.28E-01		-1.12E-01	2.90E-01
PA-234M	1001.03	0.92	9.03E+00	9.03E+00	-1.10E+00	4.19E+00
TH-234	63.29	3.80	1.54E+00	1.54E+00	1.49E+00	7.47E-01
U-235	143.76	10.50	4.71E-01	4.71E-01	2.36E-01	2.28E-01
	163.35	4.70	1.10E+00		7.17E-03	5.34E-01
	205.31	4.70	1.12E+00		-2.22E-01	5.39E-01
+ NP-237	86.50 *	12.60	4.13E-01	4.13E-01	3.19E-01	2.01E-01
NP-239	106.10	22.70	3.15E+03	3.15E+03	4.63E+02	1.53E+03
	228.18	10.70	7.76E+03		2.08E+03	3.74E+03
	277.60	14.10	6.41E+03		4.83E+03	3.08E+03
AM-241	59.54	35.90	1.59E-01	1.59E-01	3.59E-02	7.70E-02
AM-243	74.67	66.00	1.06E-01	1.06E-01	-1.52E-01	5.18E-02

Analysis Report for 1510087-13
CP4106S08-09

<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Line MDA (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Activity (pCi/grams)</i>	<i>Dec. Level (pCi/grams)</i>
+	CM-243	209.75 *	3.29	2.14E+00	5.20E-01	2.23E+00
		228.14	10.60	5.20E-01		1.39E-01
		277.60 *	14.00	5.88E-01		2.91E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
----------------------	----------------	-------------

No Data Review Comments Entered.

369: 18 21 18 21 29 27 15 24

Sample Title: CP4106S08-09

377:	15	14	23	25	17	17	17	24
385:	18	21	29	26	22	13	19	28
393:	22	17	21	18	18	18	20	26
401:	22	16	14	27	18	25	21	18
409:	28	48	26	18	19	19	21	19
417:	15	16	19	17	21	18	14	22
425:	14	17	19	13	19	18	14	24
433:	13	14	19	15	16	22	20	17
441:	14	13	12	25	23	17	21	16
449:	11	12	21	9	15	22	9	16
457:	23	10	11	14	18	29	34	17
465:	17	10	12	14	10	16	23	10
473:	22	21	21	13	11	14	15	17
481:	18	13	10	17	12	16	26	14
489:	11	9	16	12	10	20	19	14
497:	10	13	14	18	17	8	12	13
505:	12	14	19	19	31	59	90	52
513:	24	17	14	17	13	9	12	14
521:	17	16	13	16	14	11	8	4
529:	19	8	19	14	21	6	9	12
537:	13	8	14	8	12	14	17	15
545:	11	11	14	15	13	14	12	11
553:	13	19	17	14	14	4	11	14
561:	9	14	20	14	17	18	11	14
569:	12	11	12	19	12	12	11	6
577:	15	10	8	10	21	53	156	110
585:	16	12	11	15	12	13	10	6
593:	9	12	8	9	16	12	16	16
601:	11	15	15	17	13	10	11	49
609:	219	135	22	10	9	9	13	12
617:	9	16	7	5	11	11	8	11
625:	17	14	7	10	9	8	11	13
633:	6	15	15	9	10	6	10	13
641:	9	12	7	4	16	10	10	11
649:	10	9	17	9	10	8	12	3
657:	18	8	12	10	12	15	15	10
665:	15	14	13	8	14	11	7	13
673:	10	12	15	10	8	16	9	5
681:	7	14	14	8	13	11	6	12
689:	10	5	18	13	7	9	10	7
697:	15	8	11	8	9	13	13	6
705:	12	11	20	13	7	19	15	12
713:	13	8	10	15	11	12	11	12
721:	10	7	18	10	16	19	56	41
729:	13	8	5	6	11	8	10	8
737:	8	18	13	4	8	7	9	14
745:	8	12	11	7	6	9	12	8
753:	14	6	12	10	13	9	8	12
761:	6	9	10	12	8	10	8	20
769:	18	10	10	12	12	5	14	6
777:	8	12	10	9	8	16	7	12
785:	15	16	12	9	8	5	7	10
793:	11	20	26	9	7	6	7	6

801: 8 5 10 13 11 9 14 10

Sample Title: CP4106S08-09

Channel	1	2	3	4	5	6	7	8
809:	12	6	8	8	8	3	5	10
817:	8	8	10	6	12	6	7	11
825:	2	9	8	11	7	17	12	13
833:	8	8	13	16	13	12	6	11
841:	9	6	9	3	6	7	7	7
849:	4	8	6	9	6	8	8	6
857:	5	10	14	27	20	8	7	7
865:	8	8	10	9	9	11	3	9
873:	4	6	6	6	6	3	10	4
881:	4	8	6	5	7	5	10	6
889:	6	6	3	7	5	7	7	10
897:	8	9	11	8	10	4	8	11
905:	5	7	8	4	10	47	110	50
913:	3	5	13	4	5	7	12	10
921:	4	11	7	5	4	10	6	10
929:	3	7	3	6	9	11	13	6
937:	5	4	5	3	9	1	8	6
945:	11	5	7	6	8	9	12	7
953:	6	4	9	6	8	6	8	6
961:	5	6	8	23	26	14	14	40
969:	56	24	13	8	4	10	6	3
977:	6	8	8	8	13	6	6	6
985:	6	10	6	5	8	7	7	6
993:	6	5	7	8	20	12	5	8
1001:	12	8	6	6	7	4	5	9
1009:	9	6	4	5	6	6	4	9
1017:	3	13	12	10	6	8	6	4
1025:	13	7	11	8	3	3	3	4
1033:	8	6	8	8	4	6	3	6
1041:	5	6	4	5	9	5	5	8
1049:	7	7	12	10	7	5	11	8
1057:	5	9	9	6	6	7	7	7
1065:	6	8	9	7	2	8	7	6
1073:	3	12	5	9	5	6	9	5
1081:	1	9	5	7	9	7	4	7
1089:	5	3	5	2	6	8	8	4
1097:	6	5	5	5	3	9	5	9
1105:	3	8	9	6	5	7	6	5
1113:	4	9	9	10	6	8	22	44
1121:	34	14	6	6	10	8	5	7
1129:	13	3	9	11	7	9	2	4
1137:	4	7	6	9	9	6	10	10
1145:	3	6	6	8	8	6	8	7
1153:	11	2	11	4	5	4	6	8
1161:	4	8	10	9	9	3	6	10
1169:	8	7	5	6	11	5	5	7
1177:	11	6	7	18	6	8	11	8
1185:	7	3	7	7	9	5	6	10
1193:	5	10	8	8	5	15	14	3
1201:	7	7	7	6	9	8	7	6
1209:	4	3	8	4	5	6	6	9
1217:	7	10	8	8	10	5	7	12
1225:	9	5	11	11	5	8	6	4

1233: 6 12 5 9 11 20 17 12

Sample Title: CP4106S08-09

Channel	12	10	12	13	3	9	9	9
1241:	12	10	12	13	3	9	9	9
1249:	10	5	4	2	13	7	11	5
1257:	6	8	12	0	11	4	3	11
1265:	3	5	7	7	5	5	3	6
1273:	9	1	7	4	1	3	12	5
1281:	4	8	5	6	6	8	8	6
1289:	2	8	4	9	4	3	5	6
1297:	5	4	4	5	3	5	3	6
1305:	1	4	3	6	5	3	1	5
1313:	2	5	1	2	4	2	6	7
1321:	10	4	1	3	5	5	7	3
1329:	6	2	5	4	3	5	5	4
1337:	1	2	1	6	4	1	3	4
1345:	2	1	4	5	4	1	8	2
1353:	3	6	4	5	2	2	3	1
1361:	8	2	3	3	4	3	3	5
1369:	7	2	5	2	4	2	4	5
1377:	5	8	2	3	2	2	3	4
1385:	4	2	3	3	3	2	3	3
1393:	0	2	6	2	5	3	2	3
1401:	6	3	1	2	2	3	4	6
1409:	5	1	0	3	3	2	2	4
1417:	6	2	2	4	1	1	0	1
1425:	2	1	0	2	0	5	1	2
1433:	1	3	2	4	6	4	5	6
1441:	4	1	4	4	4	5	2	2
1449:	7	2	3	7	3	0	5	2
1457:	2	16	88	287	303	87	9	3
1465:	1	1	1	4	3	0	1	2
1473:	2	4	3	4	1	1	2	5
1481:	3	1	1	2	4	3	1	1
1489:	1	1	0	2	2	4	1	2
1497:	3	0	1	3	4	1	0	1
1505:	0	1	0	5	5	5	2	6
1513:	1	1	3	2	1	0	3	3
1521:	1	2	0	1	6	2	1	0
1529:	1	3	1	1	2	3	4	0
1537:	2	2	3	2	1	0	2	3
1545:	1	6	1	0	0	2	0	1
1553:	0	1	2	3	1	2	1	0
1561:	3	2	1	2	3	0	0	0
1569:	1	3	1	1	2	1	2	1
1577:	0	3	3	0	1	3	0	2
1585:	3	1	5	8	2	5	2	0
1593:	3	4	1	2	0	2	5	4
1601:	0	0	1	1	2	1	2	2
1609:	3	2	1	0	0	1	2	0
1617:	2	1	2	2	5	5	1	3
1625:	1	1	2	2	3	7	3	0
1633:	1	2	0	0	1	1	2	0
1641:	0	2	0	1	1	2	0	0
1649:	4	2	0	0	0	0	1	1
1657:	1	0	1	3	4	2	2	0

1665: 1 1 1 2 1 0 2 1

Sample Title: CP4106S08-09

Channel	1	2	3	4	5	6	7	8
1673:	1	0	1	2	0	0	1	0
1681:	1	1	2	0	1	1	0	0
1689:	2	2	0	2	2	2	2	0
1697:	0	2	0	0	1	1	2	2
1705:	2	1	2	1	0	2	2	1
1713:	2	2	2	0	2	1	1	2
1721:	1	2	1	0	3	0	3	6
1729:	7	6	3	0	0	1	0	1
1737:	0	2	1	2	3	2	2	2
1745:	0	0	1	1	1	0	1	1
1753:	2	0	1	1	2	1	2	1
1761:	2	4	15	24	27	6	0	2
1769:	0	0	0	3	1	1	0	2
1777:	1	1	1	2	0	1	2	0
1785:	1	1	1	1	2	1	0	2
1793:	2	1	0	1	2	1	0	0
1801:	0	0	2	0	0	3	2	3
1809:	0	0	2	0	2	3	0	0
1817:	1	1	2	1	2	1	1	0
1825:	0	0	2	3	1	1	4	1
1833:	2	1	0	4	2	1	0	2
1841:	1	2	1	0	3	3	4	1
1849:	4	0	0	2	0	1	0	1
1857:	2	0	3	2	1	0	1	0
1865:	1	0	4	1	1	0	0	1
1873:	0	1	1	0	1	1	1	0
1881:	0	3	0	1	1	2	0	1
1889:	2	1	1	0	1	2	0	0
1897:	1	0	1	0	1	3	0	2
1905:	1	2	1	1	3	2	0	1
1913:	1	0	1	0	1	0	1	1
1921:	0	1	1	2	1	1	0	0
1929:	1	1	0	1	1	1	0	2
1937:	2	1	3	3	1	2	2	2
1945:	2	0	0	0	0	1	2	1
1953:	2	0	2	1	2	0	0	0
1961:	0	2	0	1	0	2	1	1
1969:	0	0	0	2	1	1	3	1
1977:	2	0	0	1	1	3	0	1
1985:	1	0	3	0	1	3	2	1
1993:	1	3	0	2	0	0	1	2
2001:	1	1	0	1	0	0	0	0
2009:	0	0	3	0	2	0	0	0
2017:	1	2	0	1	0	1	1	1
2025:	0	0	1	1	0	1	1	1
2033:	0	2	0	1	3	1	3	1
2041:	0	2	1	4	1	1	3	0
2049:	2	0	0	1	1	3	1	3
2057:	1	1	0	1	2	0	0	2
2065:	1	1	1	0	0	0	0	0
2073:	2	1	0	0	0	0	1	2
2081:	1	0	0	3	1	1	0	0
2089:	1	0	2	0	1	2	1	3

2097: 1 2 1 3 1 2 6 3

Sample Title: CP4106S08-09

Channel	1	2	3	4	5	6	7	8
2105:	4	4	0	1	0	0	2	0
2113:	0	0	0	3	3	3	0	0
2121:	2	3	0	2	0	0	0	0
2129:	0	0	0	1	0	1	4	2
2137:	1	2	1	1	1	0	1	2
2145:	1	0	1	0	0	0	1	1
2153:	1	1	0	0	0	2	2	0
2161:	1	2	0	0	1	1	1	0
2169:	0	0	2	1	2	1	1	1
2177:	2	0	0	0	2	3	0	1
2185:	1	0	2	1	2	0	0	1
2193:	2	2	2	1	2	0	0	1
2201:	4	2	6	4	4	1	0	0
2209:	1	1	1	0	0	0	0	1
2217:	2	2	0	0	1	2	0	0
2225:	0	2	0	0	0	0	0	0
2233:	1	1	2	0	1	2	0	1
2241:	1	0	0	0	1	2	1	2
2249:	0	1	0	0	6	0	1	2
2257:	0	0	0	1	3	5	0	1
2265:	1	1	3	1	2	0	0	1
2273:	0	1	0	2	1	0	3	1
2281:	1	2	1	1	0	0	0	0
2289:	2	1	1	1	3	1	0	1
2297:	5	3	1	0	2	1	1	2
2305:	2	0	1	2	0	1	1	2
2313:	3	0	1	0	0	1	3	3
2321:	2	2	1	2	1	2	1	1
2329:	1	0	0	0	0	0	1	3
2337:	0	0	1	2	1	0	0	1
2345:	1	2	1	0	2	4	0	0
2353:	0	4	1	1	1	3	2	0
2361:	3	0	1	1	1	1	4	1
2369:	3	1	1	2	1	2	1	4
2377:	1	1	2	0	1	2	1	0
2385:	3	2	0	0	2	3	1	2
2393:	3	2	0	1	0	0	1	1
2401:	0	1	0	0	2	1	1	1
2409:	0	1	0	0	5	0	1	1
2417:	0	0	0	0	1	0	0	1
2425:	0	0	2	0	0	2	0	1
2433:	0	1	2	0	1	0	0	1
2441:	0	2	1	1	2	2	1	2
2449:	1	0	0	2	1	0	0	1
2457:	2	0	2	1	0	1	1	0
2465:	1	1	0	2	0	0	1	0
2473:	1	1	0	1	2	0	0	1
2481:	1	1	1	1	0	0	0	0
2489:	0	0	0	0	0	0	0	1
2497:	1	1	1	0	1	2	0	0
2505:	1	0	0	0	3	0	1	0
2513:	2	0	1	1	0	0	0	0
2521:	0	0	0	1	0	0	1	1

2529: 3 1 2 0 0 0 0 0

Sample Title: CP4106S08-09

Channel	1	2	3	4	5	6	7	8
2537:	0	1	1	0	0	0	1	1
2545:	1	1	1	1	0	0	0	1
2553:	0	1	0	1	1	0	0	0
2561:	0	0	1	1	0	2	0	0
2569:	0	1	0	0	1	0	0	0
2577:	0	0	1	1	0	1	0	0
2585:	0	1	0	0	0	1	0	0
2593:	0	0	0	0	1	0	1	0
2601:	0	1	1	2	0	1	0	1
2609:	2	0	2	12	35	40	14	6
2617:	0	0	0	0	0	0	0	0
2625:	0	0	0	1	0	0	1	0
2633:	1	0	0	0	1	1	0	1
2641:	1	2	0	2	0	0	0	0
2649:	0	0	0	1	0	0	1	0
2657:	1	1	0	1	0	1	0	0
2665:	0	1	0	0	0	0	1	0
2673:	1	0	0	0	0	1	0	0
2681:	0	0	0	0	0	0	1	1
2689:	0	0	0	0	0	0	0	0
2697:	0	0	0	1	0	2	0	1
2705:	1	0	0	0	0	1	0	0
2713:	0	0	1	0	1	0	0	0
2721:	0	0	2	0	0	0	1	0
2729:	0	2	1	0	1	0	0	1
2737:	1	1	1	1	1	0	0	1
2745:	0	0	0	0	0	0	0	1
2753:	1	0	0	0	0	1	0	2
2761:	0	0	0	0	1	0	0	0
2769:	0	0	0	0	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	1	0	0	0	0
2793:	0	0	1	0	0	0	0	0
2801:	0	0	0	0	1	1	0	0
2809:	0	0	1	1	0	0	0	0
2817:	0	1	0	0	0	1	0	0
2825:	0	0	0	1	0	0	0	1
2833:	0	1	0	0	1	0	0	0
2841:	0	0	2	0	0	0	2	1
2849:	0	0	0	0	0	0	0	1
2857:	0	0	0	1	0	0	0	0
2865:	0	0	0	0	0	2	0	0
2873:	0	0	1	0	0	1	0	0
2881:	0	1	0	0	0	0	0	0
2889:	1	0	0	0	0	0	1	1
2897:	0	1	1	0	0	0	0	0
2905:	0	1	0	0	0	0	0	0
2913:	1	1	0	0	0	0	0	0
2921:	0	0	0	0	1	0	1	0
2929:	0	0	0	0	1	0	0	0
2937:	1	0	1	1	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	1	0	0	0	0

2961: 0 0 0 0 0 0 0 0 0

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
2969:	0	1	0	0	0	2	0	1
2977:	0	0	1	0	0	0	1	0
2985:	0	0	0	0	1	0	0	0
2993:	0	0	0	0	0	1	0	0
3001:	0	0	1	0	1	0	0	0
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	0	0	0
3033:	1	0	0	1	0	0	1	0
3041:	0	0	0	0	0	0	0	0
3049:	1	1	1	0	0	0	1	0
3057:	0	0	0	0	0	0	0	0
3065:	1	0	2	0	0	0	0	0
3073:	1	0	0	0	1	1	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	0	1	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	1	0	0	1	0	1
3113:	0	0	0	0	1	0	1	0
3121:	0	0	0	0	0	0	0	0
3129:	0	0	0	0	0	0	0	1
3137:	0	1	1	1	0	0	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	1	0	0	0	1
3169:	0	0	0	0	1	0	0	0
3177:	0	0	0	0	1	2	0	1
3185:	0	0	0	1	0	0	0	0
3193:	0	0	0	3	1	0	0	0
3201:	0	0	0	0	0	1	0	0
3209:	0	0	0	0	0	0	0	0
3217:	1	0	0	1	0	0	0	0
3225:	0	0	1	0	0	0	0	0
3233:	0	0	0	0	0	1	0	0
3241:	0	0	1	0	0	0	1	0
3249:	0	0	0	1	0	0	0	0
3257:	0	0	0	0	0	0	1	0
3265:	1	0	0	0	0	0	0	1
3273:	0	1	0	0	0	0	0	0
3281:	0	0	0	1	0	0	0	0
3289:	0	0	0	0	1	1	1	0
3297:	0	0	0	0	1	0	1	0
3305:	0	0	0	0	0	0	0	1
3313:	0	0	0	1	1	0	0	0
3321:	0	0	1	0	0	0	1	0
3329:	1	0	0	0	0	0	0	1
3337:	0	0	0	0	2	0	1	0
3345:	0	0	1	0	0	0	0	0
3353:	0	0	0	0	0	1	0	0
3361:	0	1	0	0	0	0	0	0
3369:	0	1	1	0	0	0	0	1
3377:	1	0	0	0	1	0	0	0
3385:	0	0	0	0	0	0	0	0

3393: 0 1 0 0 0 0 0 0

Sample Title: CP4106S08-09

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	1	0	0	0	0	0
3409:	0	0	0	0	0	0	1	1
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	1	0	0	0	1
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	1
3449:	0	1	0	1	0	0	0	2
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	1	0	0	0	0
3473:	1	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	1	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	1	0	0	0	0	0
3505:	0	0	0	0	0	0	0	1
3513:	0	0	0	1	0	0	0	0
3521:	1	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	1	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	1	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	2	0	1	0	0	0	0	0
3577:	0	0	0	0	0	1	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	1	1	0	1
3601:	0	0	0	1	0	0	0	0
3609:	0	0	1	3	1	0	0	0
3617:	0	0	0	0	1	0	0	0
3625:	0	0	0	1	0	0	0	0
3633:	0	0	1	0	0	0	0	1
3641:	0	0	0	0	0	0	0	0
3649:	0	1	0	0	0	0	0	0
3657:	0	0	0	0	0	1	0	0
3665:	0	0	0	0	0	1	1	0
3673:	0	0	1	0	0	0	1	0
3681:	1	0	0	1	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	1	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	2	0	0	0	0	0	0
3729:	0	1	1	1	0	2	1	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	1	1	0	0	0	0	0	0
3761:	0	0	0	0	0	0	1	1
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	1
3785:	0	0	0	0	0	0	0	0
3793:	0	0	1	0	0	0	0	0
3801:	0	0	0	0	0	0	0	2
3809:	0	0	0	0	0	0	0	0
3817:	0	0	1	0	0	0	0	0

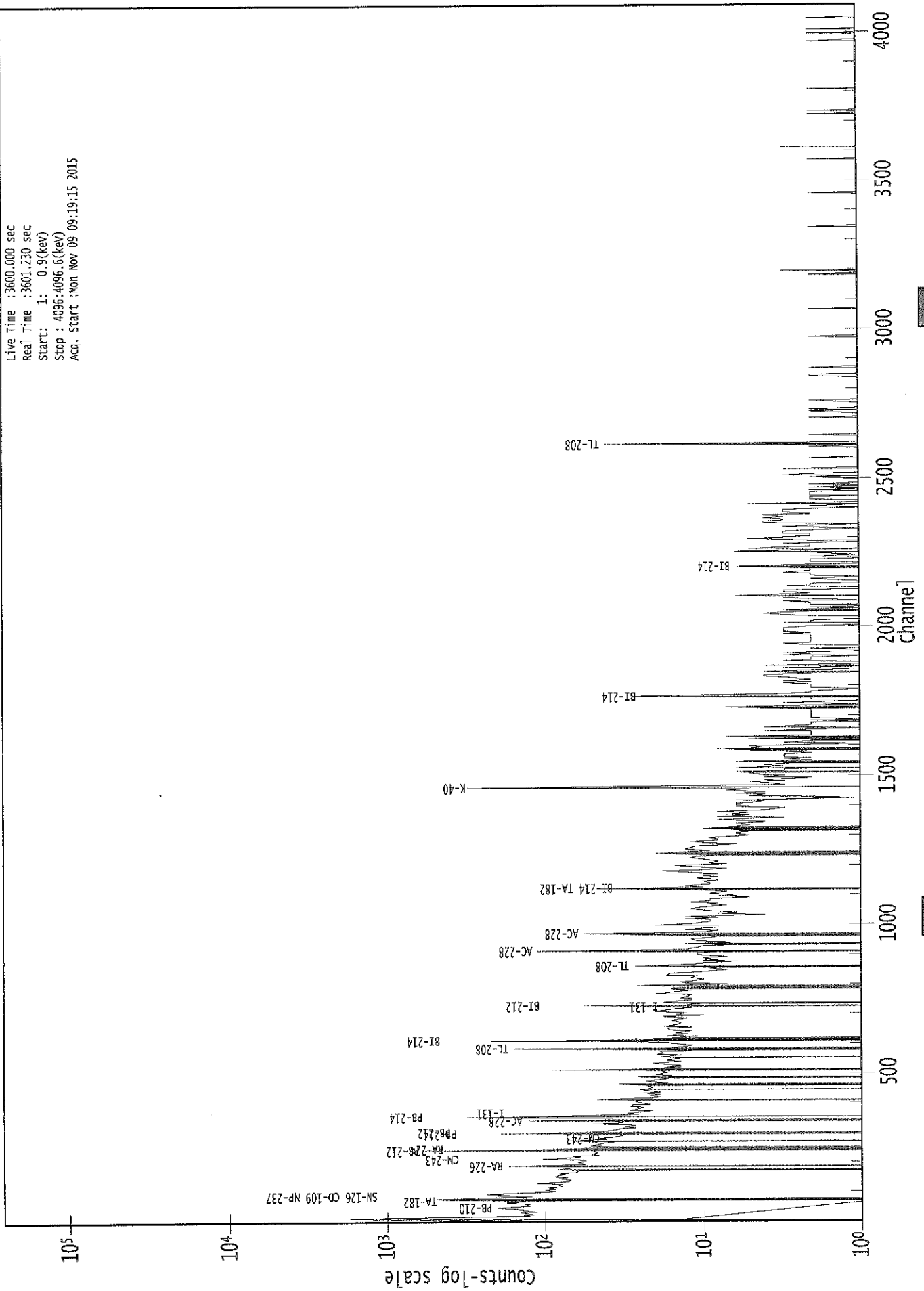
3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP4106S08-09

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	1	0	0	0	0	0
3841:	0	1	1	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	1	0
3881:	0	0	0	0	0	0	1	0
3889:	0	1	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	1	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	1	0	0
3953:	0	0	0	0	0	0	0	0
3961:	1	0	0	0	0	0	0	0
3969:	2	0	0	0	0	0	1	1
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	1	0	2	0	1	0	0	0
4001:	0	1	1	0	0	0	0	0
4009:	2	1	0	0	0	0	0	0
4017:	0	0	1	0	0	0	0	0
4025:	0	0	1	0	0	0	0	0
4033:	1	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	2	0
4049:	0	0	0	1	0	0	0	1
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	1	0	1
4081:	0	0	0	0	1	0	0	0
4089:	0	1	0	0	0	0	0	0

0000029321.CNF

Live Time : 3600.000 sec
Real Time : 3601.230 sec
Start : 1: 0.9(keV)
Stop : 4096:4096.6(keV)
Acq. Start : Mon Nov 09 09:19:15 2015



Analysis Report for 1510087-14
CP4106S10-11

✓
1119

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-14
Sample Description : CP4106S10-11
Sample Type : SOIL

Sample Size : 5.369E+02 grams
Facility : Countroom

Sample Taken On : 10/7/2015 5:13:21PM
Acquisition Started : 11/9/2015 9:19:22AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3661.9 seconds

Dead Time : 1.69 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 15 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 11/8/2014
Efficiency Calibration Description :

Sample Number : 29322

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-14
CP4106S10-11

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 10:20:25AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.96	46.22	0.0000	0.00
2	64.82	64.09	0.0000	0.00
3	76.34	75.61	0.0000	0.00
4	87.49	86.77	0.0000	0.00
5	93.00	92.27	0.0000	0.00
6	106.25	105.53	0.0000	0.00
7	185.87	185.18	0.0000	0.00
8	198.41	197.73	0.0000	0.00
9	222.97	222.30	0.0000	0.00
10	239.41	238.74	0.0000	0.00
11	271.53	270.88	0.0000	0.00
12	277.91	277.27	0.0000	0.00
13	296.34	295.70	0.0000	0.00
14	328.75	328.12	0.0000	0.00
15	339.09	338.47	0.0000	0.00
16	352.24	351.62	0.0000	0.00
17	374.21	373.60	0.0000	0.00
18	418.10	417.52	0.0000	0.00
19	490.80	490.25	0.0000	0.00
20	511.27	510.73	0.0000	0.00
21	583.40	582.89	0.0000	0.00
22	609.61	609.12	0.0000	0.00
23	727.55	727.11	0.0000	0.00
24	743.72	743.29	0.0000	0.00
25	781.67	781.26	0.0000	0.00
26	912.49	912.15	0.0000	0.00
27	970.32	970.01	0.0000	0.00
28	980.55	980.25	0.0000	0.00
29	1121.00	1120.77	0.0000	0.00
30	1155.96	1155.75	0.0000	0.00
31	1238.68	1238.52	0.0000	0.00
32	1337.23	1337.13	0.0000	0.00
33	1397.45	1397.38	0.0000	0.00
34	1403.31	1403.24	0.0000	0.00
35	1408.97	1408.91	0.0000	0.00
36	1461.22	1461.19	0.0000	0.00
37	1519.79	1519.80	0.0000	0.00
38	1660.97	1661.07	0.0000	0.00
39	1730.94	1731.09	0.0000	0.00
40	1764.83	1765.00	0.0000	0.00
41	1845.97	1846.19	0.0000	0.00
42	1957.50	1957.79	0.0000	0.00

Analysis Report for 1510087-14
CP4106S10-11

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	2204.46	2204.93	0.0000	0.00
44	2614.99	2615.76	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510087-14
CP4106S10-11

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 10:20:25AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	46.96	42 -	50	46.22	1.57E+02	85.63	1.03E+03	2.06
M 2	64.82	59 -	81	64.09	1.64E+02	110.71	1.62E+03	4.13
m 3	76.34	59 -	81	75.61	7.62E+02	137.91	1.99E+03	4.15
M 4	87.49	82 -	98	86.77	2.37E+02	104.11	1.46E+03	4.02
m 5	93.00	82 -	98	92.27	2.84E+02	128.20	1.59E+03	4.17
6	106.25	102 -	108	105.53	5.28E+01	64.49	7.12E+02	2.48
7	185.87	182 -	189	185.18	8.51E+01	65.60	6.62E+02	2.33
8	198.41	193 -	203	197.73	7.46E+01	75.57	7.25E+02	8.47
9	222.97	219 -	226	222.30	6.08E+01	52.27	4.12E+02	4.73
10	239.41	232 -	245	238.74	5.50E+02	100.32	8.71E+02	2.93
M 11	271.53	266 -	281	270.88	6.44E+01	49.22	3.23E+02	2.94
m 12	277.91	266 -	281	277.27	4.43E+01	48.56	3.36E+02	2.95
13	296.34	290 -	302	295.70	1.68E+02	73.60	5.55E+02	2.30
14	328.75	324 -	332	328.12	3.71E+01	46.18	3.04E+02	2.45
15	339.09	333 -	343	338.47	9.57E+01	53.43	3.29E+02	2.22
16	352.24	347 -	356	351.62	2.19E+02	54.55	3.00E+02	2.86
17	374.21	367 -	377	373.60	4.53E+01	47.29	2.71E+02	5.51
18	418.10	415 -	420	417.52	2.45E+01	24.08	9.71E+01	3.73
19	490.80	485 -	497	490.25	3.75E+01	36.90	1.41E+02	5.35
20	511.27	506 -	516	510.73	8.04E+01	44.47	2.23E+02	2.44
21	583.40	578 -	587	582.89	1.35E+02	39.41	1.45E+02	2.26
22	609.61	602 -	615	609.12	1.70E+02	53.69	2.44E+02	2.22
23	727.55	723 -	732	727.11	3.76E+01	29.82	1.07E+02	3.05
24	743.72	738 -	747	743.29	3.80E+01	20.78	4.00E+01	3.78
25	781.67	777 -	785	781.26	1.96E+01	24.01	7.69E+01	2.15
26	912.49	907 -	921	912.15	8.45E+01	37.36	1.07E+02	3.43
27	970.32	966 -	975	970.01	3.87E+01	25.18	6.45E+01	2.90
28	980.55	977 -	983	980.25	1.45E+01	15.17	3.10E+01	4.68
29	1121.00	1116 -	1125	1120.77	2.95E+01	25.28	7.29E+01	3.61
30	1155.96	1149 -	1164	1155.75	3.11E+01	32.86	9.37E+01	13.46
31	1238.68	1233 -	1242	1238.52	3.47E+01	21.28	4.46E+01	5.48
32	1337.23	1333 -	1340	1337.13	1.50E+01	12.49	1.60E+01	1.58
M 33	1397.45	1395 -	1405	1397.38	1.09E+01	9.54	9.85E+00	3.25
m 34	1403.31	1395 -	1405	1403.24	1.02E+01	8.66	7.19E+00	3.36
35	1408.97	1406 -	1412	1408.91	1.66E+01	9.18	2.78E+00	2.81
36	1461.22	1454 -	1468	1461.19	2.71E+02	37.00	3.00E+01	3.24
37	1519.79	1516 -	1523	1519.80	9.00E+00	9.17	8.00E+00	1.66
38	1660.97	1657 -	1664	1661.07	7.55E+00	8.72	6.91E+00	2.91
39	1730.94	1727 -	1734	1731.09	9.09E+00	7.75	3.82E+00	2.85
40	1764.83	1760 -	1769	1765.00	2.75E+01	12.04	4.90E+00	2.23

Analysis Report for 1510087-14
CP4106S10-11

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1845.97	1841 - 1851		1846.19	8.50E+00	8.62	5.00E+00	7.11
42	1957.50	1954 - 1961		1957.79	6.19E+00	6.93	3.63E+00	1.85
43	2204.46	2201 - 2208		2204.93	1.11E+01	8.25	3.85E+00	3.21
44	2614.99	2611 - 2620		2615.76	3.70E+01	12.17	0.00E+00	3.28

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 10:20:25AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.96	42 -	50	1.57E+02	85.63	1.03E+03	6.73E+01
M	2	64.82	59 -	81	1.64E+02	110.71	1.62E+03	6.61E+01
m	3	76.34	59 -	81	7.62E+02	137.91	1.99E+03	7.34E+01
M	4	87.49	82 -	98	2.37E+02	104.11	1.46E+03	6.29E+01
m	5	93.00	82 -	98	2.84E+02	128.20	1.59E+03	6.55E+01
	6	106.25	102 -	108	5.28E+01	64.49	7.12E+02	5.17E+01
	7	185.87	182 -	189	8.51E+01	65.60	6.62E+02	5.18E+01
	8	198.41	193 -	203	7.46E+01	75.57	7.25E+02	6.05E+01
	9	222.97	219 -	226	6.08E+01	52.27	4.12E+02	4.10E+01
	10	239.41	232 -	245	5.50E+02	100.32	8.71E+02	7.29E+01
M	11	271.53	266 -	281	6.44E+01	49.22	3.23E+02	2.96E+01
m	12	277.91	266 -	281	4.43E+01	48.56	3.36E+02	3.01E+01
	13	296.34	290 -	302	1.68E+02	73.60	5.55E+02	5.66E+01
	14	328.75	324 -	332	3.71E+01	46.18	3.04E+02	3.66E+01
	15	339.09	333 -	343	9.57E+01	53.43	3.29E+02	4.09E+01
	16	352.24	347 -	356	2.19E+02	54.55	3.00E+02	3.77E+01
	17	374.21	367 -	377	4.53E+01	47.29	2.71E+02	3.73E+01
	18	418.10	415 -	420	2.45E+01	24.08	9.71E+01	1.80E+01
	19	490.80	485 -	497	3.75E+01	36.90	1.41E+02	2.86E+01
	20	511.27	506 -	516	8.04E+01	44.47	2.23E+02	3.35E+01
	21	583.40	578 -	587	1.35E+02	39.41	1.45E+02	2.62E+01
	22	609.61	602 -	615	1.70E+02	53.69	2.44E+02	3.86E+01
	23	727.55	723 -	732	3.76E+01	29.82	1.07E+02	2.23E+01

Analysis Report for 1510087-14

CP4106S10-11

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level	
24	743.72	738 -	747	3.80E+01	20.78	4.00E+01	1.38E+01	
25	781.67	777 -	785	1.96E+01	24.01	7.69E+01	1.83E+01	
26	912.49	907 -	921	8.45E+01	37.36	1.07E+02	2.67E+01	
27	970.32	966 -	975	3.87E+01	25.18	6.45E+01	1.80E+01	
28	980.55	977 -	983	1.45E+01	15.17	3.10E+01	1.08E+01	
29	1121.00	1116 -	1125	2.95E+01	25.28	7.29E+01	1.88E+01	
30	1155.96	1149 -	1164	3.11E+01	32.86	9.37E+01	2.54E+01	
31	1238.68	1233 -	1242	3.47E+01	21.28	4.46E+01	1.46E+01	
32	1337.23	1333 -	1340	1.50E+01	12.49	1.60E+01	8.05E+00	
M	33	1397.45	1395 -	1405	1.09E+01	9.54	9.85E+00	5.16E+00
m	34	1403.31	1395 -	1405	1.02E+01	8.66	7.19E+00	4.41E+00
35	1408.97	1406 -	1412	1.66E+01	9.18	2.78E+00	3.47E+00	
36	1461.22	1454 -	1468	2.71E+02	37.00	3.00E+01	1.39E+01	
37	1519.79	1516 -	1523	9.00E+00	9.17	8.00E+00	5.70E+00	
38	1660.97	1657 -	1664	7.55E+00	8.72	6.91E+00	5.56E+00	
39	1730.94	1727 -	1734	9.09E+00	7.75	3.82E+00	4.00E+00	
40	1764.83	1760 -	1769	2.75E+01	12.04	4.90E+00	4.85E+00	
41	1845.97	1841 -	1851	8.50E+00	8.62	5.00E+00	5.22E+00	
42	1957.50	1954 -	1961	6.19E+00	6.93	3.63E+00	3.96E+00	
43	2204.46	2201 -	2208	1.11E+01	8.25	3.85E+00	4.00E+00	
44	2614.99	2611 -	2620	3.70E+01	12.17	0.00E+00	0.00E+00	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 10:20:25AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	46.96	42 -	50	46.22	1.57E+02	85.63	1.03E+03	PB-210
M	2	59 -	81	64.09	1.64E+02	110.71	1.62E+03	.....
m	3	59 -	81	75.61	7.62E+02	137.91	1.99E+03	.....
M	4	82 -	98	86.77	2.37E+02	104.11	1.46E+03	SN-126

: 00805

Analysis Report for 1510087-14
CP4106S10-11

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									CD-109
									LU-176
									NP-237
									EU-155
m	5	93.00	82 -	98	92.27	2.84E+02	128.20	1.59E+03	GA-67
	6	106.25	102 -	108	105.53	5.28E+01	64.49	7.12E+02	NP-239
									EU-155
	7	185.87	182 -	189	185.18	8.51E+01	65.60	6.62E+02	RA-226
	8	198.41	193 -	203	197.73	7.46E+01	75.57	7.25E+02	.....
	9	222.97	219 -	226	222.30	6.08E+01	52.27	4.12E+02	.....
	10	239.41	232 -	245	238.74	5.50E+02	100.32	8.71E+02	PB-212
M	11	271.53	266 -	281	270.88	6.44E+01	49.22	3.23E+02	LU-173
m	12	277.91	266 -	281	277.27	4.43E+01	48.56	3.36E+02	CM-243
									NP-239
	13	296.34	290 -	302	295.70	1.68E+02	73.60	5.55E+02	.....
	14	328.75	324 -	332	328.12	3.71E+01	46.18	3.04E+02	LA-140
	15	339.09	333 -	343	338.47	9.57E+01	53.43	3.29E+02	AC-228
	16	352.24	347 -	356	351.62	2.19E+02	54.55	3.00E+02	PB-214
	17	374.21	367 -	377	373.60	4.53E+01	47.29	2.71E+02	.....
	18	418.10	415 -	420	417.52	2.45E+01	24.08	9.71E+01	.....
	19	490.80	485 -	497	490.25	3.75E+01	36.90	1.41E+02	.....
	20	511.27	506 -	516	510.73	8.04E+01	44.47	2.23E+02	.....
	21	583.40	578 -	587	582.89	1.35E+02	39.41	1.45E+02	TL-208
	22	609.61	602 -	615	609.12	1.70E+02	53.69	2.44E+02	BI-214
	23	727.55	723 -	732	727.11	3.76E+01	29.82	1.07E+02	BI-212
	24	743.72	738 -	747	743.29	3.80E+01	20.78	4.00E+01	.....
	25	781.67	777 -	785	781.26	1.96E+01	24.01	7.69E+01	.....
	26	912.49	907 -	921	912.15	8.45E+01	37.36	1.07E+02	LU-172
	27	970.32	966 -	975	970.01	3.87E+01	25.18	6.45E+01	.....
	28	980.55	977 -	983	980.25	1.45E+01	15.17	3.10E+01	.....
	29	1121.00	1116 -	1125	1120.77	2.95E+01	25.28	7.29E+01	TA-182
									SC-46
									BI-214
	30	1155.96	1149 -	1164	1155.75	3.11E+01	32.86	9.37E+01	.....
	31	1238.68	1233 -	1242	1238.52	3.47E+01	21.28	4.46E+01	CO-56
	32	1337.23	1333 -	1340	1337.13	1.50E+01	12.49	1.60E+01	.....
M	33	1397.45	1395 -	1405	1397.38	1.09E+01	9.54	9.85E+00	.....
m	34	1403.31	1395 -	1405	1403.24	1.02E+01	8.66	7.19E+00	.....
	35	1408.97	1406 -	1412	1408.91	1.66E+01	9.18	2.78E+00	.....
	36	1461.22	1454 -	1468	1461.19	2.71E+02	37.00	3.00E+01	K-40
	37	1519.79	1516 -	1523	1519.80	9.00E+00	9.17	8.00E+00	.....
	38	1660.97	1657 -	1664	1661.07	7.55E+00	8.72	6.91E+00	.....
	39	1730.94	1727 -	1734	1731.09	9.09E+00	7.75	3.82E+00	.....
	40	1764.83	1760 -	1769	1765.00	2.75E+01	12.04	4.90E+00	BI-214
	41	1845.97	1841 -	1851	1846.19	8.50E+00	8.62	5.00E+00	.....
	42	1957.50	1954 -	1961	1957.79	6.19E+00	6.93	3.63E+00	.....
	43	2204.46	2201 -	2208	2204.93	1.11E+01	8.25	3.85E+00	BI-214
	44	2614.99	2611 -	2620	2615.76	3.70E+01	12.17	0.00E+00	TL-208

Analysis Report for 1510087-14
CP4106S10-11

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 10:20:25AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.96	1.57E+02	85.63	2.62E-02	1.78E-03
M	2	64.82	1.64E+02	110.71	2.30E-02	1.75E-03
m	3	76.34	7.62E+02	137.91	2.12E-02	1.69E-03
M	4	87.49	2.37E+02	104.11	1.97E-02	1.63E-03
m	5	93.00	2.84E+02	128.20	1.90E-02	1.62E-03
	6	106.25	5.28E+01	64.49	1.75E-02	1.57E-03
	7	185.87	8.51E+01	65.60	1.16E-02	1.15E-03
	8	198.41	7.46E+01	75.57	1.10E-02	1.11E-03
	9	222.97	6.08E+01	52.27	9.99E-03	1.04E-03
	10	239.41	5.50E+02	100.32	9.39E-03	9.85E-04
M	11	271.53	6.44E+01	49.22	8.40E-03	8.85E-04
m	12	277.91	4.43E+01	48.56	8.22E-03	8.65E-04
	13	296.34	1.68E+02	73.60	7.76E-03	8.42E-04
	14	328.75	3.71E+01	46.18	7.05E-03	8.06E-04
	15	339.09	9.57E+01	53.43	6.84E-03	7.94E-04
	16	352.24	2.19E+02	54.55	6.60E-03	7.80E-04
	17	374.21	4.53E+01	47.29	6.24E-03	7.55E-04
	18	418.10	2.45E+01	24.08	5.61E-03	6.97E-04
	19	490.80	3.75E+01	36.90	4.80E-03	5.91E-04
	20	511.27	8.04E+01	44.47	4.61E-03	5.61E-04
	21	583.40	1.35E+02	39.41	4.05E-03	4.55E-04
	22	609.61	1.70E+02	53.69	3.87E-03	4.17E-04
	23	727.55	3.76E+01	29.82	3.25E-03	3.03E-04
	24	743.72	3.80E+01	20.78	3.18E-03	2.94E-04
	25	781.67	1.96E+01	24.01	3.03E-03	2.73E-04
	26	912.49	8.45E+01	37.36	2.61E-03	2.06E-04
	27	970.32	3.87E+01	25.18	2.46E-03	1.99E-04
	28	980.55	1.45E+01	15.17	2.43E-03	1.97E-04
	29	1121.00	2.95E+01	25.28	2.14E-03	1.79E-04
	30	1155.96	3.11E+01	32.86	2.08E-03	1.75E-04
	31	1238.68	3.47E+01	21.28	1.95E-03	1.90E-04
	32	1337.23	1.50E+01	12.49	1.82E-03	2.15E-04
M	33	1397.45	1.09E+01	9.54	1.75E-03	2.02E-04
m	34	1403.31	1.02E+01	8.66	1.74E-03	2.01E-04

Analysis Report for 1510087-14
CP4106S10-11

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	1408.97	1.66E+01	9.18	1.74E-03	2.00E-04
36	1461.22	2.71E+02	37.00	1.68E-03	1.89E-04
37	1519.79	9.00E+00	9.17	1.63E-03	1.77E-04
38	1660.97	7.55E+00	8.72	1.51E-03	1.47E-04
39	1730.94	9.09E+00	7.75	1.46E-03	1.33E-04
40	1764.83	2.75E+01	12.04	1.43E-03	1.26E-04
41	1845.97	8.50E+00	8.62	1.38E-03	1.11E-04
42	1957.50	6.19E+00	6.93	1.32E-03	1.11E-04
43	2204.46	1.11E+01	8.25	1.21E-03	1.11E-04
44	2614.99	3.70E+01	12.17	1.07E-03	1.11E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 10:20:25AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
	1	46.96	1.57E+02	85.63	2.00E+01	7.38E+00	1.37E+02	8.60E+01
M	2	64.82	1.64E+02	110.71			1.64E+02	1.11E+02
m	3	76.34	7.62E+02	137.91			7.62E+02	1.38E+02
M	4	87.49	2.37E+02	104.11			2.37E+02	1.04E+02
m	5	93.00	2.84E+02	128.20	5.44E+01	8.36E+00	2.30E+02	1.28E+02
	6	106.25	5.28E+01	64.49			5.28E+01	6.45E+01
	7	185.87	8.51E+01	65.60	1.43E+01	7.33E+00	7.08E+01	6.60E+01
	8	198.41	7.46E+01	75.57			7.46E+01	7.56E+01
	9	222.97	6.08E+01	52.27			6.08E+01	5.23E+01
	10	239.41	5.50E+02	100.32	1.09E+01	6.39E+00	5.39E+02	1.01E+02
M	11	271.53	6.44E+01	49.22			6.44E+01	4.92E+01
m	12	277.91	4.43E+01	48.56			4.43E+01	4.86E+01
	13	296.34	1.68E+02	73.60			1.68E+02	7.36E+01
	14	328.75	3.71E+01	46.18			3.71E+01	4.62E+01
	15	339.09	9.57E+01	53.43			9.57E+01	5.34E+01
	16	352.24	2.19E+02	54.55	8.07E+00	5.01E+00	2.11E+02	5.48E+01
	17	374.21	4.53E+01	47.29			4.53E+01	4.73E+01
	18	418.10	2.45E+01	24.08			2.45E+01	2.41E+01
	19	490.80	3.75E+01	36.90			3.75E+01	3.69E+01
	20	511.27	8.04E+01	44.47	4.21E+01	4.92E+00	3.82E+01	4.47E+01

Analysis Report for 1510087-14
CP4106S10-11

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
21	583.40	1.35E+02	39.41			1.35E+02	3.94E+01
22	609.61	1.70E+02	53.69	5.16E+00	1.63E+00	1.65E+02	5.37E+01
23	727.55	3.76E+01	29.82			3.76E+01	2.98E+01
24	743.72	3.80E+01	20.78			3.80E+01	2.08E+01
25	781.67	1.96E+01	24.01			1.96E+01	2.40E+01
26	912.49	8.45E+01	37.36			8.45E+01	3.74E+01
27	970.32	3.87E+01	25.18			3.87E+01	2.52E+01
28	980.55	1.45E+01	15.17			1.45E+01	1.52E+01
29	1121.00	2.95E+01	25.28			2.95E+01	2.53E+01
30	1155.96	3.11E+01	32.86			3.11E+01	3.29E+01
31	1238.68	3.47E+01	21.28			3.47E+01	2.13E+01
32	1337.23	1.50E+01	12.49			1.50E+01	1.25E+01
M 33	1397.45	1.09E+01	9.54			1.09E+01	9.54E+00
m 34	1403.31	1.02E+01	8.66			1.02E+01	8.66E+00
35	1408.97	1.66E+01	9.18			1.66E+01	9.18E+00
36	1461.22	2.71E+02	37.00			2.71E+02	3.70E+01
37	1519.79	9.00E+00	9.17			9.00E+00	9.17E+00
38	1660.97	7.55E+00	8.72			7.55E+00	8.72E+00
39	1730.94	9.09E+00	7.75			9.09E+00	7.75E+00
40	1764.83	2.75E+01	12.04	1.11E-01	9.77E-01	2.74E+01	1.21E+01
41	1845.97	8.50E+00	8.62			8.50E+00	8.62E+00
42	1957.50	6.19E+00	6.93			6.19E+00	6.93E+00
43	2204.46	1.11E+01	8.25			1.11E+01	8.25E+00
44	2614.99	3.70E+01	12.17	1.20E+00	1.02E+00	3.58E+01	1.22E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 10:20:25AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	46.96	1.57E+02	85.63	2.00E+01	7.38E+00	1.37E+02	8.60E+01
M 2	64.82	1.64E+02	110.71			1.64E+02	1.11E+02
m 3	76.34	7.62E+02	137.91			7.62E+02	1.38E+02
M 4	87.49	2.37E+02	104.11			2.37E+02	1.04E+02

Analysis Report for 1510087-14

CP4106S10-11

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	5	93.00	2.84E+02	128.20	5.44E+01	8.36E+00	2.30E+02	1.28E+02
	6	106.25	5.28E+01	64.49			5.28E+01	6.45E+01
	7	185.87	8.51E+01	65.60	1.43E+01	7.33E+00	7.08E+01	6.60E+01
	8	198.41	7.46E+01	75.57			7.46E+01	7.56E+01
	9	222.97	6.08E+01	52.27			6.08E+01	5.23E+01
	10	239.41	5.50E+02	100.32	1.09E+01	6.39E+00	5.39E+02	1.01E+02
M	11	271.53	6.44E+01	49.22			6.44E+01	4.92E+01
m	12	277.91	4.43E+01	48.56			4.43E+01	4.86E+01
	13	296.34	1.68E+02	73.60			1.68E+02	7.36E+01
	14	328.75	3.71E+01	46.18			3.71E+01	4.62E+01
	15	339.09	9.57E+01	53.43			9.57E+01	5.34E+01
	16	352.24	2.19E+02	54.55	8.07E+00	5.01E+00	2.11E+02	5.48E+01
	17	374.21	4.53E+01	47.29			4.53E+01	4.73E+01
	18	418.10	2.45E+01	24.08			2.45E+01	2.41E+01
	19	490.80	3.75E+01	36.90			3.75E+01	3.69E+01
	20	511.27	8.04E+01	44.47	4.21E+01	4.92E+00	3.82E+01	4.47E+01
	21	583.40	1.35E+02	39.41			1.35E+02	3.94E+01
	22	609.61	1.70E+02	53.69	5.16E+00	1.63E+00	1.65E+02	5.37E+01
	23	727.55	3.76E+01	29.82			3.76E+01	2.98E+01
	24	743.72	3.80E+01	20.78			3.80E+01	2.08E+01
	25	781.67	1.96E+01	24.01			1.96E+01	2.40E+01
	26	912.49	8.45E+01	37.36			8.45E+01	3.74E+01
	27	970.32	3.87E+01	25.18			3.87E+01	2.52E+01
	28	980.55	1.45E+01	15.17			1.45E+01	1.52E+01
	29	1121.00	2.95E+01	25.28			2.95E+01	2.53E+01
	30	1155.96	3.11E+01	32.86			3.11E+01	3.29E+01
	31	1238.68	3.47E+01	21.28			3.47E+01	2.13E+01
	32	1337.23	1.50E+01	12.49			1.50E+01	1.25E+01
M	33	1397.45	1.09E+01	9.54			1.09E+01	9.54E+00
m	34	1403.31	1.02E+01	8.66			1.02E+01	8.66E+00
	35	1408.97	1.66E+01	9.18			1.66E+01	9.18E+00
	36	1461.22	2.71E+02	37.00			2.71E+02	3.70E+01
	37	1519.79	9.00E+00	9.17			9.00E+00	9.17E+00
	38	1660.97	7.55E+00	8.72			7.55E+00	8.72E+00
	39	1730.94	9.09E+00	7.75			9.09E+00	7.75E+00
	40	1764.83	2.75E+01	12.04	1.11E-01	9.77E-01	2.74E+01	1.21E+01
	41	1845.97	8.50E+00	8.62			8.50E+00	8.62E+00
	42	1957.50	6.19E+00	6.93			6.19E+00	6.93E+00
	43	2204.46	1.11E+01	8.25			1.11E+01	8.25E+00
	44	2614.99	3.70E+01	12.17	1.20E+00	1.02E+00	3.58E+01	1.22E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1510087-14
CP4106S10-11

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.974	1460.81 *	10.67	2.11E+01	3.75E+00
GA-67	0.358	93.31 *	35.70	4.94E+02	2.19E+03
		208.95	2.24		
		300.22	16.00		
CD-109	0.955	88.03 *	3.72	4.75E+00	2.14E+00
LU-173	0.531	100.72	5.24		
		272.11 *	21.20	5.29E-01	4.08E-01
TL-208	0.874	583.14 *	30.22	1.54E+00	4.83E-01
		860.37	4.48		
		2614.66 *	35.85	1.30E+00	4.64E-01
PB-210	0.966	46.50 *	4.25	1.72E+00	1.09E+00
BI-212	0.760	727.17 *	11.80	1.37E+00	1.09E+00
		1620.62	2.75		
PB-212	0.811	238.63 *	44.60	1.80E+00	3.85E-01
		300.09	3.41		
BI-214	0.974	609.31 *	46.30	1.29E+00	4.41E-01
		1120.29 *	15.10	1.28E+00	1.10E+00
		1764.49 *	15.80	1.69E+00	7.60E-01
		2204.22 *	4.98	2.58E+00	1.93E+00
PB-214	0.415	295.21	19.19		
		351.92 *	37.19	1.20E+00	3.43E-01
RA-226	0.981	186.21 *	3.28	2.60E+00	5.34E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 10:20:25AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1510087-14
CP4106S10-11

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	2	64.82	4.55715E-02	33.74		
m	3	76.34	2.11632E-01	9.05		
	6	106.25	1.46757E-02	61.04	Tol.	EU-155 NP-239
	8	198.41	2.07345E-02	50.62		
	9	222.97	1.69007E-02	42.95		
m	12	277.91	1.22964E-02	54.85	Sum	
	13	296.34	4.67769E-02	21.85		
	14	328.75	1.03160E-02	62.18	Tol.	LA-140
	15	339.09	2.65833E-02	27.92	Tol.	AC-228
	17	374.21	1.25706E-02	52.25		
	18	418.10	6.79604E-03	49.22		
	19	490.80	1.04270E-02	49.15		
	20	511.27	1.06167E-02	58.54	Sum	
	24	743.72	1.05556E-02	27.35	D-Esc	
	25	781.67	5.43343E-03	61.36		
	26	912.49	2.34722E-02	22.11	Sum	
	27	970.32	1.07629E-02	32.49		
	28	980.55	4.03241E-03	52.26		
	30	1155.96	8.65029E-03	52.77		
	31	1238.68	9.63450E-03	30.68	Tol.	CO-56
	32	1337.23	4.16667E-03	41.63	Sum	
M	33	1397.45	3.02238E-03	43.84		
m	34	1403.31	2.84506E-03	42.28		
	35	1408.97	4.61420E-03	27.63		
	37	1519.79	2.50000E-03	50.92		
	38	1660.97	2.09596E-03	57.77		
	39	1730.94	2.52525E-03	42.60	Sum	
	41	1845.97	2.36111E-03	50.69		
	42	1957.50	1.71875E-03	55.99		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1510087-14
CP4106S10-11

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.97	1460.81 *	10.67	2.11E+01	3.75E+00
GA-67	0.35	93.31 *	35.70	4.94E+02	2.19E+03
		208.95	2.24		
		300.22	16.00		
CD-109	0.95	88.03 *	3.72	4.75E+00	2.14E+00
LU-173	0.53	100.72	5.24		
		272.11 *	21.20	5.29E-01	4.08E-01
TL-208	0.87	583.14 *	30.22	1.54E+00	4.83E-01
		860.37	4.48		
		2614.66 *	35.85	1.30E+00	4.64E-01
PB-210	0.96	46.50 *	4.25	1.72E+00	1.09E+00
BI-212	0.76	727.17 *	11.80	1.37E+00	1.09E+00
		1620.62	2.75		
PB-212	0.81	238.63 *	44.60	1.80E+00	3.85E-01
		300.09	3.41		
BI-214	0.97	609.31 *	46.30	1.29E+00	4.41E-01
		1120.29 *	15.10	1.28E+00	1.10E+00
		1764.49 *	15.80	1.69E+00	7.60E-01
		2204.22 *	4.98	2.58E+00	1.93E+00
PB-214	0.41	295.21	19.19		
		351.92 *	37.19	1.20E+00	3.43E-01
RA-226	0.98	186.21 *	3.28	2.60E+00	5.34E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.974	2.11E+01	3.75E+00	
GA-67	0.358	4.94E+02	2.19E+03	
CD-109	0.955	4.75E+00	2.14E+00	

Analysis Report for 1510087-14
CP4106S10-11

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
X	SN-126	0.999			
X	EU-155	0.859			
	LU-173	0.531	5.29E-01	4.08E-01	
	TL-208	0.874	1.42E+00	3.35E-01	
	PB-210	0.966	1.72E+00	1.09E+00	
	BI-212	0.760	1.37E+00	1.09E+00	
	PB-212	0.811	1.80E+00	3.85E-01	
	BI-214	0.974	1.42E+00	3.54E-01	
	PB-214	0.415	1.20E+00	3.43E-01	
	RA-226	0.981	2.60E+00	5.34E+00	
X	NP-237	0.854			

- ? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1510087-14
CP4106S10-11

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 10:20:25AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	2	64.82	4.55715E-02	33.74		
m	3	76.34	2.11632E-01	9.05		
	6	106.25	1.46757E-02	61.04	Tol.	EU-155 NP-239
	8	198.41	2.07345E-02	50.62		
	9	222.97	1.69007E-02	42.95		
m	12	277.91	1.22964E-02	54.85	Sum	
	13	296.34	4.67769E-02	21.85		
	14	328.75	1.03160E-02	62.18	Tol.	LA-140
	15	339.09	2.65833E-02	27.92	Tol.	AC-228
	17	374.21	1.25706E-02	52.25		
	18	418.10	6.79604E-03	49.22		
	19	490.80	1.04270E-02	49.15		
	20	511.27	1.06167E-02	58.54	Sum	
	24	743.72	1.05556E-02	27.35	D-Esc	
	25	781.67	5.43343E-03	61.36		
	26	912.49	2.34722E-02	22.11	Sum	
	27	970.32	1.07629E-02	32.49		
	28	980.55	4.03241E-03	52.26		
	30	1155.96	8.65029E-03	52.77		
	31	1238.68	9.63450E-03	30.68	Tol.	CO-56
	32	1337.23	4.16667E-03	41.63	Sum	
M	33	1397.45	3.02238E-03	43.84		
m	34	1403.31	2.84506E-03	42.28		
	35	1408.97	4.61420E-03	27.63		
	37	1519.79	2.50000E-03	50.92		
	38	1660.97	2.09596E-03	57.77		
	39	1730.94	2.52525E-03	42.60	Sum	
	41	1845.97	2.36111E-03	50.69		
	42	1957.50	1.71875E-03	55.99		

Analysis Report for 1510087-14
CP4106S10-11

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
+	BE-7	477.59	10.42	8.15E-01	1.91E+00	1.91E+00
+	NA-22	1274.54	99.94	4.13E-02	2.28E-01	2.28E-01
+	NA-24	1368.53	99.99	1.85E+14	8.10E+14	9.80E+14
		2754.09	99.86	1.25E+14		8.10E+14
+	AL-26	1808.65	99.76	-2.18E-02	1.50E-01	1.50E-01
+	K-40	1460.81	* 10.67	2.11E+01	2.37E+00	2.37E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.38E-01	9.51E-02	9.51E-02
		78.34	96.00	3.52E-01		1.24E-01
+	SC-46	889.25	99.98	-3.26E-02	2.18E-01	2.18E-01
		1120.51	99.99	1.83E-01		3.44E-01
+	V-48	983.52	99.98	-8.74E-02	7.01E-01	7.01E-01
		1312.10	97.50	-2.28E-01		8.45E-01
+	CR-51	320.08	9.83	8.45E-01	2.81E+00	2.81E+00
+	MN-54	834.83	99.97	4.11E-02	1.97E-01	1.97E-01
+	CO-56	846.75	99.96	3.04E-02	2.14E-01	2.14E-01
		1037.75	14.03	-3.11E-01		1.65E+00
		1238.25	67.00	2.69E-01		5.26E-01
		1771.40	15.51	5.04E-02		1.33E+00
		2598.48	16.90	5.70E-02		1.10E+00
+	CO-57	122.06	85.51	-4.87E-02	1.13E-01	1.13E-01
		136.48	10.60	-3.08E-01		1.02E+00
+	CO-58	810.76	99.40	-1.37E-01	2.10E-01	2.10E-01
+	FE-59	1099.22	56.50	9.76E-02	5.70E-01	5.70E-01
		1291.56	43.20	-4.09E-03		7.82E-01
+	CO-60	1173.22	100.00	6.63E-02	1.86E-01	2.34E-01
		1332.49	100.00	-3.99E-03		1.86E-01
+	ZN-65	1115.52	50.75	2.86E-02	5.05E-01	5.05E-01
+	GA-67	93.31	* 35.70	4.94E+02	5.42E+02	5.42E+02
		208.95	2.24	-4.27E+02		5.34E+03
		300.22	16.00	-9.77E+01		8.78E+02
+	SE-75	121.11	16.70	-2.54E-01	2.03E-01	6.36E-01

Analysis Report for 1510087-14
CP4106S10-11

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)	
	SE-75	136.00	59.20	-6.32E-02	2.03E-01	2.03E-01
		264.65	59.80	2.35E-02		2.28E-01
		279.53	25.20	-1.97E-02		5.72E-01
		400.65	11.40	-3.26E-01		1.36E+00
+	RB-82	776.52	13.00	-1.24E-01	3.10E+00	3.10E+00
+	RB-83	520.41	46.00	-7.49E-02	3.87E-01	3.87E-01
		529.64	30.30	1.44E-01		5.80E-01
		552.65	16.40	9.10E-02		1.15E+00
+	KR-85	513.99	0.43	7.98E+01	4.64E+01	4.64E+01
+	SR-85	513.99	99.27	4.92E-01	2.86E-01	2.86E-01
+	Y-88	898.02	93.40	-8.35E-02	1.51E-01	2.32E-01
		1836.01	99.38	-5.64E-02		1.51E-01
+	NB-93M	16.57	9.43	1.03E+00	4.82E-01	4.82E-01
+	NB-94	702.63	100.00	7.80E-02	1.59E-01	1.76E-01
		871.10	100.00	-1.70E-02		1.59E-01
+	NB-95	765.79	99.81	-9.46E-02	3.65E-01	3.65E-01
+	NB-95M	235.69	25.00	9.70E+02	4.01E+02	4.01E+02
+	ZR-95	724.18	43.70	-3.52E-02	4.70E-01	6.33E-01
		756.72	55.30	-1.32E-02		4.70E-01
+	MO-99	181.06	6.20	-2.66E+01	4.51E+03	6.86E+03
		739.58	12.80	8.27E+02		4.51E+03
		778.00	4.50	1.36E+02		1.48E+04
+	RU-103	497.08	89.00	8.19E-02	2.37E-01	2.37E-01
+	RU-106	621.84	9.80	-3.16E-01	1.56E+00	1.56E+00
+	AG-108M	433.93	89.90	-5.27E-02	1.46E-01	1.46E-01
		614.37	90.40	-2.33E-02		2.24E-01
		722.95	90.50	-2.11E-02		1.97E-01
+	CD-109	88.03	* 3.72	4.75E+00	4.99E+00	4.99E+00
+	AG-110M	657.75	93.14	2.89E-02	1.92E-01	1.92E-01
		677.61	10.53	6.26E-01		1.69E+00
		706.67	16.46	-6.52E-02		1.06E+00
		763.93	21.98	-9.86E-02		9.35E-01
		884.67	71.63	-5.93E-02		2.24E-01
		1384.27	23.94	-5.50E-01		7.93E-01
+	CD-113M	263.70	0.02	-1.07E+02	4.85E+02	4.85E+02
+	SN-113	255.12	1.93	-5.13E-01	2.56E-01	7.22E+00
		391.69	64.90	1.15E-01		2.56E-01
+	TE123M	159.00	84.10	-8.73E-02	1.43E-01	1.43E-01
+	SB-124	602.71	97.87	-1.30E-02	2.34E-01	2.34E-01
		645.85	7.26	-1.22E+00		2.90E+00
		722.78	11.10	-2.59E-01		2.27E+00
		1691.02	49.00	1.11E-01		4.44E-01
+	I-125	35.49	6.49	-1.06E-01	1.19E+00	1.19E+00
+	SB-125	176.33	6.89	3.38E-01	4.60E-01	1.59E+00
		427.89	29.33	1.62E-01		4.60E-01
		463.38	10.35	2.08E-02		1.37E+00
		600.56	17.80	-4.09E-02		8.51E-01
		635.90	11.32	-2.59E-01		1.25E+00

Analysis Report for 1510087-14
CP4106S10-11

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-1.66E-02	9.47E-01	9.47E-01
		666.33	99.60	1.52E-01		9.83E-01
		695.00	99.60	5.25E-02		1.07E+00
		720.50	53.80	3.92E-02		1.88E+00
+	SN-126	87.57	* 37.00	4.55E-01	4.78E-01	4.78E-01
+	SB-127	473.00	25.00	5.24E+01	1.51E+02	1.94E+02
		685.20	35.70	-6.31E+01		1.51E+02
		783.80	14.70	-3.15E+01		4.39E+02
+	I-129	29.78	57.00	-4.05E-02	8.94E-02	8.94E-02
		33.60	13.20	-1.35E-01		3.96E-01
		39.58	7.52	1.01E-01		7.42E-01
+	I-131	284.30	6.05	-1.10E+01	2.47E+00	3.04E+01
		364.48	81.20	-9.79E-01		2.47E+00
		636.97	7.26	-5.70E-01		3.32E+01
		722.89	1.80	-1.84E+01		1.61E+02
+	TE-132	49.72	13.10	-1.16E+02	1.42E+02	5.41E+02
		228.16	88.00	4.77E+01		1.42E+02
+	BA-133	81.00	33.00	-1.35E-01	3.17E-01	3.38E-01
		302.84	17.80	-2.82E-01		6.82E-01
		356.01	60.00	6.48E-02		3.17E-01
+	I-133	529.87	86.30	8.82E+09	3.55E+10	3.55E+10
+	XE-133	81.00	38.00	-8.77E+00	2.20E+01	2.20E+01
+	CS-134	563.23	8.38	-6.79E-01	2.00E-01	1.72E+00
		569.32	15.43	-5.11E-01		9.45E-01
		604.70	97.60	-3.19E-03		2.00E-01
		795.84	85.40	7.76E-02		2.29E-01
		801.93	8.73	2.36E-02		2.02E+00
+	CS-135	268.24	16.00	-1.01E-01	7.45E-01	7.45E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	5.92E+00	1.04E+00	7.83E+00
		163.89	4.61	1.97E+00		1.24E+01
		176.55	13.56	9.39E-01		4.42E+00
		273.65	12.66	2.77E+00		5.66E+00
		340.57	48.50	2.16E+00		1.72E+00
		818.50	99.70	3.58E-01		1.04E+00
		1048.07	79.60	4.74E-01		1.30E+00
		1235.34	19.70	3.38E-02		7.02E+00
+	CS-137	661.65	85.12	-9.63E-04	1.88E-01	1.88E-01
+	LA-138	788.74	34.00	-8.49E-02	1.97E-01	4.83E-01
		1435.80	66.00	-4.96E-02		1.97E-01
+	CE-139	165.85	80.35	5.22E-02	1.52E-01	1.52E-01
+	BA-140	162.64	6.70	1.71E-02	3.14E+00	8.84E+00
		304.84	4.50	-9.39E+00		1.49E+01
		423.70	3.20	-2.33E+00		2.31E+01
		437.55	2.00	1.17E+00		3.81E+01
		537.32	25.00	3.75E-01		3.14E+00
+	LA-140	328.77	20.50	2.20E+00	1.18E+00	3.80E+00

Analysis Report for 1510087-14
CP4106S10-11

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	487.03	45.50	-2.62E-01	1.18E+00	1.58E+00
		815.85	23.50	1.77E+00		4.48E+00
		1596.49	95.49	5.15E-01		1.18E+00
+	CE-141	145.44	48.40	-1.99E-01	4.12E-01	4.12E-01
+	CE-143	57.36	11.80	1.45E+06	5.43E+06	8.99E+06
		293.26	42.00	8.52E+06		5.43E+06
		664.55	5.20	-2.33E+06		4.34E+07
+	CE-144	133.54	10.80	-1.74E-01	9.97E-01	9.97E-01
+	PM-144	476.78	42.00	8.54E-03	1.58E-01	3.24E-01
		618.01	98.60	-1.03E-04		1.58E-01
		696.49	99.49	1.57E-02		1.87E-01
+	PM-145	36.85	21.70	-7.22E-02	1.35E-01	2.48E-01
		37.36	39.70	-5.97E-02		1.35E-01
		42.30	15.10	4.06E-02		4.07E-01
		72.40	2.31	6.09E+00		4.83E+00
+	PM-146	453.90	39.94	-5.67E-02	3.34E-01	3.34E-01
		735.90	14.01	3.38E-01		1.11E+00
		747.13	13.10	-1.63E-01		1.24E+00
+	ND-147	91.11	28.90	6.04E+00	2.98E+00	2.98E+00
		531.02	13.10	-2.84E+00		7.62E+00
+	PM-149	285.90	3.10	-4.37E+03	1.02E+05	1.02E+05
+	EU-152	121.78	20.50	-1.87E-01	4.35E-01	4.35E-01
		244.69	5.40	9.41E-03		2.66E+00
		344.27	19.13	-3.18E-02		6.33E-01
		778.89	9.20	1.77E-02		1.93E+00
		964.01	10.40	-2.24E-01		1.95E+00
		1085.78	7.22	-5.66E-01		2.80E+00
		1112.02	9.60	5.98E-01		2.41E+00
		1407.95	14.94	5.13E-01		1.33E+00
+	GD-153	97.43	31.30	-8.97E-03	3.17E-01	3.17E-01
		103.18	22.20	-1.31E-02		4.24E-01
+	EU-154	123.07	40.50	-6.06E-02	2.27E-01	2.27E-01
		723.30	19.70	-9.77E-02		9.10E-01
		873.19	11.50	2.40E-01		1.45E+00
		996.32	10.30	-2.27E-01		1.73E+00
		1004.76	17.90	5.13E-01		1.16E+00
		1274.45	35.50	1.14E-01		6.30E-01
+	EU-155	86.50	* 30.90	5.51E-01	4.15E-01	5.80E-01
		105.30	* 20.70	2.07E-01		4.15E-01
+	EU-156	811.77	10.40	-6.21E+00	6.27E+00	6.27E+00
		1153.47	7.20	3.38E+00		1.49E+01
		1230.71	8.90	3.08E-01		9.71E+00
+	HO-166M	184.41	72.60	-1.78E-02	1.69E-01	1.69E-01
		280.45	29.60	-3.54E-02		3.97E-01
		410.94	11.10	1.23E-01		1.14E+00
		711.69	54.10	-9.55E-02		2.79E-01
+	TM-171	66.72	0.14	4.75E+00	6.62E+01	6.62E+01
+	HF-172	81.75	4.52	-6.61E+00	8.73E-01	2.35E+00
		125.81	11.30	1.32E-01		8.73E-01

Analysis Report for 1510087-14
CP4106S10-11

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	-1.27E+00	8.96E+00	1.68E+01
		810.06	16.63	-1.75E+01		2.69E+01
		912.12	15.25	6.24E+01		5.33E+01
		1093.66	62.50	4.42E-01		8.96E+00
+	LU-173	100.72	5.24	-5.21E-02	1.01E+00	1.67E+00
		272.11	*	21.20	5.29E-01	1.01E+00
+	HF-175	343.40	84.00	-9.94E-03	2.14E-01	2.14E-01
+	LU-176	88.34	13.30	9.55E-01	1.16E-01	8.01E-01
		201.83	86.00	1.56E-03		1.36E-01
		306.78	94.00	-8.51E-02		1.16E-01
+	TA-182	67.75	41.20	-3.85E-01	2.65E-01	2.65E-01
		1121.30	34.90	3.30E-01		8.84E-01
		1189.05	16.23	-1.51E-01		1.74E+00
		1221.41	26.98	4.31E-01		1.13E+00
		1231.02	11.44	6.57E-02		2.07E+00
+	IR-192	308.46	29.68	-1.69E-01	3.87E-01	4.91E-01
		468.07	48.10	-5.00E-02		3.87E-01
+	HG-203	279.19	77.30	-8.65E-03	2.51E-01	2.51E-01
+	BI-207	569.67	97.72	-7.85E-02	1.45E-01	1.45E-01
		1063.62	74.90	1.21E-01		2.64E-01
+	TL-208	583.14	*	30.22	1.54E+00	2.43E-01
		860.37	4.48	1.46E+00		3.87E+00
		2614.66	*	35.85	1.30E+00	2.43E-01
+	BI-210M	262.00	45.00	1.60E-02	2.52E-01	2.52E-01
		300.00	23.00	9.33E-01		6.63E-01
+	PB-210	46.50	*	4.25	1.72E+00	1.75E+00
+	PB-211	404.84	2.90	-1.01E+00	4.42E+00	4.42E+00
		831.96	2.90	-1.75E-01		6.24E+00
+	BI-212	727.17	*	11.80	1.37E+00	1.73E+00
		1620.62	2.75	1.64E+00		6.43E+00
+	PB-212	238.63	*	44.60	1.80E+00	4.99E-01
		300.09	3.41	6.29E+00		4.48E+00
+	BI-214	609.31	*	46.30	1.29E+00	6.26E-01
		1120.29	*	15.10	1.28E+00	1.74E+00
		1764.49	*	15.80	1.69E+00	7.78E-01
		2204.22	*	4.98	2.58E+00	2.49E+00
+	PB-214	295.21	19.19	1.37E+00	4.50E-01	8.46E-01
		351.92	*	37.19	1.20E+00	4.50E-01
+	RN-219	401.80	6.50	-1.19E-01	2.01E+00	2.01E+00
+	RA-223	323.87	3.88	-1.18E-01	3.24E+00	3.24E+00
+	RA-224	240.98	3.95	2.24E+01	5.23E+00	5.23E+00
+	RA-225	40.00	31.00	1.14E-01	8.34E-01	8.34E-01
+	RA-226	186.21	*	3.28	2.60E+00	3.95E+00
+	TH-227	50.10	8.40	-1.73E-01	8.08E-01	8.08E-01
		236.00	11.50	3.97E+00		1.64E+00
		256.20	6.30	-5.28E-01		1.80E+00
+	AC-228	338.32	11.40	1.50E+00	1.00E+00	1.30E+00
		911.07	27.70	1.29E+00		1.00E+00

Analysis Report for 1510087-14
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	16.60	1.39E+00	1.00E+00	1.45E+00
+	TH-230	48.44	16.90	-8.10E-02	3.94E-01	3.94E-01
		62.85	4.60	1.02E+00		1.84E+00
		67.67	0.37	-3.51E+01		2.42E+01
+	PA-231	283.67	1.60	-9.98E-01	5.25E+00	6.80E+00
		302.67	2.30	-2.17E+00		5.25E+00
+	TH-231	25.64	14.70	-2.48E-01	3.51E-01	3.51E-01
		84.21	6.40	-5.76E+00		1.53E+00
+	PA-233	311.98	38.60	-3.84E-02	6.68E-01	6.68E-01
+	PA-234	131.20	20.40	8.91E-02	4.82E-01	4.82E-01
		733.99	8.80	5.31E-01		1.75E+00
		946.00	12.00	1.04E-01		1.36E+00
+	PA-234M	1001.03	0.92	3.56E+00	2.16E+01	2.16E+01
+	TH-234	63.29	3.80	1.11E+00	2.25E+00	2.25E+00
+	U-235	143.76	10.50	-4.43E-01	9.47E-01	9.47E-01
		163.35	4.70	3.44E-01		2.17E+00
		205.31	4.70	2.59E-01		2.47E+00
+	NP-237	86.50	* 12.60	1.34E+00	1.40E+00	1.40E+00
+	NP-239	106.10	22.70	2.57E+03	5.78E+03	5.78E+03
		228.18	10.70	5.66E+03		1.67E+04
		277.60	14.10	6.57E+02		1.30E+04
+	AM-241	59.54	35.90	1.99E-02	2.21E-01	2.21E-01
+	AM-243	74.67	66.00	6.58E-01	1.82E-01	1.82E-01
+	CM-243	209.75	3.29	-5.46E-01	8.72E-01	3.47E+00
		228.14	10.60	3.79E-01		1.13E+00
		277.60	14.00	4.39E-02		8.72E-01

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction

? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

: 00821

Analysis Report for 1510087-14
CP4106S10-11

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	1.91E+00	1.91E+00	8.15E-01	8.98E-01
NA-22	1274.54	99.94	2.28E-01	2.28E-01	4.13E-02	1.04E-01
NA-24	1368.53	99.99	9.80E+14	8.10E+14	1.85E+14	4.31E+14
	2754.09	99.86	8.10E+14		1.25E+14	3.03E+14
AL-26	1808.65	99.76	1.50E-01	1.50E-01	-2.18E-02	6.14E-02
+ K-40	1460.81	* 10.67	2.37E+00	2.37E+00	2.11E+01	1.08E+00
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	9.51E-02	9.51E-02	-1.38E-01	4.67E-02
	78.34	96.00	1.24E-01		3.52E-01	6.10E-02
SC-46	889.25	99.98	2.18E-01	2.18E-01	-3.26E-02	9.96E-02
	1120.51	99.99	3.44E-01		1.83E-01	1.60E-01
V-48	983.52	99.98	7.01E-01	7.01E-01	-8.74E-02	3.18E-01
	1312.10	97.50	8.45E-01		-2.28E-01	3.79E-01
CR-51	320.08	9.83	2.81E+00	2.81E+00	8.45E-01	1.35E+00
MN-54	834.83	99.97	1.97E-01	1.97E-01	4.11E-02	9.13E-02
CO-56	846.75	99.96	2.14E-01	2.14E-01	3.04E-02	9.79E-02
	1037.75	14.03	1.65E+00		-3.11E-01	7.47E-01
	1238.25	67.00	5.26E-01		2.69E-01	2.44E-01
	1771.40	15.51	1.33E+00		5.04E-02	5.53E-01
	2598.48	16.90	1.10E+00		5.70E-02	4.13E-01
CO-57	122.06	85.51	1.13E-01	1.13E-01	-4.87E-02	5.51E-02
	136.48	10.60	1.02E+00		-3.08E-01	4.96E-01
CO-58	810.76	99.40	2.10E-01	2.10E-01	-1.37E-01	9.62E-02
FE-59	1099.22	56.50	5.70E-01	5.70E-01	9.76E-02	2.59E-01
	1291.56	43.20	7.82E-01		-4.09E-03	3.52E-01
CO-60	1173.22	100.00	2.34E-01	1.86E-01	6.63E-02	1.08E-01
	1332.49	100.00	1.86E-01		-3.99E-03	8.25E-02
ZN-65	1115.52	50.75	5.05E-01	5.05E-01	2.86E-02	2.33E-01
+ GA-67	93.31	* 35.70	5.42E+02	5.42E+02	4.94E+02	2.68E+02
	208.95	2.24	5.34E+03		-4.27E+02	2.59E+03
	300.22	16.00	8.78E+02		-9.77E+01	4.23E+02
SE-75	121.11	16.70	6.36E-01	2.03E-01	-2.54E-01	3.10E-01
	136.00	59.20	2.03E-01		-6.32E-02	9.90E-02
	264.65	59.80	2.28E-01		2.35E-02	1.10E-01
	279.53	25.20	5.72E-01		-1.97E-02	2.75E-01
	400.65	11.40	1.36E+00		-3.26E-01	6.47E-01
RB-82	776.52	13.00	3.10E+00	3.10E+00	-1.24E-01	1.44E+00
RB-83	520.41	46.00	3.87E-01	3.87E-01	-7.49E-02	1.82E-01
	529.64	30.30	5.80E-01		1.44E-01	2.72E-01
	552.65	16.40	1.15E+00		9.10E-02	5.41E-01
KR-85	513.99	0.43	4.64E+01	4.64E+01	7.98E+01	2.23E+01
SR-85	513.99	99.27	2.86E-01	2.86E-01	4.92E-01	1.37E-01
Y-88	898.02	93.40	2.32E-01	1.51E-01	-8.35E-02	1.07E-01
	1836.01	99.38	1.51E-01		-5.64E-02	5.83E-02
NB-93M	16.57	9.43	4.82E-01	4.82E-01	1.03E+00	2.34E-01
NB-94	702.63	100.00	1.76E-01	1.59E-01	7.80E-02	8.26E-02
	871.10	100.00	1.59E-01		-1.70E-02	7.26E-02
NB-95	765.79	99.81	3.65E-01	3.65E-01	-9.46E-02	1.71E-01
NB-95M	235.69	25.00	4.01E+02	4.01E+02	9.70E+02	1.96E+02
ZR-95	724.18	43.70	6.33E-01	4.70E-01	-3.52E-02	2.97E-01
	756.72	55.30	4.70E-01		-1.32E-02	2.19E-01

Analysis Report for 1510087-14
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
MO-99	181.06	6.20	6.86E+03	4.51E+03	-2.66E+01	3.33E+03
	739.58	12.80	4.51E+03		8.27E+02	2.08E+03
	778.00	4.50	1.48E+04		1.36E+02	6.89E+03
RU-103	497.08	89.00	2.37E-01	2.37E-01	8.19E-02	1.11E-01
RU-106	621.84	9.80	1.56E+00	1.56E+00	-3.16E-01	7.26E-01
AG-108M	433.93	89.90	1.46E-01	1.46E-01	-5.27E-02	6.89E-02
	614.37	90.40	2.24E-01		-2.33E-02	1.07E-01
	722.95	90.50	1.97E-01		-2.11E-02	9.19E-02
+ CD-109	88.03	*	4.99E+00	4.99E+00	4.75E+00	2.47E+00
AG-110M	657.75	93.14	1.92E-01	1.92E-01	2.89E-02	8.97E-02
	677.61	10.53	1.69E+00		6.26E-01	7.88E-01
	706.67	16.46	1.06E+00		-6.52E-02	4.92E-01
	763.93	21.98	9.35E-01		-9.86E-02	4.37E-01
	884.67	71.63	2.24E-01		-5.93E-02	1.01E-01
	1384.27	23.94	7.93E-01		-5.50E-01	3.47E-01
CD-113M	263.70	0.02	4.85E+02	4.85E+02	-1.07E+02	2.33E+02
SN-113	255.12	1.93	7.22E+00	2.56E-01	-5.13E-01	3.47E+00
	391.69	64.90	2.56E-01		1.15E-01	1.22E-01
TE123M	159.00	84.10	1.43E-01	1.43E-01	-8.73E-02	6.96E-02
SB-124	602.71	97.87	2.34E-01	2.34E-01	-1.30E-02	1.10E-01
	645.85	7.26	2.90E+00		-1.22E+00	1.35E+00
	722.78	11.10	2.27E+00		-2.59E-01	1.06E+00
	1691.02	49.00	4.44E-01		1.11E-01	1.84E-01
	I-125	35.49	6.49		1.19E+00	1.19E+00	-1.06E-01	5.79E-01
SB-125	176.33	6.89	1.59E+00	4.60E-01	3.38E-01	7.71E-01
	427.89	29.33	4.60E-01		1.62E-01	2.18E-01
	463.38	10.35	1.37E+00		2.08E-02	6.49E-01
	600.56	17.80	8.51E-01		-4.09E-02	3.98E-01
	635.90	11.32	1.25E+00		-2.59E-01	5.81E-01
	SB-126	414.70	83.30		9.47E-01	9.47E-01	-1.66E-02	4.49E-01
SN-126	666.33	99.60	9.83E-01	9.47E-01	1.52E-01	4.58E-01
	695.00	99.60	1.07E+00		5.25E-02	4.99E-01
	720.50	53.80	1.88E+00		3.92E-02	8.72E-01
	87.57	*	4.78E-01		4.78E-01	4.55E-01	2.37E-01
SB-127	473.00	25.00	1.94E+02	1.51E+02	5.24E+01	9.13E+01
	685.20	35.70	1.51E+02		-6.31E+01	6.98E+01
	783.80	14.70	4.39E+02		-3.15E+01	2.04E+02
I-129	29.78	57.00	8.94E-02	8.94E-02	-4.05E-02	4.36E-02
	33.60	13.20	3.96E-01		-1.35E-01	1.93E-01
	39.58	7.52	7.42E-01		1.01E-01	3.62E-01
I-131	284.30	6.05	3.04E+01	2.47E+00	-1.10E+01	1.45E+01
	364.48	81.20	2.47E+00		-9.79E-01	1.17E+00
	636.97	7.26	3.32E+01		-5.70E-01	1.54E+01
	722.89	1.80	1.61E+02		-1.84E+01	7.51E+01
TE-132	49.72	13.10	5.41E+02	1.42E+02	-1.16E+02	2.65E+02
	228.16	88.00	1.42E+02		4.77E+01	6.89E+01
BA-133	81.00	33.00	3.38E-01	3.17E-01	-1.35E-01	1.66E-01
	302.84	17.80	6.82E-01		-2.82E-01	3.27E-01
	356.01	60.00	3.17E-01		6.48E-02	1.54E-01
I-133	529.87	86.30	3.55E+10	3.55E+10	8.82E+09	1.66E+10
XE-133	81.00	38.00	2.20E+01	2.20E+01	-8.77E+00	1.08E+01
CS-134	563.23	8.38	1.72E+00	2.00E-01	-6.79E-01	8.05E-01
	569.32	15.43	9.45E-01		-5.11E-01	4.42E-01

Analysis Report for 1510087-14

CP4106S10-11

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)		
CS-134	604.70	97.60	2.00E-01	2.00E-01	-3.19E-03	9.48E-02		
	795.84	85.40	2.29E-01		7.76E-02	1.07E-01		
	801.93	8.73	2.02E+00		2.36E-02	9.37E-01		
CS-135	268.24	16.00	7.45E-01	7.45E-01	-1.01E-01	3.58E-01		
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20		
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20		
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20		
CS-136	153.22	7.46	7.83E+00	1.04E+00	5.92E+00	3.81E+00		
	163.89	4.61	1.24E+01		1.97E+00	6.04E+00		
	176.55	13.56	4.42E+00		9.39E-01	2.15E+00		
	273.65	12.66	5.66E+00		2.77E+00	2.73E+00		
	340.57	48.50	1.72E+00		2.16E+00	8.30E-01		
	818.50	99.70	1.04E+00		3.58E-01	4.84E-01		
	1048.07	79.60	1.30E+00		4.74E-01	5.93E-01		
	1235.34	19.70	7.02E+00		3.38E-02	3.24E+00		
	CS-137	661.65	85.12		1.88E-01	1.88E-01	-9.63E-04	8.78E-02
	LA-138	788.74	34.00		4.83E-01	1.97E-01	-8.49E-02	2.23E-01
1435.80		66.00	1.97E-01	-4.96E-02	8.15E-02			
CE-139	165.85	80.35	1.52E-01	1.52E-01	5.22E-02	7.36E-02		
BA-140	162.64	6.70	8.84E+00	3.14E+00	1.71E-02	4.29E+00		
	304.84	4.50	1.49E+01		-9.39E+00	7.12E+00		
	423.70	3.20	2.31E+01		-2.33E+00	1.09E+01		
	437.55	2.00	3.81E+01		1.17E+00	1.80E+01		
	537.32	25.00	3.14E+00		3.75E-01	1.47E+00		
	LA-140	328.77	20.50		3.80E+00	1.18E+00	2.20E+00	1.82E+00
	487.03	45.50	1.58E+00		-2.62E-01	7.38E-01		
	815.85	23.50	4.48E+00		1.77E+00	2.08E+00		
	1596.49	95.49	1.18E+00		5.15E-01	5.14E-01		
CE-141	145.44	48.40	4.12E-01	4.12E-01	-1.99E-01	2.01E-01		
CE-143	57.36	11.80	8.99E+06	5.43E+06	1.45E+06	4.40E+06		
	293.26	42.00	5.43E+06		8.52E+06	2.63E+06		
	664.55	5.20	4.34E+07		-2.33E+06	2.02E+07		
CE-144	133.54	10.80	9.97E-01	9.97E-01	-1.74E-01	4.86E-01		
PM-144	476.78	42.00	3.24E-01	1.58E-01	8.54E-03	1.52E-01		
	618.01	98.60	1.58E-01		-1.03E-04	7.35E-02		
	696.49	99.49	1.87E-01		1.57E-02	8.76E-02		
PM-145	36.85	21.70	2.48E-01	1.35E-01	-7.22E-02	1.21E-01		
	37.36	39.70	1.35E-01		-5.97E-02	6.59E-02		
	42.30	15.10	4.07E-01		4.06E-02	1.99E-01		
	72.40	2.31	4.83E+00		6.09E+00	2.38E+00		
PM-146	453.90	39.94	3.34E-01	3.34E-01	-5.67E-02	1.58E-01		
	735.90	14.01	1.11E+00		3.38E-01	5.11E-01		
	747.13	13.10	1.24E+00		-1.63E-01	5.71E-01		
ND-147	91.11	28.90	2.98E+00	2.98E+00	6.04E+00	1.46E+00		
	531.02	13.10	7.62E+00		-2.84E+00	3.55E+00		
PM-149	285.90	3.10	1.02E+05	1.02E+05	-4.37E+03	4.86E+04		
EU-152	121.78	20.50	4.35E-01	4.35E-01	-1.87E-01	2.12E-01		
	244.69	5.40	2.66E+00		9.41E-03	1.29E+00		
	344.27	19.13	6.33E-01		-3.18E-02	3.02E-01		
	778.89	9.20	1.93E+00		1.77E-02	8.97E-01		
	964.01	10.40	1.95E+00		-2.24E-01	8.99E-01		
	1085.78	7.22	2.80E+00		-5.66E-01	1.28E+00		
	1112.02	9.60	2.41E+00		5.98E-01	1.12E+00		

Analysis Report for 1510087-14

CP4106S10-11

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	1407.95	14.94	1.33E+00	4.35E-01	5.13E-01	5.90E-01
GD-153	97.43	31.30	3.17E-01	3.17E-01	-8.97E-03	1.55E-01
	103.18	22.20	4.24E-01		-1.31E-02	2.07E-01
EU-154	123.07	40.50	2.27E-01	2.27E-01	-6.06E-02	1.11E-01
	723.30	19.70	9.10E-01		-9.77E-02	4.25E-01
	873.19	11.50	1.45E+00		2.40E-01	6.62E-01
	996.32	10.30	1.73E+00		-2.27E-01	7.86E-01
	1004.76	17.90	1.16E+00		5.13E-01	5.34E-01
	1274.45	35.50	6.30E-01		1.14E-01	2.87E-01
EU-155	86.50	* 30.90	5.80E-01	4.15E-01	5.51E-01	2.87E-01
	105.30	* 20.70	4.15E-01		2.07E-01	2.02E-01
EU-156	811.77	10.40	6.27E+00	6.27E+00	-6.21E+00	2.86E+00
	1153.47	7.20	1.49E+01		3.38E+00	6.88E+00
	1230.71	8.90	9.71E+00		3.08E-01	4.38E+00
HO-166M	184.41	72.60	1.69E-01	1.69E-01	-1.78E-02	8.21E-02
	280.45	29.60	3.97E-01		-3.54E-02	1.91E-01
	410.94	11.10	1.14E+00		1.23E-01	5.39E-01
	711.69	54.10	2.79E-01		-9.55E-02	1.29E-01
TM-171	66.72	0.14	6.62E+01	6.62E+01	4.75E+00	3.25E+01
HF-172	81.75	4.52	2.35E+00	8.73E-01	-6.61E+00	1.15E+00
	125.81	11.30	8.73E-01		1.32E-01	4.25E-01
LU-172	181.53	20.60	1.68E+01	8.96E+00	-1.27E+00	8.18E+00
	810.06	16.63	2.69E+01		-1.75E+01	1.23E+01
	912.12	15.25	5.33E+01		6.24E+01	2.53E+01
	1093.66	62.50	8.96E+00		4.42E-01	4.07E+00
+ LU-173	100.72	5.24	1.67E+00	1.01E+00	-5.21E-02	8.13E-01
	272.11	* 21.20	1.01E+00		5.29E-01	4.93E-01
HF-175	343.40	84.00	2.14E-01	2.14E-01	-9.94E-03	1.02E-01
LU-176	88.34	13.30	8.01E-01	1.16E-01	9.55E-01	3.93E-01
	201.83	86.00	1.36E-01		1.56E-03	6.58E-02
	306.78	94.00	1.16E-01		-8.51E-02	5.53E-02
TA-182	67.75	41.20	2.65E-01	2.65E-01	-3.85E-01	1.30E-01
	1121.30	34.90	8.84E-01		3.30E-01	4.11E-01
	1189.05	16.23	1.74E+00		-1.51E-01	7.99E-01
	1221.41	26.98	1.13E+00		4.31E-01	5.20E-01
	1231.02	11.44	2.07E+00		6.57E-02	9.34E-01
IR-192	308.46	29.68	4.91E-01	3.87E-01	-1.69E-01	2.34E-01
	468.07	48.10	3.87E-01		-5.00E-02	1.83E-01
HG-203	279.19	77.30	2.51E-01	2.51E-01	-8.65E-03	1.21E-01
BI-207	569.67	97.72	1.45E-01	1.45E-01	-7.85E-02	6.79E-02
	1063.62	74.90	2.64E-01		1.21E-01	1.21E-01
+ TL-208	583.14	* 30.22	6.30E-01	2.43E-01	1.54E+00	3.00E-01
	860.37	4.48	3.87E+00		1.46E+00	1.78E+00
	2614.66	* 35.85	2.43E-01		1.30E+00	7.24E-02
BI-210M	262.00	45.00	2.52E-01	2.52E-01	1.60E-02	1.21E-01
	300.00	23.00	6.63E-01		9.33E-01	3.21E-01
+ PB-210	46.50	* 4.25	1.75E+00	1.75E+00	1.72E+00	8.56E-01
PB-211	404.84	2.90	4.42E+00	4.42E+00	-1.01E+00	2.10E+00
	831.96	2.90	6.24E+00		-1.75E-01	2.89E+00
+ BI-212	727.17	* 11.80	1.73E+00	1.73E+00	1.37E+00	8.14E-01
	1620.62	2.75	6.43E+00		1.64E+00	2.77E+00
+ PB-212	238.63	* 44.60	4.99E-01	4.99E-01	1.80E+00	2.45E-01
	300.09	3.41	4.48E+00		6.29E+00	2.17E+00

Analysis Report for 1510087-14
CP4106S10-11

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	BI-214	609.31	*	46.30	6.26E-01	6.26E-01	1.29E+00	3.03E-01
		1120.29	*	15.10	1.74E+00		1.28E+00	8.11E-01
		1764.49	*	15.80	7.78E-01		1.69E+00	3.05E-01
		2204.22	*	4.98	2.49E+00		2.58E+00	9.32E-01
+	PB-214	295.21		19.19	8.46E-01	4.50E-01	1.37E+00	4.10E-01
		351.92	*	37.19	4.50E-01		1.20E+00	2.18E-01
	RN-219	401.80		6.50	2.01E+00	2.01E+00	-1.19E-01	9.57E-01
	RA-223	323.87		3.88	3.24E+00	3.24E+00	-1.18E-01	1.55E+00
	RA-224	240.98		3.95	5.23E+00	5.23E+00	2.24E+01	2.56E+00
	RA-225	40.00		31.00	8.34E-01	8.34E-01	1.14E-01	4.07E-01
+	RA-226	186.21	*	3.28	3.95E+00	3.95E+00	2.60E+00	1.93E+00
		TH-227	50.10		8.40	8.08E-01	8.08E-01	-1.73E-01	3.95E-01
		236.00		11.50	1.64E+00		3.97E+00	8.03E-01
		256.20		6.30	1.80E+00		-5.28E-01	8.66E-01
	AC-228	338.32		11.40	1.30E+00	1.00E+00	1.50E+00	6.28E-01
		911.07		27.70	1.00E+00		1.29E+00	4.74E-01
		969.11		16.60	1.45E+00		1.39E+00	6.81E-01
	TH-230	48.44		16.90	3.94E-01	3.94E-01	-8.10E-02	1.93E-01
		62.85		4.60	1.84E+00		1.02E+00	9.03E-01
		67.67		0.37	2.42E+01		-3.51E+01	1.19E+01
	PA-231	283.67		1.60	6.80E+00	5.25E+00	-9.98E-01	3.25E+00
		302.67		2.30	5.25E+00		-2.17E+00	2.52E+00
	TH-231	25.64		14.70	3.51E-01	3.51E-01	-2.48E-01	1.71E-01
		84.21		6.40	1.53E+00		-5.76E+00	7.51E-01
	PA-233	311.98		38.60	6.68E-01	6.68E-01	-3.84E-02	3.19E-01
	PA-234	131.20		20.40	4.82E-01	4.82E-01	8.91E-02	2.35E-01
		733.99		8.80	1.75E+00		5.31E-01	8.11E-01
		946.00		12.00	1.36E+00		1.04E-01	6.19E-01
	PA-234M	1001.03		0.92	2.16E+01	2.16E+01	3.56E+00	9.95E+00
	TH-234	63.29		3.80	2.25E+00	2.25E+00	1.11E+00	1.10E+00
	U-235	143.76		10.50	9.47E-01	9.47E-01	-4.43E-01	4.61E-01
		163.35		4.70	2.17E+00		3.44E-01	1.06E+00
		205.31		4.70	2.47E+00		2.59E-01	1.20E+00
	NP-237	86.50	*	12.60	1.40E+00	1.40E+00	1.34E+00	6.95E-01
	NP-239	106.10		22.70	5.78E+03	5.78E+03	2.57E+03	2.82E+03
		228.18		10.70	1.67E+04		5.66E+03	8.07E+03
		277.60		14.10	1.30E+04		6.57E+02	6.28E+03
	AM-241	59.54		35.90	2.21E-01	2.21E-01	1.99E-02	1.09E-01
	AM-243	74.67		66.00	1.82E-01	1.82E-01	6.58E-01	8.97E-02
	CM-243	209.75		3.29	3.47E+00	8.72E-01	-5.46E-01	1.68E+00
		228.14		10.60	1.13E+00		3.79E-01	5.47E-01
		277.60		14.00	8.72E-01		4.39E-02	4.20E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

Analysis Report for 1510087-14
CP4106S10-11

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP4106S10-11

Elapsed Live time: 3600
Elapsed Real Time: 3662

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	13	110
17:	67	82	75	78	50	69	80	59
25:	59	66	54	40	64	68	59	58
33:	37	57	54	56	54	73	60	64
41:	51	58	64	62	75	115	96	71
49:	73	60	60	63	70	72	87	69
57:	81	92	68	92	98	128	104	103
65:	105	97	103	110	85	110	110	95
73:	147	186	227	278	232	142	90	92
81:	93	76	87	97	95	127	127	97
89:	121	87	108	131	124	87	72	67
97:	62	47	54	57	57	54	53	62
105:	68	73	57	42	53	61	54	41
113:	50	50	59	51	40	53	54	44
121:	56	54	42	51	57	59	48	62
129:	69	59	62	48	38	54	56	51
137:	60	64	52	58	52	48	54	43
145:	46	51	41	45	57	54	49	49
153:	51	55	33	53	45	35	42	36
161:	35	49	53	41	51	35	44	37
169:	40	39	30	52	34	44	31	43
177:	37	46	48	40	42	39	45	58
185:	80	74	47	34	39	45	46	32
193:	29	42	36	45	50	45	34	38
201:	38	49	31	39	33	38	31	34
209:	50	45	29	26	32	32	41	31
217:	30	27	28	38	35	38	33	44
225:	27	24	25	40	36	32	42	26
233:	29	28	32	47	138	195	191	83
241:	67	47	39	38	25	32	25	32
249:	31	29	22	25	25	15	21	38
257:	27	24	19	26	23	27	29	17
265:	19	16	24	25	24	28	41	30
273:	23	25	24	22	34	36	15	25
281:	16	22	14	16	24	18	17	17
289:	30	16	25	23	30	61	82	52
297:	24	26	32	27	20	28	12	13
305:	15	10	16	19	13	18	20	14
313:	12	17	17	20	21	18	18	16
321:	21	21	16	20	18	17	28	30
329:	24	14	21	17	15	13	16	17
337:	36	53	35	25	18	15	17	11
345:	16	15	15	10	17	46	91	88
353:	58	16	19	9	21	18	19	19
361:	9	10	13	17	13	17	13	14

369: 19 13 22 14 14 20 17 27

Sample Title: CP4106S10-11

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	8	12	8	19	12	8	13	5
385:	7	16	12	24	17	12	14	14
393:	17	15	17	11	18	18	13	11
401:	17	11	12	9	15	14	12	16
409:	10	11	17	16	8	6	9	15
417:	10	17	16	6	11	7	7	12
425:	14	14	15	13	8	13	15	17
433:	11	9	13	8	12	15	13	13
441:	8	6	9	9	15	15	14	7
449:	13	12	9	9	10	15	13	7
457:	10	15	6	14	9	17	13	16
465:	11	7	12	13	16	8	9	8
473:	13	10	10	7	8	11	6	10
481:	11	5	7	8	4	11	12	6
489:	10	9	17	11	8	4	5	9
497:	2	8	12	14	3	2	7	9
505:	10	7	10	9	16	38	43	26
513:	15	11	11	6	17	2	12	8
521:	8	10	10	7	15	11	7	9
529:	5	5	6	11	6	5	5	8
537:	10	9	7	10	11	7	8	7
545:	9	14	4	7	5	9	7	12
553:	6	12	10	12	11	5	8	11
561:	6	11	6	11	6	4	8	12
569:	8	10	9	9	5	9	12	13
577:	9	6	7	15	18	33	59	39
585:	17	8	5	9	5	6	7	10
593:	4	8	12	8	7	8	8	8
601:	7	13	7	4	12	12	16	37
609:	79	56	25	8	10	9	4	11
617:	2	5	12	7	5	9	5	7
625:	9	10	5	7	7	9	5	6
633:	5	3	3	10	3	10	9	9
641:	4	5	9	2	7	12	6	6
649:	6	5	8	8	8	11	4	8
657:	9	6	10	10	5	11	5	6
665:	5	12	7	3	7	8	5	6
673:	4	11	4	7	4	7	8	11
681:	10	5	6	4	7	3	5	5
689:	9	6	6	9	4	11	7	8
697:	6	10	9	9	6	10	9	7
705:	4	9	9	5	2	3	8	7
713:	3	7	7	4	11	7	5	8
721:	7	4	5	7	9	14	11	19
729:	8	3	9	6	6	7	7	8
737:	2	2	2	4	7	12	4	11
745:	6	6	4	0	6	7	8	5
753:	11	7	9	11	3	5	11	5
761:	9	6	9	8	8	7	8	10
769:	7	14	9	10	4	6	7	4
777:	4	3	7	7	12	9	7	6
785:	3	6	3	3	9	6	10	3
793:	7	9	7	11	7	6	6	8

801: 4 5 4 7 5 7 3 3

Sample Title: CP4106S10-11

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	5	2	4	7	2	6	4	5
817:	14	6	7	8	4	5	6	3
825:	8	5	7	6	5	5	6	11
833:	5	3	6	7	7	5	5	7
841:	2	4	2	6	6	3	7	3
849:	6	3	3	3	4	8	4	6
857:	4	5	3	8	3	9	2	6
865:	1	3	3	5	2	7	6	4
873:	4	4	2	8	3	5	4	3
881:	3	1	3	6	1	1	6	6
889:	4	4	5	3	9	9	5	6
897:	7	3	5	2	2	4	6	3
905:	10	5	4	4	9	20	25	24
913:	14	6	5	3	4	5	6	6
921:	3	3	7	2	5	2	4	5
929:	3	3	4	5	6	4	5	3
937:	1	6	4	3	2	1	2	3
945:	3	6	2	1	4	11	6	4
953:	2	4	5	4	3	4	5	6
961:	1	3	6	4	9	1	4	16
969:	13	13	5	4	8	5	2	2
977:	3	6	2	5	7	6	1	3
985:	2	2	5	3	2	5	4	4
993:	2	4	3	3	4	4	5	6
1001:	2	5	8	8	3	4	5	7
1009:	6	2	1	2	6	4	2	7
1017:	3	2	7	6	6	2	3	4
1025:	3	4	1	2	2	0	5	2
1033:	5	6	3	1	6	3	3	4
1041:	0	5	7	3	3	7	4	4
1049:	2	7	2	3	0	2	3	2
1057:	1	2	7	6	3	4	7	4
1065:	1	4	3	3	2	5	5	3
1073:	5	1	2	6	2	6	10	4
1081:	9	6	1	9	2	4	2	6
1089:	5	4	3	3	3	5	6	3
1097:	2	3	3	4	5	2	7	4
1105:	3	2	7	5	7	5	8	5
1113:	6	5	3	6	4	4	10	13
1121:	6	10	5	7	1	5	9	2
1129:	1	4	5	7	3	3	4	6
1137:	3	5	1	3	7	4	5	5
1145:	5	8	5	5	2	9	5	3
1153:	4	10	10	3	5	6	3	2
1161:	4	3	8	1	4	2	4	7
1169:	9	7	4	1	4	7	3	6
1177:	4	3	5	3	3	4	8	2
1185:	6	3	5	6	4	5	5	2
1193:	8	4	4	9	2	5	2	6
1201:	6	5	2	3	2	4	2	6
1209:	7	5	4	10	7	4	4	5
1217:	6	7	5	5	8	4	4	3
1225:	7	2	3	6	1	4	3	3

1233: 3 3 2 7 10 8 8 7

Sample Title: CP4106S10-11

Channel	1	2	3	4	5	6	7	8
1241:	8	1	2	5	7	4	3	1
1249:	2	0	4	3	4	3	3	2
1257:	3	4	3	3	2	5	5	3
1265:	3	7	4	2	2	7	5	2
1273:	4	5	3	2	2	5	3	4
1281:	4	2	5	4	3	4	3	2
1289:	2	4	3	5	4	3	2	2
1297:	3	3	2	1	3	3	4	4
1305:	3	3	1	5	1	3	2	3
1313:	3	5	3	1	6	4	4	3
1321:	0	2	3	7	6	0	2	0
1329:	3	3	4	1	1	2	3	4
1337:	2	7	4	0	2	0	2	2
1345:	1	1	0	2	5	1	4	0
1353:	3	5	2	3	1	5	2	1
1361:	0	3	2	1	0	1	3	1
1369:	4	1	2	5	0	3	1	2
1377:	4	7	6	0	1	2	3	5
1385:	1	2	2	1	4	0	1	5
1393:	3	0	2	2	4	5	2	1
1401:	2	1	4	4	0	1	1	7
1409:	3	4	2	0	0	1	1	2
1417:	4	1	0	2	1	3	3	0
1425:	2	4	0	0	0	2	2	0
1433:	1	2	1	3	0	1	0	0
1441:	0	3	1	1	1	1	4	1
1449:	1	4	1	0	1	1	1	1
1457:	3	4	24	53	81	69	36	9
1465:	1	2	1	0	2	2	1	2
1473:	1	1	0	3	3	2	1	2
1481:	1	0	0	4	0	2	2	1
1489:	1	4	1	1	0	2	0	6
1497:	3	1	1	2	0	4	2	2
1505:	3	0	1	1	0	4	1	4
1513:	2	0	0	1	0	1	3	5
1521:	1	2	0	1	1	1	2	2
1529:	1	1	1	3	1	1	0	1
1537:	1	1	2	1	2	0	0	2
1545:	1	0	1	2	2	1	0	0
1553:	1	2	1	0	1	0	2	2
1561:	0	0	1	2	1	0	0	1
1569:	0	1	1	0	0	0	0	0
1577:	0	0	2	0	2	0	3	3
1585:	0	0	1	1	4	2	2	1
1593:	4	3	0	2	4	0	2	1
1601:	0	0	0	1	1	3	1	1
1609:	0	3	1	0	0	4	0	1
1617:	2	1	2	1	3	1	0	0
1625:	3	0	0	1	1	1	2	1
1633:	1	0	2	2	1	0	2	2
1641:	1	0	1	1	0	1	2	2
1649:	1	1	0	3	1	0	0	1
1657:	1	1	0	3	3	2	1	0

1665: 0 1 0 0 1 0 2 0

Sample Title: CP4106S10-11

Channel	1	2	3	4	5	6	7	8
1673:	0	0	0	0	1	2	0	1
1681:	3	0	1	0	0	2	3	0
1689:	0	0	2	1	2	0	0	0
1697:	0	1	0	1	1	1	1	0
1705:	0	1	2	3	1	3	1	1
1713:	0	0	1	0	0	1	0	0
1721:	1	1	2	1	1	0	0	0
1729:	1	3	1	5	1	0	1	0
1737:	1	0	0	0	3	1	1	0
1745:	0	1	1	0	0	1	1	0
1753:	1	0	1	1	0	2	1	0
1761:	3	0	2	4	8	10	2	1
1769:	0	0	0	0	3	0	0	1
1777:	1	0	0	0	1	0	1	0
1785:	1	2	0	1	0	0	1	0
1793:	0	0	0	0	1	0	3	0
1801:	1	2	0	1	0	0	1	0
1809:	1	1	1	1	0	1	0	1
1817:	1	2	0	0	0	0	2	0
1825:	1	3	1	0	1	1	0	0
1833:	0	0	0	0	1	2	0	1
1841:	0	3	1	0	0	0	2	3
1849:	1	1	0	0	1	0	1	1
1857:	2	0	1	0	0	1	1	1
1865:	1	0	1	1	0	0	0	0
1873:	1	2	2	0	0	2	0	3
1881:	1	0	1	0	0	0	0	0
1889:	0	0	0	0	0	0	0	0
1897:	1	0	0	2	0	0	0	1
1905:	2	0	1	0	2	2	1	0
1913:	1	0	1	2	2	1	1	1
1921:	1	1	2	0	1	1	1	1
1929:	0	0	0	1	0	3	0	1
1937:	3	1	0	1	0	2	0	1
1945:	1	0	1	1	0	0	0	1
1953:	1	0	1	0	3	2	1	1
1961:	0	0	1	0	0	0	0	1
1969:	1	0	0	0	0	1	0	0
1977:	0	1	1	1	0	0	0	0
1985:	2	0	0	0	0	1	0	0
1993:	0	0	1	1	0	1	1	0
2001:	0	0	1	0	1	0	0	0
2009:	1	0	1	0	2	3	0	1
2017:	0	0	1	1	0	1	0	0
2025:	0	0	1	1	0	0	2	1
2033:	0	0	0	0	0	0	1	0
2041:	1	1	0	1	0	0	1	0
2049:	1	0	0	2	0	1	0	1
2057:	0	0	0	1	0	0	0	0
2065:	0	3	1	0	2	2	1	0
2073:	0	1	0	2	2	0	0	0
2081:	1	1	0	0	1	0	0	1
2089:	1	2	1	1	1	1	1	0

2097: 1 0 0 1 1 2 2 3

Sample Title: CP4106S10-11

Channel	1	2	3	4	5	6	7	8
2105:	1	0	2	1	1	0	0	2
2113:	1	0	0	0	0	0	0	0
2121:	0	0	0	0	0	1	0	1
2129:	1	0	0	2	0	1	1	2
2137:	0	0	0	0	1	0	0	1
2145:	0	0	0	0	1	1	0	0
2153:	2	0	2	0	0	1	0	2
2161:	0	0	0	0	1	0	1	1
2169:	0	0	1	0	0	0	2	0
2177:	0	0	2	0	0	1	1	1
2185:	0	1	0	0	1	0	0	0
2193:	0	0	1	0	2	1	0	1
2201:	0	0	2	3	4	3	1	0
2209:	0	0	0	0	0	0	0	0
2217:	0	1	0	2	0	1	1	0
2225:	0	1	0	1	1	0	1	0
2233:	0	0	0	0	1	0	0	0
2241:	1	3	1	0	1	0	1	0
2249:	2	2	1	2	0	1	0	0
2257:	1	0	0	0	0	2	1	2
2265:	0	0	2	1	0	0	0	1
2273:	1	0	1	0	1	2	2	1
2281:	0	3	0	0	1	1	1	1
2289:	0	1	0	3	1	0	0	2
2297:	1	1	1	0	0	1	0	2
2305:	1	0	0	0	5	1	0	1
2313:	1	0	1	0	0	0	0	1
2321:	0	1	2	2	1	0	0	0
2329:	0	1	1	0	0	1	0	1
2337:	0	1	0	1	0	0	0	1
2345:	2	1	2	1	0	0	0	0
2353:	1	0	2	0	0	0	1	1
2361:	1	0	1	0	0	0	1	1
2369:	2	0	0	0	0	1	0	1
2377:	0	1	1	0	0	1	0	2
2385:	1	1	0	0	1	0	2	0
2393:	0	1	2	1	1	1	0	1
2401:	0	0	1	0	0	1	0	0
2409:	1	1	0	0	0	0	0	1
2417:	1	2	0	0	0	0	0	0
2425:	1	0	0	1	0	1	0	0
2433:	0	0	0	0	1	1	2	0
2441:	1	0	0	0	0	0	0	0
2449:	2	1	2	0	1	0	1	1
2457:	1	1	1	0	0	0	1	0
2465:	0	0	0	1	1	0	0	0
2473:	0	1	1	0	0	0	0	0
2481:	0	0	1	0	0	1	0	1
2489:	0	1	0	1	1	0	0	0
2497:	1	1	0	1	0	1	0	1
2505:	2	0	0	2	0	0	1	0
2513:	0	0	0	0	1	0	0	0
2521:	1	0	0	0	0	2	0	1

2529: 0 0 0 1 0 0 0 0

Sample Title: CP4106S10-11

Channel	1	2	3	4	5	6	7	8
2537:	0	1	0	0	0	0	1	1
2545:	0	0	0	0	0	0	0	0
2553:	0	0	0	0	0	0	0	0
2561:	0	0	0	0	0	0	0	0
2569:	0	0	0	0	1	0	0	0
2577:	1	0	0	0	0	0	0	1
2585:	0	0	0	0	0	0	1	0
2593:	1	1	0	0	0	1	0	0
2601:	1	0	0	0	0	0	0	0
2609:	1	0	0	0	1	5	12	7
2617:	9	2	1	0	0	1	0	0
2625:	0	0	0	0	0	0	0	0
2633:	0	1	0	0	0	1	1	0
2641:	0	0	0	0	1	1	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	0	1	1	0	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	0	1	0	2	0	0	0
2681:	0	0	0	0	0	0	0	0
2689:	0	0	0	0	0	0	0	0
2697:	0	1	0	0	0	0	0	0
2705:	2	1	0	0	0	0	0	0
2713:	1	1	0	0	0	0	0	0
2721:	1	1	0	1	0	0	0	1
2729:	0	0	0	0	0	0	0	0
2737:	0	0	0	0	0	0	0	0
2745:	0	0	0	0	0	0	0	0
2753:	1	0	0	0	0	0	2	0
2761:	0	0	1	0	1	0	0	0
2769:	0	0	0	0	1	1	0	0
2777:	0	1	0	0	0	0	0	0
2785:	0	0	0	1	0	0	1	0
2793:	0	0	0	0	0	0	0	0
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	0	0	0	1	1
2817:	0	0	1	0	0	0	0	0
2825:	0	0	1	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	0	0
2849:	0	1	0	1	0	0	1	0
2857:	0	0	0	0	1	0	1	0
2865:	0	0	1	0	1	0	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	0	0	1	1
2897:	0	0	0	0	0	0	1	0
2905:	1	1	0	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	1
2937:	0	0	0	0	0	0	1	1
2945:	1	0	0	0	0	0	0	0
2953:	0	0	1	0	0	0	1	0

2961: 0 0 0 0 0 0 0 0 0

Sample Title: CP4106S10-11

Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	0	0	0	0	0
2985:	1	1	0	0	0	0	0	0
2993:	0	0	0	1	0	0	0	0
3001:	0	0	1	1	0	0	0	0
3009:	0	1	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	1	0	0	0	0	0	0	0
3033:	0	0	2	0	0	0	0	0
3041:	0	1	0	0	0	1	0	0
3049:	0	1	0	0	0	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	0	1	0
3073:	0	0	0	1	0	0	0	0
3081:	1	0	0	0	0	0	1	0
3089:	0	0	0	0	1	0	0	0
3097:	0	0	1	1	0	0	0	0
3105:	0	0	0	0	0	0	0	0
3113:	0	0	0	0	0	1	0	0
3121:	0	0	0	0	0	0	1	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	2	0	0	0	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	1	0	1	0
3169:	0	1	1	1	0	0	0	1
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	0	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	0	1	0	0	0	0	0
3217:	0	0	0	0	1	0	0	1
3225:	0	0	0	0	0	0	0	0
3233:	0	0	1	0	0	1	0	0
3241:	0	0	0	0	0	0	1	0
3249:	0	1	0	0	0	0	0	0
3257:	0	0	1	0	0	0	0	0
3265:	1	0	0	1	0	0	0	1
3273:	0	0	0	0	1	0	0	0
3281:	0	0	1	0	0	0	0	0
3289:	1	1	0	0	1	0	0	0
3297:	0	0	0	0	1	0	1	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0
3321:	1	0	0	0	0	0	0	1
3329:	0	0	0	0	1	0	0	0
3337:	0	1	0	0	0	0	0	0
3345:	0	0	0	0	0	0	2	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	1	0	0	0	0	0
3377:	0	0	0	1	0	0	1	0
3385:	0	0	1	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0

Sample Title: CP4106S10-11

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	0	0	0	0	1
3409:	0	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	1	1
3425:	1	0	0	1	0	0	0	0	1
3433:	0	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0	0
3465:	0	0	0	1	0	0	0	0	0
3473:	0	0	0	0	1	0	0	0	0
3481:	0	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0	0
3497:	1	0	0	0	0	0	0	1	0
3505:	0	0	0	0	0	0	0	0	0
3513:	0	0	1	0	1	0	0	0	1
3521:	0	0	0	0	0	0	0	0	0
3529:	1	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0	0
3545:	0	0	1	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0	0
3569:	0	0	0	0	1	0	0	0	0
3577:	0	0	1	0	1	1	0	0	0
3585:	1	0	0	0	0	1	0	0	0
3593:	0	0	0	1	0	0	0	0	1
3601:	0	0	0	0	0	0	0	0	0
3609:	0	1	0	0	0	0	0	0	1
3617:	0	1	0	0	1	0	0	0	0
3625:	0	0	1	0	0	0	0	0	1
3633:	0	0	0	2	0	0	0	0	0
3641:	0	0	0	0	1	0	0	0	0
3649:	0	0	0	1	0	0	0	1	0
3657:	0	0	0	0	0	0	0	0	0
3665:	0	1	0	0	0	0	0	1	0
3673:	0	0	0	0	1	0	0	0	0
3681:	1	0	0	0	0	0	0	1	0
3689:	0	0	0	0	0	0	0	0	1
3697:	0	0	0	0	0	0	0	0	0
3705:	0	1	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0	0
3729:	0	0	0	0	2	0	0	0	1
3737:	0	0	0	0	1	0	0	1	1
3745:	0	0	0	1	0	0	0	0	0
3753:	1	0	0	0	0	0	0	0	1
3761:	0	0	0	0	0	0	0	0	0
3769:	1	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0	1
3793:	0	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0	0

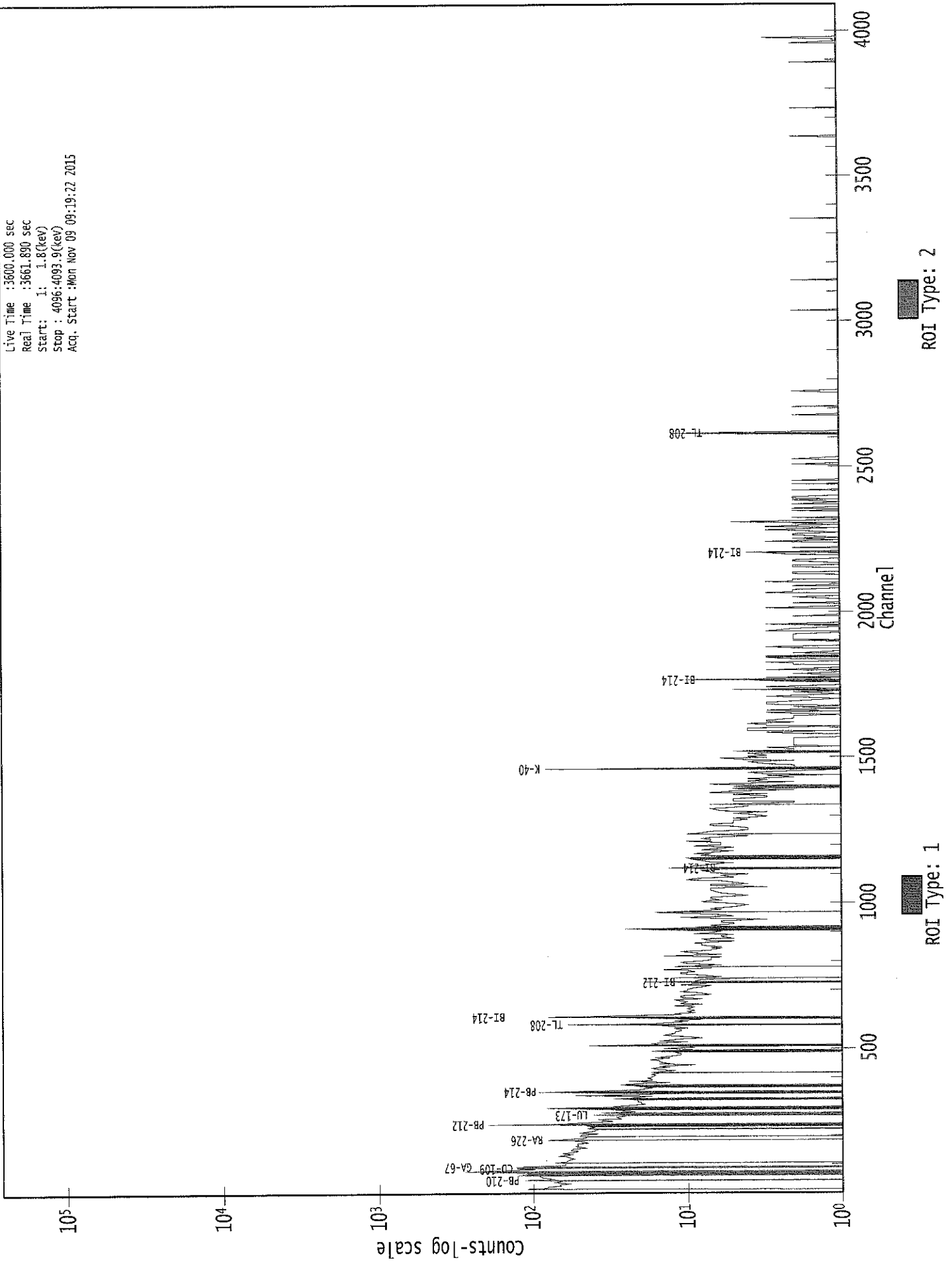
3825: 1 1 0 0 0 0 0 0

Sample Title: CP4106S10-11

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	1	1	0	0
3841:	0	1	0	0	0	1	0	0
3849:	0	0	0	0	0	0	0	0
3857:	1	0	1	0	0	0	0	0
3865:	0	0	1	0	1	0	1	0
3873:	1	0	0	1	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	2	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	1
3905:	0	0	0	0	0	0	0	0
3913:	0	0	1	0	0	0	0	0
3921:	0	1	0	0	0	1	0	0
3929:	0	1	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	1	0	0	0	0	0
3953:	0	1	1	0	2	1	0	0
3961:	0	0	1	0	0	0	0	0
3969:	0	1	0	0	0	0	0	3
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	1	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	1	1	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	1	0	0
4049:	0	1	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	1
4081:	1	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000029322.CNF

Live Time : 3600.000 sec
Real Time : 3661.890 sec
Start : 1: 1.8(keV)
Stop : 4096:4093.9(keV)
Acq. Start : Mon Nov 09 09:19:22 2015



Analysis Report for 1510087-15
CP4106S13-14

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-15
Sample Description : CP4106S13-14
Sample Type : SOIL

Sample Size : 6.055E+02 grams
Facility : Countroom

Sample Taken On : 10/7/2015 5:13:54PM
Acquisition Started : 11/9/2015 10:20:32AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.3 seconds

Dead Time : 0.04 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 19 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 29324

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-15
CP4106S13-14

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 11:20:36AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
1	74.94	75.28	0.0000	0.00
2	77.40	77.74	0.0000	0.00
3	90.66	91.00	0.0000	0.00
4	99.66	99.99	0.0000	0.00
5	128.74	129.06	0.0000	0.00
6	186.04	186.35	0.0000	0.00
7	238.80	239.09	0.0000	0.00
8	241.79	242.08	0.0000	0.00
9	270.50	270.77	0.0000	0.00
10	295.46	295.73	0.0000	0.00
11	300.61	300.87	0.0000	0.00
12	327.80	328.06	0.0000	0.00
13	338.46	338.72	0.0000	0.00
14	352.11	352.35	0.0000	0.00
15	452.93	453.14	0.0000	0.00
16	463.92	464.13	0.0000	0.00
17	507.67	507.87	0.0000	0.00
18	510.98	511.17	0.0000	0.00
19	583.27	583.44	0.0000	0.00
20	609.54	609.70	0.0000	0.00
21	635.84	635.99	0.0000	0.00
22	693.25	693.38	0.0000	0.00
23	727.84	727.96	0.0000	0.00
24	768.59	768.69	0.0000	0.00
25	773.29	773.40	0.0000	0.00
26	784.49	784.59	0.0000	0.00
27	794.48	794.57	0.0000	0.00
28	869.67	869.74	0.0000	0.00
29	911.58	911.63	0.0000	0.00
30	934.46	934.50	0.0000	0.00
31	964.80	964.83	0.0000	0.00
32	969.16	969.20	0.0000	0.00
33	1120.83	1120.81	0.0000	0.00
34	1197.41	1197.37	0.0000	0.00
35	1237.56	1237.49	0.0000	0.00
36	1461.29	1461.14	0.0000	0.00
37	1497.59	1497.44	0.0000	0.00
38	1509.59	1509.42	0.0000	0.00
39	1593.07	1592.88	0.0000	0.00
40	1621.73	1621.53	0.0000	0.00
41	1631.52	1631.32	0.0000	0.00
42	1657.22	1657.00	0.0000	0.00

Analysis Report for 1510087-15
CP4106S13-14

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1661.88	1661.66	0.0000	0.00
44	1670.26	1670.04	0.0000	0.00
45	1701.58	1701.35	0.0000	0.00
46	1708.52	1708.29	0.0000	0.00
47	1724.47	1724.23	0.0000	0.00
48	1730.01	1729.77	0.0000	0.00
49	1740.84	1740.59	0.0000	0.00
50	1765.37	1765.11	0.0000	0.00
51	1819.86	1819.58	0.0000	0.00
52	1831.47	1831.19	0.0000	0.00
53	2103.66	2103.28	0.0000	0.00
54	2110.26	2109.88	0.0000	0.00
55	2314.21	2313.74	0.0000	0.00
56	2323.39	2322.92	0.0000	0.00
57	2360.86	2360.38	0.0000	0.00
58	2448.90	2448.38	0.0000	0.00
59	2615.08	2614.50	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510087-15
CP4106S13-14

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 11:20:36AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	74.94	72 -	82	75.28	3.90E+02	95.71	1.37E+03	1.60
m	2	77.40	72 -	82	77.74	7.73E+02	103.60	1.33E+03	1.61
m	3	90.66	82 -	97	91.00	9.37E+01	64.34	8.24E+02	1.35
	4	99.66	98 -	103	99.99	7.24E+01	73.00	1.00E+03	2.12
	5	128.74	124 -	134	129.06	1.88E+02	109.77	1.50E+03	4.56
	6	186.04	183 -	190	186.35	2.12E+02	82.70	9.96E+02	1.88
M	7	238.80	234 -	246	239.09	1.10E+03	80.84	4.50E+02	1.68
m	8	241.79	234 -	246	242.08	2.18E+02	62.82	3.91E+02	1.68
	9	270.50	267 -	273	270.77	7.48E+01	55.86	5.11E+02	2.62
M	10	295.46	292 -	303	295.73	2.99E+02	50.14	2.98E+02	1.66
m	11	300.61	292 -	303	300.87	8.22E+01	40.57	3.03E+02	1.72
	12	327.80	324 -	331	328.06	7.60E+01	50.79	3.78E+02	2.51
	13	338.46	335 -	343	338.72	1.86E+02	64.22	5.27E+02	1.54
	14	352.11	348 -	356	352.35	4.74E+02	72.67	5.18E+02	1.74
	15	452.93	451 -	455	453.14	2.30E+01	28.28	1.54E+02	2.56
	16	463.92	459 -	471	464.13	9.51E+01	61.23	3.96E+02	3.05
M	17	507.67	506 -	514	507.87	2.24E+01	23.15	9.95E+01	1.91
m	18	510.98	506 -	514	511.17	1.42E+02	39.48	1.81E+02	1.91
	19	583.27	579 -	587	583.44	2.77E+02	52.09	2.47E+02	2.05
	20	609.54	605 -	613	609.70	3.76E+02	53.36	2.07E+02	1.78
	21	635.84	634 -	638	635.99	1.86E+01	22.44	9.27E+01	2.09
	22	693.25	690 -	698	693.38	4.13E+01	32.43	1.39E+02	4.90
	23	727.84	722 -	733	727.96	7.87E+01	49.27	2.65E+02	1.50
M	24	768.59	765 -	780	768.69	3.45E+01	28.50	1.46E+02	2.28
m	25	773.29	765 -	780	773.40	3.29E+01	27.58	1.01E+02	2.29
	26	784.49	781 -	788	784.59	5.40E+01	26.91	8.61E+01	4.78
	27	794.48	790 -	799	794.57	3.73E+01	36.63	1.71E+02	2.12
	28	869.67	866 -	874	869.74	2.65E+01	29.44	1.17E+02	1.70
	29	911.58	906 -	917	911.63	2.07E+02	48.58	1.90E+02	2.05
	30	934.46	930 -	939	934.50	4.68E+01	30.35	1.04E+02	2.60
M	31	964.80	962 -	973	964.83	4.76E+01	24.37	8.85E+01	2.10
m	32	969.16	962 -	973	969.20	1.21E+02	27.10	5.92E+01	1.79
	33	1120.83	1116 -	1128	1120.81	7.86E+01	41.98	1.75E+02	2.84
	34	1197.41	1190 -	1206	1197.37	6.09E+01	39.80	1.28E+02	11.46
	35	1237.56	1232 -	1245	1237.49	5.04E+01	42.83	1.79E+02	3.15
	36	1461.29	1455 -	1466	1461.14	8.44E+02	62.10	5.97E+01	2.19
	37	1497.59	1493 -	1503	1497.44	2.03E+01	14.24	1.54E+01	3.90
	38	1509.59	1504 -	1514	1509.42	2.08E+01	16.95	2.64E+01	1.98
	39	1593.07	1591 -	1597	1592.88	1.20E+01	14.21	2.80E+01	1.45
	40	1621.73	1617 -	1625	1621.53	1.27E+01	10.42	8.59E+00	4.74

Analysis Report for 1510087-15
CP4106S13-14

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1631.52	1627 - 1635		1631.32	1.48E+01	13.00	1.44E+01	3.39
M	42	1657.22	1656 - 1664		1657.00	7.03E+00	4.27	3.50E-01	2.27
m	43	1661.88	1656 - 1664		1661.66	1.01E+01	8.54	4.40E+00	3.19
	44	1670.26	1665 - 1676		1670.04	1.20E+01	12.00	1.20E+01	1.31
	45	1701.58	1697 - 1704		1701.35	1.20E+01	9.80	8.00E+00	2.03
	46	1708.52	1706 - 1711		1708.29	6.00E+00	7.35	6.00E+00	2.63
M	47	1724.47	1723 - 1738		1724.23	5.73E+00	4.47	2.29E+00	2.52
m	48	1730.01	1723 - 1738		1729.77	2.34E+01	12.81	1.66E+01	2.52
	49	1740.84	1738 - 1743		1740.59	1.17E+01	7.81	2.54E+00	3.57
	50	1765.37	1760 - 1771		1765.11	6.52E+01	21.07	1.95E+01	2.42
	51	1819.86	1816 - 1823		1819.58	9.33E+00	10.39	1.13E+01	3.44
	52	1831.47	1828 - 1834		1831.19	5.44E+00	7.78	7.11E+00	1.84
	53	2103.66	2100 - 2107		2103.28	1.87E+01	10.00	4.62E+00	3.33
	54	2110.26	2108 - 2112		2109.88	7.13E+00	6.18	1.75E+00	3.07
	55	2314.21	2312 - 2316		2313.74	6.14E+00	5.85	1.71E+00	2.08
	56	2323.39	2318 - 2328		2322.92	1.14E+01	11.34	1.12E+01	3.57
	57	2360.86	2357 - 2363		2360.38	6.50E+00	8.99	9.00E+00	1.17
	58	2448.90	2442 - 2452		2448.38	1.02E+01	12.76	1.57E+01	3.79
	59	2615.08	2611 - 2619		2614.50	1.35E+02	23.84	3.48E+00	2.21

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 11:20:36AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	1	74.94	72 -	82	3.90E+02	95.71	1.37E+03	6.10E+01
m	2	77.40	72 -	82	7.73E+02	103.60	1.33E+03	6.00E+01
m	3	90.66	82 -	97	9.37E+01	64.34	8.24E+02	4.72E+01
	4	99.66	98 -	103	7.24E+01	73.00	1.00E+03	5.84E+01
	5	128.74	124 -	134	1.88E+02	109.77	1.50E+03	8.74E+01
	6	186.04	183 -	190	2.12E+02	82.70	9.96E+02	6.36E+01
M	7	238.80	234 -	246	1.10E+03	80.84	4.50E+02	3.49E+01
m	8	241.79	234 -	246	2.18E+02	62.82	3.91E+02	3.25E+01
	9	270.50	267 -	273	7.48E+01	55.86	5.11E+02	4.37E+01

Analysis Report for 1510087-15
CP4106S13-14

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	10	295.46	292 -	303	2.99E+02	50.14	2.98E+02	2.84E+01
m	11	300.61	292 -	303	8.22E+01	40.57	3.03E+02	2.86E+01
	12	327.80	324 -	331	7.60E+01	50.79	3.78E+02	3.92E+01
	13	338.46	335 -	343	1.86E+02	64.22	5.27E+02	4.78E+01
	14	352.11	348 -	356	4.74E+02	72.67	5.18E+02	4.78E+01
	15	452.93	451 -	455	2.30E+01	28.28	1.54E+02	2.19E+01
	16	463.92	459 -	471	9.51E+01	61.23	3.96E+02	4.77E+01
M	17	507.67	506 -	514	2.24E+01	23.15	9.95E+01	1.64E+01
m	18	510.98	506 -	514	1.42E+02	39.48	1.81E+02	2.21E+01
	19	583.27	579 -	587	2.77E+02	52.09	2.47E+02	3.30E+01
	20	609.54	605 -	613	3.76E+02	53.36	2.07E+02	3.02E+01
	21	635.84	634 -	638	1.86E+01	22.44	9.27E+01	1.70E+01
	22	693.25	690 -	698	4.13E+01	32.43	1.39E+02	2.45E+01
	23	727.84	722 -	733	7.87E+01	49.27	2.65E+02	1.89E+01
M	24	768.59	765 -	780	3.45E+01	28.50	1.46E+02	1.99E+01
m	25	773.29	765 -	780	3.29E+01	27.58	1.01E+02	1.65E+01
	26	784.49	781 -	788	5.40E+01	26.91	8.61E+01	1.85E+01
	27	794.48	790 -	799	3.73E+01	36.63	1.71E+02	2.84E+01
	28	869.67	866 -	874	2.65E+01	29.44	1.17E+02	2.27E+01
	29	911.58	906 -	917	2.07E+02	48.58	1.90E+02	3.22E+01
	30	934.46	930 -	939	4.68E+01	30.35	1.04E+02	1.08E+01
M	31	964.80	962 -	973	4.76E+01	24.37	8.85E+01	1.55E+01
m	32	969.16	962 -	973	1.21E+02	27.10	5.92E+01	1.27E+01
	33	1120.83	1116 -	1128	7.86E+01	41.98	1.75E+02	3.13E+01
	34	1197.41	1190 -	1206	6.09E+01	39.80	1.28E+02	3.01E+01
	35	1237.56	1232 -	1245	5.04E+01	42.83	1.79E+02	3.32E+01
	36	1461.29	1455 -	1466	8.44E+02	62.10	5.97E+01	1.80E+01
	37	1497.59	1493 -	1503	2.03E+01	14.24	1.54E+01	9.06E+00
	38	1509.59	1504 -	1514	2.08E+01	16.95	2.64E+01	1.17E+01
	39	1593.07	1591 -	1597	1.20E+01	14.21	2.80E+01	1.02E+01
	40	1621.73	1617 -	1625	1.27E+01	10.42	8.59E+00	6.24E+00
	41	1631.52	1627 -	1635	1.48E+01	13.00	1.44E+01	8.61E+00
M	42	1657.22	1656 -	1664	7.03E+00	4.27	3.50E-01	9.73E-01
m	43	1661.88	1656 -	1664	1.01E+01	8.54	4.40E+00	3.45E+00
	44	1670.26	1665 -	1676	1.20E+01	12.00	1.20E+01	8.05E+00
	45	1701.58	1697 -	1704	1.20E+01	9.80	8.00E+00	5.70E+00
	46	1708.52	1706 -	1711	6.00E+00	7.35	6.00E+00	4.50E+00
M	47	1724.47	1723 -	1738	5.73E+00	4.47	2.29E+00	2.49E+00
m	48	1730.01	1723 -	1738	2.34E+01	12.81	1.66E+01	6.71E+00
	49	1740.84	1738 -	1743	1.17E+01	7.81	2.54E+00	3.08E+00
	50	1765.37	1760 -	1771	6.52E+01	21.07	1.95E+01	1.11E+01
	51	1819.86	1816 -	1823	9.33E+00	10.39	1.13E+01	6.91E+00
	52	1831.47	1828 -	1834	5.44E+00	7.78	7.11E+00	5.12E+00
	53	2103.66	2100 -	2107	1.87E+01	10.00	4.62E+00	4.13E+00
	54	2110.26	2108 -	2112	7.13E+00	6.18	1.75E+00	2.57E+00
	55	2314.21	2312 -	2316	6.14E+00	5.85	1.71E+00	2.56E+00
	56	2323.39	2318 -	2328	1.14E+01	11.34	1.12E+01	7.48E+00
	57	2360.86	2357 -	2363	6.50E+00	8.99	9.00E+00	6.08E+00
	58	2448.90	2442 -	2452	1.02E+01	12.76	1.57E+01	9.08E+00
	59	2615.08	2611 -	2619	1.35E+02	23.84	3.48E+00	4.29E+00

Analysis Report for 1510087-15
CP4106S13-14

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 11:20:36AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	1	74.94	72 -	82	75.28	3.90E+02	95.71	1.37E+03	AM-243
m	2	77.40	72 -	82	77.74	7.73E+02	103.60	1.33E+03	TI-44
m	3	90.66	82 -	97	91.00	9.37E+01	64.34	8.24E+02	ND-147
	4	99.66	98 -	103	99.99	7.24E+01	73.00	1.00E+03	.....
	5	128.74	124 -	134	129.06	1.88E+02	109.77	1.50E+03	.....
	6	186.04	183 -	190	186.35	2.12E+02	82.70	9.96E+02	RA-226
M	7	238.80	234 -	246	239.09	1.10E+03	80.84	4.50E+02	PB-212
m	8	241.79	234 -	246	242.08	2.18E+02	62.82	3.91E+02	RA-224
	9	270.50	267 -	273	270.77	7.48E+01	55.86	5.11E+02	.....
M	10	295.46	292 -	303	295.73	2.99E+02	50.14	2.98E+02	PB-214
m	11	300.61	292 -	303	300.87	8.22E+01	40.57	3.03E+02	GA-67 PB-212 BI-210M
	12	327.80	324 -	331	328.06	7.60E+01	50.79	3.78E+02	LA-140
	13	338.46	335 -	343	338.72	1.86E+02	64.22	5.27E+02	AC-228
	14	352.11	348 -	356	352.35	4.74E+02	72.67	5.18E+02	PB-214
	15	452.93	451 -	455	453.14	2.30E+01	28.28	1.54E+02	PM-146
	16	463.92	459 -	471	464.13	9.51E+01	61.23	3.96E+02	SB-125
M	17	507.67	506 -	514	507.87	2.24E+01	23.15	9.95E+01	.....
m	18	510.98	506 -	514	511.17	1.42E+02	39.48	1.81E+02	.....
	19	583.27	579 -	587	583.44	2.77E+02	52.09	2.47E+02	TL-208
	20	609.54	605 -	613	609.70	3.76E+02	53.36	2.07E+02	BI-214
	21	635.84	634 -	638	635.99	1.86E+01	22.44	9.27E+01	SB-125
	22	693.25	690 -	698	693.38	4.13E+01	32.43	1.39E+02	.....
	23	727.84	722 -	733	727.96	7.87E+01	49.27	2.65E+02	BI-212
M	24	768.59	765 -	780	768.69	3.45E+01	28.50	1.46E+02	.....
m	25	773.29	765 -	780	773.40	3.29E+01	27.58	1.01E+02	.....
	26	784.49	781 -	788	784.59	5.40E+01	26.91	8.61E+01	SB-127
	27	794.48	790 -	799	794.57	3.73E+01	36.63	1.71E+02	.....
	28	869.67	866 -	874	869.74	2.65E+01	29.44	1.17E+02	.....

Analysis Report for 1510087-15
CP4106S13-14

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	29	911.58	906 -	917	911.63	2.07E+02	48.58	1.90E+02	AC-228 LU-172
	30	934.46	930 -	939	934.50	4.68E+01	30.35	1.04E+02	.....
M	31	964.80	962 -	973	964.83	4.76E+01	24.37	8.85E+01	EU-152
m	32	969.16	962 -	973	969.20	1.21E+02	27.10	5.92E+01	AC-228
	33	1120.83	1116 -	1128	1120.81	7.86E+01	41.98	1.75E+02	SC-46 TA-182 BI-214
	34	1197.41	1190 -	1206	1197.37	6.09E+01	39.80	1.28E+02	.....
	35	1237.56	1232 -	1245	1237.49	5.04E+01	42.83	1.79E+02	CO-56
	36	1461.29	1455 -	1466	1461.14	8.44E+02	62.10	5.97E+01	K-40
	37	1497.59	1493 -	1503	1497.44	2.03E+01	14.24	1.54E+01	.....
	38	1509.59	1504 -	1514	1509.42	2.08E+01	16.95	2.64E+01	.....
	39	1593.07	1591 -	1597	1592.88	1.20E+01	14.21	2.80E+01	.....
	40	1621.73	1617 -	1625	1621.53	1.27E+01	10.42	8.59E+00	.....
	41	1631.52	1627 -	1635	1631.32	1.48E+01	13.00	1.44E+01	.....
M	42	1657.22	1656 -	1664	1657.00	7.03E+00	4.27	3.50E-01	.....
m	43	1661.88	1656 -	1664	1661.66	1.01E+01	8.54	4.40E+00	.....
	44	1670.26	1665 -	1676	1670.04	1.20E+01	12.00	1.20E+01	.....
	45	1701.58	1697 -	1704	1701.35	1.20E+01	9.80	8.00E+00	.....
	46	1708.52	1706 -	1711	1708.29	6.00E+00	7.35	6.00E+00	.....
M	47	1724.47	1723 -	1738	1724.23	5.73E+00	4.47	2.29E+00	.....
m	48	1730.01	1723 -	1738	1729.77	2.34E+01	12.81	1.66E+01	.....
	49	1740.84	1738 -	1743	1740.59	1.17E+01	7.81	2.54E+00	.....
	50	1765.37	1760 -	1771	1765.11	6.52E+01	21.07	1.95E+01	BI-214
	51	1819.86	1816 -	1823	1819.58	9.33E+00	10.39	1.13E+01	.....
	52	1831.47	1828 -	1834	1831.19	5.44E+00	7.78	7.11E+00	.....
	53	2103.66	2100 -	2107	2103.28	1.87E+01	10.00	4.62E+00	.....
	54	2110.26	2108 -	2112	2109.88	7.13E+00	6.18	1.75E+00	.....
	55	2314.21	2312 -	2316	2313.74	6.14E+00	5.85	1.71E+00	.....
	56	2323.39	2318 -	2328	2322.92	1.14E+01	11.34	1.12E+01	.....
	57	2360.86	2357 -	2363	2360.38	6.50E+00	8.99	9.00E+00	.....
	58	2448.90	2442 -	2452	2448.38	1.02E+01	12.76	1.57E+01	.....
	59	2615.08	2611 -	2619	2614.50	1.35E+02	23.84	3.48E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 11:20:36AM

Analysis Report for 1510087-15
CP4106S13-14

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	1	74.94	3.90E+02	95.71	2.75E-02	2.30E-03
m	2	77.40	7.73E+02	103.60	2.78E-02	2.38E-03
m	3	90.66	9.37E+01	64.34	2.86E-02	2.69E-03
	4	99.66	7.24E+01	73.00	2.85E-02	2.51E-03
	5	128.74	1.88E+02	109.77	2.67E-02	2.09E-03
	6	186.04	2.12E+02	82.70	2.24E-02	2.03E-03
M	7	238.80	1.10E+03	80.84	1.92E-02	1.64E-03
m	8	241.79	2.18E+02	62.82	1.91E-02	1.62E-03
	9	270.50	7.48E+01	55.86	1.77E-02	1.40E-03
M	10	295.46	2.99E+02	50.14	1.67E-02	1.31E-03
m	11	300.61	8.22E+01	40.57	1.65E-02	1.30E-03
	12	327.80	7.60E+01	50.79	1.55E-02	1.24E-03
	13	338.46	1.86E+02	64.22	1.52E-02	1.22E-03
	14	352.11	4.74E+02	72.67	1.48E-02	1.19E-03
	15	452.93	2.30E+01	28.28	1.23E-02	1.05E-03
	16	463.92	9.51E+01	61.23	1.21E-02	1.04E-03
M	17	507.67	2.24E+01	23.15	1.13E-02	9.94E-04
m	18	510.98	1.42E+02	39.48	1.12E-02	9.90E-04
	19	583.27	2.77E+02	52.09	1.02E-02	9.15E-04
	20	609.54	3.76E+02	53.36	9.82E-03	8.88E-04
	21	635.84	1.86E+01	22.44	9.51E-03	8.61E-04
	22	693.25	4.13E+01	32.43	8.88E-03	8.06E-04
	23	727.84	7.87E+01	49.27	8.55E-03	7.75E-04
M	24	768.59	3.45E+01	28.50	8.19E-03	7.38E-04
m	25	773.29	3.29E+01	27.58	8.15E-03	7.34E-04
	26	784.49	5.40E+01	26.91	8.06E-03	7.24E-04
	27	794.48	3.73E+01	36.63	7.97E-03	7.15E-04
	28	869.67	2.65E+01	29.44	7.42E-03	6.48E-04
	29	911.58	2.07E+02	48.58	7.15E-03	6.15E-04
	30	934.46	4.68E+01	30.35	7.01E-03	6.03E-04
M	31	964.80	4.76E+01	24.37	6.83E-03	5.88E-04
m	32	969.16	1.21E+02	27.10	6.80E-03	5.85E-04
	33	1120.83	7.86E+01	41.98	6.06E-03	5.06E-04
	34	1197.41	6.09E+01	39.80	5.76E-03	4.75E-04
	35	1237.56	5.04E+01	42.83	5.62E-03	4.68E-04
	36	1461.29	8.44E+02	62.10	4.97E-03	4.19E-04
	37	1497.59	2.03E+01	14.24	4.89E-03	4.10E-04
	38	1509.59	2.08E+01	16.95	4.86E-03	4.07E-04
	39	1593.07	1.20E+01	14.21	4.69E-03	3.86E-04
	40	1621.73	1.27E+01	10.42	4.63E-03	3.79E-04
	41	1631.52	1.48E+01	13.00	4.61E-03	3.77E-04
M	42	1657.22	7.03E+00	4.27	4.57E-03	3.70E-04
m	43	1661.88	1.01E+01	8.54	4.56E-03	3.69E-04
	44	1670.26	1.20E+01	12.00	4.54E-03	3.67E-04
	45	1701.58	1.20E+01	9.80	4.49E-03	3.59E-04
	46	1708.52	6.00E+00	7.35	4.48E-03	3.58E-04
M	47	1724.47	5.73E+00	4.47	4.46E-03	3.54E-04
m	48	1730.01	2.34E+01	12.81	4.45E-03	3.52E-04
	49	1740.84	1.17E+01	7.81	4.43E-03	3.50E-04
	50	1765.37	6.52E+01	21.07	4.39E-03	3.43E-04
	51	1819.86	9.33E+00	10.39	4.32E-03	3.30E-04
	52	1831.47	5.44E+00	7.78	4.30E-03	3.27E-04
	53	2103.66	1.87E+01	10.00	4.02E-03	3.26E-04

Analysis Report for 1510087-15
CP4106S13-14

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	2110.26	7.13E+00	6.18	4.02E-03	3.26E-04
55	2314.21	6.14E+00	5.85	3.89E-03	3.26E-04
56	2323.39	1.14E+01	11.34	3.88E-03	3.26E-04
57	2360.86	6.50E+00	8.99	3.87E-03	3.26E-04
58	2448.90	1.02E+01	12.76	3.83E-03	3.26E-04
59	2615.08	1.35E+02	23.84	3.79E-03	3.26E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 11:20:36AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
M	1	74.94	3.90E+02	95.71	5.09E+00	4.37E+00	3.85E+02	9.58E+01
m	2	77.40	7.73E+02	103.60	9.75E+00	8.28E+00	7.63E+02	1.04E+02
m	3	90.66	9.37E+01	64.34			9.37E+01	6.43E+01
	4	99.66	7.24E+01	73.00			7.24E+01	7.30E+01
	5	128.74	1.88E+02	109.77			1.88E+02	1.10E+02
	6	186.04	2.12E+02	82.70	6.41E+01	7.38E+00	1.48E+02	8.30E+01
M	7	238.80	1.10E+03	80.84	2.34E+01	6.34E+00	1.08E+03	8.11E+01
m	8	241.79	2.18E+02	62.82			2.18E+02	6.28E+01
	9	270.50	7.48E+01	55.86			7.48E+01	5.59E+01
M	10	295.46	2.99E+02	50.14	4.17E+00	5.50E+00	2.95E+02	5.04E+01
m	11	300.61	8.22E+01	40.57			8.22E+01	4.06E+01
	12	327.80	7.60E+01	50.79			7.60E+01	5.08E+01
	13	338.46	1.86E+02	64.22	2.22E-01	4.54E+00	1.85E+02	6.44E+01
	14	352.11	4.74E+02	72.67	8.83E+00	4.91E+00	4.65E+02	7.28E+01
	15	452.93	2.30E+01	28.28			2.30E+01	2.83E+01
	16	463.92	9.51E+01	61.23			9.51E+01	6.12E+01
M	17	507.67	2.24E+01	23.15			2.24E+01	2.32E+01
m	18	510.98	1.42E+02	39.48	8.12E+01	5.49E+00	6.11E+01	3.99E+01
	19	583.27	2.77E+02	52.09	6.34E+00	3.74E+00	2.70E+02	5.22E+01
	20	609.54	3.76E+02	53.36	5.20E+00	3.69E+00	3.70E+02	5.35E+01
	21	635.84	1.86E+01	22.44			1.86E+01	2.24E+01
	22	693.25	4.13E+01	32.43			4.13E+01	3.24E+01
	23	727.84	7.87E+01	49.27			7.87E+01	4.93E+01
M	24	768.59	3.45E+01	28.50			3.45E+01	2.85E+01

Analysis Report for 1510087-15
CP4106S13-14

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	25	773.29	3.29E+01	27.58			3.29E+01	2.76E+01
	26	784.49	5.40E+01	26.91			5.40E+01	2.69E+01
	27	794.48	3.73E+01	36.63			3.73E+01	3.66E+01
	28	869.67	2.65E+01	29.44			2.65E+01	2.94E+01
	29	911.58	2.07E+02	48.58	3.28E+00	2.53E+00	2.04E+02	4.86E+01
	30	934.46	4.68E+01	30.35			4.68E+01	3.03E+01
M	31	964.80	4.76E+01	24.37			4.76E+01	2.44E+01
m	32	969.16	1.21E+02	27.10			1.21E+02	2.71E+01
	33	1120.83	7.86E+01	41.98	2.28E+00	2.55E+00	7.63E+01	4.21E+01
	34	1197.41	6.09E+01	39.80			6.09E+01	3.98E+01
	35	1237.56	5.04E+01	42.83			5.04E+01	4.28E+01
	36	1461.29	8.44E+02	62.10	6.46E+00	2.33E+00	8.38E+02	6.21E+01
	37	1497.59	2.03E+01	14.24			2.03E+01	1.42E+01
	38	1509.59	2.08E+01	16.95			2.08E+01	1.69E+01
	39	1593.07	1.20E+01	14.21			1.20E+01	1.42E+01
	40	1621.73	1.27E+01	10.42			1.27E+01	1.04E+01
	41	1631.52	1.48E+01	13.00			1.48E+01	1.30E+01
M	42	1657.22	7.03E+00	4.27			7.03E+00	4.27E+00
m	43	1661.88	1.01E+01	8.54			1.01E+01	8.54E+00
	44	1670.26	1.20E+01	12.00			1.20E+01	1.20E+01
	45	1701.58	1.20E+01	9.80			1.20E+01	9.80E+00
	46	1708.52	6.00E+00	7.35			6.00E+00	7.35E+00
M	47	1724.47	5.73E+00	4.47			5.73E+00	4.47E+00
m	48	1730.01	2.34E+01	12.81			2.34E+01	1.28E+01
	49	1740.84	1.17E+01	7.81			1.17E+01	7.81E+00
	50	1765.37	6.52E+01	21.07			6.52E+01	2.11E+01
	51	1819.86	9.33E+00	10.39			9.33E+00	1.04E+01
	52	1831.47	5.44E+00	7.78			5.44E+00	7.78E+00
	53	2103.66	1.87E+01	10.00			1.87E+01	1.00E+01
	54	2110.26	7.13E+00	6.18			7.13E+00	6.18E+00
	55	2314.21	6.14E+00	5.85			6.14E+00	5.85E+00
	56	2323.39	1.14E+01	11.34			1.14E+01	1.13E+01
	57	2360.86	6.50E+00	8.99			6.50E+00	8.99E+00
	58	2448.90	1.02E+01	12.76			1.02E+01	1.28E+01
	59	2615.08	1.35E+02	23.84	3.47E+00	1.48E+00	1.32E+02	2.39E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1510087-15

CP4106S13-14

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 11:20:36AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoof\Countroom\Data\0000028941.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	1	74.94	3.90E+02	95.71	5.09E+00	4.37E+00	3.85E+02	9.58E+01
m	2	77.40	7.73E+02	103.60	9.75E+00	8.28E+00	7.63E+02	1.04E+02
m	3	90.66	9.37E+01	64.34			9.37E+01	6.43E+01
	4	99.66	7.24E+01	73.00			7.24E+01	7.30E+01
	5	128.74	1.88E+02	109.77			1.88E+02	1.10E+02
	6	186.04	2.12E+02	82.70	6.41E+01	7.38E+00	1.48E+02	8.30E+01
M	7	238.80	1.10E+03	80.84	2.34E+01	6.34E+00	1.08E+03	8.11E+01
m	8	241.79	2.18E+02	62.82			2.18E+02	6.28E+01
	9	270.50	7.48E+01	55.86			7.48E+01	5.59E+01
M	10	295.46	2.99E+02	50.14	4.17E+00	5.50E+00	2.95E+02	5.04E+01
m	11	300.61	8.22E+01	40.57			8.22E+01	4.06E+01
	12	327.80	7.60E+01	50.79			7.60E+01	5.08E+01
	13	338.46	1.86E+02	64.22	2.22E-01	4.54E+00	1.85E+02	6.44E+01
	14	352.11	4.74E+02	72.67	8.83E+00	4.91E+00	4.65E+02	7.28E+01
	15	452.93	2.30E+01	28.28			2.30E+01	2.83E+01
	16	463.92	9.51E+01	61.23			9.51E+01	6.12E+01
M	17	507.67	2.24E+01	23.15			2.24E+01	2.32E+01
m	18	510.98	1.42E+02	39.48	8.12E+01	5.49E+00	6.11E+01	3.99E+01
	19	583.27	2.77E+02	52.09	6.34E+00	3.74E+00	2.70E+02	5.22E+01
	20	609.54	3.76E+02	53.36	5.20E+00	3.69E+00	3.70E+02	5.35E+01
	21	635.84	1.86E+01	22.44			1.86E+01	2.24E+01
	22	693.25	4.13E+01	32.43			4.13E+01	3.24E+01
	23	727.84	7.87E+01	49.27			7.87E+01	4.93E+01
M	24	768.59	3.45E+01	28.50			3.45E+01	2.85E+01
m	25	773.29	3.29E+01	27.58			3.29E+01	2.76E+01
	26	784.49	5.40E+01	26.91			5.40E+01	2.69E+01
	27	794.48	3.73E+01	36.63			3.73E+01	3.66E+01
	28	869.67	2.65E+01	29.44			2.65E+01	2.94E+01
	29	911.58	2.07E+02	48.58	3.28E+00	2.53E+00	2.04E+02	4.86E+01
	30	934.46	4.68E+01	30.35			4.68E+01	3.03E+01
M	31	964.80	4.76E+01	24.37			4.76E+01	2.44E+01
m	32	969.16	1.21E+02	27.10			1.21E+02	2.71E+01
	33	1120.83	7.86E+01	41.98	2.28E+00	2.55E+00	7.63E+01	4.21E+01
	34	1197.41	6.09E+01	39.80			6.09E+01	3.98E+01
	35	1237.56	5.04E+01	42.83			5.04E+01	4.28E+01
	36	1461.29	8.44E+02	62.10	6.46E+00	2.33E+00	8.38E+02	6.21E+01
	37	1497.59	2.03E+01	14.24			2.03E+01	1.42E+01
	38	1509.59	2.08E+01	16.95			2.08E+01	1.69E+01
	39	1593.07	1.20E+01	14.21			1.20E+01	1.42E+01
	40	1621.73	1.27E+01	10.42			1.27E+01	1.04E+01
	41	1631.52	1.48E+01	13.00			1.48E+01	1.30E+01

Analysis Report for 1510087-15

CP4106S13-14

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	42	1657.22	7.03E+00	4.27			7.03E+00	4.27E+00
m	43	1661.88	1.01E+01	8.54			1.01E+01	8.54E+00
	44	1670.26	1.20E+01	12.00			1.20E+01	1.20E+01
	45	1701.58	1.20E+01	9.80			1.20E+01	9.80E+00
	46	1708.52	6.00E+00	7.35			6.00E+00	7.35E+00
M	47	1724.47	5.73E+00	4.47			5.73E+00	4.47E+00
m	48	1730.01	2.34E+01	12.81			2.34E+01	1.28E+01
	49	1740.84	1.17E+01	7.81			1.17E+01	7.81E+00
	50	1765.37	6.52E+01	21.07			6.52E+01	2.11E+01
	51	1819.86	9.33E+00	10.39			9.33E+00	1.04E+01
	52	1831.47	5.44E+00	7.78			5.44E+00	7.78E+00
	53	2103.66	1.87E+01	10.00			1.87E+01	1.00E+01
	54	2110.26	7.13E+00	6.18			7.13E+00	6.18E+00
	55	2314.21	6.14E+00	5.85			6.14E+00	5.85E+00
	56	2323.39	1.14E+01	11.34			1.14E+01	1.13E+01
	57	2360.86	6.50E+00	8.99			6.50E+00	8.99E+00
	58	2448.90	1.02E+01	12.76			1.02E+01	1.28E+01
	59	2615.08	1.35E+02	23.84	3.47E+00	1.48E+00	1.32E+02	2.39E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.964	1460.81 *	10.67	1.96E+01	2.24E+00
PM-146	0.338	453.90 *	39.94	5.87E-02	7.24E-02
		735.90	14.01		
		747.13	13.10		
ND-147	0.601	91.11 *	28.90	1.11E+00	7.71E-01
		531.02	13.10		
TL-208	0.875	583.14 *	30.22	1.09E+00	2.33E-01
		860.37	4.48		
		2614.66 *	35.85	1.20E+00	2.41E-01
BI-212	0.710	727.17 *	11.80	9.67E-01	6.12E-01
		1620.62	2.75		
PB-212	0.993	238.63 *	44.60	1.56E+00	1.77E-01
		300.09 *	3.41	1.81E+00	9.06E-01

: 00051

Analysis Report for 1510087-15
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Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.894	609.31 *	46.30	1.01E+00	1.72E-01
		1120.29 *	15.10	1.03E+00	5.76E-01
		1764.49 *	15.80	1.16E+00	3.87E-01
		2204.22	4.98		
PB-214	0.993	295.21 *	19.19	1.14E+00	2.15E-01
		351.92 *	37.19	1.05E+00	1.85E-01
RA-224	0.901	240.98 *	3.95	3.59E+00	1.08E+00
RA-226	0.995	186.21 *	3.28	2.50E+00	4.78E+00
AC-228	0.979	338.32 *	11.40	1.33E+00	4.74E-01
		911.07 *	27.70	1.28E+00	3.24E-01
		969.11 *	16.60	1.33E+00	3.19E-01
AM-243	0.989	74.67 *	66.00	2.63E-01	6.91E-02

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 Energy Tolerance : 1.000 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 11:20:36AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 2	77.40	2.11913E-01	6.81		
4	99.66	2.01193E-02	50.39	D-Esc	
5	128.74	5.22745E-02	29.16		
9	270.50	2.07639E-02	37.37		
12	327.80	2.11032E-02	33.43		
16	463.92	2.64259E-02	32.18	Tol.	SB-125
M 17	507.67	6.22373E-03	51.67		
m 18	510.98	1.69766E-02	32.61		
21	635.84	5.17949E-03	60.19	Tol.	SB-125
22	693.25	1.14765E-02	39.24		
M 24	768.59	9.59341E-03	41.27	Sum	
m 25	773.29	9.14329E-03	41.89		
26	784.49	1.49914E-02	24.93	Tol.	SB-127
27	794.48	1.03749E-02	49.04		
28	869.67	7.36111E-03	55.54		
30	934.46	1.29896E-02	32.45	Sum	
M 31	964.80	1.32303E-02	25.59	Tol.	EU-152

Analysis Report for 1510087-15
CP4106S13-14

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
34	1197.41	1.69156E-02	32.68		
35	1237.56	1.39881E-02	42.52	Tol.	CO-56
37	1497.59	5.63988E-03	35.07		
38	1509.59	5.78431E-03	40.70		
39	1593.07	3.33333E-03	59.22	D-Esc	
40	1621.73	3.52941E-03	40.99		
41	1631.52	4.11616E-03	43.87		
M	42	1657.22	1.95298E-03	30.38	
m	43	1661.88	2.79733E-03	42.42	
	44	1670.26	3.33333E-03	50.00	
	45	1701.58	3.33333E-03	40.82	
	46	1708.52	1.66667E-03	61.24	
M	47	1724.47	1.59195E-03	39.02	
m	48	1730.01	6.49172E-03	27.40	Sum
	49	1740.84	3.25855E-03	33.29	
	51	1819.86	2.59259E-03	55.67	
	52	1831.47	1.51235E-03	71.43	
	53	2103.66	5.19180E-03	26.75	S-Esc
	54	2110.26	1.97917E-03	43.40	
	55	2314.21	1.70635E-03	47.64	
	56	2323.39	3.16993E-03	49.67	
	57	2360.86	1.80556E-03	69.12	
	58	2448.90	2.82407E-03	62.74	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.96	1460.81	* 10.67	1.96E+01	2.24E+00
PM-146	0.33	453.90	* 39.94	5.87E-02	7.24E-02
		735.90	14.01		
		747.13	13.10		
ND-147	0.60	91.11	* 28.90	1.11E+00	7.71E-01

Analysis Report for 1510087-15
CP4106S13-14

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
ND-147	0.60	531.02	13.10		
TL-208	0.87	583.14 *	30.22	1.09E+00	2.33E-01
		860.37	4.48		
		2614.66 *	35.85	1.20E+00	2.41E-01
BI-212	0.71	727.17 *	11.80	9.67E-01	6.12E-01
		1620.62	2.75		
PB-212	0.99	238.63 *	44.60	1.56E+00	1.77E-01
		300.09 *	3.41	1.81E+00	9.06E-01
BI-214	0.89	609.31 *	46.30	1.01E+00	1.72E-01
		1120.29 *	15.10	1.03E+00	5.76E-01
		1764.49 *	15.80	1.16E+00	3.87E-01
		2204.22	4.98		
PB-214	0.99	295.21 *	19.19	1.14E+00	2.15E-01
		351.92 *	37.19	1.05E+00	1.85E-01
RA-224	0.90	240.98 *	3.95	3.59E+00	1.08E+00
RA-226	0.99	186.21 *	3.28	2.50E+00	4.78E+00
AC-228	0.97	338.32 *	11.40	1.33E+00	4.74E-01
		911.07 *	27.70	1.28E+00	3.24E-01
		969.11 *	16.60	1.33E+00	3.19E-01
AM-243	0.98	74.67 *	66.00	2.63E-01	6.91E-02

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.964	1.96E+01	2.24E+00	
PM-146	0.338	5.87E-02	7.24E-02	
ND-147	0.601	1.11E+00	7.71E-01	
TL-208	0.875	1.14E+00	1.67E-01	
BI-212	0.710	9.67E-01	6.12E-01	
PB-212	0.993	1.57E+00	1.74E-01	
BI-214	0.894	1.03E+00	1.52E-01	

Analysis Report for 1510087-15
CP4106S13-14

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
PB-214	0.993	1.09E+00	1.40E-01	
RA-224	0.901	3.59E+00	1.08E+00	
RA-226	0.995	2.50E+00	4.78E+00	
AC-228	0.979	1.31E+00	2.05E-01	
AM-243	0.989	2.63E-01	6.91E-02	

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1510087-15
CP4106S13-14

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 11:20:36AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	2	77.40	2.11913E-01	6.81		
	4	99.66	2.01193E-02	50.39	D-Esc	
	5	128.74	5.22745E-02	29.16		
	9	270.50	2.07639E-02	37.37		
	12	327.80	2.11032E-02	33.43		
	16	463.92	2.64259E-02	32.18	Tol.	SB-125
M	17	507.67	6.22373E-03	51.67		
m	18	510.98	1.69766E-02	32.61		
	21	635.84	5.17949E-03	60.19	Tol.	SB-125
	22	693.25	1.14765E-02	39.24		
M	24	768.59	9.59341E-03	41.27	Sum	
m	25	773.29	9.14329E-03	41.89		
	26	784.49	1.49914E-02	24.93	Tol.	SB-127
	27	794.48	1.03749E-02	49.04		
	28	869.67	7.36111E-03	55.54		
	30	934.46	1.29896E-02	32.45	Sum	
M	31	964.80	1.32303E-02	25.59	Tol.	EU-152
	34	1197.41	1.69156E-02	32.68		
	35	1237.56	1.39881E-02	42.52	Tol.	CO-56
	37	1497.59	5.63988E-03	35.07		
	38	1509.59	5.78431E-03	40.70		
	39	1593.07	3.33333E-03	59.22	D-Esc	
	40	1621.73	3.52941E-03	40.99		
	41	1631.52	4.11616E-03	43.87		
M	42	1657.22	1.95298E-03	30.38		
m	43	1661.88	2.79733E-03	42.42		
	44	1670.26	3.33333E-03	50.00		
	45	1701.58	3.33333E-03	40.82		
	46	1708.52	1.66667E-03	61.24		
M	47	1724.47	1.59195E-03	39.02		
m	48	1730.01	6.49172E-03	27.40	Sum	
	49	1740.84	3.25855E-03	33.29		
	51	1819.86	2.59259E-03	55.67		
	52	1831.47	1.51235E-03	71.43		
	53	2103.66	5.19180E-03	26.75	S-Esc	

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
54	2110.26	1.97917E-03	43.40		
55	2314.21	1.70635E-03	47.64		
56	2323.39	3.16993E-03	49.67		
57	2360.86	1.80556E-03	69.12		
58	2448.90	2.82407E-03	62.74		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-1.42E-01	7.89E-01	7.89E-01
+	NA-22	1274.54	99.94	-3.35E-03	7.26E-02	7.26E-02
+	NA-24	1368.53	99.99	-2.57E+14	1.41E+14	2.71E+14
		2754.09	99.86	-1.91E+13		1.41E+14
+	AL-26	1808.65	99.76	-2.01E-02	4.78E-02	4.78E-02
+	K-40	1460.81	* 10.67	1.96E+01	9.33E-01	9.33E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-6.91E-03	6.39E-02	6.39E-02
		78.34	96.00	2.60E-01		8.26E-02
+	SC-46	889.25	99.98	-3.47E-02	7.41E-02	7.41E-02
		1120.51	99.99	2.01E-01		1.46E-01
+	V-48	983.52	99.98	1.60E-01	2.88E-01	3.07E-01
		1312.10	97.50	6.95E-02		2.88E-01
+	CR-51	320.08	9.83	-2.36E-01	9.81E-01	9.81E-01
+	MN-54	834.83	99.97	-4.86E-02	7.05E-02	7.05E-02
+	CO-56	846.75	99.96	-2.76E-02	7.70E-02	7.70E-02
		1037.75	14.03	1.95E-01		6.75E-01
		1238.25	67.00	2.05E-01		2.12E-01
		1771.40	15.51	-6.08E-02		3.43E-01
		2598.48	16.90	-1.12E-01		1.90E-01
+	CO-57	122.06	85.51	-1.17E-03	5.26E-02	5.26E-02
		136.48	10.60	3.63E-01		4.70E-01
+	CO-58	810.76	99.40	-5.47E-03	8.74E-02	8.74E-02
+	FE-59	1099.22	56.50	5.81E-02	2.11E-01	2.11E-01

Analysis Report for 1510087-15
CP4106S13-14

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	FE-59	1291.56	43.20	5.26E-03	2.11E-01	2.98E-01
+	CO-60	1173.22	100.00	2.61E-02	7.05E-02	8.80E-02
		1332.49	100.00	-1.89E-02		7.05E-02
+	ZN-65	1115.52	50.75	7.19E-03	1.58E-01	1.58E-01
+	GA-67	93.31	35.70	4.06E+02	1.80E+02	1.80E+02
		208.95	2.24	2.04E+03		2.48E+03
		300.22	16.00	-7.23E+02		3.57E+02
+	SE-75	121.11	16.70	-4.56E-02	8.99E-02	3.00E-01
		136.00	59.20	9.78E-03		8.99E-02
		264.65	59.80	-4.75E-03		9.06E-02
		279.53	25.20	1.25E-01		2.44E-01
		400.65	11.40	-1.46E-01		4.76E-01
+	RB-82	776.52	13.00	-1.50E-01	1.20E+00	1.20E+00
+	RB-83	520.41	46.00	-1.06E-02	1.56E-01	1.56E-01
		529.64	30.30	-9.37E-02		2.29E-01
		552.65	16.40	9.02E-02		4.76E-01
+	KR-85	513.99	0.43	2.37E+00	1.94E+01	1.94E+01
+	SR-85	513.99	99.27	1.46E-02	1.20E-01	1.20E-01
+	Y-88	898.02	93.40	2.27E-03	5.70E-02	8.59E-02
		1836.01	99.38	-1.46E-02		5.70E-02
+	NB-93M	16.57	9.43	-3.41E+01	6.25E+01	6.25E+01
+	NB-94	702.63	100.00	3.24E-02	6.64E-02	6.64E-02
		871.10	100.00	2.07E-02		6.83E-02
+	NB-95	765.79	99.81	-1.16E-02	1.44E-01	1.44E-01
+	NB-95M	235.69	25.00	-1.26E+03	1.30E+02	1.30E+02
+	ZR-95	724.18	43.70	-3.18E-01	1.89E-01	2.29E-01
		756.72	55.30	6.59E-02		1.89E-01
+	MO-99	181.06	6.20	4.96E+02	1.78E+03	2.89E+03
		739.58	12.80	-1.07E+03		1.78E+03
		778.00	4.50	-7.22E+03		4.95E+03
+	RU-103	497.08	89.00	-7.27E-03	1.12E-01	1.12E-01
+	RU-106	621.84	9.80	2.44E-01	6.78E-01	6.78E-01
+	AG-108M	433.93	89.90	-3.81E-03	5.81E-02	5.81E-02
		614.37	90.40	-6.33E-03		7.11E-02
		722.95	90.50	4.06E-03		7.19E-02
+	CD-109	88.03	3.72	1.09E+00	1.75E+00	1.75E+00
+	AG-110M	657.75	93.14	-7.87E-03	7.22E-02	7.22E-02
		677.61	10.53	-1.93E-01		5.65E-01
		706.67	16.46	-1.18E-01		4.42E-01
		763.93	21.98	-1.91E-02		3.44E-01
		884.67	71.63	1.70E-02		1.01E-01
		1384.27	23.94	-1.02E-01		2.46E-01
+	CD-113M	263.70	0.02	-1.35E+01	1.97E+02	1.97E+02
+	SN-113	255.12	1.93	6.88E-01	8.72E-02	2.97E+00
		391.69	64.90	2.03E-02		8.72E-02
+	TE123M	159.00	84.10	-1.13E-02	6.35E-02	6.35E-02
+	SB-124	602.71	97.87	-2.53E-02	8.54E-02	8.54E-02
		645.85	7.26	-1.22E-01		1.20E+00

Analysis Report for 1510087-15
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-124	722.78	11.10	4.82E-02	8.54E-02	8.54E-01
		1691.02	49.00	-5.72E-02		1.23E-01
+	I-125	35.49	6.49	1.70E-01	2.89E+00	2.89E+00
+	SB-125	176.33	6.89	5.16E-02	1.93E-01	6.98E-01
		427.89	29.33	-3.22E-02		1.93E-01
		463.38	10.35	7.31E-01		6.87E-01
		600.56	17.80	-1.86E-01		3.25E-01
		635.90	11.32	3.42E-02		5.49E-01
+	SB-126	414.70	83.30	1.45E-02	4.20E-01	4.55E-01
		666.33	99.60	1.71E-01		4.23E-01
		695.00	99.60	2.27E-01		4.20E-01
		720.50	53.80	9.65E-02		7.21E-01
+	SN-126	87.57	37.00	1.05E-01	1.67E-01	1.67E-01
+	SB-127	473.00	25.00	1.65E+01	6.00E+01	7.81E+01
		685.20	35.70	3.05E+01		6.00E+01
		783.80	14.70	1.84E+02		1.81E+02
+	I-129	29.78	57.00	8.25E-02	4.38E-01	4.38E-01
		33.60	13.20	-1.57E-01		1.16E+00
		39.58	7.52	-5.51E-02		1.30E+00
+	I-131	284.30	6.05	-7.99E+00	9.49E-01	1.21E+01
		364.48	81.20	1.88E-01		9.49E-01
		636.97	7.26	-3.17E-01		1.39E+01
		722.89	1.80	3.43E+00		6.07E+01
+	TE-132	49.72	13.10	-8.36E+02	5.60E+01	5.60E+02
		228.16	88.00	-2.27E+01		5.60E+01
+	BA-133	81.00	33.00	-1.14E+00	8.68E-02	1.65E-01
		302.84	17.80	-1.16E-03		2.91E-01
		356.01	60.00	1.72E-02		8.68E-02
+	I-133	529.87	86.30	-5.92E+09	1.45E+10	1.45E+10
+	XE-133	81.00	38.00	-7.46E+01	1.08E+01	1.08E+01
+	CS-134	563.23	8.38	-4.04E-02	6.27E-02	7.46E-01
		569.32	15.43	6.05E-02		4.15E-01
		604.70	97.60	-1.25E-02		6.27E-02
		795.84	85.40	4.12E-02		8.89E-02
		801.93	8.73	1.91E-01		7.75E-01
+	CS-135	268.24	16.00	1.72E-01	3.27E-01	3.27E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	3.01E+00	3.13E-01	3.61E+00
		163.89	4.61	-2.03E+00		5.47E+00
		176.55	13.56	1.44E-01		1.95E+00
		273.65	12.66	-1.35E+00		2.15E+00
		340.57	48.50	9.95E-01		7.69E-01
		818.50	99.70	-2.72E-01		3.13E-01
		1048.07	79.60	8.03E-02		5.08E-01
		1235.34	19.70	-1.47E-01		2.83E+00
+	CS-137	661.65	85.12	-2.49E-02	7.65E-02	7.65E-02
+	LA-138	788.74	34.00	4.68E-02	8.17E-02	2.04E-01

Analysis Report for 1510087-15
CP4106S13-14

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-138	1435.80	66.00	2.96E-03	8.17E-02	8.17E-02
+	CE-139	165.85	80.35	1.98E-03	6.59E-02	6.59E-02
+	BA-140	162.64	6.70	1.04E+00	1.30E+00	4.00E+00
		304.84	4.50	-1.73E+00		5.82E+00
		423.70	3.20	3.86E+00		1.06E+01
		437.55	2.00	-4.01E+00		1.58E+01
		537.32	25.00	3.46E-01		1.30E+00
+	LA-140	328.77	20.50	1.28E+00	4.17E-01	1.53E+00
		487.03	45.50	1.55E-01		7.25E-01
		815.85	23.50	2.24E-01		1.53E+00
		1596.49	95.49	-1.23E-02		4.17E-01
+	CE-141	145.44	48.40	6.49E-02	1.91E-01	1.91E-01
+	CE-143	57.36	11.80	-5.62E+06	2.51E+06	7.55E+06
		293.26	42.00	6.27E+06		2.51E+06
		664.55	5.20	8.93E+06		1.92E+07
+	CE-144	133.54	10.80	-3.52E-02	4.35E-01	4.35E-01
+	PM-144	476.78	42.00	2.11E-02	6.75E-02	1.41E-01
		618.01	98.60	1.43E-02		6.75E-02
		696.49	99.49	-2.25E-03		6.80E-02
+	PM-145	36.85	21.70	8.04E-02	2.84E-01	5.37E-01
		37.36	39.70	6.65E-03		2.84E-01
		42.30	15.10	-2.89E-01		5.72E-01
		72.40	2.31	-2.10E+00		2.98E+00
+	PM-146	453.90	* 39.94	5.87E-02	1.19E-01	1.19E-01
		735.90	14.01	6.71E-02		4.60E-01
		747.13	13.10	1.44E-01		4.88E-01
+	ND-147	91.11	* 28.90	1.11E+00	3.32E+00	3.35E+00
		531.02	13.10	-2.33E-01		3.32E+00
+	PM-149	285.90	3.10	-1.87E+04	4.02E+04	4.02E+04
+	EU-152	121.78	20.50	-4.52E-03	2.02E-01	2.02E-01
		244.69	5.40	-1.30E+00		9.30E-01
		344.27	19.13	8.55E-03		2.57E-01
		778.89	9.20	-6.26E-01		6.48E-01
		964.01	10.40	-1.68E+00		8.63E-01
		1085.78	7.22	-3.24E-01		9.22E-01
		1112.02	9.60	2.91E-01		7.85E-01
		1407.95	14.94	7.08E-02		4.39E-01
+	GD-153	97.43	31.30	-4.26E-02	1.60E-01	1.60E-01
		103.18	22.20	3.22E-02		2.16E-01
+	EU-154	123.07	40.50	4.54E-03	1.04E-01	1.04E-01
		723.30	19.70	1.88E-02		3.33E-01
		873.19	11.50	-6.45E-02		5.51E-01
		996.32	10.30	-1.21E-01		6.72E-01
		1004.76	17.90	8.57E-03		3.96E-01
		1274.45	35.50	-9.27E-03		2.01E-01
+	EU-155	86.50	30.90	1.66E-01	2.02E-01	2.02E-01
		105.30	20.70	-6.82E-02		2.13E-01
+	EU-156	811.77	10.40	9.46E-01	2.76E+00	2.76E+00
		1153.47	7.20	2.07E+00		4.93E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-156	1230.71	8.90	-1.04E-01	2.76E+00	4.33E+00
+	HO-166M	184.41	72.60	1.75E-01	8.43E-02	8.43E-02
		280.45	29.60	1.66E-02		1.63E-01
		410.94	11.10	-1.68E-01		5.24E-01
		711.69	54.10	8.08E-02		1.27E-01
+	TM-171	66.72	0.14	-8.66E+01	4.50E+01	4.50E+01
+	HF-172	81.75	4.52	-1.47E+00	4.12E-01	1.21E+00
		125.81	11.30	-9.34E-02		4.12E-01
+	LU-172	181.53	20.60	1.96E+00	3.35E+00	6.87E+00
		810.06	16.63	-4.80E+00		1.10E+01
		912.12	15.25	7.06E+01		2.63E+01
		1093.66	62.50	-7.67E-01		3.35E+00
+	LU-173	100.72	5.24	7.89E-01	2.70E-01	9.16E-01
		272.11	21.20	2.67E-01		2.70E-01
+	HF-175	343.40	84.00	-4.48E-04	7.98E-02	7.98E-02
+	LU-176	88.34	13.30	1.03E+00	4.87E-02	4.75E-01
		201.83	86.00	-1.44E-02		5.80E-02
		306.78	94.00	1.35E-02		4.87E-02
+	TA-182	67.75	41.20	-1.93E-02	1.79E-01	1.79E-01
		1121.30	34.90	6.35E-01		3.98E-01
		1189.05	16.23	2.17E-02		5.83E-01
		1221.41	26.98	1.15E-01		3.83E-01
		1231.02	11.44	-2.21E-02		9.22E-01
+	IR-192	308.46	29.68	2.29E-02	1.67E-01	2.06E-01
		468.07	48.10	-6.56E-02		1.67E-01
+	HG-203	279.19	77.30	7.55E-02	1.11E-01	1.11E-01
+	BI-207	569.67	97.72	8.03E-03	6.43E-02	6.43E-02
		1063.62	74.90	-1.65E-02		8.24E-02
+	TL-208	583.14	* 30.22	1.09E+00	1.23E-01	2.80E-01
		860.37	4.48	1.62E+00		1.75E+00
		2614.66	* 35.85	1.20E+00		1.23E-01
+	BI-210M	262.00	45.00	-9.79E-03	1.01E-01	1.01E-01
		300.00	23.00	-4.78E-01		2.36E-01
+	PB-210	46.50	4.25	1.18E+00	1.92E+00	1.92E+00
+	PB-211	404.84	2.90	5.54E-01	1.66E+00	1.66E+00
		831.96	2.90	8.63E-02		2.28E+00
+	BI-212	727.17	* 11.80	9.67E-01	9.63E-01	9.63E-01
		1620.62	2.75	4.87E-01		1.90E+00
+	PB-212	238.63	* 44.60	1.56E+00	2.25E-01	2.25E-01
		300.09	* 3.41	1.81E+00		2.61E+00
+	BI-214	609.31	* 46.30	1.01E+00	1.74E-01	1.74E-01
		1120.29	* 15.10	1.03E+00		8.89E-01
		1764.49	* 15.80	1.16E+00		4.46E-01
		2204.22	4.98	1.17E+00		1.69E+00
+	PB-214	295.21	* 19.19	1.14E+00	2.24E-01	4.60E-01
		351.92	* 37.19	1.05E+00		2.24E-01
+	RN-219	401.80	6.50	-2.48E-01	7.09E-01	7.09E-01
+	RA-223	323.87	3.88	1.72E-01	1.16E+00	1.16E+00

Analysis Report for 1510087-15
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98	*	3.95	3.59E+00	2.52E+00	2.52E+00
+	RA-225	40.00		31.00	-6.03E-02	1.42E+00	1.42E+00
+	RA-226	186.21	*	3.28	2.50E+00	2.25E+00	2.25E+00
+	TH-227	50.10		8.40	-1.22E+00	5.28E-01	8.16E-01
		236.00		11.50	-5.12E+00		5.28E-01
		256.20		6.30	-2.28E-01		7.33E-01
+	AC-228	338.32	*	11.40	1.33E+00	4.23E-01	7.07E-01
		911.07	*	27.70	1.28E+00		4.23E-01
		969.11	*	16.60	1.33E+00		6.16E-01
+	TH-230	48.44		16.90	-6.16E-02	4.47E-01	4.47E-01
		62.85		4.60	2.37E+00		1.51E+00
		67.67		0.37	-1.76E+00		1.63E+01
+	PA-231	283.67		1.60	-6.12E-01	2.23E+00	2.77E+00
		302.67		2.30	-8.91E-03		2.23E+00
+	TH-231	25.64		14.70	3.30E-01	8.98E-01	3.50E+00
		84.21		6.40	-1.13E+00		8.98E-01
+	PA-233	311.98		38.60	-4.00E-02	2.69E-01	2.69E-01
+	PA-234	131.20		20.40	-3.97E-03	2.24E-01	2.24E-01
		733.99		8.80	2.03E-01		7.65E-01
		946.00		12.00	-1.41E-01		5.54E-01
+	PA-234M	1001.03		0.92	2.62E+00	8.11E+00	8.11E+00
+	TH-234	63.29		3.80	1.80E+00	1.80E+00	1.80E+00
+	U-235	143.76		10.50	2.16E-02	4.35E-01	4.35E-01
		163.35		4.70	-3.54E-01		9.54E-01
		205.31		4.70	-8.46E-01		1.05E+00
+	NP-237	86.50		12.60	4.02E-01	4.89E-01	4.89E-01
+	NP-239	106.10		22.70	-9.39E+02	2.94E+03	2.94E+03
		228.18		10.70	-2.70E+03		6.65E+03
		277.60		14.10	2.52E+03		5.60E+03
+	AM-241	59.54		35.90	-1.51E-01	1.74E-01	1.74E-01
+	AM-243	74.67	*	66.00	2.63E-01	1.57E-01	1.57E-01
+	CM-243	209.75		3.29	2.39E-01	3.70E-01	1.58E+00
		228.14		10.60	-1.79E-01		4.40E-01
		277.60		14.00	1.67E-01		3.70E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1510087-15

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NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	7.89E-01	7.89E-01	-1.42E-01	3.74E-01
NA-22	1274.54	99.94	7.26E-02	7.26E-02	-3.35E-03	3.32E-02
NA-24	1368.53	99.99	2.71E+14	1.41E+14	-2.57E+14	1.17E+14
	2754.09	99.86	1.41E+14		-1.91E+13	4.45E+13
AL-26	1808.65	99.76	4.78E-02	4.78E-02	-2.01E-02	2.00E-02
+ K-40	1460.81	* 10.67	9.33E-01	9.33E-01	1.96E+01	4.35E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	6.39E-02	6.39E-02	-6.91E-03	3.13E-02
	78.34	96.00	8.26E-02		2.60E-01	4.07E-02
SC-46	889.25	99.98	7.41E-02	7.41E-02	-3.47E-02	3.40E-02
	1120.51	99.99	1.46E-01		2.01E-01	6.94E-02
V-48	983.52	99.98	3.07E-01	2.88E-01	1.60E-01	1.43E-01
	1312.10	97.50	2.88E-01		6.95E-02	1.31E-01
CR-51	320.08	9.83	9.81E-01	9.81E-01	-2.36E-01	4.66E-01
MN-54	834.83	99.97	7.05E-02	7.05E-02	-4.86E-02	3.29E-02
CO-56	846.75	99.96	7.70E-02	7.70E-02	-2.76E-02	3.55E-02
	1037.75	14.03	6.75E-01		1.95E-01	3.13E-01
	1238.25	67.00	2.12E-01		2.05E-01	1.00E-01
	1771.40	15.51	3.43E-01		-6.08E-02	1.39E-01
	2598.48	16.90	1.90E-01		-1.12E-01	6.00E-02
CO-57	122.06	85.51	5.26E-02	5.26E-02	-1.17E-03	2.55E-02
	136.48	10.60	4.70E-01		3.63E-01	2.28E-01
CO-58	810.76	99.40	8.74E-02	8.74E-02	-5.47E-03	4.08E-02
FE-59	1099.22	56.50	2.11E-01	2.11E-01	5.81E-02	9.75E-02
	1291.56	43.20	2.98E-01		5.26E-03	1.37E-01
CO-60	1173.22	100.00	8.80E-02	7.05E-02	2.61E-02	4.11E-02
	1332.49	100.00	7.05E-02		-1.89E-02	3.20E-02
ZN-65	1115.52	50.75	1.58E-01	1.58E-01	7.19E-03	7.32E-02
GA-67	93.31	35.70	1.80E+02	1.80E+02	4.06E+02	8.85E+01
	208.95	2.24	2.48E+03		2.04E+03	1.20E+03
	300.22	16.00	3.57E+02		-7.23E+02	1.72E+02
SE-75	121.11	16.70	3.00E-01	8.99E-02	-4.56E-02	1.46E-01
	136.00	59.20	8.99E-02		9.78E-03	4.37E-02
	264.65	59.80	9.06E-02		-4.75E-03	4.34E-02
	279.53	25.20	2.44E-01		1.25E-01	1.17E-01
	400.65	11.40	4.76E-01		-1.46E-01	2.25E-01
RB-82	776.52	13.00	1.20E+00	1.20E+00	-1.50E-01	5.59E-01
RB-83	520.41	46.00	1.56E-01	1.56E-01	-1.06E-02	7.36E-02
	529.64	30.30	2.29E-01		-9.37E-02	1.08E-01
	552.65	16.40	4.76E-01		9.02E-02	2.26E-01
KR-85	513.99	0.43	1.94E+01	1.94E+01	2.37E+00	9.35E+00
SR-85	513.99	99.27	1.20E-01	1.20E-01	1.46E-02	5.77E-02

Analysis Report for 1510087-15
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
Y-88	898.02	93.40	8.59E-02	5.70E-02	2.27E-03	3.99E-02
	1836.01	99.38	5.70E-02		-1.46E-02	2.36E-02
NB-93M	16.57	9.43	6.25E+01	6.25E+01	-3.41E+01	2.90E+01
NB-94	702.63	100.00	6.64E-02	6.64E-02	3.24E-02	3.13E-02
	871.10	100.00	6.83E-02		2.07E-02	3.19E-02
NB-95	765.79	99.81	1.44E-01	1.44E-01	-1.16E-02	6.82E-02
NB-95M	235.69	25.00	1.30E+02	1.30E+02	-1.26E+03	6.33E+01
ZR-95	724.18	43.70	2.29E-01	1.89E-01	-3.18E-01	1.08E-01
	756.72	55.30	1.89E-01		6.59E-02	8.92E-02
MO-99	181.06	6.20	2.89E+03	1.78E+03	4.96E+02	1.40E+03
	739.58	12.80	1.78E+03		-1.07E+03	8.28E+02
	778.00	4.50	4.95E+03		-7.22E+03	2.30E+03
RU-103	497.08	89.00	1.12E-01	1.12E-01	-7.27E-03	5.30E-02
RU-106	621.84	9.80	6.78E-01	6.78E-01	2.44E-01	3.20E-01
AG-108M	433.93	89.90	5.81E-02	5.81E-02	-3.81E-03	2.76E-02
	614.37	90.40	7.11E-02		-6.33E-03	3.37E-02
	722.95	90.50	7.19E-02		4.06E-03	3.38E-02
CD-109	88.03	3.72	1.75E+00	1.75E+00	1.09E+00	8.57E-01
AG-110M	657.75	93.14	7.22E-02	7.22E-02	-7.87E-03	3.40E-02
	677.61	10.53	5.65E-01		-1.93E-01	2.63E-01
	706.67	16.46	4.42E-01		-1.18E-01	2.08E-01
	763.93	21.98	3.44E-01		-1.91E-02	1.62E-01
	884.67	71.63	1.01E-01		1.70E-02	4.71E-02
	1384.27	23.94	2.46E-01		-1.02E-01	1.08E-01
CD-113M	263.70	0.02	1.97E+02	1.97E+02	-1.35E+01	9.46E+01
SN-113	255.12	1.93	2.97E+00	8.72E-02	6.88E-01	1.43E+00
	391.69	64.90	8.72E-02		2.03E-02	4.13E-02
TE123M	159.00	84.10	6.35E-02	6.35E-02	-1.13E-02	3.08E-02
SB-124	602.71	97.87	8.54E-02	8.54E-02	-2.53E-02	4.02E-02
	645.85	7.26	1.20E+00		-1.22E-01	5.65E-01
	722.78	11.10	8.54E-01		4.82E-02	4.01E-01
	1691.02	49.00	1.23E-01		-5.72E-02	5.03E-02
I-125	35.49	6.49	2.89E+00	2.89E+00	1.70E-01	1.40E+00
SB-125	176.33	6.89	6.98E-01	1.93E-01	5.16E-02	3.38E-01
	427.89	29.33	1.93E-01		-3.22E-02	9.21E-02
	463.38	10.35	6.87E-01		7.31E-01	3.30E-01
	600.56	17.80	3.25E-01		-1.86E-01	1.53E-01
	635.90	11.32	5.49E-01		3.42E-02	2.59E-01
SB-126	414.70	83.30	4.55E-01	4.20E-01	1.45E-02	2.18E-01
	666.33	99.60	4.23E-01		1.71E-01	2.00E-01
	695.00	99.60	4.20E-01		2.27E-01	1.98E-01
	720.50	53.80	7.21E-01		9.65E-02	3.38E-01
SN-126	87.57	37.00	1.67E-01	1.67E-01	1.05E-01	8.21E-02
SB-127	473.00	25.00	7.81E+01	6.00E+01	1.65E+01	3.70E+01
	685.20	35.70	6.00E+01		3.05E+01	2.81E+01
	783.80	14.70	1.81E+02		1.84E+02	8.56E+01
I-129	29.78	57.00	4.38E-01	4.38E-01	8.25E-02	2.12E-01
	33.60	13.20	1.16E+00		-1.57E-01	5.60E-01
	39.58	7.52	1.30E+00		-5.51E-02	6.32E-01
I-131	284.30	6.05	1.21E+01	9.49E-01	-7.99E+00	5.75E+00
	364.48	81.20	9.49E-01		1.88E-01	4.50E-01
	636.97	7.26	1.39E+01		-3.17E-01	6.52E+00
	722.89	1.80	6.07E+01		3.43E+00	2.86E+01

Analysis Report for 1510087-15
CP4106S13-14

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TE-132	49.72	13.10	5.60E+02	5.60E+01	-8.36E+02	2.73E+02
	228.16	88.00	5.60E+01		-2.27E+01	2.70E+01
BA-133	81.00	33.00	1.65E-01	8.68E-02	-1.14E+00	8.06E-02
	302.84	17.80	2.91E-01		-1.16E-03	1.40E-01
	356.01	60.00	8.68E-02		1.72E-02	4.15E-02
I-133	529.87	86.30	1.45E+10	1.45E+10	-5.92E+09	6.83E+09
XE-133	81.00	38.00	1.08E+01	1.08E+01	-7.46E+01	5.27E+00
CS-134	563.23	8.38	7.46E-01	6.27E-02	-4.04E-02	3.53E-01
	569.32	15.43	4.15E-01		6.05E-02	1.97E-01
	604.70	97.60	6.27E-02		-1.25E-02	2.96E-02
	795.84	85.40	8.89E-02		4.12E-02	4.19E-02
	801.93	8.73	7.75E-01		1.91E-01	3.62E-01
CS-135	268.24	16.00	3.27E-01	3.27E-01	1.72E-01	1.58E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.61E+00	3.13E-01	3.01E+00	1.75E+00
	163.89	4.61	5.47E+00		-2.03E+00	2.65E+00
	176.55	13.56	1.95E+00		1.44E-01	9.43E-01
	273.65	12.66	2.15E+00		-1.35E+00	1.03E+00
	340.57	48.50	7.69E-01		9.95E-01	3.72E-01
	818.50	99.70	3.13E-01		-2.72E-01	1.44E-01
	1048.07	79.60	5.08E-01		8.03E-02	2.36E-01
	1235.34	19.70	2.83E+00		-1.47E-01	1.33E+00
CS-137	661.65	85.12	7.65E-02	7.65E-02	-2.49E-02	3.61E-02
LA-138	788.74	34.00	2.04E-01	8.17E-02	4.68E-02	9.58E-02
	1435.80	66.00	8.17E-02		2.96E-03	3.58E-02
CE-139	165.85	80.35	6.59E-02	6.59E-02	1.98E-03	3.19E-02
BA-140	162.64	6.70	4.00E+00	1.30E+00	1.04E+00	1.94E+00
	304.84	4.50	5.82E+00		-1.73E+00	2.78E+00
	423.70	3.20	1.06E+01		3.86E+00	5.07E+00
	437.55	2.00	1.58E+01		-4.01E+00	7.50E+00
	537.32	25.00	1.30E+00		3.46E-01	6.13E-01
LA-140	328.77	20.50	1.53E+00	4.17E-01	1.28E+00	7.34E-01
	487.03	45.50	7.25E-01		1.55E-01	3.44E-01
	815.85	23.50	1.53E+00		2.24E-01	7.12E-01
	1596.49	95.49	4.17E-01		-1.23E-02	1.86E-01
CE-141	145.44	48.40	1.91E-01	1.91E-01	6.49E-02	9.30E-02
CE-143	57.36	11.80	7.55E+06	2.51E+06	-5.62E+06	3.68E+06
	293.26	42.00	2.51E+06		6.27E+06	1.22E+06
	664.55	5.20	1.92E+07		8.93E+06	9.08E+06
CE-144	133.54	10.80	4.35E-01	4.35E-01	-3.52E-02	2.11E-01
PM-144	476.78	42.00	1.41E-01	6.75E-02	2.11E-02	6.68E-02
	618.01	98.60	6.75E-02		1.43E-02	3.19E-02
	696.49	99.49	6.80E-02		-2.25E-03	3.20E-02
PM-145	36.85	21.70	5.37E-01	2.84E-01	8.04E-02	2.61E-01
	37.36	39.70	2.84E-01		6.65E-03	1.38E-01
	42.30	15.10	5.72E-01		-2.89E-01	2.78E-01
	72.40	2.31	2.98E+00		-2.10E+00	1.46E+00
+ PM-146	453.90	* 39.94	1.19E-01	1.19E-01	5.87E-02	5.58E-02
	735.90	14.01	4.60E-01		6.71E-02	2.16E-01
	747.13	13.10	4.88E-01		1.44E-01	2.29E-01
+ ND-147	91.11	* 28.90	3.35E+00	3.32E+00	1.11E+00	1.66E+00

Analysis Report for 1510087-15
CP4106S13-14

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
ND-147	531.02	13.10	3.32E+00	3.32E+00	-2.33E-01	1.57E+00
PM-149	285.90	3.10	4.02E+04	4.02E+04	-1.87E+04	1.92E+04
EU-152	121.78	20.50	2.02E-01	2.02E-01	-4.52E-03	9.82E-02
	244.69	5.40	9.30E-01		-1.30E+00	4.49E-01
	344.27	19.13	2.57E-01		8.55E-03	1.23E-01
	778.89	9.20	6.48E-01		-6.26E-01	3.01E-01
	964.01	10.40	8.63E-01		-1.68E+00	4.08E-01
	1085.78	7.22	9.22E-01		-3.24E-01	4.23E-01
	1112.02	9.60	7.85E-01		2.91E-01	3.63E-01
	1407.95	14.94	4.39E-01		7.08E-02	1.97E-01
GD-153	97.43	31.30	1.60E-01	1.60E-01	-4.26E-02	7.79E-02
	103.18	22.20	2.16E-01		3.22E-02	1.05E-01
EU-154	123.07	40.50	1.04E-01	1.04E-01	4.54E-03	5.04E-02
	723.30	19.70	3.33E-01		1.88E-02	1.56E-01
	873.19	11.50	5.51E-01		-6.45E-02	2.56E-01
	996.32	10.30	6.72E-01		-1.21E-01	3.11E-01
	1004.76	17.90	3.96E-01		8.57E-03	1.84E-01
	1274.45	35.50	2.01E-01		-9.27E-03	9.18E-02
EU-155	86.50	30.90	2.02E-01	2.02E-01	1.66E-01	9.91E-02
	105.30	20.70	2.13E-01		-6.82E-02	1.04E-01
EU-156	811.77	10.40	2.76E+00	2.76E+00	9.46E-01	1.29E+00
	1153.47	7.20	4.93E+00		2.07E+00	2.29E+00
	1230.71	8.90	4.33E+00		-1.04E-01	2.01E+00
HO-166M	184.41	72.60	8.43E-02	8.43E-02	1.75E-01	4.11E-02
	280.45	29.60	1.63E-01		1.66E-02	7.81E-02
	410.94	11.10	5.24E-01		-1.68E-01	2.50E-01
	711.69	54.10	1.27E-01		8.08E-02	5.97E-02
TM-171	66.72	0.14	4.50E+01	4.50E+01	-8.66E+01	2.20E+01
HF-172	81.75	4.52	1.21E+00	4.12E-01	-1.47E+00	5.93E-01
	125.81	11.30	4.12E-01		-9.34E-02	2.00E-01
LU-172	181.53	20.60	6.87E+00	3.35E+00	1.96E+00	3.33E+00
	810.06	16.63	1.10E+01		-4.80E+00	5.14E+00
	912.12	15.25	2.63E+01		7.06E+01	1.27E+01
	1093.66	62.50	3.35E+00		-7.67E-01	1.54E+00
LU-173	100.72	5.24	9.16E-01	2.70E-01	7.89E-01	4.46E-01
	272.11	21.20	2.70E-01		2.67E-01	1.30E-01
HF-175	343.40	84.00	7.98E-02	7.98E-02	-4.48E-04	3.81E-02
LU-176	88.34	13.30	4.75E-01	4.87E-02	1.03E+00	2.33E-01
	201.83	86.00	5.80E-02		-1.44E-02	2.81E-02
	306.78	94.00	4.87E-02		1.35E-02	2.33E-02
TA-182	67.75	41.20	1.79E-01	1.79E-01	-1.93E-02	8.74E-02
	1121.30	34.90	3.98E-01		6.35E-01	1.90E-01
	1189.05	16.23	5.83E-01		2.17E-02	2.70E-01
	1221.41	26.98	3.83E-01		1.15E-01	1.78E-01
	1231.02	11.44	9.22E-01		-2.21E-02	4.29E-01
IR-192	308.46	29.68	2.06E-01	1.67E-01	2.29E-02	9.82E-02
	468.07	48.10	1.67E-01		-6.56E-02	7.94E-02
HG-203	279.19	77.30	1.11E-01	1.11E-01	7.55E-02	5.32E-02
BI-207	569.67	97.72	6.43E-02	6.43E-02	8.03E-03	3.05E-02
	1063.62	74.90	8.24E-02		-1.65E-02	3.76E-02
+ TL-208	583.14	* 30.22	2.80E-01	1.23E-01	1.09E+00	1.35E-01
	860.37	* 4.48	1.75E+00		1.62E+00	8.25E-01
	2614.66	* 35.85	1.23E-01		1.20E+00	4.93E-02

Analysis Report for 1510087-15
CP4106S13-14

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BI-210M	262.00	45.00	1.01E-01	1.01E-01	-9.79E-03	4.82E-02
	300.00	23.00	2.36E-01		-4.78E-01	1.14E-01
PB-210	46.50	4.25	1.92E+00	1.92E+00	1.18E+00	9.36E-01
PB-211	404.84	2.90	1.66E+00	1.66E+00	5.54E-01	7.88E-01
	831.96	2.90	2.28E+00		8.63E-02	1.07E+00
+ BI-212	727.17 *	11.80	9.63E-01	9.63E-01	9.67E-01	4.65E-01
	1620.62	2.75	1.90E+00		4.87E-01	8.16E-01
+ PB-212	238.63 *	44.60	2.25E-01	2.25E-01	1.56E+00	1.10E-01
	300.09 *	3.41	2.61E+00		1.81E+00	1.27E+00
+ BI-214	609.31 *	46.30	1.74E-01	1.74E-01	1.01E+00	8.33E-02
	1120.29 *	15.10	8.89E-01		1.03E+00	4.26E-01
	1764.49 *	15.80	4.46E-01		1.16E+00	1.99E-01
	2204.22 *	4.98	1.69E+00		1.17E+00	7.62E-01
+ PB-214	295.21 *	19.19	4.60E-01	2.24E-01	1.14E+00	2.25E-01
	351.92 *	37.19	2.24E-01		1.05E+00	1.09E-01
RN-219	401.80	6.50	7.09E-01	7.09E-01	-2.48E-01	3.35E-01
RA-223	323.87	3.88	1.16E+00	1.16E+00	1.72E-01	5.52E-01
+ RA-224	240.98 *	3.95	2.52E+00	2.52E+00	3.59E+00	1.24E+00
RA-225	40.00	31.00	1.42E+00	1.42E+00	-6.03E-02	6.92E-01
+ RA-226	186.21 *	3.28	2.25E+00	2.25E+00	2.50E+00	1.10E+00
TH-227	50.10	8.40	8.16E-01	5.28E-01	-1.22E+00	3.97E-01
	236.00	11.50	5.28E-01		-5.12E+00	2.56E-01
	256.20	6.30	7.33E-01		-2.28E-01	3.52E-01
+ AC-228	338.32 *	11.40	7.07E-01	4.23E-01	1.33E+00	3.44E-01
	911.07 *	27.70	4.23E-01		1.28E+00	2.03E-01
	969.11 *	16.60	6.16E-01		1.33E+00	2.93E-01
TH-230	48.44	16.90	4.47E-01	4.47E-01	-6.16E-02	2.18E-01
	62.85	4.60	1.51E+00		2.37E+00	7.41E-01
	67.67	0.37	1.63E+01		-1.76E+00	7.99E+00
PA-231	283.67	1.60	2.77E+00	2.23E+00	-6.12E-01	1.32E+00
	302.67	2.30	2.23E+00		-8.91E-03	1.07E+00
TH-231	25.64	14.70	3.50E+00	8.98E-01	3.30E-01	1.70E+00
	84.21	6.40	8.98E-01		-1.13E+00	4.40E-01
PA-233	311.98	38.60	2.69E-01	2.69E-01	-4.00E-02	1.28E-01
PA-234	131.20	20.40	2.24E-01	2.24E-01	-3.97E-03	1.09E-01
	733.99	8.80	7.65E-01		2.03E-01	3.60E-01
	946.00	12.00	5.54E-01		-1.41E-01	2.57E-01
PA-234M	1001.03	0.92	8.11E+00	8.11E+00	2.62E+00	3.78E+00
TH-234	63.29	3.80	1.80E+00	1.80E+00	1.80E+00	8.84E-01
U-235	143.76	10.50	4.35E-01	4.35E-01	2.16E-02	2.11E-01
	163.35	4.70	9.54E-01		-3.54E-01	4.62E-01
	205.31	4.70	1.05E+00		-8.46E-01	5.10E-01
NP-237	86.50	12.60	4.89E-01	4.89E-01	4.02E-01	2.40E-01
NP-239	106.10	22.70	2.94E+03	2.94E+03	-9.39E+02	1.43E+03
	228.18	10.70	6.65E+03		-2.70E+03	3.21E+03
	277.60	14.10	5.60E+03		2.52E+03	2.70E+03
AM-241	59.54	35.90	1.74E-01	1.74E-01	-1.51E-01	8.51E-02
+ AM-243	74.67 *	66.00	1.57E-01	1.57E-01	2.63E-01	7.77E-02
CM-243	209.75	3.29	1.58E+00	3.70E-01	2.39E-01	7.64E-01
	228.14	10.60	4.40E-01		-1.79E-01	2.12E-01
	277.60	14.00	3.70E-01		1.67E-01	1.78E-01

Analysis Report for 1510087-15
CP4106S13-14

- + = Nuclide identified during the nuclide identification
 - * = Energy line found in the spectrum
 - > = MDA value not calculated
 - @ = Half-life too short to be able to perform the decay correction
-

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP4106S13-14

Elapsed Live time: 3600

Elapsed Real Time: 3601

Channel	1	9	17	25	33	41	49	57	65	73	81	89	97	105	113	121	129	137	145	153	161	169	177	185	193	201	209	217	225	233	241	249	257	265	273	281	289	297	305	313	321	329	337	345	353	361																																																																																																																																																																																																																																																																																																																																											
1:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																								
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17:	0	0	59	80	71	83	65	61	67	80	68	75	71	68	62	78	69	75	73	82	77	74	96	101	160	96	80	105	91	114	106	133	88	90	96	96	143	138	132	143	163	140	148	137	73	165	178	369	300	436	574	162	130	81	120	130	124	139	155	128	220	232	89	154	166	167	123	305	259	115	83	97	86	89	114	110	92	80	89	73	105	83	111	81	83	95	100	95	91	113	92	102	96	83	87	82	75	71	121	69	79	69	71	76	96	84	91	129	102	120	74	84	83	59	75	69	137	81	93	89	72	82	67	64	91	145	79	85	72	63	76	93	75	76	153	68	83	93	83	57	64	71	60	161	75	58	69	62	74	65	70	52	169	61	71	70	54	61	62	76	63	177	71	64	58	67	68	68	60	70	185	82	156	174	56	59	53	69	76	193	50	49	69	61	54	68	71	61	201	66	51	77	64	66	60	65	53	209	74	92	60	50	62	48	57	64	217	67	44	51	54	44	49	57	55	225	50	48	58	39	53	39	58	50	233	59	46	51	62	59	174	717	285	241	119	169	96	38	42	42	32	41	249	39	45	24	45	45	54	32	38	257	40	35	47	40	35	38	32	40	265	28	45	34	41	34	74	59	60	273	28	40	44	29	52	59	47	38	281	35	37	35	32	20	34	30	36	289	43	29	24	35	22	39	128	189	297	63	28	29	56	74	37	27	34	305	25	31	27	34	35	16	33	28	313	27	38	23	30	29	22	18	27	321	21	34	24	26	24	27	41	53	329	44	26	24	21	33	28	21	29	337	30	85	150	50	30	25	29	37	345	23	31	28	36	25	26	64	290	353	185	48	32	27	25	26	18	14	361	23	23	22	24	26	25	21	18

369: 23 22 22 14 38 17 21 18

Sample Title: CP4106S13-14

Channel	1	2	3	4	5	6	7	8
377:	20	16	14	14	23	24	23	22
385:	22	25	28	17	23	16	22	29
393:	23	19	20	18	22	22	18	20
401:	16	26	18	23	23	31	17	19
409:	16	43	16	24	18	26	27	28
417:	23	30	22	20	17	19	22	22
425:	20	26	26	20	13	16	17	16
433:	25	21	13	10	17	19	20	25
441:	20	19	14	17	21	13	8	18
449:	15	19	18	23	22	25	12	15
457:	20	18	13	14	25	29	39	36
465:	23	20	24	21	20	14	15	15
473:	12	20	15	20	17	11	21	13
481:	12	22	13	13	17	19	26	16
489:	15	9	16	10	17	11	24	15
497:	14	14	14	19	20	17	17	15
505:	8	15	14	25	21	38	88	63
513:	22	14	22	19	17	16	15	15
521:	12	17	11	14	10	15	11	10
529:	13	13	15	17	12	17	20	11
537:	14	16	11	12	11	11	9	15
545:	6	11	13	17	15	17	14	19
553:	21	15	12	11	11	15	15	12
561:	14	15	20	14	17	16	17	16
569:	17	16	16	14	18	11	18	13
577:	19	20	9	15	13	43	130	141
585:	26	14	9	17	12	10	12	10
593:	9	15	15	18	17	16	11	11
601:	14	9	13	10	13	16	11	20
609:	138	210	39	25	7	16	15	12
617:	14	17	14	17	10	16	11	16
625:	14	9	8	16	11	9	12	15
633:	13	10	16	20	14	5	11	10
641:	13	10	13	13	13	5	15	16
649:	9	13	14	13	13	13	10	12
657:	16	8	15	13	12	14	12	15
665:	15	24	14	11	12	10	12	11
673:	5	18	10	8	13	6	5	7
681:	14	8	13	9	10	10	12	12
689:	4	6	10	17	16	13	15	15
697:	10	9	11	11	13	12	15	19
705:	12	9	7	12	16	15	16	15
713:	11	14	8	11	7	7	14	12
721:	10	11	8	14	10	18	26	49
729:	21	16	19	9	10	13	8	16
737:	12	8	10	15	6	5	10	14
745:	13	13	7	12	10	5	10	9
753:	9	16	17	15	13	13	11	14
761:	13	14	10	13	13	14	9	17
769:	27	11	8	7	22	17	12	9
777:	8	12	9	4	4	14	15	12
785:	11	25	13	3	10	5	12	14
793:	7	12	24	21	13	6	9	10

801: 6 13 10 12 11 11 8 10

Sample Title: CP4106S13-14

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	15	6	7	10	6	10	13	6
817:	7	12	5	7	7	4	15	7
825:	16	16	13	9	8	14	10	11
833:	10	8	7	10	7	13	14	15
841:	15	6	7	7	7	7	5	11
849:	7	5	16	5	7	8	4	12
857:	15	7	8	18	20	12	12	9
865:	3	10	8	10	15	10	4	9
873:	9	10	3	11	8	10	10	9
881:	9	14	7	7	11	7	6	9
889:	8	6	4	3	11	5	9	11
897:	10	9	10	4	4	9	7	3
905:	12	6	10	8	15	17	91	95
913:	25	9	12	5	9	5	8	3
921:	7	9	4	6	7	9	3	12
929:	8	3	12	6	11	19	16	11
937:	7	11	3	7	10	9	6	11
945:	6	11	7	5	9	4	14	8
953:	8	8	11	7	5	5	7	15
961:	10	6	11	17	31	18	7	19
969:	68	41	8	7	4	6	10	6
977:	4	11	6	9	12	4	20	3
985:	10	9	7	8	3	5	7	7
993:	11	5	5	7	7	10	9	8
1001:	12	12	6	7	11	4	10	6
1009:	7	6	8	10	12	9	8	8
1017:	1	7	2	9	10	5	6	8
1025:	4	5	6	6	9	9	6	13
1033:	7	3	9	6	7	14	4	9
1041:	5	4	10	9	10	7	10	10
1049:	9	1	8	6	5	7	5	5
1057:	6	7	4	7	3	4	6	8
1065:	9	5	3	7	7	7	11	4
1073:	6	5	11	9	11	6	13	12
1081:	10	8	6	8	9	3	4	7
1089:	6	8	6	9	7	5	10	5
1097:	7	12	6	7	10	3	5	4
1105:	4	7	6	8	7	12	7	9
1113:	9	5	5	5	5	11	11	31
1121:	33	25	8	11	7	6	4	9
1129:	7	11	10	6	8	11	6	3
1137:	6	4	5	10	5	5	4	13
1145:	12	6	8	4	7	7	5	8
1153:	7	7	9	15	5	8	12	8
1161:	10	6	5	6	10	9	8	8
1169:	5	15	9	6	6	13	10	9
1177:	9	9	6	9	7	7	5	7
1185:	8	7	9	12	2	5	9	8
1193:	12	2	10	15	6	4	7	2
1201:	5	6	12	9	9	4	4	9
1209:	9	10	10	5	14	8	14	10
1217:	5	7	10	12	7	9	8	7
1225:	4	9	13	8	11	8	7	7

1233: 8 13 11 11 15 18 21 13

Sample Title: CP4106S13-14

Channel	1	2	3	4	5	6	7	8
1241:	7	4	5	4	3	9	12	8
1249:	7	10	8	5	5	7	7	4
1257:	6	7	7	4	3	8	4	4
1265:	7	12	5	5	6	4	8	9
1273:	4	3	3	7	4	7	5	4
1281:	15	6	6	5	4	7	4	10
1289:	4	5	6	5	4	11	10	4
1297:	2	3	6	7	5	4	7	3
1305:	5	5	5	4	4	4	3	6
1313:	6	4	6	3	3	6	2	7
1321:	3	10	6	3	3	5	9	3
1329:	1	9	2	8	9	2	3	7
1337:	5	2	3	3	4	8	4	3
1345:	2	3	4	5	1	6	2	4
1353:	1	5	0	2	4	4	7	1
1361:	4	2	3	6	1	1	1	1
1369:	5	4	0	2	7	2	0	5
1377:	5	12	8	3	2	3	7	0
1385:	4	0	2	3	3	2	2	4
1393:	1	6	4	2	2	4	5	3
1401:	5	8	5	5	3	3	2	11
1409:	4	2	2	2	2	2	0	2
1417:	3	1	3	1	5	5	3	3
1425:	4	1	2	3	0	6	3	1
1433:	3	5	0	3	2	2	2	1
1441:	4	4	2	2	2	1	6	3
1449:	2	6	1	6	3	1	3	6
1457:	6	6	27	152	357	246	52	11
1465:	4	4	2	1	1	5	4	2
1473:	1	3	3	3	3	3	1	2
1481:	3	3	3	2	0	0	0	1
1489:	2	3	4	0	2	2	2	6
1497:	3	4	4	1	1	2	1	0
1505:	2	1	2	3	6	9	3	2
1513:	3	3	1	4	0	2	4	2
1521:	2	1	2	1	3	2	1	0
1529:	3	1	0	0	3	2	0	2
1537:	1	3	4	4	0	2	0	1
1545:	2	1	2	3	2	2	2	3
1553:	0	1	2	0	4	2	1	3
1561:	1	1	0	3	2	1	1	2
1569:	0	3	1	1	1	1	0	2
1577:	5	2	2	2	7	4	6	2
1585:	1	3	1	11	12	4	0	6
1593:	12	4	0	2	2	2	2	2
1601:	3	0	0	2	0	0	2	4
1609:	1	1	0	1	2	0	1	0
1617:	0	1	0	4	3	3	2	4
1625:	0	2	2	1	2	5	6	2
1633:	3	1	0	0	1	1	2	3
1641:	2	1	2	2	2	1	0	0
1649:	0	2	1	0	3	2	0	0
1657:	3	1	4	1	6	2	2	1

1665: 0 1 2 5 1 2 1 1

Sample Title: CP4106S13-14

Channel	1	2	3	4	5	6	7	8	9
1673:	1	2	2	0	1	0	0	0	0
1681:	0	0	1	2	3	1	3	1	1
1689:	2	0	0	1	2	1	3	1	1
1697:	0	1	1	2	4	6	2	0	0
1705:	1	0	2	3	3	1	0	1	1
1713:	2	1	0	0	2	0	0	2	2
1721:	1	0	1	3	1	0	0	2	2
1729:	9	11	1	1	1	1	1	1	1
1737:	1	0	3	3	4	3	0	0	0
1745:	0	1	0	0	3	1	2	0	0
1753:	2	3	2	0	1	0	2	2	2
1761:	0	1	6	24	21	11	6	1	1
1769:	1	2	0	0	1	1	1	3	3
1777:	0	0	1	1	1	1	0	0	0
1785:	1	0	0	0	1	1	2	1	1
1793:	1	0	1	0	0	0	2	0	0
1801:	1	2	3	1	0	3	1	2	2
1809:	0	2	1	1	4	1	0	2	2
1817:	2	0	3	3	3	2	0	1	1
1825:	2	0	0	0	0	1	4	3	3
1833:	1	0	2	2	1	1	1	3	3
1841:	3	1	1	1	2	1	2	8	8
1849:	1	0	4	2	0	0	1	0	0
1857:	1	2	1	4	1	0	2	2	2
1865:	2	2	3	1	1	1	0	1	1
1873:	0	2	0	0	2	0	2	1	1
1881:	2	1	0	1	1	3	1	0	0
1889:	1	1	1	1	3	0	0	1	1
1897:	2	0	1	1	1	1	0	0	0
1905:	0	0	4	0	0	2	2	1	1
1913:	1	0	1	1	0	1	3	0	0
1921:	2	1	2	2	1	2	2	2	2
1929:	0	0	3	0	1	1	1	1	1
1937:	0	1	1	0	3	2	1	0	0
1945:	0	1	1	1	0	0	3	1	1
1953:	0	1	1	0	1	1	0	2	2
1961:	0	2	2	1	0	1	1	2	2
1969:	3	2	0	1	0	0	1	2	2
1977:	0	1	0	1	0	1	2	0	0
1985:	1	0	1	0	1	1	1	0	0
1993:	2	1	3	1	0	1	0	0	0
2001:	1	2	1	0	1	0	1	0	0
2009:	3	0	1	0	2	0	1	2	2
2017:	0	1	1	1	1	1	2	0	0
2025:	0	2	3	0	1	1	0	1	1
2033:	0	0	2	0	1	1	4	1	1
2041:	0	3	1	1	0	0	1	0	0
2049:	1	0	1	0	2	0	1	1	1
2057:	2	2	0	1	1	1	1	0	0
2065:	1	0	1	0	1	1	0	1	1
2073:	0	1	2	0	0	0	2	0	0
2081:	1	0	2	1	0	2	1	3	3
2089:	0	1	0	0	2	0	2	0	0

2097: 1 2 0 0 1 6 3 7

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Channel	1	2	3	4	5	6	7	8
2105:	3	1	0	1	3	1	3	0
2113:	0	1	2	0	1	2	1	1
2121:	1	1	2	2	0	1	2	0
2129:	1	0	2	2	1	0	2	0
2137:	1	1	2	1	2	0	1	1
2145:	1	0	3	1	0	1	2	1
2153:	1	3	0	1	0	0	1	1
2161:	0	0	1	2	0	1	3	3
2169:	0	1	1	0	1	1	0	1
2177:	1	1	2	0	0	1	0	0
2185:	3	3	2	1	1	1	4	2
2193:	2	2	1	0	2	1	2	4
2201:	0	2	5	5	4	4	1	2
2209:	1	0	3	1	0	0	1	3
2217:	1	2	0	0	4	1	0	1
2225:	2	1	4	0	1	2	1	0
2233:	0	0	0	1	2	0	0	1
2241:	1	0	1	1	0	2	1	2
2249:	2	3	0	2	0	2	2	0
2257:	0	1	1	1	1	1	1	0
2265:	0	0	0	0	0	1	1	1
2273:	3	1	2	1	0	0	1	0
2281:	1	0	0	0	3	1	0	1
2289:	0	2	0	5	3	1	0	2
2297:	0	1	1	3	1	1	2	1
2305:	1	1	0	4	1	3	1	0
2313:	3	3	1	0	0	0	1	0
2321:	3	2	1	6	1	1	2	0
2329:	2	0	2	1	1	2	0	1
2337:	0	0	2	2	1	1	1	0
2345:	1	4	1	1	1	1	0	2
2353:	3	0	1	1	2	0	0	5
2361:	2	2	0	0	3	2	1	1
2369:	2	1	0	1	1	1	1	1
2377:	1	0	2	1	0	0	0	1
2385:	0	3	2	2	0	4	2	4
2393:	1	1	0	2	0	2	1	3
2401:	1	0	1	1	2	0	3	3
2409:	2	0	4	0	2	1	1	0
2417:	2	1	3	1	2	1	0	0
2425:	0	1	2	0	0	0	0	2
2433:	1	2	1	0	1	1	1	2
2441:	2	1	2	1	0	1	3	4
2449:	2	3	1	0	0	0	0	0
2457:	1	1	0	2	0	1	0	0
2465:	0	3	0	1	1	1	0	1
2473:	1	0	0	0	0	0	0	1
2481:	1	0	1	1	1	0	0	0
2489:	0	2	0	0	1	1	0	1
2497:	0	1	0	0	0	0	0	0
2505:	1	0	1	0	0	0	1	1
2513:	0	0	0	1	1	0	0	0
2521:	0	0	2	2	0	0	0	0

2529: 0 0 0 1 0 2 0 2

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	0	1	0	1	0	0
2545:	1	0	0	0	1	0	0	0
2553:	1	0	0	0	0	0	0	0
2561:	0	0	1	0	0	0	1	0
2569:	1	0	0	0	0	1	1	0
2577:	1	1	0	1	1	1	1	1
2585:	0	1	1	0	1	0	1	0
2593:	0	0	0	1	0	0	0	0
2601:	0	0	0	1	1	1	0	1
2609:	0	1	0	4	13	55	46	17
2617:	1	1	0	0	0	1	0	0
2625:	0	0	1	0	0	2	1	0
2633:	0	0	0	0	1	0	0	1
2641:	0	0	1	0	0	0	0	0
2649:	0	1	0	0	0	0	0	0
2657:	0	0	0	0	1	1	0	0
2665:	0	0	0	0	0	0	1	0
2673:	0	0	1	0	0	1	0	0
2681:	0	0	0	0	0	1	0	0
2689:	0	1	1	0	0	0	1	0
2697:	0	1	0	1	0	0	0	0
2705:	2	0	0	0	0	1	0	0
2713:	1	0	1	0	0	0	0	0
2721:	0	0	0	0	0	0	0	0
2729:	1	0	0	0	0	0	0	0
2737:	1	0	0	1	1	0	0	0
2745:	1	0	1	0	0	0	0	0
2753:	0	0	1	0	0	0	0	0
2761:	1	1	0	1	0	2	0	0
2769:	0	0	0	0	0	1	0	0
2777:	0	0	0	0	0	1	0	0
2785:	0	0	0	0	0	0	0	0
2793:	0	0	0	1	1	0	0	0
2801:	0	0	0	0	0	0	0	0
2809:	1	1	0	0	2	0	1	0
2817:	0	0	1	1	0	0	1	0
2825:	0	0	0	1	0	0	1	0
2833:	0	0	2	0	0	0	0	0
2841:	0	0	3	0	0	0	1	2
2849:	0	2	0	0	0	0	0	0
2857:	1	0	0	1	0	0	0	0
2865:	0	0	0	0	0	0	1	0
2873:	0	1	0	1	1	0	0	0
2881:	0	0	1	0	0	0	0	1
2889:	1	1	0	1	0	0	0	0
2897:	0	0	0	0	1	0	1	0
2905:	0	0	0	1	0	0	0	0
2913:	0	0	0	1	0	0	0	1
2921:	0	0	0	0	0	1	0	0
2929:	0	2	0	0	1	0	0	0
2937:	0	0	1	0	0	0	0	1
2945:	0	0	0	0	0	0	1	0
2953:	0	1	1	2	0	1	0	0

2961: 0 0 0 0 1 0 0 0

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Channel	1	0	0	1	0	0	1	0
2969:	1	0	0	1	0	0	1	0
2977:	0	1	0	0	0	0	0	0
2985:	0	0	0	0	1	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	1	0	0	1	0	0	0	0
3009:	0	0	0	1	0	0	1	0
3017:	0	0	1	0	0	0	0	0
3025:	0	0	0	0	1	0	1	0
3033:	0	0	0	1	0	0	0	0
3041:	1	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	1	1
3057:	0	1	0	0	0	2	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	1	0
3081:	0	0	0	1	0	0	0	0
3089:	0	0	1	0	0	1	0	0
3097:	0	0	0	0	0	0	1	1
3105:	0	1	0	0	0	1	0	0
3113:	1	0	0	1	0	0	0	0
3121:	1	0	1	0	1	0	0	1
3129:	0	0	0	0	1	0	1	0
3137:	0	0	0	0	0	0	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	1	1	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	1	0	0	2	0	1	1
3185:	0	0	0	0	0	0	1	0
3193:	0	0	0	1	0	1	0	1
3201:	0	0	0	0	1	0	0	0
3209:	1	0	0	0	0	0	0	0
3217:	0	1	0	0	0	0	0	0
3225:	0	0	0	0	0	0	0	1
3233:	0	0	0	0	0	0	0	1
3241:	1	0	0	0	0	0	0	0
3249:	0	1	0	0	0	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	1	0	0	0	0
3273:	0	0	1	0	0	0	0	0
3281:	0	0	0	1	1	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	0	1
3305:	0	1	0	0	0	0	0	0
3313:	0	0	1	0	0	0	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	1	0	0	0	0	0
3337:	0	0	0	0	0	1	1	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	1
3361:	0	0	0	0	0	0	1	0
3369:	0	0	1	0	0	1	0	0
3377:	0	0	0	0	0	0	0	1
3385:	0	1	0	0	0	0	0	0

3393: 0 0 0 0 0 1 0 0

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Channel									
3401:	0	0	0	0	1	0	0	0	0
3409:	0	1	0	0	0	0	1	1	1
3417:	0	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0	1
3441:	0	0	0	1	0	0	0	0	0
3449:	1	0	0	0	0	0	1	0	0
3457:	1	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0	0
3473:	1	0	1	1	0	0	0	0	0
3481:	0	1	1	0	0	3	0	0	0
3489:	0	0	0	0	0	0	0	0	1
3497:	0	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0	0
3513:	0	0	0	1	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0	0
3537:	0	0	1	0	0	0	0	0	0
3545:	2	0	0	0	0	0	0	0	0
3553:	0	0	0	0	1	0	0	0	0
3561:	0	0	1	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0	1
3577:	0	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0	0
3601:	0	0	0	0	1	0	0	0	1
3609:	2	1	0	0	0	0	0	0	0
3617:	1	1	1	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0	0
3633:	0	1	0	0	0	0	0	0	0
3641:	0	0	0	0	1	0	0	0	1
3649:	0	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0	0
3673:	0	1	0	1	0	0	0	0	1
3681:	0	0	0	0	0	0	2	0	0
3689:	0	0	0	0	0	0	0	0	0
3697:	0	0	1	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0	0
3737:	0	0	1	0	0	0	0	0	0
3745:	0	0	0	1	0	0	0	0	0
3753:	0	0	0	0	1	0	1	0	0
3761:	0	0	0	2	1	0	0	0	0
3769:	0	0	0	0	0	0	0	0	0
3777:	0	0	0	0	1	0	0	0	0
3785:	0	0	0	0	0	0	0	0	1
3793:	0	0	0	1	0	0	0	0	0
3801:	0	0	1	1	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0	0
3817:	0	0	1	0	0	0	0	0	0

3825: 0 0 0 0 0 0 1 0

Sample Title: CP4106S13-14

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	1
3841:	2	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	1	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	1	0	1
3881:	0	0	0	1	0	1	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	1	1	0	0	0
3905:	1	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	1
3945:	1	0	0	0	0	1	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	1	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	1	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	1	0	0	0	0	0	1
4025:	0	0	0	0	0	0	0	0
4033:	0	1	1	0	0	1	0	0
4041:	0	0	0	0	1	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	1	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	2	0	0	0

Analysis Report for 1510087-16
CP4106S15-16

1119

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-16
Sample Description : CP4106S15-16
Sample Type : SOIL

Sample Size : 5.574E+02 grams
Facility : Countroom

Sample Taken On : 10/7/2015 5:14:24PM
Acquisition Started : 11/9/2015 10:20:38AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.2 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 8 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 29325

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-16
CP4106S15-16

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 11:20:56AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	31.51	31.62	0.0000	0.00
2	52.73	52.83	0.0000	0.00
3	76.29	76.38	0.0000	0.00
4	87.13	87.21	0.0000	0.00
5	89.71	89.79	0.0000	0.00
6	92.71	92.79	0.0000	0.00
7	129.62	129.68	0.0000	0.00
8	155.13	155.17	0.0000	0.00
9	185.58	185.60	0.0000	0.00
10	207.08	207.10	0.0000	0.00
11	238.86	238.86	0.0000	0.00
12	241.86	241.86	0.0000	0.00
13	270.69	270.67	0.0000	0.00
14	295.32	295.29	0.0000	0.00
15	300.24	300.20	0.0000	0.00
16	338.83	338.77	0.0000	0.00
17	351.97	351.90	0.0000	0.00
18	375.64	375.56	0.0000	0.00
19	392.08	391.99	0.0000	0.00
20	462.68	462.56	0.0000	0.00
21	498.68	498.54	0.0000	0.00
22	511.15	511.00	0.0000	0.00
23	583.21	583.03	0.0000	0.00
24	609.42	609.23	0.0000	0.00
25	706.87	706.63	0.0000	0.00
26	768.02	767.76	0.0000	0.00
27	795.38	795.10	0.0000	0.00
28	860.82	860.52	0.0000	0.00
29	911.44	911.12	0.0000	0.00
30	965.26	964.92	0.0000	0.00
31	969.22	968.87	0.0000	0.00
32	991.43	991.08	0.0000	0.00
33	1024.18	1023.81	0.0000	0.00
34	1120.44	1120.03	0.0000	0.00
35	1238.61	1238.16	0.0000	0.00
36	1264.59	1264.13	0.0000	0.00
37	1328.36	1327.88	0.0000	0.00
38	1376.10	1375.60	0.0000	0.00
39	1384.14	1383.64	0.0000	0.00
40	1437.19	1436.68	0.0000	0.00
41	1460.98	1460.45	0.0000	0.00
42	1511.89	1511.36	0.0000	0.00

Analysis Report for 1510087-16
CP4106S15-16

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1578.96	1578.40	0.0000	0.00
44	1585.58	1585.02	0.0000	0.00
45	1589.89	1589.33	0.0000	0.00
46	1619.82	1619.25	0.0000	0.00
47	1629.54	1628.97	0.0000	0.00
48	1731.02	1730.42	0.0000	0.00
49	1764.46	1763.85	0.0000	0.00
50	1795.61	1795.00	0.0000	0.00
51	1888.29	1887.65	0.0000	0.00
52	1994.47	1993.81	0.0000	0.00
53	2103.26	2102.58	0.0000	0.00
54	2118.75	2118.07	0.0000	0.00
55	2203.68	2202.98	0.0000	0.00
56	2285.41	2284.70	0.0000	0.00
57	2294.01	2293.31	0.0000	0.00
58	2318.96	2318.25	0.0000	0.00
59	2447.10	2446.38	0.0000	0.00
60	2614.49	2613.75	0.0000	0.00
61	2687.35	2686.60	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510087-16
CP4106S15-16

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 11:20:56AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	31.51	30 -	34	31.62	5.90E+01	70.47	1.06E+03	2.91
2	52.73	51 -	56	52.83	7.69E+01	76.92	1.09E+03	3.10
3	76.29	72 -	83	76.38	1.04E+03	152.16	2.35E+03	3.90
M 4	87.13	83 -	98	87.21	1.37E+02	61.22	6.64E+02	1.22
m 5	89.71	83 -	98	89.79	9.25E+01	59.83	6.58E+02	1.23
m 6	92.71	83 -	98	92.79	2.34E+02	62.29	6.52E+02	1.23
7	129.62	126 -	133	129.68	7.37E+01	80.05	1.02E+03	3.57
8	155.13	153 -	158	155.17	6.36E+01	57.59	6.09E+02	1.94
9	185.58	181 -	188	185.60	2.11E+02	74.65	7.89E+02	1.58
10	207.08	202 -	212	207.10	1.41E+02	86.17	9.20E+02	7.68
M 11	238.86	234 -	247	238.86	7.62E+02	71.31	3.32E+02	1.55
m 12	241.86	234 -	247	241.86	1.25E+02	48.68	3.03E+02	1.56
13	270.69	267 -	275	270.67	7.85E+01	61.17	5.29E+02	1.97
M 14	295.32	291 -	304	295.29	2.54E+02	48.02	2.93E+02	1.65
m 15	300.24	291 -	304	300.20	8.32E+01	39.12	2.50E+02	1.66
16	338.83	334 -	344	338.77	1.90E+02	59.61	3.68E+02	2.08
17	351.97	347 -	356	351.90	4.01E+02	66.11	3.96E+02	1.51
18	375.64	374 -	378	375.56	2.69E+01	30.13	1.78E+02	1.20
19	392.08	387 -	398	391.99	4.96E+01	57.27	3.89E+02	7.57
20	462.68	459 -	466	462.56	3.81E+01	35.83	1.90E+02	1.16
21	498.68	494 -	505	498.54	4.33E+01	45.83	2.43E+02	3.12
22	511.15	506 -	516	511.00	1.88E+02	52.63	2.68E+02	2.16
23	583.21	579 -	587	583.03	2.82E+02	46.79	1.66E+02	1.71
24	609.42	603 -	612	609.23	2.46E+02	52.09	2.51E+02	1.85
25	706.87	704 -	709	706.63	1.90E+01	24.66	1.04E+02	2.77
26	768.02	763 -	772	767.76	5.64E+01	36.72	1.61E+02	1.68
27	795.38	792 -	798	795.10	3.41E+01	25.19	8.98E+01	2.00
28	860.82	856 -	865	860.52	4.27E+01	31.81	1.21E+02	1.86
29	911.44	907 -	915	911.12	2.19E+02	37.37	7.81E+01	2.20
M 30	965.26	962 -	972	964.92	2.81E+01	19.89	7.88E+01	2.39
m 31	969.22	962 -	972	968.87	1.23E+02	30.75	6.99E+01	2.34
32	991.43	988 -	994	991.08	2.80E+01	19.06	4.60E+01	4.35
33	1024.18	1019 -	1034	1023.81	3.52E+01	37.84	1.34E+02	3.95
34	1120.44	1115 -	1125	1120.03	1.07E+02	34.07	9.48E+01	2.02
35	1238.61	1236 -	1242	1238.16	2.24E+01	23.10	8.12E+01	2.41
36	1264.59	1257 -	1270	1264.13	3.13E+01	35.47	1.25E+02	2.49
37	1328.36	1322 -	1336	1327.88	3.07E+01	28.96	7.66E+01	9.07
38	1376.10	1372 -	1379	1375.60	2.42E+01	12.96	1.15E+01	3.01
39	1384.14	1380 -	1388	1383.64	1.89E+01	12.84	1.41E+01	4.08
40	1437.19	1426 -	1447	1436.68	3.80E+01	26.91	4.40E+01	9.31

Analysis Report for 1510087-16
CP4106S15-16

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1460.98	1453 - 1465		1460.45	7.99E+02	58.95	3.34E+01	2.41
42	1511.89	1505 - 1516		1511.36	1.64E+01	19.80	3.72E+01	8.33
43	1578.96	1576 - 1581		1578.40	8.75E+00	8.12	6.50E+00	1.62
M 44	1585.58	1582 - 1591		1585.02	9.23E+00	11.36	1.38E+01	3.84
m 45	1589.89	1582 - 1591		1589.33	7.05E+00	11.18	1.68E+01	2.58
46	1619.82	1614 - 1623		1619.25	1.26E+01	9.22	4.87E+00	2.38
47	1629.54	1624 - 1632		1628.97	1.80E+01	10.01	4.00E+00	2.28
48	1731.02	1725 - 1734		1730.42	1.54E+01	12.92	1.52E+01	1.69
49	1764.46	1760 - 1767		1763.85	6.19E+01	16.49	4.13E+00	2.33
50	1795.61	1791 - 1798		1795.00	6.00E+00	8.49	8.00E+00	2.69
51	1888.29	1885 - 1891		1887.65	8.45E+00	8.28	5.09E+00	3.61
52	1994.47	1988 - 1998		1993.81	1.33E+01	9.71	5.38E+00	6.93
53	2103.26	2098 - 2109		2102.58	1.70E+01	16.12	2.40E+01	4.34
54	2118.75	2114 - 2121		2118.07	1.13E+01	9.59	7.47E+00	1.85
55	2203.68	2198 - 2206		2202.98	1.20E+01	10.22	8.00E+00	1.05
56	2285.41	2280 - 2289		2284.70	8.69E+00	10.10	8.62E+00	0.98
57	2294.01	2290 - 2295		2293.31	4.67E+00	5.74	2.67E+00	1.89
58	2318.96	2315 - 2320		2318.25	4.42E+00	5.74	3.17E+00	2.57
59	2447.10	2442 - 2449		2446.38	8.00E+00	5.66	0.00E+00	3.31
60	2614.49	2607 - 2617		2613.75	1.15E+02	21.45	0.00E+00	2.87
61	2687.35	2682 - 2688		2686.60	5.00E+00	4.47	0.00E+00	1.00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 11:20:56AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	31.51	30 -	34	5.90E+01	70.47	1.06E+03	5.65E+01
2	52.73	51 -	56	7.69E+01	76.92	1.09E+03	6.16E+01
3	76.29	72 -	83	1.04E+03	152.16	2.35E+03	1.13E+02
M 4	87.13	83 -	98	1.37E+02	61.22	6.64E+02	4.24E+01
m 5	89.71	83 -	98	9.25E+01	59.83	6.58E+02	4.22E+01
m 6	92.71	83 -	98	2.34E+02	62.29	6.52E+02	4.20E+01
7	129.62	126 -	133	7.37E+01	80.05	1.02E+03	6.43E+01

Analysis Report for 1510087-16

CP4106S15-16

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level	
8	155.13	153 -	158	6.36E+01	57.59	6.09E+02	4.55E+01	
9	185.58	181 -	188	2.11E+02	74.65	7.89E+02	5.65E+01	
10	207.08	202 -	212	1.41E+02	86.17	9.20E+02	6.81E+01	
M	11	238.86	234 -	247	7.62E+02	71.31	3.32E+02	3.00E+01
m	12	241.86	234 -	247	1.25E+02	48.68	3.03E+02	2.86E+01
	13	270.69	267 -	275	7.85E+01	61.17	5.29E+02	4.81E+01
M	14	295.32	291 -	304	2.54E+02	48.02	2.93E+02	2.81E+01
m	15	300.24	291 -	304	8.32E+01	39.12	2.50E+02	2.60E+01
	16	338.83	334 -	344	1.90E+02	59.61	3.68E+02	4.34E+01
	17	351.97	347 -	356	4.01E+02	66.11	3.96E+02	4.32E+01
	18	375.64	374 -	378	2.69E+01	30.13	1.78E+02	2.33E+01
	19	392.08	387 -	398	4.96E+01	57.27	3.89E+02	4.56E+01
	20	462.68	459 -	466	3.81E+01	35.83	1.90E+02	2.77E+01
	21	498.68	494 -	505	4.33E+01	45.83	2.43E+02	3.61E+01
	22	511.15	506 -	516	1.88E+02	52.63	2.68E+02	3.69E+01
	23	583.21	579 -	587	2.82E+02	46.79	1.66E+02	2.68E+01
	24	609.42	603 -	612	2.46E+02	52.09	2.51E+02	3.42E+01
	25	706.87	704 -	709	1.90E+01	24.66	1.04E+02	1.90E+01
	26	768.02	763 -	772	5.64E+01	36.72	1.61E+02	2.75E+01
	27	795.38	792 -	798	3.41E+01	25.19	8.98E+01	1.83E+01
	28	860.82	856 -	865	4.27E+01	31.81	1.21E+02	2.38E+01
	29	911.44	907 -	915	2.19E+02	37.37	7.81E+01	1.88E+01
M	30	965.26	962 -	972	2.81E+01	19.89	7.88E+01	1.46E+01
m	31	969.22	962 -	972	1.23E+02	30.75	6.99E+01	1.37E+01
	32	991.43	988 -	994	2.80E+01	19.06	4.60E+01	1.30E+01
	33	1024.18	1019 -	1034	3.52E+01	37.84	1.34E+02	2.95E+01
	34	1120.44	1115 -	1125	1.07E+02	34.07	9.48E+01	2.23E+01
	35	1238.61	1236 -	1242	2.24E+01	23.10	8.12E+01	1.73E+01
	36	1264.59	1257 -	1270	3.13E+01	35.47	1.25E+02	2.77E+01
	37	1328.36	1322 -	1336	3.07E+01	28.96	7.66E+01	2.20E+01
	38	1376.10	1372 -	1379	2.42E+01	12.96	1.15E+01	6.93E+00
	39	1384.14	1380 -	1388	1.89E+01	12.84	1.41E+01	7.75E+00
	40	1437.19	1426 -	1447	3.80E+01	26.91	4.40E+01	1.97E+01
	41	1460.98	1453 -	1465	7.99E+02	58.95	3.34E+01	1.37E+01
	42	1511.89	1505 -	1516	1.64E+01	19.80	3.72E+01	1.49E+01
	43	1578.96	1576 -	1581	8.75E+00	8.12	6.50E+00	4.58E+00
M	44	1585.58	1582 -	1591	9.23E+00	11.36	1.38E+01	6.11E+00
m	45	1589.89	1582 -	1591	7.05E+00	11.18	1.68E+01	6.74E+00
	46	1619.82	1614 -	1623	1.26E+01	9.22	4.87E+00	4.84E+00
	47	1629.54	1624 -	1632	1.80E+01	10.01	4.00E+00	4.37E+00
	48	1731.02	1725 -	1734	1.54E+01	12.92	1.52E+01	8.44E+00
	49	1764.46	1760 -	1767	6.19E+01	16.49	4.13E+00	4.05E+00
	50	1795.61	1791 -	1798	6.00E+00	8.49	8.00E+00	5.70E+00
	51	1888.29	1885 -	1891	8.45E+00	8.28	5.09E+00	4.84E+00
	52	1994.47	1988 -	1998	1.33E+01	9.71	5.38E+00	5.26E+00
	53	2103.26	2098 -	2109	1.70E+01	16.12	2.40E+01	1.14E+01
	54	2118.75	2114 -	2121	1.13E+01	9.59	7.47E+00	5.63E+00
	55	2203.68	2198 -	2206	1.20E+01	10.22	8.00E+00	6.18E+00
	56	2285.41	2280 -	2289	8.69E+00	10.10	8.62E+00	6.74E+00
	57	2294.01	2290 -	2295	4.67E+00	5.74	2.67E+00	3.11E+00
	58	2318.96	2315 -	2320	4.42E+00	5.74	3.17E+00	3.22E+00

Analysis Report for 1510087-16
CP4106S15-16

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
59	2447.10	2442 -	2449	8.00E+00	5.66	0.00E+00	0.00E+00
60	2614.49	2607 -	2617	1.15E+02	21.45	0.00E+00	0.00E+00
61	2687.35	2682 -	2688	5.00E+00	4.47	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 11:20:56AM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	31.51	30 -	34	31.62	5.90E+01	70.47	1.06E+03	.....
2	52.73	51 -	56	52.83	7.69E+01	76.92	1.09E+03	.....
3	76.29	72 -	83	76.38	1.04E+03	152.16	2.35E+03	.....
M 4	87.13	83 -	98	87.21	1.37E+02	61.22	6.64E+02	SN-126 NP-237 EU-155 CD-109
m 5	89.71	83 -	98	89.79	9.25E+01	59.83	6.58E+02	.....
m 6	92.71	83 -	98	92.79	2.34E+02	62.29	6.52E+02	GA-67
7	129.62	126 -	133	129.68	7.37E+01	80.05	1.02E+03	.....
8	155.13	153 -	158	155.17	6.36E+01	57.59	6.09E+02	.....
9	185.58	181 -	188	185.60	2.11E+02	74.65	7.89E+02	RA-226
10	207.08	202 -	212	207.10	1.41E+02	86.17	9.20E+02	.....
M 11	238.86	234 -	247	238.86	7.62E+02	71.31	3.32E+02	PB-212
m 12	241.86	234 -	247	241.86	1.25E+02	48.68	3.03E+02	RA-224
13	270.69	267 -	275	270.67	7.85E+01	61.17	5.29E+02	.....
M 14	295.32	291 -	304	295.29	2.54E+02	48.02	2.93E+02	PB-214
m 15	300.24	291 -	304	300.20	8.32E+01	39.12	2.50E+02	GA-67 PB-212 BI-210M
16	338.83	334 -	344	338.77	1.90E+02	59.61	3.68E+02	AC-228
17	351.97	347 -	356	351.90	4.01E+02	66.11	3.96E+02	PB-214
18	375.64	374 -	378	375.56	2.69E+01	30.13	1.78E+02	.....

Analysis Report for 1510087-16

CP4106S15-16

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide	
19	392.08	387 -	398	391.99	4.96E+01	57.27	3.89E+02	SN-113	
20	462.68	459 -	466	462.56	3.81E+01	35.83	1.90E+02	SB-125	
21	498.68	494 -	505	498.54	4.33E+01	45.83	2.43E+02	.....
22	511.15	506 -	516	511.00	1.88E+02	52.63	2.68E+02	.....
23	583.21	579 -	587	583.03	2.82E+02	46.79	1.66E+02	TL-208	
24	609.42	603 -	612	609.23	2.46E+02	52.09	2.51E+02	BI-214	
25	706.87	704 -	709	706.63	1.90E+01	24.66	1.04E+02	AG-110M	
26	768.02	763 -	772	767.76	5.64E+01	36.72	1.61E+02	.....
27	795.38	792 -	798	795.10	3.41E+01	25.19	8.98E+01	CS-134	
28	860.82	856 -	865	860.52	4.27E+01	31.81	1.21E+02	TL-208	
29	911.44	907 -	915	911.12	2.19E+02	37.37	7.81E+01	AC-228 LU-172	
M	30	965.26	962 -	972	964.92	2.81E+01	19.89	7.88E+01	.....
m	31	969.22	962 -	972	968.87	1.23E+02	30.75	6.99E+01	AC-228
	32	991.43	988 -	994	991.08	2.80E+01	19.06	4.60E+01	.....
	33	1024.18	1019 -	1034	1023.81	3.52E+01	37.84	1.34E+02	.....
	34	1120.44	1115 -	1125	1120.03	1.07E+02	34.07	9.48E+01	SC-46 BI-214 TA-182
	35	1238.61	1236 -	1242	1238.16	2.24E+01	23.10	8.12E+01	CO-56
	36	1264.59	1257 -	1270	1264.13	3.13E+01	35.47	1.25E+02	.....
	37	1328.36	1322 -	1336	1327.88	3.07E+01	28.96	7.66E+01	.....
	38	1376.10	1372 -	1379	1375.60	2.42E+01	12.96	1.15E+01	.....
	39	1384.14	1380 -	1388	1383.64	1.89E+01	12.84	1.41E+01	AG-110M
	40	1437.19	1426 -	1447	1436.68	3.80E+01	26.91	4.40E+01	.....
	41	1460.98	1453 -	1465	1460.45	7.99E+02	58.95	3.34E+01	K-40
	42	1511.89	1505 -	1516	1511.36	1.64E+01	19.80	3.72E+01	.....
	43	1578.96	1576 -	1581	1578.40	8.75E+00	8.12	6.50E+00	.....
M	44	1585.58	1582 -	1591	1585.02	9.23E+00	11.36	1.38E+01	.....
m	45	1589.89	1582 -	1591	1589.33	7.05E+00	11.18	1.68E+01	.....
	46	1619.82	1614 -	1623	1619.25	1.26E+01	9.22	4.87E+00	BI-212
	47	1629.54	1624 -	1632	1628.97	1.80E+01	10.01	4.00E+00	.....
	48	1731.02	1725 -	1734	1730.42	1.54E+01	12.92	1.52E+01	.....
	49	1764.46	1760 -	1767	1763.85	6.19E+01	16.49	4.13E+00	BI-214
	50	1795.61	1791 -	1798	1795.00	6.00E+00	8.49	8.00E+00	.....
	51	1888.29	1885 -	1891	1887.65	8.45E+00	8.28	5.09E+00	.....
	52	1994.47	1988 -	1998	1993.81	1.33E+01	9.71	5.38E+00	.....
	53	2103.26	2098 -	2109	2102.58	1.70E+01	16.12	2.40E+01	.....
	54	2118.75	2114 -	2121	2118.07	1.13E+01	9.59	7.47E+00	.....
	55	2203.68	2198 -	2206	2202.98	1.20E+01	10.22	8.00E+00	BI-214
	56	2285.41	2280 -	2289	2284.70	8.69E+00	10.10	8.62E+00	.....
	57	2294.01	2290 -	2295	2293.31	4.67E+00	5.74	2.67E+00	.....
	58	2318.96	2315 -	2320	2318.25	4.42E+00	5.74	3.17E+00	.....
	59	2447.10	2442 -	2449	2446.38	8.00E+00	5.66	0.00E+00	.....
	60	2614.49	2607 -	2617	2613.75	1.15E+02	21.45	0.00E+00	TL-208
	61	2687.35	2682 -	2688	2686.60	5.00E+00	4.47	0.00E+00	.....

Analysis Report for 1510087-16

CP4106S15-16

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 11:20:56AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	31.51	5.90E+01	70.47	2.51E-03	1.68E-03
	2	52.73	7.69E+01	76.92	1.80E-02	1.68E-03
	3	76.29	1.04E+03	152.16	2.74E-02	3.34E-03
M	4	87.13	1.37E+02	61.22	2.84E-02	4.42E-03
m	5	89.71	9.25E+01	59.83	2.85E-02	4.43E-03
m	6	92.71	2.34E+02	62.29	2.85E-02	4.30E-03
	7	129.62	7.37E+01	80.05	2.60E-02	2.76E-03
	8	155.13	6.36E+01	57.59	2.36E-02	2.00E-03
	9	185.58	2.11E+02	74.65	2.11E-02	1.65E-03
	10	207.08	1.41E+02	86.17	1.97E-02	1.63E-03
M	11	238.86	7.62E+02	71.31	1.79E-02	1.60E-03
m	12	241.86	1.25E+02	48.68	1.77E-02	1.60E-03
	13	270.69	7.85E+01	61.17	1.64E-02	1.57E-03
M	14	295.32	2.54E+02	48.02	1.55E-02	1.48E-03
m	15	300.24	8.32E+01	39.12	1.53E-02	1.46E-03
	16	338.83	1.90E+02	59.61	1.41E-02	1.27E-03
	17	351.97	4.01E+02	66.11	1.37E-02	1.21E-03
	18	375.64	2.69E+01	30.13	1.31E-02	1.10E-03
	19	392.08	4.96E+01	57.27	1.27E-02	1.02E-03
	20	462.68	3.81E+01	35.83	1.13E-02	9.47E-04
	21	498.68	4.33E+01	45.83	1.07E-02	9.11E-04
	22	511.15	1.88E+02	52.63	1.06E-02	8.98E-04
	23	583.21	2.82E+02	46.79	9.58E-03	8.25E-04
	24	609.42	2.46E+02	52.09	9.27E-03	7.98E-04
	25	706.87	1.90E+01	24.66	8.27E-03	7.16E-04
	26	768.02	5.64E+01	36.72	7.74E-03	6.77E-04
	27	795.38	3.41E+01	25.19	7.53E-03	6.59E-04
	28	860.82	4.27E+01	31.81	7.06E-03	6.17E-04
	29	911.44	2.19E+02	37.37	6.74E-03	5.86E-04
M	30	965.26	2.81E+01	19.89	6.44E-03	5.59E-04
m	31	969.22	1.23E+02	30.75	6.41E-03	5.57E-04
	32	991.43	2.80E+01	19.06	6.30E-03	5.46E-04
	33	1024.18	3.52E+01	37.84	6.13E-03	5.29E-04
	34	1120.44	1.07E+02	34.07	5.70E-03	4.80E-04

Analysis Report for 1510087-16
CP4106S15-16

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	1238.61	2.24E+01	23.10	5.27E-03	4.83E-04
36	1264.59	3.13E+01	35.47	5.19E-03	4.95E-04
37	1328.36	3.07E+01	28.96	5.00E-03	5.25E-04
38	1376.10	2.42E+01	12.96	4.87E-03	5.08E-04
39	1384.14	1.89E+01	12.84	4.85E-03	5.05E-04
40	1437.19	3.80E+01	26.91	4.73E-03	4.83E-04
41	1460.98	7.99E+02	58.95	4.67E-03	4.73E-04
42	1511.89	1.64E+01	19.80	4.57E-03	4.52E-04
43	1578.96	8.75E+00	8.12	4.45E-03	4.24E-04
M 44	1585.58	9.23E+00	11.36	4.43E-03	4.22E-04
m 45	1589.89	7.05E+00	11.18	4.43E-03	4.20E-04
46	1619.82	1.26E+01	9.22	4.38E-03	4.07E-04
47	1629.54	1.80E+01	10.01	4.36E-03	4.03E-04
48	1731.02	1.54E+01	12.92	4.22E-03	3.61E-04
49	1764.46	6.19E+01	16.49	4.19E-03	3.48E-04
50	1795.61	6.00E+00	8.49	4.15E-03	3.35E-04
51	1888.29	8.45E+00	8.28	4.07E-03	3.18E-04
52	1994.47	1.33E+01	9.71	4.00E-03	3.18E-04
53	2103.26	1.70E+01	16.12	3.95E-03	3.18E-04
54	2118.75	1.13E+01	9.59	3.95E-03	3.18E-04
55	2203.68	1.20E+01	10.22	3.93E-03	3.18E-04
56	2285.41	8.69E+00	10.10	3.93E-03	3.18E-04
57	2294.01	4.67E+00	5.74	3.93E-03	3.18E-04
58	2318.96	4.42E+00	5.74	3.93E-03	3.18E-04
59	2447.10	8.00E+00	5.66	3.96E-03	3.18E-04
60	2614.49	1.15E+02	21.45	4.05E-03	3.18E-04
61	2687.35	5.00E+00	4.47	4.11E-03	3.18E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 11:20:56AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	31.51	5.90E+01	70.47			5.90E+01	7.05E+01
2	52.73	7.69E+01	76.92			7.69E+01	7.69E+01
3	76.29	1.04E+03	152.16			1.04E+03	1.52E+02

: 00000

Analysis Report for 1510087-16

CP4106S15-16

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	4	87.13	1.37E+02	61.22	1.46E+00	7.88E+00	1.35E+02	6.17E+01
m	5	89.71	9.25E+01	59.83			9.25E+01	5.98E+01
m	6	92.71	2.34E+02	62.29	5.70E+01	9.03E+00	1.77E+02	6.29E+01
	7	129.62	7.37E+01	80.05			7.37E+01	8.00E+01
	8	155.13	6.36E+01	57.59			6.36E+01	5.76E+01
	9	185.58	2.11E+02	74.65	4.72E+01	7.97E+00	1.64E+02	7.51E+01
	10	207.08	1.41E+02	86.17			1.41E+02	8.62E+01
M	11	238.86	7.62E+02	71.31	2.36E+01	1.35E+01	7.39E+02	7.26E+01
m	12	241.86	1.25E+02	48.68	6.38E+00	3.91E+00	1.19E+02	4.88E+01
	13	270.69	7.85E+01	61.17			7.85E+01	6.12E+01
M	14	295.32	2.54E+02	48.02	8.57E+00	6.10E+00	2.45E+02	4.84E+01
m	15	300.24	8.32E+01	39.12			8.32E+01	3.91E+01
	16	338.83	1.90E+02	59.61			1.90E+02	5.96E+01
	17	351.97	4.01E+02	66.11	1.40E+01	5.55E+00	3.87E+02	6.63E+01
	18	375.64	2.69E+01	30.13			2.69E+01	3.01E+01
	19	392.08	4.96E+01	57.27			4.96E+01	5.73E+01
	20	462.68	3.81E+01	35.83			3.81E+01	3.58E+01
	21	498.68	4.33E+01	45.83			4.33E+01	4.58E+01
	22	511.15	1.88E+02	52.63	8.41E+01	5.50E+00	1.04E+02	5.29E+01
	23	583.21	2.82E+02	46.79	7.32E+00	4.08E+00	2.75E+02	4.70E+01
	24	609.42	2.46E+02	52.09	1.30E+01	3.89E+00	2.33E+02	5.22E+01
	25	706.87	1.90E+01	24.66			1.90E+01	2.47E+01
	26	768.02	5.64E+01	36.72			5.64E+01	3.67E+01
	27	795.38	3.41E+01	25.19			3.41E+01	2.52E+01
	28	860.82	4.27E+01	31.81			4.27E+01	3.18E+01
	29	911.44	2.19E+02	37.37	5.60E+00	3.32E+00	2.13E+02	3.75E+01
M	30	965.26	2.81E+01	19.89			2.81E+01	1.99E+01
m	31	969.22	1.23E+02	30.75			1.23E+02	3.08E+01
	32	991.43	2.80E+01	19.06			2.80E+01	1.91E+01
	33	1024.18	3.52E+01	37.84			3.52E+01	3.78E+01
	34	1120.44	1.07E+02	34.07	3.93E+00	2.96E+00	1.03E+02	3.42E+01
	35	1238.61	2.24E+01	23.10			2.24E+01	2.31E+01
	36	1264.59	3.13E+01	35.47			3.13E+01	3.55E+01
	37	1328.36	3.07E+01	28.96			3.07E+01	2.90E+01
	38	1376.10	2.42E+01	12.96			2.42E+01	1.30E+01
	39	1384.14	1.89E+01	12.84			1.89E+01	1.28E+01
	40	1437.19	3.80E+01	26.91			3.80E+01	2.69E+01
	41	1460.98	7.99E+02	58.95	1.12E+01	2.55E+00	7.88E+02	5.90E+01
	42	1511.89	1.64E+01	19.80			1.64E+01	1.98E+01
	43	1578.96	8.75E+00	8.12			8.75E+00	8.12E+00
M	44	1585.58	9.23E+00	11.36			9.23E+00	1.14E+01
m	45	1589.89	7.05E+00	11.18			7.05E+00	1.12E+01
	46	1619.82	1.26E+01	9.22			1.26E+01	9.22E+00
	47	1629.54	1.80E+01	10.01			1.80E+01	1.00E+01
	48	1731.02	1.54E+01	12.92			1.54E+01	1.29E+01
	49	1764.46	6.19E+01	16.49	4.23E+00	2.21E+00	5.77E+01	1.66E+01
	50	1795.61	6.00E+00	8.49			6.00E+00	8.49E+00
	51	1888.29	8.45E+00	8.28			8.45E+00	8.28E+00
	52	1994.47	1.33E+01	9.71			1.33E+01	9.71E+00
	53	2103.26	1.70E+01	16.12			1.70E+01	1.61E+01
	54	2118.75	1.13E+01	9.59			1.13E+01	9.59E+00
	55	2203.68	1.20E+01	10.22	5.94E-01	1.16E+00	1.14E+01	1.03E+01
	56	2285.41	8.69E+00	10.10			8.69E+00	1.01E+01
	57	2294.01	4.67E+00	5.74			4.67E+00	5.74E+00

Analysis Report for 1510087-16

CP4106S15-16

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
58	2318.96	4.42E+00	5.74			4.42E+00	5.74E+00
59	2447.10	8.00E+00	5.66			8.00E+00	5.66E+00
60	2614.49	1.15E+02	21.45	7.38E+00	1.57E+00	1.08E+02	2.15E+01
61	2687.35	5.00E+00	4.47			5.00E+00	4.47E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 11:20:56AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
	1	31.51	5.90E+01	70.47		5.90E+01	7.05E+01	
	2	52.73	7.69E+01	76.92		7.69E+01	7.69E+01	
	3	76.29	1.04E+03	152.16		1.04E+03	1.52E+02	
M	4	87.13	1.37E+02	61.22	1.46E+00	7.88E+00	1.35E+02	6.17E+01
m	5	89.71	9.25E+01	59.83			9.25E+01	5.98E+01
m	6	92.71	2.34E+02	62.29	5.70E+01	9.03E+00	1.77E+02	6.29E+01
	7	129.62	7.37E+01	80.05			7.37E+01	8.00E+01
	8	155.13	6.36E+01	57.59			6.36E+01	5.76E+01
	9	185.58	2.11E+02	74.65	4.72E+01	7.97E+00	1.64E+02	7.51E+01
	10	207.08	1.41E+02	86.17			1.41E+02	8.62E+01
M	11	238.86	7.62E+02	71.31	2.36E+01	1.35E+01	7.39E+02	7.26E+01
m	12	241.86	1.25E+02	48.68	6.38E+00	3.91E+00	1.19E+02	4.88E+01
	13	270.69	7.85E+01	61.17			7.85E+01	6.12E+01
M	14	295.32	2.54E+02	48.02	8.57E+00	6.10E+00	2.45E+02	4.84E+01
m	15	300.24	8.32E+01	39.12			8.32E+01	3.91E+01
	16	338.83	1.90E+02	59.61			1.90E+02	5.96E+01
	17	351.97	4.01E+02	66.11	1.40E+01	5.55E+00	3.87E+02	6.63E+01
	18	375.64	2.69E+01	30.13			2.69E+01	3.01E+01
	19	392.08	4.96E+01	57.27			4.96E+01	5.73E+01
	20	462.68	3.81E+01	35.83			3.81E+01	3.58E+01
	21	498.68	4.33E+01	45.83			4.33E+01	4.58E+01
	22	511.15	1.88E+02	52.63	8.41E+01	5.50E+00	1.04E+02	5.29E+01
	23	583.21	2.82E+02	46.79	7.32E+00	4.08E+00	2.75E+02	4.70E+01
	24	609.42	2.46E+02	52.09	1.30E+01	3.89E+00	2.33E+02	5.22E+01

: 00891

Analysis Report for 1510087-16

CP4106S15-16

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	25	706.87	1.90E+01	24.66			1.90E+01	2.47E+01
	26	768.02	5.64E+01	36.72			5.64E+01	3.67E+01
	27	795.38	3.41E+01	25.19			3.41E+01	2.52E+01
	28	860.82	4.27E+01	31.81			4.27E+01	3.18E+01
	29	911.44	2.19E+02	37.37	5.60E+00	3.32E+00	2.13E+02	3.75E+01
M	30	965.26	2.81E+01	19.89			2.81E+01	1.99E+01
m	31	969.22	1.23E+02	30.75			1.23E+02	3.08E+01
	32	991.43	2.80E+01	19.06			2.80E+01	1.91E+01
	33	1024.18	3.52E+01	37.84			3.52E+01	3.78E+01
	34	1120.44	1.07E+02	34.07	3.93E+00	2.96E+00	1.03E+02	3.42E+01
	35	1238.61	2.24E+01	23.10			2.24E+01	2.31E+01
	36	1264.59	3.13E+01	35.47			3.13E+01	3.55E+01
	37	1328.36	3.07E+01	28.96			3.07E+01	2.90E+01
	38	1376.10	2.42E+01	12.96			2.42E+01	1.30E+01
	39	1384.14	1.89E+01	12.84			1.89E+01	1.28E+01
	40	1437.19	3.80E+01	26.91			3.80E+01	2.69E+01
	41	1460.98	7.99E+02	58.95	1.12E+01	2.55E+00	7.88E+02	5.90E+01
	42	1511.89	1.64E+01	19.80			1.64E+01	1.98E+01
	43	1578.96	8.75E+00	8.12			8.75E+00	8.12E+00
M	44	1585.58	9.23E+00	11.36			9.23E+00	1.14E+01
m	45	1589.89	7.05E+00	11.18			7.05E+00	1.12E+01
	46	1619.82	1.26E+01	9.22			1.26E+01	9.22E+00
	47	1629.54	1.80E+01	10.01			1.80E+01	1.00E+01
	48	1731.02	1.54E+01	12.92			1.54E+01	1.29E+01
	49	1764.46	6.19E+01	16.49	4.23E+00	2.21E+00	5.77E+01	1.66E+01
	50	1795.61	6.00E+00	8.49			6.00E+00	8.49E+00
	51	1888.29	8.45E+00	8.28			8.45E+00	8.28E+00
	52	1994.47	1.33E+01	9.71			1.33E+01	9.71E+00
	53	2103.26	1.70E+01	16.12			1.70E+01	1.61E+01
	54	2118.75	1.13E+01	9.59			1.13E+01	9.59E+00
	55	2203.68	1.20E+01	10.22	5.94E-01	1.16E+00	1.14E+01	1.03E+01
	56	2285.41	8.69E+00	10.10			8.69E+00	1.01E+01
	57	2294.01	4.67E+00	5.74			4.67E+00	5.74E+00
	58	2318.96	4.42E+00	5.74			4.42E+00	5.74E+00
	59	2447.10	8.00E+00	5.66			8.00E+00	5.66E+00
	60	2614.49	1.15E+02	21.45	7.38E+00	1.57E+00	1.08E+02	2.15E+01
	61	2687.35	5.00E+00	4.47			5.00E+00	4.47E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Analysis Report for 1510087-16
CP4106S15-16

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.996	1460.81 *	10.67	2.13E+01	2.72E+00
GA-67	0.545	93.31 *	35.70	2.46E+02	1.09E+03
		208.95	2.24		
		300.22 *	16.00	4.82E+02	2.14E+03
CD-109	0.878	88.03 *	3.72	1.81E+00	8.79E-01
SN-113	0.923	255.12	1.93		
		391.69 *	64.90	9.84E-02	1.14E-01
SN-126	0.969	87.57 *	37.00	1.73E-01	8.36E-02
EU-155	0.323	86.50 *	30.90	2.10E-01	1.01E-01
		105.30	20.70		
TL-208	0.995	583.14 *	30.22	1.28E+00	2.45E-01
		860.37 *	4.48	1.82E+00	1.36E+00
		2614.66 *	35.85	9.98E-01	2.14E-01
PB-212	0.992	238.63 *	44.60	1.25E+00	1.66E-01
		300.09 *	3.41	2.15E+00	1.03E+00
BI-214	0.995	609.31 *	46.30	7.32E-01	1.76E-01
		1120.29 *	15.10	1.61E+00	5.52E-01
		1764.49 *	15.80	1.18E+00	3.53E-01
		2204.22 *	4.98	7.85E-01	7.11E-01
PB-214	0.999	295.21 *	19.19	1.11E+00	2.44E-01
		351.92 *	37.19	1.02E+00	1.97E-01
RA-224	0.883	240.98 *	3.95	2.29E+00	9.63E-01
RA-226	0.938	186.21 *	3.28	3.18E+00	6.00E+00
AC-228	0.980	338.32 *	11.40	1.59E+00	5.20E-01
		911.07 *	27.70	1.54E+00	3.02E-01
		969.11 *	16.60	1.55E+00	4.12E-01
NP-237	0.939	86.50 *	12.60	5.09E-01	2.45E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 11:20:56AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1510087-16
CP4106S15-16

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	31.51	1.63851E-02	59.74		
2	52.73	2.13644E-02	50.00		
3	76.29	2.88220E-01	7.33		
m 5	89.71	2.56968E-02	32.34		
7	129.62	2.04627E-02	54.33		
8	155.13	1.76774E-02	45.25		
10	207.08	3.92060E-02	30.53		
13	270.69	2.18137E-02	38.94		
18	375.64	7.47845E-03	55.96		
20	462.68	1.05764E-02	47.06		
21	498.68	1.20253E-02	52.93		
22	511.15	2.88775E-02	25.45		
25	706.87	5.28560E-03	64.79	Tol.	AG-110M
26	768.02	1.56752E-02	32.53	Sum	
27	795.38	9.46906E-03	36.95	Sum	
M 30	965.26	7.80786E-03	35.39		
32	991.43	7.77778E-03	34.03		
33	1024.18	9.78758E-03	53.70		
35	1238.61	6.21693E-03	51.61		
36	1264.59	8.70567E-03	56.59	Sum	
37	1328.36	8.53462E-03	47.12		
38	1376.10	6.73148E-03	26.74		
39	1384.14	5.26175E-03	33.88	Tol.	AG-110M
40	1437.19	1.05556E-02	35.40		
42	1511.89	4.55556E-03	60.36	Sum	
43	1578.96	2.43056E-03	46.42	Sum	
M 44	1585.58	2.56509E-03	61.50		
m 45	1589.89	1.95780E-03	79.31		
46	1619.82	3.49074E-03	36.68	Tol.	BI-212
47	1629.54	5.00000E-03	27.81		
48	1731.02	4.27536E-03	41.98		
50	1795.61	1.66667E-03	70.71		
51	1888.29	2.34848E-03	48.95		
52	1994.47	3.69792E-03	36.46		
53	2103.26	4.72222E-03	47.43	S-Esc	
54	2118.75	3.12963E-03	42.57		
56	2285.41	2.41453E-03	58.09		
57	2294.01	1.29630E-03	61.55		
58	2318.96	1.22685E-03	65.03		
59	2447.10	2.22222E-03	35.36		
61	2687.35	1.38889E-03	44.72		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

Analysis Report for 1510087-16
CP4106S15-16

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	2.13E+01	2.72E+00
GA-67	0.54	93.31	*	35.70	2.46E+02	1.09E+03
		208.95		2.24		
		300.22	*	16.00	4.82E+02	2.14E+03
CD-109	0.87	88.03	*	3.72	1.81E+00	8.79E-01
SN-113	0.92	255.12		1.93		
		391.69	*	64.90	9.84E-02	1.14E-01
SN-126	0.96	87.57	*	37.00	1.73E-01	8.36E-02
EU-155	0.32	86.50	*	30.90	2.10E-01	1.01E-01
		105.30		20.70		
TL-208	0.99	583.14	*	30.22	1.28E+00	2.45E-01
		860.37	*	4.48	1.82E+00	1.36E+00
		2614.66	*	35.85	9.98E-01	2.14E-01
PB-212	0.99	238.63	*	44.60	1.25E+00	1.66E-01
		300.09	*	3.41	2.15E+00	1.03E+00
BI-214	0.99	609.31	*	46.30	7.32E-01	1.76E-01
		1120.29	*	15.10	1.61E+00	5.52E-01
		1764.49	*	15.80	1.18E+00	3.53E-01
		2204.22	*	4.98	7.85E-01	7.11E-01
PB-214	0.99	295.21	*	19.19	1.11E+00	2.44E-01
		351.92	*	37.19	1.02E+00	1.97E-01
RA-224	0.88	240.98	*	3.95	2.29E+00	9.63E-01
RA-226	0.93	186.21	*	3.28	3.18E+00	6.00E+00
AC-228	0.98	338.32	*	11.40	1.59E+00	5.20E-01
		911.07	*	27.70	1.54E+00	3.02E-01
		969.11	*	16.60	1.55E+00	4.12E-01
NP-237	0.93	86.50	*	12.60	5.09E-01	2.45E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

Analysis Report for 1510087-16
CP4106S15-16

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.996	2.13E+01	2.72E+00	
GA-67	0.545	2.40E+02	1.03E+03	
? CD-109	0.878	1.81E+00	8.79E-01	
? SN-113	0.923	9.84E-02	1.14E-01	
? SN-126	0.969	1.73E-01	8.36E-02	
? EU-155	0.323	2.10E-01	1.01E-01	
TL-208	0.995	1.13E+00	1.60E-01	
PB-212	0.992	1.24E+00	1.64E-01	
BI-214	0.995	8.75E-01	1.48E-01	
PB-214	0.999	1.06E+00	1.53E-01	
RA-224	0.883	2.29E+00	9.63E-01	
RA-226	0.938	3.18E+00	6.00E+00	
AC-228	0.980	1.55E+00	2.20E-01	
? NP-237	0.939	5.09E-01	2.45E-01	

- ? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1510087-16
 CP4106S15-16

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 11:20:56AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	31.51	1.63851E-02	59.74		
2	52.73	2.13644E-02	50.00		
3	76.29	2.88220E-01	7.33		
m 5	89.71	2.56968E-02	32.34		
7	129.62	2.04627E-02	54.33		
8	155.13	1.76774E-02	45.25		
10	207.08	3.92060E-02	30.53		
13	270.69	2.18137E-02	38.94		
18	375.64	7.47845E-03	55.96		
20	462.68	1.05764E-02	47.06		
21	498.68	1.20253E-02	52.93		
22	511.15	2.88775E-02	25.45		
25	706.87	5.28560E-03	64.79	Tol.	AG-110M
26	768.02	1.56752E-02	32.53	Sum	
27	795.38	9.46906E-03	36.95	Sum	
M 30	965.26	7.80786E-03	35.39		
32	991.43	7.77778E-03	34.03		
33	1024.18	9.78758E-03	53.70		
35	1238.61	6.21693E-03	51.61		
36	1264.59	8.70567E-03	56.59	Sum	
37	1328.36	8.53462E-03	47.12		
38	1376.10	6.73148E-03	26.74		
39	1384.14	5.26175E-03	33.88	Tol.	AG-110M
40	1437.19	1.05556E-02	35.40		
42	1511.89	4.55556E-03	60.36	Sum	
43	1578.96	2.43056E-03	46.42	Sum	
M 44	1585.58	2.56509E-03	61.50		
m 45	1589.89	1.95780E-03	79.31		
46	1619.82	3.49074E-03	36.68	Tol.	BI-212
47	1629.54	5.00000E-03	27.81		
48	1731.02	4.27536E-03	41.98		
50	1795.61	1.66667E-03	70.71		
51	1888.29	2.34848E-03	48.95		
52	1994.47	3.69792E-03	36.46		
53	2103.26	4.72222E-03	47.43	S-Esc	

Analysis Report for 1510087-16
CP4106S15-16

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
54	2118.75	3.12963E-03	42.57		
56	2285.41	2.41453E-03	58.09		
57	2294.01	1.29630E-03	61.55		
58	2318.96	1.22685E-03	65.03		
59	2447.10	2.22222E-03	35.36		
61	2687.35	1.38889E-03	44.72		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-1.79E-02	7.57E-01	7.57E-01
+	NA-22	1274.54	99.94	2.23E-02	9.26E-02	9.26E-02
+	NA-24	1368.53	99.99	6.90E+13	5.11E+13	3.52E+14
		2754.09	99.86	0.00E+00		5.11E+13
+	AL-26	1808.65	99.76	-8.70E-03	5.68E-02	5.68E-02
+	K-40	1460.81	* 10.67	2.13E+01	8.80E-01	8.80E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.17E-02	4.84E-02	4.84E-02
		78.34	96.00	2.65E-01		7.04E-02
+	SC-46	889.25	99.98	-6.26E-03	9.71E-02	9.71E-02
		1120.51	99.99	2.94E-01		1.74E-01
+	V-48	983.52	99.98	1.86E-01	2.72E-01	3.44E-01
		1312.10	97.50	-1.19E-01		2.72E-01
+	CR-51	320.08	9.83	1.30E-01	1.18E+00	1.18E+00
+	MN-54	834.83	99.97	2.36E-02	8.55E-02	8.55E-02
+	CO-56	846.75	99.96	1.40E-02	9.80E-02	9.80E-02
		1037.75	14.03	2.14E-01		6.94E-01
		1238.25	67.00	3.44E-02		2.03E-01
		1771.40	15.51	6.93E-03		4.40E-01
		2598.48	16.90	-8.77E-02		3.16E-01
+	CO-57	122.06	85.51	-2.25E-02	5.53E-02	5.53E-02
		136.48	10.60	-7.13E-02		4.63E-01
+	CO-58	810.76	99.40	-6.23E-02	8.36E-02	8.36E-02

Analysis Report for 1510087-16
CP4106S15-16

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	FE-59	1099.22	56.50	-8.56E-02	2.25E-01	2.25E-01
		1291.56	43.20	2.45E-02		3.03E-01
+	CO-60	1173.22	100.00	4.20E-02	7.70E-02	1.01E-01
		1332.49	100.00	1.08E-02		7.70E-02
+	ZN-65	1115.52	50.75	4.65E-03	1.94E-01	1.94E-01
+	GA-67	93.31	* 35.70	2.46E+02	3.49E+02	3.49E+02
		208.95	2.24	2.89E+03		2.72E+03
		300.22	* 16.00	4.82E+02		7.55E+02
+	SE-75	121.11	16.70	-6.06E-02	9.18E-02	3.10E-01
		136.00	59.20	2.71E-02		9.29E-02
		264.65	59.80	2.24E-02		9.18E-02
		279.53	25.20	-7.10E-02		2.52E-01
		400.65	11.40	7.29E-02		5.36E-01
+	RB-82	776.52	13.00	-6.56E-01	1.17E+00	1.17E+00
+	RB-83	520.41	46.00	-4.15E-02	1.21E-01	1.21E-01
		529.64	30.30	8.00E-02		2.28E-01
		552.65	16.40	9.56E-02		3.89E-01
+	KR-85	513.99	0.43	-1.30E+01	1.50E+01	1.50E+01
+	SR-85	513.99	99.27	-8.01E-02	9.22E-02	9.22E-02
+	Y-88	898.02	93.40	5.87E-03	6.47E-02	1.00E-01
		1836.01	99.38	1.39E-02		6.47E-02
+	NB-93M	16.57	9.43	-8.52E+03	5.36E+03	5.36E+03
+	NB-94	702.63	100.00	-1.21E-02	6.79E-02	6.93E-02
		871.10	100.00	-7.01E-03		6.79E-02
+	NB-95	765.79	99.81	1.26E-01	1.68E-01	1.68E-01
+	NB-95M	235.69	25.00	-1.16E+03	1.65E+02	1.65E+02
+	ZR-95	724.18	43.70	8.18E-02	1.92E-01	2.62E-01
		756.72	55.30	-1.64E-02		1.92E-01
+	MO-99	181.06	6.20	1.71E+02	1.97E+03	2.99E+03
		739.58	12.80	-2.77E+02		1.97E+03
		778.00	4.50	4.58E+02		5.60E+03
+	RU-103	497.08	89.00	4.86E-02	1.08E-01	1.08E-01
+	RU-106	621.84	9.80	-4.59E-02	6.97E-01	6.97E-01
+	AG-108M	433.93	89.90	-1.76E-02	5.43E-02	5.43E-02
		614.37	90.40	1.29E-02		7.38E-02
		722.95	90.50	-9.56E-02		7.73E-02
+	CD-109	88.03	* 3.72	1.81E+00	3.34E+00	3.34E+00
+	AG-110M	657.75	93.14	8.24E-03	7.54E-02	7.54E-02
		677.61	10.53	1.89E-01		7.22E-01
		706.67	16.46	1.02E-01		4.89E-01
		763.93	21.98	2.63E-02		3.62E-01
		884.67	71.63	-2.15E-02		1.08E-01
		1384.27	23.94	2.34E-01		3.24E-01
+	CD-113M	263.70	0.02	5.93E+01	1.99E+02	1.99E+02
+	SN-113	255.12	1.93	1.57E-01	1.87E-01	3.15E+00
		391.69	* 64.90	9.84E-02		1.87E-01
+	TE123M	159.00	84.10	-7.58E-03	6.61E-02	6.61E-02

Analysis Report for 1510087-16
CP4106S15-16

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-124	602.71	97.87	-5.13E-03	1.04E-01	1.04E-01
		645.85	7.26	9.55E-02		1.23E+00
		722.78	11.10	-1.14E+00		9.18E-01
		1691.02	49.00	7.31E-02		1.63E-01
+	I-125	35.49	6.49	1.38E+00	5.72E+00	5.72E+00
+	SB-125	176.33	6.89	5.50E-01	1.87E-01	7.38E-01
		427.89	29.33	3.37E-02		1.87E-01
		463.38	10.35	3.83E-01		5.73E-01
		600.56	17.80	-1.79E-02		3.93E-01
		635.90	11.32	1.27E-01		5.45E-01
+	SB-126	414.70	83.30	9.05E-02	3.92E-01	3.97E-01
		666.33	99.60	-7.59E-02		3.92E-01
		695.00	99.60	2.24E-01		4.59E-01
		720.50	53.80	-4.99E-02		7.48E-01
+	SN-126	87.57	* 37.00	1.73E-01	3.19E-01	3.19E-01
+	SB-127	473.00	25.00	-1.51E+01	6.78E+01	6.78E+01
		685.20	35.70	1.00E+01		7.32E+01
		783.80	14.70	1.78E+00		1.77E+02
+	I-129	29.78	57.00	-1.83E-01	1.15E+00	1.15E+00
		33.60	13.20	3.12E-01		2.53E+00
		39.58	7.52	2.69E-01		2.12E+00
+	I-131	284.30	6.05	-2.36E+00	1.04E+00	1.39E+01
		364.48	81.20	2.51E-01		1.04E+00
		636.97	7.26	2.60E+00		1.35E+01
		722.89	1.80	-8.08E+01		6.53E+01
+	TE-132	49.72	13.10	-3.18E+01	6.20E+01	6.11E+02
		228.16	88.00	-2.85E+00		6.20E+01
+	BA-133	81.00	33.00	7.97E-02	8.54E-02	1.20E-01
		302.84	17.80	-2.88E-01		2.97E-01
		356.01	60.00	-1.48E-03		8.54E-02
+	I-133	529.87	86.30	3.50E+08	1.42E+10	1.42E+10
+	XE-133	81.00	38.00	5.21E+00	7.82E+00	7.82E+00
+	CS-134	563.23	8.38	-8.27E-02	8.22E-02	6.58E-01
		569.32	15.43	-1.51E-01		3.43E-01
		604.70	97.60	-5.42E-01		8.22E-02
		795.84	85.40	4.78E-02		9.57E-02
		801.93	8.73	3.24E-01		8.79E-01
+	CS-135	268.24	16.00	-2.86E-01	3.34E-01	3.34E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	1.02E+00	3.67E-01	3.66E+00
		163.89	4.61	1.90E+00		5.95E+00
		176.55	13.56	3.07E-01		2.03E+00
		273.65	12.66	-4.33E+00		2.27E+00
		340.57	48.50	-8.37E-03		7.13E-01
		818.50	99.70	5.58E-02		3.67E-01
		1048.07	79.60	-2.25E-01		5.56E-01
		1235.34	19.70	3.27E-01		3.06E+00

Analysis Report for 1510087-16

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CS-137	661.65	85.12	1.80E-02	8.03E-02	8.03E-02
+	LA-138	788.74	34.00	2.47E-02	1.20E-01	2.06E-01
		1435.80	66.00	2.75E-03		1.20E-01
+	CE-139	165.85	80.35	-1.48E-02	7.05E-02	7.05E-02
+	BA-140	162.64	6.70	1.50E+00	1.30E+00	4.32E+00
		304.84	4.50	2.16E+00		6.57E+00
		423.70	3.20	-6.87E+00		8.39E+00
		437.55	2.00	-1.72E+00		1.46E+01
		537.32	25.00	1.56E-01		1.30E+00
+	LA-140	328.77	20.50	9.45E-01	4.23E-01	1.67E+00
		487.03	45.50	-1.60E-02		6.73E-01
		815.85	23.50	-4.03E-01		1.60E+00
		1596.49	95.49	-2.09E-03		4.23E-01
+	CE-141	145.44	48.40	-5.81E-02	1.91E-01	1.91E-01
+	CE-143	57.36	11.80	1.63E+06	2.53E+06	6.16E+06
		293.26	42.00	-2.24E+06		2.53E+06
		664.55	5.20	-1.28E+06		1.84E+07
+	CE-144	133.54	10.80	-1.08E-01	4.54E-01	4.54E-01
+	PM-144	476.78	42.00	-3.10E-03	7.15E-02	1.31E-01
		618.01	98.60	-8.21E-03		7.15E-02
		696.49	99.49	1.37E-02		7.64E-02
+	PM-145	36.85	21.70	-7.49E-02	5.05E-01	9.83E-01
		37.36	39.70	-3.84E-02		5.05E-01
		42.30	15.10	2.20E-01		8.14E-01
		72.40	2.31	-2.65E+00		1.91E+00
+	PM-146	453.90	39.94	6.82E-02	1.30E-01	1.30E-01
		735.90	14.01	1.64E-01		4.92E-01
		747.13	13.10	-3.02E-01		4.89E-01
+	ND-147	91.11	28.90	-1.75E+00	1.66E+00	1.66E+00
		531.02	13.10	3.74E-01		3.13E+00
+	PM-149	285.90	3.10	1.18E+04	4.75E+04	4.75E+04
+	EU-152	121.78	20.50	-8.64E-02	2.13E-01	2.13E-01
		244.69	5.40	-1.64E+00		9.21E-01
		344.27	19.13	1.30E-02		2.44E-01
		778.89	9.20	-2.31E-01		7.03E-01
		964.01	10.40	-2.48E+00		9.06E-01
		1085.78	7.22	7.90E-01		1.16E+00
		1112.02	9.60	2.31E-01		8.75E-01
		1407.95	14.94	8.62E-02		4.82E-01
+	GD-153	97.43	31.30	4.58E-02	1.56E-01	1.56E-01
		103.18	22.20	-2.84E-02		2.21E-01
+	EU-154	123.07	40.50	6.78E-02	1.11E-01	1.11E-01
		723.30	19.70	-4.42E-01		3.58E-01
		873.19	11.50	-3.04E-01		5.85E-01
		996.32	10.30	-1.83E-01		7.12E-01
		1004.76	17.90	1.50E-01		4.49E-01
		1274.45	35.50	6.17E-02		2.56E-01
+	EU-155	86.50	* 30.90	2.10E-01	2.20E-01	3.87E-01
		105.30	20.70	9.17E-02		2.20E-01

Analysis Report for 1510087-16
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	EU-156	811.77	10.40	-2.96E-01	2.69E+00	2.69E+00
		1153.47	7.20	3.36E+00		6.14E+00
		1230.71	8.90	-6.88E-01		5.04E+00
+	HO-166M	184.41	72.60	7.60E-02	8.62E-02	8.62E-02
		280.45	29.60	-5.01E-02		1.78E-01
		410.94	11.10	-3.57E-02		4.80E-01
		711.69	54.10	1.47E-02		1.30E-01
+	TM-171	66.72	0.14	-4.28E+00	3.36E+01	3.36E+01
+	HF-172	81.75	4.52	5.51E-01	4.18E-01	8.70E-01
		125.81	11.30	1.35E-01		4.18E-01
+	LU-172	181.53	20.60	-6.67E+00	3.56E+00	7.14E+00
		810.06	16.63	-7.99E+00		1.07E+01
		912.12	15.25	7.62E+01		2.93E+01
		1093.66	62.50	6.81E-02		3.56E+00
+	LU-173	100.72	5.24	-1.02E-01	3.05E-01	8.92E-01
		272.11	21.20	4.35E-01		3.05E-01
+	HF-175	343.40	84.00	-3.11E-03	7.82E-02	7.82E-02
+	LU-176	88.34	13.30	3.95E-01	5.30E-02	4.60E-01
		201.83	86.00	7.21E-03		5.92E-02
		306.78	94.00	1.71E-02		5.30E-02
+	TA-182	67.75	41.20	-3.27E-02	1.35E-01	1.35E-01
		1121.30	34.90	7.48E-01		4.55E-01
		1189.05	16.23	-3.84E-01		6.37E-01
		1221.41	26.98	-1.20E-01		4.29E-01
		1231.02	11.44	3.28E-01		1.10E+00
+	IR-192	308.46	29.68	-5.65E-02	1.32E-01	2.28E-01
		468.07	48.10	7.88E-02		1.32E-01
+	HG-203	279.19	77.30	6.01E-02	1.17E-01	1.17E-01
+	BI-207	569.67	97.72	-2.32E-02	5.27E-02	5.27E-02
		1063.62	74.90	3.57E-02		1.11E-01
+	TL-208	583.14	* 30.22	1.28E+00	1.11E-01	2.67E-01
		860.37	* 4.48	1.82E+00		2.15E+00
		2614.66	* 35.85	9.98E-01		1.11E-01
+	BI-210M	262.00	45.00	-3.90E-02	1.01E-01	1.01E-01
		300.00	23.00	2.36E-01		2.66E-01
+	PB-210	46.50	4.25	1.54E+00	2.36E+00	2.36E+00
+	PB-211	404.84	2.90	4.38E-02	1.76E+00	1.76E+00
		831.96	2.90	-4.81E-01		2.59E+00
+	BI-212	727.17	11.80	6.29E-01	6.95E-01	6.95E-01
		1620.62	2.75	1.42E-01		2.18E+00
+	PB-212	238.63	* 44.60	1.25E+00	2.46E-01	2.46E-01
		300.09	* 3.41	2.15E+00		3.37E+00
+	BI-214	609.31	* 46.30	7.32E-01	2.27E-01	2.27E-01
		1120.29	* 15.10	1.61E+00		7.51E-01
		1764.49	* 15.80	1.18E+00		2.82E-01
		2204.22	* 4.98	7.85E-01		1.06E+00
+	PB-214	295.21	* 19.19	1.11E+00	2.39E-01	6.00E-01
		351.92	* 37.19	1.02E+00		2.39E-01

Analysis Report for 1510087-16

CP4106S15-16

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RN-219	401.80	6.50	-3.79E-01	7.59E-01	7.59E-01
+	RA-223	323.87	3.88	-8.38E-01	1.27E+00	1.27E+00
+	RA-224	240.98	* 3.95	2.29E+00	2.74E+00	2.74E+00
+	RA-225	40.00	31.00	2.91E-01	2.28E+00	2.28E+00
+	RA-226	186.21	* 3.28	3.18E+00	2.31E+00	2.31E+00
+	TH-227	50.10	8.40	-4.61E-02	6.67E-01	8.85E-01
		236.00	11.50	-4.70E+00		6.67E-01
		256.20	6.30	-3.12E-01		7.75E-01
+	AC-228	338.32	* 11.40	1.59E+00	2.99E-01	7.52E-01
		911.07	* 27.70	1.54E+00		2.99E-01
		969.11	* 16.60	1.55E+00		6.36E-01
+	TH-230	48.44	16.90	-5.87E-01	4.69E-01	4.69E-01
		62.85	4.60	1.16E+00		1.22E+00
		67.67	0.37	-2.99E+00		1.24E+01
+	PA-231	283.67	1.60	-5.30E-01	2.28E+00	3.12E+00
		302.67	2.30	-2.21E+00		2.28E+00
+	TH-231	25.64	14.70	1.70E+00	6.33E-01	1.40E+01
		84.21	6.40	-1.28E-02		6.33E-01
+	PA-233	311.98	38.60	4.12E-02	2.91E-01	2.91E-01
+	PA-234	131.20	20.40	1.40E-01	2.40E-01	2.40E-01
		733.99	8.80	7.66E-02		7.50E-01
		946.00	12.00	-6.98E-01		5.64E-01
+	PA-234M	1001.03	0.92	8.09E+00	9.49E+00	9.49E+00
+	TH-234	63.29	3.80	1.39E+00	1.47E+00	1.47E+00
+	U-235	143.76	10.50	-2.31E-01	4.29E-01	4.29E-01
		163.35	4.70	3.63E-01		1.05E+00
		205.31	4.70	3.36E-01		1.13E+00
+	NP-237	86.50	* 12.60	5.09E-01	9.38E-01	9.38E-01
+	NP-239	106.10	22.70	1.61E+02	3.02E+03	3.02E+03
		228.18	10.70	-3.39E+02		7.38E+03
		277.60	14.10	8.66E+02		5.94E+03
+	AM-241	59.54	35.90	1.33E-02	1.42E-01	1.42E-01
+	AM-243	74.67	66.00	-1.24E-01	9.98E-02	9.98E-02
+	CM-243	209.75	3.29	1.21E+00	3.92E-01	1.76E+00
		228.14	10.60	-2.24E-02		4.88E-01
		277.60	14.00	5.72E-02		3.92E-01

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction

? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1510087-16
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NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	7.57E-01	7.57E-01	-1.79E-02	3.54E-01
NA-22	1274.54	99.94	9.26E-02	9.26E-02	2.23E-02	4.27E-02
NA-24	1368.53	99.99	3.52E+14	5.11E+13	6.90E+13	1.54E+14
	2754.09	99.86	5.11E+13		0.00E+00	0.00E+00
AL-26	1808.65	99.76	5.68E-02	5.68E-02	-8.70E-03	2.40E-02
+ K-40	1460.81	* 10.67	8.80E-01	8.80E-01	2.13E+01	4.03E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	4.84E-02	4.84E-02	-1.17E-02	2.34E-02
	78.34	96.00	7.04E-02		2.65E-01	3.45E-02
SC-46	889.25	99.98	9.71E-02	9.71E-02	-6.26E-03	4.51E-02
	1120.51	99.99	1.74E-01		2.94E-01	8.28E-02
V-48	983.52	99.98	3.44E-01	2.72E-01	1.86E-01	1.60E-01
	1312.10	97.50	2.72E-01		-1.19E-01	1.21E-01
CR-51	320.08	9.83	1.18E+00	1.18E+00	1.30E-01	5.61E-01
MN-54	834.83	99.97	8.55E-02	8.55E-02	2.36E-02	4.00E-02
CO-56	846.75	99.96	9.80E-02	9.80E-02	1.40E-02	4.56E-02
	1037.75	14.03	6.94E-01		2.14E-01	3.18E-01
	1238.25	67.00	2.03E-01		3.44E-02	9.47E-02
	1771.40	15.51	4.40E-01		6.93E-03	1.82E-01
	2598.48	16.90	3.16E-01		-8.77E-02	1.22E-01
CO-57	122.06	85.51	5.53E-02	5.53E-02	-2.25E-02	2.68E-02
	136.48	10.60	4.63E-01		-7.13E-02	2.24E-01
CO-58	810.76	99.40	8.36E-02	8.36E-02	-6.23E-02	3.84E-02
FE-59	1099.22	56.50	2.25E-01	2.25E-01	-8.56E-02	1.03E-01
	1291.56	43.20	3.03E-01		2.45E-02	1.38E-01
CO-60	1173.22	100.00	1.01E-01	7.70E-02	4.20E-02	4.72E-02
	1332.49	100.00	7.70E-02		1.08E-02	3.48E-02
ZN-65	1115.52	50.75	1.94E-01	1.94E-01	4.65E-03	9.02E-02
+ GA-67	93.31	* 35.70	3.49E+02	3.49E+02	2.46E+02	1.72E+02
	208.95	2.24	2.72E+03		2.89E+03	1.31E+03
	300.22	* 16.00	7.55E+02		4.82E+02	3.70E+02
SE-75	121.11	16.70	3.10E-01	9.18E-02	-6.06E-02	1.50E-01
	136.00	59.20	9.29E-02		2.71E-02	4.50E-02
	264.65	59.80	9.18E-02		2.24E-02	4.37E-02
	279.53	25.20	2.52E-01		-7.10E-02	1.21E-01
	400.65	11.40	5.36E-01		7.29E-02	2.53E-01
RB-82	776.52	13.00	1.17E+00	1.17E+00	-6.56E-01	5.40E-01
RB-83	520.41	46.00	1.21E-01	1.21E-01	-4.15E-02	5.58E-02
	529.64	30.30	2.28E-01		8.00E-02	1.06E-01
	552.65	16.40	3.89E-01		9.56E-02	1.80E-01

Analysis Report for 1510087-16
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
KR-85	513.99	0.43	1.50E+01	1.50E+01	-1.30E+01	7.08E+00
SR-85	513.99	99.27	9.22E-02	9.22E-02	-8.01E-02	4.36E-02
Y-88	898.02	93.40	1.00E-01	6.47E-02	5.87E-03	4.67E-02
	1836.01	99.38	6.47E-02		1.39E-02	2.68E-02
NB-93M	16.57	9.43	5.36E+03	5.36E+03	-8.52E+03	2.61E+03
NB-94	702.63	100.00	6.93E-02	6.79E-02	-1.21E-02	3.24E-02
	871.10	100.00	6.79E-02		-7.01E-03	3.13E-02
NB-95	765.79	99.81	1.68E-01	1.68E-01	1.26E-01	7.95E-02
NB-95M	235.69	25.00	1.65E+02	1.65E+02	-1.16E+03	8.01E+01
ZR-95	724.18	43.70	2.62E-01	1.92E-01	8.18E-02	1.23E-01
	756.72	55.30	1.92E-01		-1.64E-02	8.99E-02
MO-99	181.06	6.20	2.99E+03	1.97E+03	1.71E+02	1.44E+03
	739.58	12.80	1.97E+03		-2.77E+02	9.15E+02
	778.00	4.50	5.60E+03		4.58E+02	2.60E+03
RU-103	497.08	89.00	1.08E-01	1.08E-01	4.86E-02	5.07E-02
RU-106	621.84	9.80	6.97E-01	6.97E-01	-4.59E-02	3.27E-01
AG-108M	433.93	89.90	5.43E-02	5.43E-02	-1.76E-02	2.54E-02
	614.37	90.40	7.38E-02		1.29E-02	3.47E-02
	722.95	90.50	7.73E-02		-9.56E-02	3.62E-02
+ CD-109	88.03	*	3.72	3.34E+00	1.81E+00	1.65E+00
AG-110M	657.75	93.14	7.54E-02	7.54E-02	8.24E-03	3.52E-02
	677.61	10.53	7.22E-01		1.89E-01	3.39E-01
	706.67	16.46	4.89E-01		1.02E-01	2.30E-01
	763.93	21.98	3.62E-01		2.63E-02	1.69E-01
	884.67	71.63	1.08E-01		-2.15E-02	5.00E-02
	1384.27	23.94	3.24E-01		2.34E-01	1.45E-01
CD-113M	263.70	0.02	1.99E+02	1.99E+02	5.93E+01	9.48E+01
+ SN-113	255.12	1.93	3.15E+00	1.87E-01	1.57E-01	1.51E+00
	391.69	*	64.90	1.87E-01	9.84E-02	9.06E-02
TE123M	159.00	84.10	6.61E-02	6.61E-02	-7.58E-03	3.19E-02
SB-124	602.71	97.87	1.04E-01	1.04E-01	-5.13E-03	4.89E-02
	645.85	7.26	1.23E+00		9.55E-02	5.72E-01
	722.78	11.10	9.18E-01		-1.14E+00	4.30E-01
	1691.02	49.00	1.63E-01		7.31E-02	6.90E-02
I-125	35.49	6.49	5.72E+00	5.72E+00	1.38E+00	2.77E+00
SB-125	176.33	6.89	7.38E-01	1.87E-01	5.50E-01	3.57E-01
	427.89	29.33	1.87E-01		3.37E-02	8.84E-02
	463.38	10.35	5.73E-01		3.83E-01	2.71E-01
	600.56	17.80	3.93E-01		-1.79E-02	1.85E-01
	635.90	11.32	5.45E-01		1.27E-01	2.54E-01
SB-126	414.70	83.30	3.97E-01	3.92E-01	9.05E-02	1.88E-01
	666.33	99.60	3.92E-01		-7.59E-02	1.83E-01
	695.00	99.60	4.59E-01		2.24E-01	2.16E-01
	720.50	53.80	7.48E-01		-4.99E-02	3.48E-01
+ SN-126	87.57	*	37.00	3.19E-01	1.73E-01	1.58E-01
SB-127	473.00	25.00	6.78E+01	6.78E+01	-1.51E+01	3.15E+01
	685.20	35.70	7.32E+01		1.00E+01	3.44E+01
	783.80	14.70	1.77E+02		1.78E+00	8.24E+01
I-129	29.78	57.00	1.15E+00	1.15E+00	-1.83E-01	5.58E-01
	33.60	13.20	2.53E+00		3.12E-01	1.23E+00
	39.58	7.52	2.12E+00		2.69E-01	1.03E+00
I-131	284.30	6.05	1.39E+01	1.04E+00	-2.36E+00	6.63E+00
	364.48	81.20	1.04E+00		2.51E-01	4.92E-01

Analysis Report for 1510087-16

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-131	636.97	7.26	1.35E+01	1.04E+00	2.60E+00	6.27E+00
	722.89	1.80	6.53E+01		-8.08E+01	3.06E+01
TE-132	49.72	13.10	6.11E+02	6.20E+01	-3.18E+01	2.96E+02
	228.16	88.00	6.20E+01		-2.85E+00	2.98E+01
BA-133	81.00	33.00	1.20E-01	8.54E-02	7.97E-02	5.78E-02
	302.84	17.80	2.97E-01		-2.88E-01	1.42E-01
	356.01	60.00	8.54E-02		-1.48E-03	4.05E-02
I-133	529.87	86.30	1.42E+10	1.42E+10	3.50E+08	6.62E+09
XE-133	81.00	38.00	7.82E+00	7.82E+00	5.21E+00	3.78E+00
CS-134	563.23	8.38	6.58E-01	8.22E-02	-8.27E-02	3.06E-01
	569.32	15.43	3.43E-01		-1.51E-01	1.59E-01
	604.70	97.60	8.22E-02		-5.42E-01	3.90E-02
	795.84	85.40	9.57E-02		4.78E-02	4.49E-02
	801.93	8.73	8.79E-01		3.24E-01	4.11E-01
CS-135	268.24	16.00	3.34E-01	3.34E-01	-2.86E-01	1.60E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.66E+00	3.67E-01	1.02E+00	1.77E+00
	163.89	4.61	5.95E+00		1.90E+00	2.88E+00
	176.55	13.56	2.03E+00		3.07E-01	9.80E-01
	273.65	12.66	2.27E+00		-4.33E+00	1.09E+00
	340.57	48.50	7.13E-01		-8.37E-03	3.42E-01
	818.50	99.70	3.67E-01		5.58E-02	1.69E-01
	1048.07	79.60	5.56E-01		-2.25E-01	2.57E-01
	1235.34	19.70	3.06E+00		3.27E-01	1.43E+00
CS-137	661.65	85.12	8.03E-02	8.03E-02	1.80E-02	3.77E-02
LA-138	788.74	34.00	2.06E-01	1.20E-01	2.47E-02	9.57E-02
	1435.80	66.00	1.20E-01		2.75E-03	5.41E-02
CE-139	165.85	80.35	7.05E-02	7.05E-02	-1.48E-02	3.41E-02
BA-140	162.64	6.70	4.32E+00	1.30E+00	1.50E+00	2.09E+00
	304.84	4.50	6.57E+00		2.16E+00	3.13E+00
	423.70	3.20	8.39E+00		-6.87E+00	3.92E+00
	437.55	2.00	1.46E+01		-1.72E+00	6.82E+00
	537.32	25.00	1.30E+00		1.56E-01	6.07E-01
LA-140	328.77	20.50	1.67E+00	4.23E-01	9.45E-01	8.00E-01
	487.03	45.50	6.73E-01		-1.60E-02	3.15E-01
	815.85	23.50	1.60E+00		-4.03E-01	7.38E-01
	1596.49	95.49	4.23E-01		-2.09E-03	1.86E-01
CE-141	145.44	48.40	1.91E-01	1.91E-01	-5.81E-02	9.26E-02
CE-143	57.36	11.80	6.16E+06	2.53E+06	1.63E+06	2.97E+06
	293.26	42.00	2.53E+06		-2.24E+06	1.22E+06
	664.55	5.20	1.84E+07		-1.28E+06	8.58E+06
CE-144	133.54	10.80	4.54E-01	4.54E-01	-1.08E-01	2.20E-01
PM-144	476.78	42.00	1.31E-01	7.15E-02	-3.10E-03	6.11E-02
	618.01	98.60	7.15E-02		-8.21E-03	3.36E-02
	696.49	99.49	7.64E-02		1.37E-02	3.58E-02
PM-145	36.85	21.70	9.83E-01	5.05E-01	-7.49E-02	4.77E-01
	37.36	39.70	5.05E-01		-3.84E-02	2.45E-01
	42.30	15.10	8.14E-01		2.20E-01	3.95E-01
	72.40	2.31	1.91E+00		-2.65E+00	9.25E-01
PM-146	453.90	39.94	1.30E-01	1.30E-01	6.82E-02	6.10E-02
	735.90	14.01	4.92E-01		1.64E-01	2.29E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-146	747.13	13.10	4.89E-01	1.30E-01	-3.02E-01	2.27E-01
ND-147	91.11	28.90	1.66E+00	1.66E+00	-1.75E+00	8.14E-01
	531.02	13.10	3.13E+00		3.74E-01	1.46E+00
PM-149	285.90	3.10	4.75E+04	4.75E+04	1.18E+04	2.27E+04
EU-152	121.78	20.50	2.13E-01	2.13E-01	-8.64E-02	1.03E-01
	244.69	5.40	9.21E-01		-1.64E+00	4.41E-01
	344.27	19.13	2.44E-01		1.30E-02	1.15E-01
	778.89	9.20	7.03E-01		-2.31E-01	3.25E-01
	964.01	10.40	9.06E-01		-2.48E+00	4.25E-01
	1085.78	7.22	1.16E+00		7.90E-01	5.38E-01
	1112.02	9.60	8.75E-01		2.31E-01	4.04E-01
	1407.95	14.94	4.82E-01		8.62E-02	2.15E-01
GD-153	97.43	31.30	1.56E-01	1.56E-01	4.58E-02	7.60E-02
	103.18	22.20	2.21E-01		-2.84E-02	1.07E-01
EU-154	123.07	40.50	1.11E-01	1.11E-01	6.78E-02	5.39E-02
	723.30	19.70	3.58E-01		-4.42E-01	1.67E-01
	873.19	11.50	5.85E-01		-3.04E-01	2.69E-01
	996.32	10.30	7.12E-01		-1.83E-01	3.28E-01
	1004.76	17.90	4.49E-01		1.50E-01	2.08E-01
	1274.45	35.50	2.56E-01		6.17E-02	1.18E-01
+ EU-155	86.50	* 30.90	3.87E-01	2.20E-01	2.10E-01	1.92E-01
	105.30	20.70	2.20E-01		9.17E-02	1.07E-01
EU-156	811.77	10.40	2.69E+00	2.69E+00	-2.96E-01	1.24E+00
	1153.47	7.20	6.14E+00		3.36E+00	2.87E+00
	1230.71	8.90	5.04E+00		-6.88E-01	2.35E+00
HO-166M	184.41	72.60	8.62E-02	8.62E-02	7.60E-02	4.19E-02
	280.45	29.60	1.78E-01		-5.01E-02	8.51E-02
	410.94	11.10	4.80E-01		-3.57E-02	2.27E-01
	711.69	54.10	1.30E-01		1.47E-02	6.10E-02
TM-171	66.72	0.14	3.36E+01	3.36E+01	-4.28E+00	1.63E+01
HF-172	81.75	4.52	8.70E-01	4.18E-01	5.51E-01	4.20E-01
	125.81	11.30	4.18E-01		1.35E-01	2.03E-01
LU-172	181.53	20.60	7.14E+00	3.56E+00	-6.67E+00	3.45E+00
	810.06	16.63	1.07E+01		-7.99E+00	4.92E+00
	912.12	15.25	2.93E+01		7.62E+01	1.41E+01
	1093.66	62.50	3.56E+00		6.81E-02	1.63E+00
LU-173	100.72	5.24	8.92E-01	3.05E-01	-1.02E-01	4.33E-01
	272.11	21.20	3.05E-01		4.35E-01	1.47E-01
HF-175	343.40	84.00	7.82E-02	7.82E-02	-3.11E-03	3.70E-02
LU-176	88.34	13.30	4.60E-01	5.30E-02	3.95E-01	2.25E-01
	201.83	86.00	5.92E-02		7.21E-03	2.85E-02
	306.78	94.00	5.30E-02		1.71E-02	2.52E-02
TA-182	67.75	41.20	1.35E-01	1.35E-01	-3.27E-02	6.55E-02
	1121.30	34.90	4.55E-01		7.48E-01	2.16E-01
	1189.05	16.23	6.37E-01		-3.84E-01	2.93E-01
	1221.41	26.98	4.29E-01		-1.20E-01	1.99E-01
	1231.02	11.44	1.10E+00		3.28E-01	5.12E-01
IR-192	308.46	29.68	2.28E-01	1.32E-01	-5.65E-02	1.09E-01
	468.07	48.10	1.32E-01		7.88E-02	6.15E-02
HG-203	279.19	77.30	1.17E-01	1.17E-01	6.01E-02	5.63E-02
BI-207	569.67	97.72	5.27E-02	5.27E-02	-2.32E-02	2.44E-02
	1063.62	74.90	1.11E-01		3.57E-02	5.13E-02
+ TL-208	583.14	* 30.22	2.67E-01	1.11E-01	1.28E+00	1.27E-01

Analysis Report for 1510087-16

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Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TL-208	860.37	*	4.48	2.15E+00	1.11E-01	1.82E+00	1.02E+00
	2614.66	*	35.85	1.11E-01		9.98E-01	4.32E-02
BI-210M	262.00		45.00	1.01E-01	1.01E-01	-3.90E-02	4.82E-02
	300.00		23.00	2.66E-01		2.36E-01	1.28E-01
PB-210	46.50		4.25	2.36E+00	2.36E+00	1.54E+00	1.15E+00
PB-211	404.84		2.90	1.76E+00	1.76E+00	4.38E-02	8.32E-01
	831.96		2.90	2.59E+00		-4.81E-01	1.21E+00
BI-212	727.17		11.80	6.95E-01	6.95E-01	6.29E-01	3.28E-01
	1620.62		2.75	2.18E+00		1.42E-01	9.39E-01
+ PB-212	238.63	*	44.60	2.46E-01	2.46E-01	1.25E+00	1.21E-01
	300.09	*	3.41	3.37E+00		2.15E+00	1.65E+00
+ BI-214	609.31	*	46.30	2.27E-01	2.27E-01	7.32E-01	1.09E-01
	1120.29	*	15.10	7.51E-01		1.61E+00	3.54E-01
	1764.49	*	15.80	2.82E-01		1.18E+00	1.14E-01
	2204.22	*	4.98	1.06E+00		7.85E-01	4.39E-01
+ PB-214	295.21	*	19.19	6.00E-01	2.39E-01	1.11E+00	2.94E-01
	351.92	*	37.19	2.39E-01		1.02E+00	1.16E-01
RN-219	401.80		6.50	7.59E-01	7.59E-01	-3.79E-01	3.57E-01
RA-223	323.87		3.88	1.27E+00	1.27E+00	-8.38E-01	6.04E-01
+ RA-224	240.98	*	3.95	2.74E+00	2.74E+00	2.29E+00	1.35E+00
RA-225	40.00		31.00	2.28E+00	2.28E+00	2.91E-01	1.11E+00
+ RA-226	186.21	*	3.28	2.31E+00	2.31E+00	3.18E+00	1.13E+00
TH-227	50.10		8.40	8.85E-01	6.67E-01	-4.61E-02	4.29E-01
	236.00		11.50	6.67E-01		-4.70E+00	3.25E-01
	256.20		6.30	7.75E-01		-3.12E-01	3.71E-01
+ AC-228	338.32	*	11.40	7.52E-01	2.99E-01	1.59E+00	3.65E-01
	911.07	*	27.70	2.99E-01		1.54E+00	1.40E-01
	969.11	*	16.60	6.36E-01		1.55E+00	3.01E-01
TH-230	48.44		16.90	4.69E-01	4.69E-01	-5.87E-01	2.27E-01
	62.85		4.60	1.22E+00		1.16E+00	5.93E-01
	67.67		0.37	1.24E+01		-2.99E+00	5.99E+00
PA-231	283.67		1.60	3.12E+00	2.28E+00	-5.30E-01	1.49E+00
	302.67		2.30	2.28E+00		-2.21E+00	1.09E+00
TH-231	25.64		14.70	1.40E+01	6.33E-01	1.70E+00	6.75E+00
	84.21		6.40	6.33E-01		-1.28E-02	3.07E-01
PA-233	311.98		38.60	2.91E-01	2.91E-01	4.12E-02	1.38E-01
PA-234	131.20		20.40	2.40E-01	2.40E-01	1.40E-01	1.16E-01
	733.99		8.80	7.50E-01		7.66E-02	3.49E-01
	946.00		12.00	5.64E-01		-6.98E-01	2.59E-01
PA-234M	1001.03		0.92	9.49E+00	9.49E+00	8.09E+00	4.43E+00
TH-234	63.29		3.80	1.47E+00	1.47E+00	1.39E+00	7.13E-01
U-235	143.76		10.50	4.29E-01	4.29E-01	-2.31E-01	2.07E-01
	163.35		4.70	1.05E+00		3.63E-01	5.07E-01
	205.31		4.70	1.13E+00		3.36E-01	5.47E-01
+ NP-237	86.50	*	12.60	9.38E-01	9.38E-01	5.09E-01	4.64E-01
NP-239	106.10		22.70	3.02E+03	3.02E+03	1.61E+02	1.47E+03
	228.18		10.70	7.38E+03		-3.39E+02	3.55E+03
	277.60		14.10	5.94E+03		8.66E+02	2.85E+03
AM-241	59.54		35.90	1.42E-01	1.42E-01	1.33E-02	6.88E-02
AM-243	74.67		66.00	9.98E-02	9.98E-02	-1.24E-01	4.89E-02
CM-243	209.75		3.29	1.76E+00	3.92E-01	1.21E+00	8.51E-01
	228.14		10.60	4.88E-01		-2.24E-02	2.35E-01
	277.60		14.00	3.92E-01		5.72E-02	1.88E-01

Analysis Report for 1510087-16
CP4106S15-16

-
- + = Nuclide identified during the nuclide identification
 - * = Energy line found in the spectrum
 - > = MDA value not calculated
 - @ = Half-life too short to be able to perform the decay correction
-

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

<i>Creation Date</i>	<i>Comment</i>	<i>User</i>
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No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP4106S15-16

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	139
9:	509	1214	1125	476	513	1771	323	141	
17:	145	116	122	116	124	102	116	106	
25:	108	94	102	94	83	105	127	119	
33:	127	112	117	113	134	115	126	131	
41:	116	123	121	102	118	120	207	106	
49:	125	101	118	122	121	103	94	66	
57:	95	92	89	96	116	101	151	169	
65:	105	97	93	120	108	123	104	106	
73:	117	163	410	205	421	345	90	87	
81:	103	97	71	116	126	110	187	185	
89:	115	141	125	100	252	164	72	70	
97:	70	75	86	84	70	74	69	81	
105:	85	74	73	65	78	63	69	63	
113:	99	71	76	86	68	56	66	58	
121:	63	57	70	73	75	56	78	65	
129:	89	91	64	81	58	66	55	61	
137:	72	64	59	64	62	61	55	61	
145:	65	51	71	69	61	52	62	60	
153:	48	78	72	59	60	51	46	53	
161:	62	60	64	55	62	56	49	60	
169:	57	58	60	52	44	52	54	62	
177:	56	56	44	52	42	55	64	57	
185:	87	161	94	45	58	54	51	46	
193:	52	46	50	56	49	54	58	54	
201:	36	36	56	63	55	42	47	55	
209:	75	75	53	44	50	49	40	54	
217:	58	40	48	38	54	43	35	41	
225:	42	52	45	33	43	40	44	38	
233:	36	40	47	51	45	278	545	94	
241:	100	109	48	32	39	31	27	31	
249:	45	30	26	34	42	30	35	37	
257:	26	33	34	40	24	25	26	20	
265:	30	33	23	24	27	75	65	44	
273:	29	29	27	34	51	43	28	27	
281:	39	29	28	33	26	30	26	40	
289:	28	34	33	29	35	46	158	131	
297:	30	24	33	75	43	31	28	23	
305:	23	24	35	20	28	22	32	19	
313:	26	21	19	21	24	21	23	29	
321:	30	26	25	20	24	23	31	48	
329:	34	28	22	27	22	16	19	22	
337:	36	91	82	23	24	23	23	15	
345:	15	19	16	24	28	25	92	243	
353:	98	22	26	25	19	18	17	17	
361:	14	21	21	17	24	20	21	15	

369: 12 21 27 23 16 19 35 22

Sample Title: CP4106S15-16

Channel	12	21	27	23	16	19	35	22
377:	25	15	21	18	32	20	14	25
385:	18	13	13	18	21	25	27	18
393:	20	16	22	31	18	15	23	19
401:	17	17	15	18	21	20	18	19
409:	20	24	14	20	20	19	24	14
417:	19	12	22	18	20	11	9	13
425:	17	17	22	20	11	24	21	16
433:	18	15	13	13	15	15	20	15
441:	17	12	10	15	13	12	11	13
449:	15	9	13	24	15	14	12	13
457:	12	10	12	16	17	11	41	20
465:	9	7	18	11	11	14	8	7
473:	9	16	20	16	14	11	12	18
481:	14	14	13	12	14	14	17	12
489:	15	15	17	4	10	4	17	13
497:	19	13	14	14	14	13	16	17
505:	11	15	14	13	17	72	86	39
513:	22	16	13	15	8	11	10	5
521:	8	9	8	13	11	12	12	10
529:	14	17	13	10	9	17	7	19
537:	16	16	12	17	9	11	14	11
545:	17	12	16	9	11	7	9	12
553:	13	11	8	7	16	20	12	11
561:	7	14	14	12	14	17	12	8
569:	12	18	5	17	10	8	9	7
577:	12	6	7	9	11	57	165	87
585:	10	11	8	15	9	7	10	13
593:	10	6	14	10	12	12	15	14
601:	10	17	13	17	13	12	9	40
609:	146	100	13	9	10	14	14	14
617:	11	14	8	8	14	13	13	8
625:	13	8	13	10	11	14	9	11
633:	13	10	8	7	6	9	12	8
641:	5	3	10	14	5	3	12	11
649:	10	6	19	13	6	9	4	12
657:	10	9	15	8	12	14	8	13
665:	9	9	6	10	10	8	9	9
673:	8	13	9	10	13	13	8	13
681:	8	13	16	9	15	16	6	9
689:	13	10	9	11	8	14	13	11
697:	14	14	6	11	10	14	12	9
705:	12	19	13	14	4	11	8	15
713:	8	15	9	14	6	6	12	8
721:	12	6	11	8	6	21	32	20
729:	7	6	8	7	14	13	6	6
737:	8	8	11	4	11	13	11	8
745:	7	8	6	11	10	5	13	8
753:	8	15	14	11	8	10	10	11
761:	13	6	7	8	11	15	11	32
769:	22	11	9	11	8	6	11	6
777:	8	4	7	10	10	8	8	12
785:	14	6	8	8	12	7	7	7
793:	7	19	20	9	13	4	8	10

801: 8 8 13 15 7 8 6 4

Sample Title: CP4106S15-16

Channel	1	2	3	4	5	6	7	8
809:	5	8	6	9	5	10	13	2
817:	7	6	5	4	13	4	7	8
825:	7	12	7	9	7	13	7	10
833:	8	10	11	16	9	10	8	8
841:	7	7	11	8	12	8	8	7
849:	7	5	12	9	6	6	9	2
857:	9	9	8	24	20	6	6	14
865:	5	8	10	4	11	6	9	10
873:	4	5	6	7	9	12	6	7
881:	5	10	7	5	9	11	5	14
889:	6	7	2	12	5	14	9	7
897:	7	8	11	8	9	7	7	10
905:	14	4	8	4	8	53	101	62
913:	14	5	3	3	12	5	5	8
921:	2	5	5	7	7	6	4	7
929:	4	13	4	5	12	10	6	9
937:	6	6	8	2	10	13	10	5
945:	4	8	3	8	4	17	7	5
953:	2	11	6	5	4	4	10	4
961:	9	9	8	14	21	11	10	39
969:	58	22	5	2	3	4	10	7
977:	7	8	11	10	10	6	12	8
985:	3	12	1	5	7	8	8	11
993:	10	2	5	6	3	9	10	6
1001:	15	8	7	11	4	5	4	5
1009:	5	8	7	10	10	6	6	6
1017:	7	4	2	7	9	14	8	10
1025:	9	8	4	2	4	6	2	6
1033:	7	4	6	7	7	3	7	8
1041:	5	3	5	10	5	6	5	4
1049:	14	7	8	10	11	6	9	9
1057:	2	6	3	8	8	7	6	5
1065:	9	10	8	6	8	8	11	7
1073:	5	7	7	13	5	4	12	0
1081:	5	4	10	5	13	5	10	5
1089:	6	4	7	3	6	9	6	6
1097:	5	7	5	7	9	3	9	7
1105:	12	3	4	5	6	11	5	5
1113:	11	7	5	9	10	11	22	44
1121:	25	15	5	5	3	3	8	9
1129:	7	8	4	7	16	7	2	9
1137:	4	7	6	4	7	7	7	7
1145:	6	5	9	7	6	11	11	8
1153:	8	9	12	9	6	7	9	2
1161:	7	5	8	5	7	3	4	7
1169:	9	8	11	8	11	9	12	8
1177:	8	5	4	10	9	6	9	13
1185:	8	4	4	6	7	8	7	10
1193:	9	8	12	4	6	2	8	7
1201:	5	8	4	15	6	8	4	7
1209:	5	5	14	8	4	9	7	7
1217:	12	6	9	9	7	8	7	10
1225:	9	10	10	6	6	10	11	11

1233: 9 13 7 4 12 16 13 5

Sample Title: CP4106S15-16

Channel	1	2	3	4	5	6	7	8
1241:	7	6	6	7	5	10	7	7
1249:	11	4	7	4	6	7	5	5
1257:	5	4	6	1	4	14	16	11
1265:	5	2	9	7	7	3	5	6
1273:	2	9	10	11	4	8	4	5
1281:	5	1	5	5	6	8	6	7
1289:	7	4	2	3	9	2	3	3
1297:	3	5	3	4	7	2	6	7
1305:	3	4	4	5	5	1	2	3
1313:	5	4	1	3	6	3	5	4
1321:	3	1	4	6	10	7	3	6
1329:	3	3	2	7	7	3	5	2
1337:	4	3	3	2	6	6	4	7
1345:	4	4	5	2	1	2	1	3
1353:	1	0	3	2	3	3	4	6
1361:	2	5	1	2	5	2	1	2
1369:	3	2	2	0	4	6	2	10
1377:	4	4	0	1	4	3	1	7
1385:	4	3	2	1	1	3	2	4
1393:	1	3	0	4	2	0	2	2
1401:	5	2	4	0	0	5	6	5
1409:	3	5	4	1	2	2	1	1
1417:	3	2	2	4	1	4	2	2
1425:	0	2	1	1	0	3	1	6
1433:	6	2	2	3	4	6	5	6
1441:	3	2	2	1	2	2	0	2
1449:	2	2	2	2	1	2	3	3
1457:	2	18	102	290	280	100	14	1
1465:	0	2	0	0	1	2	1	1
1473:	3	2	1	0	2	2	2	3
1481:	1	1	1	1	0	3	2	0
1489:	1	1	2	0	1	4	0	1
1497:	3	0	3	4	2	2	3	5
1505:	2	0	5	2	6	4	5	1
1513:	4	3	3	0	0	2	1	0
1521:	0	1	1	3	0	2	0	1
1529:	0	1	1	3	0	0	1	0
1537:	0	4	3	2	2	1	3	3
1545:	1	1	0	2	1	1	2	0
1553:	1	3	1	2	2	0	2	2
1561:	0	3	1	1	1	2	0	0
1569:	0	1	0	0	0	2	0	0
1577:	1	5	3	2	1	1	3	1
1585:	5	3	8	2	5	1	1	2
1593:	0	3	2	3	0	3	2	3
1601:	3	3	1	0	2	0	2	0
1609:	4	0	1	3	0	1	1	2
1617:	0	1	2	3	4	1	0	0
1625:	1	2	2	2	3	4	6	0
1633:	1	1	1	0	0	1	2	3
1641:	0	1	0	2	1	0	0	1
1649:	0	0	3	2	0	0	1	0
1657:	0	0	0	3	1	0	1	3

1665: 1 1 1 4 1 3 0 1

Sample Title: CP4106S15-16

Channel	1	2	3	4	5	6	7	8
1673:	2	0	1	1	0	2	0	2
1681:	2	0	2	0	0	0	0	2
1689:	2	1	2	1	0	2	1	0
1697:	1	0	3	1	2	0	3	2
1705:	0	2	0	0	0	1	1	3
1713:	0	2	0	0	1	0	2	1
1721:	1	0	1	2	0	1	1	0
1729:	5	8	2	4	1	1	0	2
1737:	0	1	3	0	2	2	1	2
1745:	0	1	2	0	0	0	0	0
1753:	0	0	0	2	1	3	0	0
1761:	3	5	12	24	17	3	0	1
1769:	0	2	1	1	0	2	1	1
1777:	0	1	1	0	1	1	1	1
1785:	0	0	1	2	0	0	1	0
1793:	2	0	4	0	3	0	1	0
1801:	2	2	2	0	2	0	1	2
1809:	0	1	1	3	1	0	1	1
1817:	1	2	2	1	0	2	1	1
1825:	3	1	1	0	0	1	0	1
1833:	1	2	1	0	1	1	1	1
1841:	1	0	0	2	0	0	2	0
1849:	1	4	0	0	0	2	1	2
1857:	1	1	3	1	0	1	0	0
1865:	1	1	1	1	0	2	0	1
1873:	0	1	1	0	2	2	1	0
1881:	0	1	1	2	0	4	1	3
1889:	2	1	0	0	1	1	0	0
1897:	1	1	0	2	1	0	1	0
1905:	0	2	1	1	1	1	1	1
1913:	0	1	0	0	2	4	1	1
1921:	0	1	3	2	0	2	1	0
1929:	3	1	1	0	2	1	0	1
1937:	2	1	0	0	2	0	2	3
1945:	1	1	0	0	1	1	1	3
1953:	1	0	0	1	0	2	0	1
1961:	0	0	0	1	1	0	3	2
1969:	0	2	2	0	0	0	0	0
1977:	0	1	1	0	0	1	1	0
1985:	2	1	0	1	1	1	3	0
1993:	2	1	1	3	3	0	0	0
2001:	0	1	0	0	2	1	3	2
2009:	0	0	2	0	3	1	0	1
2017:	2	0	0	0	2	1	1	3
2025:	2	2	1	0	1	1	1	0
2033:	2	1	1	1	0	0	0	0
2041:	0	0	1	0	0	0	1	2
2049:	1	1	2	0	0	2	1	3
2057:	0	1	0	0	0	1	2	1
2065:	2	1	0	1	3	0	1	1
2073:	0	2	0	0	1	1	0	0
2081:	3	2	0	2	2	1	2	1
2089:	5	1	0	2	1	1	0	2

2097: 2 0 1 3 4 6 3 6

Sample Title: CP4106S15-16

Channel	1	2	3	4	5	6	7	8
2105:	3	1	1	1	0	2	0	0
2113:	2	0	1	2	3	5	2	2
2121:	0	0	1	1	1	3	0	1
2129:	0	0	2	0	1	0	1	0
2137:	0	3	5	1	0	1	1	2
2145:	0	1	2	1	0	0	0	1
2153:	2	0	0	2	1	0	2	1
2161:	0	1	0	1	0	0	2	1
2169:	0	1	3	0	0	0	2	3
2177:	0	1	1	3	1	0	0	2
2185:	1	3	0	1	1	1	0	1
2193:	1	0	0	1	0	0	2	0
2201:	0	2	2	10	0	0	2	0
2209:	3	1	1	2	1	1	2	1
2217:	3	0	1	0	1	0	2	3
2225:	1	1	2	3	3	1	0	0
2233:	1	1	1	0	0	1	2	0
2241:	0	0	1	1	0	0	1	2
2249:	1	0	0	2	2	1	1	0
2257:	1	1	0	1	1	3	1	2
2265:	0	0	2	0	1	0	0	0
2273:	1	0	2	2	1	0	1	1
2281:	0	0	5	1	2	2	1	1
2289:	0	0	0	1	2	3	0	1
2297:	1	0	2	0	0	1	2	0
2305:	0	0	2	2	1	2	2	1
2313:	0	1	0	0	2	1	3	0
2321:	0	0	2	0	1	2	0	0
2329:	1	3	1	2	2	0	0	1
2337:	1	0	2	1	1	0	1	2
2345:	1	2	0	2	1	2	3	0
2353:	0	1	2	1	0	0	2	2
2361:	0	1	0	1	0	1	2	2
2369:	0	1	2	2	3	2	1	1
2377:	0	0	1	1	0	0	1	1
2385:	0	0	0	1	1	2	1	1
2393:	0	0	0	0	0	1	1	2
2401:	0	2	0	1	0	0	2	0
2409:	0	1	0	1	2	0	0	1
2417:	0	0	1	1	0	0	0	1
2425:	2	1	0	1	0	1	1	1
2433:	0	0	0	1	2	0	2	0
2441:	0	0	0	1	1	2	2	2
2449:	0	0	0	0	0	0	0	2
2457:	1	1	1	0	3	1	2	1
2465:	0	1	0	0	0	0	0	0
2473:	0	1	0	0	1	1	0	0
2481:	1	0	1	1	0	0	0	0
2489:	0	1	0	1	0	1	0	1
2497:	1	1	0	0	0	1	1	1
2505:	1	2	0	0	0	0	2	0
2513:	0	0	0	1	2	0	0	1
2521:	1	0	0	0	1	0	1	0

2529: 0 0 1 0 0 0 0 0

Sample Title: CP4106S15-16

Channel	1	2	3	4	5	6	7	8
2537:	0	0	0	0	1	0	0	0
2545:	1	0	2	0	0	0	0	1
2553:	0	1	1	0	0	0	0	0
2561:	0	0	0	0	0	0	1	1
2569:	1	0	0	1	0	0	0	0
2577:	0	1	0	1	0	0	1	0
2585:	0	0	1	0	0	0	1	0
2593:	0	2	0	0	0	0	2	0
2601:	0	0	0	2	1	0	0	1
2609:	1	2	1	8	35	34	22	11
2617:	0	0	1	0	0	0	1	0
2625:	0	0	2	0	0	0	2	0
2633:	1	0	0	0	1	0	0	0
2641:	0	0	1	0	0	1	1	1
2649:	1	0	0	0	0	2	0	0
2657:	0	0	0	1	0	0	2	1
2665:	0	0	0	0	1	0	0	0
2673:	0	1	1	0	0	0	0	0
2681:	0	0	0	0	1	0	4	0
2689:	0	0	0	0	0	0	1	0
2697:	0	0	0	0	1	0	0	0
2705:	1	1	1	0	0	0	0	0
2713:	1	0	0	1	0	0	0	1
2721:	0	1	0	0	0	0	0	0
2729:	0	0	0	0	0	0	0	2
2737:	0	0	1	0	0	0	1	2
2745:	0	2	0	0	0	0	0	0
2753:	0	0	0	0	0	0	1	0
2761:	0	0	0	0	0	1	0	0
2769:	1	0	0	0	1	0	1	0
2777:	0	0	0	0	2	1	0	0
2785:	0	1	0	0	0	0	0	0
2793:	1	1	0	1	0	0	0	0
2801:	0	1	0	1	1	0	1	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	1	0	0	0	0	0
2825:	0	0	1	1	0	1	0	2
2833:	1	0	0	0	0	1	0	0
2841:	0	0	0	0	0	0	1	0
2849:	0	1	0	1	0	0	0	0
2857:	0	0	0	1	1	0	1	0
2865:	0	1	0	0	1	0	0	0
2873:	0	0	1	2	0	1	0	0
2881:	0	0	1	0	0	1	1	1
2889:	1	1	0	0	0	0	0	0
2897:	0	1	0	0	0	0	0	0
2905:	1	0	1	0	1	0	0	1
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	0	0	1	0	0
2929:	0	0	0	0	1	0	2	0
2937:	1	0	0	0	0	1	0	0
2945:	1	0	0	0	0	0	0	0
2953:	0	0	0	0	0	0	1	0

2961: 0 0 0 0 1 0 0 1

Sample Title: CP4106S15-16

Channel	1	2	3	4	5	6	7	8
2969:	0	1	0	0	0	0	0	1
2977:	1	0	2	0	1	0	1	2
2985:	1	0	0	0	0	1	0	0
2993:	1	0	1	0	0	0	0	1
3001:	0	0	0	0	0	0	0	1
3009:	0	0	0	0	0	0	0	0
3017:	0	1	1	0	0	0	0	0
3025:	0	0	0	2	0	0	0	0
3033:	0	0	0	0	0	1	0	0
3041:	0	1	0	0	0	0	0	0
3049:	0	1	1	0	0	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	1	0	0	0	1	0
3073:	1	0	1	0	0	0	0	0
3081:	0	1	0	0	0	0	1	0
3089:	1	0	0	0	0	0	0	1
3097:	0	0	2	0	0	0	0	0
3105:	0	0	0	0	1	0	0	0
3113:	0	0	0	0	0	0	0	1
3121:	0	0	1	0	1	0	0	0
3129:	0	0	0	0	0	0	0	1
3137:	0	0	0	0	0	0	0	0
3145:	0	0	0	0	0	1	0	0
3153:	0	0	0	0	0	0	0	1
3161:	0	0	0	0	0	0	0	0
3169:	1	0	0	0	1	0	0	1
3177:	0	0	0	0	0	0	0	1
3185:	0	0	0	0	0	0	1	0
3193:	0	1	0	0	0	0	0	0
3201:	0	1	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	1	0	0	0
3225:	0	0	0	1	0	0	0	0
3233:	0	0	0	0	0	1	0	0
3241:	0	0	1	1	0	0	0	0
3249:	0	1	0	0	0	1	0	0
3257:	0	1	0	0	0	1	1	0
3265:	0	0	0	0	0	0	1	0
3273:	1	1	0	0	0	0	0	0
3281:	0	0	0	0	1	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	1	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	1
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	1	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	1	0	0	1	0	1	0
3369:	1	0	0	0	0	0	0	3
3377:	0	0	0	0	0	0	0	0
3385:	0	1	1	0	0	0	0	0

3393: 0 1 0 0 1 0 0 0

Sample Title: CP4106S15-16

Channel	1	2	3	4	5	6	7	8
3401:	0	1	0	2	0	0	0	1
3409:	0	1	1	0	0	0	0	0
3417:	1	0	0	0	0	0	0	0
3425:	0	0	0	0	0	1	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	1	0	0	0
3449:	1	0	0	0	0	0	0	0
3457:	1	0	0	0	0	0	0	1
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	1	0	0
3481:	0	1	0	0	0	1	0	0
3489:	0	1	2	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	1	0	1	1	0
3513:	0	1	0	1	0	0	0	0
3521:	0	0	0	1	0	0	0	1
3529:	0	0	0	1	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	1	0	1	0	0	1	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	1	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	1	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	1	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	1	0	0	0	0	0	1	0
3633:	0	0	1	0	0	0	0	0
3641:	1	1	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	1	0	0	0	0	0	0
3665:	1	0	1	0	0	0	0	0
3673:	0	1	0	0	0	0	0	0
3681:	0	0	1	0	0	0	0	0
3689:	0	0	0	0	0	1	0	0
3697:	1	0	0	0	1	0	0	0
3705:	0	0	0	0	0	0	1	0
3713:	1	1	0	1	2	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	1	0	0	0	1	1	0
3737:	1	0	0	0	0	0	0	1
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	1	1	0
3769:	0	0	0	0	0	0	1	0
3777:	0	0	0	0	0	0	0	0
3785:	0	1	0	0	0	0	0	0
3793:	0	0	0	0	0	1	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	1

3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP4106S15-16

Channel								
3833:	0	0	0	0	0	0	0	1
3841:	0	1	0	0	0	1	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	1	0	0	0	0	0	0
3873:	0	0	0	0	1	0	1	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	1	1	1	1
3897:	1	0	0	0	1	0	0	0
3905:	0	0	1	0	0	0	0	0
3913:	0	0	0	0	0	1	1	0
3921:	0	1	0	0	0	0	0	0
3929:	0	0	0	0	0	0	2	0
3937:	0	0	0	0	0	0	1	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	1	0	0
3969:	0	1	1	0	0	0	0	1
3977:	0	0	0	0	0	0	0	1
3985:	0	0	0	0	1	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	2	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	1	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	1	0	0
4041:	0	1	0	0	0	1	0	0
4049:	0	0	0	0	0	0	0	0
4057:	1	0	0	1	0	1	0	0
4065:	1	0	0	0	0	0	0	1
4073:	0	0	0	0	0	0	0	1
4081:	0	0	0	1	0	0	0	0
4089:	0	0	0	0	0	0	0	0

Analysis Report for 1510087-17
CP4106S18-19

1119

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510087-17
Sample Description : CP4106S18-19
Sample Type : SOIL

Sample Size : 5.250E+02 grams
Facility : Countroom

Sample Taken On : 10/7/2015 5:14:55PM
Acquisition Started : 11/9/2015 10:20:46AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3663.4 seconds

Dead Time : 1.73 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 15 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 11/8/2014
Efficiency Calibration Description :

Sample Number : 29326

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/9/15

Analysis Report for 1510087-17

CP4106S18-19

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 11:21:50AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096
 Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	64.94	64.20	0.0000	0.00
2	76.04	75.31	0.0000	0.00
3	93.10	92.37	0.0000	0.00
4	185.83	185.14	0.0000	0.00
5	209.27	208.60	0.0000	0.00
6	239.42	238.76	0.0000	0.00
7	277.41	276.76	0.0000	0.00
8	294.68	294.04	0.0000	0.00
9	300.84	300.21	0.0000	0.00
10	310.27	309.64	0.0000	0.00
11	338.38	337.76	0.0000	0.00
12	352.11	351.50	0.0000	0.00
13	462.62	462.05	0.0000	0.00
14	510.33	509.79	0.0000	0.00
15	536.27	535.74	0.0000	0.00
16	583.44	582.93	0.0000	0.00
17	609.39	608.90	0.0000	0.00
18	727.73	727.30	0.0000	0.00
19	810.68	810.29	0.0000	0.00
20	912.13	911.79	0.0000	0.00
21	964.60	964.29	0.0000	0.00
22	970.02	969.71	0.0000	0.00
23	1120.11	1119.89	0.0000	0.00
24	1454.33	1454.30	0.0000	0.00
25	1461.32	1461.30	0.0000	0.00
26	1540.23	1540.25	0.0000	0.00
27	1591.18	1591.24	0.0000	0.00
28	1685.89	1686.01	0.0000	0.00
29	1691.87	1691.99	0.0000	0.00
30	1709.35	1709.47	0.0000	0.00
31	1765.30	1765.47	0.0000	0.00
32	1797.19	1797.38	0.0000	0.00
33	2102.27	2102.67	0.0000	0.00
34	2615.49	2616.26	0.0000	0.00

? = Adjacent peak noted
 Errors quoted at 2.000sigma

Analysis Report for 1510087-17

CP4106S18-19

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 11:21:50AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	64.94	57 -	82	64.20	4.29E+02	150.15	2.16E+03	5.74
m	2	76.04	57 -	82	75.31	9.27E+02	158.22	2.26E+03	4.96
	3	93.10	90 -	95	92.37	1.84E+02	74.59	9.38E+02	2.77
	4	185.83	181 -	190	185.14	1.39E+02	79.30	8.15E+02	2.09
	5	209.27	205 -	212	208.60	6.39E+01	54.59	4.50E+02	2.86
	6	239.42	233 -	244	238.76	5.69E+02	85.35	6.14E+02	2.54
	7	277.41	274 -	280	276.76	4.32E+01	40.64	2.68E+02	3.38
	8	294.68	289 -	298	294.04	6.23E+01	60.68	4.91E+02	2.01
	9	300.84	298 -	304	300.21	3.88E+01	37.48	2.20E+02	2.96
	10	310.27	305 -	313	309.64	3.40E+01	41.78	2.48E+02	4.39
	11	338.38	334 -	342	337.76	5.74E+01	50.19	3.55E+02	1.59
	12	352.11	346 -	358	351.50	2.01E+02	63.82	3.88E+02	2.31
	13	462.62	459 -	466	462.05	2.67E+01	28.71	1.19E+02	1.13
	14	510.33	501 -	517	509.79	1.21E+02	56.21	2.55E+02	3.09
	15	536.27	533 -	539	535.74	1.85E+01	23.47	7.30E+01	2.77
	16	583.44	578 -	586	582.93	1.34E+02	36.81	1.26E+02	2.23
	17	609.39	603 -	614	608.90	1.49E+02	38.21	1.07E+02	2.44
	18	727.73	722 -	733	727.30	3.26E+01	34.41	1.31E+02	2.26
	19	810.68	808 -	813	810.29	1.48E+01	18.65	5.44E+01	5.35
	20	912.13	905 -	917	911.79	8.65E+01	34.20	9.51E+01	2.56
M	21	964.60	960 -	980	964.29	1.83E+01	23.73	7.06E+01	3.15
m	22	970.02	960 -	980	969.71	4.30E+01	25.52	5.45E+01	3.15
	23	1120.11	1117 -	1125	1119.89	2.00E+01	20.86	5.60E+01	2.99
M	24	1454.33	1448 -	1469	1454.30	1.24E+01	13.71	2.00E+01	3.25
m	25	1461.32	1448 -	1469	1461.30	2.86E+02	35.78	2.00E+01	3.22
	26	1540.23	1536 -	1545	1540.25	1.43E+01	12.77	1.55E+01	1.50
	27	1591.18	1585 -	1596	1591.24	1.50E+01	15.87	2.40E+01	5.48
M	28	1685.89	1684 -	1694	1686.01	7.40E+00	4.00	0.00E+00	3.83
m	29	1691.87	1684 -	1694	1691.99	7.68E+00	5.66	0.00E+00	3.37
	30	1709.35	1707 -	1712	1709.47	7.86E+00	8.43	6.27E+00	5.49
	31	1765.30	1760 -	1771	1765.47	2.58E+01	12.33	6.34E+00	2.63
	32	1797.19	1793 -	1800	1797.38	7.22E+00	7.21	3.56E+00	2.90
	33	2102.27	2098 -	2105	2102.67	1.20E+01	6.93	0.00E+00	1.00
	34	2615.49	2612 -	2621	2616.26	3.50E+01	11.83	0.00E+00	2.92

Analysis Report for 1510087-17

CP4106S18-19

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 11:21:50AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	1	64.94	57 -	82	4.29E+02	150.15	2.16E+03	7.65E+01
m	2	76.04	57 -	82	9.27E+02	158.22	2.26E+03	7.82E+01
	3	93.10	90 -	95	1.84E+02	74.59	9.38E+02	5.71E+01
	4	185.83	181 -	190	1.39E+02	79.30	8.15E+02	6.22E+01
	5	209.27	205 -	212	6.39E+01	54.59	4.50E+02	4.29E+01
	6	239.42	233 -	244	5.69E+02	85.35	6.14E+02	5.82E+01
	7	277.41	274 -	280	4.32E+01	40.64	2.68E+02	3.16E+01
	8	294.68	289 -	298	6.23E+01	60.68	4.91E+02	4.82E+01
	9	300.84	298 -	304	3.88E+01	37.48	2.20E+02	2.91E+01
	10	310.27	305 -	313	3.40E+01	41.78	2.48E+02	3.30E+01
	11	338.38	334 -	342	5.74E+01	50.19	3.55E+02	3.93E+01
	12	352.11	346 -	358	2.01E+02	63.82	3.88E+02	4.70E+01
	13	462.62	459 -	466	2.67E+01	28.71	1.19E+02	2.20E+01
	14	510.33	501 -	517	1.21E+02	56.21	2.55E+02	4.25E+01
	15	536.27	533 -	539	1.85E+01	23.47	7.30E+01	1.79E+01
	16	583.44	578 -	586	1.34E+02	36.81	1.26E+02	2.35E+01
	17	609.39	603 -	614	1.49E+02	38.21	1.07E+02	2.41E+01
	18	727.73	722 -	733	3.26E+01	34.41	1.31E+02	2.67E+01
	19	810.68	808 -	813	1.48E+01	18.65	5.44E+01	1.40E+01
	20	912.13	905 -	917	8.65E+01	34.20	9.51E+01	2.36E+01
M	21	964.60	960 -	980	1.83E+01	23.73	7.06E+01	1.38E+01
m	22	970.02	960 -	980	4.30E+01	25.52	5.45E+01	1.21E+01
	23	1120.11	1117 -	1125	2.00E+01	20.86	5.60E+01	1.55E+01
M	24	1454.33	1448 -	1469	1.24E+01	13.71	2.00E+01	7.35E+00
m	25	1461.32	1448 -	1469	2.86E+02	35.78	2.00E+01	7.35E+00
	26	1540.23	1536 -	1545	1.43E+01	12.77	1.55E+01	8.46E+00
	27	1591.18	1585 -	1596	1.50E+01	15.87	2.40E+01	1.14E+01
M	28	1685.89	1684 -	1694	7.40E+00	4.00	0.00E+00	0.00E+00
m	29	1691.87	1684 -	1694	7.68E+00	5.66	0.00E+00	0.00E+00
	30	1709.35	1707 -	1712	7.86E+00	8.43	6.27E+00	5.17E+00
	31	1765.30	1760 -	1771	2.58E+01	12.33	6.34E+00	5.74E+00

Analysis Report for 1510087-17

CP4106S18-19

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	1797.19	1793 -	1800	7.22E+00	7.21	3.56E+00	3.95E+00
33	2102.27	2098 -	2105	1.20E+01	6.93	0.00E+00	0.00E+00
34	2615.49	2612 -	2621	3.50E+01	11.83	0.00E+00	0.00E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 11:21:50AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	1	64.94	57 - 82	64.20	4.29E+02	150.15	2.16E+03	.....
m	2	76.04	57 - 82	75.31	9.27E+02	158.22	2.26E+03	.....
	3	93.10	90 - 95	92.37	1.84E+02	74.59	9.38E+02	GA-67
	4	185.83	181 - 190	185.14	1.39E+02	79.30	8.15E+02	RA-226
	5	209.27	205 - 212	208.60	6.39E+01	54.59	4.50E+02	GA-67 CM-243
	6	239.42	233 - 244	238.76	5.69E+02	85.35	6.14E+02	PB-212
	7	277.41	274 - 280	276.76	4.32E+01	40.64	2.68E+02	CM-243 NP-239
	8	294.68	289 - 298	294.04	6.23E+01	60.68	4.91E+02	PB-214
	9	300.84	298 - 304	300.21	3.88E+01	37.48	2.20E+02	GA-67 PB-212 BI-210M
	10	310.27	305 - 313	309.64	3.40E+01	41.78	2.48E+02	.....
	11	338.38	334 - 342	337.76	5.74E+01	50.19	3.55E+02	AC-228
	12	352.11	346 - 358	351.50	2.01E+02	63.82	3.88E+02	PB-214
	13	462.62	459 - 466	462.05	2.67E+01	28.71	1.19E+02	SB-125
	14	510.33	501 - 517	509.79	1.21E+02	56.21	2.55E+02	.....
	15	536.27	533 - 539	535.74	1.85E+01	23.47	7.30E+01	.....
	16	583.44	578 - 586	582.93	1.34E+02	36.81	1.26E+02	TL-208
	17	609.39	603 - 614	608.90	1.49E+02	38.21	1.07E+02	BI-214
	18	727.73	722 - 733	727.30	3.26E+01	34.41	1.31E+02	BI-212
	19	810.68	808 - 813	810.29	1.48E+01	18.65	5.44E+01	CO-58

Analysis Report for 1510087-17

CP4106S18-19

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									LU-172
M	20	912.13	905 -	917	911.79	8.65E+01	34.20	9.51E+01	LU-172
m	21	964.60	960 -	980	964.29	1.83E+01	23.73	7.06E+01	EU-152
m	22	970.02	960 -	980	969.71	4.30E+01	25.52	5.45E+01	AC-228
	23	1120.11	1117 -	1125	1119.89	2.00E+01	20.86	5.60E+01	BI-214 SC-46
M	24	1454.33	1448 -	1469	1454.30	1.24E+01	13.71	2.00E+01	.....
m	25	1461.32	1448 -	1469	1461.30	2.86E+02	35.78	2.00E+01	K-40
	26	1540.23	1536 -	1545	1540.25	1.43E+01	12.77	1.55E+01	.....
	27	1591.18	1585 -	1596	1591.24	1.50E+01	15.87	2.40E+01	.....
M	28	1685.89	1684 -	1694	1686.01	7.40E+00	4.00	0.00E+00	.....
m	29	1691.87	1684 -	1694	1691.99	7.68E+00	5.66	0.00E+00	SB-124
	30	1709.35	1707 -	1712	1709.47	7.86E+00	8.43	6.27E+00	.....
	31	1765.30	1760 -	1771	1765.47	2.58E+01	12.33	6.34E+00	BI-214
	32	1797.19	1793 -	1800	1797.38	7.22E+00	7.21	3.56E+00	.....
	33	2102.27	2098 -	2105	2102.67	1.20E+01	6.93	0.00E+00	.....
	34	2615.49	2612 -	2621	2616.26	3.50E+01	11.83	0.00E+00	TL-208

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 11:21:50AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	1	64.94	4.29E+02	150.15	2.30E-02	1.75E-03
m	2	76.04	9.27E+02	158.22	2.13E-02	1.69E-03
	3	93.10	1.84E+02	74.59	1.90E-02	1.62E-03
	4	185.83	1.39E+02	79.30	1.16E-02	1.15E-03
	5	209.27	6.39E+01	54.59	1.05E-02	1.08E-03
	6	239.42	5.69E+02	85.35	9.39E-03	9.85E-04
	7	277.41	4.32E+01	40.64	8.24E-03	8.66E-04
	8	294.68	6.23E+01	60.68	7.80E-03	8.44E-04
	9	300.84	3.88E+01	37.48	7.65E-03	8.37E-04
	10	310.27	3.40E+01	41.78	7.44E-03	8.26E-04
	11	338.38	5.74E+01	50.19	6.86E-03	7.95E-04
	12	352.11	2.01E+02	63.82	6.61E-03	7.80E-04
	13	462.62	2.67E+01	28.71	5.08E-03	6.32E-04

: 00926

Analysis Report for 1510087-17
CP4106S18-19

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	14	510.33	1.21E+02	56.21	4.62E-03	5.62E-04
	15	536.27	1.85E+01	23.47	4.40E-03	5.24E-04
	16	583.44	1.34E+02	36.81	4.05E-03	4.55E-04
	17	609.39	1.49E+02	38.21	3.87E-03	4.17E-04
	18	727.73	3.26E+01	34.41	3.25E-03	3.03E-04
	19	810.68	1.48E+01	18.65	2.93E-03	2.57E-04
	20	912.13	8.65E+01	34.20	2.61E-03	2.06E-04
M	21	964.60	1.83E+01	23.73	2.47E-03	1.99E-04
m	22	970.02	4.30E+01	25.52	2.46E-03	1.99E-04
	23	1120.11	2.00E+01	20.86	2.14E-03	1.79E-04
M	24	1454.33	1.24E+01	13.71	1.69E-03	1.90E-04
m	25	1461.32	2.86E+02	35.78	1.68E-03	1.89E-04
	26	1540.23	1.43E+01	12.77	1.61E-03	1.73E-04
	27	1591.18	1.50E+01	15.87	1.56E-03	1.62E-04
M	28	1685.89	7.40E+00	4.00	1.49E-03	1.42E-04
m	29	1691.87	7.68E+00	5.66	1.49E-03	1.41E-04
	30	1709.35	7.86E+00	8.43	1.47E-03	1.37E-04
	31	1765.30	2.58E+01	12.33	1.43E-03	1.26E-04
	32	1797.19	7.22E+00	7.21	1.41E-03	1.19E-04
	33	2102.27	1.20E+01	6.93	1.25E-03	1.11E-04
	34	2615.49	3.50E+01	11.83	1.07E-03	1.11E-04

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000 sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 11:21:50AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	64.94	4.29E+02	150.15			4.29E+02	1.50E+02
m	2	76.04	9.27E+02	158.22			9.27E+02	1.58E+02
	3	93.10	1.84E+02	74.59	5.44E+01	8.36E+00	1.30E+02	7.51E+01
	4	185.83	1.39E+02	79.30	1.43E+01	7.33E+00	1.25E+02	7.96E+01
	5	209.27	6.39E+01	54.59			6.39E+01	5.46E+01
	6	239.42	5.69E+02	85.35	1.09E+01	6.39E+00	5.58E+02	8.56E+01
	7	277.41	4.32E+01	40.64			4.32E+01	4.06E+01
	8	294.68	6.23E+01	60.68			6.23E+01	6.07E+01
	9	300.84	3.88E+01	37.48			3.88E+01	3.75E+01

: 00927

Analysis Report for 1510087-17

CP4106S18-19

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
10	310.27	3.40E+01	41.78			3.40E+01	4.18E+01
11	338.38	5.74E+01	50.19			5.74E+01	5.02E+01
12	352.11	2.01E+02	63.82	8.07E+00	5.01E+00	1.93E+02	6.40E+01
13	462.62	2.67E+01	28.71			2.67E+01	2.87E+01
14	510.33	1.21E+02	56.21	4.21E+01	4.92E+00	7.84E+01	5.64E+01
15	536.27	1.85E+01	23.47			1.85E+01	2.35E+01
16	583.44	1.34E+02	36.81			1.34E+02	3.68E+01
17	609.39	1.49E+02	38.21	5.16E+00	1.63E+00	1.44E+02	3.82E+01
18	727.73	3.26E+01	34.41			3.26E+01	3.44E+01
19	810.68	1.48E+01	18.65			1.48E+01	1.87E+01
20	912.13	8.65E+01	34.20			8.65E+01	3.42E+01
M 21	964.60	1.83E+01	23.73			1.83E+01	2.37E+01
m 22	970.02	4.30E+01	25.52			4.30E+01	2.55E+01
23	1120.11	2.00E+01	20.86			2.00E+01	2.09E+01
M 24	1454.33	1.24E+01	13.71			1.24E+01	1.37E+01
m 25	1461.32	2.86E+02	35.78			2.86E+02	3.58E+01
26	1540.23	1.43E+01	12.77			1.43E+01	1.28E+01
27	1591.18	1.50E+01	15.87			1.50E+01	1.59E+01
M 28	1685.89	7.40E+00	4.00			7.40E+00	4.00E+00
m 29	1691.87	7.68E+00	5.66			7.68E+00	5.66E+00
30	1709.35	7.86E+00	8.43			7.86E+00	8.43E+00
31	1765.30	2.58E+01	12.33	1.11E-01	9.77E-01	2.57E+01	1.24E+01
32	1797.19	7.22E+00	7.21			7.22E+00	7.21E+00
33	2102.27	1.20E+01	6.93			1.20E+01	6.93E+00
34	2615.49	3.50E+01	11.83			3.50E+01	1.18E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 11:21:50AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M 1	64.94	4.29E+02	150.15			4.29E+02	1.50E+02
m 2	76.04	9.27E+02	158.22			9.27E+02	1.58E+02
3	93.10	1.84E+02	74.59	5.44E+01	8.36E+00	1.30E+02	7.51E+01

: 00928

Analysis Report for 1510087-17

CP4106S18-19

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
4	185.83	1.39E+02	79.30	1.43E+01	7.33E+00	1.25E+02	7.96E+01
5	209.27	6.39E+01	54.59			6.39E+01	5.46E+01
6	239.42	5.69E+02	85.35	1.09E+01	6.39E+00	5.58E+02	8.56E+01
7	277.41	4.32E+01	40.64			4.32E+01	4.06E+01
8	294.68	6.23E+01	60.68			6.23E+01	6.07E+01
9	300.84	3.88E+01	37.48			3.88E+01	3.75E+01
10	310.27	3.40E+01	41.78			3.40E+01	4.18E+01
11	338.38	5.74E+01	50.19			5.74E+01	5.02E+01
12	352.11	2.01E+02	63.82	8.07E+00	5.01E+00	1.93E+02	6.40E+01
13	462.62	2.67E+01	28.71			2.67E+01	2.87E+01
14	510.33	1.21E+02	56.21	4.21E+01	4.92E+00	7.84E+01	5.64E+01
15	536.27	1.85E+01	23.47			1.85E+01	2.35E+01
16	583.44	1.34E+02	36.81			1.34E+02	3.68E+01
17	609.39	1.49E+02	38.21	5.16E+00	1.63E+00	1.44E+02	3.82E+01
18	727.73	3.26E+01	34.41			3.26E+01	3.44E+01
19	810.68	1.48E+01	18.65			1.48E+01	1.87E+01
20	912.13	8.65E+01	34.20			8.65E+01	3.42E+01
M	21	964.60	1.83E+01			1.83E+01	2.37E+01
m	22	970.02	4.30E+01			4.30E+01	2.55E+01
	23	1120.11	2.00E+01			2.00E+01	2.09E+01
M	24	1454.33	1.24E+01			1.24E+01	1.37E+01
m	25	1461.32	2.86E+02			2.86E+02	3.58E+01
	26	1540.23	1.43E+01			1.43E+01	1.28E+01
	27	1591.18	1.50E+01			1.50E+01	1.59E+01
M	28	1685.89	7.40E+00			7.40E+00	4.00E+00
m	29	1691.87	7.68E+00			7.68E+00	5.66E+00
	30	1709.35	7.86E+00			7.86E+00	8.43E+00
	31	1765.30	2.58E+01	1.11E-01	9.77E-01	2.57E+01	1.24E+01
	32	1797.19	7.22E+00			7.22E+00	7.21E+00
	33	2102.27	1.20E+01			1.20E+01	6.93E+00
	34	2615.49	3.50E+01			3.50E+01	1.18E+01

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
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Analysis Report for 1510087-17
 CP4106S18-19

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.959	1460.81 *	10.67	2.28E+01	3.86E+00
CO-58	0.998	810.76 *	99.40	1.00E-01	1.27E-01
GA-67	0.590	93.31 *	35.70	2.88E+02	1.28E+03
		208.95 *	2.24	4.07E+03	1.77E+04
		300.22 *	16.00	4.76E+02	2.15E+03
		583.14 *	30.22	1.57E+00	4.65E-01
TL-208	0.827	860.37	4.48		
		2614.66 *	35.85	1.30E+00	4.61E-01
BI-212	0.738	727.17 *	11.80	1.22E+00	1.29E+00
		1620.62	2.75		
PB-212	0.905	238.63 *	44.60	1.91E+00	3.54E-01
		300.09 *	3.41	2.13E+00	2.07E+00
BI-214	0.915	609.31 *	46.30	1.15E+00	3.29E-01
		1120.29 *	15.10	8.84E-01	9.24E-01
		1764.49 *	15.80	1.62E+00	7.94E-01
		2204.22	4.98		
PB-214	0.981	295.21 *	19.19	5.95E-01	5.84E-01
		351.92 *	37.19	1.12E+00	3.96E-01
RA-226	0.977	186.21 *	3.28	4.69E+00	9.10E+00
CM-243	0.361	209.75 *	3.29	2.64E+00	2.27E+00
		228.14	10.60		
		277.60 *	14.00	5.37E-01	5.08E-01

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 Energy Tolerance : 1.000 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 11:21:50AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M 1	64.94	1.19153E-01	17.50		
m 2	76.04	2.57494E-01	8.53		
10	310.27	9.45763E-03	61.36		
11	338.38	1.59391E-02	43.74	Tol.	AC-228
13	462.62	7.40956E-03	53.81	Sum	
14	510.33	2.17669E-02	36.00	Sum	
15	536.27	5.13636E-03	63.46		

Analysis Report for 1510087-17

CP4106S18-19

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	20	912.13	2.40143E-02	19.78	Tol. LU-172
M	21	964.60	5.09554E-03	64.69	Tol. EU-152
m	22	970.02	1.19422E-02	29.68	Tol. AC-228
M	24	1454.33	3.44289E-03	55.31	
	26	1540.23	3.95833E-03	44.80	
	27	1591.18	4.16667E-03	52.92	
M	28	1685.89	2.05623E-03	27.02	
m	29	1691.87	2.13314E-03	36.83	Tol. SB-124
	30	1709.35	2.18434E-03	53.58	
	32	1797.19	2.00617E-03	49.92	
	33	2102.27	3.33333E-03	28.87	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.95	1460.81 *	10.67	2.28E+01	3.86E+00
CO-58	0.99	810.76 *	99.40	1.00E-01	1.27E-01
GA-67	0.59	93.31 *	35.70	2.88E+02	1.28E+03
		208.95 *	2.24	4.07E+03	1.77E+04
		300.22 *	16.00	4.76E+02	2.15E+03
TL-208	0.82	583.14 *	30.22	1.57E+00	4.65E-01
		860.37 *	4.48		
		2614.66 *	35.85	1.30E+00	4.61E-01
BI-212	0.73	727.17 *	11.80	1.22E+00	1.29E+00
		1620.62 *	2.75		
PB-212	0.90	238.63 *	44.60	1.91E+00	3.54E-01
		300.09 *	3.41	2.13E+00	2.07E+00
BI-214	0.91	609.31 *	46.30	1.15E+00	3.29E-01
		1120.29 *	15.10	8.84E-01	9.24E-01
		1764.49 *	15.80	1.62E+00	7.94E-01
		2204.22 *	4.98		
PB-214	0.98	295.21 *	19.19	5.95E-01	5.84E-01

: 00931

Analysis Report for 1510087-17

CP4106S18-19

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.98	351.92 *	37.19	1.12E+00	3.96E-01
RA-226	0.97	186.21 *	3.28	4.69E+00	9.10E+00
CM-243	0.36	209.75 *	3.29	2.64E+00	2.27E+00
		228.14	10.60		
		277.60 *	14.00	5.37E-01	5.08E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.959	2.28E+01	3.86E+00	
CO-58	0.998	1.00E-01	1.27E-01	
GA-67	0.590	2.67E+02	1.15E+03	
TL-208	0.827	1.43E+00	3.27E-01	
BI-212	0.738	1.22E+00	1.29E+00	
PB-212	0.905	1.88E+00	3.50E-01	
BI-214	0.915	1.19E+00	2.89E-01	
PB-214	0.981	9.57E-01	3.27E-01	
RA-226	0.977	4.69E+00	9.10E+00	
CM-243	0.361	6.29E-01	4.96E-01	

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1510087-17
CP4106S18-19

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 11:21:50AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	1	64.94	1.19153E-01	17.50	
m	2	76.04	2.57494E-01	8.53	
	10	310.27	9.45763E-03	61.36	
	11	338.38	1.59391E-02	43.74	Tol. AC-228
	13	462.62	7.40956E-03	53.81	Sum
	14	510.33	2.17669E-02	36.00	Sum
	15	536.27	5.13636E-03	63.46	
	20	912.13	2.40143E-02	19.78	Tol. LU-172
M	21	964.60	5.09554E-03	64.69	Tol. EU-152
m	22	970.02	1.19422E-02	29.68	Tol. AC-228
M	24	1454.33	3.44289E-03	55.31	
	26	1540.23	3.95833E-03	44.80	
	27	1591.18	4.16667E-03	52.92	
M	28	1685.89	2.05623E-03	27.02	
m	29	1691.87	2.13314E-03	36.83	Tol. SB-124
	30	1709.35	2.18434E-03	53.58	
	32	1797.19	2.00617E-03	49.92	
	33	2102.27	3.33333E-03	28.87	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
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Analysis Report for 1510087-17
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+	BE-7	477.59	10.42	1.80E-01	1.92E+00	1.92E+00
+	NA-22	1274.54	99.94	1.59E-02	2.20E-01	2.20E-01
+	NA-24	1368.53	99.99	-3.74E+14	7.79E+14	7.79E+14
		2754.09	99.86	5.64E+14		1.21E+15
+	AL-26	1808.65	99.76	1.55E-02	1.53E-01	1.53E-01
+	K-40	1460.81	*	10.67	2.28E+01	3.21E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-2.38E-01	9.81E-02	9.81E-02
		78.34	96.00	3.56E-01		1.26E-01
+	SC-46	889.25	99.98	-4.44E-02	2.33E-01	2.33E-01
		1120.51	99.99	2.07E-01		3.14E-01
+	V-48	983.52	99.98	1.83E-01	6.78E-01	6.78E-01
		1312.10	97.50	-2.75E-01		8.51E-01
+	CR-51	320.08	9.83	-6.51E-01	2.57E+00	2.57E+00
+	MN-54	834.83	99.97	-1.54E-02	1.84E-01	1.84E-01
+	CO-56	846.75	99.96	-3.20E-02	2.33E-01	2.33E-01
		1037.75	14.03	1.52E-01		1.90E+00
		1238.25	67.00	2.84E-01		5.56E-01
		1771.40	15.51	-3.34E-01		1.56E+00
		2598.48	16.90	-1.22E-01		9.74E-01
+	CO-57	122.06	85.51	-8.61E-02	1.13E-01	1.13E-01
		136.48	10.60	-1.00E+00		1.01E+00
+	CO-58	810.76	*	99.40	1.00E-01	2.08E-01
+	FE-59	1099.22	56.50	1.74E-01	6.05E-01	6.05E-01
		1291.56	43.20	-1.92E-01		7.18E-01
+	CO-60	1173.22	100.00	-2.15E-02	1.82E-01	1.99E-01
		1332.49	100.00	3.17E-02		1.82E-01
+	ZN-65	1115.52	50.75	-8.02E-02	4.51E-01	4.51E-01
+	GA-67	93.31	*	35.70	2.88E+02	2.67E+02
		208.95	*	2.24	4.07E+03	5.64E+03
		300.22	*	16.00	4.76E+02	7.47E+02
+	SE-75	121.11	16.70	-8.87E-02	2.02E-01	6.50E-01
		136.00	59.20	-1.59E-01		2.02E-01
		264.65	59.80	-1.14E-01		2.33E-01
		279.53	25.20	-1.03E-02		6.14E-01
		400.65	11.40	-2.82E-01		1.39E+00
+	RB-82	776.52	13.00	2.30E-01	3.32E+00	3.32E+00
+	RB-83	520.41	46.00	-6.55E-02	3.89E-01	3.89E-01
		529.64	30.30	5.96E-02		6.40E-01
		552.65	16.40	-2.32E-01		1.20E+00
+	KR-85	513.99	0.43	5.67E+01	4.50E+01	4.50E+01
+	SR-85	513.99	99.27	3.50E-01	2.78E-01	2.78E-01
+	Y-88	898.02	93.40	2.72E-02	1.68E-01	2.59E-01
		1836.01	99.38	1.71E-02		1.68E-01
+	NB-93M	16.57	9.43	8.26E-01	4.65E-01	4.65E-01
+	NB-94	702.63	100.00	1.45E-02	1.62E-01	1.62E-01
		871.10	100.00	-2.86E-02		1.67E-01
+	NB-95	765.79	99.81	-5.32E-02	3.32E-01	3.32E-01
+	NB-95M	235.69	25.00	3.97E+01	4.08E+02	4.08E+02
+	ZR-95	724.18	43.70	2.82E-02	4.80E-01	6.25E-01
		756.72	55.30	1.67E-01		4.80E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	MO-99	181.06	6.20	-5.41E+02	4.70E+03	7.26E+03
		739.58	12.80	-1.07E+03		4.70E+03
		778.00	4.50	-4.65E+03		1.42E+04
+	RU-103	497.08	89.00	-1.07E-02	2.68E-01	2.68E-01
+	RU-106	621.84	9.80	1.53E-01	1.55E+00	1.55E+00
+	AG-108M	433.93	89.90	-4.44E-02	1.50E-01	1.50E-01
		614.37	90.40	-2.48E-02		1.98E-01
		722.95	90.50	1.48E-02		2.08E-01
+	CD-109	88.03	3.72	-1.78E-01	2.97E+00	2.97E+00
+	AG-110M	657.75	93.14	8.41E-02	2.04E-01	2.04E-01
		677.61	10.53	4.69E-01		1.75E+00
		706.67	16.46	-8.26E-01		9.54E-01
		763.93	21.98	-4.93E-01		8.26E-01
		884.67	71.63	-5.67E-02		2.55E-01
		1384.27	23.94	-3.70E-02		8.11E-01
+	CD-113M	263.70	0.02	-1.56E+02	5.05E+02	5.05E+02
+	SN-113	255.12	1.93	-2.81E+00	2.53E-01	6.98E+00
		391.69	64.90	1.97E-02		2.53E-01
+	TE123M	159.00	84.10	-3.77E-02	1.49E-01	1.49E-01
+	SB-124	602.71	97.87	-2.27E-04	2.16E-01	2.16E-01
		645.85	7.26	-5.91E-01		3.20E+00
		722.78	11.10	6.07E-01		2.34E+00
		1691.02	49.00	6.05E-02		4.77E-01
+	I-125	35.49	6.49	-6.90E-02	1.21E+00	1.21E+00
+	SB-125	176.33	6.89	-1.29E-01	4.86E-01	1.63E+00
		427.89	29.33	1.66E-01		4.86E-01
		463.38	10.35	4.41E-01		1.33E+00
		600.56	17.80	-8.63E-02		7.91E-01
		635.90	11.32	1.29E-01		1.42E+00
+	SB-126	414.70	83.30	2.15E-01	1.01E+00	1.01E+00
		666.33	99.60	5.88E-01		1.10E+00
		695.00	99.60	8.39E-01		1.17E+00
		720.50	53.80	2.63E-01		1.78E+00
+	SN-126	87.57	37.00	-1.70E-02	2.84E-01	2.84E-01
+	SB-127	473.00	25.00	-4.81E+01	1.59E+02	1.77E+02
		685.20	35.70	-6.69E+01		1.59E+02
		783.80	14.70	-2.27E+01		4.27E+02
+	I-129	29.78	57.00	-3.04E-02	8.87E-02	8.87E-02
		33.60	13.20	-9.66E-02		3.96E-01
		39.58	7.52	-3.48E-01		7.55E-01
+	I-131	284.30	6.05	9.04E+00	2.51E+00	3.48E+01
		364.48	81.20	-8.34E-01		2.51E+00
		636.97	7.26	1.76E+00		3.67E+01
		722.89	1.80	4.32E+01		1.66E+02
+	TE-132	49.72	13.10	2.78E+02	1.40E+02	5.40E+02
		228.16	88.00	-3.09E+01		1.40E+02
+	BA-133	81.00	33.00	-5.73E-02	3.08E-01	3.38E-01
		302.84	17.80	-4.10E-01		6.92E-01
		356.01	60.00	6.17E-01		3.08E-01

Analysis Report for 1510087-17
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-133	529.87	86.30	3.77E+09	4.05E+10	4.05E+10
+	XE-133	81.00	38.00	-3.74E+00	2.21E+01	2.21E+01
+	CS-134	563.23	8.38	5.36E-02	1.91E-01	1.87E+00
		569.32	15.43	-8.54E-02		9.72E-01
		604.70	97.60	2.07E-02		1.91E-01
		795.84	85.40	4.57E-02		2.24E-01
		801.93	8.73	-1.90E-01		2.25E+00
+	CS-135	268.24	16.00	4.58E-02	7.42E-01	7.42E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	5.49E+00	9.32E-01	8.09E+00
		163.89	4.61	-1.91E+00		1.27E+01
		176.55	13.56	-3.59E-01		4.56E+00
		273.65	12.66	5.19E-02		5.60E+00
		340.57	48.50	1.81E-01		1.78E+00
		818.50	99.70	-2.07E-01		9.32E-01
		1048.07	79.60	-4.69E-01		1.32E+00
		1235.34	19.70	1.66E+00		7.80E+00
+	CS-137	661.65	85.12	-3.87E-02	1.99E-01	1.99E-01
+	LA-138	788.74	34.00	-1.05E-01	3.17E-01	5.16E-01
		1435.80	66.00	1.04E-01		3.17E-01
+	CE-139	165.85	80.35	6.64E-02	1.56E-01	1.56E-01
+	BA-140	162.64	6.70	-4.90E+00	3.16E+00	9.02E+00
		304.84	4.50	-7.97E+00		1.53E+01
		423.70	3.20	-4.87E+00		2.49E+01
		437.55	2.00	6.49E-01		4.06E+01
		537.32	25.00	-1.64E-01		3.16E+00
+	LA-140	328.77	20.50	8.39E-01	1.24E+00	3.67E+00
		487.03	45.50	-1.14E+00		1.70E+00
		815.85	23.50	4.94E-02		4.23E+00
		1596.49	95.49	4.25E-02		1.24E+00
+	CE-141	145.44	48.40	2.52E-01	4.44E-01	4.44E-01
+	CE-143	57.36	11.80	1.12E+06	5.22E+06	9.16E+06
		293.26	42.00	4.73E+06		5.22E+06
		664.55	5.20	-1.24E+07		4.72E+07
+	CE-144	133.54	10.80	2.34E-01	1.01E+00	1.01E+00
+	PM-144	476.78	42.00	1.04E-01	1.46E-01	3.37E-01
		618.01	98.60	-1.67E-02		1.46E-01
		696.49	99.49	8.56E-02		1.96E-01
+	PM-145	36.85	21.70	5.87E-02	1.40E-01	2.55E-01
		37.36	39.70	5.64E-02		1.40E-01
		42.30	15.10	1.43E-01		4.02E-01
		72.40	2.31	7.58E+00		5.02E+00
+	PM-146	453.90	39.94	-5.54E-02	3.31E-01	3.31E-01
		735.90	14.01	1.38E-01		1.15E+00
		747.13	13.10	5.59E-02		1.29E+00
+	ND-147	91.11	28.90	4.47E-01	3.13E+00	3.13E+00
		531.02	13.10	3.85E-01		8.86E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-149	285.90	3.10	3.01E+04	1.19E+05	1.19E+05
+	EU-152	121.78	20.50	-3.31E-01	4.35E-01	4.35E-01
		244.69	5.40	-1.71E-01		2.58E+00
		344.27	19.13	-7.27E-02		6.54E-01
		778.89	9.20	-5.99E-01		1.83E+00
		964.01	10.40	-3.28E-01		2.40E+00
		1085.78	7.22	4.68E-01		2.79E+00
		1112.02	9.60	-2.63E-02		2.12E+00
		1407.95	14.94	1.93E-01		1.11E+00
+	GD-153	97.43	31.30	-9.13E-02	3.36E-01	3.36E-01
		103.18	22.20	-1.25E-01		4.35E-01
+	EU-154	123.07	40.50	-1.46E-01	2.26E-01	2.26E-01
		723.30	19.70	6.83E-02		9.61E-01
		873.19	11.50	-2.28E-01		1.41E+00
		996.32	10.30	-3.97E-01		1.59E+00
		1004.76	17.90	-2.03E-01		1.08E+00
		1274.45	35.50	4.40E-02		6.10E-01
+	EU-155	86.50	30.90	-2.05E-02	3.31E-01	3.31E-01
		105.30	20.70	-2.32E-02		4.29E-01
+	EU-156	811.77	10.40	-2.90E+00	7.73E+00	7.73E+00
		1153.47	7.20	-3.55E-01		1.28E+01
		1230.71	8.90	-2.32E+00		1.26E+01
+	HO-166M	184.41	72.60	2.29E-01	1.82E-01	1.82E-01
		280.45	29.60	-1.69E-02		4.33E-01
		410.94	11.10	-4.36E-01		1.15E+00
		711.69	54.10	1.59E-02		2.91E-01
+	TM-171	66.72	0.14	-3.34E+01	6.85E+01	6.85E+01
+	HF-172	81.75	4.52	-1.02E+00	8.64E-01	2.35E+00
		125.81	11.30	-2.21E-01		8.64E-01
+	LU-172	181.53	20.60	-1.60E-01	1.00E+01	1.80E+01
		810.06	16.63	8.04E+00		3.44E+01
		912.12	15.25	9.93E+01		5.71E+01
		1093.66	62.50	2.11E-01		1.00E+01
+	LU-173	100.72	5.24	-1.30E+00	5.93E-01	1.77E+00
		272.11	21.20	-4.51E-02		5.93E-01
+	HF-175	343.40	84.00	-2.27E-02	2.12E-01	2.12E-01
+	LU-176	88.34	13.30	-1.38E-02	1.23E-01	8.19E-01
		201.83	86.00	-4.26E-02		1.29E-01
		306.78	94.00	-8.84E-02		1.23E-01
+	TA-182	67.75	41.20	-6.65E-01	2.74E-01	2.74E-01
		1121.30	34.90	3.62E-01		8.15E-01
		1189.05	16.23	-1.34E-01		1.85E+00
		1221.41	26.98	4.32E-01		1.24E+00
		1231.02	11.44	-4.94E-01		2.69E+00
+	IR-192	308.46	29.68	6.02E-02	3.33E-01	5.41E-01
		468.07	48.10	-2.75E-02		3.33E-01
+	HG-203	279.19	77.30	-4.53E-03	2.69E-01	2.69E-01
+	BI-207	569.67	97.72	-1.31E-02	1.49E-01	1.49E-01
		1063.62	74.90	-4.40E-02		2.50E-01

Analysis Report for 1510087-17
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TL-208	583.14	*	30.22	1.57E+00	1.01E-01	5.82E-01
		860.37		4.48	3.75E+00		4.94E+00
		2614.66	*	35.85	1.30E+00		1.01E-01
+	BI-210M	262.00		45.00	1.01E-01	2.61E-01	2.61E-01
		300.00		23.00	1.95E-01		6.05E-01
+	PB-210	46.50		4.25	-1.93E-01	1.48E+00	1.48E+00
+	PB-211	404.84		2.90	-8.23E-01	4.54E+00	4.54E+00
		831.96		2.90	-1.15E+00		6.04E+00
+	BI-212	727.17	*	11.80	1.22E+00	2.09E+00	2.09E+00
		1620.62		2.75	5.63E-01		4.76E+00
+	PB-212	238.63	*	44.60	1.91E+00	4.10E-01	4.10E-01
		300.09	*	3.41	2.13E+00		3.34E+00
+	BI-214	609.31	*	46.30	1.15E+00	4.12E-01	4.12E-01
		1120.29	*	15.10	8.84E-01		1.49E+00
		1764.49	*	15.80	1.62E+00		9.06E-01
		2204.22		4.98	7.93E-01		5.34E+00
+	PB-214	295.21	*	19.19	5.95E-01	5.68E-01	9.47E-01
		351.92	*	37.19	1.12E+00		5.68E-01
+	RN-219	401.80		6.50	6.41E-02	2.07E+00	2.07E+00
+	RA-223	323.87		3.88	-1.33E+00	2.99E+00	2.99E+00
+	RA-224	240.98		3.95	2.05E+01	5.14E+00	5.14E+00
+	RA-225	40.00		31.00	-3.92E-01	8.51E-01	8.51E-01
+	RA-226	186.21	*	3.28	4.69E+00	4.82E+00	4.82E+00
+	TH-227	50.10		8.40	4.11E-01	7.98E-01	7.98E-01
		236.00		11.50	1.61E-01		1.65E+00
		256.20		6.30	-3.29E-01		1.77E+00
+	AC-228	338.32		11.40	1.75E+00	1.04E+00	1.35E+00
		911.07		27.70	1.53E+00		1.04E+00
		969.11		16.60	1.85E+00		1.70E+00
+	TH-230	48.44		16.90	9.44E-02	3.84E-01	3.84E-01
		62.85		4.60	1.79E+00		1.91E+00
		67.67		0.37	-6.07E+01		2.50E+01
+	PA-231	283.67		1.60	2.65E+00	5.32E+00	7.87E+00
		302.67		2.30	-3.16E+00		5.32E+00
+	TH-231	25.64		14.70	-5.80E-02	3.47E-01	3.47E-01
		84.21		6.40	5.43E-01		1.53E+00
+	PA-233	311.98		38.60	1.21E-02	7.12E-01	7.12E-01
+	PA-234	131.20		20.40	3.38E-01	4.96E-01	4.96E-01
		733.99		8.80	-1.68E-01		1.83E+00
		946.00		12.00	-2.24E-02		1.57E+00
+	PA-234M	1001.03		0.92	8.87E-01	2.00E+01	2.00E+01
+	TH-234	63.29		3.80	3.03E+00	2.36E+00	2.36E+00
+	U-235	143.76		10.50	3.86E-01	1.00E+00	1.00E+00
		163.35		4.70	-3.33E-01		2.22E+00
		205.31		4.70	1.04E-01		2.51E+00
+	NP-237	86.50		12.60	-4.96E-02	8.02E-01	8.02E-01
+	NP-239	106.10		22.70	-3.21E+02	5.93E+03	5.93E+03

Analysis Report for 1510087-17

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	NP-239	228.18	10.70	2.65E+01	5.93E+03	1.69E+04
		277.60	14.10	-2.69E+03		1.34E+04
+	AM-241	59.54	35.90	1.38E-02	2.28E-01	2.28E-01
+	AM-243	74.67	66.00	6.97E-01	1.88E-01	1.88E-01
+	CM-243	209.75	* 3.29	2.64E+00	8.20E-01	3.66E+00
		228.14	10.60	-2.43E-01		1.10E+00
		277.60	* 14.00	5.37E-01		8.20E-01

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction

? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoof\Countroom\Library\TMA2.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59	10.42	1.92E+00	1.92E+00	1.80E-01	9.03E-01
	NA-22	1274.54	99.94	2.20E-01	2.20E-01	1.59E-02	9.98E-02
	NA-24	1368.53	99.99	7.79E+14	7.79E+14	-3.74E+14	3.26E+14
		2754.09	99.86	1.21E+15		5.64E+14	4.96E+14
	AL-26	1808.65	99.76	1.53E-01	1.53E-01	1.55E-02	6.28E-02
+	K-40	1460.81	* 10.67	3.21E+00	3.21E+00	2.28E+01	1.50E+00
@	AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88	94.40	9.81E-02	9.81E-02	-2.38E-01	4.81E-02
		78.34	96.00	1.26E-01		3.56E-01	6.22E-02
	SC-46	889.25	99.98	2.33E-01	2.33E-01	-4.44E-02	1.07E-01
		1120.51	99.99	3.14E-01		2.07E-01	1.45E-01
	V-48	983.52	99.98	6.78E-01	6.78E-01	1.83E-01	3.06E-01
		1312.10	97.50	8.51E-01		-2.75E-01	3.81E-01
	CR-51	320.08	9.83	2.57E+00	2.57E+00	-6.51E-01	1.23E+00
	MN-54	834.83	99.97	1.84E-01	1.84E-01	-1.54E-02	8.44E-02
	CO-56	846.75	99.96	2.33E-01	2.33E-01	-3.20E-02	1.07E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-56	1037.75	14.03	1.90E+00	2.33E-01	1.52E-01	8.68E-01
	1238.25	67.00	5.56E-01		2.84E-01	2.58E-01
	1771.40	15.51	1.56E+00		-3.34E-01	6.64E-01
	2598.48	16.90	9.74E-01		-1.22E-01	3.45E-01
CO-57	122.06	85.51	1.13E-01	1.13E-01	-8.61E-02	5.49E-02
	136.48	10.60	1.01E+00		-1.00E+00	4.91E-01
+ CO-58	810.76	*	2.08E-01	2.08E-01	1.00E-01	9.47E-02
FE-59	1099.22	56.50	6.05E-01	6.05E-01	1.74E-01	2.77E-01
	1291.56	43.20	7.18E-01		-1.92E-01	3.19E-01
CO-60	1173.22	100.00	1.99E-01	1.82E-01	-2.15E-02	8.98E-02
	1332.49	100.00	1.82E-01		3.17E-02	8.03E-02
ZN-65	1115.52	50.75	4.51E-01	4.51E-01	-8.02E-02	2.06E-01
+ GA-67	93.31	*	2.67E+02	2.67E+02	2.88E+02	1.31E+02
	208.95	*	5.64E+03		4.07E+03	2.73E+03
	300.22	*	7.47E+02		4.76E+02	3.57E+02
SE-75	121.11	16.70	6.50E-01	2.02E-01	-8.87E-02	3.16E-01
	136.00	59.20	2.02E-01		-1.59E-01	9.81E-02
	264.65	59.80	2.33E-01		-1.14E-01	1.12E-01
	279.53	25.20	6.14E-01		-1.03E-02	2.96E-01
	400.65	11.40	1.39E+00		-2.82E-01	6.59E-01
RB-82	776.52	13.00	3.32E+00	3.32E+00	2.30E-01	1.54E+00
RB-83	520.41	46.00	3.89E-01	3.89E-01	-6.55E-02	1.82E-01
	529.64	30.30	6.40E-01		5.96E-02	3.01E-01
	552.65	16.40	1.20E+00		-2.32E-01	5.64E-01
KR-85	513.99	0.43	4.50E+01	4.50E+01	5.67E+01	2.15E+01
SR-85	513.99	99.27	2.78E-01	2.78E-01	3.50E-01	1.33E-01
Y-88	898.02	93.40	2.59E-01	1.68E-01	2.72E-02	1.20E-01
	1836.01	99.38	1.68E-01		1.71E-02	6.67E-02
NB-93M	16.57	9.43	4.65E-01	4.65E-01	8.26E-01	2.26E-01
NB-94	702.63	100.00	1.62E-01	1.62E-01	1.45E-02	7.53E-02
	871.10	100.00	1.67E-01		-2.86E-02	1.62E-02
NB-95	765.79	99.81	3.32E-01	3.32E-01	-5.32E-02	1.54E-01
NB-95M	235.69	25.00	4.08E+02	4.08E+02	3.97E+01	1.99E+02
ZR-95	724.18	43.70	6.25E-01	4.80E-01	2.82E-02	2.93E-01
	756.72	55.30	4.80E-01		1.67E-01	2.24E-01
MO-99	181.06	6.20	7.26E+03	4.70E+03	-5.41E+02	3.53E+03
	739.58	12.80	4.70E+03		-1.07E+03	2.17E+03
	778.00	4.50	1.42E+04		-4.65E+03	6.56E+03
RU-103	497.08	89.00	2.68E-01	2.68E-01	-1.07E-02	1.26E-01
RU-106	621.84	9.80	1.55E+00	1.55E+00	1.53E-01	7.18E-01
AG-108M	433.93	89.90	1.50E-01	1.50E-01	-4.44E-02	7.08E-02
	614.37	90.40	1.98E-01		-2.48E-02	9.34E-02
	722.95	90.50	2.08E-01		1.48E-02	9.73E-02
CD-109	88.03	3.72	2.97E+00	2.97E+00	-1.78E-01	1.46E+00
AG-110M	657.75	93.14	2.04E-01	2.04E-01	8.41E-02	9.55E-02
	677.61	10.53	1.75E+00		4.69E-01	8.18E-01
	706.67	16.46	9.54E-01		-8.26E-01	4.39E-01
	763.93	21.98	8.26E-01		-4.93E-01	3.82E-01
	884.67	71.63	2.55E-01		-5.67E-02	1.17E-01
	1384.27	23.94	8.11E-01		-3.70E-02	3.55E-01
	263.70	0.02	5.05E+02		5.05E+02	-1.56E+02	2.42E+02
SN-113	255.12	1.93	6.98E+00	2.53E-01	-2.81E+00	3.35E+00
	391.69	64.90	2.53E-01		1.97E-02	1.20E-01

Analysis Report for 1510087-17

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TE123M	159.00	84.10	1.49E-01	1.49E-01	-3.77E-02	7.22E-02
SB-124	602.71	97.87	2.16E-01	2.16E-01	-2.27E-04	1.00E-01
	645.85	7.26	3.20E+00		-5.91E-01	1.49E+00
	722.78	11.10	2.34E+00		6.07E-01	1.09E+00
	1691.02	49.00	4.77E-01		6.05E-02	2.00E-01
I-125	35.49	6.49	1.21E+00	1.21E+00	-6.90E-02	5.90E-01
SB-125	176.33	6.89	1.63E+00	4.86E-01	-1.29E-01	7.94E-01
	427.89	29.33	4.86E-01		1.66E-01	2.31E-01
	463.38	10.35	1.33E+00		4.41E-01	6.25E-01
	600.56	17.80	7.91E-01		-8.63E-02	3.67E-01
	635.90	11.32	1.42E+00		1.29E-01	6.62E-01
SB-126	414.70	83.30	1.01E+00	1.01E+00	2.15E-01	4.79E-01
	666.33	99.60	1.10E+00		5.88E-01	5.15E-01
	695.00	99.60	1.17E+00		8.39E-01	5.51E-01
	720.50	53.80	1.78E+00		2.63E-01	8.21E-01
SN-126	87.57	37.00	2.84E-01	2.84E-01	-1.70E-02	1.39E-01
SB-127	473.00	25.00	1.77E+02	1.59E+02	-4.81E+01	8.29E+01
	685.20	35.70	1.59E+02		-6.69E+01	7.39E+01
	783.80	14.70	4.27E+02		-2.27E+01	1.98E+02
I-129	29.78	57.00	8.87E-02	8.87E-02	-3.04E-02	4.32E-02
	33.60	13.20	3.96E-01		-9.66E-02	1.93E-01
	39.58	7.52	7.55E-01		-3.48E-01	3.68E-01
I-131	284.30	6.05	3.48E+01	2.51E+00	9.04E+00	1.67E+01
	364.48	81.20	2.51E+00		-8.34E-01	1.19E+00
	636.97	7.26	3.67E+01		1.76E+00	1.71E+01
	722.89	1.80	1.66E+02		4.32E+01	7.77E+01
TE-132	49.72	13.10	5.40E+02	1.40E+02	2.78E+02	2.64E+02
	228.16	88.00	1.40E+02		-3.09E+01	6.75E+01
BA-133	81.00	33.00	3.38E-01	3.08E-01	-5.73E-02	1.66E-01
	302.84	17.80	6.92E-01		-4.10E-01	3.32E-01
	356.01	60.00	3.08E-01		6.17E-01	1.49E-01
I-133	529.87	86.30	4.05E+10	4.05E+10	3.77E+09	1.90E+10
XE-133	81.00	38.00	2.21E+01	2.21E+01	-3.74E+00	1.09E+01
CS-134	563.23	8.38	1.87E+00	1.91E-01	5.36E-02	8.79E-01
	569.32	15.43	9.72E-01		-8.54E-02	4.55E-01
	604.70	97.60	1.91E-01		2.07E-02	9.04E-02
	795.84	85.40	2.24E-01		4.57E-02	1.04E-01
	801.93	8.73	2.25E+00		-1.90E-01	1.05E+00
CS-135	268.24	16.00	7.42E-01	7.42E-01	4.58E-02	3.57E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	8.09E+00	9.32E-01	5.49E+00	3.94E+00
	163.89	4.61	1.27E+01		-1.91E+00	6.18E+00
	176.55	13.56	4.56E+00		-3.59E-01	2.21E+00
	273.65	12.66	5.60E+00		5.19E-02	2.70E+00
	340.57	48.50	1.78E+00		1.81E-01	8.58E-01
	818.50	99.70	9.32E-01		-2.07E-01	4.28E-01
	1048.07	79.60	1.32E+00		-4.69E-01	5.99E-01
	1235.34	19.70	7.80E+00		1.66E+00	3.62E+00
CS-137	661.65	85.12	1.99E-01	1.99E-01	-3.87E-02	9.30E-02
LA-138	788.74	34.00	5.16E-01	3.17E-01	-1.05E-01	2.39E-01
	1435.80	66.00	3.17E-01		1.04E-01	1.41E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CE-139	165.85	80.35	1.56E-01	1.56E-01	6.64E-02	7.55E-02
BA-140	162.64	6.70	9.02E+00	3.16E+00	-4.90E+00	4.38E+00
	304.84	4.50	1.53E+01		-7.97E+00	7.32E+00
	423.70	3.20	2.49E+01		-4.87E+00	1.18E+01
	437.55	2.00	4.06E+01		6.49E-01	1.93E+01
	537.32	25.00	3.16E+00		-1.64E-01	1.47E+00
LA-140	328.77	20.50	3.67E+00	1.24E+00	8.39E-01	1.75E+00
	487.03	45.50	1.70E+00		-1.14E+00	7.98E-01
	815.85	23.50	4.23E+00		4.94E-02	1.95E+00
	1596.49	95.49	1.24E+00		4.25E-02	5.43E-01
CE-141	145.44	48.40	4.44E-01	4.44E-01	2.52E-01	2.16E-01
CE-143	57.36	11.80	9.16E+06	5.22E+06	1.12E+06	4.48E+06
	293.26	42.00	5.22E+06		4.73E+06	2.52E+06
	664.55	5.20	4.72E+07		-1.24E+07	2.21E+07
CE-144	133.54	10.80	1.01E+00	1.01E+00	2.34E-01	4.92E-01
PM-144	476.78	42.00	3.37E-01	1.46E-01	1.04E-01	1.59E-01
	618.01	98.60	1.46E-01		-1.67E-02	6.78E-02
	696.49	99.49	1.96E-01		8.56E-02	9.20E-02
PM-145	36.85	21.70	2.55E-01	1.40E-01	5.87E-02	1.24E-01
	37.36	39.70	1.40E-01		5.64E-02	6.85E-02
	42.30	15.10	4.02E-01		1.43E-01	1.96E-01
	72.40	2.31	5.02E+00		7.58E+00	2.47E+00
PM-146	453.90	39.94	3.31E-01	3.31E-01	-5.54E-02	1.56E-01
	735.90	14.01	1.15E+00		1.38E-01	5.33E-01
	747.13	13.10	1.29E+00		5.59E-02	5.96E-01
ND-147	91.11	28.90	3.13E+00	3.13E+00	4.47E-01	1.54E+00
	531.02	13.10	8.86E+00		3.85E-01	4.17E+00
PM-149	285.90	3.10	1.19E+05	1.19E+05	3.01E+04	5.74E+04
EU-152	121.78	20.50	4.35E-01	4.35E-01	-3.31E-01	2.11E-01
	244.69	5.40	2.58E+00		-1.71E-01	1.25E+00
	344.27	19.13	6.54E-01		-7.27E-02	3.12E-01
	778.89	9.20	1.83E+00		-5.99E-01	8.45E-01
	964.01	10.40	2.40E+00		-3.28E-01	1.13E+00
	1085.78	7.22	2.79E+00		4.68E-01	1.28E+00
	1112.02	9.60	2.12E+00		-2.63E-02	9.68E-01
	1407.95	14.94	1.11E+00		1.93E-01	4.81E-01
GD-153	97.43	31.30	3.36E-01	3.36E-01	-9.13E-02	1.64E-01
	103.18	22.20	4.35E-01		-1.25E-01	2.12E-01
EU-154	123.07	40.50	2.26E-01	2.26E-01	-1.46E-01	1.10E-01
	723.30	19.70	9.61E-01		6.83E-02	4.50E-01
	873.19	11.50	1.41E+00		-2.28E-01	6.43E-01
	996.32	10.30	1.59E+00		-3.97E-01	7.19E-01
	1004.76	17.90	1.08E+00		-2.03E-01	4.92E-01
	1274.45	35.50	6.10E-01		4.40E-02	2.76E-01
EU-155	86.50	30.90	3.31E-01	3.31E-01	-2.05E-02	1.62E-01
	105.30	20.70	4.29E-01		-2.32E-02	2.09E-01
EU-156	811.77	10.40	7.73E+00	7.73E+00	-2.90E+00	3.58E+00
	1153.47	7.20	1.28E+01		-3.55E-01	5.84E+00
	1230.71	8.90	1.26E+01		-2.32E+00	5.81E+00
HO-166M	184.41	72.60	1.82E-01	1.82E-01	2.29E-01	8.86E-02
	280.45	29.60	4.33E-01		-1.69E-02	2.09E-01
	410.94	11.10	1.15E+00		-4.36E-01	5.46E-01
	711.69	54.10	2.91E-01		1.59E-02	1.35E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TM-171	66.72	0.14	6.85E+01	6.85E+01	-3.34E+01	3.36E+01
HF-172	81.75	4.52	2.35E+00	8.64E-01	-1.02E+00	1.15E+00
	125.81	11.30	8.64E-01		-2.21E-01	4.21E-01
LU-172	181.53	20.60	1.80E+01	1.00E+01	-1.60E-01	8.78E+00
	810.06	16.63	3.44E+01		8.04E+00	1.60E+01
	912.12	15.25	5.71E+01		9.93E+01	2.71E+01
	1093.66	62.50	1.00E+01		2.11E-01	4.59E+00
LU-173	100.72	5.24	1.77E+00	5.93E-01	-1.30E+00	8.64E-01
	272.11	21.20	5.93E-01		-4.51E-02	2.85E-01
HF-175	343.40	84.00	2.12E-01	2.12E-01	-2.27E-02	1.01E-01
LU-176	88.34	13.30	8.19E-01	1.23E-01	-1.38E-02	4.02E-01
	201.83	86.00	1.29E-01		-4.26E-02	6.24E-02
	306.78	94.00	1.23E-01		-8.84E-02	5.86E-02
TA-182	67.75	41.20	2.74E-01	2.74E-01	-6.65E-01	1.34E-01
	1121.30	34.90	8.15E-01		3.62E-01	3.76E-01
	1189.05	16.23	1.85E+00		-1.34E-01	8.54E-01
	1221.41	26.98	1.24E+00		4.32E-01	5.74E-01
	1231.02	11.44	2.69E+00		-4.94E-01	1.24E+00
IR-192	308.46	29.68	5.41E-01	3.33E-01	6.02E-02	2.58E-01
	468.07	48.10	3.33E-01		-2.75E-02	1.55E-01
HG-203	279.19	77.30	2.69E-01	2.69E-01	-4.53E-03	1.30E-01
BI-207	569.67	97.72	1.49E-01	1.49E-01	-1.31E-02	6.99E-02
	1063.62	74.90	2.50E-01		-4.40E-02	1.14E-01
+ TL-208	583.14	*	30.22	1.01E-01	1.57E+00	2.75E-01
	860.37		4.48		3.75E+00	2.31E+00
	2614.66	*	35.85	1.01E-01	1.30E+00	0.00E+00
BI-210M	262.00	45.00	2.61E-01	2.61E-01	1.01E-01	1.26E-01
	300.00	23.00	6.05E-01		1.95E-01	2.92E-01
PB-210	46.50	4.25	1.48E+00	1.48E+00	-1.93E-01	7.24E-01
PB-211	404.84	2.90	4.54E+00	4.54E+00	-8.23E+00	2.16E+00
	831.96	2.90	6.04E+00		-1.15E+00	2.79E+00
+ BI-212	727.17	*	11.80	2.09E+00	1.22E+00	9.95E-01
	1620.62		2.75		5.63E-01	1.92E+00
+ PB-212	238.63	*	44.60	4.10E-01	1.91E+00	2.00E-01
	300.09	*	3.41		2.13E+00	1.59E+00
+ BI-214	609.31	*	46.30	4.12E-01	1.15E+00	1.95E-01
	1120.29	*	15.10		8.84E-01	6.84E-01
	1764.49	*	15.80		1.62E+00	3.67E-01
	2204.22		4.98		7.93E-01	2.35E+00
+ PB-214	295.21	*	19.19	5.68E-01	5.95E-01	4.61E-01
	351.92	*	37.19		1.12E+00	2.76E-01
RN-219	401.80	6.50	2.07E+00	2.07E+00	6.41E-02	9.82E-01
RA-223	323.87	3.88	2.99E+00	2.99E+00	-1.33E+00	1.42E+00
RA-224	240.98	3.95	5.14E+00	5.14E+00	2.05E+01	2.52E+00
RA-225	40.00	31.00	8.51E-01	8.51E-01	-3.92E-01	4.15E-01
+ RA-226	186.21	*	3.28	4.82E+00	4.69E+00	2.36E+00
TH-227	50.10	8.40	7.98E-01	7.98E-01	4.11E-01	3.90E-01
	236.00	11.50	1.65E+00		1.61E-01	8.09E-01
	256.20	6.30	1.77E+00		-3.29E-01	8.48E-01
AC-228	338.32	11.40	1.35E+00	1.04E+00	1.75E+00	6.52E-01
	911.07	27.70	1.04E+00		1.53E+00	4.95E-01
	969.11	16.60	1.70E+00		1.85E+00	8.02E-01
TH-230	48.44	16.90	3.84E-01	3.84E-01	9.44E-02	1.88E-01

Analysis Report for 1510087-17

CP4106S18-19

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TH-230	62.85	4.60	1.91E+00	3.84E-01	1.79E+00	9.36E-01
	67.67	0.37	2.50E+01		-6.07E+01	1.23E+01
PA-231	283.67	1.60	7.87E+00	5.32E+00	2.65E+00	3.79E+00
	302.67	2.30	5.32E+00		-3.16E+00	2.55E+00
TH-231	25.64	14.70	3.47E-01	3.47E-01	-5.80E-02	1.69E-01
	84.21	6.40	1.53E+00		5.43E-01	7.52E-01
PA-233	311.98	38.60	7.12E-01	7.12E-01	1.21E-02	3.40E-01
PA-234	131.20	20.40	4.96E-01	4.96E-01	3.38E-01	2.42E-01
	733.99	8.80	1.83E+00		-1.68E-01	8.45E-01
	946.00	12.00	1.57E+00		-2.24E-02	7.22E-01
PA-234M	1001.03	0.92	2.00E+01	2.00E+01	8.87E-01	9.10E+00
TH-234	63.29	3.80	2.36E+00	2.36E+00	3.03E+00	1.16E+00
U-235	143.76	10.50	1.00E+00	1.00E+00	3.86E-01	4.89E-01
	163.35	4.70	2.22E+00		-3.33E-01	1.08E+00
	205.31	4.70	2.51E+00		1.04E-01	1.22E+00
NP-237	86.50	12.60	8.02E-01	8.02E-01	-4.96E-02	3.93E-01
NP-239	106.10	22.70	5.93E+03	5.93E+03	-3.21E+02	2.89E+03
	228.18	10.70	1.69E+04		2.65E+01	8.16E+03
	277.60	14.10	1.34E+04		-2.69E+03	6.47E+03
	AM-241	59.54	35.90		2.28E-01	2.28E-01
AM-243	74.67	66.00	1.88E-01	1.88E-01	6.97E-01	9.27E-02
+ CM-243	209.75	* 3.29	3.66E+00	8.20E-01	2.64E+00	1.77E+00
	228.14	10.60	1.10E+00		-2.43E-01	5.31E-01
	277.60	* 14.00	8.20E-01		5.37E-01	3.93E-01

- + = Nuclide identified during the nuclide identification
- * = Energy line found in the spectrum
- > = MDA value not calculated
- @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User
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Analysis Report for 1510087-17
CP4106S18-19

No Data Review Comments Entered.

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: CP4106S18-19

Elapsed Live time: 3600
 Elapsed Real Time: 3663

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	15	85
17:	84	58	74	61	58	65	71	54	54
25:	56	55	50	46	50	44	62	55	55
33:	57	47	59	48	64	53	59	75	75
41:	60	59	52	47	87	87	56	70	70
49:	61	69	63	72	72	70	71	76	76
57:	65	71	70	93	104	127	152	99	99
65:	97	99	106	99	97	92	103	120	120
73:	179	212	233	257	214	147	105	81	81
81:	89	68	87	89	77	127	123	104	104
89:	104	92	126	149	138	92	56	76	76
97:	65	65	75	55	53	41	65	58	58
105:	54	61	44	73	61	50	48	54	54
113:	48	48	60	55	52	48	47	55	55
121:	47	49	48	43	40	67	43	62	62
129:	67	60	54	63	50	40	54	46	46
137:	54	44	51	47	65	59	61	56	56
145:	50	41	49	45	58	45	51	45	45
153:	64	44	35	64	48	45	45	33	33
161:	35	45	52	35	37	47	56	36	36
169:	45	31	38	41	39	38	46	38	38
177:	43	41	45	49	37	43	62	60	60
185:	95	77	50	39	44	40	38	44	44
193:	36	47	37	46	34	43	28	32	32
201:	39	33	36	33	29	30	44	40	40
209:	56	38	25	27	25	32	36	24	24
217:	26	37	44	29	33	31	27	43	43
225:	22	28	30	32	26	27	38	37	37
233:	30	33	34	47	115	210	163	86	86
241:	57	50	32	19	19	30	28	27	27
249:	25	20	25	21	20	18	18	26	26
257:	35	18	24	22	27	23	23	25	25
265:	20	21	22	21	25	28	28	22	22
273:	20	20	26	33	31	30	21	16	16
281:	21	29	23	25	31	22	28	18	18
289:	29	19	19	25	33	61	50	33	33
297:	20	19	32	24	29	15	17	13	13
305:	14	17	12	20	22	25	13	25	25
313:	10	18	14	11	18	17	15	13	13
321:	21	14	10	13	16	17	22	21	21
329:	21	22	17	18	17	18	21	20	20
337:	36	55	28	18	16	23	20	15	15
345:	7	19	11	16	24	34	63	94	94
353:	55	16	20	11	14	18	15	8	8
361:	15	13	17	16	9	13	15	17	17

369: 10 18 19 12 23 14 14 21

Sample Title: CP4106S18-19

Channel	10	18	19	12	23	14	14	21
377:	10	7	17	15	13	14	13	20
385:	12	19	9	15	14	18	16	14
393:	10	19	17	12	11	12	19	6
401:	15	19	14	11	18	7	16	12
409:	13	14	16	12	12	6	15	9
417:	18	16	12	8	11	11	12	21
425:	18	11	10	11	12	17	7	18
433:	10	8	14	12	9	17	19	11
441:	11	13	5	14	12	15	12	11
449:	11	5	10	12	9	10	11	9
457:	15	10	6	13	14	9	22	9
465:	6	7	7	6	5	9	12	8
473:	11	6	11	5	7	12	16	10
481:	5	7	10	7	7	14	11	9
489:	11	4	17	11	13	13	8	5
497:	12	6	8	7	8	5	12	13
505:	12	10	13	11	21	40	27	27
513:	14	7	9	8	11	4	10	12
521:	9	5	8	10	8	11	9	12
529:	7	6	13	10	12	5	13	12
537:	9	4	0	5	8	11	8	8
545:	6	14	10	13	9	9	11	2
553:	10	12	13	4	9	13	9	15
561:	8	7	8	8	7	8	11	5
569:	6	16	6	3	10	6	11	10
577:	7	8	8	15	16	29	58	40
585:	19	4	9	11	8	11	5	9
593:	6	9	4	9	3	4	4	8
601:	10	6	4	9	9	9	18	28
609:	52	38	17	8	7	4	4	7
617:	6	4	11	5	5	6	8	4
625:	8	6	7	7	4	7	8	6
633:	5	9	6	8	5	5	15	9
641:	7	8	10	9	7	9	8	3
649:	6	11	7	4	10	8	6	11
657:	12	9	9	6	6	6	7	5
665:	12	9	11	8	10	9	5	5
673:	5	6	13	7	10	9	7	3
681:	8	10	2	7	8	6	6	2
689:	8	8	10	10	8	7	9	9
697:	7	7	14	6	6	3	5	7
705:	4	6	5	4	5	5	11	7
713:	5	7	4	4	3	10	6	7
721:	5	7	1	6	10	15	18	9
729:	5	10	7	7	3	7	5	2
737:	4	7	9	2	6	5	9	9
745:	5	7	6	6	4	6	2	8
753:	3	9	8	8	12	8	8	3
761:	11	5	6	4	3	5	5	9
769:	8	9	4	9	7	5	3	7
777:	8	7	6	5	2	7	7	7
785:	7	5	7	5	4	6	5	8
793:	10	5	9	7	9	4	3	7

801: 8 4 8 4 12 12 3 10

Sample Title: CP4106S18-19

Channel	1	2	3	4	5	6	7	8
809:	5	11	5	10	1	6	3	6
817:	5	8	2	5	6	3	5	6
825:	7	12	1	8	4	8	1	9
833:	4	5	5	4	6	3	8	3
841:	7	9	4	4	6	1	1	6
849:	9	6	7	3	6	6	4	8
857:	3	8	7	10	18	8	4	8
865:	2	6	4	6	4	5	5	4
873:	4	5	2	2	5	7	2	3
881:	2	3	7	3	5	4	5	6
889:	6	4	6	3	4	7	7	5
897:	7	11	3	4	4	4	7	5
905:	6	4	3	6	4	18	30	33
913:	13	3	6	7	1	3	2	2
921:	4	5	7	4	3	4	4	6
929:	5	3	5	3	2	4	3	6
937:	5	1	3	7	4	4	5	4
945:	4	1	4	8	4	9	6	5
953:	4	7	2	2	5	4	4	5
961:	3	5	8	9	16	10	4	15
969:	15	15	13	5	4	3	2	5
977:	5	6	2	1	3	3	2	6
985:	5	2	5	1	2	4	1	0
993:	2	4	4	5	1	1	5	6
1001:	2	4	11	4	2	6	2	2
1009:	6	11	3	1	4	1	6	4
1017:	5	4	6	2	4	2	1	2
1025:	4	2	6	4	8	4	5	6
1033:	3	3	4	4	4	6	8	3
1041:	5	3	4	3	4	9	1	1
1049:	4	5	5	2	7	3	7	5
1057:	4	5	8	3	4	3	3	4
1065:	2	4	2	4	4	4	4	2
1073:	4	3	5	8	2	3	8	2
1081:	2	2	4	1	4	3	8	3
1089:	6	6	3	4	2	3	8	5
1097:	4	6	4	3	4	1	3	3
1105:	4	3	1	2	7	4	6	5
1113:	3	2	3	4	1	8	6	12
1121:	7	5	4	4	1	6	3	3
1129:	7	6	6	5	2	2	6	0
1137:	2	9	3	5	5	7	3	2
1145:	4	1	7	5	3	3	5	1
1153:	6	5	4	4	4	8	2	1
1161:	6	3	7	1	6	3	3	1
1169:	6	3	4	0	4	3	2	3
1177:	5	3	7	4	10	5	7	6
1185:	4	6	9	5	8	2	3	5
1193:	6	3	5	8	5	3	4	6
1201:	8	7	9	4	8	3	5	10
1209:	6	3	4	3	2	3	8	3
1217:	3	13	5	8	5	10	4	5
1225:	4	5	4	6	3	7	6	5

1233: 3 10 3 8 7 6 8 4

Sample Title: CP4106S18-19

Channel	1	2	3	4	5	6	7	8	9
1241:	6	6	6	4	2	4	10	7	
1249:	1	1	3	7	3	3	6	1	
1257:	4	4	3	10	3	5	3	5	
1265:	4	5	6	4	3	4	4	2	
1273:	4	2	6	2	3	4	3	4	
1281:	0	7	2	2	2	5	0	5	
1289:	1	3	1	3	5	2	2	3	
1297:	5	2	3	4	1	8	0	4	
1305:	4	3	7	2	3	3	3	4	
1313:	3	3	3	1	2	1	6	3	
1321:	8	1	0	1	2	1	2	1	
1329:	1	2	2	4	3	2	3	1	
1337:	1	2	2	1	1	0	3	3	
1345:	3	5	0	0	4	1	1	5	
1353:	0	4	2	1	1	0	0	1	
1361:	1	1	2	1	1	0	1	1	
1369:	3	1	1	0	2	4	1	2	
1377:	3	1	2	5	1	3	1	3	
1385:	0	2	1	1	5	0	1	1	
1393:	1	1	1	4	0	1	0	0	
1401:	3	0	2	0	3	0	3	1	
1409:	2	1	1	3	0	1	1	0	
1417:	1	1	1	2	0	2	1	1	
1425:	2	2	3	1	2	0	1	4	
1433:	3	1	5	2	4	2	2	0	
1441:	3	2	1	0	3	1	2	0	
1449:	2	2	0	1	2	5	4	1	
1457:	3	2	18	61	82	74	33	17	
1465:	4	1	3	2	0	2	0	0	
1473:	2	2	2	2	2	4	3	1	
1481:	1	0	2	1	1	1	1	2	
1489:	0	0	0	0	1	1	0	1	
1497:	2	2	1	1	1	0	1	3	
1505:	0	0	0	1	0	4	2	1	
1513:	3	3	0	1	1	0	0	0	
1521:	1	2	0	0	1	1	0	4	
1529:	2	0	0	3	0	1	1	0	
1537:	2	3	3	2	3	6	2	0	
1545:	1	1	1	0	2	0	0	1	
1553:	1	1	0	1	2	0	0	2	
1561:	1	1	2	0	0	2	0	1	
1569:	2	0	1	0	1	0	1	0	
1577:	0	2	1	1	1	3	2	0	
1585:	2	1	0	1	3	5	4	2	
1593:	3	4	2	0	2	0	2	2	
1601:	2	1	1	1	1	0	0	1	
1609:	1	3	1	0	1	1	1	1	
1617:	0	0	1	2	0	0	3	0	
1625:	0	0	0	0	1	4	0	2	
1633:	1	1	1	1	2	2	0	2	
1641:	1	0	2	1	1	0	0	1	
1649:	0	0	1	0	1	0	0	0	
1657:	3	0	0	2	2	1	1	1	

1665: 1 1 1 1 0 2 1 2

Sample Title: CP4106S18-19

Channel	1	2	3	4	5	6	7	8
1673:	1	0	1	1	0	2	1	0
1681:	0	1	0	0	1	3	1	0
1689:	1	1	1	4	1	0	0	0
1697:	0	1	1	0	0	0	2	3
1705:	2	0	3	1	2	2	3	0
1713:	0	0	0	0	2	1	0	0
1721:	1	1	1	2	0	1	0	2
1729:	0	0	2	1	2	0	1	0
1737:	2	1	3	0	1	0	0	0
1745:	0	1	0	1	0	1	2	0
1753:	1	2	0	1	1	0	0	0
1761:	1	1	1	3	7	8	4	2
1769:	1	1	0	1	0	1	1	0
1777:	0	1	0	3	1	1	3	2
1785:	1	0	0	0	0	0	0	0
1793:	0	1	0	1	2	2	3	0
1801:	1	0	0	1	0	0	0	0
1809:	2	2	1	0	0	1	0	2
1817:	0	1	0	1	1	1	0	1
1825:	1	0	3	1	0	0	0	2
1833:	1	0	1	0	0	0	0	1
1841:	0	0	0	1	1	2	3	1
1849:	2	1	1	1	0	0	0	1
1857:	0	1	0	0	0	0	0	1
1865:	1	0	1	0	2	1	2	1
1873:	0	0	1	1	0	0	0	1
1881:	1	0	1	1	0	1	0	0
1889:	0	2	0	1	0	2	0	0
1897:	1	0	0	0	1	0	1	1
1905:	0	0	1	1	1	0	1	1
1913:	0	3	0	0	0	2	1	1
1921:	1	0	0	0	2	0	0	0
1929:	1	1	1	0	1	1	0	0
1937:	0	1	0	1	0	0	0	1
1945:	0	0	2	0	0	1	0	0
1953:	0	0	0	1	0	0	0	1
1961:	0	1	1	1	0	1	1	1
1969:	0	2	1	0	0	0	4	0
1977:	0	1	0	1	0	1	1	0
1985:	0	0	1	0	0	2	1	2
1993:	0	0	0	1	1	1	0	1
2001:	2	0	1	0	0	0	0	0
2009:	1	0	1	1	1	0	0	0
2017:	1	1	0	1	1	0	1	0
2025:	0	0	2	1	0	0	1	1
2033:	0	0	0	1	0	1	0	1
2041:	3	0	0	2	1	1	2	0
2049:	0	0	0	0	0	0	0	0
2057:	1	0	0	0	0	1	0	0
2065:	1	1	0	0	0	0	0	0
2073:	1	0	0	1	1	0	1	0
2081:	1	1	1	0	0	1	0	1
2089:	0	2	0	1	0	1	0	1

2097: 0 0 1 1 1 2 0 7

Sample Title: CP4106S18-19

Channel	1	2	3	4	5	6	7	8
2105:	0	0	1	0	1	0	1	0
2113:	0	0	0	1	0	3	2	0
2121:	2	1	1	0	0	2	0	0
2129:	0	0	0	1	0	1	1	1
2137:	1	1	2	0	1	0	0	0
2145:	0	0	0	1	0	2	0	0
2153:	1	0	0	0	0	0	2	1
2161:	0	0	0	0	0	0	0	1
2169:	1	3	0	1	0	1	0	1
2177:	0	0	0	0	0	0	2	1
2185:	0	1	0	0	0	1	2	0
2193:	0	1	1	0	2	0	2	2
2201:	1	1	2	3	2	1	4	2
2209:	0	0	1	1	2	1	0	0
2217:	0	1	0	0	1	0	0	2
2225:	0	0	0	0	0	1	1	0
2233:	0	0	0	1	1	1	0	1
2241:	1	0	1	1	1	1	0	0
2249:	0	0	2	2	0	0	1	3
2257:	1	2	0	1	1	0	0	0
2265:	0	2	1	0	2	0	0	1
2273:	2	0	1	1	2	0	0	0
2281:	1	2	1	0	1	0	1	0
2289:	0	0	1	0	2	0	2	0
2297:	1	1	0	1	0	1	1	1
2305:	0	1	0	0	0	0	1	1
2313:	0	1	3	1	0	0	0	0
2321:	1	0	0	1	0	2	1	0
2329:	1	0	0	0	3	0	1	0
2337:	2	0	1	0	1	3	0	0
2345:	0	0	1	0	0	0	0	2
2353:	0	2	0	2	0	0	1	1
2361:	0	1	0	1	0	0	1	0
2369:	0	2	1	0	0	0	0	1
2377:	1	0	0	0	1	0	2	1
2385:	0	0	0	0	0	0	2	0
2393:	0	2	1	0	1	1	0	2
2401:	0	0	0	0	1	0	0	2
2409:	1	0	0	1	1	0	1	2
2417:	0	1	1	1	1	0	0	1
2425:	0	0	1	1	0	0	0	0
2433:	0	1	0	1	0	0	0	1
2441:	0	0	1	0	0	0	0	2
2449:	1	0	1	1	1	1	0	0
2457:	0	0	1	1	0	1	0	0
2465:	0	0	0	1	0	0	0	0
2473:	1	0	0	1	0	0	0	0
2481:	0	1	0	0	1	0	0	0
2489:	0	0	0	0	0	1	0	1
2497:	0	0	0	0	1	0	1	0
2505:	0	1	0	0	0	1	0	0
2513:	0	0	0	0	0	0	0	1
2521:	0	1	0	0	0	0	0	0

2529: 0 0 1 1 0 0 1 0

Sample Title: CP4106S18-19

Channel	1	2	3	4	5	6	7	8	9
2537:	2	0	0	0	0	0	0	0	0
2545:	0	1	0	0	0	0	0	0	0
2553:	0	0	1	1	1	1	0	0	0
2561:	0	0	1	1	0	0	0	0	0
2569:	0	0	1	0	0	0	0	0	0
2577:	0	0	0	0	0	0	0	1	0
2585:	0	0	0	1	0	1	0	0	0
2593:	0	0	1	1	0	0	0	0	0
2601:	0	0	0	0	0	0	0	1	0
2609:	0	0	0	0	1	3	7	8	8
2617:	11	2	2	1	0	0	0	0	0
2625:	0	0	0	1	0	0	0	0	0
2633:	0	0	1	0	0	0	0	0	0
2641:	0	1	0	0	0	0	0	1	0
2649:	0	0	0	1	0	0	0	0	0
2657:	0	0	0	0	0	0	0	0	1
2665:	0	0	0	1	0	0	0	0	0
2673:	0	0	0	0	1	0	0	0	2
2681:	0	0	0	0	0	0	0	0	0
2689:	0	0	0	1	0	1	0	0	0
2697:	0	0	0	0	0	0	0	0	1
2705:	0	0	0	0	0	1	1	1	1
2713:	1	0	0	0	0	1	0	0	0
2721:	1	1	0	1	0	2	0	0	0
2729:	0	1	0	0	2	1	0	0	0
2737:	0	1	0	0	0	0	0	0	0
2745:	0	1	0	0	0	2	0	0	1
2753:	0	0	0	2	0	1	0	0	1
2761:	0	0	0	0	0	0	0	0	0
2769:	0	1	0	0	1	0	0	0	0
2777:	0	0	0	0	0	1	1	0	0
2785:	0	0	0	0	1	0	0	0	0
2793:	0	0	0	0	0	1	0	0	0
2801:	0	0	0	0	0	0	0	1	0
2809:	0	0	0	0	0	0	0	0	1
2817:	0	1	0	0	0	1	0	0	0
2825:	0	0	0	0	0	0	0	1	0
2833:	0	1	0	0	0	1	0	0	0
2841:	0	0	0	0	0	0	0	0	0
2849:	0	0	0	1	0	0	0	0	1
2857:	0	0	0	0	0	0	0	0	0
2865:	0	0	0	0	0	0	0	0	0
2873:	1	0	0	0	0	0	0	0	0
2881:	0	0	1	0	0	1	0	0	0
2889:	0	0	0	0	0	0	0	0	0
2897:	0	1	0	0	1	0	0	0	0
2905:	0	0	1	0	2	0	0	0	0
2913:	0	0	0	0	1	0	0	0	0
2921:	0	0	0	0	0	0	0	0	0
2929:	0	1	0	0	0	0	0	0	0
2937:	0	0	1	1	1	0	0	0	0
2945:	0	0	0	0	1	0	0	0	0
2953:	1	0	0	0	0	0	0	0	1

2961: 0 1 0 0 0 0 0 0

Sample Title: CP4106S18-19

Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	0	0	0	0	0
2985:	1	0	0	0	0	1	0	0
2993:	0	1	1	0	0	0	1	0
3001:	0	0	0	0	0	0	0	0
3009:	0	0	0	0	1	0	0	1
3017:	0	0	0	0	0	0	0	0
3025:	0	1	0	0	0	1	0	0
3033:	0	0	0	0	0	0	1	0
3041:	0	0	0	0	0	0	0	1
3049:	0	1	0	0	0	0	0	1
3057:	1	0	0	0	0	0	1	0
3065:	0	0	0	0	0	1	0	0
3073:	0	1	0	0	0	0	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	1	0	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	0	0	1	0	0	0
3113:	0	0	1	0	0	0	0	0
3121:	0	0	0	0	0	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	1	0	0	0
3145:	0	0	0	0	0	0	1	0
3153:	1	0	0	0	0	0	0	0
3161:	0	0	1	1	0	0	0	0
3169:	0	0	0	0	0	0	1	0
3177:	0	0	1	0	0	0	0	1
3185:	0	0	0	0	0	0	0	0
3193:	1	0	0	0	0	0	1	0
3201:	0	0	0	0	0	1	0	0
3209:	0	0	0	0	0	0	0	1
3217:	0	0	0	0	0	0	0	0
3225:	0	0	0	1	0	0	0	0
3233:	0	0	0	0	0	0	1	1
3241:	0	0	1	0	0	0	0	0
3249:	0	0	0	1	0	0	0	1
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	1
3273:	0	0	0	1	0	0	0	0
3281:	0	0	1	0	0	0	0	1
3289:	0	0	1	0	0	0	0	0
3297:	0	1	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	0	1	0	1
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	1	0	1	0	0	1	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	1	0	0
3369:	0	0	1	0	0	0	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	1	0	0	0	0

3393: 0 0 0 0 0 0 0 0

Sample Title: CP4106S18-19

Channel								
3401:	0	1	0	0	0	0	1	0
3409:	0	0	0	0	0	0	1	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	1	0	0	0	0
3441:	0	0	0	0	0	0	1	0
3449:	1	0	0	1	0	1	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	1	0	0	0
3473:	0	0	0	0	0	0	1	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	1	0
3497:	0	0	1	0	1	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	1	0	0	0	0	0	1
3521:	0	1	0	0	0	0	0	1
3529:	0	0	0	0	0	0	0	0
3537:	0	2	0	0	0	0	1	0
3545:	0	0	1	0	0	0	0	0
3553:	0	0	0	0	0	1	0	0
3561:	1	0	0	0	0	0	0	1
3569:	0	0	0	0	0	0	0	1
3577:	0	0	0	0	0	0	1	0
3585:	0	0	0	0	0	0	1	0
3593:	0	0	0	0	0	0	1	0
3601:	0	0	0	0	0	0	0	0
3609:	0	1	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	1	0	0	0	0	0	0	0
3641:	0	0	1	0	0	0	0	0
3649:	0	0	0	0	0	1	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	1
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	1	0	0	0	0
3705:	0	0	0	1	0	0	0	1
3713:	0	1	0	0	0	0	0	0
3721:	0	0	1	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	1	0	0	0	0	0
3753:	0	0	0	1	0	1	0	0
3761:	0	0	0	1	0	0	0	0
3769:	0	0	0	0	0	0	0	1
3777:	0	0	0	0	0	0	0	1
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	1	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

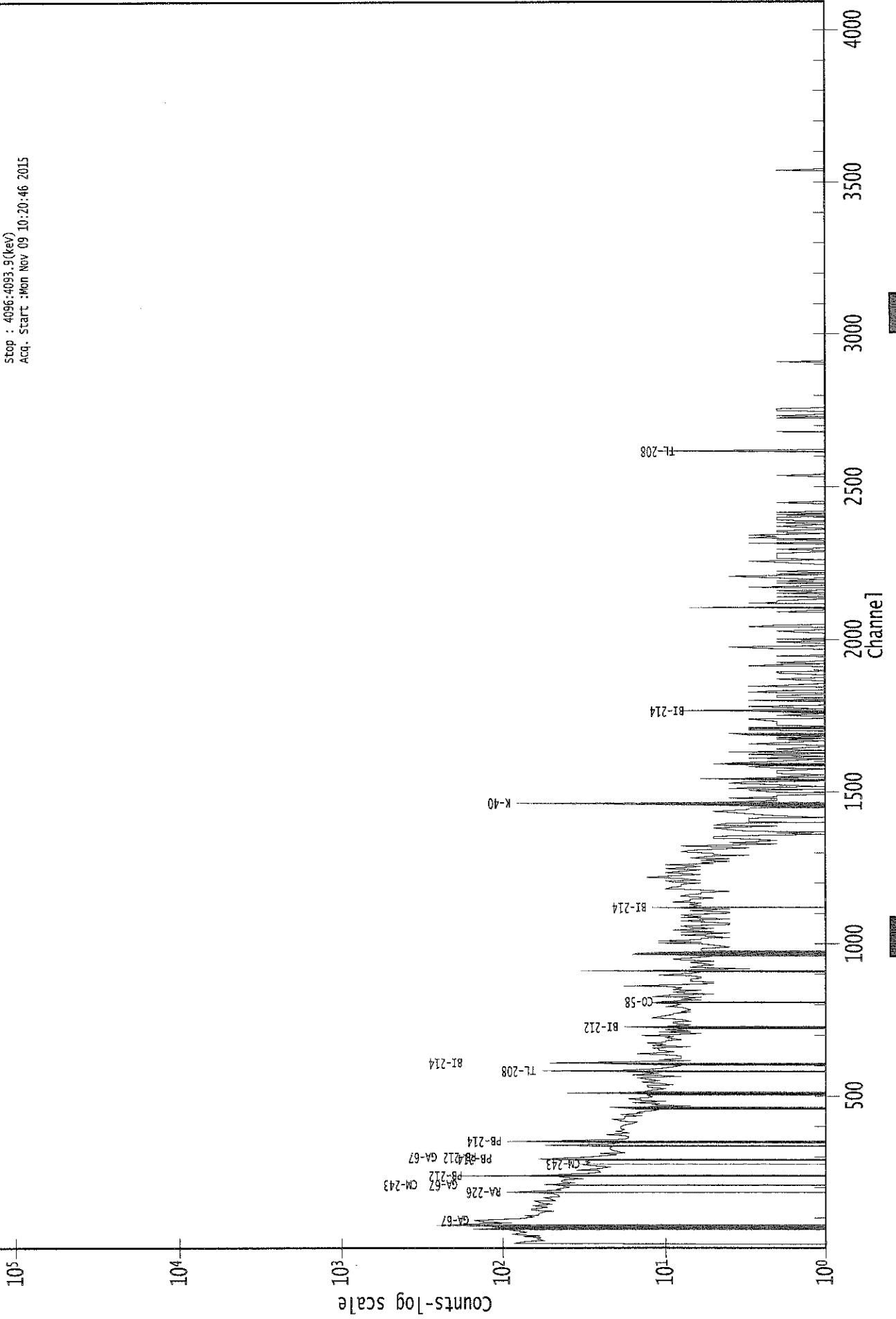
3825: 0 0 0 0 0 1 0 0

Sample Title: CP4106S18-19

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	1
3841:	0	0	0	1	0	0	1	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	1	0
3873:	0	0	0	0	0	0	1	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	1	0	0	0	0	0
3897:	0	0	1	0	0	0	0	0
3905:	1	0	0	0	0	0	0	0
3913:	0	0	1	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	1
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	1	0	0	0	0
3953:	1	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	1
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	1	0	1	0	0	0
3993:	0	1	0	0	0	0	0	0
4001:	0	0	1	0	0	1	0	0
4009:	0	0	0	0	0	1	0	0
4017:	0	0	1	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	1	0	0	0
4049:	1	1	0	0	0	0	0	0
4057:	1	0	1	0	1	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	1	1	1
4089:	0	0	0	0	0	1	0	0

0000029326.CNF

Live Time : 3600.000 sec
Real Time : 3663.420 sec
Start : 1: 1.8(keV)
Stop : 4096.4093.9(keV)
Acq. Start : Mon Nov 09 10:20:46 2015



 ***** GENIE QUALITY ASSURANCE *****

✓
1119

Last Results Report
 11/9/15 6:05:56 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000004B.QCK

Detector: GE4
 Geometry: <None>
 Certificate: <None>
 Sample ID: QA Background Ch
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 11/9/15 5:50:26 AM
 Measurement Date: 11/9/15 5:50:27 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 915.8 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE4 [SD: 8.7352E+000+/-163.68]	1.5133E+000	-4.4122E-002
Trend Test: The last	9 samples exhibit a bias trend.	< : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 11/9/15 5:36:24 AM

1119

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000004GAW-14C.QCK

Detector: GE4
 Geometry: <None>
 Certificate: GAW-14
 Sample ID: QA Calibration C
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 10/1/14 12:00:00 AM
 Measurement Date: 11/9/15 5:20:14 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 958.6 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >			
Peak centroid 59.54 keV Boundary Limits: [5.800E+001, 6.100E+001]	5.8768E+001	<	:	:	>
Peak centroid 661.65 keV Boundary Limits: [6.600E+002, 6.630E+002]	6.6108E+002	<	:	:	>
Peak centroid 1332.49 keV Boundary Limits: [1.331E+003, 1.334E+003]	1.3322E+003	<	:	:	>
Peak centroid 1836.1 keV Boundary Limits: [1.834E+003, 1.838E+003] Trend Test: The last 9 samples exhibit a bias trend.	1.8361E+003	<	:	:	>
Peak FWHM Am-241 Boundary Limits: [5.000E-001, 3.000E+000]	2.2287E+000	<	:	:	>
Peak FWHM Cs-137 Boundary Limits: [5.000E-001, 3.000E+000]	2.7059E+000	<	:	:	>
Peak FWHM Co-60 Boundary Limits: [5.000E-001, 3.000E+000]	2.9628E+000	<	:	:	>
Peak FWHM Y-88 Boundary Limits: [5.000E-001, 3.500E+000] Trend Test: The last 9 samples exhibit a bias trend.	3.0641E+000	<	:	:	>
Decay corrected activity Boundary Limits: [1.200E-001, 1.816E-001] Trend Test: The last 9 samples exhibit a bias trend.	1.2370E+005	<	:	:	>
Decay corrected activity Boundary Limits: [4.918E-002, 7.377E-002]	6.4324E+004	<	:	:	>

Decay corrected activity 9.6134E+004
Boundary Limits: [7.892E-002, 1.184E-001] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >

Decay corrected activity 2.0628E+005
Boundary Limits: [1.695E-001, 2.543E-001] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 11/9/15 5:35:35 AM

1119

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D000000002GAS-1401C.QC

Detector: GE2
 Geometry: <None>
 Certificate: GAS-1401
 Sample ID: QA Calibration C
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 10/1/14 12:00:00 AM
 Measurement Date: 11/9/15 5:19:57 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 926.5 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >			
Peak centroid 59.54keV	6.0000E+001				
Boundary Limits: [5.800E+001, 6.100E+001]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak centroid 661.65 keV	6.6150E+002				
Boundary Limits: [6.600E+002, 6.640E+002]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak centroid 1332.49 ke	1.3322E+003				
Boundary Limits: [1.331E+003, 1.334E+003]		<	:	:	>
Peak centroid 1836.1 keV	1.8355E+003				
Boundary Limits: [1.834E+003, 1.838E+003]		<	:	:	>
Peak FWHM Am-241	1.3298E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak FWHM Cs-137	2.1672E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak FWHM Co-60	2.2216E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Peak FWHM Y-88	2.6185E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Decay corrected activity	1.5495E+005				
Boundary Limits: [1.224E-001, 1.836E-001]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					

Decay corrected activity 6.3689E+004
Boundary Limits: [4.971E-002, 7.457E-002] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Parameter Description Value Deviation/Flags
[Mean +/- Std. Dev.] < LU : SD : UD : BS >

Decay corrected activity 1.0397E+005
Boundary Limits: [7.978E-002, 1.197E-001] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 2.2859E+005
Boundary Limits: [1.714E-001, 2.571E-001] < : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 11/9/15 5:35:25 AM

✓
 11109

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000001GAF-14C.QCK

Detector: GE1
 Geometry: <None>
 Certificate: GAF-14
 Sample ID: QA Calibration C
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 10/1/14 12:00:00 AM
 Measurement Date: 11/9/15 5:19:47 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 924.4 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >			
Peak centroid 59.54 keV Boundary Limits: [5.800E+001, 6.100E+001]	6.0189E+001	<	:	:	>
Peak centroid 661.65 keV Boundary Limits: [6.600E+002, 6.630E+002] Trend Test: The last 9 samples exhibit a bias trend.	6.6200E+002	<	:	:	>
Peak centroid 1332.49 keV Boundary Limits: [1.331E+003, 1.334E+003] Trend Test: The last 9 samples exhibit a bias trend.	1.3327E+003	<	:	:	>
Peak centroid 1836.01 keV Boundary Limits: [1.834E+003, 1.838E+003]	1.8362E+003	<	:	:	>
Peak FWHM Am-241 Boundary Limits: [5.000E-001, 3.000E+000]	1.0488E+000	<	:	:	>
Peak FWHM Cs-137 Boundary Limits: [5.000E-001, 3.000E+000] Trend Test: The last 9 samples exhibit a bias trend.	1.5732E+000	<	:	:	>
Peak FWHM Co-60 Boundary Limits: [5.000E-001, 3.000E+000] Trend Test: The last 9 samples exhibit a bias trend.	2.1058E+000	<	:	:	>
Peak FWHM Y-90 Boundary Limits: [5.000E-001, 3.000E+000]	2.3049E+000	<	:	:	>
Decay corrected activity Boundary Limits: [1.170E-002, 1.754E-002]	1.4699E+004	<	:	:	>
Decay corrected activity	6.2225E+003				

Boundary Limits: [4.716E-003, 7.075E-003] < : : : >

Decay corrected activity 1.0515E+004
Boundary Limits: [7.572E-003, 1.136E-002] < : : : >

Parameter Description Value Deviation/Flags
[Mean +/- Std. Dev.] < LU : SD : UD : BS >

Decay corrected activity 2.0051E+004
Boundary Limits: [1.626E-002, 2.440E-002] < : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)