

AUXIER & ASSOCIATES, INC.

PAP-KAN

**STANDARD LEVEL IV
REPORT OF ANALYSIS**

WORK ORDER #15-10084-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

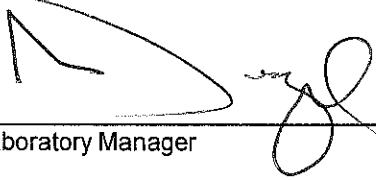
Eberline Services Work Order # 15 - 10084

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	JEP	Sample Log-In
		11/5/15	JL	Data Compilation
		11-12-15	MPT	First Technical Data Review
		11/11/15	USK	Second Technical Data Review
		11/11/15	S	Data Entry/Electronic Deliverable
		11/11/15	S	Case Narrative
		11/12/15	USK	Electronic Deliverable Proof
		11/12/15	USK	Samples Analyzed within Holding Time Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/>
		11/12/15	USK	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

11/12/15
Date

Copy No. _____

SECTION I
CHAIN OF CUSTODY

Chain of Custody Record

No 7130

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



EBERLINE
SERVICES

Project Name: PAP/KIAN		Project Number:		15-10084		Page ___ of ___	
Send Report To: Cecilia Greene		Sampler (Print Name): Ashley Jahr		RECD/OCT 14 2015		Purchase Order #:	
Address:		Sampler (Print Name):		Isotope Chromium		Comments, Special Instructions, etc.	
9821 Coopers Rd, Sumbel		Shipment Method: FedEx		Isotope Thorium		Lab Sample ID (to be completed by lab)	
Knoxville, TN 37982		Airbill Number:		Gamma Spec			
Phone: 865-675-3669		Laboratory Receiving:					
Fax: Greene@auxier.com							
Field Sample ID	Sample Date	Sample Time	Sample Matrix	Number of Containers	Analysis Requested	Comments, Special Instructions, etc.	Lab Sample ID (to be completed by lab)
CP0604506-07	10/9/15	1300	S	1	X	21 Day Growth	
CP0604509-10	10/9/15	1310	S	1	X		
CP0604511-12	10/9/15	1320	S	1	X		
CP0604514-15	10/9/15	1330	S	1	X		
CP0604516-17	10/9/15	1340	S	1	X		
CP0604519-20	10/9/15	1350	S	1	X		
CP0604521-22	10/9/15	1400	S	1	X		
CP0604524-25	10/9/15	1410	S	1	X		
CP0604526-27	10/9/15	1420	S	1	X		
CP0604528-29	10/9/15	1430	S	1	X		
CP1803503-04	10/10/15	1130	S	1	X		
CP1803506-07	10/10/15	1140	S	1	X		
CP1803508-09	10/10/15	1150	S	1	X		
CP1803510-11	10/10/15	1200	S	1	X		
CP1803512-13	10/10/15	1210	S	1	X		
CP1803515-16	10/10/15	1220	S	1	X		
CP1803518-19	10/10/15	1230	S	1	X		
Relinquished by: (Signature)		Received by: (Signature)		Date: 10/14/2015		Time: 1300	
Relinquished by: (Signature)		Received by: (Signature)		Date:		Time:	
Relinquished by: (Signature)		Received by: (Signature)		Date:		Time:	
Sample Custodian Remarks (Completed By Laboratory):				Turnaround		Sample Receipt	
QA/QC Level				Level I <input type="checkbox"/>		Routine <input type="checkbox"/>	
				Level II <input type="checkbox"/>		24 Hour <input type="checkbox"/>	
				Level III <input type="checkbox"/>		1 Week <input type="checkbox"/>	
				Other <input type="checkbox"/>		Other _____	
				Total # Containers Received?			
				COC Seals Present?			
				COC Seals Intact?			
				Received Containers Intact?			
				Temperature?			



EBERLINE
SERVICES
Oak Ridge Laboratory

Internal Chain of Custody

Work Order #

15-10084

Lab Deadline

11/6/2015

Analysis

UISO - Level 4

Sample Matrix

Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	38	K1.2
	05	34	K1.2
	06	35	K1.2
	07	36	K1.2
	08	34	K1.2
	09	35	K1.2
	10	32	K1.2
	11	37	K1.2
	12	35	K1.2
	13	36	K1.2
	14	34	K1.2
	15	34	K1.2
	16	38	K1.2
	17	33	K1.2
	18	35	K1.2
	19	35	K1.2
	20	35	K1.2

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1390 Keny Seis	10-14-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0920 Keny Seis	10-15-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0920 J. Pacheco	10-15-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	J. Pacheco	10-15-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0920 J. Pacheco	10-16-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	J. Pacheco	10-16-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0920 J. Pacheco	10-21-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	10/21/15 1157
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 #

15-10084

Lab Deadline

11/6/2015

Analysis

THISO - Level 4

Sample Matrix

Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	38	K1.2
	05	34	K1.2
	06	35	K1.2
	07	36	K1.2
	08	34	K1.2
	09	35	K1.2
	10	32	K1.2
	11	37	K1.2
	12	35	K1.2
	13	36	K1.2
	14	34	K1.2
	15	34	K1.2
	16	38	K1.2
	17	33	K1.2
	18	35	K1.2
	19	35	K1.2
	20	35	K1.2

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1330 Kengscoj	10-14-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0920 Kengscoj	10-15-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0920 J. Pachelle	10-15-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	J. Pachelle	10/19/15 OK
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0912	10/15/15 0400
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0912	10/23/15 0912
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		10/27/15 0912
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		KB 10/23/15 1424
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 #

15-10084

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	38	K1.2
	05	34	K1.2
	06	35	K1.2
	07	36	K1.2
	08	34	K1.2
	09	35	K1.2
	10	32	K1.2
	11	37	K1.2
	12	35	K1.2
	13	36	K1.2
	14	34	K1.2
	15	34	K1.2
	16	38	K1.2
	17	33	K1.2
	18	35	K1.2
	19	35	K1.2
	20	35	K1.2

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1370 Kenny Seig	10-14-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0925 Kenny Seig	10-15-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0925 Kenny Seig	10-15-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	106 11/4/15	1648
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		15-10084												
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	UinSO															
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	CP0604S06-07	10/09/15 13:00	SO	K1.2	X	X	X				3											
05	CP0604S09-10	10/09/15 13:10	SO	K1.2	X	X	X				3											
06	CP0604S11-12	10/09/15 13:20	SO	K1.2	X	X	X				3											
07	CP0604S14-15	10/09/15 13:30	SO	K1.2	X	X	X				3											
08	CP0604S16-17	10/09/15 13:40	SO	K1.2	X	X	X				3											
09	CP0604S19-20	10/09/15 13:50	SO	K1.2	X	X	X				3											
10	CP0604S21-22	10/09/15 14:00	SO	K1.2	X	X	X				3											
11	CP0604S24-25	10/09/15 14:10	SO	K1.2	X	X	X				3											
12	CP0604S26-27	10/09/15 14:20	SO	K1.2	X	X	X				3											
13	CP0604S28-29	10/09/15 14:30	SO	K1.2	X	X	X				3											
14	CP1803S03-04	10/10/15 11:30	SO	K1.2	X	X	X				3											
15	CP1803S06-07	10/10/15 11:40	SO	K1.2	X	X	X				3											
16	CP1803S08-09	10/10/15 11:50	SO	K1.2	X	X	X				3											
17	CP1803S10-11	10/10/15 12:00	SO	K1.2	X	X	X				3											
18	CP1803S12-13	10/10/15 12:10	SO	K1.2	X	X	X				3											
19	CP1803S15-16	10/10/15 12:20	SO	K1.2	X	X	X				3											
20	CP1803S18-19	10/10/15 12:30	SO	K1.2	X	X	X				3											
Totals Per Analysis (non QA samples)					17	17	17	0	0	0	0	0	0	0	0	0	0	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	Report Data Cecilia Greene Auxier & Associates, Inc. 9821 Cogdill Road, Suite 1 Knoxville, TN 37830 Voice 865-675-3669 Fax 865-675-3677
	Voice Fax	Contact Harvey Cohen 301-718-8900 Fax 301-718-8909			



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 - 10084

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

WERE SAMPLES:

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

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. Smith* DATE: 10-19-15

SECTION III
CASE NARRATIVE



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

EBS-OR-39965

November 16, 2015

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

CASE NARRATIVE
Work Order # 15-10084-OR

SAMPLE RECEIPT

This work order contains seventeen 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>
CP0604S06-07	15-10084-04	CP0604S28-29	15-10084-13
CP0604S09-10	15-10084-05	CP1803S03-04	15-10084-14
CP0604S11-12	15-10084-06	CP1803S06-07	15-10084-15
CP0604S14-15	15-10084-07	CP1803S08-09	15-10084-16
CP0604S16-17	15-10084-08	CP1803S10-11	15-10084-17
CP0604S19-20	15-10084-09	CP1803S12-13	15-10084-18
CP0604S21-22	15-10084-10	CP1803S15-16	15-10084-19
CP0604S24-25	15-10084-11	CP1803S18-19	15-10084-20
CP0604S26-27	15-10084-12		

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 and Uranium-238 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Uranium-235 duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. 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 and Thorium-232 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Thorium-230 duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. 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: 15-10084
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
15-10084-01	LCS	KNOWN	10/14/15 00:00	10/14/2015	11/4/2015	15-10084	Cobalt-60	LANL ER-130 Modified	1.37E+02	5.48E+00				pCi/g
15-10084-01	LCS	KNOWN	10/14/15 00:00	10/14/2015	11/4/2015	15-10084	Cesium-137	LANL ER-130 Modified	8.69E+01	3.48E+00				pCi/g
15-10084-01	LCS	SPIKE	10/14/15 00:00	10/14/2015	11/4/2015	15-10084	Cobalt-60	LANL ER-130 Modified	1.34E+02	9.26E+00	1.15E+01	1.58E+00	1.47E+00	pCi/g
15-10084-01	LCS	SPIKE	10/14/15 00:00	10/14/2015	11/4/2015	15-10084	Cesium-137	LANL ER-130 Modified	8.37E+01	8.09E+00	9.16E+00	2.38E+00	1.18E+00	pCi/g
15-10084-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	-8.72E-02	1.44E-01	1.44E-01	2.10E-01	8.72E-02	pCi/g
15-10084-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	-6.06E-02	8.88E-02	8.88E-02	1.28E-01	5.69E-02	pCi/g
15-10084-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	2.13E-01	3.60E-01	3.60E-01	8.01E-01	3.28E-01	pCi/g
15-10084-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	4.34E-02	5.71E-02	5.71E-02	9.87E-02	4.63E-02	pCi/g
15-10084-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	6.86E-03	8.49E-02	8.49E-02	1.39E-01	6.41E-02	pCi/g
15-10084-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	-6.06E-02	8.88E-02	8.88E-02	1.28E-01	5.55E-01	pCi/g
15-10084-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	-8.72E-02	1.44E-01	1.44E-01	2.10E-01	8.72E-02	pCi/g
15-10084-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	2.52E-01	4.14E-01	4.15E-01	6.61E-01	3.16E-01	pCi/g
15-10084-02	MBL	BLANK	10/14/15 00:00	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	-1.72E-02	1.23E-01	1.23E-01	1.84E-01	8.15E-02	pCi/g
15-10084-03	DUP	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.36E+00	2.15E-01	2.26E-01	7.18E-01	3.47E-01	pCi/g
15-10084-03	DUP	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	9.32E-01	1.73E-01	1.79E-01	1.85E-01	8.74E-02	pCi/g
15-10084-03	DUP	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	2.01E+01	2.32E+00	2.54E+00	6.68E-01	2.90E-01	pCi/g
15-10084-03	DUP	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.60E+00	1.77E-01	1.95E-01	3.18E-01	1.57E-01	pCi/g
15-10084-03	DUP	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	6.33E-01	1.48E-01	1.55E-01	2.13E-01	1.03E-01	pCi/g
15-10084-03	DUP	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	9.32E-01	1.73E-01	1.79E-01	1.85E-01	1.37E+00	pCi/g
15-10084-03	DUP	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.36E+00	2.15E-01	2.26E-01	7.18E-01	3.47E-01	pCi/g
15-10084-03	DUP	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	1.83E+00	1.47E+00	1.47E+00	2.43E+00	1.20E+00	pCi/g
15-10084-03	DUP	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.60E+00	2.92E-01	3.03E-01	3.36E-01	1.61E-01	pCi/g
15-10084-04	DO	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.38E+00	2.27E-01	2.38E-01	6.43E-01	3.10E-01	pCi/g
15-10084-04	DO	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	9.02E-01	1.67E-01	1.73E-01	4.77E-01	2.34E-01	pCi/g
15-10084-04	DO	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	1.95E+01	2.28E+00	2.49E+00	2.15E+00	1.03E+00	pCi/g
15-10084-04	DO	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.60E+00	1.73E-01	1.91E-01	2.55E-01	1.15E-01	pCi/g
15-10084-04	DO	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	8.78E-01	1.53E-01	1.59E-01	2.76E-01	1.34E-01	pCi/g
15-10084-04	DO	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	9.02E-01	1.67E-01	1.73E-01	4.77E-01	1.03E+00	pCi/g
15-10084-04	DO	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.38E+00	2.27E-01	2.38E-01	6.43E-01	3.10E-01	pCi/g
15-10084-04	DO	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	1.37E+00	1.33E+00	1.33E+00	2.22E+00	1.09E+00	pCi/g
15-10084-04	DO	CP0604S06-07	10/09/15 13:00	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.50E+00	2.94E-01	3.04E-01	3.66E-01	1.76E-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

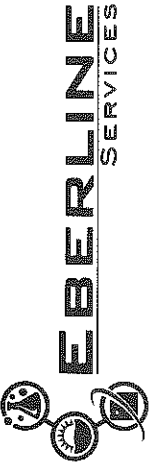
SDG: 15-10084
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

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
15-10084-05	TRG	CP0604S09-10	10/09/15 13:10	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.35E+00	4.92E-01	4.97E-01	8.54E-01	4.04E-01	pCi/g
15-10084-05	TRG	CP0604S09-10	10/09/15 13:10	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	1.48E+00	3.33E-01	3.42E-01	5.39E-01	2.60E-01	pCi/g
15-10084-05	TRG	CP0604S09-10	10/09/15 13:10	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	1.94E+01	3.28E+00	3.41E+00	1.67E+00	7.41E-01	pCi/g
15-10084-05	TRG	CP0604S09-10	10/09/15 13:10	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.86E+00	3.45E-01	3.58E-01	4.41E-01	2.17E-01	pCi/g
15-10084-05	TRG	CP0604S09-10	10/09/15 13:10	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	1.27E+00	2.64E-01	2.72E-01	4.33E-01	2.10E-01	pCi/g
15-10084-05	TRG	CP0604S09-10	10/09/15 13:10	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	1.48E+00	3.33E-01	3.42E-01	5.39E-01	2.37E+00	pCi/g
15-10084-05	TRG	CP0604S09-10	10/09/15 13:10	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.35E+00	4.92E-01	4.97E-01	8.54E-01	4.04E-01	pCi/g
15-10084-05	TRG	CP0604S09-10	10/09/15 13:10	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	1.37E+00	1.38E+00	1.39E+00	2.16E+00	1.08E+00	pCi/g
15-10084-05	TRG	CP0604S09-10	10/09/15 13:10	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.38E+00	3.26E-01	3.34E-01	2.17E-01	3.56E-01	pCi/g
15-10084-06	TRG	CP0604S11-12	10/09/15 13:20	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.66E+00	2.18E-01	2.34E-01	3.25E-01	1.53E-01	pCi/g
15-10084-06	TRG	CP0604S11-12	10/09/15 13:20	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	1.45E+00	1.83E-01	1.98E-01	2.22E-01	1.07E-01	pCi/g
15-10084-06	TRG	CP0604S11-12	10/09/15 13:20	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	2.28E+01	2.47E+00	2.73E+00	1.70E+00	8.18E-01	pCi/g
15-10084-06	TRG	CP0604S11-12	10/09/15 13:20	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.54E+00	1.75E-01	1.92E-01	2.77E-01	1.38E-01	pCi/g
15-10084-06	TRG	CP0604S11-12	10/09/15 13:20	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	1.61E+00	1.68E-01	1.87E-01	2.24E-01	1.09E-01	pCi/g
15-10084-06	TRG	CP0604S11-12	10/09/15 13:20	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	1.45E+00	1.83E-01	1.98E-01	2.22E-01	1.08E+00	pCi/g
15-10084-06	TRG	CP0604S11-12	10/09/15 13:20	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.66E+00	2.18E-01	2.34E-01	3.25E-01	1.53E-01	pCi/g
15-10084-06	TRG	CP0604S11-12	10/09/15 13:20	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	3.30E+00	1.43E+00	1.44E+00	1.99E+00	9.78E-01	pCi/g
15-10084-06	TRG	CP0604S11-12	10/09/15 13:20	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.32E+00	1.77E-01	1.90E-01	9.16E-02	1.53E-01	pCi/g
15-10084-07	TRG	CP0604S14-15	10/09/15 13:30	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.62E+00	2.32E-01	2.46E-01	3.71E-01	1.76E-01	pCi/g
15-10084-07	TRG	CP0604S14-15	10/09/15 13:30	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	1.53E+00	1.82E-01	1.98E-01	1.96E-01	9.38E-02	pCi/g
15-10084-07	TRG	CP0604S14-15	10/09/15 13:30	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	2.11E+01	2.66E+00	2.87E+00	1.05E+00	4.86E-01	pCi/g
15-10084-07	TRG	CP0604S14-15	10/09/15 13:30	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.48E+00	1.85E-01	2.00E-01	2.15E-01	1.05E-01	pCi/g
15-10084-07	TRG	CP0604S14-15	10/09/15 13:30	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	1.72E+00	1.80E-01	2.00E-01	2.03E-01	9.80E-02	pCi/g
15-10084-07	TRG	CP0604S14-15	10/09/15 13:30	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	1.53E+00	1.82E-01	1.98E-01	1.96E-01	1.27E+00	pCi/g
15-10084-07	TRG	CP0604S14-15	10/09/15 13:30	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.62E+00	2.32E-01	2.46E-01	3.71E-01	1.76E-01	pCi/g
15-10084-07	TRG	CP0604S14-15	10/09/15 13:30	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	1.81E+00	1.63E+00	1.63E+00	2.71E+00	1.34E+00	pCi/g
15-10084-07	TRG	CP0604S14-15	10/09/15 13:30	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.31E+00	1.73E-01	1.86E-01	1.11E-01	1.41E-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:
Project:
Analysis Category:
Sample Matrix:

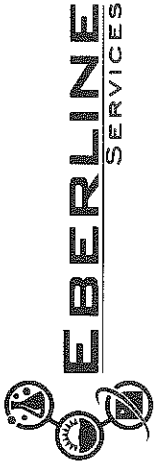
15-10084
PAP-KAN
ENVIRONMENTAL
SO

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
15-10084-08	TRG	CP0604S16-17	10/09/15 13:40	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.40E+00	4.42E-01	4.48E-01	8.43E-01	3.98E-01	pCi/g
15-10084-08	TRG	CP0604S16-17	10/09/15 13:40	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	1.65E+00	3.05E-01	3.17E-01	3.90E-01	1.85E-01	pCi/g
15-10084-08	TRG	CP0604S16-17	10/09/15 13:40	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	2.07E+01	3.44E+00	3.60E+00	1.48E+00	6.38E-01	pCi/g
15-10084-08	TRG	CP0604S16-17	10/09/15 13:40	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	2.04E+00	3.57E-01	3.72E-01	4.15E-01	2.03E-01	pCi/g
15-10084-08	TRG	CP0604S16-17	10/09/15 13:40	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	1.56E+00	3.40E-01	3.49E-01	5.51E-01	2.68E-01	pCi/g
15-10084-08	TRG	CP0604S16-17	10/09/15 13:40	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	1.65E+00	3.05E-01	3.17E-01	3.90E-01	2.07E+00	pCi/g
15-10084-08	TRG	CP0604S16-17	10/09/15 13:40	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.40E+00	4.42E-01	4.48E-01	8.43E-01	3.98E-01	pCi/g
15-10084-08	TRG	CP0604S16-17	10/09/15 13:40	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	2.24E+00	1.46E+00	1.47E+00	2.30E+00	1.13E+00	pCi/g
15-10084-08	TRG	CP0604S16-17	10/09/15 13:40	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.38E+00	3.43E-01	3.51E-01	2.35E-01	3.91E-01	pCi/g
15-10084-09	TRG	CP0604S19-20	10/09/15 13:50	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.51E+00	2.78E-01	2.89E-01	4.74E-01	2.24E-01	pCi/g
15-10084-09	TRG	CP0604S19-20	10/09/15 13:50	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	1.23E+00	1.79E-01	1.90E-01	3.51E-01	1.70E-01	pCi/g
15-10084-09	TRG	CP0604S19-20	10/09/15 13:50	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	1.95E+01	2.48E+00	2.68E+00	1.53E+00	7.18E-01	pCi/g
15-10084-09	TRG	CP0604S19-20	10/09/15 13:50	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.60E+00	1.84E-01	2.02E-01	3.61E-01	1.78E-01	pCi/g
15-10084-09	TRG	CP0604S19-20	10/09/15 13:50	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	1.30E+00	1.85E-01	1.97E-01	2.83E-01	1.37E-01	pCi/g
15-10084-09	TRG	CP0604S19-20	10/09/15 13:50	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	1.23E+00	1.79E-01	1.90E-01	3.51E-01	1.44E+00	pCi/g
15-10084-09	TRG	CP0604S19-20	10/09/15 13:50	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.51E+00	2.78E-01	2.89E-01	4.74E-01	2.24E-01	pCi/g
15-10084-09	TRG	CP0604S19-20	10/09/15 13:50	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	1.06E+00	1.68E+00	1.69E+00	2.20E+00	1.08E+00	pCi/g
15-10084-09	TRG	CP0604S19-20	10/09/15 13:50	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.26E+00	2.91E-01	2.98E-01	5.20E-01	2.52E-01	pCi/g
15-10084-10	TRG	CP0604S21-22	10/09/15 14:00	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.53E+00	2.38E-01	2.50E-01	3.75E-01	1.79E-01	pCi/g
15-10084-10	TRG	CP0604S21-22	10/09/15 14:00	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	1.46E+00	1.64E-01	1.81E-01	1.90E-01	9.09E-02	pCi/g
15-10084-10	TRG	CP0604S21-22	10/09/15 14:00	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	2.11E+01	2.30E+00	2.54E+00	9.55E-01	4.44E-01	pCi/g
15-10084-10	TRG	CP0604S21-22	10/09/15 14:00	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.53E+00	1.73E-01	1.90E-01	2.36E-01	1.16E-01	pCi/g
15-10084-10	TRG	CP0604S21-22	10/09/15 14:00	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	1.45E+00	1.70E-01	1.85E-01	2.13E-01	1.03E-01	pCi/g
15-10084-10	TRG	CP0604S21-22	10/09/15 14:00	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	1.46E+00	1.64E-01	1.81E-01	1.90E-01	1.03E+00	pCi/g
15-10084-10	TRG	CP0604S21-22	10/09/15 14:00	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.53E+00	2.38E-01	2.50E-01	3.75E-01	1.79E-01	pCi/g
15-10084-10	TRG	CP0604S21-22	10/09/15 14:00	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	1.65E+00	1.48E+00	1.48E+00	2.48E+00	1.21E+00	pCi/g
15-10084-10	TRG	CP0604S21-22	10/09/15 14:00	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.26E+00	1.80E-01	1.91E-01	8.99E-02	1.79E-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:
Project:
Analysis Category:
Sample Matrix:

15-10084
 PAP-KAN
 ENVIRONMENTAL
 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
15-10084-11	TRG	CP0604S24-25	10/09/15 14:10	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.46E+00	2.24E-01	2.36E-01	4.46E-01	2.14E-01	pCi/g
15-10084-11	TRG	CP0604S24-25	10/09/15 14:10	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	1.38E+00	1.59E-01	1.74E-01	1.97E-01	9.49E-02	pCi/g
15-10084-11	TRG	CP0604S24-25	10/09/15 14:10	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	2.00E+01	2.55E+00	2.75E+00	1.12E+00	5.23E-01	pCi/g
15-10084-11	TRG	CP0604S24-25	10/09/15 14:10	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.28E+00	1.58E-01	1.71E-01	3.12E-01	1.54E-01	pCi/g
15-10084-11	TRG	CP0604S24-25	10/09/15 14:10	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	1.47E+00	1.67E-01	1.83E-01	2.36E-01	1.14E-01	pCi/g
15-10084-11	TRG	CP0604S24-25	10/09/15 14:10	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.38E+00	1.59E-01	1.74E-01	1.97E-01	1.06E+00	pCi/g
15-10084-11	TRG	CP0604S24-25	10/09/15 14:10	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	1.46E+00	2.24E-01	2.36E-01	4.46E-01	2.14E-01	pCi/g
15-10084-11	TRG	CP0604S24-25	10/09/15 14:10	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	1.36E+00	9.33E-01	9.35E-01	1.49E+00	7.28E-01	pCi/g
15-10084-11	TRG	CP0604S24-25	10/09/15 14:10	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.22E+00	1.52E-01	1.65E-01	1.47E-01	1.34E-01	pCi/g
15-10084-12	TRG	CP0604S26-27	10/09/15 14:20	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.49E+00	2.07E-01	2.21E-01	3.66E-01	1.74E-01	pCi/g
15-10084-12	TRG	CP0604S26-27	10/09/15 14:20	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	1.23E+00	1.49E-01	1.62E-01	2.19E-01	1.05E-01	pCi/g
15-10084-12	TRG	CP0604S26-27	10/09/15 14:20	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	1.99E+01	2.26E+00	2.48E+00	8.90E-01	4.10E-01	pCi/g
15-10084-12	TRG	CP0604S26-27	10/09/15 14:20	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.57E+00	1.79E-01	1.96E-01	2.55E-01	1.26E-01	pCi/g
15-10084-12	TRG	CP0604S26-27	10/09/15 14:20	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	1.29E+00	1.63E-01	1.76E-01	2.16E-01	1.05E-01	pCi/g
15-10084-12	TRG	CP0604S26-27	10/09/15 14:20	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	1.23E+00	1.49E-01	1.62E-01	2.19E-01	1.18E+00	pCi/g
15-10084-12	TRG	CP0604S26-27	10/09/15 14:20	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.49E+00	2.07E-01	2.21E-01	3.66E-01	1.74E-01	pCi/g
15-10084-12	TRG	CP0604S26-27	10/09/15 14:20	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	1.50E+00	1.46E+00	1.47E+00	1.96E+00	9.58E-01	pCi/g
15-10084-12	TRG	CP0604S26-27	10/09/15 14:20	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.30E+00	1.66E-01	1.78E-01	1.97E-01	1.72E-01	pCi/g
15-10084-13	TRG	CP0604S28-29	10/09/15 14:30	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.26E+00	2.07E-01	2.17E-01	3.05E-01	1.42E-01	pCi/g
15-10084-13	TRG	CP0604S28-29	10/09/15 14:30	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	1.03E+00	1.54E-01	1.63E-01	1.85E-01	8.80E-02	pCi/g
15-10084-13	TRG	CP0604S28-29	10/09/15 14:30	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	1.96E+01	2.54E+00	2.74E+00	1.19E+00	5.57E-01	pCi/g
15-10084-13	TRG	CP0604S28-29	10/09/15 14:30	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.43E+00	1.72E-01	1.87E-01	2.43E-01	1.19E-01	pCi/g
15-10084-13	TRG	CP0604S28-29	10/09/15 14:30	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	9.86E-01	1.37E-01	1.46E-01	2.05E-01	9.89E-02	pCi/g
15-10084-13	TRG	CP0604S28-29	10/09/15 14:30	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	1.03E+00	1.54E-01	1.63E-01	1.85E-01	1.07E+00	pCi/g
15-10084-13	TRG	CP0604S28-29	10/09/15 14:30	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.26E+00	2.07E-01	2.17E-01	3.05E-01	1.42E-01	pCi/g
15-10084-13	TRG	CP0604S28-29	10/09/15 14:30	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	1.68E+00	1.53E+00	1.54E+00	2.55E+00	1.25E+00	pCi/g
15-10084-13	TRG	CP0604S28-29	10/09/15 14:30	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.04E+00	1.69E-01	1.77E-01	1.96E-01	1.57E-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 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: 15-10084
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
15-10084-14	TRG	CP1803S03-04	10/10/15 11:30	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.26E+00	2.61E-01	2.69E-01	4.82E-01	2.28E-01	pCi/g
15-10084-14	TRG	CP1803S03-04	10/10/15 11:30	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	1.46E+00	2.27E-01	2.39E-01	3.04E-01	1.47E-01	pCi/g
15-10084-14	TRG	CP1803S03-04	10/10/15 11:30	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	1.75E+01	2.27E+00	2.44E+00	1.45E+00	6.78E-01	pCi/g
15-10084-14	TRG	CP1803S03-04	10/10/15 11:30	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.64E+00	1.82E-01	2.01E-01	2.66E-01	1.31E-01	pCi/g
15-10084-14	TRG	CP1803S03-04	10/10/15 11:30	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	1.37E+00	1.79E-01	1.92E-01	2.46E-01	1.19E-01	pCi/g
15-10084-14	TRG	CP1803S03-04	10/10/15 11:30	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	1.46E+00	2.27E-01	2.39E-01	3.04E-01	1.48E+00	pCi/g
15-10084-14	TRG	CP1803S03-04	10/10/15 11:30	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.26E+00	2.61E-01	2.69E-01	4.82E-01	2.28E-01	pCi/g
15-10084-14	TRG	CP1803S03-04	10/10/15 11:30	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	1.49E+00	1.66E+00	1.66E+00	2.77E+00	1.36E+00	pCi/g
15-10084-14	TRG	CP1803S03-04	10/10/15 11:30	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.50E+00	2.87E-01	2.97E-01	5.19E-01	2.52E-01	pCi/g
15-10084-15	TRG	CP1803S06-07	10/10/15 11:40	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.67E+00	2.51E-01	2.65E-01	4.22E-01	2.01E-01	pCi/g
15-10084-15	TRG	CP1803S06-07	10/10/15 11:40	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	1.32E+00	1.66E-01	1.80E-01	2.27E-01	1.09E-01	pCi/g
15-10084-15	TRG	CP1803S06-07	10/10/15 11:40	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	2.01E+01	2.27E+00	2.48E+00	8.27E-01	3.78E-01	pCi/g
15-10084-15	TRG	CP1803S06-07	10/10/15 11:40	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.95E+00	2.07E-01	2.30E-01	3.04E-01	1.50E-01	pCi/g
15-10084-15	TRG	CP1803S06-07	10/10/15 11:40	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	1.55E+00	1.67E-01	1.85E-01	2.40E-01	1.17E-01	pCi/g
15-10084-15	TRG	CP1803S06-07	10/10/15 11:40	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	1.32E+00	1.66E-01	1.80E-01	2.27E-01	1.33E+00	pCi/g
15-10084-15	TRG	CP1803S06-07	10/10/15 11:40	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.67E+00	2.51E-01	2.65E-01	4.22E-01	2.01E-01	pCi/g
15-10084-15	TRG	CP1803S06-07	10/10/15 11:40	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	3.81E+00	1.98E+00	1.98E+00	3.24E+00	1.60E+00	pCi/g
15-10084-15	TRG	CP1803S06-07	10/10/15 11:40	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.42E+00	1.94E-01	2.07E-01	1.51E-01	1.62E-01	pCi/g
15-10084-16	TRG	CP1803S08-09	10/10/15 11:50	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.70E+00	2.10E-01	2.28E-01	3.86E-01	1.85E-01	pCi/g
15-10084-16	TRG	CP1803S08-09	10/10/15 11:50	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	1.34E+00	1.70E-01	1.83E-01	2.26E-01	1.09E-01	pCi/g
15-10084-16	TRG	CP1803S08-09	10/10/15 11:50	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	1.66E+01	2.18E+00	2.34E+00	1.13E+00	5.35E-01	pCi/g
15-10084-16	TRG	CP1803S08-09	10/10/15 11:50	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.71E+00	1.88E-01	2.08E-01	2.58E-01	1.27E-01	pCi/g
15-10084-16	TRG	CP1803S08-09	10/10/15 11:50	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	1.37E+00	1.59E-01	1.74E-01	2.33E-01	1.14E-01	pCi/g
15-10084-16	TRG	CP1803S08-09	10/10/15 11:50	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	1.34E+00	1.70E-01	1.83E-01	2.26E-01	1.19E+00	pCi/g
15-10084-16	TRG	CP1803S08-09	10/10/15 11:50	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.70E+00	2.10E-01	2.28E-01	3.86E-01	1.85E-01	pCi/g
15-10084-16	TRG	CP1803S08-09	10/10/15 11:50	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	1.35E+00	1.51E+00	1.51E+00	1.51E+00	1.24E+00	pCi/g
15-10084-16	TRG	CP1803S08-09	10/10/15 11:50	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.22E+00	1.58E-01	1.70E-01	9.69E-02	1.35E-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 CORPORATION

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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:

SDG: 15-10084
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
15-10084-17	TRG	CP1803S10-11	10/10/15 12:00	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.33E+00	2.55E-01	2.64E-01	5.58E-01	2.67E-01	pCi/g
15-10084-17	TRG	CP1803S10-11	10/10/15 12:00	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	1.31E+00	1.77E-01	1.89E-01	1.98E-01	9.40E-02	pCi/g
15-10084-17	TRG	CP1803S10-11	10/10/15 12:00	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	1.48E+01	1.95E+00	2.10E+00	1.17E+00	5.41E-01	pCi/g
15-10084-17	TRG	CP1803S10-11	10/10/15 12:00	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.48E+00	1.64E-01	1.81E-01	2.53E-01	1.24E-01	pCi/g
15-10084-17	TRG	CP1803S10-11	10/10/15 12:00	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	1.50E+00	1.67E-01	1.83E-01	2.15E-01	1.04E-01	pCi/g
15-10084-17	TRG	CP1803S10-11	10/10/15 12:00	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	1.31E+00	1.77E-01	1.89E-01	1.98E-01	1.29E+00	pCi/g
15-10084-17	TRG	CP1803S10-11	10/10/15 12:00	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.33E+00	2.55E-01	2.64E-01	5.58E-01	2.67E-01	pCi/g
15-10084-17	TRG	CP1803S10-11	10/10/15 12:00	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	1.77E+00	1.37E+00	1.37E+00	2.28E+00	1.11E+00	pCi/g
15-10084-17	TRG	CP1803S10-11	10/10/15 12:00	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.16E+00	2.54E-01	2.61E-01	4.60E-01	2.23E-01	pCi/g
15-10084-18	TRG	CP1803S12-13	10/10/15 12:10	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.42E+00	3.51E-01	3.59E-01	6.32E-01	2.94E-01	pCi/g
15-10084-18	TRG	CP1803S12-13	10/10/15 12:10	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	9.79E-01	2.82E-01	2.87E-01	4.81E-01	2.32E-01	pCi/g
15-10084-18	TRG	CP1803S12-13	10/10/15 12:10	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	1.61E+01	2.95E+00	3.06E+00	2.18E+00	1.00E+00	pCi/g
15-10084-18	TRG	CP1803S12-13	10/10/15 12:10	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.99E+00	3.57E-01	3.71E-01	4.47E-01	2.20E-01	pCi/g
15-10084-18	TRG	CP1803S12-13	10/10/15 12:10	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	1.11E+00	2.38E-01	2.44E-01	4.46E-01	2.16E-01	pCi/g
15-10084-18	TRG	CP1803S12-13	10/10/15 12:10	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	9.79E-01	2.82E-01	2.87E-01	4.81E-01	2.07E+00	pCi/g
15-10084-18	TRG	CP1803S12-13	10/10/15 12:10	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.42E+00	3.51E-01	3.59E-01	6.32E-01	2.94E-01	pCi/g
15-10084-18	TRG	CP1803S12-13	10/10/15 12:10	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	2.55E+00	1.51E+00	1.52E+00	5.11E+00	2.54E+00	pCi/g
15-10084-18	TRG	CP1803S12-13	10/10/15 12:10	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.47E+00	3.16E-01	3.25E-01	2.03E-01	3.02E-01	pCi/g
15-10084-19	TRG	CP1803S15-16	10/10/15 12:20	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.58E+00	3.98E-01	3.67E-01	6.11E-01	2.83E-01	pCi/g
15-10084-19	TRG	CP1803S15-16	10/10/15 12:20	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	9.20E-01	2.85E-01	2.89E-01	4.71E-01	2.26E-01	pCi/g
15-10084-19	TRG	CP1803S15-16	10/10/15 12:20	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	1.65E+01	2.90E+00	3.02E+00	1.60E+00	7.10E-01	pCi/g
15-10084-19	TRG	CP1803S15-16	10/10/15 12:20	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.78E+00	3.45E-01	3.57E-01	4.38E-01	2.15E-01	pCi/g
15-10084-19	TRG	CP1803S15-16	10/10/15 12:20	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	1.17E+00	2.95E-01	2.62E-01	7.77E-01	3.82E-01	pCi/g
15-10084-19	TRG	CP1803S15-16	10/10/15 12:20	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	9.20E-01	2.85E-01	2.89E-01	4.71E-01	1.67E+00	pCi/g
15-10084-19	TRG	CP1803S15-16	10/10/15 12:20	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.58E+00	3.58E-01	3.67E-01	6.11E-01	2.83E-01	pCi/g
15-10084-19	TRG	CP1803S15-16	10/10/15 12:20	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	2.36E+00	1.30E+00	1.31E+00	2.07E+00	1.01E+00	pCi/g
15-10084-19	TRG	CP1803S15-16	10/10/15 12:20	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.41E+00	3.42E-01	3.50E-01	2.10E-01	3.73E-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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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: 15-10084
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
15-10084-20	TRG	CP1803S18-19	10/10/15 12:30	10/14/2015	11/4/2015	15-10084	Actinium-228	LANL ER-130 Modified	1.51E+00	5.28E-01	5.34E-01	8.79E-01	4.16E-01	pCi/g
15-10084-20	TRG	CP1803S18-19	10/10/15 12:30	10/14/2015	11/4/2015	15-10084	Bismuth-214	LANL ER-130 Modified	1.28E+00	2.54E-01	2.62E-01	3.18E-01	1.49E-01	pCi/g
15-10084-20	TRG	CP1803S18-19	10/10/15 12:30	10/14/2015	11/4/2015	15-10084	Potassium-40	LANL ER-130 Modified	1.74E+01	3.08E+00	3.16E+00	1.59E+00	7.01E-01	pCi/g
15-10084-20	TRG	CP1803S18-19	10/10/15 12:30	10/14/2015	11/4/2015	15-10084	Lead-212	LANL ER-130 Modified	1.70E+00	3.26E-01	3.37E-01	4.06E-01	1.99E-01	pCi/g
15-10084-20	TRG	CP1803S18-19	10/10/15 12:30	10/14/2015	11/4/2015	15-10084	Lead-214	LANL ER-130 Modified	1.19E+00	3.25E-01	3.31E-01	5.65E-01	2.76E-01	pCi/g
15-10084-20	TRG	CP1803S18-19	10/10/15 12:30	10/14/2015	11/4/2015	15-10084	Radium-226	LANL ER-130 Modified	1.28E+00	2.54E-01	2.62E-01	3.18E-01	2.20E+00	pCi/g
15-10084-20	TRG	CP1803S18-19	10/10/15 12:30	10/14/2015	11/4/2015	15-10084	Radium-228	LANL ER-130 Modified	1.51E+00	5.28E-01	5.34E-01	8.79E-01	4.16E-01	pCi/g
15-10084-20	TRG	CP1803S18-19	10/10/15 12:30	10/14/2015	11/4/2015	15-10084	Thorium-234	LANL ER-130 Modified	2.29E+00	1.33E+00	1.34E+00	2.12E+00	1.04E+00	pCi/g
15-10084-20	TRG	CP1803S18-19	10/10/15 12:30	10/14/2015	11/4/2015	15-10084	Thallium-208	LANL ER-130 Modified	1.29E+00	3.21E-01	3.27E-01	2.19E-01	3.32E-01	pCi/g
15-10084-01	LCS	KNOWN	10/14/15 00:00	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	5.09E+00	1.83E-01				pCi/g
15-10084-01	LCS	SPIKE	10/14/15 00:00	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	5.57E+00	9.50E-01	1.09E+00	1.03E-01	1.78E-02	pCi/g
15-10084-02	MBL	BLANK	10/14/15 00:00	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	2.48E-02	4.39E-02	4.40E-02	7.88E-02	1.37E-02	pCi/g
15-10084-03	DUP	CP0604S06-07	10/09/15 13:00	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.37E+00	3.16E-01	3.41E-01	1.19E-01	5.43E-02	pCi/g
15-10084-04	DO	CP0604S06-07	10/09/15 13:00	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.75E+00	4.10E-01	4.42E-01	1.01E-01	2.53E-02	pCi/g
15-10084-05	TRG	CP0604S09-10	10/09/15 13:10	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.47E+00	3.21E-01	3.50E-01	5.86E-02	1.21E-02	pCi/g
15-10084-06	TRG	CP0604S11-12	10/09/15 13:20	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.03E+00	2.53E-01	2.71E-01	5.36E-02	8.21E-03	pCi/g
15-10084-07	TRG	CP0604S14-15	10/09/15 13:30	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.40E+00	3.73E-01	3.96E-01	9.26E-02	2.21E-02	pCi/g
15-10084-08	TRG	CP0604S16-17	10/09/15 13:40	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.16E+00	2.75E-01	2.95E-01	6.00E-02	1.24E-02	pCi/g
15-10084-09	TRG	CP0604S19-20	10/09/15 13:50	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.45E+00	3.37E-01	3.63E-01	5.10E-02	5.64E-03	pCi/g
15-10084-10	TRG	CP0604S21-22	10/09/15 14:00	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.02E+00	2.62E-01	2.79E-01	5.89E-02	9.01E-03	pCi/g
15-10084-11	TRG	CP0604S24-25	10/09/15 14:10	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.62E+00	3.67E-01	3.97E-01	6.84E-02	1.52E-02	pCi/g
15-10084-12	TRG	CP0604S26-27	10/09/15 14:20	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.19E+00	2.86E-01	3.07E-01	6.16E-02	1.17E-02	pCi/g
15-10084-13	TRG	CP0604S28-29	10/09/15 14:30	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.39E+00	3.30E-01	3.55E-01	6.49E-02	1.24E-02	pCi/g
15-10084-14	TRG	CP1803S03-04	10/10/15 11:30	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.42E+00	3.32E-01	3.58E-01	4.56E-02	3.94E-03	pCi/g
15-10084-15	TRG	CP1803S06-07	10/10/15 11:40	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.82E+00	4.20E-01	4.54E-01	6.20E-02	9.48E-03	pCi/g
15-10084-16	TRG	CP1803S08-09	10/10/15 11:50	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.84E+00	4.30E-01	4.64E-01	7.84E-02	1.76E-02	pCi/g
15-10084-17	TRG	CP1803S10-11	10/10/15 12:00	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.61E+00	3.93E-01	4.21E-01	5.43E-02	4.69E-03	pCi/g
15-10084-18	TRG	CP1803S12-13	10/10/15 12:10	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.21E+00	2.75E-01	2.98E-01	4.90E-02	7.47E-03	pCi/g
15-10084-19	TRG	CP1803S15-16	10/10/15 12:20	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.25E+00	2.89E-01	3.12E-01	7.84E-02	2.72E-02	pCi/g
15-10084-20	TRG	CP1803S18-19	10/10/15 12:30	10/14/2015	10/23/2015	15-10084	Thorium-228	EML Th-01 Modified	1.28E+00	2.99E-01	3.22E-01	6.46E-02	1.44E-02	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

Report To:

Work Order Details:

SDG: 15-10084
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
15-10084-01	LCS	KNOWN	10/14/15 00:00	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	5.38E+00	1.45E-01				pCi/g
15-10084-01	LCS	SPIKE	10/14/15 00:00	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	6.16E+00	1.03E+00	1.28E+00	7.80E-02	8.88E-02	pCi/g
15-10084-02	MBL	BLANK	10/14/15 00:00	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.87E-02	3.56E-02	3.57E-02	6.57E-02	7.04E-02	pCi/g
15-10084-03	DUP	CP0604S06-07	10/09/15 13:00	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	8.39E-01	2.20E-01	2.43E-01	9.01E-02	7.13E-02	pCi/g
15-10084-04	DO	CP0604S06-07	10/09/15 13:00	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.22E+00	3.10E-01	3.45E-01	6.37E-02	5.43E-02	pCi/g
15-10084-05	TRG	CP0604S09-10	10/09/15 13:10	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.47E+00	3.20E-01	3.68E-01	5.31E-02	5.16E-02	pCi/g
15-10084-06	TRG	CP0604S11-12	10/09/15 13:20	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.16E+00	2.74E-01	3.10E-01	4.23E-02	4.83E-02	pCi/g
15-10084-07	TRG	CP0604S14-15	10/09/15 13:30	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.99E+00	4.86E-01	5.45E-01	8.19E-02	7.87E-02	pCi/g
15-10084-08	TRG	CP0604S16-17	10/09/15 13:40	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.33E+00	3.03E-01	3.44E-01	7.08E-02	6.48E-02	pCi/g
15-10084-09	TRG	CP0604S19-20	10/09/15 13:50	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.43E+00	3.31E-01	3.75E-01	4.59E-02	5.23E-02	pCi/g
15-10084-10	TRG	CP0604S21-22	10/09/15 14:00	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.12E+00	2.79E-01	3.11E-01	4.06E-02	5.14E-02	pCi/g
15-10084-11	TRG	CP0604S24-25	10/09/15 14:10	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.61E+00	3.63E-01	4.14E-01	5.36E-02	5.50E-02	pCi/g
15-10084-12	TRG	CP0604S26-27	10/09/15 14:20	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.29E+00	3.03E-01	3.42E-01	4.41E-02	5.05E-02	pCi/g
15-10084-13	TRG	CP0604S28-29	10/09/15 14:30	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.34E+00	3.20E-01	3.60E-01	5.11E-02	5.49E-02	pCi/g
15-10084-14	TRG	CP1803S03-04	10/10/15 11:30	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.53E+00	3.52E-01	4.00E-01	6.69E-02	6.25E-02	pCi/g
15-10084-15	TRG	CP1803S06-07	10/10/15 11:40	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.83E+00	4.19E-01	4.76E-01	5.77E-02	5.93E-02	pCi/g
15-10084-16	TRG	CP1803S08-09	10/10/15 11:50	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.90E+00	4.41E-01	4.99E-01	6.15E-02	6.31E-02	pCi/g
15-10084-17	TRG	CP1803S10-11	10/10/15 12:00	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.72E+00	4.14E-01	4.65E-01	5.36E-02	6.12E-02	pCi/g
15-10084-18	TRG	CP1803S12-13	10/10/15 12:10	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.11E+00	2.57E-01	2.91E-01	4.24E-02	4.54E-02	pCi/g
15-10084-19	TRG	CP1803S15-16	10/10/15 12:20	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.27E+00	2.93E-01	3.32E-01	7.89E-02	7.25E-02	pCi/g
15-10084-20	TRG	CP1803S18-19	10/10/15 12:30	10/14/2015	10/23/2015	15-10084	Thorium-230	EML Th-01 Modified	1.74E+00	3.77E-01	4.34E-01	4.71E-02	5.04E-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

Final Report of Analysis

Cecilia Greene
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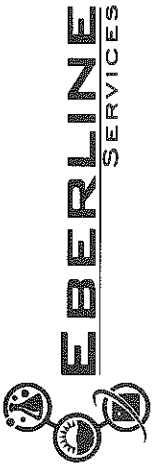
SDG: 15-10084
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

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
15-10084-01	LCS	KNOWN	10/14/15 00:00	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	5.09E+00	1.83E-01	1.06E+00	9.18E-02	1.21E-02	pC/g
15-10084-01	LCS	SPIKE	10/14/15 00:00	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	5.49E+00	9.39E-01	4.28E-02	7.50E-02	8.41E-04	pC/g
15-10084-02	MBL	BLANK	10/14/15 00:00	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	2.50E-02	4.27E-02	3.20E-01	5.67E-02	7.29E-03	pC/g
15-10084-03	DUP	CP0604S06-07	10/09/15 13:00	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.30E+00	2.98E-01	4.20E-01	6.36E-02	7.13E-04	pC/g
15-10084-04	DO	CP0604S06-07	10/09/15 13:00	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.68E+00	3.93E-01	2.88E-01	4.75E-02	6.27E-03	pC/g
15-10084-05	TRG	CP0604S09-10	10/09/15 13:10	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.16E+00	2.69E-01	2.93E-01	3.68E-02	2.10E-03	pC/g
15-10084-06	TRG	CP0604S11-12	10/09/15 13:20	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.16E+00	2.74E-01	4.17E-01	5.18E-02	2.95E-03	pC/g
15-10084-07	TRG	CP0604S14-15	10/09/15 13:30	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.53E+00	3.95E-01	2.69E-01	4.86E-02	6.45E-03	pC/g
15-10084-08	TRG	CP0604S16-17	10/09/15 13:40	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.05E+00	2.53E-01	2.91E-01	5.47E-02	7.15E-03	pC/g
15-10084-09	TRG	CP0604S19-20	10/09/15 13:50	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.17E+00	2.74E-01	2.69E-01	5.47E-02	7.29E-03	pC/g
15-10084-10	TRG	CP0604S21-22	10/09/15 14:00	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	9.89E-01	2.54E-01	3.67E-01	4.97E-02	5.48E-03	pC/g
15-10084-11	TRG	CP0604S24-25	10/09/15 14:10	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.49E+00	3.43E-01	2.97E-01	3.84E-02	2.19E-03	pC/g
15-10084-12	TRG	CP0604S26-27	10/09/15 14:20	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.16E+00	2.79E-01	3.18E-01	5.82E-02	6.58E-04	pC/g
15-10084-13	TRG	CP0604S28-29	10/09/15 14:30	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.22E+00	2.99E-01	3.37E-01	4.93E-02	5.42E-03	pC/g
15-10084-14	TRG	CP1803S03-04	10/10/15 11:30	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.33E+00	3.16E-01	3.81E-01	6.13E-02	6.87E-04	pC/g
15-10084-15	TRG	CP1803S06-07	10/10/15 11:40	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.49E+00	3.58E-01	3.78E-01	5.20E-02	4.42E-03	pC/g
15-10084-16	TRG	CP1803S08-09	10/10/15 11:50	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.42E+00	3.57E-01	3.63E-01	4.67E-02	2.68E-03	pC/g
15-10084-17	TRG	CP1803S10-11	10/10/15 12:00	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.35E+00	3.43E-01	3.19E-01	3.86E-02	3.28E-03	pC/g
15-10084-18	TRG	CP1803S12-13	10/10/15 12:10	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.34E+00	2.96E-01	3.72E-01	6.15E-02	1.39E-02	pC/g
15-10084-19	TRG	CP1803S15-16	10/10/15 12:20	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.59E+00	3.45E-01	3.19E-01	5.38E-02	6.02E-04	pC/g
15-10084-20	TRG	CP1803S18-19	10/10/15 12:30	10/14/2015	10/23/2015	15-10084	Thorium-232	EML Th-01 Modified	1.28E+00	2.98E-01	3.19E-01	5.38E-02	6.02E-04	pC/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

Report To:

SDG: 15-10084
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
15-10084-01	LCS	KNOWN	10/14/15 00:00	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	8.06E+00	2.90E-01	1.22E+00	9.59E-02	1.63E-02	pCi/g
15-10084-01	LCS	SPIKE	10/14/15 00:00	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	7.43E+00	1.09E+00	3.64E-02	6.38E-02	1.52E-02	pCi/g
15-10084-02	MBL	BLANK	10/14/15 00:00	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	2.22E-02	3.64E-02	2.00E-01	5.72E-02	1.18E-02	pCi/g
15-10084-03	DUP	CP0604S06-07	10/09/15 13:00	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	8.40E-01	1.91E-01	2.11E-01	5.18E-02	8.78E-03	pCi/g
15-10084-04	DO	CP0604S06-07	10/09/15 13:00	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	9.18E-01	2.01E-01	2.31E-01	8.62E-02	3.41E-02	pCi/g
15-10084-05	TRG	CP0604S09-10	10/09/15 13:10	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	1.17E+00	2.08E-01	2.24E-01	4.00E-02	6.80E-03	pCi/g
15-10084-06	TRG	CP0604S11-12	10/09/15 13:20	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	1.17E+00	2.08E-01	2.24E-01	4.00E-02	6.80E-03	pCi/g
15-10084-07	TRG	CP0604S14-15	10/09/15 13:30	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	1.20E+00	2.54E-01	2.69E-01	5.60E-02	8.44E-03	pCi/g
15-10084-08	TRG	CP0604S16-17	10/09/15 13:40	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	1.03E+00	2.15E-01	2.27E-01	4.86E-02	7.30E-03	pCi/g
15-10084-09	TRG	CP0604S19-20	10/09/15 13:50	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	1.23E+00	2.54E-01	2.69E-01	4.05E-02	3.28E-03	pCi/g
15-10084-10	TRG	CP0604S21-22	10/09/15 14:00	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	1.08E+00	2.39E-01	2.51E-01	5.30E-02	6.84E-03	pCi/g
15-10084-11	TRG	CP0604S24-25	10/09/15 14:10	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	8.47E-01	1.90E-01	1.99E-01	3.58E-02	2.91E-03	pCi/g
15-10084-12	TRG	CP0604S26-27	10/09/15 14:20	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	9.10E-01	2.11E-01	2.21E-01	4.09E-02	3.32E-03	pCi/g
15-10084-13	TRG	CP0604S28-29	10/09/15 14:30	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	8.68E-01	1.97E-01	2.07E-01	6.70E-02	1.80E-02	pCi/g
15-10084-14	TRG	CP1803S03-04	10/10/15 11:30	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	1.01E+00	2.22E-01	2.33E-01	4.50E-02	4.78E-03	pCi/g
15-10084-15	TRG	CP1803S06-07	10/10/15 11:40	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	1.15E+00	2.42E-01	2.55E-01	5.71E-02	9.74E-03	pCi/g
15-10084-16	TRG	CP1803S08-09	10/10/15 11:50	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	1.00E+00	2.22E-01	2.34E-01	3.99E-02	3.24E-03	pCi/g
15-10084-17	TRG	CP1803S10-11	10/10/15 12:00	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	1.30E+00	2.61E-01	2.77E-01	5.67E-02	9.63E-03	pCi/g
15-10084-18	TRG	CP1803S12-13	10/10/15 12:10	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	1.02E+00	2.10E-01	2.22E-01	3.45E-02	2.80E-03	pCi/g
15-10084-19	TRG	CP1803S15-16	10/10/15 12:20	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	9.44E-01	2.22E-01	2.32E-01	5.83E-02	8.77E-03	pCi/g
15-10084-20	TRG	CP1803S18-19	10/10/15 12:30	10/14/2015	10/21/2015	15-10084	Uranium-234	EML U-02 Modified	1.16E+00	2.78E-01	2.90E-01	7.07E-02	1.06E-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

Final Report of Analysis

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

SDG: 15-10084
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
15-10084-01	LCS	SPIKE	10/14/2015 00:00	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	9.91E-01	3.00E-01	3.08E-01	1.18E-01	1.47E-02	pCi/g
15-10084-02	MBL	BLANK	10/14/2015 00:00	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	-9.41E-03	2.32E-02	2.32E-02	6.62E-02	8.25E-03	pCi/g
15-10084-03	DUP	CP0604S06-07	10/09/15 13:00	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	2.85E-02	3.68E-02	3.69E-02	5.12E-02	3.57E-03	pCi/g
15-10084-04	DO	CP0604S06-07	10/09/15 13:00	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	9.42E-02	6.37E-02	6.40E-02	4.45E-02	2.08E-03	pCi/g
15-10084-05	TRG	CP0604S09-10	10/09/15 13:10	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	2.42E-02	3.93E-02	3.93E-02	6.75E-02	8.41E-03	pCi/g
15-10084-06	TRG	CP0604S11-12	10/09/15 13:20	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	1.24E-01	6.57E-02	6.63E-02	4.94E-02	4.75E-04	pCi/g
15-10084-07	TRG	CP0604S14-15	10/09/15 13:30	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	9.59E-02	5.88E-02	5.92E-02	5.11E-02	2.40E-03	pCi/g
15-10084-08	TRG	CP0604S16-17	10/09/15 13:40	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	8.84E-02	6.36E-02	6.39E-02	5.99E-02	6.45E-03	pCi/g
15-10084-09	TRG	CP0604S19-20	10/09/15 13:50	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	4.18E-02	4.76E-02	4.77E-02	6.28E-02	5.62E-03	pCi/g
15-10084-10	TRG	CP0604S21-22	10/09/15 14:00	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	7.26E-02	6.05E-02	6.07E-02	5.20E-02	2.43E-03	pCi/g
15-10084-11	TRG	CP0604S24-25	10/09/15 14:10	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	7.74E-02	5.96E-02	5.99E-02	5.97E-02	6.43E-03	pCi/g
15-10084-12	TRG	CP0604S26-27	10/09/15 14:20	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	9.67E-02	7.19E-02	7.22E-02	7.25E-02	6.95E-04	pCi/g
15-10084-13	TRG	CP0604S28-29	10/09/15 14:30	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	5.78E-02	5.81E-02	5.82E-02	8.01E-02	1.57E-02	pCi/g
15-10084-14	TRG	CP1803S03-04	10/10/15 11:30	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	1.04E-01	7.28E-02	7.32E-02	6.96E-02	6.68E-04	pCi/g
15-10084-15	TRG	CP1803S05-07	10/10/15 11:40	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	4.31E-02	4.67E-02	4.68E-02	5.63E-02	3.92E-03	pCi/g
15-10084-16	TRG	CP1803S08-09	10/10/15 11:50	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	9.23E-02	6.63E-02	6.66E-02	4.92E-02	2.30E-03	pCi/g
15-10084-17	TRG	CP1803S10-11	10/10/15 12:00	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	4.47E-02	4.62E-02	4.63E-02	4.87E-02	2.28E-03	pCi/g
15-10084-18	TRG	CP1803S12-13	10/10/15 12:10	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	8.16E-02	6.06E-02	6.09E-02	6.12E-02	5.87E-04	pCi/g
15-10084-19	TRG	CP1803S15-16	10/10/15 12:20	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	4.88E-02	5.05E-02	5.06E-02	5.32E-02	2.49E-03	pCi/g
15-10084-20	TRG	CP1803S18-19	10/10/15 12:30	10/14/2015	10/21/2015	15-10084	Uranium-235	EML U-02 Modified	1.70E-01	1.08E-01	1.09E-01	9.74E-02	1.36E-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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Final Report of Analysis

Cecilia Greene
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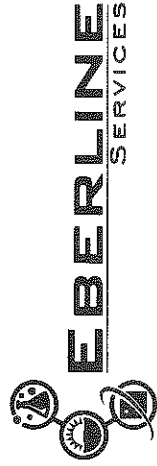
SDG: 15-10084
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

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
15-10084-01	LCS	KNOWN	10/14/15 00:00	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	7.85E+00	2.83E-01				pCi/g
15-10084-01	LCS	SPIKE	10/14/15 00:00	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	7.85E+00	1.14E+00	1.27E+00	9.55E-02	1.49E-02	pCi/g
15-10084-02	MBL	BLANK	10/14/15 00:00	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	2.66E-02	3.59E-02	3.59E-02	5.63E-02	9.84E-03	pCi/g
15-10084-03	DUP	CP0604S06-07	10/09/15 13:00	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	9.44E-01	2.04E-01	2.15E-01	5.18E-02	8.07E-03	pCi/g
15-10084-04	DO	CP0604S06-07	10/09/15 13:00	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	9.72E-01	2.07E-01	2.19E-01	3.59E-02	2.15E-03	pCi/g
15-10084-05	TRG	CP0604S09-10	10/09/15 13:10	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	1.14E+00	2.36E-01	2.49E-01	5.45E-02	8.48E-03	pCi/g
15-10084-06	TRG	CP0604S11-12	10/09/15 13:20	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	1.03E+00	1.91E-01	2.04E-01	2.78E-02	1.66E-03	pCi/g
15-10084-07	TRG	CP0604S14-15	10/09/15 13:30	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	1.17E+00	2.49E-01	2.63E-01	4.12E-02	2.47E-03	pCi/g
15-10084-08	TRG	CP0604S16-17	10/09/15 13:40	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	9.09E-01	1.99E-01	2.09E-01	5.14E-02	6.80E-04	pCi/g
15-10084-09	TRG	CP0604S19-20	10/09/15 13:50	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	9.83E-01	2.20E-01	2.31E-01	4.03E-02	2.41E-03	pCi/g
15-10084-10	TRG	CP0604S21-22	10/09/15 14:00	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	9.72E-01	2.23E-01	2.34E-01	4.81E-02	4.21E-03	pCi/g
15-10084-11	TRG	CP0604S24-25	10/09/15 14:10	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	8.87E-01	1.95E-01	2.05E-01	3.56E-02	2.13E-03	pCi/g
15-10084-12	TRG	CP0604S26-27	10/09/15 14:20	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	9.53E-01	2.17E-01	2.28E-01	4.66E-02	4.09E-03	pCi/g
15-10084-13	TRG	CP0604S28-29	10/09/15 14:30	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	9.62E-01	2.10E-01	2.21E-01	6.47E-02	1.57E-02	pCi/g
15-10084-14	TRG	CP1803S03-04	10/10/15 11:30	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	1.17E+00	2.43E-01	2.57E-01	5.61E-02	7.42E-04	pCi/g
15-10084-15	TRG	CP1803S06-07	10/10/15 11:40	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	1.05E+00	2.30E-01	2.42E-01	7.60E-02	2.18E-02	pCi/g
15-10084-16	TRG	CP1803S08-09	10/10/15 11:50	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	1.09E+00	2.35E-01	2.47E-01	3.97E-02	2.37E-03	pCi/g
15-10084-17	TRG	CP1803S10-11	10/10/15 12:00	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	1.39E+00	2.73E-01	2.91E-01	5.65E-02	7.48E-04	pCi/g
15-10084-18	TRG	CP1803S12-13	10/10/15 12:10	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	1.07E+00	2.15E-01	2.28E-01	3.94E-02	3.45E-03	pCi/g
15-10084-19	TRG	CP1803S15-16	10/10/15 12:20	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	9.30E-01	2.21E-01	2.31E-01	7.56E-02	1.84E-02	pCi/g
15-10084-20	TRG	CP1803S18-19	10/10/15 12:30	10/14/2015	10/21/2015	15-10084	Uranium-238	EML U-02 Modified	1.26E+00	2.92E-01	3.05E-01	5.21E-02	3.11E-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
ANALYTICAL CORPORATION

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

SECTION V
ANALYTICAL STANDARD

U-8

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

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
3017 N. SAN FERNANDO BLVD.
BURBANK, CALIFORNIA 91504
818-843-7000 FAX 818-843-6168



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 8.016 $\mu\text{Ci per gram}$

Ampoule /Solution Gross	<u>97.6400</u>	Weight, Grams
Empty Ampoule	<u>32.5020</u>	Weight, Grams
Solution Net	<u>65.1380</u>	Weight, Grams
Total Activity in Ampoule	<u>8.0160</u>	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]
QC Approval [Signature]

Date: 10/1/2015 0:00
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

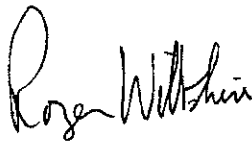
RECORD COPY

Tracer Solution for Environmental Analysis & Disequilibrium Studies

Product Description & Measurement Certificate

<i>Description</i>	Principal radionuclide: uranium 232 (U-232) Daughter Nuclide: Th-228	Product code: UDP10050 Batch Number: 92/232/67
<i>Measurement</i>	Reference date: Radioactive concentration U-232 which is equivalent to Mass of solution Volume of solution Total activity of U-232 which is equivalent to	01 March 2000 6.739E+03 becquerels per gram of solution 1.821E-01 microcuries per gram of solution 5.356 grams 5.035 millilitres 3.61E+04 becquerels 9.76E-01 microcuries
<i>Accuracy</i>	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.	
<i>Radionuclidic Purity</i>	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	
<i>Isotopic Purity</i>	The isotopic composition, expressed as atom per cent at the reference date . Not measured	
<i>Chemical Composition</i>	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'.	
<i>Physical Data</i>	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.	
<i>Remarks</i>	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
²³² U	7.200E+01	2.630E+04

Radionuclide	²³² U	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.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
AEA/Amersham 92/232/67

Date 10/27/2015 0:00
Solution # U-10a

Principal Radionuclide	Half Life, Years	Half Life, Days
<u>²³²U</u>	<u>7.200E+01</u>	<u>2.630E+04</u>

Radionuclide of Interest: ²³²U
Parent Solution Conc. 2.167E+03 dpm/ml

Reference Date 3/1/2000 0:00

Chemical Composition of Standard Solution

²³²U(NO₃)₆ in 2M HNO₃

Dilution Instructions:

Dilution Solvent Used 2M HNO₃

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 10.0000 ml
Total Activity: 2.1670E+04 dpm
Final Volume: 1000.00 ml

Final Activity Concentration: 2.1670E+01 dpm/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 [Signature]

Date: 10/27/2015 0:00

QC Approval [Signature]

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:	±3.0%
b. Random uncertainty in assay:	±0.0%
c. Random uncertainty in weighing(s):	±2.0%
d. Total uncertainty at the 99% confidence level:	±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).



ISOTOPE PRODUCTS LABORATORIES
1800 North Keystone Street
Burbank, California 91504
(818) 843 - 7000

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 $^{232}\text{Th}, ^{228}\text{Th}$ **Half Life, Years** 1.405E+10 **Half Life, Days** 5.132E+12

Radionuclide $^{232}\text{Th}, ^{228}\text{Th}$ **Reference Date** 11/1/1993 0:00
Certified Activity 9.330E-02 μCi
Certified Concentration $\mu\text{Ci per gram}$

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 μCi

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 μCi **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

Rev.8; 1/10/03
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 ²²⁸Th & ²³²Th	Half Life, Years 1.405E+10	Half Life, Days 5.132E+12
Radionuclide of Interest ²²⁸Th & ²³²Th	Parent Solution Conc. 2.07E+02 dpm/ml	Reference Date 11/1/1993 0:00
Chemical Composition of Standard Solution Th(NO₃)₄ in 1% HNO₃		

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

SECONDARY VOLUMETRIC DILUTION

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

QA/QC REVIEWED

Date 10/14/91 Initials ut

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Received
OCT 14 1991
TMA/Eberline
Oak Ridge Lab

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 12:00 PST.
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)



ISOTOPE PRODUCTS LABORATORIES
1800 No. Keystone Street.,
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[Signature]
QUALITY CONTROL



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 9.2660 Weight, Grams
Empty Ampoule 4.6218 Weight, Grams
Solution Net 4.6442 Weight, Grams
Total Activity in Ampoule 1.0360 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 [Signature]

Date: 4/15/2015 0:00

QC Approval [Signature]

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
²³⁰Th

Half Life, Years
7.540E+04

Half Life, Days
2.754E+07

Radionuclide of Interest **²³⁰Thorium**
Parent Solution Conc. **2.30E+03** dpm/ml

Reference Date **11/1/1991 0:00**

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 Volume: **1000.00** ml

Final Activity Concentration: **2.2999E+01** dpm/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 

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

QC Approval 

Date: **4/15/15**



**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.


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

: 00042



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 # JPL 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 μCi
Certified Concentration μCi 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	μCi

Chemical Composition of Standard Solution
²²⁸Th(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 μCi **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 

Date: 9/29/2015 0:00

QC Approval 

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 IPL 867-54 Date 9/29/2015 0:00
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



Eckert & Ziegler

Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404-352-8677
Fax 404-352-2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

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* yps/gram	This Source yps	Uncertainty*, %			Calibration Method*
					u _A	u _B	U	
Am-241	59.5	1.580E+05	—	2.030E+03	0.1	1.8	3.6	4π 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: 4π 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)

ANA Form005 Rev. —



SECTION VI
QUALITY CONTROL SAMPLE RESULTS SUMMARY

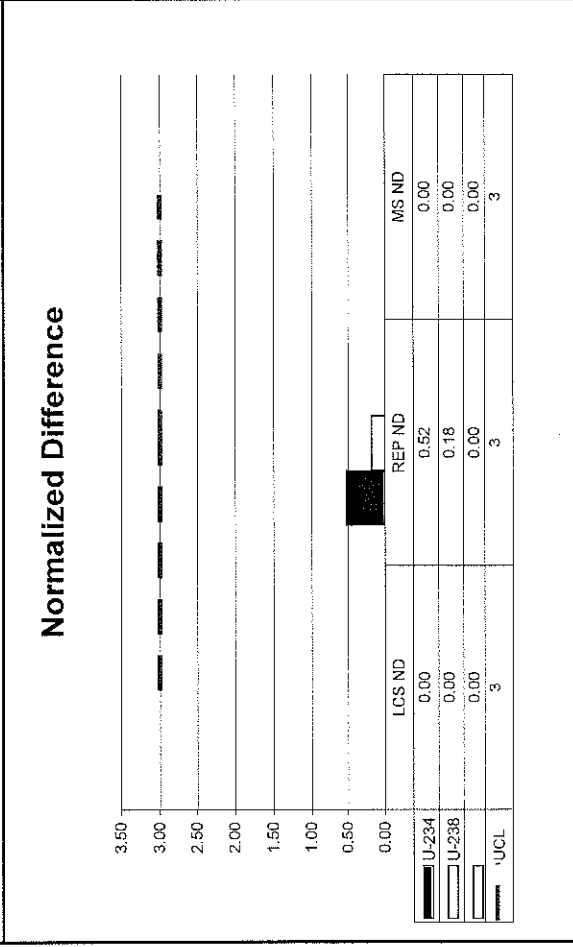
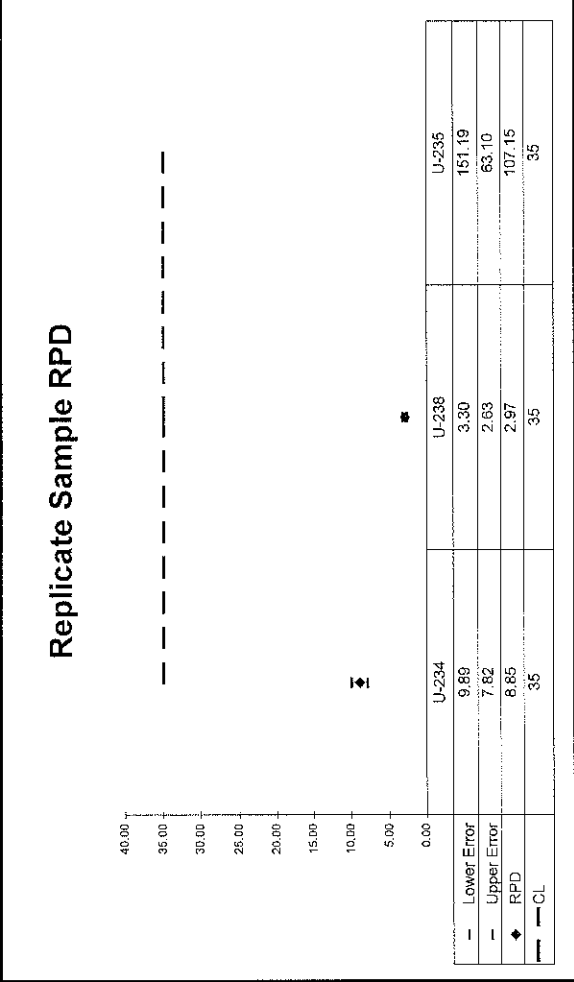
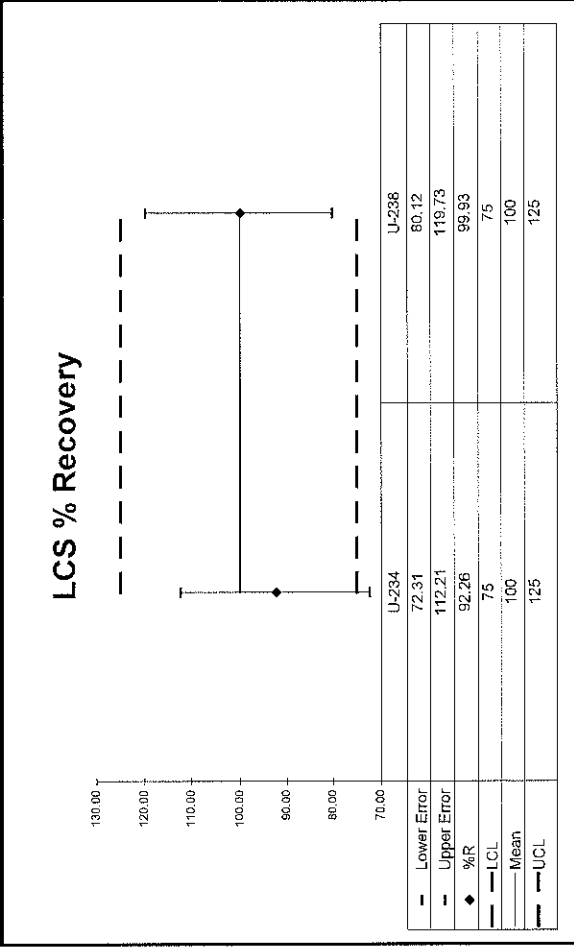
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10084	UUISO	1	pCi	g	Auxier & Associates, Inc.

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)
U-234	92.26%	16.35%	100.00%	3.60%	8.06E+00	2.90E-01	7.43E+00	1.22E+00	U-8a	3.52E+01	3.60E+00	5.08E-01
U-238	99.93%	16.20%	100.00%	3.60%	7.85E+00	2.83E-01	7.85E+00	1.27E+00	U-8a	3.44E+01	3.60E+00	5.08E-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										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	0.52	8.85	9.18E-01	2.11E-01	8.40E-01	2.00E-01	0.92	OK			OK	OK	
U-238	0.18	2.97	9.72E-01	2.19E-01	9.44E-01	2.15E-01	1.00	OK			OK	OK	
U-235	1.74	107.15	9.42E-02	6.40E-02	2.85E-02	3.69E-02		OK			NA	OK	

W/O	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10084	UUIISO	1	pCi	g	Auxier & Associates, Inc.



No Matrix Spike

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10084	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	109.35%	19.49%	100.00%	3.60%	5.09E+00	1.83E-01	5.57E+00	1.09E+00	Th-8b	1.04E+02	3.60E+00	1.09E-01
TH-230	114.46%	20.81%	100.00%	2.70%	5.38E+00	1.45E-01	6.16E+00	1.28E+00	Th-1b	2.35E+01	2.70E+00	5.08E-01
TH-232	107.78%	19.24%	100.00%	3.60%	5.09E+00	1.83E-01	5.49E+00	1.06E+00	Th-8b	1.04E+02	3.60E+00	1.09E-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

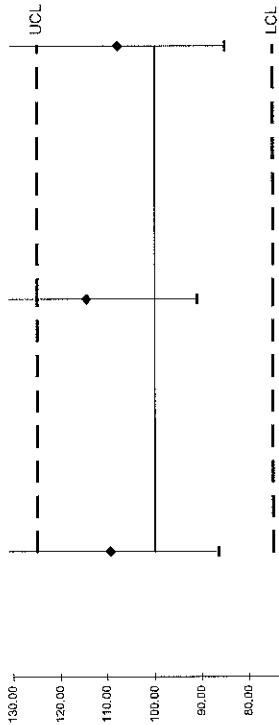
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
TH-228	1.35	24.65	1.75E+00	4.42E-01	1.37E+00	3.41E-01	1.09	OK			OK	OK
TH-230	1.78	37.14	1.22E+00	3.45E-01	8.39E-01	2.43E-01	1.14	OK			INV	OK
TH-232	1.40	25.37	1.68E+00	4.20E-01	1.30E+00	3.20E-01	1.08	OK			INV	OK

QC Summary

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	1.35	24.65	1.75E+00	4.42E-01	1.37E+00	3.41E-01	1.09	OK			OK	OK
TH-230	1.78	37.14	1.22E+00	3.45E-01	8.39E-01	2.43E-01	1.14	OK			INV	OK
TH-232	1.40	25.37	1.68E+00	4.20E-01	1.30E+00	3.20E-01	1.08	OK			INV	OK

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10084	ThISO	1	pCi	g	Auxier & Associates, Inc.

LCS % Recovery



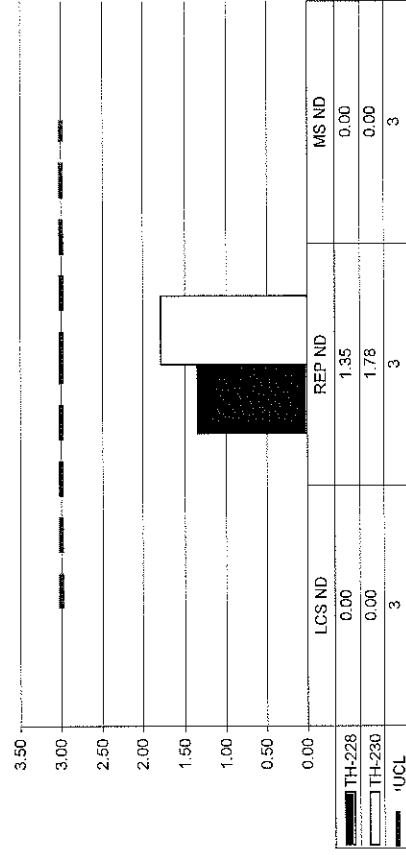
	TH-228	TH-230	TH-232
Lower Error	86.26	90.95	84.94
Upper Error	132.44	137.98	130.62
%R	109.88	114.46	107.78
LCL	75	75	75
Mean	100	100	100
UCL	125	125	125

Replicate Sample RPD



	TH-228	TH-230	TH-232
Lower Error	27.74	42.44	28.52
Upper Error	21.55	31.84	22.21
RPD	24.65	37.14	25.37
CL	35	35	35

Normalized Difference



No Matrix Spike

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10084	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	97.50%	8.62%	100.00%	4.00%	1.37E+02	5.48E+00	1.34E+02	1.15E+01	GAS-1302	1.37E+02	5.48E+00	7.36E+02
CS-137	96.23%	10.95%	100.00%	4.00%	8.69E+01	3.48E+00	8.37E+01	9.16E+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)

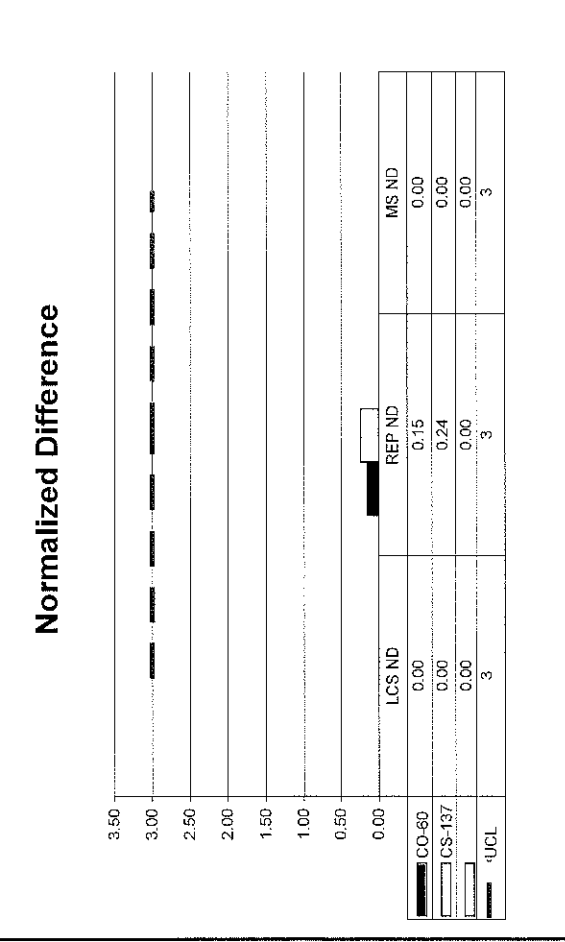
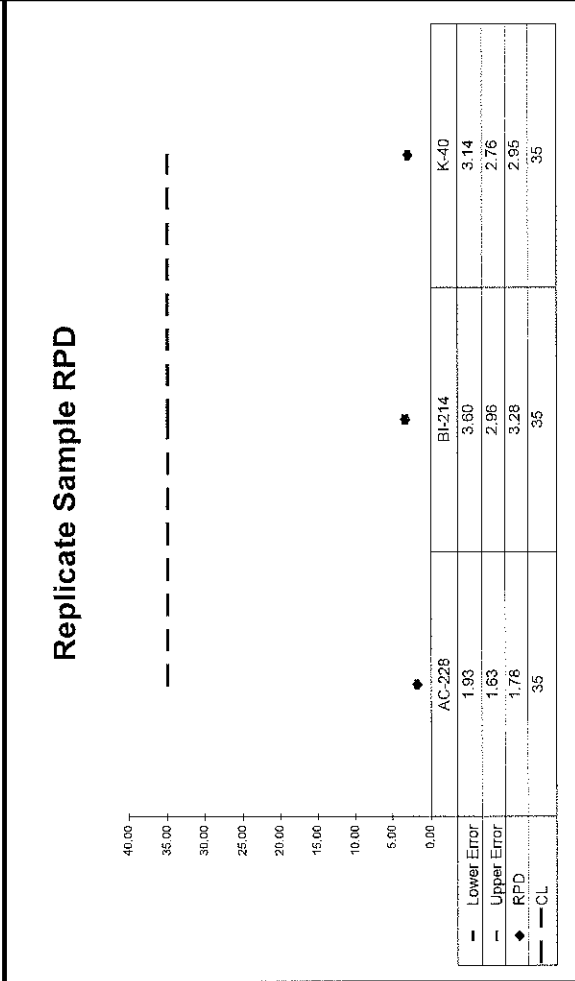
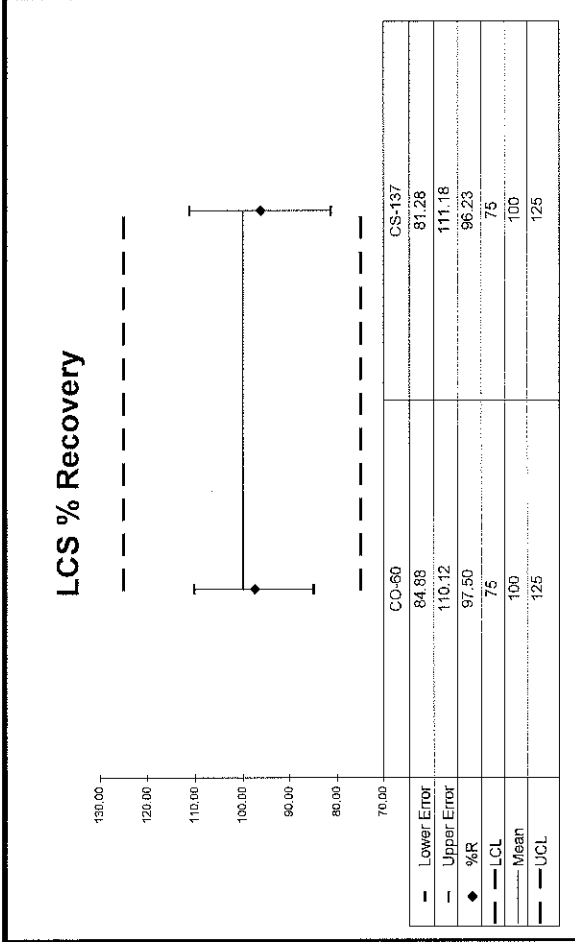
Replicate Sample

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	0.15	1.78	1.38E+00	2.38E-01	1.36E+00	2.26E-01	0.98	OK	<CS-137	AC-228>	OK	OK
BI-214	0.24	3.28	9.02E-01	1.73E-01	9.32E-01	1.79E-01	0.96	OK	<CO-60	BI-214>	OK	OK
K-40	0.32	2.95	1.95E+01	2.49E+00	2.01E+01	2.54E+00				K-40>	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
AC-228	0.15	1.78	1.38E+00	2.38E-01	1.36E+00	2.26E-01	0.98	OK	<CS-137	AC-228>	OK	OK
BI-214	0.24	3.28	9.02E-01	1.73E-01	9.32E-01	1.79E-01	0.96	OK	<CO-60	BI-214>	OK	OK
K-40	0.32	2.95	1.95E+01	2.49E+00	2.01E+01	2.54E+00				K-40>	OK	OK

WG	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10084	Gamma	1	pCi	g	Auxier & Associates, Inc.




SECTION VII
LABORATORY TECHNICIAN'S NOTES
& RUN LOGS

ISO U NOTES

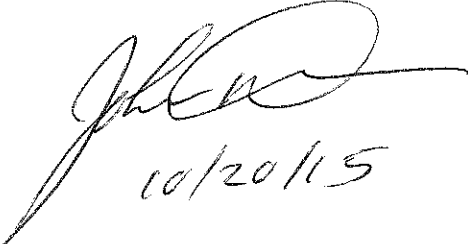
 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com		Internal Work Order	15-10084
			Analysis Code	UISO
			Run Number	1


#	Date	Dept	User	Notes
1	10/15/15 13:49	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.

1015-15 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	15-10084
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	10/15/15 13:49	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	10/20/15 19:17	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.


 10/20/15

 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	15-10084
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	10/15/15 13:49	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	10/20/15 19:17	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	10/21/15 05:04	CHEM	TSMITH	Followed steps 12.1.7 to 12.4.5 in AP-005 . 9Precipitated and filtered samples for Uranium)

10-21-15
 JSM



Reagents Used in an Analysis

Internal Work Order

15-10084

Analysis Code

Run

UUISO

1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
016569P	Hydrofluoric Acid	Reagent Grade	JPACHELLA	10/15/2015
016519P	Nitric Acid	Reagent Grade	JPACHELLA	10/15/2015
016158P	Perchloric Acid	Reagent Grade	JPACHELLA	10/15/2015
016679P	Sulfuric Acid	Reagent Grade	JPACHELLA	10/15/2015
016862P	Anion Exchange Resin	Reagent Grade	JDEMELAS	10/20/2015
016897S	HCl - HF	6.5N - 0.04N	JDEMELAS	10/20/2015
016745D03	Hydrochloric Acid	0.5N	JDEMELAS	10/20/2015
016803S	Hydrochloric Acid	6.5N	JDEMELAS	10/20/2015
016905S	Hydrochloric Acid	8N	JDEMELAS	10/20/2015
016745P	Hydrochloric Acid	Reagent Grade	JDEMELAS	10/20/2015
016922S	HCl - NH4I	8N - 0.1M	JDEMELAS	10/20/2015
016899S	Carbon substrate	Solution	TSMITH	10/21/2015
016569P	Hydrofluoric Acid	Reagent Grade	TSMITH	10/21/2015
016583S	Neodymium Carrier	1 mg/ml	TSMITH	10/21/2015
016514P	Reagent Alcohol	Reagent Grade	TSMITH	10/21/2015
016606P	Titanous Chloride	Reagent Grade	TSMITH	10/21/2015


Alpha #1

State	Sample #	Client	Address	CPT #	Analysis	Test
10/19/15	1510054B(1-4)	USA	0959	2hr50-	ISO-PL	KB
10/19/15	1510021A(1-3)	UCAR	1000	2hr50-	Am241	KB
10/22	PringPuts	USA	0515	1-	us	-
10/22	1510067A(1-7)	Auxier	0909	2hr5-	UNTSO	-
10/20/15	1510051A(1-6)	TW Dept. of Health	1209	16.40 hrs	UN	KB
10/20/15	1510051A (1)	TW Dept. of Health	1208	16.40 hrs	ISO-PU	KB
10/22	PringPuts	USA	0530	1-	us	-
10/22	1510084A(1-6)	Auxier	0851	2hr5-	UNTSO	-

Alphabet 3

Photo	Account	Client	Location	Office	Address	State
10/20/15	1510040A(1-3,5)	Unitech	1212	2hr 50 =	Np	KB
10/20/15	1509101A(1-4)	DOE	1211	Shr 35 =	Am 241	KB
10/20/15	1510063A(1)	Aurora	1232	2hr 00 =	ULL	KB
10/20/15	1510022A(1-5)	Accutest	1449	2hr 50 =	Rale	KB
10/20/15	1510067A(1-4)	UCOR	1504	2hr 00 =	Rale	KB
10/20/15	1510061A(1-7)	Texas Brine	1505	2hr 00 =	Rale	KB
10/21	Dwight Puls	LAB	0870	1 =	np	—
10/21	1510051A(1)	TN Dept.	0145	2 1/2 =	UL 750	—
10/21	1510084A(7-20)	Aurora	0848	2 1/2 =	UL 750	—
10/21	1510064A(1-10)	Aurora	0850	2 1/2 =	UL 750	—
10/21	1510061A(1-4)	Pearsons	0850	5hr 15 =	Am 241	—

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	15-10084
			Analysis Code	ThISO
			Run Number	1

#	Date	Dept	User	Notes
1	10/15/15 13:48	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.

10-15-15 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	15-10084
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	10/15/15 13:48	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	10/22/15 16:47	CHEM	JDEMELAS	Added concentrated HNO3 to sample beakers and heated to dryness; Added 20 ml 8N HNO3 to samples and transferred to new, labeled C-Tubes, adding 8N HNO3 to bring volume to ~35 ml; Preconditioned resin columns with 50 ml 8N HNO3; Centrifuged samples as needed, and passed through columns; Rinsed C-Tubes with 20 ml 8N HNO3; Centrifuged rinsates and loaded onto columns; Rinsed columns with 40 ml 8N HNO3; Eluted Thorium with 50 ml of 8N 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 deionized water, bringing volume to ~15ml. Set samples aside for later precipitation and filtering.

John A. Demelas
 10/22/15

 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	15-10084
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	10/15/15 13:48	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	10/22/15 16:47	CHEM	JDEMELAS	Added concentrated HNO3 to sample beakers and heated to dryness; Added 20 ml 8N HNO3 to samples and transferred to new, labeled C-Tubes, adding 8N HNO3 to bring volume to ~35 ml; Preconditioned resin columns with 50 ml 8N HNO3; Centrifuged samples as needed, and passed through columns; Rinsed C-Tubes with 20 ml 8N HNO3; Centrifuged rinsates and loaded onto columns; Rinsed columns with 40 ml 8N HNO3; Eluted Thorium with 50 ml of 8N 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 deionized water, bringing volume to ~15ml. Set samples aside for later precipitation and filtering.
3	10/23/15 05:10	CHEM	TSMITH	Followed steps 12.2.5 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Thorium)

10-23-15
mm



EBERLINE
SERVICES

Reagents Used in an Analysis

Internal Work Order

15-10084

Analysis Code

Run

ThISO

1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
016569P	Hydrofluoric Acid	Reagent Grade	JPACHELLA	10/15/2015
016519P	Nitric Acid	Reagent Grade	JPACHELLA	10/15/2015
016679P	Sulfuric Acid	Reagent Grade	JPACHELLA	10/15/2015
016158P	Perchloric Acid	Reagent Grade	JPACHELLA	10/15/2015
016862P	Anion Exchange Resin	Reagent Grade	JDEMELAS	10/22/2015
016519P	Nitric Acid	Reagent Grade	JDEMELAS	10/22/2015
016874P	Hydrochloric Acid	Reagent Grade	JDEMELAS	10/22/2015
016928S	Hydrochloric Acid	8N	JDEMELAS	10/22/2015
016926S	Nitric Acid	8N	JDEMELAS	10/22/2015
016909S	Carbon substrate	Solution	TSMITH	10/23/2015
016869S	Cerrium Carrier	0.1mg/ml	TSMITH	10/23/2015
016569P	Hydrofluoric Acid	Reagent Grade	TSMITH	10/23/2015
016514P	Reagent Alcohol	Reagent Grade	TSMITH	10/23/2015

Alphabet 3

Date	Sample #	Client	Landline	CT Time	Analyst	Tech
10/23	1570104AL3(6)	Ely	0821	2hr	Utzgo	—
10/23	151007036(1-4)	Udon	0821	2hr	Jutso	—
10/23	1510068A(1-4)	Udon	0821	2hr	Am 241	—
10/23	1510068A(1-4)	Udon	0821	2hr	Am 241	—
10/23/15	1510084A(1-12)	Auxier	1030	2hr50-	IS-Th	KB

Alphabet 3

Date	Sample #	Client	Leadtime	CTtime	Analysis	Tech
10/23	1510104A(1-6)	EM	0821	7hr	Uu290	-
10/23	15100713E(1-4)	UCOR	0821	7hr	Uu290	-
10/23	1510068A(1-4)	UCOR	0821	7hr	Am 241	-
10/23	1510068A(1-4)	UCOR	0821	7hr	Am 241	-
10/23/15	1510084A(1-12)	Auxier	1030	2hrs0-	IS-Th	KB
10/23/15	1510084A(13-20)	Auxier	1120	2hrs0-	IS-Th	KB
10/23/15	1510067A(1-4)	UCOR	1121	2hrs0-	Np	KB
10/23/15	1510068A(1-4)	UCOR	1122	2hrs0-	Np	KB

GAMMA NOTES

GE 1

101

DATE	SAMPLE #	Client	Lead Time	CT Time	Analysis	Tech
11/2/15	1511004-03	Foxfire	1820	8 hrs	Y	KB
11/2	CAF14	LD	0517	15	r	c
11/2	Dairy	LD	0546	15	r	c
11/2	1511001-10	Limbrell	0606	2L	r	c
11/3	1510062-07	Auxier	0709	2L	r	c
11/3	1510062-10	Auxier	0812	2L	r	c
11/3	1510062-14	Auxier	0916	2L	r	c
11/3	1510062-18	Auxier	1018	2L	r	c
11/3	1510064-05	Auxier	1127	2L	r	c
11/3/15	1510064-09	Auxier	1229	1hr	Y	KB
11/3/15	1510064-12	Auxier	1335	1hr	Y	KB
11/3/15	1511008-05	Solutient Tech	1437	1hr	Y	KB
11/3/15	1511008-08	Solutient Tech	1538	1hr	Y	KB
11/3/15	1511010-05	Energy Transfer	1640	1hr	Y	KB
11/3/15	1511010-06	Energy Transfer	1741	1hr	Y	KB
11/3/15	1511004-04	Foxfire	1841	8 hrs	Y	KB
11/4	CAF-14	LD	0526	15	r	c
11/4	Dairy	LD	0557	15	r	c
11/4	1511010-08	Energy	0620	2L	r	c
11/4	1511010-12	Energy	0728	2L	r	c
11/4	1511010-16	Energy	0875	2L	r	c
11/4	1510084-06	Auxier	0978	2L	r	c
11/4	1510084-10	Auxier	0978	2L	r	c
11/4	1510171-10	James	0978	2L	r	c
11/4	1510084-10	Auxier	1040	2L	r	c
11/4/15	1510084-12	Auxier	1142	1hr	Y	KB
11/4/15	1510084-15	Auxier	1332	1hr	Y	KB
11/4/15	1510162-07	MPT	1242	15 mins	Ben	KB
11/4/15	1510165-07	Tetra	1700	15 mins	Ben	KB
11/4	1510165-07	Tetra	1718	15	Ben	c
11/4	1510169-09	Tetra	1309	15	Ben	KB

GE 2

DATE	SAMPLE #	Client	Load Time	CT Time	Analysis	Tech
11/3/15	1511010-01	Energy Transfer	1741	30 mins	Y	KB
11/3/15	1510106-03	Test America	1812	15 mins	Ba	KB
11/3/15	EA 11/3/15	Foxfire		8 hr	Y	KB
11/3/15	1510171-08	James R Reed	1828	3 hr	Y	KB
11/4	6481401	UPS	0526	1R	r	
11/4	Diana	UPS	0557	1R	r	Σ
11/4	1511010-09	Energy	0622	2L	r	Σ
11/4	1511010-13	Energy	0728	2L	r	Σ
11/4	1511010-17	Energy	0825	2L	r	—
11/4	1510084-07	Auxier	0828	2L	r	—
11/4	1510084-11	Auxier	1111	2L	r	—
11/4	1510171-11	James		2L	r	—
11/4	1510084-11	Auxier	1040	2L	r	—
11/4/15	1510084-13	Auxier	1142	1 hr	Y	KB
11/4/15	1510084-16	Auxier	1352	1 hr	r	KB
11/4/15	1510162-05	MPA	1243	15 mins	Ba	KB
11/4/15	1510165-04	TBE	1700	15 mins	Ba	KB
11/4	1510169-04	Tetra	1718	1R	De	—
11/4	1510169-10	Tetra	1334	1R	De	KB

GE 3

DATE	SAMPLE #	Client	Load Time	CT Time	Analysis	Tech
11/4	1510084-07	Aurora	0842	2L	✓	S
11/4	1510084-04	Aurora	0944	2L	✓	S
11/4	1510084-12	Aurora	0944	2L	✓	✓
11/4	1510084-07	Aurora	1045	2L	✓	—
11/4/15	1510084-14	Aurora	1146	1hr	✓	ICB
11/4/15	1510084-17	Aurora	1343	1hr	✓	ICB
11/4/15	1510165-01	TDE	1247	15mins	Ba	ICB
11/4/15	1510165-01	Tetra	1307	15mins	Ba	ICB
11/4	1510165-86	Tetra	1326	15	A	—

GE 4

DATE	SAMPLE #	Client	Load Time	CT Time	Analysis	Tech
11/2/15	151100301	Eden Foods	1231	30mins	✓	KB
11/2/15	151100302	Eden Foods	1439	2 hr	✓	KB
11/2/15	151100101	Kimbrell	1207	30mins	✓	KB
	15110001					
11/2/15	1511001-02	Kimbrell	1337	1hr	✓	KB
11/2/15	1511001-07	Kimbrell	1640	1hr	✓	KB
11/2/15	1511004-01	Fox fire	1741	30mins	✓	KB
11/2/15	1511004-02	Fox fire	1815		✓	KB
11/7	GW14	LAS	0572	15	✓	✓
11/7	Daily	LAS	0514	15	✓	✓
11/7	1510067-06	Aurica	0607	1L	✓	✓
11/7	1510067-09	Aurica	0709	1L	✓	✓
11/7	1510067-13	Aurica	0812	1L	✓	✓
11/7	1510067-17	Aurica	0916	1L	✓	✓
11/7	1510064-07	Aurica	1018	1L	✓	✓
11/7	1510064-09	Aurica	1127	1L	✓	✓
11/3/15	1510064-11	Aurica	1230	1hr	✓	KB
11/3/15	1511008-01	Solutent Tech	1336	30mins	✓	KB
11/3/15	1511008-02	Solutent Tech	1408	1hr	✓	KB
11/3/15	1511008-07	Solutent Tech	1509	1hr	✓	KB
11/3/15	1511010-03	Energy Trans Sen	1611	1hr	✓	KB
11/3/15	1511010-04	Energy Trans Sen	1712	1hr	✓	KB
11/3/15	1510171-02	James Reed	1818	5 hrs	✓	KB
11/4	GW14	LAS	0526	15	✓	✓
11/4	Daily	LAS	0557	15	✓	✓
11/4	1511010-10	Energy	0620	1L	✓	✓
11/4	1511010-14	Energy	0722	1L	✓	✓
11/4	1510084-05	Aurica	0826	1L	✓	✓
11/4	1510084-08	Aurica	0928	1L	✓	✓
11/4	1510084-012	Aurica	1011	1L	✓	✓
11/4	1510084-01	Aurica	1041	1L	✓	✓
11/4	1510084-02	Aurica	1112	1L	✓	✓

GE 4

5

DATE	SAMPLE #	Client	Load Time	CT Time	Analysis	Tech
11/4/15	1510165-02	TBE	1247	15 mins	Ba	KB
11/4/15	1510169-02	Tetra	1707	15 mins	Ba	KB
11/4	1510169-07	Tetra	1726	15	Ba	KB
11/4/15	1510084-18	Auxan	1343	1 hr	Y	KB
11/4/15	1510084-19	Auxan	1445	1 hr	Y	KB
11/4/15	1510084-20	Auxan	1546	1 hr	Y	KB

SECTION VIII
ANALYTICAL DATA (ISOTOPIC URANIUM)

Work Order	15-10084
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	CP0604S06-07	38	10/09/15 13:00	1.5037E+00
04	DO	CP0604S06-07	38	10/09/15 13:00	1.5310E+00
05	TRG	CP0604S09-10	34	10/09/15 13:10	1.5181E+00
06	TRG	CP0604S11-12	35	10/09/15 13:20	1.5676E+00
07	TRG	CP0604S14-15	36	10/09/15 13:30	1.5280E+00
08	TRG	CP0604S16-17	34	10/09/15 13:40	1.5240E+00
09	TRG	CP0604S19-20	35	10/09/15 13:50	1.5084E+00
10	TRG	CP0604S21-22	32	10/09/15 14:00	1.5333E+00
11	TRG	CP0604S24-25	37	10/09/15 14:10	1.5108E+00
12	TRG	CP0604S26-27	35	10/09/15 14:20	1.5177E+00
13	TRG	CP0604S28-29	36	10/09/15 14:30	1.5391E+00
14	TRG	CP1803S03-04	34	10/10/15 11:30	1.5122E+00
15	TRG	CP1803S06-07	34	10/10/15 11:40	1.5139E+00
16	TRG	CP1803S08-09	38	10/10/15 11:50	1.5667E+00
17	TRG	CP1803S10-11	33	10/10/15 12:00	1.5323E+00
18	TRG	CP1803S12-13	35	10/10/15 12:10	1.5090E+00
19	TRG	CP1803S15-16	35	10/10/15 12:20	1.5082E+00
20	TRG	CP1803S18-19	35	10/10/15 12:30	1.5408E+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	0.6525	12.2		0.00								
02	MBL	0.6519	12.2		0.00								
03	DUP	0.6526	12.2		0.00								
04	DO	0.6513	12.1		0.00								
05	TRG	0.6503	12.1		0.00								
06	TRG	0.6523	12.2		0.00								
07	TRG	0.6504	12.1		0.00								
08	TRG	0.6609	12.3		0.00								
09	TRG	0.6503	12.1		0.00								
10	TRG	0.6522	12.2		0.00								
11	TRG	0.6526	12.2		0.00								
12	TRG	0.6509	12.1		0.00								
13	TRG	0.6526	12.2		0.00								
14	TRG	0.6505	12.1		0.00								
15	TRG	0.6498	12.1		0.00								
16	TRG	0.6503	12.1		0.00								
17	TRG	0.6498	12.1		0.00								
18	TRG	0.6509	12.1		0.00								
19	TRG	0.6508	12.1		0.00								
20	TRG	0.6547	12.2		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			10/15/15 14:51	JPACHELLA				
02	MBL			10/15/15 14:51	JPACHELLA				
03	DUP			10/15/15 14:51	JPACHELLA				
04	DO	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
05	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
06	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
07	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
08	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
09	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
10	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
11	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
12	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
13	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
14	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
15	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
16	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
17	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
18	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
19	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	JPACHELLA				
20	TRG	10/15/15 07:34	KSALLINGS	10/15/15 14:51	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.

	Run	1
	Analysis Code	UJISO
Eberline Services Work Order	15-10084	
Client	Auxier & Associates, Inc.	

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	7.43E+00	1.09E+00	9.59E-02	8.06E+00	92.26	OK		OK	
02	U-234	MBL	BLANK	pCi/g	2.22E-02	3.64E-02	6.38E-02					OK	OK
03	U-234	DUP	CP0604S06-07	pCi/g	8.40E-01	1.91E-01	5.72E-02				OK	OK	
04	U-234	DO	CP0604S06-07	pCi/g	9.18E-01	2.01E-01	5.18E-02					OK	
05	U-234	TRG	CP0604S09-10	pCi/g	1.00E+00	2.20E-01	8.62E-02					OK	
06	U-234	TRG	CP0604S11-12	pCi/g	1.17E+00	2.08E-01	4.00E-02					OK	
07	U-234	TRG	CP0604S14-15	pCi/g	1.20E+00	2.54E-01	5.60E-02					OK	
08	U-234	TRG	CP0604S16-17	pCi/g	1.03E+00	2.15E-01	4.86E-02					OK	
09	U-234	TRG	CP0604S19-20	pCi/g	1.23E+00	2.54E-01	4.05E-02					OK	
10	U-234	TRG	CP0604S21-22	pCi/g	1.08E+00	2.39E-01	5.30E-02					OK	
11	U-234	TRG	CP0604S24-25	pCi/g	8.47E-01	1.90E-01	3.58E-02					OK	
12	U-234	TRG	CP0604S26-27	pCi/g	9.10E-01	2.11E-01	4.09E-02					OK	
13	U-234	TRG	CP0604S28-29	pCi/g	8.68E-01	1.97E-01	6.70E-02					OK	
14	U-234	TRG	CP1803S03-04	pCi/g	1.01E+00	2.22E-01	4.50E-02					OK	
15	U-234	TRG	CP1803S06-07	pCi/g	1.15E+00	2.42E-01	5.71E-02					OK	
16	U-234	TRG	CP1803S08-09	pCi/g	1.00E+00	2.22E-01	3.99E-02					OK	
17	U-234	TRG	CP1803S10-11	pCi/g	1.30E+00	2.61E-01	5.67E-02					OK	
18	U-234	TRG	CP1803S12-13	pCi/g	1.02E+00	2.10E-01	3.45E-02					OK	
19	U-234	TRG	CP1803S15-16	pCi/g	9.44E-01	2.22E-01	5.83E-02					OK	
20	U-234	TRG	CP1803S18-19	pCi/g	1.16E+00	2.78E-01	7.07E-02					OK	

01000

	Run	1
	Analysis Code	UISO
	Eberline Services Work Order	15-10084
Client	Auxier & Associates, Inc.	

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	U-234	LCS	10/14/15 00:00	1.00E+00	87.60	0.00	0.00			
02	U-234	MBL	10/14/15 00:00	1.50E+00	102.74	0.00	0.00			
03	U-234	DUP	10/09/15 13:00	1.50E+00	101.48	0.00	0.00			
04	U-234	DO	10/09/15 13:00	1.53E+00	103.51	0.00	0.00			
05	U-234	TRG	10/09/15 13:10	1.52E+00	103.97	0.00	0.00			
06	U-234	TRG	10/09/15 13:20	1.57E+00	107.98	0.00	0.00			
07	U-234	TRG	10/09/15 13:30	1.53E+00	97.02	0.00	0.00			
08	U-234	TRG	10/09/15 13:40	1.52E+00	113.10	0.00	0.00			
09	U-234	TRG	10/09/15 13:50	1.51E+00	110.15	0.00	0.00			
10	U-234	TRG	10/09/15 14:00	1.53E+00	94.99	0.00	0.00			
11	U-234	TRG	10/09/15 14:10	1.51E+00	119.93	0.00	0.00			
12	U-234	TRG	10/09/15 14:20	1.52E+00	110.53	0.00	0.00			
13	U-234	TRG	10/09/15 14:30	1.54E+00	100.86	0.00	0.00			
14	U-234	TRG	10/10/15 11:30	1.51E+00	100.62	0.00	0.00			
15	U-234	TRG	10/10/15 11:40	1.51E+00	98.09	0.00	0.00			
16	U-234	TRG	10/10/15 11:50	1.57E+00	102.11	0.00	0.00			
17	U-234	TRG	10/10/15 12:00	1.53E+00	91.63	0.00	0.00			
18	U-234	TRG	10/10/15 12:10	1.51E+00	115.85	0.00	0.00			
19	U-234	TRG	10/10/15 12:20	1.51E+00	96.74	0.00	0.00			
20	U-234	TRG	10/10/15 12:30	1.54E+00	77.40	0.00	0.00			

Preliminary Data Report & Analytical Calculations
Work Order: 15-10084-UJISO-1

	Run	1
	Analysis Code	UJISO
	Eberline Services Work Order	15-10084
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-234	LCS	10/21/15 08:49		A_Spec	Alpha_004	170.03	4.64 E+02	5.00 E-03	18.9
02	U-234	MBL	10/21/15 08:49		A_Spec	Alpha_010	170	2.47 E+00	9.00 E-03	19.2
03	U-234	DUP	10/21/15 08:49		A_Spec	Alpha_011	170.02	9.68 E+01	7.00 E-03	20
04	U-234	DO	10/21/15 08:49		A_Spec	Alpha_012	170.02	1.06 E+02	5.00 E-03	19.4
05	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_014	170.03	1.09 E+02	2.10 E-02	18.4
06	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_015	170	1.75 E+02	5.00 E-03	23.5
07	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_033	170	1.21 E+02	4.00 E-03	18
08	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_034	170	1.19 E+02	4.00 E-03	17.9
09	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_035	170	1.27 E+02	1.00 E-03	16.5
10	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_036	170	1.06 E+02	3.00 E-03	18.1
11	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_037	170	9.88 E+01	1.00 E-03	17.1
12	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_038	170	9.28 E+01	1.00 E-03	16.2
13	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_039	170	9.81 E+01	1.10 E-02	19.3
14	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_040	170	1.08 E+02	2.00 E-03	18.6
15	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_041	170	1.20 E+02	5.00 E-03	18.7
16	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_042	170	1.05 E+02	1.00 E-03	17.4
17	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_043	170	1.37 E+02	5.00 E-03	20
18	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_044	170	1.24 E+02	1.00 E-03	18.4
19	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_045	170	9.13 E+01	4.00 E-03	17.6
20	U-234	TRG	10/21/15 08:49		A_Spec	Alpha_046	170	9.23 E+01	4.00 E-03	17.8

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	7.85E+00	1.14E+00	9.55E-02	7.85E+00	99.93	OK		OK	
02	U-238	MBL	BLANK	pCi/g	2.66E-02	3.59E-02	5.63E-02					OK	OK
03	U-238	DUP	CP0604S06-07	pCi/g	9.44E-01	2.04E-01	5.18E-02				OK	OK	
04	U-238	DO	CP0604S06-07	pCi/g	9.72E-01	2.07E-01	3.59E-02					OK	
05	U-238	TRG	CP0604S09-10	pCi/g	1.14E+00	2.36E-01	5.45E-02					OK	
06	U-238	TRG	CP0604S11-12	pCi/g	1.03E+00	1.91E-01	2.78E-02					OK	
07	U-238	TRG	CP0604S14-15	pCi/g	1.17E+00	2.49E-01	4.12E-02					OK	
08	U-238	TRG	CP0604S16-17	pCi/g	9.09E-01	1.99E-01	5.14E-02					OK	
09	U-238	TRG	CP0604S19-20	pCi/g	9.83E-01	2.20E-01	4.03E-02					OK	
10	U-238	TRG	CP0604S21-22	pCi/g	9.72E-01	2.23E-01	4.81E-02					OK	
11	U-238	TRG	CP0604S24-25	pCi/g	8.87E-01	1.95E-01	3.56E-02					OK	
12	U-238	TRG	CP0604S26-27	pCi/g	9.63E-01	2.17E-01	4.66E-02					OK	
13	U-238	TRG	CP0604S28-29	pCi/g	9.62E-01	2.10E-01	6.47E-02					OK	
14	U-238	TRG	CP1803S03-04	pCi/g	1.17E+00	2.43E-01	5.61E-02					OK	
15	U-238	TRG	CP1803S06-07	pCi/g	1.05E+00	2.30E-01	7.60E-02					OK	
16	U-238	TRG	CP1803S08-09	pCi/g	1.09E+00	2.35E-01	3.97E-02					OK	
17	U-238	TRG	CP1803S10-11	pCi/g	1.39E+00	2.73E-01	5.65E-02					OK	
18	U-238	TRG	CP1803S12-13	pCi/g	1.07E+00	2.15E-01	3.94E-02					OK	
19	U-238	TRG	CP1803S15-16	pCi/g	9.30E-01	2.21E-01	7.56E-02					OK	
20	U-238	TRG	CP1803S18-19	pCi/g	1.26E+00	2.92E-01	5.21E-02					OK	

	Run	1
	Analysis Code	UISO
Eberline Services Work Order	15-10084	
Client	Auxier & Associates, Inc.	

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	U-238	LCS	10/14/15 00:00	1.00E+00	87.60	0.00	0.00			
02	U-238	MBL	10/14/15 00:00	1.50E+00	102.74	0.00	0.00			
03	U-238	DUP	10/09/15 13:00	1.50E+00	101.48	0.00	0.00			
04	U-238	DO	10/09/15 13:00	1.53E+00	103.51	0.00	0.00			
05	U-238	TRG	10/09/15 13:10	1.52E+00	103.97	0.00	0.00			
06	U-238	TRG	10/09/15 13:20	1.57E+00	107.98	0.00	0.00			
07	U-238	TRG	10/09/15 13:30	1.53E+00	97.02	0.00	0.00			
08	U-238	TRG	10/09/15 13:40	1.52E+00	113.10	0.00	0.00			
09	U-238	TRG	10/09/15 13:50	1.51E+00	110.15	0.00	0.00			
10	U-238	TRG	10/09/15 14:00	1.53E+00	94.99	0.00	0.00			
11	U-238	TRG	10/09/15 14:10	1.51E+00	119.93	0.00	0.00			
12	U-238	TRG	10/09/15 14:20	1.52E+00	110.53	0.00	0.00			
13	U-238	TRG	10/09/15 14:30	1.54E+00	100.86	0.00	0.00			
14	U-238	TRG	10/10/15 11:30	1.51E+00	100.62	0.00	0.00			
15	U-238	TRG	10/10/15 11:40	1.51E+00	98.09	0.00	0.00			
16	U-238	TRG	10/10/15 11:50	1.57E+00	102.11	0.00	0.00			
17	U-238	TRG	10/10/15 12:00	1.53E+00	91.63	0.00	0.00			
18	U-238	TRG	10/10/15 12:10	1.51E+00	115.85	0.00	0.00			
19	U-238	TRG	10/10/15 12:20	1.51E+00	96.74	0.00	0.00			
20	U-238	TRG	10/10/15 12:30	1.54E+00	77.40	0.00	0.00			

	1	Run
	UISO	Analysis Code
15-10084	Eberline Services Work Order	
Auxier & Associates, Inc.	Client	

250002

Preliminary Data Report & Analytical Calculations
Work Order: 15-10084-UISO-1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-238	LCS	10/21/15 08:49		A_Spec	Alpha_004	170.03	4.92 E+02	5.00 E-03	18.9
02	U-238	MBL	10/21/15 08:49		A_Spec	Alpha_010	170	2.98 E+00	6.00 E-03	19.2
03	U-238	DUP	10/21/15 08:49		A_Spec	Alpha_011	170.02	1.09 E+02	5.00 E-03	20
04	U-238	DO	10/21/15 08:49		A_Spec	Alpha_012	170.02	1.13 E+02	1.00 E-03	19.4
05	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_014	170.03	1.25 E+02	5.00 E-03	18.4
06	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_015	170	1.55 E+02	1.00 E-03	23.5
07	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_033	170	1.19 E+02	1.00 E-03	18
08	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_034	170	1.06 E+02	0.00 E+00	17.9
09	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_035	170	1.02 E+02	1.00 E-03	16.5
10	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_036	170	9.67 E+01	2.00 E-03	18.1
11	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_037	170	1.04 E+02	1.00 E-03	17.1
12	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_038	170	9.77 E+01	2.00 E-03	16.2
13	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_039	170	1.09 E+02	1.00 E-02	19.3
14	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_040	170	1.25 E+02	0.00 E+00	18.6
15	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_041	170	1.11 E+02	1.30 E-02	18.7
16	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_042	170	1.15 E+02	1.00 E-03	17.4
17	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_043	170	1.48 E+02	0.00 E+00	20
18	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_044	170	1.30 E+02	2.00 E-03	18.4
19	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_045	170	9.03 E+01	1.00 E-02	17.6
20	U-238	TRG	10/21/15 08:49		A_Spec	Alpha_046	170	1.01 E+02	1.00 E-03	17.8

	Run	1
	Analysis Code	UISO
Eberline Services Work Order	15-10084	
Client	Auxier & Associates, Inc.	

00000

	1 Run
UJISO Analysis Code	15-10084 Eberline Services Work Order
Client Auxier & Associates, Inc.	

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	9.91E-01	3.00E-01	1.18E-01					OK	
02	U-235	MBL	BLANK	pCi/g	-9.41E-03	2.32E-02	6.62E-02					OK	OK
03	U-235	DUP	CP0604S06-07	pCi/g	2.85E-02	3.68E-02	5.12E-02				NA	OK	
04	U-235	DO	CP0604S06-07	pCi/g	9.42E-02	6.37E-02	4.46E-02					OK	
05	U-235	TRG	CP0604S09-10	pCi/g	2.42E-02	3.93E-02	6.75E-02					OK	
06	U-235	TRG	CP0604S11-12	pCi/g	1.24E-01	6.57E-02	4.94E-02					OK	
07	U-235	TRG	CP0604S14-15	pCi/g	9.59E-02	6.88E-02	5.11E-02					OK	
08	U-235	TRG	CP0604S16-17	pCi/g	8.84E-02	6.36E-02	5.99E-02					OK	
09	U-235	TRG	CP0604S19-20	pCi/g	4.18E-02	4.76E-02	6.28E-02					OK	
10	U-235	TRG	CP0604S21-22	pCi/g	7.26E-02	6.05E-02	5.20E-02					OK	
11	U-235	TRG	CP0604S24-25	pCi/g	7.74E-02	5.96E-02	5.97E-02					OK	
12	U-235	TRG	CP0604S26-27	pCi/g	9.67E-02	7.19E-02	7.25E-02					OK	
13	U-235	TRG	CP0604S28-29	pCi/g	5.78E-02	5.81E-02	8.01E-02					OK	
14	U-235	TRG	CP1803S03-04	pCi/g	1.04E-01	7.28E-02	6.96E-02					OK	
15	U-235	TRG	CP1803S06-07	pCi/g	4.31E-02	4.67E-02	5.63E-02					OK	
16	U-235	TRG	CP1803S08-09	pCi/g	9.23E-02	6.63E-02	4.92E-02					OK	
17	U-235	TRG	CP1803S10-11	pCi/g	4.47E-02	4.62E-02	4.87E-02					OK	
18	U-235	TRG	CP1803S12-13	pCi/g	8.16E-02	6.06E-02	6.12E-02					OK	
19	U-235	TRG	CP1803S15-16	pCi/g	4.88E-02	5.05E-02	5.32E-02					OK	
20	U-235	TRG	CP1803S18-19	pCi/g	1.70E-01	1.08E-01	9.74E-02					OK	

	15-10084 Eberline Services Work Order	UISO Analysis Code	Run
Client			Auxier & Associates, Inc.

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	U-235	LCS	10/14/15 00:00	1.00E+00	87.60	0.00	0.00			
02	U-235	MBL	10/14/15 00:00	1.50E+00	102.74	0.00	0.00			
03	U-235	DUP	10/09/15 13:00	1.50E+00	101.48	0.00	0.00			
04	U-235	DO	10/09/15 13:00	1.53E+00	103.61	0.00	0.00			
05	U-235	TRG	10/09/15 13:10	1.52E+00	103.97	0.00	0.00			
06	U-235	TRG	10/09/15 13:20	1.57E+00	107.98	0.00	0.00			
07	U-235	TRG	10/09/15 13:30	1.53E+00	97.02	0.00	0.00			
08	U-235	TRG	10/09/15 13:40	1.52E+00	113.10	0.00	0.00			
09	U-235	TRG	10/09/15 13:50	1.51E+00	110.15	0.00	0.00			
10	U-235	TRG	10/09/15 14:00	1.53E+00	94.99	0.00	0.00			
11	U-235	TRG	10/09/15 14:10	1.51E+00	119.93	0.00	0.00			
12	U-235	TRG	10/09/15 14:20	1.52E+00	110.53	0.00	0.00			
13	U-235	TRG	10/09/15 14:30	1.54E+00	100.86	0.00	0.00			
14	U-235	TRG	10/10/15 11:30	1.51E+00	100.62	0.00	0.00			
15	U-235	TRG	10/10/15 11:40	1.51E+00	98.09	0.00	0.00			
16	U-235	TRG	10/10/15 11:50	1.57E+00	102.11	0.00	0.00			
17	U-235	TRG	10/10/15 12:00	1.53E+00	91.63	0.00	0.00			
18	U-235	TRG	10/10/15 12:10	1.51E+00	115.85	0.00	0.00			
19	U-235	TRG	10/10/15 12:20	1.51E+00	96.74	0.00	0.00			
20	U-235	TRG	10/10/15 12:30	1.54E+00	77.40	0.00	0.00			

	1 Run
Eberline Services Work Order 15-10084	Analysis Code UISO
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-235	LCS	10/21/15 08:49		A_Spec	Alpha_004	170.03	5.01 E+01	5.00 E-03	18.9
02	U-235	MBL	10/21/15 08:49		A_Spec	Alpha_010	170	-8.50 E-01	5.00 E-03	19.2
03	U-235	DUP	10/21/15 08:49		A_Spec	Alpha_011	170.02	2.66 E+00	2.00 E-03	20
04	U-235	DO	10/21/15 08:49		A_Spec	Alpha_012	170.02	8.83 E+00	1.00 E-03	19.4
05	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_014	170.03	2.15 E+00	5.00 E-03	18.4
06	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_015	170	1.50 E+01	0.00 E+00	23.5
07	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_033	170	7.83 E+00	1.00 E-03	18
08	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_034	170	8.32 E+00	4.00 E-03	17.9
09	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_035	170	3.49 E+00	3.00 E-03	16.5
10	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_036	170	5.83 E+00	1.00 E-03	18.1
11	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_037	170	7.32 E+00	4.00 E-03	17.1
12	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_038	170	8.00 E+00	0.00 E+00	16.2
13	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_039	170	5.30 E+00	1.00 E-02	19.3
14	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_040	170	9.00 E+00	0.00 E+00	18.6
15	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_041	170	3.66 E+00	2.00 E-03	18.7
16	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_042	170	7.83 E+00	1.00 E-03	17.4
17	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_043	170	3.83 E+00	1.00 E-03	20
18	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_044	170	8.00 E+00	0.00 E+00	18.4
19	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_045	170	3.83 E+00	1.00 E-03	17.6
20	U-235	TRG	10/21/15 08:49		A_Spec	Alpha_046	170	1.10 E+01	6.00 E-03	17.8

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	0.6525	12.1626		0.00		
02	MBL	BLANK	10/14/15 00:00	1.5000	0.6519	12.1514		0.00		
03	DUP	CP0604S06-07	10/09/15 13:00	1.5037	0.6526	12.1645		0.00		
04	DO	CP0604S06-07	10/09/15 13:00	1.5310	0.6513	12.1402		0.00		
05	TRG	CP0604S09-10	10/09/15 13:10	1.5181	0.6503	12.1216		0.00		
06	TRG	CP0604S11-12	10/09/15 13:20	1.5676	0.6523	12.1589		0.00		
07	TRG	CP0604S14-15	10/09/15 13:30	1.5280	0.6504	12.1235		0.00		
08	TRG	CP0604S16-17	10/09/15 13:40	1.5240	0.6609	12.3192		0.00		
09	TRG	CP0604S19-20	10/09/15 13:50	1.5084	0.6503	12.1216		0.00		
10	TRG	CP0604S21-22	10/09/15 14:00	1.5333	0.6522	12.1570		0.00		
11	TRG	CP0604S24-25	10/09/15 14:10	1.5108	0.6526	12.1645		0.00		
12	TRG	CP0604S26-27	10/09/15 14:20	1.5177	0.6509	12.1328		0.00		
13	TRG	CP0604S28-29	10/09/15 14:30	1.5391	0.6526	12.1645		0.00		
14	TRG	CP1803S03-04	10/10/15 11:30	1.5122	0.6505	12.1253		0.00		
15	TRG	CP1803S06-07	10/10/15 11:40	1.5139	0.6498	12.1123		0.00		
16	TRG	CP1803S08-09	10/10/15 11:50	1.5667	0.6503	12.1216		0.00		
17	TRG	CP1803S10-11	10/10/15 12:00	1.5323	0.6498	12.1123		0.00		
18	TRG	CP1803S12-13	10/10/15 12:10	1.5090	0.6509	12.1328		0.00		
19	TRG	CP1803S15-16	10/10/15 12:20	1.5082	0.6508	12.1309		0.00		
20	TRG	CP1803S18-19	10/10/15 12:30	1.5408	0.6547	12.2036		0.00		

Handwritten notes and signatures at the bottom of the page, including "08/18", "11/17", and "77/17".

Internal Work Order		Run	Analysis Code	Date	Technician	Technician Initials	Witness Initials								
15-10084		1	UUISO	10/15/2015 14:42	JPACHELLA	<i>JPM</i>									
LCS & Matrix Spikes															
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCS Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	MS Added pCi	MSD Added pCi	Error Estimate	Error Estimate	MSD Error Estimate	
U-234	U-8a	35.240	10/15/2015	0.500	0.5076		8.06		0.290	0.00		0.00	0.000	0.00	0.000
U-238	U-8a	34.350	10/15/2015	0.500	0.5076		7.85		0.283	0.00		0.00	0.000	0.00	0.000
1C-99 MS	1C-2a	22043.636	7/5/2014	0.1											
Tracers															
Fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Tracer	MSD	LCS	MS	LCS	MSD	LCS	MSD	
01	U-232	U-10a	18.640	10/15/2015	0.6525	0.6500									
02	U-232	U-10a	18.640	10/15/2015	0.6519	0.6500									
03	U-232	U-10a	18.640	10/15/2015	0.6526	0.6500									
04	U-232	U-10a	18.640	10/15/2015	0.6513	0.6500									
05	U-232	U-10a	18.640	10/15/2015	0.6503	0.6500									
06	U-232	U-10a	18.640	10/15/2015	0.6523	0.6500									
07	U-232	U-10a	18.640	10/15/2015	0.6504	0.6500									
08	U-232	U-10a	18.640	10/15/2015	0.6609	0.6500									
09	U-232	U-10a	18.640	10/15/2015	0.6503	0.6500									
10	U-232	U-10a	18.640	10/15/2015	0.6522	0.6500									
11	U-232	U-10a	18.640	10/15/2015	0.6526	0.6500									
12	U-232	U-10a	18.640	10/15/2015	0.6509	0.6500									
13	U-232	U-10a	18.640	10/15/2015	0.6526	0.6500									
14	U-232	U-10a	18.640	10/15/2015	0.6505	0.6500									
15	U-232	U-10a	18.640	10/15/2015	0.6498	0.6500									
16	U-232	U-10a	18.640	10/15/2015	0.6503	0.6500									
17	U-232	U-10a	18.640	10/15/2015	0.6498	0.6500									
18	U-232	U-10a	18.640	10/15/2015	0.6509	0.6500									
19	U-232	U-10a	18.640	10/15/2015	0.6508	0.6500									
20	U-232	U-10a	18.640	10/15/2015	0.6547	0.6500									
Balance Printer Tapes								Matrix Spike							

Aliquot Worksheet

Work Order		Run	Analysis Code	Rpt Units	Lab Deadline	Technician	
15-10084		1	UUISO	grams	11/6/2015	JPACHELLA	

Lab Fraction	Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No. of Dis	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	CP0604S06-07	DUP						1.5037E+00	1.5037E+00				
04	CP0604S06-07	DO						1.5310E+00	1.5310E+00				
05	CP0604S09-10	TRG						1.5181E+00	1.5181E+00				
06	CP0604S11-12	TRG						1.5676E+00	1.5676E+00				
07	CP0604S14-15	TRG						1.5280E+00	1.5280E+00				
08	CP0604S16-17	TRG						1.5240E+00	1.5240E+00				
09	CP0604S19-20	TRG						1.5084E+00	1.5084E+00				
10	CP0604S21-22	TRG						1.5333E+00	1.5333E+00				
11	CP0604S24-25	TRG						1.5108E+00	1.5108E+00				
12	CP0604S26-27	TRG						1.5177E+00	1.5177E+00				
13	CP0604S28-29	TRG						1.5391E+00	1.5391E+00				
14	CP1803S03-04	TRG						1.5122E+00	1.5122E+00				
15	CP1803S06-07	TRG						1.5139E+00	1.5139E+00				
16	CP1803S08-09	TRG						1.5667E+00	1.5667E+00				
17	CP1803S10-11	TRG						1.5323E+00	1.5323E+00				
18	CP1803S12-13	TRG						1.5090E+00	1.5090E+00				
19	CP1803S15-16	TRG						1.5082E+00	1.5082E+00				
20	CP1803S18-19	TRG						1.5408E+00	1.5408E+00				

Comments

Technician: *J. Pachella* Date: 10/15/15

**Rough Sample Preparation
 Log Book**

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
15-10084	11/6/2015	10/14/2015	10/15/2015	10/16/2015	KSALLINGS

Eberline Fraction	Auxier & Associates, Inc. Client ID	Tare (g)		Gross (g)		Net (g)		Percent		Gamma		Special Info
		Pan Wt	14.2300	Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	
04	CP0604S06-07	14.2300	920.4200	747.6000	733.3700	906.1900	733.3700	19.07%	80.93%			
05	CP0604S09-10	14.2200	925.7600	757.0600	742.8400	911.5400	742.8400	18.51%	81.49%			
06	CP0604S11-12	14.2600	797.1100	631.9100	617.6500	782.8500	617.6500	21.10%	78.90%			
07	CP0604S14-15	14.1900	910.8800	728.7400	714.5500	896.6900	714.5500	20.31%	79.69%			
08	CP0604S16-17	14.1200	934.8200	750.1100	735.9900	920.7000	735.9900	20.06%	79.94%			
09	CP0604S19-20	14.1800	1022.5400	826.6200	812.4400	1008.3600	812.4400	19.43%	80.57%			
10	CP0604S21-22	14.5200	929.6600	743.5000	728.9800	915.1400	728.9800	20.34%	79.66%			
11	CP0604S24-25	14.5700	1005.9400	797.8900	783.3200	991.3700	783.3200	20.99%	79.01%			
12	CP0604S26-27	14.5600	1145.0800	881.2800	866.7200	1130.5200	866.7200	23.33%	76.67%			
13	CP0604S28-29	14.6200	1252.7600	1005.7000	991.0800	1238.1400	991.0800	19.95%	80.05%			
14	CP1803S03-04	14.5400	820.4400	665.8800	651.3400	805.9000	651.3400	19.18%	80.82%			
15	CP1803S06-07	14.6300	753.9500	607.3600	592.7300	739.3200	592.7300	19.83%	80.17%			
16	CP1803S08-09	14.5900	925.0200	733.5400	718.9500	910.4300	718.9500	21.03%	78.97%			
17	CP1803S10-11	14.6000	1197.3600	980.0000	965.4000	1182.7600	965.4000	18.38%	81.62%			
18	CP1803S12-13	14.5900	893.3600	728.8200	714.2300	878.7700	714.2300	18.72%	81.28%			
19	CP1803S15-16	14.5700	1007.4000	817.0800	802.5100	992.8300	802.5100	19.17%	80.83%			
20	CP1803S18-19	14.6600	1078.4800	864.3400	849.6800	1063.8200	849.6800	20.13%	79.87%			

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

Technician: *Kenny Seay*



KB
10/21/15

Apex-Alpha™

Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_004
 Chamber Serial Number:
 Detector Serial Number: 4
 Env. Background: System Bkgd 131863
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/21/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:01 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: 0.1657 +/- 0.0098
 Counting Efficiency: 0.1892 +/- 0.0033 on 10/25/2014 6:43:53 PM
 Chem. Recovery Factor: 0.8760 +/- 0.0538

Control Certificate Name: NatU_U-8A
 Chem. Recov. of Control: U-238 0.974113 +/- 0.077977
 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 5.253	340.49	10.63	0.51	0.00E+000	5.0
U-234	4.715	464.15	9.11	0.85	0.00E+000	13.0
U-235	4.414	50.15	27.95	0.85	0.00E+000	4.9
U-238	4.129	492.15	8.84	0.85	0.00E+000	14.7

T = Tracer Peak used for Effective Efficiency

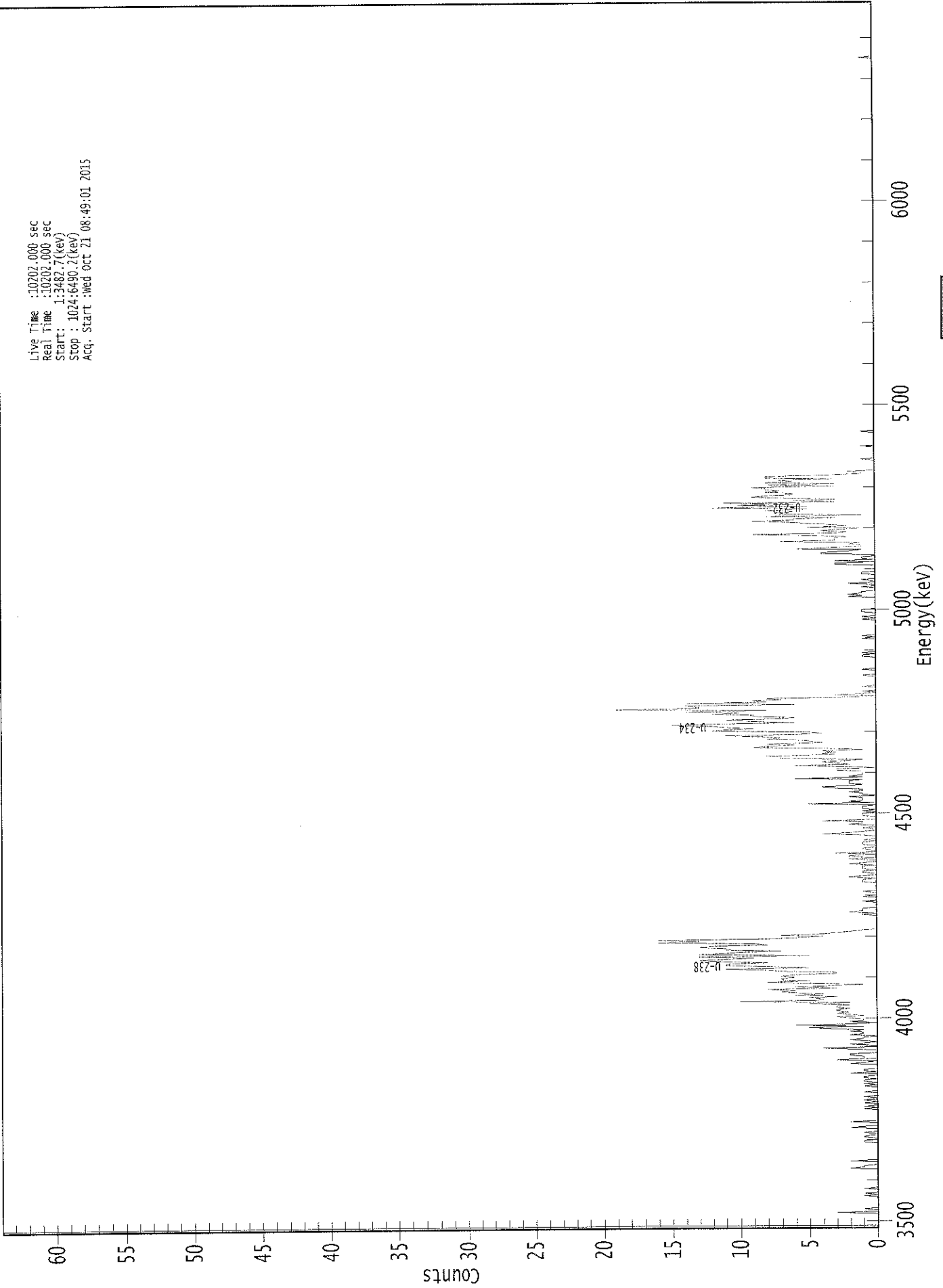
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.983	5302.50*	5.45E+000 +/- 6.30E-001	8.40E-002 +/- 9.71E-003
U-234	0.984	4761.50*	7.43E+000 +/- 1.09E+000	9.59E-002 +/- 1.11E-002
U-235	0.994	4385.50*	9.91E-001 +/- 3.00E-001	1.18E-001 +/- 1.37E-002
U-238	0.978	4184.40*	7.85E+000 +/- 1.14E+000	9.55E-002 +/- 1.10E-002

AG
10/21/15

0000131803.CNF

Live Time :10202.000 sec
Real Time :10202.000 sec
Start : 1:3482.7(kev)
Stop : 1024:6490.2(kev)
Acq. Start :Wed Oct 21 08:49:01 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	0	0	0	3	0	0
17:	1	0	0	0	0	0	0	0
25:	0	0	0	1	0	1	0	0
33:	0	1	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	2	1	1	0	0	0
57:	2	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	1	1	0	0	1	1	0	0
81:	1	0	0	0	2	1	0	0
89:	0	2	0	0	0	0	0	0
97:	0	0	0	0	1	0	1	0
105:	0	1	0	1	0	0	1	0
113:	0	0	1	0	0	0	0	1
121:	0	1	0	1	1	0	1	1
129:	0	0	2	0	1	1	0	0
137:	0	0	2	1	0	3	1	1
145:	1	2	2	0	0	0	2	4
153:	0	0	2	1	0	1	2	1
161:	1	0	2	1	1	2	1	3
169:	5	1	6	2	0	2	1	1
177:	2	3	1	2	3	2	3	3
185:	2	3	3	2	5	2	10	4
193:	4	5	3	6	4	6	7	6
201:	8	3	6	3	1	6	8	5
209:	7	7	6	7	6	3	3	7
217:	8	11	5	8	11	11	8	11
225:	13	11	9	13	5	13	11	10
233:	7	11	11	13	12	8	9	16
241:	13	16	8	6	4	7	4	3
249:	2	1	0	0	0	0	0	0
257:	0	0	0	0	0	0	1	0
265:	2	1	1	1	0	0	0	0
273:	0	1	0	0	0	1	0	0
281:	0	1	0	0	0	0	0	0
289:	0	1	1	1	0	2	1	0
297:	0	1	1	0	1	1	1	0
305:	2	1	0	0	2	0	2	2
313:	0	3	0	0	1	1	0	0
321:	1	1	1	0	1	0	0	0
329:	1	4	2	1	0	0	1	0
337:	0	2	1	1	4	0	0	0
345:	1	1	1	0	1	0	1	1
353:	1	0	5	0	2	1	1	1
361:	2	0	1	1	2	1	1	3

369: 4 2 1 2 2 2 1 6

Sample Title: 01

Channel	1	2	3	4	5	6	7	8
377:	1	2	1	1	1	1	3	3
385:	0	2	6	2	3	4	2	1
393:	7	7	8	3	4	3	4	1
401:	3	9	8	6	8	4	5	5
409:	8	7	8	11	6	4	5	12
417:	11	9	11	12	15	12	6	9
425:	11	7	6	9	9	12	10	14
433:	8	19	13	13	14	6	14	8
441:	9	7	8	2	0	3	1	0
449:	1	0	0	0	1	0	0	0
457:	0	0	0	0	0	1	0	0
465:	0	0	1	0	0	0	0	0
473:	0	0	0	0	0	1	1	0
481:	1	0	0	0	0	0	0	0
489:	0	0	0	0	1	0	1	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	1	0	1	0
513:	0	0	1	1	1	0	0	0
521:	0	0	0	0	0	0	0	2
529:	1	2	1	1	0	0	0	1
537:	0	0	2	0	0	1	0	0
545:	0	0	1	1	0	0	0	0
553:	0	0	3	3	0	3	0	1
561:	1	0	0	4	4	2	1	6
569:	3	1	1	2	1	7	3	3
577:	3	2	5	9	3	2	4	3
585:	1	5	2	3	5	6	9	6
593:	6	3	8	1	7	7	6	8
601:	5	12	5	10	6	11	3	6
609:	3	7	9	8	6	6	8	7
617:	8	8	9	3	8	3	8	6
625:	7	3	8	8	4	1	1	2
633:	0	0	0	0	0	0	0	0
641:	0	1	0	0	0	0	0	0
649:	0	0	0	0	1	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	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 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:	1	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



WBS
10/21/15

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_010
 Chamber Serial Number:
 Detector Serial Number: 10
 Env. Background: System Bkgd 131864
 Reagent Blank: <not performed>

Sample Size: 1.500E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/21/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:02 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: 0.1973 +/- 0.0108
 Counting Efficiency: 0.1921 +/- 0.0033 on 10/25/2014 6:44:30 PM
 Chem. Recovery Factor: 1.0274 +/- 0.0592

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	404.94	9.78	3.06	0.00E+000	8.5
U-234	4.709	2.47	163.78	1.53	0.00E+000	2.9
U-235	4.398	-0.85	246.69	0.85	0.00E+000	0.0
U-238	4.088	2.98	134.36	1.02	0.00E+000	2.9

T = Tracer Peak used for Effective Efficiency

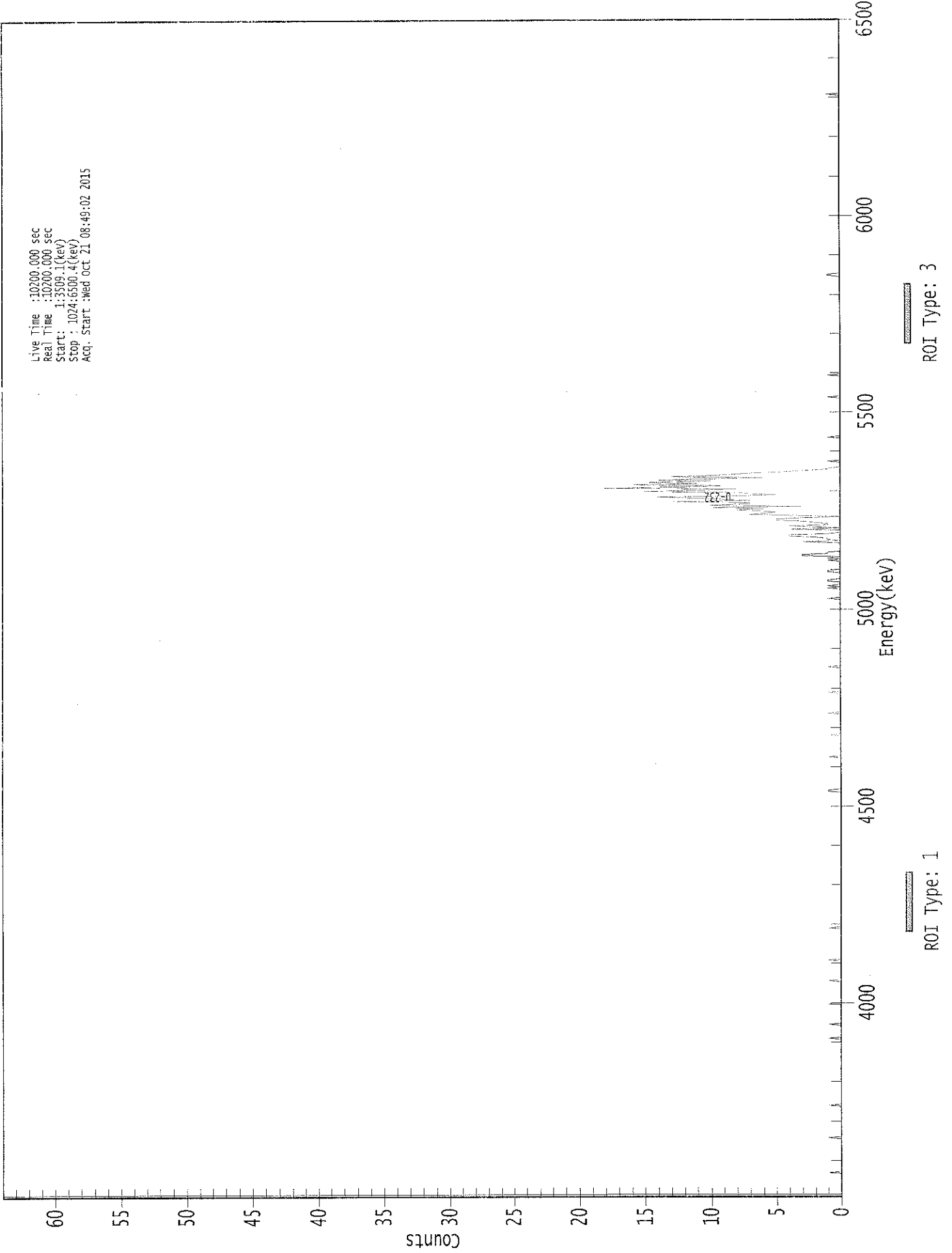
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.998	5302.50*	3.63E+000 +/- 3.91E-001	8.01E-002 +/- 8.63E-003
U-234	0.980	4761.50*	2.22E-002 +/- 3.64E-002	6.38E-002 +/- 6.87E-003
U-235	0.999	4385.50*	-9.41E-003 +/- 2.32E-002	6.62E-002 +/- 7.14E-003
U-238	0.936	4184.40*	2.66E-002 +/- 3.59E-002	5.63E-002 +/- 6.06E-003

AG
10/21/15

0000131804.CNF

Live Time :10200.000 sec
Real Time :10200.000 sec
Start : 1:3309.1(kev)
Stop : 1024:6500.4(kev)
Acq. Start :Wed Oct 21 08:49:02 2015



150000

***** 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:	10200	10200	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	1	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	1	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	1
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	0	0	0
137:	0	1	0	0	0	0	0	0	0
145:	0	0	0	0	0	1	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0	1
169:	0	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0	0
185:	0	0	0	1	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	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	1	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	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	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:	1	1	0	0	0	0	0	0	0
361:	0	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	0	1	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	1	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	1	0	0	0
425:	0	0	0	0	0	0	0	0
433:	0	0	0	0	0	0	1	0
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	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	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	0	0	1
521:	0	0	0	0	0	0	0	0
529:	1	0	1	0	0	0	1	1
537:	0	0	0	0	0	0	1	1
545:	0	0	0	0	0	0	0	0
553:	1	0	1	0	3	3	1	1
561:	0	0	0	0	0	0	0	0
569:	3	0	1	1	2	4	4	1
577:	0	0	0	4	0	2	4	1
585:	1	2	3	5	5	3	0	3
593:	7	6	5	6	8	6	10	3
601:	10	7	7	13	7	9	11	14
609:	8	5	7	8	15	11	8	18
617:	12	9	16	11	15	10	14	10
625:	6	13	10	8	7	4	3	1
633:	1	0	0	0	0	0	1	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	1	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	0
713:	0	1	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: 1 1 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	1	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
10/21/15

Sample Description: CP0604S06-07-DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_011
 Chamber Serial Number:
 Detector Serial Number: 11
 Env. Background: System Bkgd 131865
 Reagent Blank: <not performed>

Sample Size: 1.504E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:03 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.653 mL
 Effective Efficiency: 0.2034 +/- 0.0110
 Counting Efficiency: 0.2004 +/- 0.0035 on 10/25/2014 6:44:33 PM
 Chem. Recovery Factor: 1.0148 +/- 0.0577

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 5.278	417.81	9.60	1.19	0.00E+000	5.1
U-234	4.732	96.81	20.06	1.19	0.00E+000	4.1
U-235	4.435	2.66	128.85	0.34	0.00E+000	2.6
U-238	4.153	109.15	18.85	0.85	0.00E+000	3.8

T = Tracer Peak used for Effective Efficiency

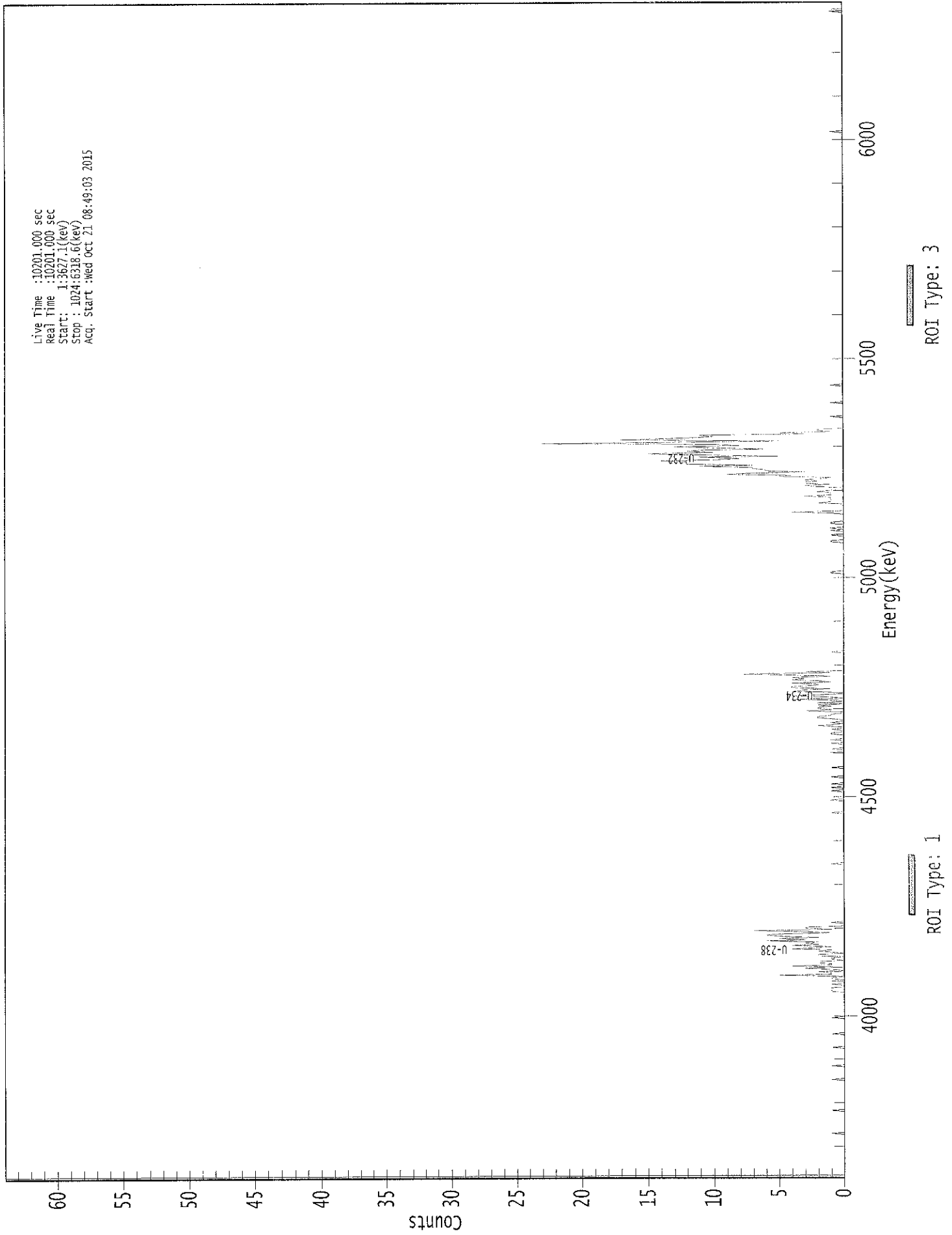
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.63E+000 +/- 3.85E-001	5.72E-002 +/- 6.07E-003
U-234	0.994	4761.50*	8.40E-001 +/- 1.91E-001	5.72E-002 +/- 6.07E-003
U-235	0.983	4385.50*	2.85E-002 +/- 3.68E-002	5.12E-002 +/- 5.43E-003
U-238	0.993	4184.40*	9.44E-001 +/- 2.04E-001	5.18E-002 +/- 5.49E-003

AG
10/21/15

0000131805.CNF

Live Time :10201.000 sec
Real Time :10201.000 sec
Start : 1:3627.1(kev)
Stop : 1024:5318.6(kev)
Acq. Start :Wed Oct 21 08:49:03 2015



00102

 ***** 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	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	1
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	1	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	1	0
89:	0	0	0	0	0	0	0	0
97:	0	0	1	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	1	0	0	0	0	0
121:	0	0	0	0	0	0	1	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	1	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	1	1	1	1	0
169:	0	1	0	0	1	0	1	1
177:	0	5	1	1	2	0	1	3
185:	0	4	1	1	2	2	0	1
193:	1	0	2	2	0	1	2	1
201:	4	2	1	4	2	3	2	6
209:	3	5	2	5	6	5	1	3
217:	7	1	3	3	0	0	0	1
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	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	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	1	0
321:	0	0	0	0	0	0	0	0
329:	0	1	0	0	0	0	0	0
337:	0	1	0	0	1	0	0	1
345:	0	0	0	0	0	1	0	0
353:	0	0	0	0	0	1	0	0
361:	0	0	0	0	0	0	0	0

369: 0 0 1 0 0 1 0 0

Sample Title: 03

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	1	0	0	1	0	0
385:	0	0	1	1	0	0	1	0
393:	0	2	1	0	1	0	0	1
401:	2	2	1	1	0	0	3	1
409:	2	2	1	2	0	2	0	0
417:	4	0	1	4	2	0	0	4
425:	3	1	4	4	2	2	4	1
433:	2	4	3	4	1	4	8	1
441:	3	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	1	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	0	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	0	0	0
521:	0	0	0	0	0	0	1	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:	0	1	1	0	0	0	0	1
561:	0	0	0	1	0	1	0	0
569:	0	1	1	0	0	0	0	0
577:	0	0	1	4	0	0	0	0
585:	0	0	0	2	1	1	1	1
593:	1	3	1	1	1	2	1	0
601:	0	2	3	1	3	3	2	3
609:	2	1	5	4	9	7	3	6
617:	6	7	7	11	7	12	12	12
625:	14	9	8	11	5	12	15	10
633:	12	11	6	10	13	8	10	23
641:	12	5	17	14	11	10	11	3
649:	5	1	2	2	0	0	0	0
657:	0	0	0	0	0	0	1	0
665:	0	0	0	0	0	0	0	0
673:	0	0	1	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	1	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 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	1	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	1	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB
10/21/15

Sample Description: CP0604S06-07
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 04
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_012
 Chamber Serial Number:
 Detector Serial Number: 12
 Env. Background: System Bkgd 131866
 Reagent Blank: <not performed>

Sample Size: 1.531E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:04 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: 0.2004 +/- 0.0109
 Counting Efficiency: 0.1936 +/- 0.0034 on 10/25/2014 6:44:33 PM
 Chem. Recovery Factor: 1.0351 +/- 0.0592

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	410.98	9.68	1.02	0.00E+000	32.6
U-234	4.735	106.15	19.11	0.85	0.00E+000	8.9
U-235	4.394	8.83	66.70	0.17	0.00E+000	3.0
U-238	4.150	112.83	18.47	0.17	0.00E+000	4.7

T = Tracer Peak used for Effective Efficiency

 NUCLIDE ANALYSIS RESULTS

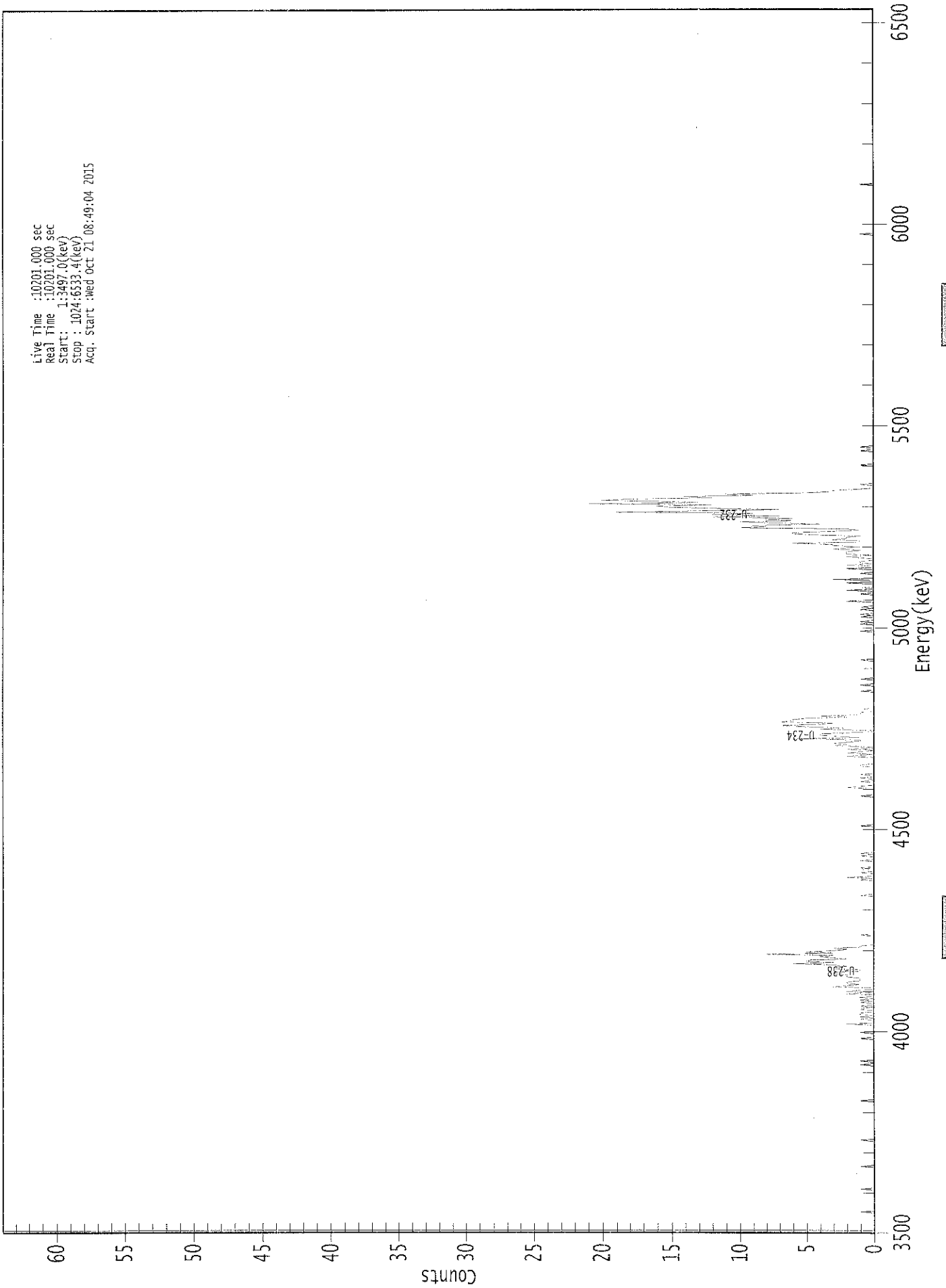
Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	3.56E+000 +/- 3.80E-001	5.45E-002 +/- 5.82E-003
U-234	0.995	4761.50*	9.18E-001 +/- 2.01E-001	5.18E-002 +/- 5.53E-003
U-235	0.999	4385.50*	9.42E-002 +/- 6.37E-002	4.45E-002 +/- 4.76E-003
U-238	0.992	4184.40*	9.72E-001 +/- 2.07E-001	3.59E-002 +/- 3.84E-003

KB
10/21/15

0000131806.CNF

10107

Live Time :10201.000 sec
Real Time :10201.000 sec
Start : 1:3497.0(kev)
Stop : 1024:6533.4(kev)
Acq. Start :Wed Oct 21 08:49:04 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: 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	1	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	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:	1	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	1	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	1
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	1	0	0
145:	1	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	1	0	0	0	0
169:	1	0	0	0	0	0	0	2
177:	0	0	0	1	0	1	0	1
185:	1	0	0	1	1	0	1	0
193:	0	1	0	1	0	1	0	0
201:	2	0	2	1	0	0	3	2
209:	1	2	2	1	1	1	2	2
217:	2	3	3	1	1	3	3	2
225:	3	6	3	5	5	2	3	4
233:	3	8	3	5	3	2	3	1
241:	1	0	0	0	0	0	0	0
249:	0	1	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	1	0	0	0	0	0
289:	0	0	0	0	0	0	0	1
297:	0	2	0	0	0	1	0	0
305:	0	1	0	0	0	0	0	1
313:	0	0	0	1	0	1	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	1	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	0	0	1	0	0

369: 0 0 0 0 2 1 0 0

Sample Title: 04

Channel	1	2	3	4	5	6	7	8	9
377:	0	1	0	0	1	0	0	1	
385:	0	0	0	0	0	0	1	1	
393:	0	0	0	0	0	0	2	1	
401:	0	2	1	0	2	1	0	3	
409:	2	3	2	1	1	6	1	3	
417:	4	4	2	0	0	4	2	5	
425:	7	4	3	7	6	6	5	2	
433:	4	1	1	1	0	0	0	0	
441:	0	0	0	0	0	0	0	0	
449:	0	0	0	0	0	1	0	0	
457:	0	0	1	0	0	0	0	1	
465:	0	0	0	0	0	0	0	0	
473:	0	0	0	0	0	0	0	1	
481:	0	0	0	0	0	0	0	0	
489:	0	0	0	0	0	0	0	0	
497:	0	0	0	0	0	0	0	1	
505:	0	0	0	0	0	1	0	1	
513:	0	0	0	1	0	1	0	0	
521:	0	1	0	1	0	0	0	0	
529:	2	0	0	0	0	0	1	0	
537:	0	2	0	0	0	0	0	2	
545:	0	0	3	0	0	0	0	1	
553:	0	0	0	2	0	0	2	0	
561:	1	1	0	0	1	2	0	2	
569:	2	2	1	3	2	1	3	3	
577:	6	1	1	3	2	2	1	4	
585:	6	6	3	1	2	10	8	9	
593:	4	7	10	6	8	6	12	7	
601:	12	9	19	12	7	12	15	16	
609:	12	21	13	16	20	18	12	14	
617:	9	11	5	3	3	1	0	0	
625:	0	1	0	0	0	0	0	0	
633:	0	0	0	0	0	0	0	0	
641:	0	1	0	0	0	0	0	0	
649:	0	0	0	0	0	1	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	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 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	1	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	1	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

KB
10/21/15

Apex-Alpha™

Sample Description: CP0604S09-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_014
 Chamber Serial Number:
 Detector Serial Number: 14
 Env. Background: System Bkgd 131867
 Reagent Blank: <not performed>

Sample Size: 1.518E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:06 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: 0.1913 +/- 0.0107
 Counting Efficiency: 0.1840 +/- 0.0032 on 10/25/2014 6:45:28 PM
 Chem. Recovery Factor: 1.0397 +/- 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 5.273	391.77	9.95	3.23	0.00E+000	7.3
U-234	4.726	109.43	19.09	3.57	0.00E+000	4.7
U-235	4.360	2.15	161.67	0.85	0.00E+000	2.9
U-238	4.149	125.15	17.59	0.85	0.00E+000	8.1

T = Tracer Peak used for Effective Efficiency

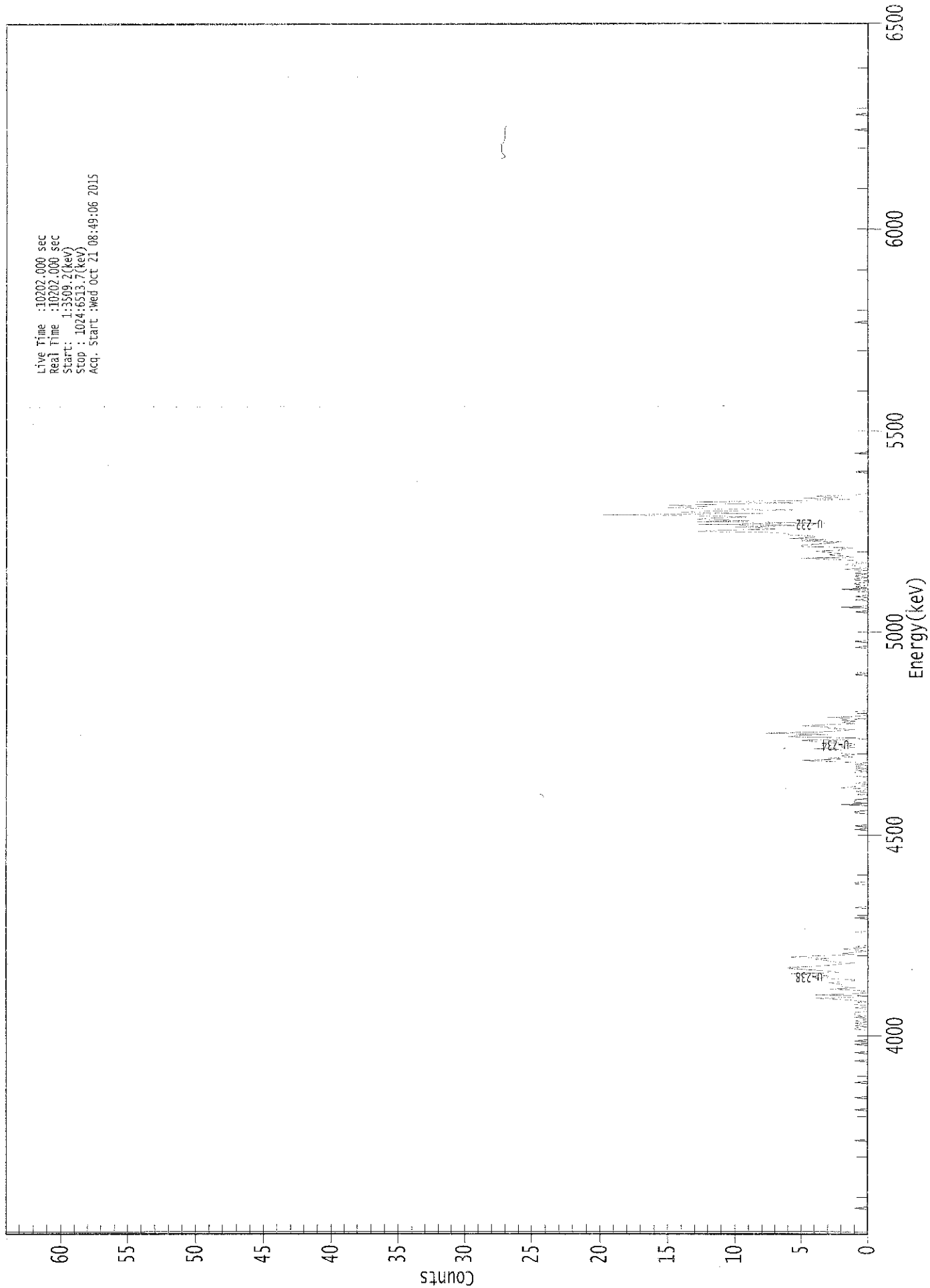
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	3.58E+000 +/- 3.91E-001	8.32E-002 +/- 9.09E-003
U-234	0.991	4761.50*	1.00E+000 +/- 2.20E-001	8.62E-002 +/- 9.42E-003
U-235	0.995	4385.50*	2.42E-002 +/- 3.93E-002	6.75E-002 +/- 7.37E-003
U-238	0.991	4184.40*	1.14E+000 +/- 2.36E-001	5.45E-002 +/- 5.95E-003

AG
10/21/15

0000131807.CNF

Live Time :10202.000 sec
Real Time :10202.000 sec
Start : 1:3509.2(kev)
Stop : 1024:6513.7(kev)
Acq. Start :Wed Oct 21 08:49:06 2015



: 00112

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: 05

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	1	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	1
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	1	0	0	0	0	0	0
113:	0	0	0	1	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	1	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	1	0	0	0	0	0	0
161:	1	0	0	1	0	0	0	0
169:	0	0	0	0	0	1	1	0
177:	1	0	1	0	1	0	0	1
185:	0	1	1	1	0	0	0	1
193:	0	0	1	1	0	1	2	4
201:	1	0	4	1	0	0	1	3
209:	1	2	2	2	3	2	1	1
217:	4	3	3	4	6	2	3	4
225:	6	6	4	3	2	1	3	3
233:	4	3	6	4	1	2	1	0
241:	1	2	0	1	0	0	0	0
249:	0	0	0	0	0	0	0	1
257:	0	0	0	0	0	0	0	0
265:	0	0	0	1	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:	1	1	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	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	1	0
345:	0	1	0	0	0	0	0	0
353:	0	0	0	0	1	1	0	0
361:	0	0	0	2	0	1	1	1

369: 0 0 0 0 0 0 0 1 0

Sample Title: 05

Channel	1	2	3	4	5	6	7	8	9
377:	0	2	1	0	0	1	0	0	
385:	0	0	0	1	1	1	1	1	0
393:	1	0	1	1	0	1	0	3	
401:	5	2	3	1	2	1	2	2	
409:	2	2	4	1	2	1	1	3	
417:	4	5	0	1	6	5	3	8	
425:	3	2	1	3	3	5	3	1	
433:	2	1	2	0	3	1	0	0	
441:	0	1	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	0	0	
473:	1	0	0	0	0	0	0	0	
481:	0	0	0	0	0	0	0	0	
489:	0	0	0	0	0	0	0	1	
497:	0	0	0	0	1	0	0	0	
505:	0	0	0	0	0	0	0	0	
513:	0	0	0	0	0	0	0	0	
521:	0	0	0	0	0	1	0	0	
529:	0	2	0	0	0	0	0	1	
537:	0	0	1	0	0	0	0	0	
545:	2	0	1	0	1	1	0	0	
553:	1	1	0	1	1	0	1	1	
561:	0	2	0	1	1	2	0	1	
569:	1	2	5	1	2	3	2	3	
577:	4	2	2	1	5	5	4	3	
585:	2	5	3	6	4	4	6	6	
593:	7	13	11	7	8	10	4	13	
601:	3	13	9	13	12	9	12	20	
609:	8	14	13	5	12	15	12	15	
617:	11	5	13	5	1	5	2	4	
625:	1	0	0	0	0	0	0	0	
633:	0	0	0	0	0	0	0	0	
641:	0	0	0	1	0	0	0	0	
649:	0	0	0	0	0	0	0	0	
657:	0	0	0	1	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	1	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	1	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:	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
10/21/15

Sample Description: CP0604S11-12
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 06
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_015
 Chamber Serial Number:
 Detector Serial Number: 15
 Env. Background: System Bkgd 131868
 Reagent Blank: <not performed>

Sample Size: 1.568E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:07 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: 0.2536 +/- 0.0126
 Counting Efficiency: 0.2348 +/- 0.0040 on 5/1/2015 2:28:00 PM
 Chem. Recovery Factor: 1.0798 +/- 0.0565

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	520.66	8.59	0.34	0.00E+000	34.6
U-234	4.735	175.15	14.85	0.85	0.00E+000	11.6
U-235	4.371	15.00	52.27	0.00	0.00E+000	4.5
U-238	4.152	154.83	15.76	0.17	0.00E+000	9.2

T = Tracer Peak used for Effective Efficiency

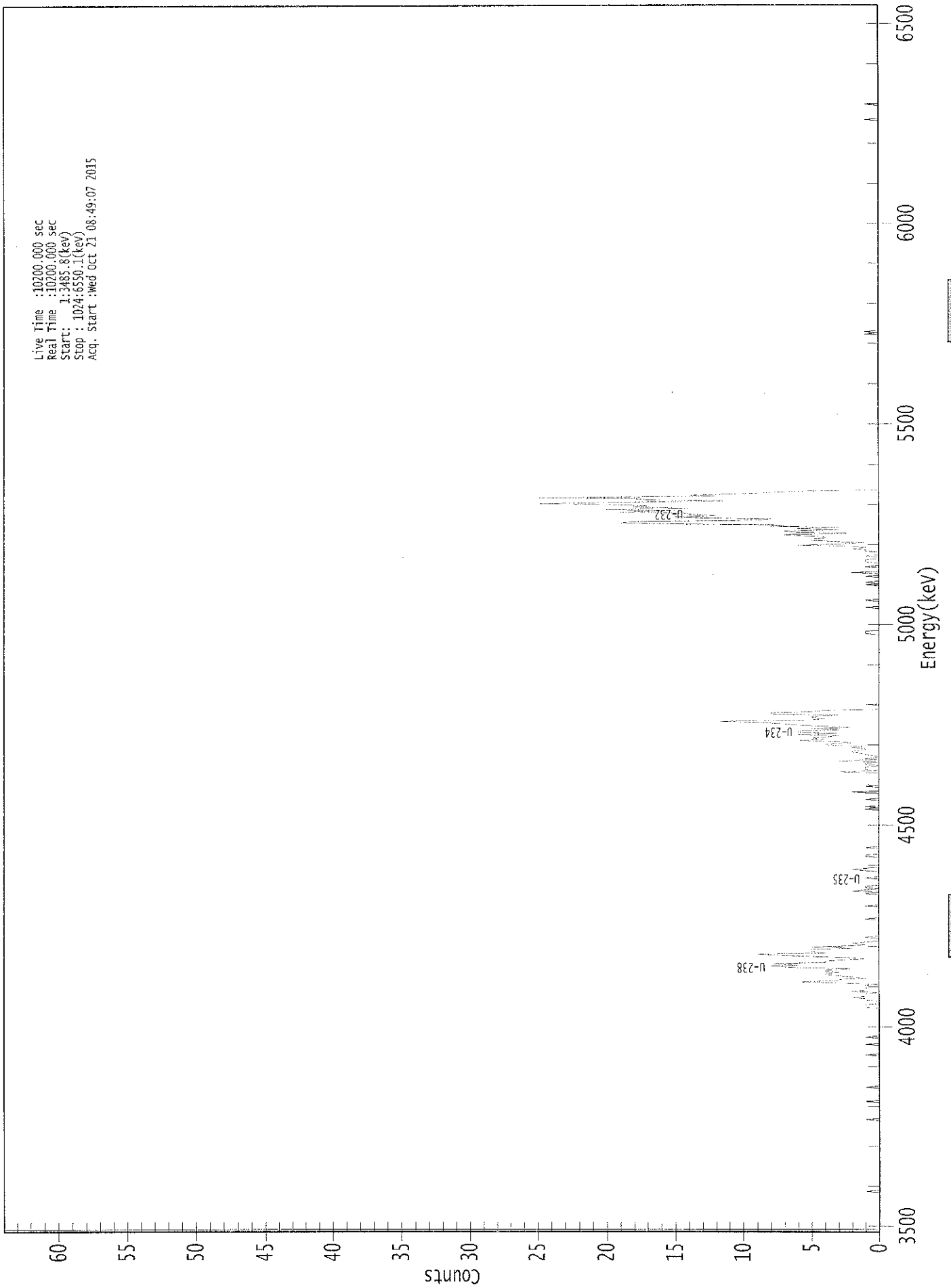
 ----- NUCLIDE ANALYSIS RESULTS -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.48E+000 +/- 3.38E-001	3.19E-002 +/- 3.10E-003
U-234	0.995	4761.50*	1.17E+000 +/- 2.08E-001	4.00E-002 +/- 3.88E-003
U-235	0.998	4385.50*	1.24E-001 +/- 6.57E-002	4.94E-002 +/- 4.80E-003
U-238	0.993	4184.40*	1.03E+000 +/- 1.91E-001	2.78E-002 +/- 2.69E-003

AG
10/21/15

0000131808.CNF

Live Time :10200.000 sec
Real Time :10200.000 sec
Start: 1:3485.8(kev)
Stop : 1024:6550.1(kev)
Acq. Start :wed Oct 21 08:49:07 2015



ROI Type: 3

ROI Type: 1

1100

 ***** 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:	10200	10200	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	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	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	1	0
97:	0	0	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	1	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	1	0	0	0
153:	0	0	0	0	0	1	0	0
161:	0	0	0	1	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	1	1	1	0
193:	0	0	1	1	2	1	1	1
201:	0	2	1	1	1	0	1	0
209:	3	6	3	3	1	2	3	4
217:	4	3	4	4	2	6	8	6
225:	8	4	4	3	1	2	5	7
233:	9	4	5	5	5	2	5	2
241:	1	2	1	0	0	0	1	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	1	0	0
265:	0	0	0	0	0	0	0	0
273:	1	0	0	0	0	0	0	0
281:	0	0	1	0	2	1	0	1
289:	1	0	0	0	0	0	0	1
297:	0	0	0	0	0	1	2	1
305:	0	0	0	0	0	0	0	0
313:	0	1	1	0	0	0	0	0
321:	1	0	0	0	0	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	0	0	0	0	0
353:	1	0	1	0	0	0	0	0
361:	1	0	0	0	0	0	2	0

369: 0 0 0 1 0 0 0 0

Sample Title: 06

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	0	3
385:	0	1	1	1	0	1	1	0
393:	3	0	1	0	0	1	1	2
401:	2	1	1	2	1	4	4	2
409:	3	6	4	5	4	3	6	3
417:	6	6	3	5	2	4	6	7
425:	9	12	5	4	5	5	3	8
433:	8	5	4	0	0	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	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	0	0	0
497:	0	0	1	1	1	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	1	0	0	0	0	0	1	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	1	0	1	0	0
545:	0	0	1	0	0	2	0	0
553:	0	0	1	0	0	0	1	1
561:	1	0	0	1	0	0	0	1
569:	1	2	1	2	6	3	1	3
577:	5	5	4	4	6	7	2	6
585:	7	3	6	3	8	7	15	19
593:	18	9	8	13	15	12	14	14
601:	19	15	20	14	18	17	19	25
609:	19	11	17	18	25	12	14	10
617:	8	6	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	1	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	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: 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	1	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	1	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

UB
10/21/15

Apex-Alpha™

Sample Description: CP0604S14-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 07
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_033
 Chamber Serial Number: 04026479A
 Detector Serial Number: 91132
 Env. Background: System Bkgd 131869
 Reagent Blank: <not performed>

Sample Size: 1.528E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:08 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: 0.1751 +/- 0.0101
 Counting Efficiency: 0.1805 +/- 0.0032 on 10/25/2014 2:26:39 PM
 Chem. Recovery Factor: 0.9702 +/- 0.0585

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 5.291	358.49	10.36	0.51	0.00E+000	7.0
U-234	4.746	121.32	17.85	0.68	0.00E+000	10.0
U-235	4.380	7.83	70.93	0.17	0.00E+000	3.0
U-238	4.178	118.83	18.00	0.17	0.00E+000	18.3

T = Tracer Peak used for Effective Efficiency

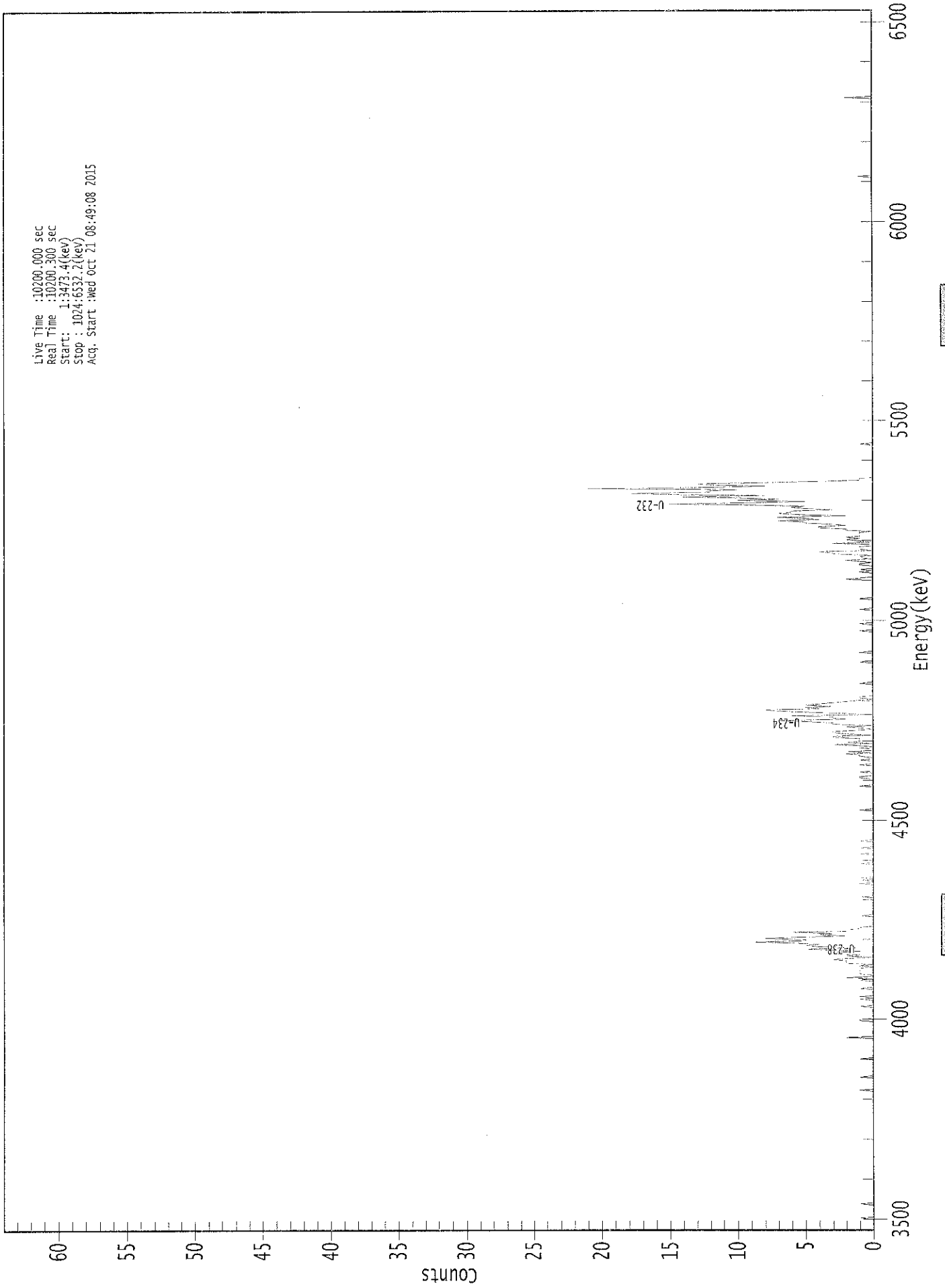
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	3.56E+000 +/- 4.02E-001	5.21E-002 +/- 5.89E-003
U-234	0.998	4761.50*	1.20E+000 +/- 2.54E-001	5.60E-002 +/- 6.33E-003
U-235	1.000	4385.50*	9.59E-002 +/- 6.88E-002	5.11E-002 +/- 5.77E-003
U-238	1.000	4184.40*	1.17E+000 +/- 2.49E-001	4.12E-002 +/- 4.66E-003

AG
10/21/15

0000131817.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:34:33.4(kev)
Stop : 1024:6532.2(kev)
Acq. Start :Wed Oct 21 08:49:08 2015



00122

 ***** 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	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	1	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	0
113:	0	0	0	0	0	1	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	1	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	1
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	2	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	1
177:	1	0	0	0	0	0	0	0	0
185:	0	0	0	1	0	0	0	0	0
193:	0	1	0	1	0	0	0	0	0
201:	0	0	1	0	0	0	0	0	0
209:	0	1	0	2	0	0	1	1	1
217:	1	1	1	1	0	1	0	2	2
225:	2	2	3	2	0	2	1	3	3
233:	3	1	3	5	1	4	5	4	4
241:	6	9	5	5	8	6	2	4	4
249:	3	6	2	2	1	1	0	0	0
257:	0	0	0	0	0	0	0	0	1
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	1
281:	0	0	0	0	0	0	0	0	0
289:	0	0	1	0	0	1	0	1	1
297:	0	0	0	0	0	0	0	0	0
305:	0	0	0	1	0	0	0	0	0
313:	0	0	0	1	0	0	0	0	0
321:	1	0	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:	1	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0	0

369: 0 0 0 0 1 0 0 0

Sample Title: 07

Channel	1	2	3	4	5	6	7	8
377:	0	0	0	1	1	0	0	0
385:	1	0	0	0	0	0	1	0
393:	0	0	1	0	0	1	1	2
401:	0	2	0	0	1	0	1	3
409:	0	2	1	1	1	3	3	0
417:	2	3	3	1	0	1	2	0
425:	3	3	5	7	2	3	3	6
433:	0	2	5	7	8	4	5	3
441:	5	4	3	2	1	0	1	1
449:	0	0	0	0	0	0	0	0
457:	0	0	1	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	1	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	1	0
505:	0	0	0	0	1	0	0	0
513:	0	0	0	0	0	0	0	0
521:	1	0	0	0	0	0	0	0
529:	0	1	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	2	1	0	0	0	0	1
553:	0	1	0	0	0	1	1	0
561:	1	2	0	1	1	0	3	3
569:	4	0	1	1	1	0	0	3
577:	0	1	2	1	2	1	1	1
585:	1	0	2	2	4	4	2	3
593:	5	5	7	4	5	7	2	5
601:	7	6	6	3	5	6	5	9
609:	15	9	5	10	7	10	14	8
617:	15	18	12	12	10	21	12	8
625:	12	13	8	3	1	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	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	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: 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	1	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	2	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



ICB
10/21/15

Sample Description: CP0604S16-17
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 08
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_034
 Chamber Serial Number: 04026479B
 Detector Serial Number: 91136
 Env. Background: System Bkgd 131870
 Reagent Blank: <not performed>

Sample Size: 1.524E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:10 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.661 mL
 Effective Efficiency: 0.2023 +/- 0.0109
 Counting Efficiency: 0.1789 +/- 0.0031 on 10/25/2014 2:30:05 PM
 Chem. Recovery Factor: 1.1310 +/- 0.0641

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	420.83	9.56	0.17	0.00E+000	20.4
U-234	4.733	119.32	18.00	0.68	0.00E+000	9.3
U-235	4.359	8.32	71.13	0.68	0.00E+000	3.0
U-238	4.152	106.00	19.13	0.00	0.00E+000	4.0

T = Tracer Peak used for Effective Efficiency

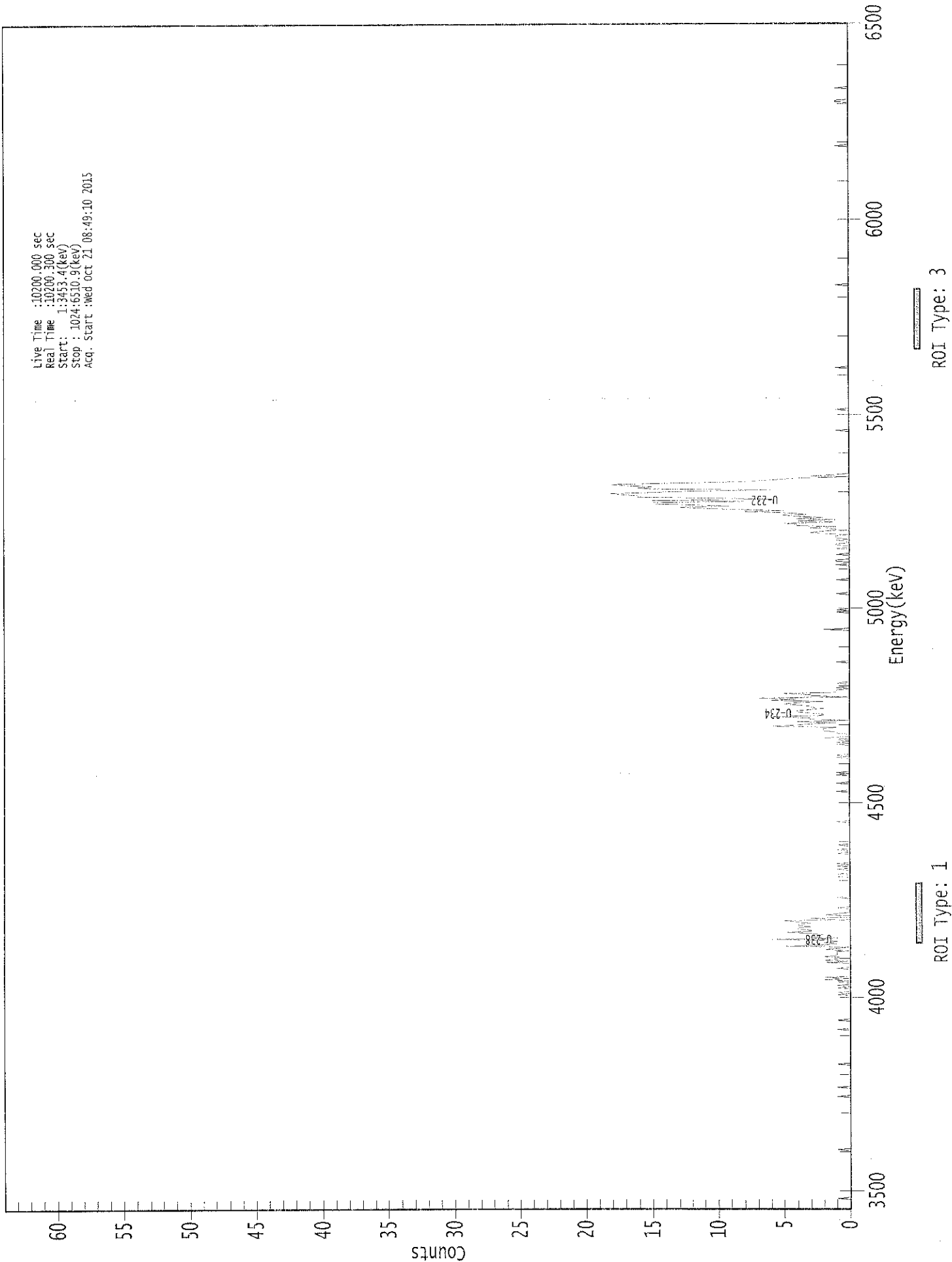
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	3.63E+000 +/- 3.83E-001	3.60E-002 +/- 3.80E-003
U-234	0.994	4761.50*	1.03E+000 +/- 2.15E-001	4.86E-002 +/- 5.13E-003
U-235	0.995	4385.50*	8.84E-002 +/- 6.36E-002	5.99E-002 +/- 6.33E-003
U-238	0.993	4184.40*	9.09E-001 +/- 1.99E-001	5.14E-002 +/- 5.43E-003

AG
10/21/15

0000131818.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3453.4(keV)
Stop : 1024:6510.9(keV)
Acq. Start : Wed Oct 21 08:49:10 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: 08

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:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	1	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	1	0	0	0	0	0	0
105:	0	1	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	1	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	1	0	0	0	0
161:	0	0	0	1	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	1	0	1	0	0	0	1
193:	0	1	0	0	1	0	2	0
201:	2	0	0	0	0	0	0	0
209:	1	0	0	0	0	2	0	2
217:	1	0	2	1	1	1	1	0
225:	2	1	0	5	2	1	2	1
233:	2	6	1	3	3	2	3	5
241:	3	3	4	4	3	4	4	3
249:	4	5	1	3	0	0	2	1
257:	0	0	0	0	1	0	0	0
265:	0	0	0	0	0	1	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	1
289:	0	1	0	0	0	1	0	0
297:	1	0	1	0	0	0	0	0
305:	0	0	0	1	0	0	1	0
313:	0	0	1	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	1	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:	1	0	0	0	0	0	0	1

369: 0 0 0 0 0 0 0 1 0

Sample Title: 08

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	1	0	0	0	0	0	0	0
385:	0	0	0	0	0	1	0	1
393:	0	0	0	0	0	0	0	0
401:	1	0	1	0	1	0	2	0
409:	0	0	1	1	2	2	2	1
417:	6	4	3	1	4	0	3	3
425:	6	2	2	3	4	4	3	2
433:	3	3	4	5	4	2	6	4
441:	7	0	3	3	5	1	1	1
449:	0	1	0	0	0	1	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	1
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	2	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	1	0	1	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	0	0	1	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	1	0	0	1	1
561:	0	0	0	0	1	0	0	0
569:	0	1	0	0	1	1	0	0
577:	1	0	1	1	1	0	2	3
585:	2	1	1	3	1	4	4	5
593:	1	4	1	4	2	4	5	3
601:	5	8	5	9	11	13	9	12
609:	15	15	8	15	5	11	16	16
617:	17	18	15	12	6	15	16	15
625:	17	18	14	8	7	5	4	0
633:	3	1	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	1
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	1	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	1	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: C8

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	1	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	1	1	0	0	0	0	0
961:	0	0	0	0	0	0	1	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

10/21/15

Apex-Alpha™

Sample Description: CP0604S19-20
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 09
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_035
 Chamber Serial Number: 04026477A
 Detector Serial Number: 58771
 Env. Background: System Bkgd 131871
 Reagent Blank: <not performed>

Sample Size: 1.508E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:11 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: 0.1815 +/- 0.0103
 Counting Efficiency: 0.1647 +/- 0.0029 on 10/25/2014 2:34:10 PM
 Chem. Recovery Factor: 1.1015 +/- 0.0655

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 5.302	371.49	10.18	0.51	0.00E+000	22.8
U-234	4.757	126.83	17.42	0.17	0.00E+000	4.3
U-235	4.377	3.49	113.53	0.51	0.00E+000	3.0
U-238	4.177	101.83	19.44	0.17	0.00E+000	14.6

T = Tracer Peak used for Effective Efficiency

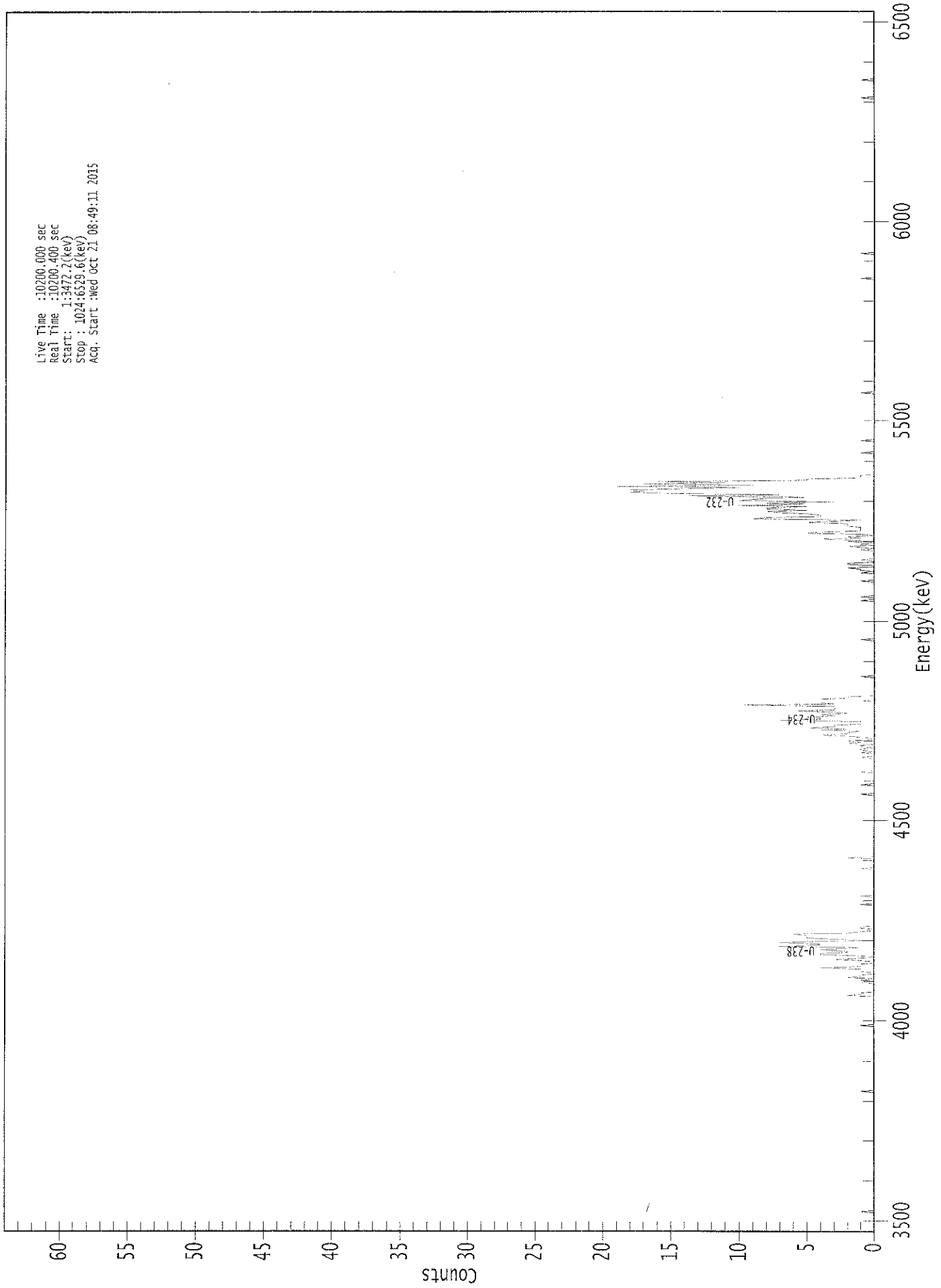
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	1.000	5302.50*	3.60E+000 +/- 4.01E-001	5.09E-002 +/- 5.67E-003
U-234	1.000	4761.50*	1.23E+000 +/- 2.54E-001	4.05E-002 +/- 4.51E-003
U-235	0.999	4385.50*	4.18E-002 +/- 4.76E-002	6.28E-002 +/- 6.99E-003
U-238	1.000	4184.40*	9.83E-001 +/- 2.20E-001	4.03E-002 +/- 4.49E-003

AG
 10/21/15

0000131810.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3472.2(keV)
Stop : 1024:6529.6(keV)
Acq. Start :Wed Oct 21 08:49:11 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:	0	0	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	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	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	1	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	0	0	0	0	1	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	2	1
201:	1	0	0	0	0	0	0	0
209:	0	1	0	1	0	2	1	1
217:	0	0	1	1	1	4	1	1
225:	1	0	0	1	3	1	0	1
233:	4	4	2	2	4	3	1	7
241:	4	4	7	5	0	3	5	5
249:	5	6	2	1	0	0	1	1
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	1	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	0	0	0	0	0
313:	0	2	0	0	0	0	0	0
321:	0	0	0	0	0	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	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	1	0

369: 0 0 0 0 0 0 0 1 0

Sample Title: 09

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	0	0
385:	0	1	0	0	0	0	0	0
393:	0	0	0	0	0	1	0	0
401:	0	1	0	1	1	0	1	1
409:	0	2	1	2	0	0	1	2
417:	4	2	2	1	4	2	5	3
425:	3	1	1	1	7	4	4	5
433:	3	4	2	3	6	3	3	3
441:	3	10	3	4	4	4	4	2
449:	2	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	1	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	0	0	0
497:	1	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	1	0	0	1	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	1	0	0	0	0	0	0
553:	1	0	1	1	2	0	0	2
561:	2	0	0	1	0	0	0	0
569:	0	0	0	1	0	1	2	0
577:	1	0	2	1	4	1	2	0
585:	1	5	4	1	1	1	1	2
593:	2	2	5	3	1	9	8	4
601:	4	5	7	8	5	8	8	5
609:	10	5	8	3	10	9	8	5
617:	14	7	15	18	17	18	14	10
625:	19	9	17	11	16	5	5	1
633:	1	1	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	1	0	0	0
657:	0	0	0	0	0	0	1	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:	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	1	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	1	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	1	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	1	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
10/21/15

Sample Description: CP0604S21-22
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 10
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_036
 Chamber Serial Number: 04026477B
 Detector Serial Number: 84167
 Env. Background: System Bkgd 131872
 Reagent Blank: <not performed>

Sample Size: 1.533E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:13 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: 0.1715 +/- 0.0100
 Counting Efficiency: 0.1806 +/- 0.0032 on 10/25/2014 2:38:17 PM
 Chem. Recovery Factor: 0.9499 +/- 0.0577

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 5.285	352.15	10.46	0.85	0.00E+000	31.0
U-234	4.731	106.49	19.05	0.51	0.00E+000	7.1
U-235	4.373	5.83	82.55	0.17	0.00E+000	3.0
U-238	4.153	96.66	19.98	0.34	0.00E+000	10.4

T = Tracer Peak used for Effective Efficiency

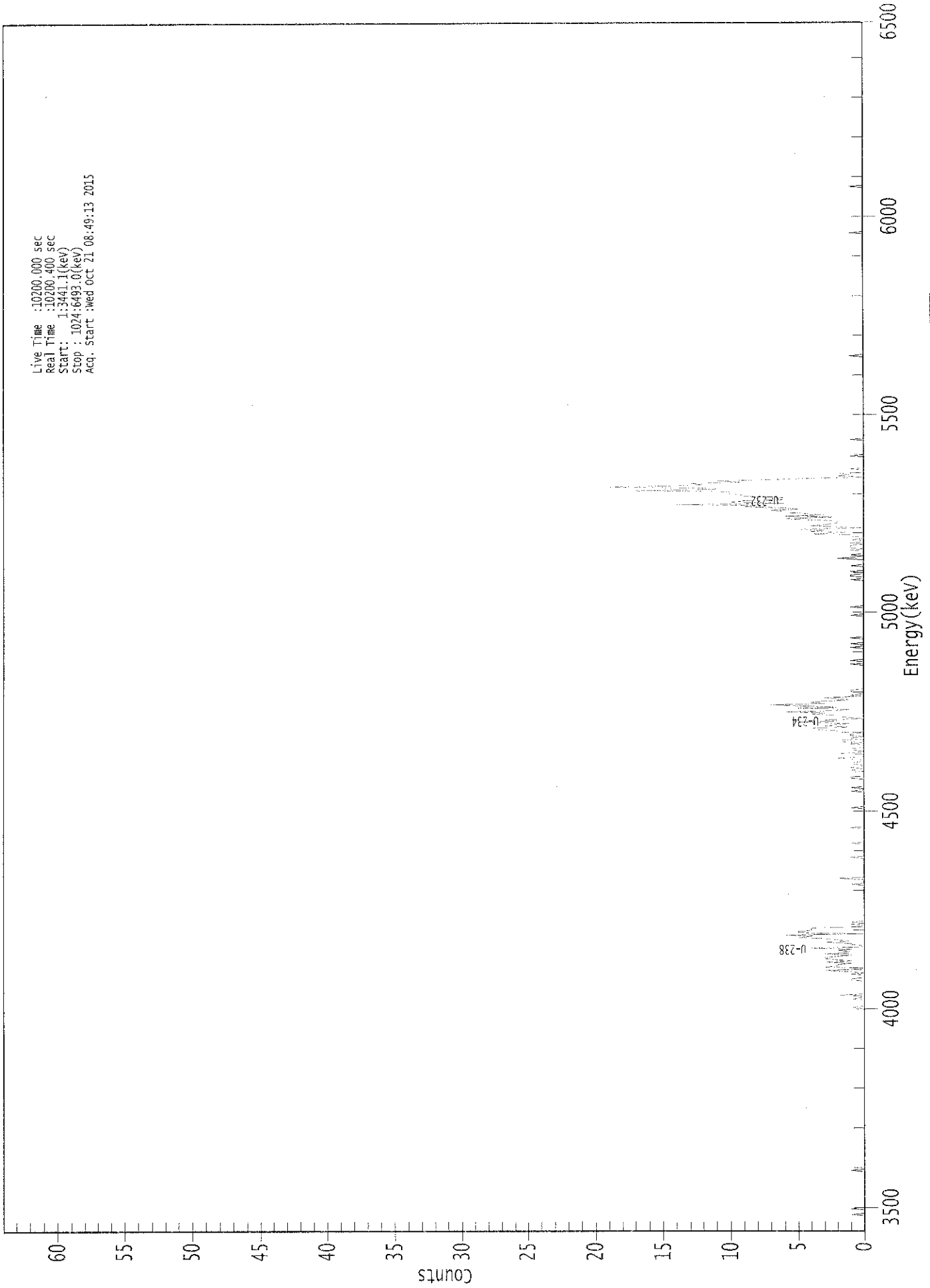
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.998	5302.50*	3.56E+000 +/- 4.05E-001	6.05E-002 +/- 6.89E-003
U-234	0.993	4761.50*	1.08E+000 +/- 2.39E-001	5.30E-002 +/- 6.03E-003
U-235	0.999	4385.50*	7.26E-002 +/- 6.05E-002	5.20E-002 +/- 5.92E-003
U-238	0.993	4184.40*	9.72E-001 +/- 2.23E-001	4.81E-002 +/- 5.47E-003

AG
10/21/15

0000131809.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:34:11.1(keV)
Stop : 1024:6493.0(keV)
Acq. Start : Wed Oct 21 08:49:13 2015



: 00137

 ***** 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	1	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	1	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	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	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	1	0	0
193:	0	0	0	0	1	0	0	2
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	1	1	0	0
217:	0	1	0	1	3	1	0	3
225:	2	2	1	3	1	2	3	3
233:	2	1	3	1	1	2	1	4
241:	0	0	1	1	3	1	2	3
249:	5	4	6	0	5	5	4	4
257:	4	0	0	1	0	1	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	1	0	0
297:	0	0	2	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	1	0	0	0
321:	0	0	0	0	0	0	0	0
329:	1	0	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	1	0
361:	0	0	0	0	0	0	0	0

369: 0 0 0 0 1 0 0 1

Sample Title: 10

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	0	0	0	0	0	0	1
385:	1	0	0	0	0	0	0	1	0
393:	1	0	0	1	1	0	0	0	1
401:	2	0	0	0	2	0	0	0	1
409:	1	0	0	0	1	0	2	2	2
417:	0	1	0	1	1	0	2	2	2
425:	4	4	1	3	2	1	5	2	2
433:	3	0	1	2	2	4	3	6	6
441:	2	1	5	2	5	7	3	4	4
449:	3	1	2	3	0	1	0	0	0
457:	1	1	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	1
481:	0	0	1	0	0	0	0	0	0
489:	0	0	0	0	0	1	0	0	0
497:	1	0	0	0	0	1	0	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	1
529:	0	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	1	0	0
553:	0	1	1	0	0	1	0	0	0
561:	0	0	1	0	0	0	0	0	0
569:	2	1	0	1	0	0	0	0	1
577:	0	1	1	1	0	1	0	0	0
585:	1	0	0	1	1	4	1	4	4
593:	3	5	0	2	4	3	2	2	2
601:	2	5	6	2	6	3	4	6	6
609:	6	7	5	6	9	8	14	6	6
617:	10	9	6	7	6	9	9	10	10
625:	10	10	17	11	11	19	14	12	12
633:	13	9	11	7	4	0	2	1	1
641:	2	0	0	0	1	0	0	0	0
649:	0	0	0	0	0	0	0	1	1
657:	0	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	1	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	1	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	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 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	1	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	1	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

KB
10/21/15

Apex-Alpha™

Sample Description: CP0604S24-25
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 11
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_037
 Chamber Serial Number: 04026478A
 Detector Serial Number: 91133
 Env. Background: System Bkgd 131873
 Reagent Blank: <not performed>

Sample Size: 1.511E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:14 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.653 mL
 Effective Efficiency: 0.2049 +/- 0.0111
 Counting Efficiency: 0.1709 +/- 0.0030 on 10/25/2014 2:46:09 PM
 Chem. Recovery Factor: 1.1993 +/- 0.0681

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 5.279	421.00	9.56	0.00	0.00E+000	20.8
U-234	4.725	98.83	19.74	0.17	0.00E+000	12.0
U-235	4.395	7.32	76.28	0.68	0.00E+000	3.0
U-238	4.153	103.83	19.25	0.17	0.00E+000	10.5

T = Tracer Peak used for Effective Efficiency

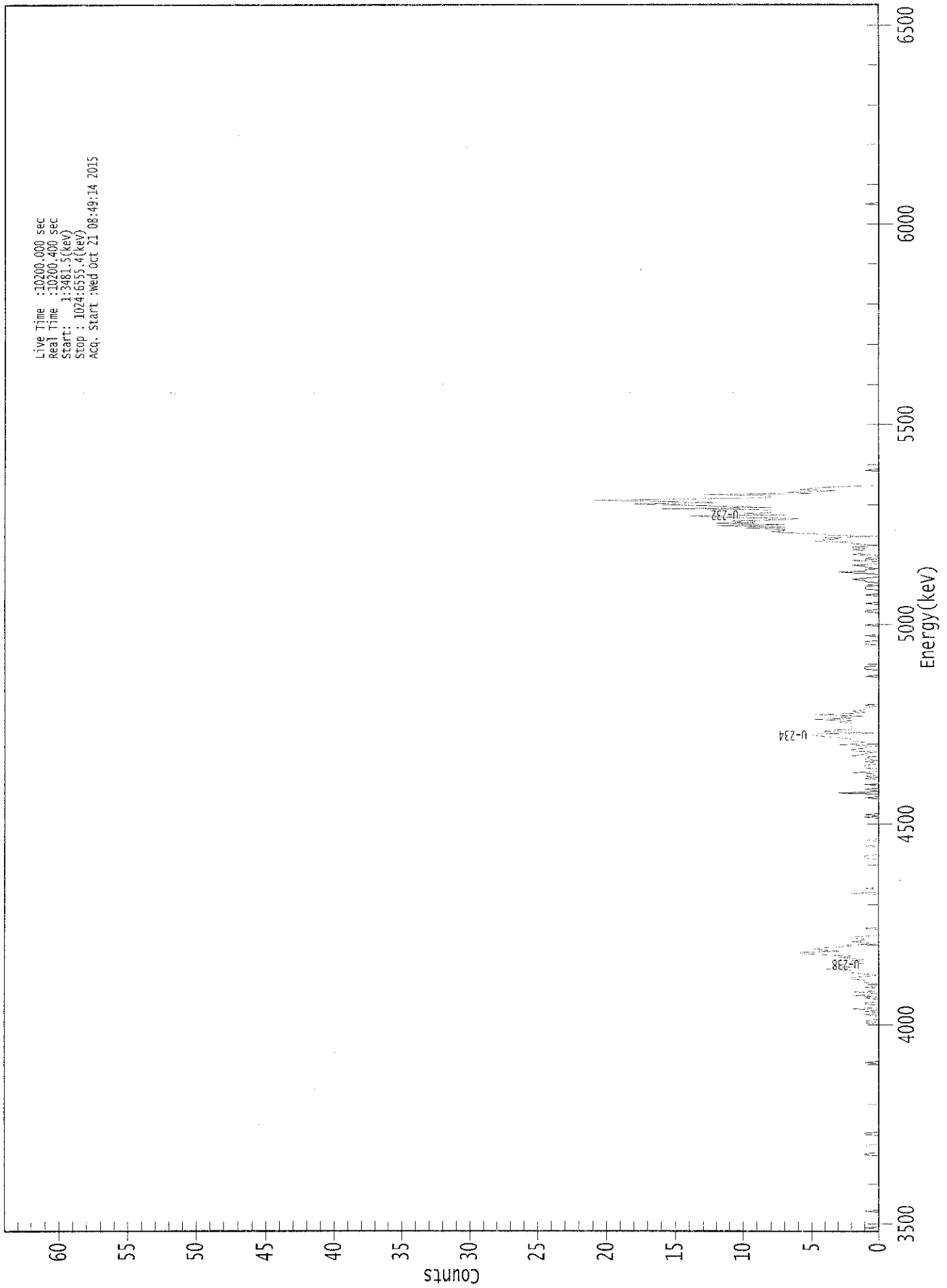
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.61E+000 +/- 3.82E-001	5.14E-002 +/- 5.44E-003
U-234	0.991	4761.50*	8.47E-001 +/- 1.90E-001	3.58E-002 +/- 3.78E-003
U-235	0.999	4385.50*	7.74E-002 +/- 5.96E-002	5.97E-002 +/- 6.31E-003
U-238	0.993	4184.40*	8.87E-001 +/- 1.95E-001	3.56E-002 +/- 3.77E-003

AG
 10/21/15

0000131811.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3481.5(kev)
Stop : 1024:6555.4(kev)
Acq. Start :Wed Oct 21 08:49:14 2015



24100 :

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: 11

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	1	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:	1	1	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	1	1	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	1	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	0	0	0	0	0	1	0
177:	1	0	0	0	0	1	0	0
185:	1	0	2	0	0	0	1	1
193:	0	0	0	1	0	2	0	0
201:	2	0	0	0	1	0	0	0
209:	1	1	1	2	2	1	0	1
217:	2	2	2	4	3	2	3	3
225:	1	2	2	1	2	3	2	4
233:	6	6	3	4	5	4	2	3
241:	0	1	2	1	1	2	2	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	2	0	0	0	1	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	1
313:	1	1	0	0	0	0	0	0
321:	0	1	0	0	0	0	1	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	1	0	1	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	1	0	0	0	3	0	0

369: 1 0 0 0 1 0 0 0

Sample Title: 11

Channel	1	2	3	4	5	6	7	8	9
377:	0	1	0	1	0	0	2	0	
385:	0	0	1	1	1	0	0	1	
393:	0	1	1	0	2	1	1	0	
401:	2	2	1	1	0	3	1	1	
409:	2	2	2	3	4	5	5	0	
417:	4	4	2	2	2	2	2	2	
425:	3	2	5	2	3	1	5	2	
433:	1	2	1	1	1	0	1	0	
441:	0	0	0	0	0	0	0	0	
449:	0	0	0	0	0	0	0	0	
457:	0	0	0	0	0	0	1	0	
465:	0	0	0	0	1	1	1	0	
473:	0	0	0	0	0	0	0	0	
481:	0	0	0	0	0	0	0	0	
489:	0	1	1	1	0	0	0	0	
497:	1	0	0	0	0	0	0	0	
505:	0	1	0	0	0	0	0	0	
513:	0	0	0	0	1	1	0	0	
521:	0	0	0	1	0	0	0	0	
529:	0	0	1	0	0	0	0	1	
537:	1	1	0	0	0	1	1	2	
545:	1	0	0	0	1	3	1	1	
553:	0	1	1	2	0	0	0	2	
561:	0	1	0	0	2	1	1	1	
569:	2	1	2	0	1	2	2	5	
577:	4	3	4	0	4	4	7	8	
585:	7	7	10	7	12	7	12	9	
593:	11	7	6	11	14	7	10	8	
601:	8	8	16	8	11	15	18	12	
609:	16	21	15	9	8	8	13	5	
617:	7	3	6	5	4	1	0	0	
625:	0	0	0	0	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	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 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	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:	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



KB
10/21/15

Sample Description: CP0604S26-27
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 12
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_038
 Chamber Serial Number: 04026478B
 Detector Serial Number: 91134
 Env. Background: System Bkgd 131874
 Reagent Blank: <not performed>

Sample Size: 1.518E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:16 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: 0.1615 +/- 0.0029 on 10/25/2014 2:50:18 PM
 Chem. Recovery Factor: 1.1053 +/- 0.0661

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 5.294	365.83	10.25	0.17	0.00E+000	20.1
U-234	4.747	92.83	20.36	0.17	0.00E+000	3.3
U-235	4.376	8.00	73.50	0.00	0.00E+000	3.0
U-238	4.168	97.66	19.87	0.34	0.00E+000	6.7

T = Tracer Peak used for Effective Efficiency

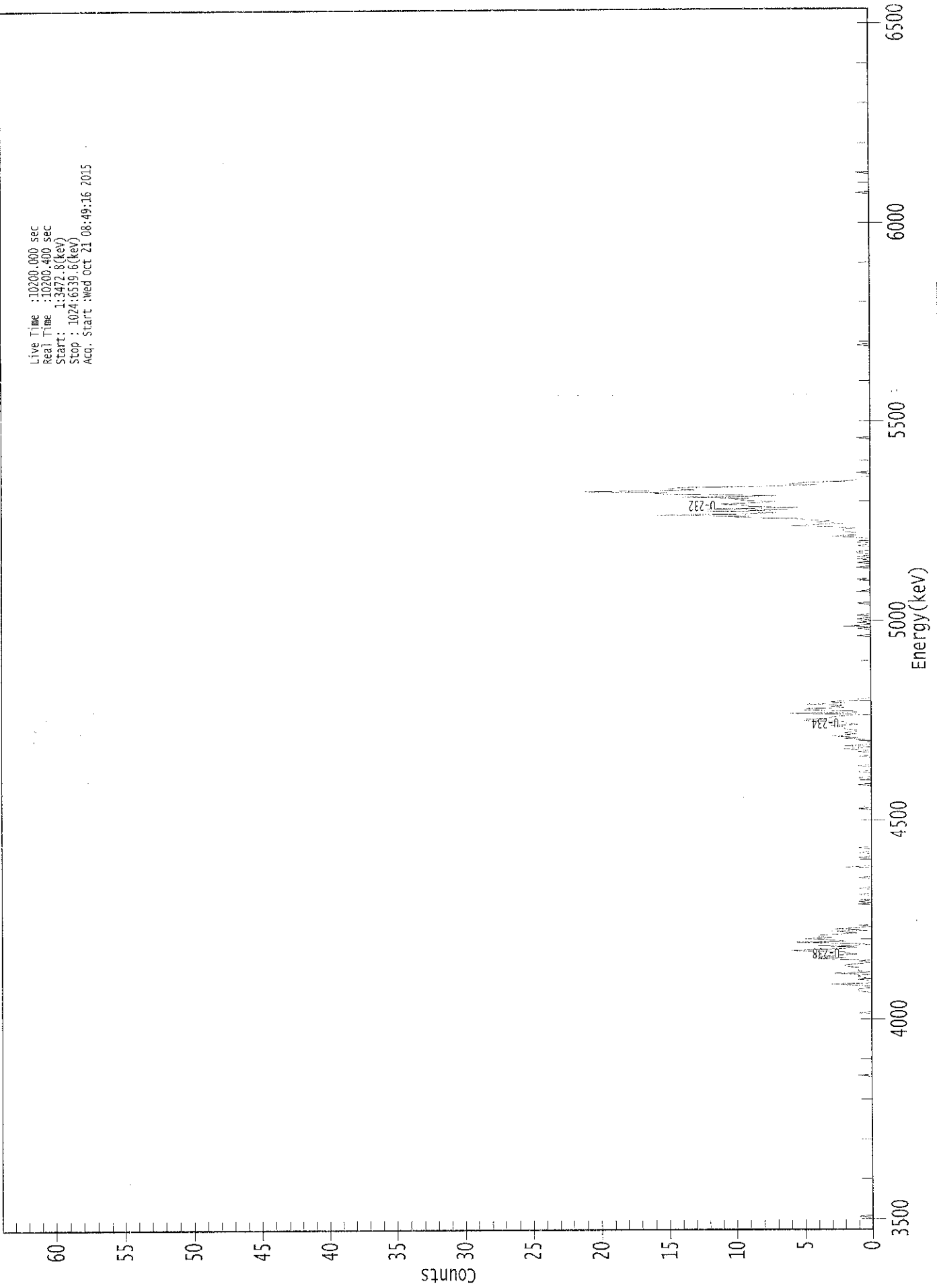
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	3.59E+000 +/- 4.02E-001	4.09E-002 +/- 4.58E-003
U-234	0.999	4761.50*	9.10E-001 +/- 2.11E-001	4.09E-002 +/- 4.58E-003
U-235	0.999	4385.50*	9.67E-002 +/- 7.19E-002	7.25E-002 +/- 8.12E-003
U-238	0.998	4184.40*	9.53E-001 +/- 2.17E-001	4.66E-002 +/- 5.22E-003

AG
10/21/15

0000131812.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:3472.8(keV)
Stop : 1024:6539.6(keV)
Acq. Start : Wed Oct 21 08:49:16 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	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	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	1	0	0	0	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	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	0	1	0	0	0
185:	0	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0	1
201:	1	1	0	0	1	3	0	0	0
209:	0	1	0	1	1	0	3	0	0
217:	1	1	1	1	2	2	1	0	0
225:	1	0	4	2	4	3	1	2	2
233:	2	6	4	2	1	4	0	1	1
241:	6	2	3	5	3	4	4	2	2
249:	1	3	0	3	1	0	1	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	1	0	1	0	0	0	0	0	0
281:	1	0	0	0	0	1	0	0	0
289:	0	0	0	0	0	0	1	0	0
297:	0	0	0	0	0	0	0	2	2
305:	0	0	0	0	0	0	0	1	1
313:	0	0	0	1	0	0	0	1	1
321:	0	0	0	0	0	0	0	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:	1	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0	0

369: 0 0 0 0 1 0 0 0

Sample Title: 12

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	1	0	0	0	0	0	1
385:	0	0	0	0	1	0	0	0	0
393:	0	0	0	0	1	0	0	0	0
401:	1	0	2	1	0	2	0	0	0
409:	0	1	0	2	1	3	2	1	1
417:	2	1	1	2	2	2	3	1	1
425:	2	2	5	5	3	3	2	0	0
433:	6	1	1	5	5	2	3	2	2
441:	5	2	3	1	1	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	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0	0
497:	0	1	0	0	0	0	0	0	1
505:	0	2	0	0	1	0	0	0	1
513:	0	0	1	0	0	0	0	0	0
521:	0	0	0	0	1	0	0	0	0
529:	0	0	0	0	0	0	1	0	0
537:	0	0	0	0	0	0	0	0	0
545:	1	0	0	0	0	0	0	0	0
553:	0	0	1	0	0	0	1	0	0
561:	0	1	0	1	0	0	1	1	1
569:	0	0	0	0	1	0	0	0	1
577:	1	0	0	1	3	1	1	1	1
585:	2	2	2	1	3	6	4	2	2
593:	4	3	5	5	10	9	16	9	9
601:	7	12	6	12	5	9	9	11	11
609:	9	7	9	10	9	14	7	11	11
617:	16	15	21	13	15	14	8	4	4
625:	6	5	2	1	1	1	0	0	0
633:	0	1	0	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	1	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	1	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	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 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	1	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	1	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
10/21/15

Sample Description: CP0604S28-29
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 13
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_039
 Chamber Serial Number: 06027396A
 Detector Serial Number: 83109
 Env. Background: System Bkgd 131875
 Reagent Blank: <not performed>

Sample Size: 1.539E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:18 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.653 mL
 Effective Efficiency: 0.1951 +/- 0.0108
 Counting Efficiency: 0.1934 +/- 0.0034 on 10/25/2014 2:53:34 PM
 Chem. Recovery Factor: 1.0086 +/- 0.0583

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	5.291	400.79	9.82	2.21	0.00E+000	17.0
U-234	4.741	98.13	20.01	1.87	0.00E+000	10.5
U-235	4.379	5.30	99.84	1.70	0.00E+000	3.0
U-238	4.161	109.30	18.92	1.70	0.00E+000	3.6

T = Tracer Peak used for Effective Efficiency

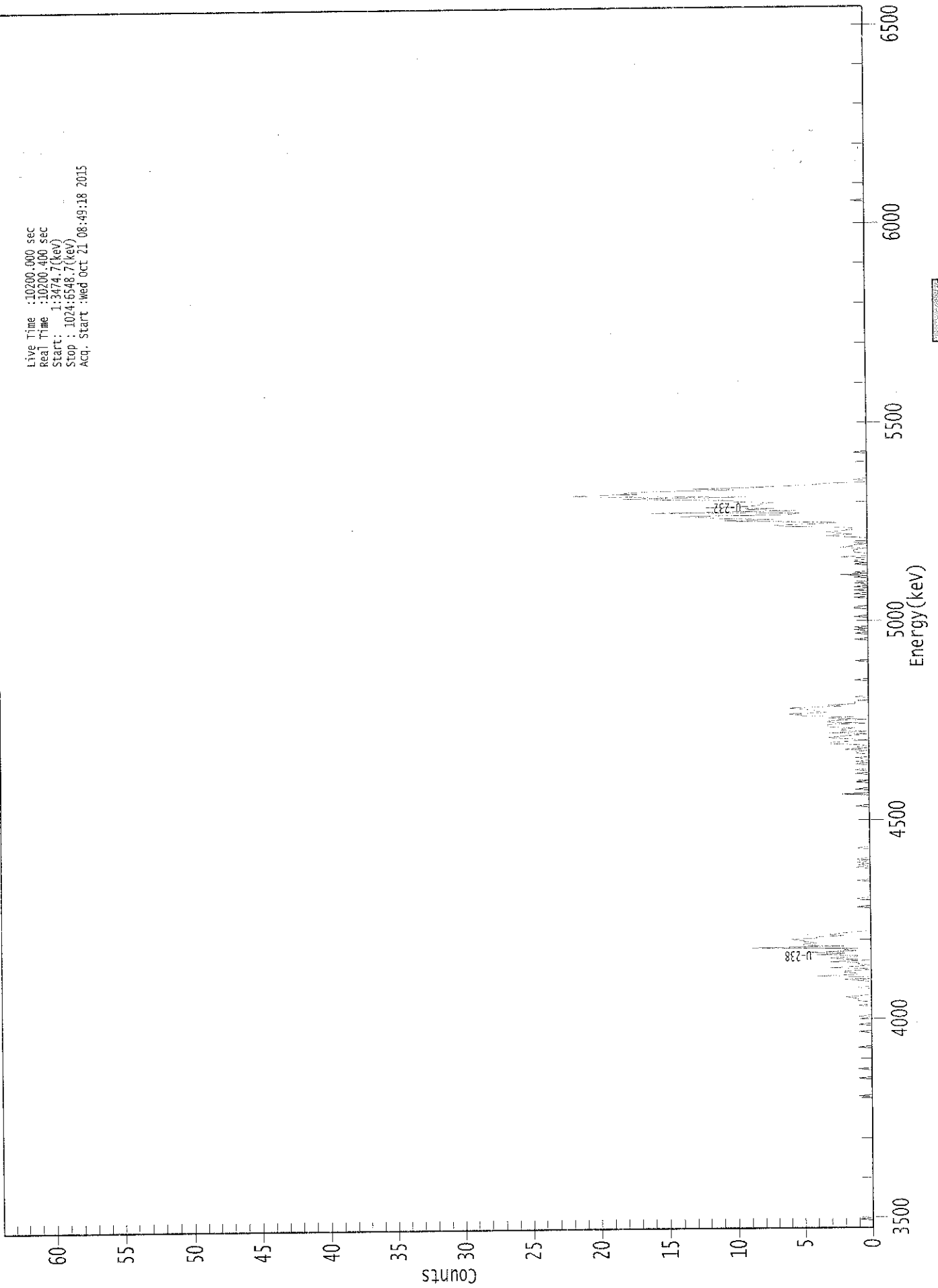
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	3.54E+000 +/- 3.83E-001	7.07E-002 +/- 7.64E-003
U-234	0.997	4761.50*	8.68E-001 +/- 1.97E-001	6.70E-002 +/- 7.24E-003
U-235	1.000	4385.50*	5.78E-002 +/- 5.81E-002	8.01E-002 +/- 8.66E-003
U-238	0.996	4184.40*	9.62E-001 +/- 2.10E-001	6.47E-002 +/- 6.99E-003

AG
10/21/15

0000131813.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start: 1:3474.7(kev)
Stop : 1024:5548.7(kev)
Acq. Start :Wed Oct 21 08:49:18 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: 13

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	1
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	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	1	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	1	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	1
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	1	0	0	0
169:	0	0	1	0	0	0	0	1
177:	0	1	0	0	0	0	0	0
185:	0	0	1	0	0	0	1	1
193:	1	2	1	0	0	0	0	0
201:	0	1	0	0	0	0	0	1
209:	2	0	0	4	1	1	2	2
217:	0	0	3	1	0	1	1	3
225:	0	2	3	1	1	4	2	5
233:	1	2	1	9	2	5	5	4
241:	5	5	6	4	4	2	3	2
249:	1	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	1	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	1	0	0	0	0
297:	0	0	0	0	0	0	1	0
305:	1	0	1	0	0	1	0	0
313:	0	0	0	0	0	0	1	0
321:	0	0	0	0	0	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	0	0	0	0	0
353:	0	1	0	0	0	0	0	0
361:	0	0	0	2	0	0	0	1

369: 0 0 0 0 0 1 0 0

Sample Title: 13

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	1	0	0	1
385:	0	0	0	0	1	0	1	0
393:	0	1	0	0	0	1	1	0
401:	2	0	1	0	1	3	3	1
409:	0	2	3	2	1	0	3	0
417:	2	2	1	3	3	3	0	3
425:	3	0	3	1	5	5	6	3
433:	4	4	5	6	2	3	1	1
441:	1	0	0	0	1	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	1	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	1	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	1	0	0	0
497:	0	1	0	0	1	0	1	0
505:	0	0	0	0	0	0	0	1
513:	0	0	0	0	0	0	1	1
521:	0	0	0	0	0	0	0	1
529:	0	0	1	0	0	1	0	0
537:	1	0	0	1	0	0	0	0
545:	1	0	2	0	1	0	0	0
553:	0	0	0	1	0	1	1	0
561:	0	2	0	0	0	1	1	1
569:	0	2	1	1	0	1	1	0
577:	0	0	2	3	1	2	3	2
585:	1	1	2	6	7	4	2	6
593:	11	7	11	12	14	6	5	16
601:	5	9	7	12	9	8	8	7
609:	10	10	15	18	9	20	22	17
617:	18	16	10	13	9	6	4	3
625:	0	0	1	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	1	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 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	1	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

KB
10/21/15

Sample Description: CP1803S03-04
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 14
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_040
 Chamber Serial Number: 06027396B
 Detector Serial Number: 91135
 Env. Background: System Bkgd 131876
 Reagent Blank: <not performed>

Sample Size: 1.512E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/10/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:19 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: 0.1867 +/- 0.0105
 Counting Efficiency: 0.1856 +/- 0.0032 on 10/25/2014 2:57:14 PM
 Chem. Recovery Factor: 1.0062 +/- 0.0591

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	5.279	382.32	10.03	0.68	0.00E+000	10.1
U-234	4.726	107.66	18.92	0.34	0.00E+000	13.3
U-235	4.421	9.00	68.87	0.00	0.00E+000	3.0
U-238	4.150	125.00	17.60	0.00	0.00E+000	4.2

T = Tracer Peak used for Effective Efficiency

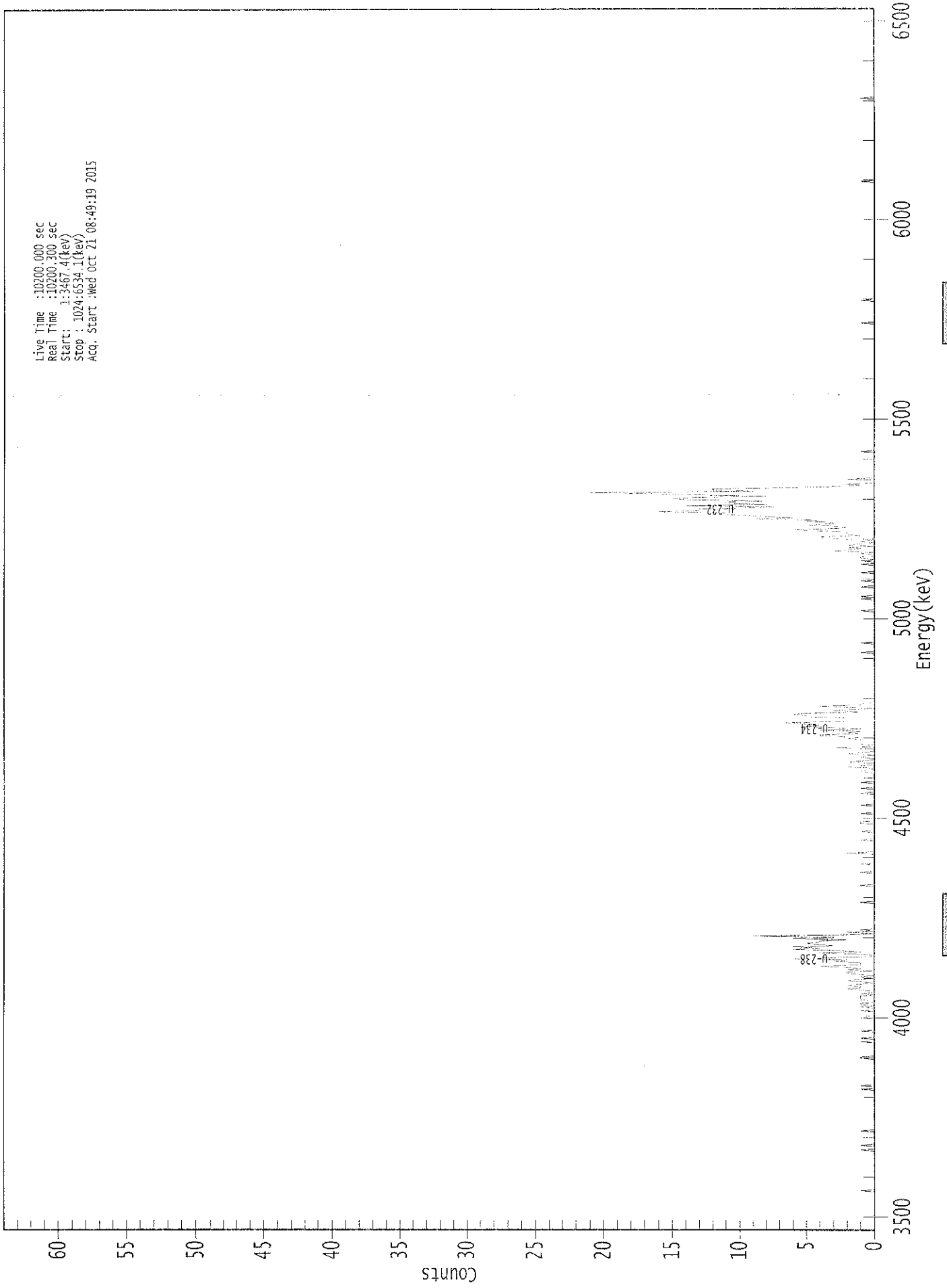
 ----- NUCLIDE ANALYSIS RESULTS -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.60E+000 +/- 3.96E-001	5.31E-002 +/- 5.84E-003
U-234	0.991	4761.50*	1.01E+000 +/- 2.22E-001	4.50E-002 +/- 4.95E-003
U-235	0.991	4385.50*	1.04E-001 +/- 7.28E-002	6.96E-002 +/- 7.65E-003
U-238	0.992	4184.40*	1.17E+000 +/- 2.43E-001	5.61E-002 +/- 6.18E-003

AG
10/21/15

0000131814.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3467.4(kev)
Stop : 1024.6534.1(kev)
Acq. Start : wed Oct 21 08:49:19 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: 14

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	1	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	1	0	0	0	1
73:	0	0	0	0	0	0	0	0
81:	0	0	0	1	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	1	0
121:	0	1	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:	1	1	0	0	0	0	0	0
153:	0	0	0	0	0	0	1	0
161:	0	1	0	0	0	0	0	1
169:	0	0	0	0	0	0	0	0
177:	0	0	1	1	0	0	0	0
185:	1	0	0	1	0	1	1	0
193:	0	1	1	1	1	0	1	0
201:	0	1	2	1	1	2	1	0
209:	1	2	1	0	1	0	1	2
217:	2	0	2	1	2	4	1	1
225:	1	3	2	6	3	0	0	1
233:	4	1	3	6	4	6	3	4
241:	5	4	4	2	6	3	9	2
249:	0	2	0	1	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	0	0	0	0
289:	1	0	0	0	0	0	0	0
297:	0	0	0	1	0	0	0	0
305:	0	0	1	0	0	0	0	0
313:	0	0	0	2	0	0	0	0
321:	0	0	0	0	0	0	1	0
329:	0	0	0	0	0	1	0	0
337:	0	0	0	0	1	1	0	0
345:	0	0	0	0	1	0	0	0
353:	0	0	0	1	0	0	0	0
361:	0	0	0	0	0	1	0	0

369: 0 1 0 0 0 0 1 0

Sample Title: 14

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	0	1
385:	1	0	0	2	1	0	0	2
393:	1	0	0	1	1	0	2	1
401:	0	0	0	3	0	0	1	1
409:	1	1	1	2	1	4	4	1
417:	2	1	4	1	3	5	4	5
425:	7	2	2	2	2	5	5	6
433:	5	1	3	2	0	2	4	1
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	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	1	0	0	0	0
489:	0	0	0	1	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	0	1	0
521:	0	0	0	0	0	0	0	0
529:	1	0	1	0	0	0	0	0
537:	0	0	1	0	0	0	0	1
545:	0	0	0	0	0	0	1	0
553:	0	0	0	0	0	1	0	0
561:	1	0	1	1	0	0	1	0
569:	3	2	1	2	0	2	1	0
577:	1	0	2	4	4	1	2	2
585:	2	4	6	3	2	3	5	3
593:	3	5	4	9	6	8	10	11
601:	11	16	13	13	10	7	14	8
609:	11	11	8	14	15	13	8	13
617:	16	21	9	12	12	6	3	1
625:	2	0	0	0	2	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	1	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	1	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	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: 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	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	1	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	1	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
10/21/15

Sample Description: CP1803S06-07
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 15
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_041
 Chamber Serial Number: 05026930A
 Detector Serial Number: 91087
 Env. Background: System Bkgd 131877
 Reagent Blank: <not performed>

Sample Size: 1.514E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/10/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:21 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: 0.1837 +/- 0.0104
 Counting Efficiency: 0.1873 +/- 0.0033 on 10/25/2014 3:00:28 PM
 Chem. Recovery Factor: 0.9809 +/- 0.0580

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	5.274	375.83	10.11	0.17	0.00E+000	31.4
U-234	4.729	120.15	17.95	0.85	0.00E+000	7.2
U-235	4.431	3.66	107.87	0.34	0.00E+000	3.0
U-238	4.146	110.79	18.84	2.21	0.00E+000	3.8

T = Tracer Peak used for Effective Efficiency

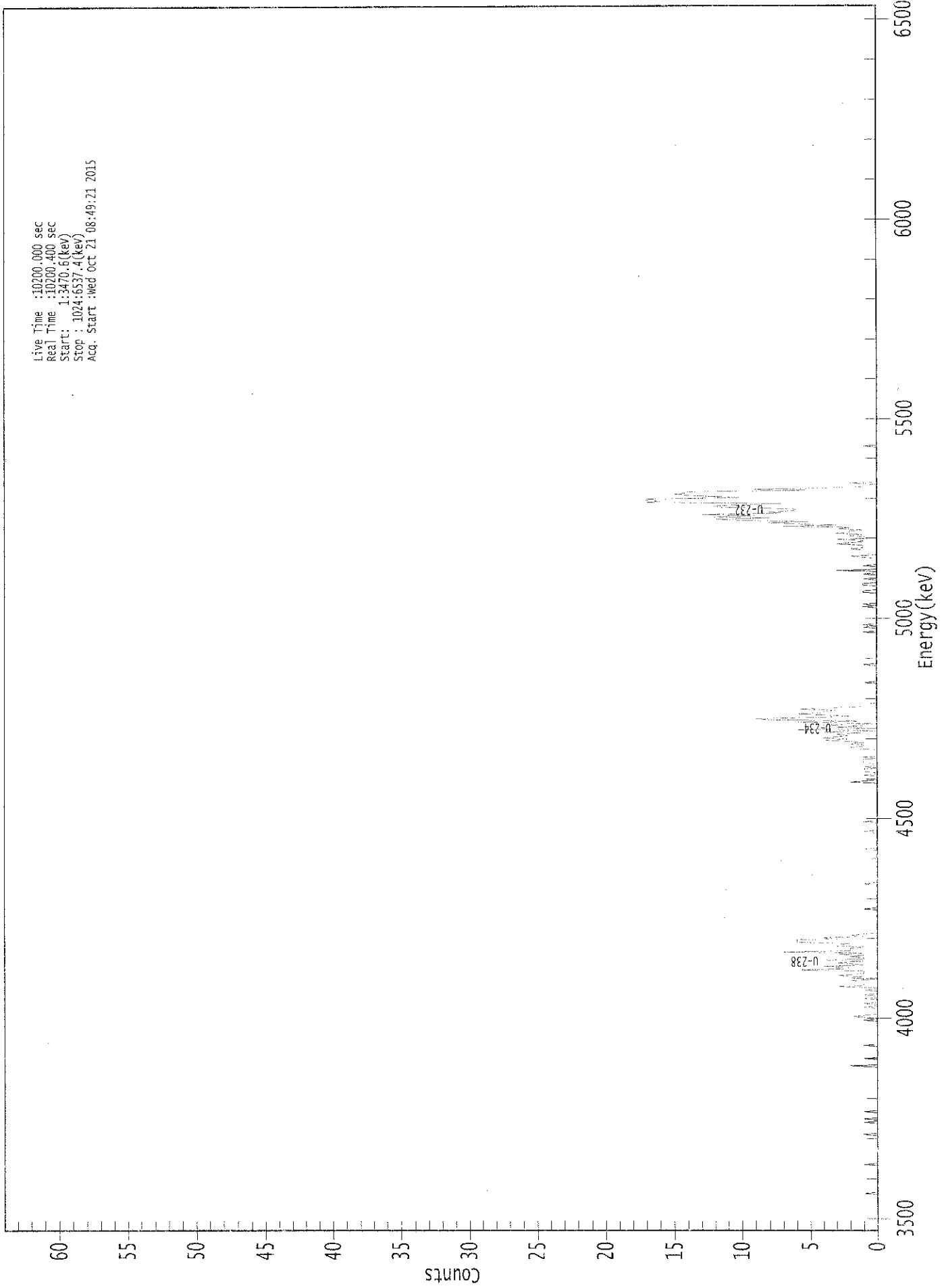
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	3.59E+000 +/- 3.97E-001	3.98E-002 +/- 4.41E-003
U-234	0.992	4761.50*	1.15E+000 +/- 2.42E-001	5.71E-002 +/- 6.33E-003
U-235	0.986	4385.50*	4.31E-002 +/- 4.67E-002	5.63E-002 +/- 6.23E-003
U-238	0.989	4184.40*	1.05E+000 +/- 2.30E-001	7.60E-002 +/- 8.42E-003

AG
10/21/15

0000131819.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3470.6(kev)
Stop : 1024:5537.4(kev)
Acq. Start :Wed Oct 21 08:49:21 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: 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:	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	1
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	1
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:	1	0	0	0	0	0	0	0	0
89:	0	0	1	0	0	1	0	0	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	0	0	0	0	0
137:	0	2	0	0	0	0	0	0	1
145:	0	0	0	0	0	0	0	0	0
153:	0	0	1	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	1
177:	0	0	2	1	0	0	0	0	0
185:	0	0	1	0	0	1	0	0	0
193:	0	1	0	0	1	0	0	0	0
201:	1	0	0	3	1	1	1	1	1
209:	2	0	2	1	3	2	1	1	1
217:	1	6	2	2	4	1	2	3	3
225:	1	4	1	1	2	1	3	1	1
233:	7	2	2	2	1	3	3	2	2
241:	6	6	6	3	4	1	2	1	1
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	1	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	1	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	1	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	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 0 2 1

Sample Title: 15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	1	0	0	1
385:	1	1	0	1	0	0	1	1
393:	1	1	0	1	0	0	0	0
401:	0	0	2	2	1	1	2	1
409:	2	4	2	4	3	2	3	1
417:	4	0	6	0	3	1	4	0
425:	6	1	8	9	4	2	4	6
433:	4	4	3	6	3	1	1	1
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	1	0	0	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	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	1	0	0	0	1
505:	0	1	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	1	0	1	0	0	0	0	0
529:	0	0	0	0	1	1	0	0
537:	0	0	1	1	0	0	0	1
545:	0	0	0	1	0	0	3	0
553:	0	0	1	0	0	0	0	0
561:	0	1	2	0	1	1	1	1
569:	2	1	1	1	3	2	1	1
577:	3	0	1	2	1	3	2	2
585:	1	3	2	7	3	6	8	5
593:	10	12	8	12	9	13	7	8
601:	6	6	8	12	12	10	7	17
609:	16	17	17	10	12	14	15	14
617:	14	5	9	4	1	1	0	2
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	1	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 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	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

10/21/15

Sample Description: CP1803S08-09
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 16
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_042
 Chamber Serial Number: 05026930B
 Detector Serial Number: 84185
 Env. Background: System Bkgd 131878
 Reagent Blank: <not performed>

Sample Size: 1.567E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/10/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:23 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: 0.1774 +/- 0.0102
 Counting Efficiency: 0.1737 +/- 0.0030 on 10/25/2014 3:04:21 PM
 Chem. Recovery Factor: 1.0211 +/- 0.0613

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	363.15	10.30	0.85	0.00E+000	8.4
U-234	4.734	104.83	19.16	0.17	0.00E+000	8.3
U-235	4.364	7.83	70.93	0.17	0.00E+000	3.0
U-238	4.142	114.83	18.31	0.17	0.00E+000	5.4

T = Tracer Peak used for Effective Efficiency

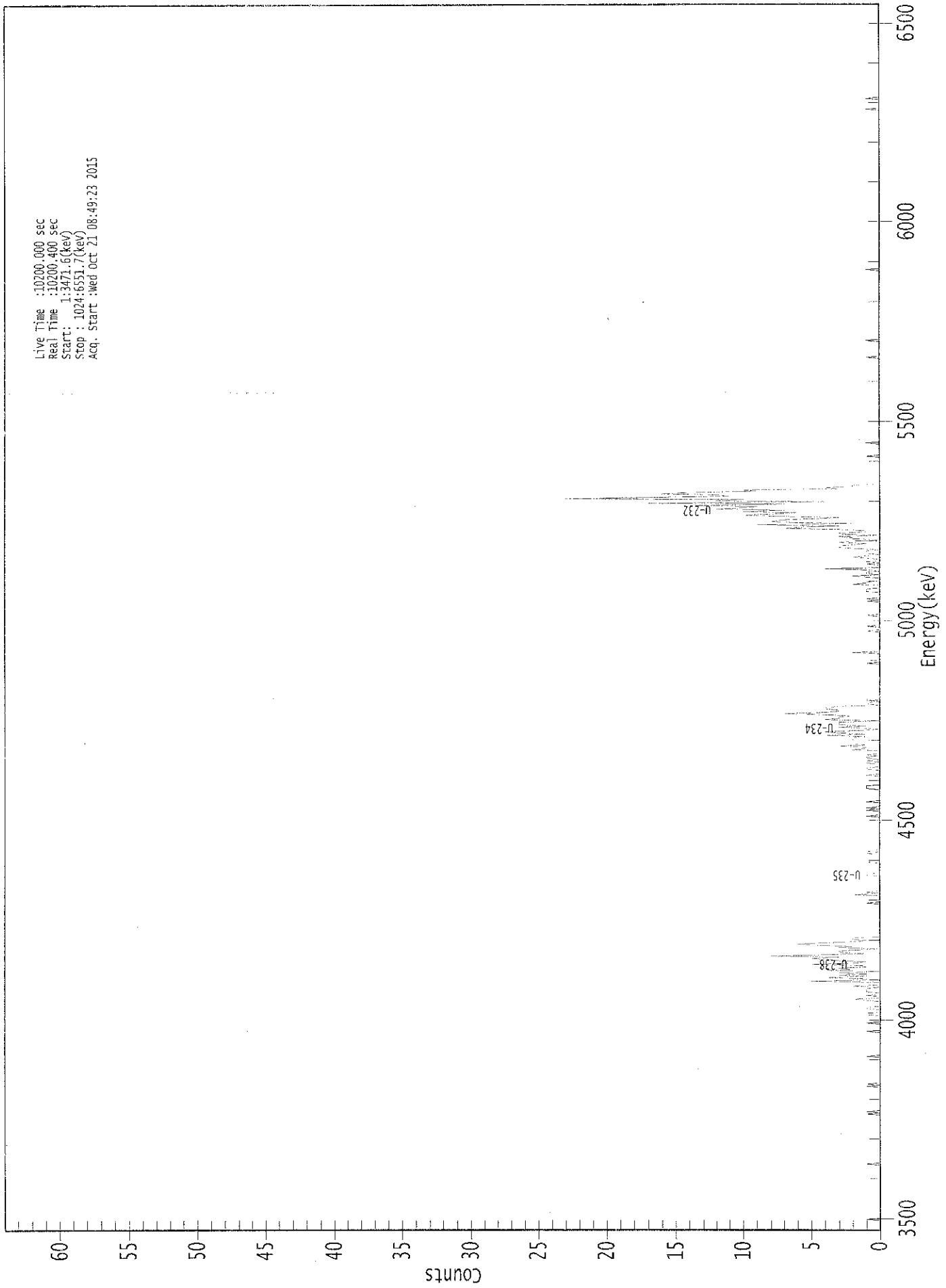
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.47E+000 +/- 3.90E-001	5.72E-002 +/- 6.43E-003
U-234	0.995	4761.50*	1.00E+000 +/- 2.22E-001	3.99E-002 +/- 4.48E-003
U-235	0.997	4385.50*	9.23E-002 +/- 6.63E-002	4.92E-002 +/- 5.53E-003
U-238	0.988	4184.40*	1.09E+000 +/- 2.35E-001	3.97E-002 +/- 4.46E-003

AG
10/21/15

0000131820.CNF

Live Time :10200.000 sec
Real Time :10200.400 Sec
Start : 1:3471.6(keV)
Stop : 1024:5531.7(keV)
Acq. Start :Wed Oct 21 08:49:23 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: 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:	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	1
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	1	0	1	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	1	0	1	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	1	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	1	0
169:	0	0	0	0	0	1	0	0
177:	0	0	0	0	1	1	0	0
185:	0	1	1	0	0	0	0	0
193:	1	2	0	0	1	0	0	1
201:	1	1	1	0	2	0	0	0
209:	5	1	1	4	1	3	1	3
217:	0	4	2	3	1	1	5	2
225:	1	3	4	5	3	8	4	1
233:	3	3	2	0	3	2	5	6
241:	4	2	1	2	2	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:	0	1	0	0	0	0	0	0
281:	2	0	1	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	1	1	0	0	0	0	0	0
305:	0	0	0	1	0	0	0	0
313:	0	0	1	0	1	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	1	0	0	0	0	1	0
353:	1	0	0	0	0	1	0	0
361:	0	0	0	0	0	0	0	0

369: 1 1 1 0 0 0 0 0

Sample Title: 16

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	1	0	0	0	0
385:	1	1	0	0	0	1	0	1
393:	0	1	1	0	1	0	0	0
401:	2	1	1	3	1	2	2	2
409:	2	2	2	1	4	1	3	4
417:	2	0	1	3	1	3	3	3
425:	0	4	3	3	2	4	7	4
433:	3	3	4	4	3	0	1	1
441:	0	1	1	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	0	0
473:	1	0	0	0	0	0	0	0
481:	0	2	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	1	0	0	0	1
505:	0	0	0	0	0	0	0	0
513:	1	0	0	0	0	0	0	0
521:	0	0	0	0	1	0	1	0
529:	0	0	0	0	1	1	1	0
537:	0	0	2	1	1	0	0	0
545:	1	2	0	1	1	0	1	4
553:	0	0	0	1	0	1	0	0
561:	1	2	1	0	1	1	1	0
569:	2	3	3	2	1	3	2	0
577:	2	2	3	0	3	3	1	1
585:	3	7	6	3	9	2	7	8
593:	7	5	3	7	10	8	6	10
601:	7	12	10	9	14	7	17	4
609:	12	10	23	16	11	12	16	14
617:	9	10	3	4	2	2	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	1	0	0
649:	0	0	0	0	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	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	1	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: 1 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	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	1	0
937:	0	0	0	0	0	0	0	1
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
10/21/15

Sample Description: CP1803910-11
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 17
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_043
 Chamber Serial Number: 04026481A
 Detector Serial Number: 91088
 Env. Background: System Bkgd 131879
 Reagent Blank: <not performed>

Sample Size: 1.532E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/10/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:24 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: 0.1831 +/- 0.0104
 Counting Efficiency: 0.1998 +/- 0.0035 on 10/25/2014 3:08:45 PM
 Chem. Recovery Factor: 0.9163 +/- 0.0542

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	374.49	10.14	0.51	0.00E+000	16.8
U-234	4.734	137.15	16.80	0.85	0.00E+000	8.2
U-235	4.387	3.83	102.72	0.17	0.00E+000	6.0
U-238	4.157	148.00	16.17	0.00	0.00E+000	10.8

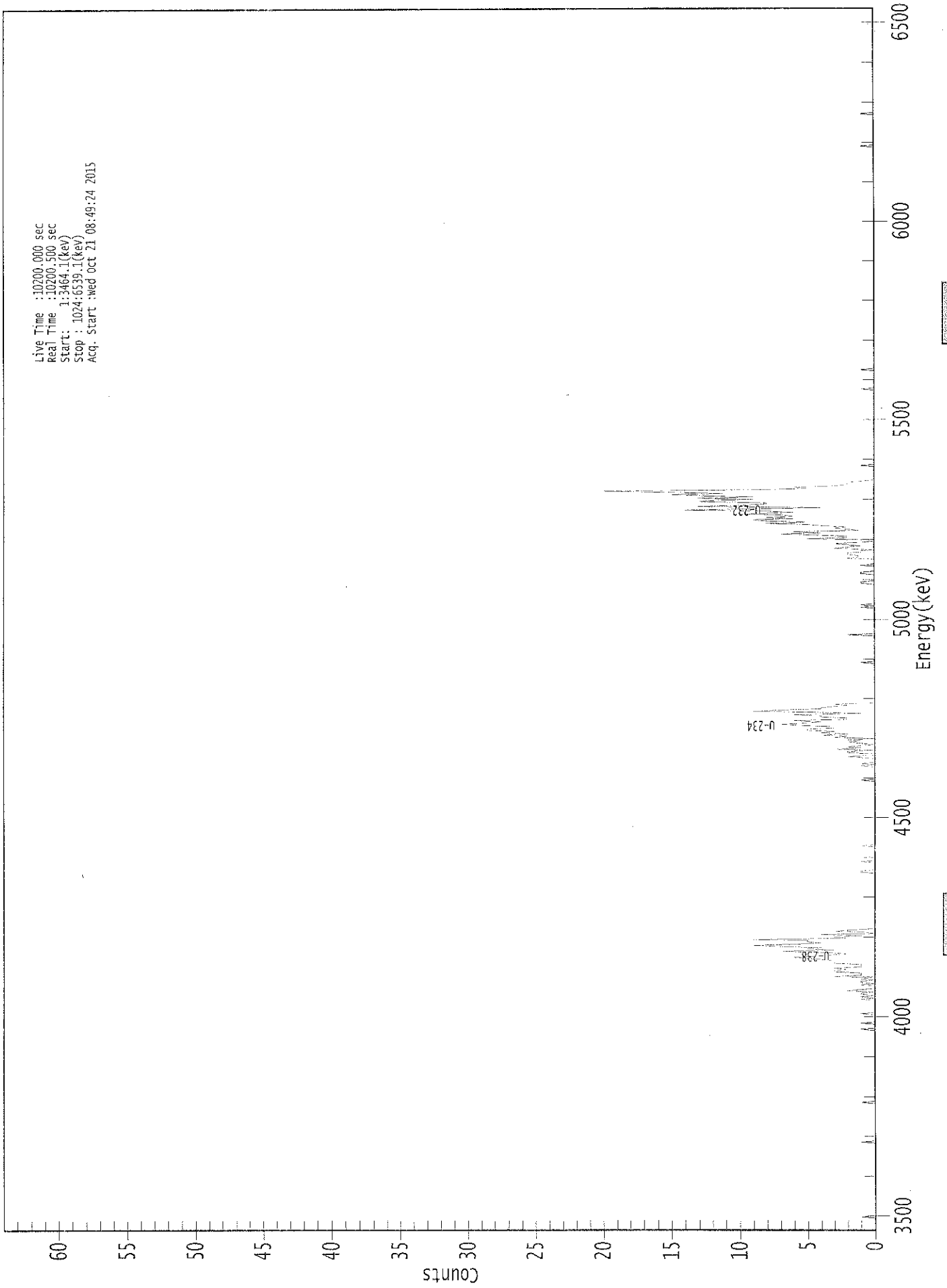
T = Tracer Peak used for Effective Efficiency

----- NUCLIDE ANALYSIS RESULTS -----						
Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)		
U-232	0.995	5302.50*	3.55E+000 +/- 3.93E-001	4.97E-002 +/- 5.51E-003		
U-234	0.995	4761.50*	1.30E+000 +/- 2.61E-001	5.67E-002 +/- 6.29E-003		
U-235	1.000	4385.50*	4.47E-002 +/- 4.62E-002	4.87E-002 +/- 5.41E-003		
U-238	0.995	4184.40*	1.39E+000 +/- 2.73E-001	5.65E-002 +/- 6.27E-003		

AG
10/21/15

0000131821.CNF

Live Time :10200.000 sec
Real Time :10200.500 sec
Start : 1:3464.1(kev)
Stop : 1024:6539.1(kev)
Acq. Start :wed Oct 21 08:49:24 2015



ROI Type: 3

ROI Type: 1

: 00172

 ***** 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	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	1	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	1	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	1	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	0	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:	1	0	0	0	0	1	0	0	0
177:	0	0	0	0	0	1	0	0	0
185:	0	0	0	0	0	0	0	0	0
193:	0	1	0	1	0	1	1	0	0
201:	2	1	0	0	0	1	0	1	1
209:	1	0	1	0	3	1	1	1	1
217:	3	3	2	3	1	1	1	3	3
225:	3	3	4	5	6	4	3	2	2
233:	4	7	3	5	4	7	9	6	6
241:	4	5	5	9	2	3	1	4	4
249:	0	1	3	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	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	1	1	0	0	0	0
305:	0	0	0	0	1	0	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	1	0	0	0	0	0	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 0 0 0

Sample Title: 17

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	1	0	0	0	0	0	0	0
385:	0	0	0	0	1	0	1	0
393:	0	0	0	1	2	0	0	2
401:	2	0	3	1	2	1	0	1
409:	2	1	2	0	3	2	4	2
417:	4	3	5	5	3	3	5	7
425:	5	4	6	2	2	4	4	6
433:	1	4	9	7	4	4	3	2
441:	3	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	0	0
473:	0	0	0	1	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	2	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	1	0	1	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	1	1	0
545:	0	0	0	0	0	1	1	0
553:	0	0	0	0	1	0	0	0
561:	0	0	2	1	1	2	2	1
569:	1	0	3	2	1	2	3	1
577:	0	0	5	2	2	4	7	4
585:	6	1	2	3	2	4	5	8
593:	5	8	9	6	8	6	7	10
601:	6	8	14	8	4	13	10	8
609:	8	13	12	9	13	9	13	15
617:	11	16	20	8	5	6	3	2
625:	2	2	1	0	0	0	0	0
633:	0	0	0	0	0	0	0	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	1
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	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: 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	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	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	1	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

10/21/15

Sample Description: CP1803S12-13
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 18
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_044
 Chamber Serial Number: 04026481B
 Detector Serial Number: 84168
 Env. Background: System Bkgd 131880
 Reagent Blank: <not performed>

Sample Size: 1.509E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/10/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:26 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: 0.2128 +/- 0.0113
 Counting Efficiency: 0.1837 +/- 0.0032 on 10/25/2014 3:13:11 PM
 Chem. Recovery Factor: 1.1585 +/- 0.0649

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	5.289	436.00	9.40	0.00	0.00E+000	36.3
U-234	4.747	123.83	17.63	0.17	0.00E+000	24.4
U-235	4.403	8.00	73.50	0.00	0.00E+000	3.0
U-238	4.162	129.66	17.24	0.34	0.00E+000	5.5

T = Tracer Peak used for Effective Efficiency

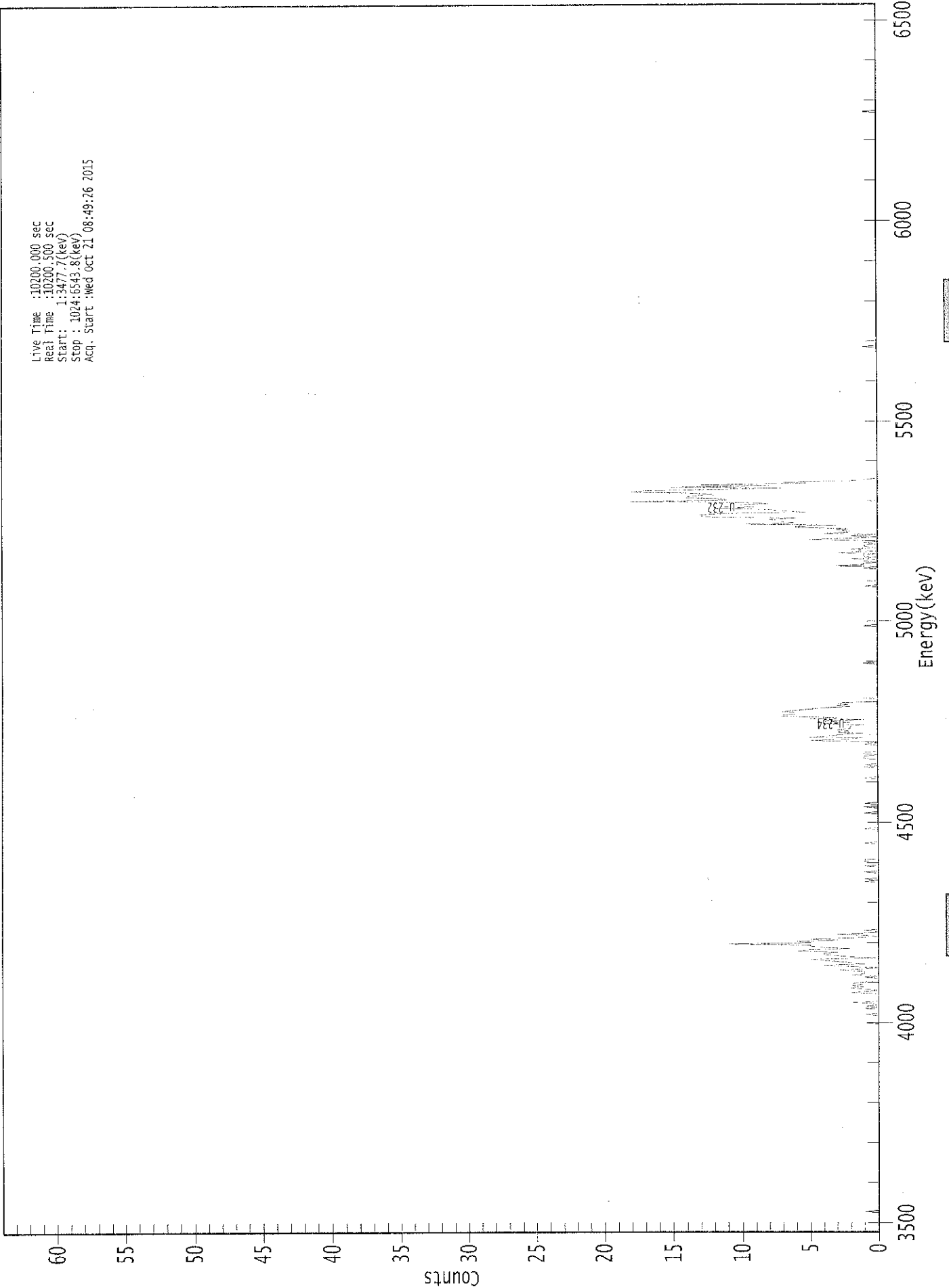
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	3.61E+000 +/- 3.76E-001	4.96E-002 +/- 5.17E-003
U-234	0.999	4761.50*	1.02E+000 +/- 2.10E-001	3.45E-002 +/- 3.60E-003
U-235	0.998	4385.50*	8.16E-002 +/- 6.06E-002	6.12E-002 +/- 6.38E-003
U-238	0.997	4184.40*	1.07E+000 +/- 2.15E-001	3.94E-002 +/- 4.10E-003

AG
10/21/15

0000131822.CNF

Live Time :10200.000 sec
Real Time :10200.500 sec
Start : 1:34:7.7(kev)
Stop : 1024:6543.8(kev)
Acq. Start :Wed Oct 21 08:49:26 2015



: 00177

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: 18

Elapsed Live time: 10200
 Elapsed Real Time: 10201

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	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:	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	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	0	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	1	0
177:	0	0	0	0	0	0	1	0	0
185:	0	0	1	0	1	0	0	0	2
193:	0	0	0	0	0	0	0	0	2
201:	1	0	1	2	1	2	1	2	2
209:	1	0	0	0	1	0	2	1	1
217:	1	1	3	1	0	2	4	1	1
225:	2	3	4	5	0	2	3	4	4
233:	4	3	6	5	2	4	5	5	5
241:	11	5	6	3	5	2	0	1	1
249:	3	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	0	0	0	0	0	0	0
289:	0	0	0	0	1	0	1	0	0
297:	0	0	0	0	1	0	0	0	0
305:	0	1	0	0	0	1	1	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	0	1	0	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	1	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	1	0	0	0
353:	0	0	1	0	0	1	0	0	0
361:	0	0	0	0	0	0	0	0	0

369: 0 0 0 0 0 0 0 0 0

Sample Title: 18

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	1	0	0	0	0	0	0
385:	0	0	0	1	0	1	0	0	0
393:	0	0	1	1	1	0	1	1	1
401:	0	0	0	0	0	0	1	0	0
409:	1	5	3	1	5	3	3	1	1
417:	3	2	3	2	2	2	1	4	4
425:	2	4	1	5	3	7	7	6	6
433:	6	7	6	5	4	2	3	2	2
441:	3	0	0	0	1	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	1	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0	0
505:	1	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	0	0	0	0	0	0	0	0
537:	0	1	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0	0
553:	1	0	3	1	1	0	1	0	0
561:	2	0	1	1	0	3	0	1	1
569:	2	0	1	1	0	1	0	1	1
577:	5	2	0	2	0	4	2	2	2
585:	3	2	6	6	3	10	6	7	7
593:	7	8	6	12	13	13	11	5	5
601:	7	8	12	9	10	10	8	10	10
609:	18	11	11	14	14	13	12	14	14
617:	18	17	12	7	15	8	13	5	5
625:	7	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	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	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	1	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	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 0

Sample Title: 18

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	1	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™

133
10/21/15

Sample Description: CPI1803S15-16
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 19
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_045
 Chamber Serial Number: 04026482A
 Detector Serial Number: 91131
 Env. Background: System Bkgd 131881
 Reagent Blank: <not performed>

Sample Size: 1.508E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/10/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:28 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: 0.1703 +/- 0.0099
 Counting Efficiency: 0.1760 +/- 0.0031 on 10/25/2014 3:16:42 PM
 Chem. Recovery Factor: 0.9674 +/- 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 5.288	348.83	10.50	0.17	0.00E+000	8.6
U-234	4.740	91.32	20.60	0.68	0.00E+000	4.8
U-235	4.382	3.83	102.72	0.17	0.00E+000	3.0
U-238	4.170	90.30	20.85	1.70	0.00E+000	7.8

T = Tracer Peak used for Effective Efficiency

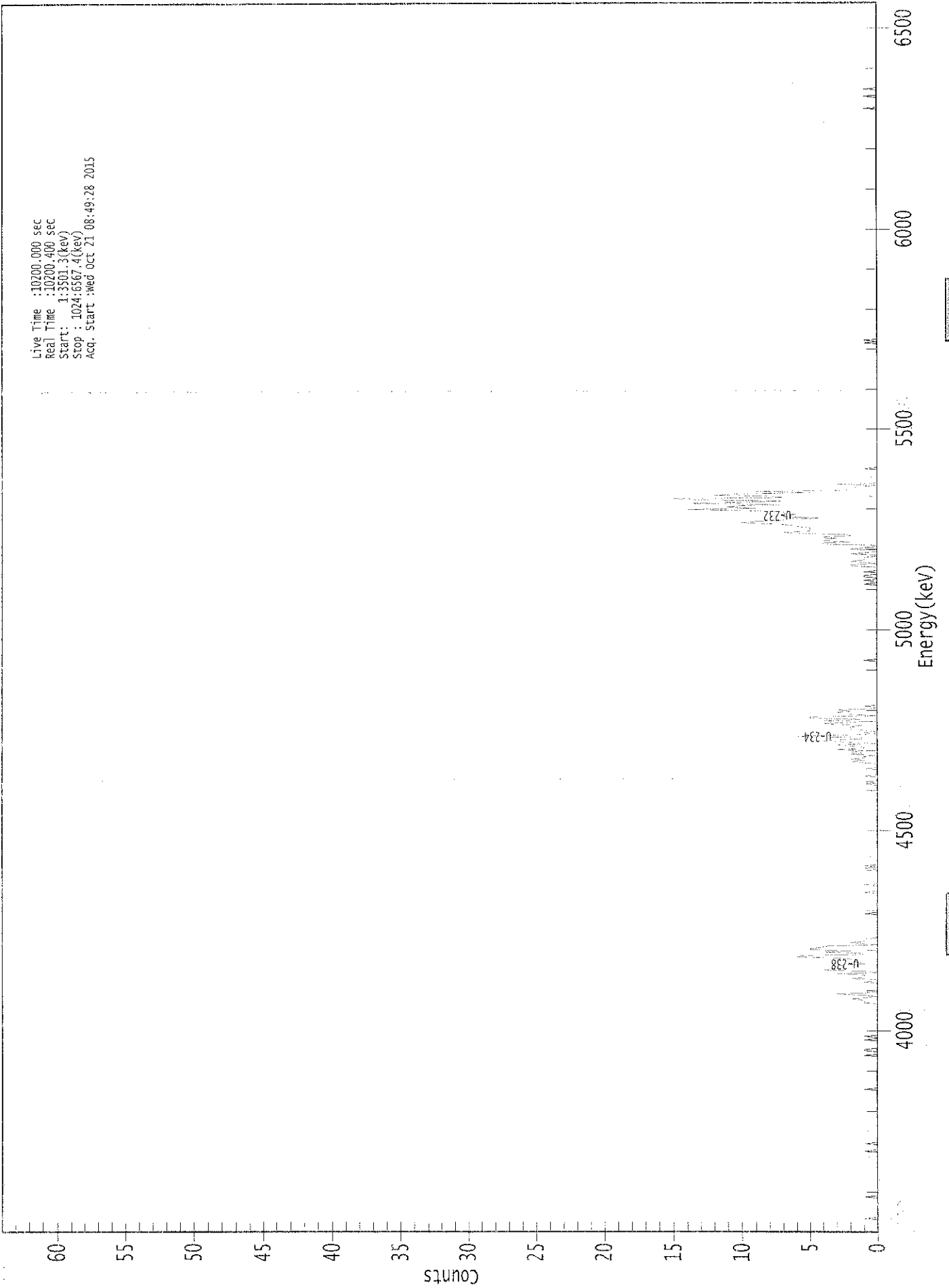
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.998	5302.50*	3.61E+000 +/- 4.12E-001	4.32E-002 +/- 4.93E-003
U-234	0.997	4761.50*	9.44E-001 +/- 2.22E-001	5.83E-002 +/- 6.66E-003
U-235	1.000	4385.50*	4.88E-002 +/- 5.05E-002	5.32E-002 +/- 6.08E-003
U-238	0.998	4184.40*	9.30E-001 +/- 2.21E-001	7.56E-002 +/- 8.64E-003

AG
 10/21/15

0000131815.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:3501.3(kev)
Stop : 1024:6567.4(kev)
Acq. Start : Wed Oct 21 08:49:28 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: 19

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	1	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	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	1	0	0	0	0
73:	0	1	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	1	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	1	1
153:	0	0	0	0	0	0	0	0	1
161:	0	0	1	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	1	1
193:	1	2	1	0	1	3	1	0	0
201:	0	0	0	0	0	0	0	0	1
209:	0	0	2	1	1	1	3	0	0
217:	1	4	3	3	3	3	1	1	1
225:	2	2	2	3	6	6	1	1	1
233:	4	2	5	5	4	4	0	1	1
241:	2	1	1	1	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:	1	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	1	0	0	0	0	0	0
289:	1	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	1	0	0
305:	1	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	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 1 0 1 0

Sample Title: 19

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	1	0	0	0	0
385:	0	1	0	0	0	0	1	2
393:	1	2	1	1	0	2	1	2
401:	1	3	1	1	2	3	0	2
409:	4	3	1	1	6	3	0	1
417:	0	1	2	2	2	1	3	4
425:	0	4	1	5	5	0	2	2
433:	3	2	3	0	0	1	0	0
441:	0	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	0	0
473:	0	0	0	1	0	0	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	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	1	0	0	1	0	0
545:	1	1	0	0	1	0	0	0
553:	0	2	2	0	1	2	1	1
561:	1	0	0	2	1	0	0	2
569:	1	0	0	4	4	2	4	4
577:	3	4	2	2	6	7	5	5
585:	5	5	6	6	8	10	9	7
593:	7	4	7	7	6	7	7	9
601:	14	9	11	10	7	14	10	7
609:	13	15	7	8	12	10	5	9
617:	2	2	2	1	0	3	0	0
625:	0	0	0	0	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	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	1	0	1	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: 19

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	1	0
937:	0	0	0	0	0	0	0	0
945:	1	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

ES
10/21/15

Apex-Alpha™

Sample Description: CP1803S18-19
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510084A-UU
 Sample Identification: 20
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_046
 Chamber Serial Number: 04026482B
 Detector Serial Number: 58762
 Env. Background: System Bkgd 131882
 Reagent Blank: <not performed>

Sample Size: 1.541E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/10/2015 6:46:16 AM
 Acquisition Date/Time: 10/21/2015 8:49:30 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.655 mL
 Effective Efficiency: 0.1375 +/- 0.0088
 Counting Efficiency: 0.1776 +/- 0.0031 on 10/25/2014 3:20:08 PM
 Chem. Recovery Factor: 0.7740 +/- 0.0512

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	283.32	11.66	0.68	0.00E+000	24.1
U-234	4.729	92.32	20.49	0.68	0.00E+000	8.4
U-235	4.395	10.98	62.28	1.02	0.00E+000	4.5
U-238	4.139	100.83	19.54	0.17	0.00E+000	6.3

T = Tracer Peak used for Effective Efficiency

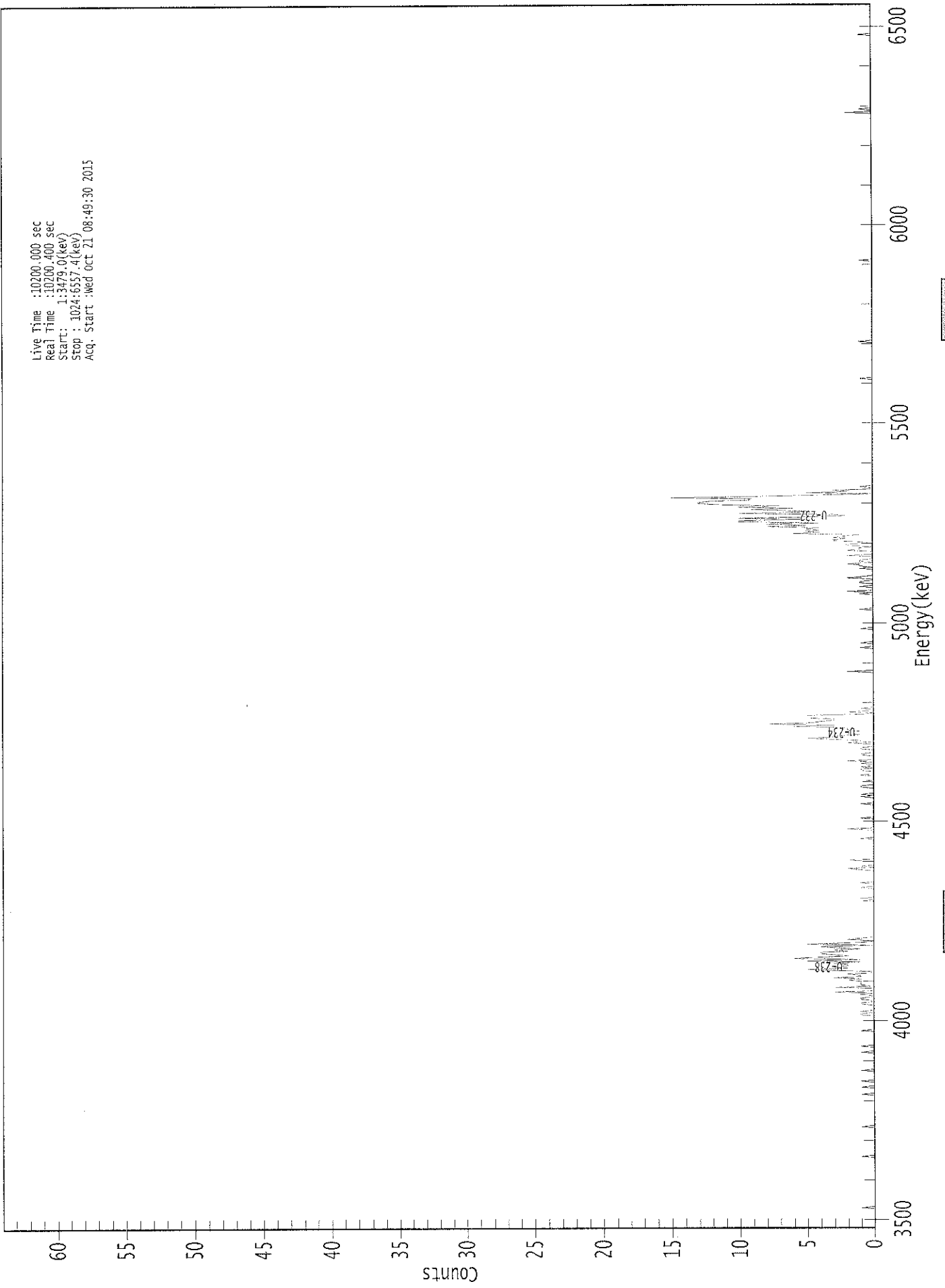
 ----- NUCLIDE ANALYSIS RESULTS -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	3.55E+000 +/- 4.44E-001	7.07E-002 +/- 8.84E-003
U-234	0.992	4761.50*	1.16E+000 +/- 2.78E-001	7.07E-002 +/- 8.84E-003
U-235	0.999	4385.50*	1.70E-001 +/- 1.08E-001	9.74E-002 +/- 1.22E-002
U-238	0.986	4184.40*	1.26E+000 +/- 2.92E-001	5.21E-002 +/- 6.51E-003

AG
 10/21/15

0000131816.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3479.0(keV)
Stop : 1024:6557.4(keV)
Acq. Start :Wed Oct 21 08:49:30 2015



ROI Type: 3

ROI Type: 1

: 00187

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

Sample Title: 20

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	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	1	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	1	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:	1	0	0	0	0	0	1	0	0
121:	0	0	0	1	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	1	0	0	0	0	0
153:	1	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	1	0	0	0
169:	0	0	0	0	0	0	0	0	0
177:	0	0	1	1	0	1	0	0	0
185:	0	0	0	1	1	0	0	0	1
193:	1	0	0	1	0	3	0	0	0
201:	0	3	0	1	1	1	1	2	0
209:	1	3	1	1	2	0	0	3	0
217:	5	2	3	2	2	3	1	5	0
225:	1	6	4	2	3	4	4	2	0
233:	3	1	3	4	0	5	2	0	0
241:	0	2	1	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	1	0	0	0	0	0
281:	0	0	0	0	1	0	0	0	0
289:	1	0	0	0	0	0	0	0	0
297:	0	0	0	1	2	0	1	0	0
305:	0	0	0	2	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	2	0	0	0
337:	0	0	0	0	0	0	1	0	0
345:	0	0	0	0	0	0	0	0	0
353:	0	0	1	0	0	0	0	0	0
361:	1	0	1	0	0	0	0	0	0

369: 1 1 0 0 0 1 0 0

Sample Title: 20

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	1	0	0	0	1	1	
385:	0	1	0	0	1	0	2	0	
393:	0	0	0	1	1	0	0	0	
401:	1	1	0	0	0	2	1	1	
409:	3	5	3	3	1	2	2	1	
417:	2	2	2	6	3	8	5	4	
425:	3	3	5	5	5	1	0	2	
433:	0	0	1	0	0	0	0	0	
441:	0	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	2	0	0	0	0	0	0	
473:	0	0	0	0	0	0	0	0	
481:	0	0	0	0	0	1	0	0	
489:	0	1	0	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	1	0	0	
521:	0	0	0	0	0	0	0	0	
529:	0	0	1	0	2	0	0	0	
537:	1	0	0	1	1	0	0	2	
545:	1	0	0	0	0	0	0	1	
553:	0	1	1	2	0	1	1	0	
561:	0	0	2	0	0	0	2	1	
569:	1	0	2	2	0	1	3	3	
577:	2	3	2	1	6	4	5	4	
585:	5	4	8	5	8	4	10	10	
593:	5	10	5	2	3	10	5	5	
601:	9	6	10	7	11	13	13	12	
609:	9	9	15	8	4	0	5	2	
617:	3	0	0	1	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	1	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	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: 20

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	1	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	2	0	0	1
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	1	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 : 10/21/2015
Time : 5:50:26 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	10/21/2015 5:31:56 AM
Alpha 004	21f	ALL	Passed	10/21/2015 5:31:56 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	10/21/2015 5:31:57 AM
Alpha 011	21f	ALL	Passed	10/21/2015 5:31:58 AM
Alpha 012	21f	ALL	Passed	10/21/2015 5:31:59 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Passed	10/21/2015 5:32:00 AM
Alpha 015	21f	ALL	Passed	10/21/2015 5:32:01 AM
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:02 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:03 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:05 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:06 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:08 AM
Alpha 038	Alpha Analyst100DC	Peak Energy <i>OK</i>	Action	10/21/2015 5:32:09 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:11 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:12 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:14 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:16 AM
Alpha 043	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:17 AM
Alpha 044	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:19 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:21 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:22 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:24 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:26 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:28 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:30 AM
Alpha 051	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:31 AM
Alpha 052	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:33 AM
Alpha 053	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:34 AM
Alpha 054	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:36 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:38 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:40 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:42 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:43 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_059	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:45 AM
Alpha_060	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:47 AM

APPROVED BY: 

APPROVAL DATE: 10/21

***** 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	15-10084
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	CP0604S06-07	38	10/09/15 13:00	1.5240E+00
04	DO	CP0604S06-07	38	10/09/15 13:00	1.5227E+00
05	TRG	CP0604S09-10	34	10/09/15 13:10	1.5265E+00
06	TRG	CP0604S11-12	35	10/09/15 13:20	1.5195E+00
07	TRG	CP0604S14-15	36	10/09/15 13:30	1.5092E+00
08	TRG	CP0604S16-17	34	10/09/15 13:40	1.5214E+00
09	TRG	CP0604S19-20	35	10/09/15 13:50	1.5142E+00
10	TRG	CP0604S21-22	32	10/09/15 14:00	1.5426E+00
11	TRG	CP0604S24-25	37	10/09/15 14:10	1.5325E+00
12	TRG	CP0604S26-27	35	10/09/15 14:20	1.5293E+00
13	TRG	CP0604S28-29	36	10/09/15 14:30	1.5463E+00
14	TRG	CP1803S03-04	34	10/10/15 11:30	1.5976E+00
15	TRG	CP1803S06-07	34	10/10/15 11:40	1.5793E+00
16	TRG	CP1803S08-09	38	10/10/15 11:50	1.5179E+00
17	TRG	CP1803S10-11	33	10/10/15 12:00	1.5128E+00
18	TRG	CP1803S12-13	35	10/10/15 12:10	1.5946E+00
19	TRG	CP1803S15-16	35	10/10/15 12:20	1.5085E+00
20	TRG	CP1803S18-19	35	10/10/15 12:30	1.5439E+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.

10/23/15

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	0.4381	9.8		0.00								
02	MBL	0.2308	5.2		0.00								
03	DUP	0.2196	4.9		0.00								
04	DO	0.2302	5.2		0.00								
05	TRG	0.2254	5.1		0.00								
06	TRG	0.2251	5.1		0.00								
07	TRG	0.2256	5.1		0.00								
08	TRG	0.2195	4.9		0.00								
09	TRG	0.2293	5.2		0.00								
10	TRG	0.2270	5.1		0.00								
11	TRG	0.2252	5.1		0.00								
12	TRG	0.2251	5.1		0.00								
13	TRG	0.2264	5.1		0.00								
14	TRG	0.2256	5.1		0.00								
15	TRG	0.2249	5.1		0.00								
16	TRG	0.2258	5.1		0.00								
17	TRG	0.2243	5.0		0.00								
18	TRG	0.2259	5.1		0.00								
19	TRG	0.2260	5.1		0.00								
20	TRG	0.2255	5.1		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			10/15/15 13:48	JPACHELLA				
02	MBL			10/15/15 13:48	JPACHELLA				
03	DUP			10/15/15 13:48	JPACHELLA				
04	DO	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
05	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
06	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
07	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
08	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
09	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
10	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
11	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
12	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
13	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
14	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
15	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
16	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
17	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
18	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
19	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	JPACHELLA				
20	TRG	10/15/15 07:34	KSALLINGS	10/15/15 13:48	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.

	Run	1
	Analysis Code	THISO
Eberline Services Work Order	15-10084	
Client	Auxier & Associates, Inc.	

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	5.57E+00	9.50E-01	1.03E-01	5.09E+00	109.35	OK		OK	
02	TH-228	MBL	BLANK	pCi/g	2.48E-02	4.39E-02	7.88E-02					OK	OK
03	TH-228	DUP	CP0604S06-07	pCi/g	1.37E+00	3.16E-01	1.19E-01				OK	OK	
04	TH-228	DO	CP0604S06-07	pCi/g	1.75E+00	4.10E-01	1.01E-01					OK	
05	TH-228	TRG	CP0604S09-10	pCi/g	1.47E+00	3.21E-01	5.86E-02					OK	
06	TH-228	TRG	CP0604S11-12	pCi/g	1.03E+00	2.53E-01	5.36E-02					OK	
07	TH-228	TRG	CP0604S14-15	pCi/g	1.40E+00	3.73E-01	9.26E-02					OK	
08	TH-228	TRG	CP0604S16-17	pCi/g	1.16E+00	2.75E-01	6.00E-02					OK	
09	TH-228	TRG	CP0604S19-20	pCi/g	1.45E+00	3.37E-01	5.10E-02					OK	
10	TH-228	TRG	CP0604S21-22	pCi/g	1.02E+00	2.62E-01	5.89E-02					OK	
11	TH-228	TRG	CP0604S24-25	pCi/g	1.62E+00	3.67E-01	6.84E-02					OK	
12	TH-228	TRG	CP0604S26-27	pCi/g	1.19E+00	2.86E-01	6.16E-02					OK	
13	TH-228	TRG	CP0604S28-29	pCi/g	1.39E+00	3.30E-01	6.49E-02					OK	
14	TH-228	TRG	CP1803S03-04	pCi/g	1.42E+00	3.32E-01	4.56E-02					OK	
15	TH-228	TRG	CP1803S06-07	pCi/g	1.82E+00	4.20E-01	6.20E-02					OK	
16	TH-228	TRG	CP1803S08-09	pCi/g	1.84E+00	4.30E-01	7.84E-02					OK	
17	TH-228	TRG	CP1803S10-11	pCi/g	1.61E+00	3.93E-01	5.43E-02					OK	
18	TH-228	TRG	CP1803S12-13	pCi/g	1.21E+00	2.75E-01	4.90E-02					OK	
19	TH-228	TRG	CP1803S15-16	pCi/g	1.25E+00	2.89E-01	7.84E-02					OK	
20	TH-228	TRG	CP1803S18-19	pCi/g	1.28E+00	2.99E-01	6.46E-02					OK	

	1 Run
THISO Analysis Code	15-10084 Eberline Services Work Order
Auxier & Associates, Inc. Client	

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	106.72	0.00	0.00			
02	TH-228	MBL	10/14/15 00:00	1.50E+00	98.96	0.00	0.00			
03	TH-228	DUP	10/09/15 13:00	1.52E+00	132.01	0.00	0.00			
04	TH-228	DO	10/09/15 13:00	1.52E+00	102.13	0.00	0.00			
05	TH-228	TRG	10/09/15 13:10	1.53E+00	141.74	0.00	0.00			
06	TH-228	TRG	10/09/15 13:20	1.52E+00	136.09	0.00	0.00			
07	TH-228	TRG	10/09/15 13:30	1.51E+00	90.42	0.00	0.00			
08	TH-228	TRG	10/09/15 13:40	1.52E+00	126.22	0.00	0.00			
09	TH-228	TRG	10/09/15 13:50	1.51E+00	115.76	0.00	0.00			
10	TH-228	TRG	10/09/15 14:00	1.54E+00	107.97	0.00	0.00			
11	TH-228	TRG	10/09/15 14:10	1.53E+00	106.22	0.00	0.00			
12	TH-228	TRG	10/09/15 14:20	1.53E+00	121.91	0.00	0.00			
13	TH-228	TRG	10/09/15 14:30	1.55E+00	97.74	0.00	0.00			
14	TH-228	TRG	10/10/15 11:30	1.60E+00	98.66	0.00	0.00			
15	TH-228	TRG	10/10/15 11:40	1.58E+00	99.66	0.00	0.00			
16	TH-228	TRG	10/10/15 11:50	1.52E+00	88.85	0.00	0.00			
17	TH-228	TRG	10/10/15 12:00	1.51E+00	91.56	0.00	0.00			
18	TH-228	TRG	10/10/15 12:10	1.59E+00	127.51	0.00	0.00			
19	TH-228	TRG	10/10/15 12:20	1.51E+00	104.91	0.00	0.00			
20	TH-228	TRG	10/10/15 12:30	1.54E+00	103.16	0.00	0.00			

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-228	LCS	10/23/15 10:28		A_Spec	Alpha_049	170	3.42 E+02	6.00 E-03	15.3
02	TH-228	MBL	10/23/15 10:28		A_Spec	Alpha_050	170	1.98 E+00	6.00 E-03	14.3
03	TH-228	DUP	10/23/15 10:29		A_Spec	Alpha_051	170	1.56 E+02	3.64 E-02	15.2
04	TH-228	DO	10/23/15 10:28		A_Spec	Alpha_052	170	1.63 E+02	1.36 E-02	16.1
05	TH-228	TRG	10/23/15 10:28		A_Spec	Alpha_053	170	1.72 E+02	8.00 E-03	14.6
06	TH-228	TRG	10/23/15 10:28		A_Spec	Alpha_054	170	1.15 E+02	5.00 E-03	14.5
07	TH-228	TRG	10/23/15 10:28		A_Spec	Alpha_055	170	1.11 E+02	1.00 E-02	15.6
08	TH-228	TRG	10/23/15 10:29		A_Spec	Alpha_056	170	1.33 E+02	8.00 E-03	16
09	TH-228	TRG	10/23/15 10:28		A_Spec	Alpha_057	170	1.49 E+02	3.00 E-03	15.8
10	TH-228	TRG	10/23/15 10:28		A_Spec	Alpha_058	170	1.03 E+02	5.00 E-03	16.4
11	TH-228	TRG	10/23/15 10:29		A_Spec	Alpha_059	170	1.68 E+02	9.00 E-03	17.2
12	TH-228	TRG	10/23/15 10:29		A_Spec	Alpha_060	170	1.27 E+02	7.00 E-03	15.4
13	TH-228	TRG	10/23/15 11:20		A_Spec	Alpha_033	170	1.41 E+02	7.00 E-03	18
14	TH-228	TRG	10/23/15 11:20		A_Spec	Alpha_034	170	1.49 E+02	2.00 E-03	17.9
15	TH-228	TRG	10/23/15 11:20		A_Spec	Alpha_035	170	1.76 E+02	5.00 E-03	16.5
16	TH-228	TRG	10/23/15 11:20		A_Spec	Alpha_036	170	1.66 E+02	9.00 E-03	18.1
17	TH-228	TRG	10/23/15 11:20		A_Spec	Alpha_037	170	1.42 E+02	2.00 E-03	17.1
18	TH-228	TRG	10/23/15 11:20		A_Spec	Alpha_038	170	1.48 E+02	5.00 E-03	16.2
19	TH-228	TRG	10/23/15 11:20		A_Spec	Alpha_039	170	1.42 E+02	1.80 E-02	19.3
20	TH-228	TRG	10/23/15 11:20		A_Spec	Alpha_040	170	1.40 E+02	9.00 E-03	18.6



Run

Analysis Code

Eberline Services Work Order

Client

1

THISO

15-10084

Auxier & Associates, Inc.

00200

	Run	1
	Analysis Code	THISO
Eberline Services Work Order	15-10084	
Client	Auxier & Associates, Inc.	

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	6.16E+00	1.03E+00	7.80E-02	5.38E+00	114.46	OK		OK	
02	TH-230	MBL	BLANK	pCi/g	1.87E-02	3.56E-02	6.57E-02					OK	OK
03	TH-230	DUP	CP0604S06-07	pCi/g	8.39E-01	2.20E-01	9.01E-02				INV	OK	
04	TH-230	DO	CP0604S06-07	pCi/g	1.22E+00	3.10E-01	6.37E-02					OK	
05	TH-230	TRG	CP0604S09-10	pCi/g	1.47E+00	3.20E-01	5.31E-02					OK	
06	TH-230	TRG	CP0604S11-12	pCi/g	1.16E+00	2.74E-01	4.23E-02					OK	
07	TH-230	TRG	CP0604S14-15	pCi/g	1.99E+00	4.86E-01	8.19E-02					OK	
08	TH-230	TRG	CP0604S16-17	pCi/g	1.33E+00	3.03E-01	7.08E-02					OK	
09	TH-230	TRG	CP0604S19-20	pCi/g	1.43E+00	3.31E-01	4.59E-02					OK	
10	TH-230	TRG	CP0604S21-22	pCi/g	1.12E+00	2.79E-01	4.06E-02					OK	
11	TH-230	TRG	CP0604S24-25	pCi/g	1.61E+00	3.63E-01	5.36E-02					OK	
12	TH-230	TRG	CP0604S26-27	pCi/g	1.29E+00	3.03E-01	4.41E-02					OK	
13	TH-230	TRG	CP0604S28-29	pCi/g	1.34E+00	3.20E-01	5.11E-02					OK	
14	TH-230	TRG	CP1803S03-04	pCi/g	1.53E+00	3.52E-01	6.69E-02					OK	
15	TH-230	TRG	CP1803S06-07	pCi/g	1.83E+00	4.19E-01	5.77E-02					OK	
16	TH-230	TRG	CP1803S08-09	pCi/g	1.90E+00	4.41E-01	6.15E-02					OK	
17	TH-230	TRG	CP1803S10-11	pCi/g	1.72E+00	4.14E-01	5.36E-02					OK	
18	TH-230	TRG	CP1803S12-13	pCi/g	1.11E+00	2.57E-01	4.24E-02					OK	
19	TH-230	TRG	CP1803S15-16	pCi/g	1.27E+00	2.93E-01	7.89E-02					OK	
20	TH-230	TRG	CP1803S18-19	pCi/g	1.74E+00	3.77E-01	4.71E-02					OK	

	Run	1
Analysis Code	THISO	
Eberline Services Work Order	15-10084	
Client	Auxier & Associates, Inc.	

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	106.72	0.00	0.00			
02	TH-230	MBL	10/14/15 00:00	1.50E+00	98.96	0.00	0.00			
03	TH-230	DUP	10/09/15 13:00	1.52E+00	132.01	0.00	0.00			
04	TH-230	DO	10/09/15 13:00	1.52E+00	102.13	0.00	0.00			
05	TH-230	TRG	10/09/15 13:10	1.53E+00	141.74	0.00	0.00			
06	TH-230	TRG	10/09/15 13:20	1.52E+00	136.09	0.00	0.00			
07	TH-230	TRG	10/09/15 13:30	1.51E+00	90.42	0.00	0.00			
08	TH-230	TRG	10/09/15 13:40	1.52E+00	126.22	0.00	0.00			
09	TH-230	TRG	10/09/15 13:50	1.51E+00	115.76	0.00	0.00			
10	TH-230	TRG	10/09/15 14:00	1.54E+00	107.97	0.00	0.00			
11	TH-230	TRG	10/09/15 14:10	1.53E+00	106.22	0.00	0.00			
12	TH-230	TRG	10/09/15 14:20	1.53E+00	121.91	0.00	0.00			
13	TH-230	TRG	10/09/15 14:30	1.55E+00	97.74	0.00	0.00			
14	TH-230	TRG	10/10/15 11:30	1.60E+00	98.66	0.00	0.00			
15	TH-230	TRG	10/10/15 11:40	1.58E+00	99.66	0.00	0.00			
16	TH-230	TRG	10/10/15 11:50	1.52E+00	88.85	0.00	0.00			
17	TH-230	TRG	10/10/15 12:00	1.51E+00	91.56	0.00	0.00			
18	TH-230	TRG	10/10/15 12:10	1.59E+00	127.51	0.00	0.00			
19	TH-230	TRG	10/10/15 12:20	1.51E+00	104.91	0.00	0.00			
20	TH-230	TRG	10/10/15 12:30	1.54E+00	103.16	0.00	0.00			

	Run
Analysis Code	THISO
Eberline Services Work Order	15-10084
Client	Auxier & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-230	LCS	10/23/15 10:28		A_Spec	Alpha_049	170	3.78 E+02	2.00 E-03	15.3
02	TH-230	MBL	10/23/15 10:28		A_Spec	Alpha_050	170	1.49 E+00	3.00 E-03	14.3
03	TH-230	DUP	10/23/15 10:29		A_Spec	Alpha_051	170	9.69 E+01	1.82 E-02	15.2
04	TH-230	DO	10/23/15 10:28		A_Spec	Alpha_052	170	1.15 E+02	0.00 E+00	16.1
05	TH-230	TRG	10/23/15 10:28		A_Spec	Alpha_053	170	1.74 E+02	6.00 E-03	14.6
06	TH-230	TRG	10/23/15 10:28		A_Spec	Alpha_054	170	1.32 E+02	2.00 E-03	14.5
07	TH-230	TRG	10/23/15 10:28		A_Spec	Alpha_055	170	1.60 E+02	7.00 E-03	15.6
08	TH-230	TRG	10/23/15 10:29		A_Spec	Alpha_056	170	1.54 E+02	1.40 E-02	16
09	TH-230	TRG	10/23/15 10:28		A_Spec	Alpha_057	170	1.49 E+02	2.00 E-03	15.8
10	TH-230	TRG	10/23/15 10:28		A_Spec	Alpha_058	170	1.15 E+02	1.00 E-03	16.4
11	TH-230	TRG	10/23/15 10:29		A_Spec	Alpha_059	170	1.69 E+02	4.00 E-03	17.2
12	TH-230	TRG	10/23/15 10:29		A_Spec	Alpha_060	170	1.40 E+02	2.00 E-03	15.4
13	TH-230	TRG	10/23/15 11:20		A_Spec	Alpha_033	170	1.37 E+02	3.00 E-03	18
14	TH-230	TRG	10/23/15 11:20		A_Spec	Alpha_034	170	1.62 E+02	9.00 E-03	17.9
15	TH-230	TRG	10/23/15 11:20		A_Spec	Alpha_035	170	1.78 E+02	4.00 E-03	16.5
16	TH-230	TRG	10/23/15 11:20		A_Spec	Alpha_036	170	1.74 E+02	4.00 E-03	18.1
17	TH-230	TRG	10/23/15 11:20		A_Spec	Alpha_037	170	1.54 E+02	2.00 E-03	17.1
18	TH-230	TRG	10/23/15 11:20		A_Spec	Alpha_038	170	1.37 E+02	3.00 E-03	16.2
19	TH-230	TRG	10/23/15 11:20		A_Spec	Alpha_039	170	1.47 E+02	1.90 E-02	19.3
20	TH-230	TRG	10/23/15 11:20		A_Spec	Alpha_040	170	1.93 E+02	3.00 E-03	18.6

	1
Run	THISO
Analysis Code	15-10084
Eberline Services Work Order	Auxier & Associates, Inc.
Client	

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	5.49E+00	9.39E-01	9.18E-02	5.09E+00	107.78	OK		OK	
02	TH-232	MBL	BLANK	pCi/g	2.50E-02	4.27E-02	7.50E-02					OK	OK
03	TH-232	DUP	CP0604S06-07	pCi/g	1.30E+00	2.98E-01	5.67E-02				INV	OK	
04	TH-232	DO	CP0604S06-07	pCi/g	1.68E+00	3.93E-01	6.36E-02					OK	
05	TH-232	TRG	CP0604S09-10	pCi/g	1.16E+00	2.69E-01	4.75E-02					OK	
06	TH-232	TRG	CP0604S11-12	pCi/g	1.16E+00	2.74E-01	3.68E-02					OK	
07	TH-232	TRG	CP0604S14-15	pCi/g	1.53E+00	3.95E-01	5.18E-02					OK	
08	TH-232	TRG	CP0604S16-17	pCi/g	1.05E+00	2.53E-01	4.86E-02					OK	
09	TH-232	TRG	CP0604S19-20	pCi/g	1.11E+00	2.74E-01	5.41E-02					OK	
10	TH-232	TRG	CP0604S21-22	pCi/g	9.83E-01	2.54E-01	5.47E-02					OK	
11	TH-232	TRG	CP0604S24-25	pCi/g	1.49E+00	3.43E-01	4.97E-02					OK	
12	TH-232	TRG	CP0604S26-27	pCi/g	1.16E+00	2.79E-01	3.84E-02					OK	
13	TH-232	TRG	CP0604S28-29	pCi/g	1.22E+00	2.99E-01	5.82E-02					OK	
14	TH-232	TRG	CP1803S03-04	pCi/g	1.33E+00	3.16E-01	4.93E-02					OK	
15	TH-232	TRG	CP1803S06-07	pCi/g	1.49E+00	3.58E-01	6.13E-02					OK	
16	TH-232	TRG	CP1803S08-09	pCi/g	1.42E+00	3.51E-01	5.20E-02					OK	
17	TH-232	TRG	CP1803S10-11	pCi/g	1.35E+00	3.43E-01	4.67E-02					OK	
18	TH-232	TRG	CP1803S12-13	pCi/g	1.34E+00	2.96E-01	3.86E-02					OK	
19	TH-232	TRG	CP1803S15-16	pCi/g	1.59E+00	3.45E-01	6.15E-02					OK	
20	TH-232	TRG	CP1803S18-19	pCi/g	1.28E+00	2.98E-01	5.38E-02					OK	

	Run	1
Eberline Services Work Order	Analysis Code	THISO
15-10084		
Client		
Auxier & Associates, Inc.		

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep to Date/Time	Sep to Date/Time
01	TH-232	LCS	10/14/15 00:00	1.00E+00	106.72	0.00	0.00			
02	TH-232	MBL	10/14/15 00:00	1.50E+00	98.96	0.00	0.00			
03	TH-232	DUP	10/09/15 13:00	1.52E+00	132.01	0.00	0.00			
04	TH-232	DO	10/09/15 13:00	1.52E+00	102.13	0.00	0.00			
05	TH-232	TRG	10/09/15 13:10	1.53E+00	141.74	0.00	0.00			
06	TH-232	TRG	10/09/15 13:20	1.52E+00	136.09	0.00	0.00			
07	TH-232	TRG	10/09/15 13:30	1.51E+00	90.42	0.00	0.00			
08	TH-232	TRG	10/09/15 13:40	1.52E+00	126.22	0.00	0.00			
09	TH-232	TRG	10/09/15 13:50	1.51E+00	115.76	0.00	0.00			
10	TH-232	TRG	10/09/15 14:00	1.54E+00	107.97	0.00	0.00			
11	TH-232	TRG	10/09/15 14:10	1.53E+00	106.22	0.00	0.00			
12	TH-232	TRG	10/09/15 14:20	1.53E+00	121.91	0.00	0.00			
13	TH-232	TRG	10/09/15 14:30	1.55E+00	97.74	0.00	0.00			
14	TH-232	TRG	10/10/15 11:30	1.60E+00	98.66	0.00	0.00			
15	TH-232	TRG	10/10/15 11:40	1.58E+00	99.66	0.00	0.00			
16	TH-232	TRG	10/10/15 11:50	1.52E+00	88.85	0.00	0.00			
17	TH-232	TRG	10/10/15 12:00	1.51E+00	91.56	0.00	0.00			
18	TH-232	TRG	10/10/15 12:10	1.59E+00	127.51	0.00	0.00			
19	TH-232	TRG	10/10/15 12:20	1.51E+00	104.91	0.00	0.00			
20	TH-232	TRG	10/10/15 12:30	1.54E+00	103.16	0.00	0.00			

150200

	Run	1
	Analysis Code	THISO
Client	Auxier & Associates, Inc.	
Eberline Services Work Order	15-10084	

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-232	LCS	10/23/15 10:28		A_Spec	Alpha_049	170	3.37 E+02	4.00 E-03	15.3
02	TH-232	MBL	10/23/15 10:28		A_Spec	Alpha_050	170	2.00 E+00	0.00 E+00	14.3
03	TH-232	DUP	10/23/15 10:29		A_Spec	Alpha_051	170	1.50 E+02	4.55 E-03	15.2
04	TH-232	DO	10/23/15 10:28		A_Spec	Alpha_052	170	1.58 E+02	0.00 E+00	16.1
05	TH-232	TRG	10/23/15 10:28		A_Spec	Alpha_053	170	1.38 E+02	4.00 E-03	14.6
06	TH-232	TRG	10/23/15 10:28		A_Spec	Alpha_054	170	1.32 E+02	1.00 E-03	14.5
07	TH-232	TRG	10/23/15 10:28		A_Spec	Alpha_055	170	1.23 E+02	1.00 E-03	15.6
08	TH-232	TRG	10/23/15 10:29		A_Spec	Alpha_056	170	1.21 E+02	4.00 E-03	16
09	TH-232	TRG	10/23/15 10:28		A_Spec	Alpha_057	170	1.15 E+02	4.00 E-03	15.8
10	TH-232	TRG	10/23/15 10:28		A_Spec	Alpha_058	170	1.01 E+02	4.00 E-03	16.4
11	TH-232	TRG	10/23/15 10:29		A_Spec	Alpha_059	170	1.67 E+02	3.00 E-03	17.2
12	TH-232	TRG	10/23/15 10:29		A_Spec	Alpha_060	170	1.26 E+02	1.00 E-03	15.4
13	TH-232	TRG	10/23/15 11:20		A_Spec	Alpha_033	170	1.26 E+02	0.00 E+00	18
14	TH-232	TRG	10/23/15 11:20		A_Spec	Alpha_034	170	1.41 E+02	3.00 E-03	17.9
15	TH-232	TRG	10/23/15 11:20		A_Spec	Alpha_035	170	1.46 E+02	0.00 E+00	16.5
16	TH-232	TRG	10/23/15 11:20		A_Spec	Alpha_036	170	1.31 E+02	2.00 E-03	18.1
17	TH-232	TRG	10/23/15 11:20		A_Spec	Alpha_037	170	1.21 E+02	1.00 E-03	17.1
18	TH-232	TRG	10/23/15 11:20		A_Spec	Alpha_038	170	1.67 E+02	2.00 E-03	16.2
19	TH-232	TRG	10/23/15 11:20		A_Spec	Alpha_039	170	1.83 E+02	9.00 E-03	19.3
20	TH-232	TRG	10/23/15 11:20		A_Spec	Alpha_040	170	1.43 E+02	0.00 E+00	18.6

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	0.4381	9.8397		0.00		
02	MBL	BLANK	10/14/15 00:00	1.5000	0.2308	5.1838		0.00		
03	DUP	CP0604S06-07	10/09/15 13:00	1.5240	0.2196	4.9322		0.00		
04	DO	CP0604S06-07	10/09/15 13:00	1.5227	0.2302	5.1703		0.00		
05	TRG	CP0604S09-10	10/09/15 13:10	1.5265	0.2254	5.0625		0.00		
06	TRG	CP0604S11-12	10/09/15 13:20	1.5195	0.2251	5.0557		0.00		
07	TRG	CP0604S14-15	10/09/15 13:30	1.5092	0.2256	5.0670		0.00		
08	TRG	CP0604S16-17	10/09/15 13:40	1.5214	0.2195	4.9300		0.00		
09	TRG	CP0604S19-20	10/09/15 13:50	1.5142	0.2293	5.1501		0.00		
10	TRG	CP0604S21-22	10/09/15 14:00	1.5426	0.2270	5.0984		0.00		
11	TRG	CP0604S24-25	10/09/15 14:10	1.5325	0.2252	5.0580		0.00		
12	TRG	CP0604S26-27	10/09/15 14:20	1.5293	0.2251	5.0557		0.00		
13	TRG	CP0604S28-29	10/09/15 14:30	1.5463	0.2264	5.0849		0.00		
14	TRG	CP1803S03-04	10/10/15 11:30	1.5976	0.2256	5.0670		0.00		
15	TRG	CP1803S06-07	10/10/15 11:40	1.5793	0.2249	5.0513		0.00		
16	TRG	CP1803S08-09	10/10/15 11:50	1.5179	0.2258	5.0715		0.00		
17	TRG	CP1803S10-11	10/10/15 12:00	1.5128	0.2243	5.0378		0.00		
18	TRG	CP1803S12-13	10/10/15 12:10	1.5946	0.2259	5.0737		0.00		
19	TRG	CP1803S15-16	10/10/15 12:20	1.5085	0.2260	5.0760		0.00		
20	TRG	CP1803S18-19	10/10/15 12:30	1.5439	0.2255	5.0647		0.00		

19-10

433-10

00207

Internal Work Order		Run	Analysis Code		Date	Technician		Technician Initials		Witness Initials		
15-10084		1	ThISO		10/15/2015 13:35	JPACHELLA		<i>JMP</i>				
LCS & Matrix Spikes												
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCSD Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	MS Error Estimate	LCSD Known pCi	MSD Error Estimate
Th-228	Th-8b	103.560	10/15/2015	0.100	0.1092				5.09	0.183	0.00	0.000
Th-230	Th-1b	23.520	10/15/2015	0.500	0.5078				5.38	0.145	0.00	0.000
Th-232	Th-8b	103.560	10/15/2015	0.100	0.1092				5.09	0.183	0.00	0.000
IC-99 MS		22043.636	7/5/2014	0.1								
Tracers												
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Tracer					LCS
01	Th-229	Th-18a	22.460	10/15/2015	0.4381	0.2200						
02	Th-229	Th-18a	22.460	10/15/2015	0.2308	0.2200						
03	Th-229	Th-18a	22.460	10/15/2015	0.2196	0.2200						
04	Th-229	Th-18a	22.460	10/15/2015	0.2302	0.2200						
05	Th-229	Th-18a	22.460	10/15/2015	0.2254	0.2200						
06	Th-229	Th-18a	22.460	10/15/2015	0.2251	0.2200						
07	Th-229	Th-18a	22.460	10/15/2015	0.2256	0.2200						
08	Th-229	Th-18a	22.460	10/15/2015	0.2195	0.2200						
09	Th-229	Th-18a	22.460	10/15/2015	0.2293	0.2200						
10	Th-229	Th-18a	22.460	10/15/2015	0.2270	0.2200						
11	Th-229	Th-18a	22.460	10/15/2015	0.2252	0.2200						
12	Th-229	Th-18a	22.460	10/15/2015	0.2251	0.2200						
13	Th-229	Th-18a	22.460	10/15/2015	0.2264	0.2200						
14	Th-229	Th-18a	22.460	10/15/2015	0.2256	0.2200						
15	Th-229	Th-18a	22.460	10/15/2015	0.2249	0.2200						
16	Th-229	Th-18a	22.460	10/15/2015	0.2258	0.2200						
17	Th-229	Th-18a	22.460	10/15/2015	0.2243	0.2200						
18	Th-229	Th-18a	22.460	10/15/2015	0.2259	0.2200						
19	Th-229	Th-18a	22.460	10/15/2015	0.2260	0.2200						
20	Th-229	Th-18a	22.460	10/15/2015	0.2255	0.2200						
Matrix Spike												

00208

Aliquot Worksheet

Work Order		Run	Analysis Code	Rpt Units	Lab Deadline	Technician	
15-10084		1	THISO	grams	11/6/2015	JPACHELLA	

Lab Fraction	Auxier & Associates, Inc.		Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID	Sample Type	Ratio Post/Pre	No of Dils	Dil. Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS	LCS					1.000E+00	1.000E+00					
02	BLANK	MBL					1.500E+00	1.500E+00					
03	CP0604S06-07	DUP					1.524E+00	1.524E+00					
04	CP0604S06-07	DO					1.522E+00	1.522E+00					
05	CP0604S09-10	TRG					1.526E+00	1.526E+00					
06	CP0604S11-12	TRG					1.519E+00	1.519E+00					
07	CP0604S14-15	TRG					1.509E+00	1.509E+00					
08	CP0604S16-17	TRG					1.521E+00	1.521E+00					
09	CP0604S19-20	TRG					1.514E+00	1.514E+00					
10	CP0604S21-22	TRG					1.542E+00	1.542E+00					
11	CP0604S24-25	TRG					1.532E+00	1.532E+00					
12	CP0604S26-27	TRG					1.523E+00	1.523E+00					
13	CP0604S28-29	TRG					1.546E+00	1.546E+00					
14	CP1803S03-04	TRG					1.597E+00	1.597E+00					
15	CP1803S06-07	TRG					1.579E+00	1.579E+00					
16	CP1803S08-09	TRG					1.517E+00	1.517E+00					
17	CP1803S10-11	TRG					1.512E+00	1.512E+00					
18	CP1803S12-13	TRG					1.594E+00	1.594E+00					
19	CP1803S15-16	TRG					1.508E+00	1.508E+00					
20	CP1803S18-19	TRG					1.543E+00	1.543E+00					

Comments

Technician: JPachella Date: 10.15.15

Rough Sample Preparation
Log Book

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
15-10084	11/6/2015	10/14/2015	10/15/2015	10/16/2015	KSALLINGS

Eberline Fraction	Auxier & Associates, Inc. Client ID	Tare (g)		Gross (g)		Net (g)		Percent			Gamma		Special Info
		Pan Wt	Dry Wt	Wet Wt	Dry Wt	Wet Wt	Dry Wt	Liquid	Solid	Dry Wt	LEPS Wt		
04	CP0604S06-07	14.2300	747.6000	920.4200	747.6000	906.1900	733.3700	19.07%	80.93%				
05	CP0604S09-10	14.2200	757.0600	925.7600	757.0600	911.5400	742.8400	18.51%	81.49%				
06	CP0604S11-12	14.2600	631.9100	797.1100	631.9100	782.8500	617.6500	21.10%	78.90%				
07	CP0604S14-15	14.1900	728.7400	910.8800	728.7400	896.6900	714.5500	20.31%	79.69%				
08	CP0604S16-17	14.1200	750.1100	934.8200	750.1100	920.7000	735.9900	20.06%	79.94%				
09	CP0604S19-20	14.1800	826.6200	1022.5400	826.6200	1008.3600	812.4400	19.43%	80.57%				
10	CP0604S21-22	14.5200	743.5000	929.6600	743.5000	915.1400	728.9800	20.34%	79.66%				
11	CP0604S24-25	14.5700	797.8900	1005.9400	797.8900	991.3700	783.3200	20.99%	79.01%				
12	CP0604S26-27	14.5600	881.2800	1145.0800	881.2800	1130.5200	866.7200	23.33%	76.67%				
13	CP0604S28-29	14.6200	1005.7000	1252.7600	1005.7000	1238.1400	991.0800	19.95%	80.05%				
14	CP1803S03-04	14.5400	665.8800	820.4400	665.8800	805.9000	651.3400	19.18%	80.82%				
15	CP1803S06-07	14.6300	607.3600	753.9500	607.3600	739.3200	592.7300	19.83%	80.17%				
16	CP1803S08-09	14.5900	733.5400	925.0200	733.5400	910.4300	718.9500	21.03%	78.97%				
17	CP1803S10-11	14.6000	980.0000	1197.3600	980.0000	1182.7600	965.4000	18.38%	81.62%				
18	CP1803S12-13	14.5900	728.8200	893.3600	728.8200	878.7700	714.2300	18.72%	81.28%				
19	CP1803S15-16	14.5700	817.0800	1007.4000	817.0800	992.8300	802.5100	19.17%	80.83%				
20	CP1803S18-19	14.6600	864.3400	1078.4800	864.3400	1063.8200	849.6800	20.13%	79.87%				

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

00210



Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001321
 Batch Identification: 1510084A-TH
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_049
 Chamber Serial Number: 10006121A
 Detector Serial Number: 49
 Env. Background: System Bkgd 131885
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/23/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 10:28:51 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.438 mL
 Effective Efficiency: 0.1628 +/- 0.0111
 Counting Efficiency: 0.1525 +/- 0.0027 on 12/13/2014 2:45:02 PM
 Chem. Recovery Factor: 1.0672 +/- 0.0752

Control Certificate Name: NatTh_Th-8
 Chem. Recov. of Control: TH-232 1.077819 +/- 0.099460
 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	5.855	12.66	55.94	0.34	0.00E+000	3.0
TH-228	5.344	341.98	10.62	1.02	0.00E+000	4.5
TH-229 T	4.861	272.32	11.89	0.68	0.00E+000	9.5
TH-230	4.633	377.66	10.09	0.34	0.00E+000	11.8
TH-232	3.945	337.32	10.68	0.68	0.00E+000	6.3

T = Tracer Peak used for Effective Efficiency

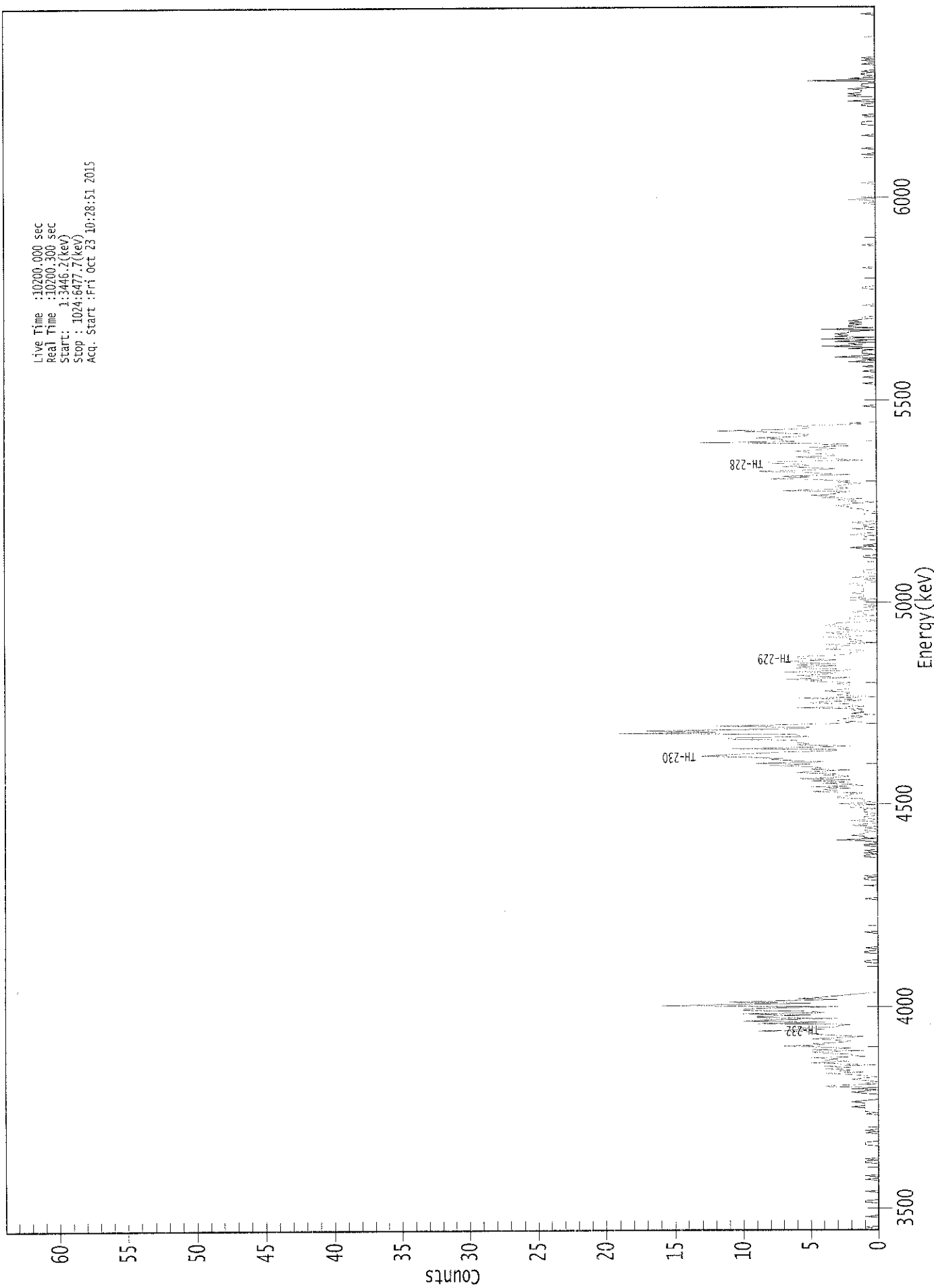
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	2.11E-001 +/- 1.22E-001	7.98E-002 +/- 1.07E-002
TH-228	0.984	5400.00*	5.57E+000 +/- 9.50E-001	1.03E-001 +/- 1.37E-002
TH-229	0.999	4872.00*	4.45E+000 +/- 5.95E-001	9.23E-002 +/- 1.23E-002
TH-230	0.992	4672.00*	6.16E+000 +/- 1.03E+000	7.80E-002 +/- 1.04E-002
TH-232	0.986	3997.00*	5.49E+000 +/- 9.39E-001	9.18E-002 +/- 1.23E-002

AG
 10/23/15

0000132096.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start: 1:3446.2(kev)
Stop : 1024:6477.7(kev)
Acq. Start :Fri Oct 23 10:28:51 2015



ROI Type: 3

ROI Type: 1

000212

 ***** 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	2	3	4	5	6	7	8	9
1:	0	0	1	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	1
25:	1	0	0	0	0	0	0	0	0
33:	1	0	0	0	0	0	0	0	0
41:	0	0	1	0	0	1	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	1	1	0	1	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	1
73:	1	1	0	0	0	0	0	0	0
81:	0	1	0	1	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	1	0	1	1	1	1	1	2
105:	1	1	1	2	1	0	0	0	0
113:	0	0	1	2	1	0	2	0	0
121:	4	3	0	1	0	1	2	1	1
129:	0	1	2	4	1	3	2	4	4
137:	2	4	0	3	5	2	4	3	3
145:	5	1	2	2	4	5	1	5	5
153:	2	4	7	4	5	3	2	3	3
161:	5	3	1	3	5	5	5	9	9
169:	4	6	3	3	2	9	4	10	10
177:	8	3	9	9	5	10	4	5	5
185:	10	10	8	3	16	11	5	11	11
193:	8	3	6	4	3	2	1	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:	1	1	0	0	0	0	0	0	0
233:	1	1	0	0	1	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	1	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	1	0	0	0	0	1	1	0	0
297:	1	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	0
313:	1	1	0	1	0	1	0	0	0
321:	0	1	1	0	0	1	3	0	0
329:	1	1	2	1	1	0	1	0	0
337:	1	0	2	1	0	0	2	0	0
345:	1	1	0	1	0	1	1	1	1
353:	0	2	2	0	3	0	1	1	1
361:	1	3	3	2	2	1	5	3	3

369: 4 2 5 1 2 4 2 5

Sample Title: 01

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

801: 0 0 0 1 0 0 0 0

Sample Title: 01

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	1	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	1	0	0	2	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:	0	0	0	0	0	0	0	0
897:	0	0	1	0	0	0	0	1
905:	0	0	0	0	0	0	0	0
913:	0	0	1	0	0	0	0	0
921:	0	0	0	1	1	1	0	0
929:	0	0	0	1	0	0	0	0
937:	0	0	0	1	1	0	0	2
945:	0	0	0	2	1	2	1	1
953:	1	2	0	1	1	1	0	0
961:	5	0	2	0	0	1	1	0
969:	1	0	0	0	0	0	1	0
977:	0	1	0	1	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:	1	0	0	0	0	0	0	0

LB
10/23/15

Apex-Alpha™

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001320
 Batch Identification: 1510084A-TH
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_050
 Chamber Serial Number: 10006121B
 Detector Serial Number: 50
 Env. Background: System Bkgd 131886
 Reagent Blank: <not performed>

Sample Size: 1.500E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/23/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 10:28:54 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.231 mL
 Effective Efficiency: 0.1413 +/- 0.0134
 Counting Efficiency: 0.1428 +/- 0.0026 on 12/13/2014 2:43:59 PM
 Chem. Recovery Factor: 0.9896 +/- 0.0957

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	5.847	4.98	97.79	1.02	0.00E+000	3.0
TH-228	5.391	1.98	176.34	1.02	0.00E+000	3.0
TH-229 T	4.886	124.49	17.61	0.51	0.00E+000	20.7
TH-230	4.672	1.49	190.02	0.51	0.00E+000	3.0
TH-232	3.958	2.00	169.74	0.00	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

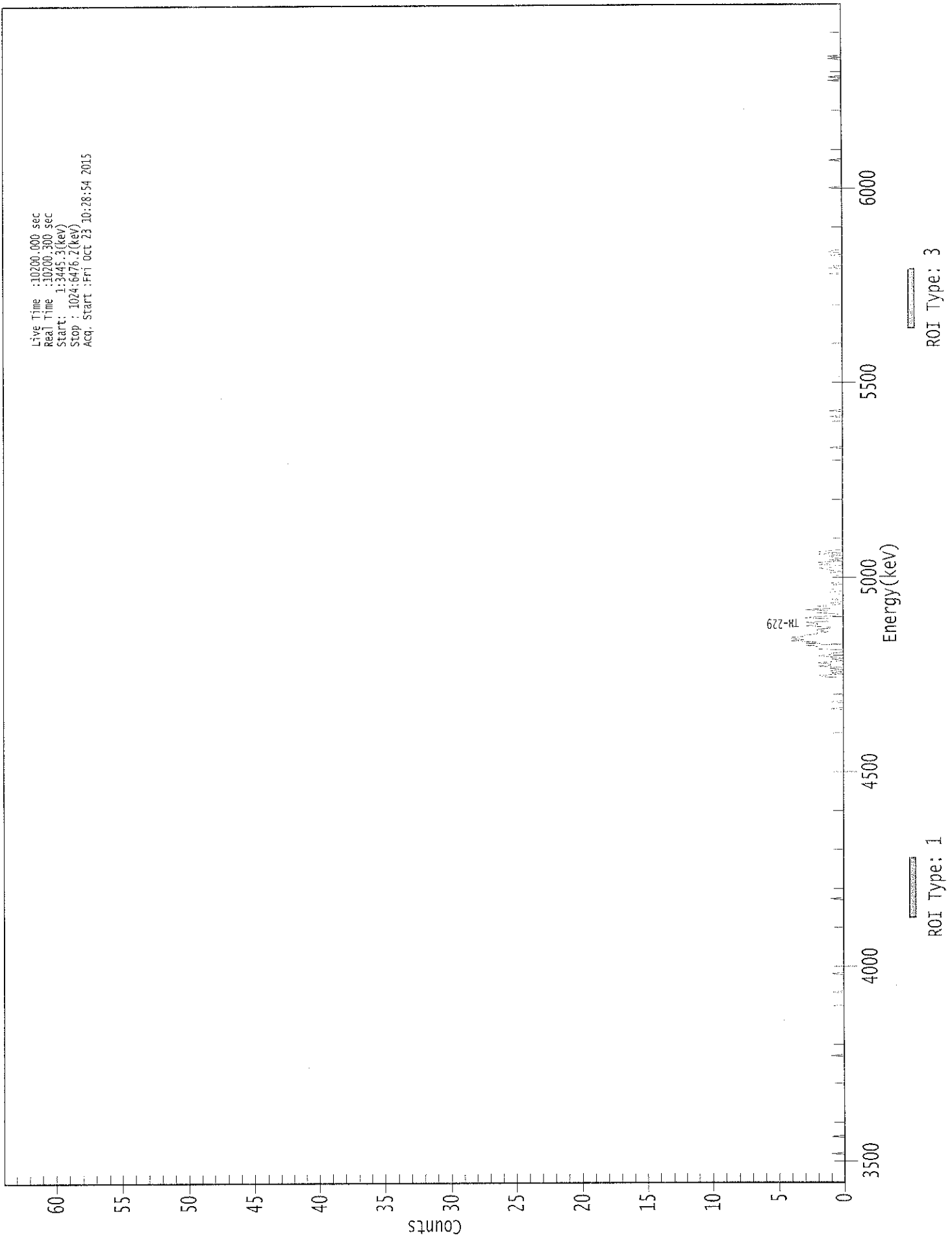
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	6.39E-002 +/- 6.36E-002	8.08E-002 +/- 1.51E-002
TH-228	1.000	5400.00*	2.48E-002 +/- 4.39E-002	7.88E-002 +/- 1.47E-002
TH-229	0.999	4872.00*	1.56E+000 +/- 2.91E-001	6.59E-002 +/- 1.23E-002
TH-230	1.000	4672.00*	1.87E-002 +/- 3.56E-002	6.57E-002 +/- 1.22E-002
TH-232	0.992	3997.00*	2.50E-002 +/- 4.27E-002	7.50E-002 +/- 1.40E-002

AG
 10/23/15

0000132097.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3445.3(kev)
Stop : 1024:6476.2(kev)
Acq. Start :Fri Oct 23 10:28:54 2015



: 00217

369: 0 0 0 0 0 0 0 0 0

Sample Title: 02

Channel								
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	1	0	0	0	0
417:	0	1	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0
433:	0	0	0	0	0	0	0	2
441:	2	0	1	0	1	0	1	0
449:	2	1	1	2	1	0	1	0
457:	1	2	1	1	0	0	0	2
465:	2	2	3	0	3	2	4	3
473:	4	4	3	3	2	2	1	2
481:	2	1	1	3	2	2	3	1
489:	1	1	3	2	0	0	2	1
497:	1	3	1	1	2	1	0	1
505:	0	0	1	0	0	0	0	1
513:	1	0	0	1	1	1	1	0
521:	1	0	0	0	0	0	0	1
529:	1	1	0	1	1	2	0	0
537:	2	1	2	0	1	0	1	1
545:	0	2	0	2	1	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	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	1	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:	1	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	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	1	0	0	0
793:	0	1	0	0	0	0	0	0

801: 0 0 0 0 1 0 0 1

Sample Title: 02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	1	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	1
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	1
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	1	0	0	1
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	1
977:	0	1	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™

165
10/23/15

Sample Description: CP0604S06-07-DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001320
 Batch Identification: 1510084A-TH
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_051
 Chamber Serial Number: 10006123A
 Detector Serial Number: 51
 Env. Background: System Bkgd 131887
 Reagent Blank: <not performed>

Sample Size: 1.524E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 10:29:10 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.220 mL
 Effective Efficiency: 0.2012 +/- 0.0169
 Counting Efficiency: 0.1524 +/- 0.0027 on 12/13/2014 2:42:37 PM
 Chem. Recovery Factor: 1.3201 +/- 0.1132

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	5.824	6.68	96.36	2.32	0.00E+000	3.0
TH-228	5.387	155.82	16.24	6.18	0.00E+000	10.2
TH-229 T	4.901	168.68	15.27	2.32	0.00E+000	6.4
TH-230	4.652	96.91	20.47	3.09	0.00E+000	25.2
TH-232	3.981	150.23	16.06	0.77	0.00E+000	5.3

T = Tracer Peak used for Effective Efficiency

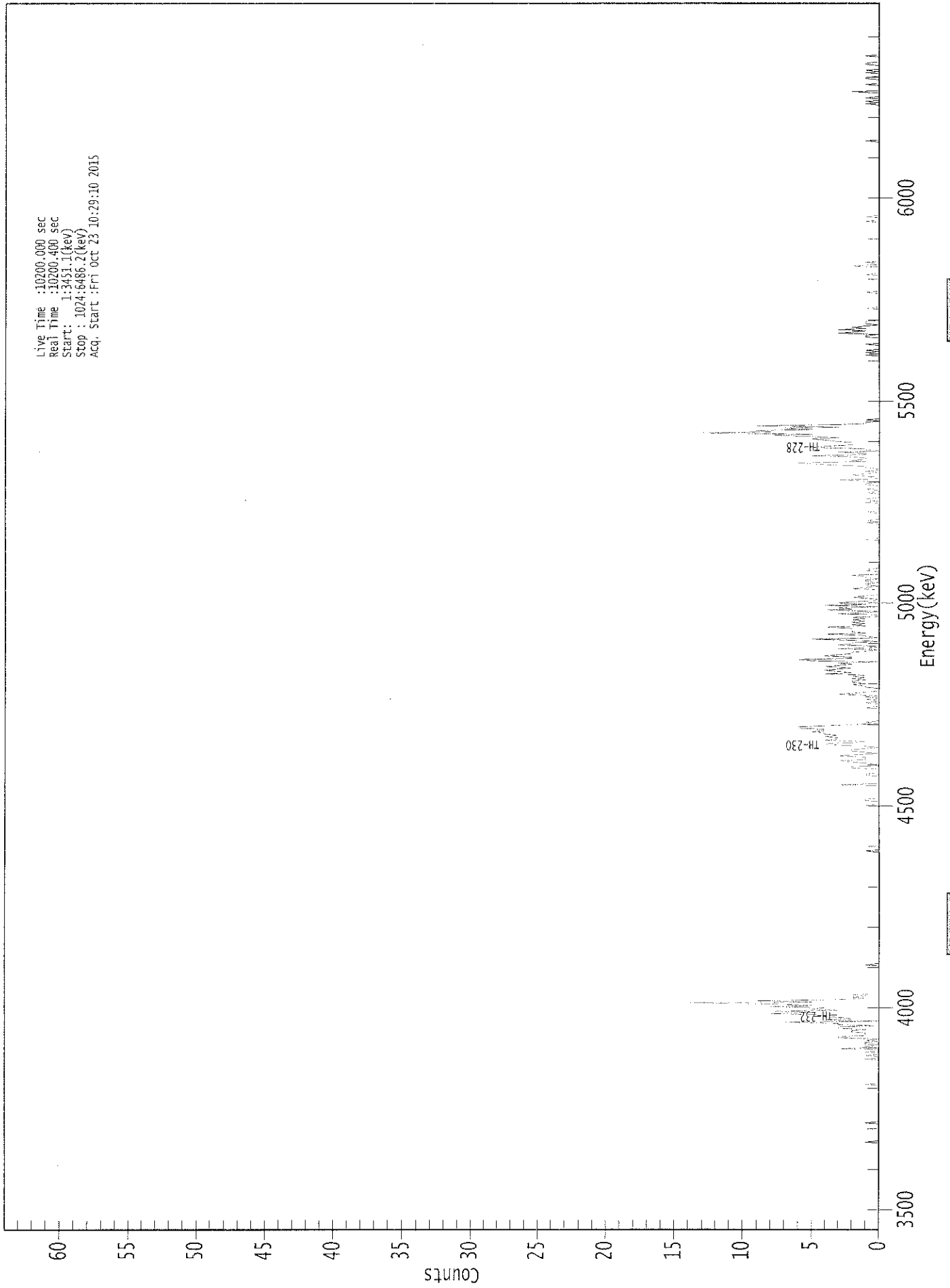
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.996	5850.00*	5.93E-002 +/- 5.80E-002	8.32E-002 +/- 1.37E-002
TH-228	0.999	5400.00*	1.37E+000 +/- 3.16E-001	1.19E-001 +/- 1.96E-002
TH-229	0.996	4872.00*	1.46E+000 +/- 2.41E-001	8.14E-002 +/- 1.34E-002
TH-230	0.998	4672.00*	8.39E-001 +/- 2.20E-001	9.01E-002 +/- 1.48E-002
TH-232	0.999	3997.00*	1.30E+000 +/- 2.98E-001	5.67E-002 +/- 9.31E-003

AG
10/23/15

0000132088.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3451.1(keV)
Stop : 1024:6486.2(keV)
Acq. Start :Fri Oct 23 10:29:10 2015



00222

369: 0 0 0 3 0 0 0 0

Sample Title: 03

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	1	1	0	0	0
385:	0	2	2	0	0	1	2	3
393:	1	1	1	3	2	0	1	2
401:	2	1	0	1	3	4	2	1
409:	4	3	3	4	3	4	4	5
417:	4	4	6	6	4	2	0	1
425:	0	0	0	0	0	0	0	0
433:	0	0	0	1	0	0	0	1
441:	0	0	1	0	1	0	3	2
449:	1	0	0	0	1	1	2	1
457:	2	2	1	2	1	2	1	4
465:	2	3	4	3	2	4	3	2
473:	3	0	5	6	2	2	4	3
481:	2	2	1	0	3	0	0	3
489:	2	2	0	2	5	0	1	1
497:	4	1	2	2	2	2	4	1
505:	2	1	2	1	2	1	2	0
513:	0	3	1	0	4	2	3	0
521:	4	1	3	2	0	0	1	2
529:	1	0	0	0	0	0	2	1
537:	0	1	1	0	1	1	0	1
545:	1	2	0	0	0	1	1	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	0
585:	0	0	0	0	0	1	0	1
593:	0	0	0	0	0	0	1	0
601:	0	0	0	0	0	0	1	0
609:	1	1	0	0	0	0	1	0
617:	0	1	0	0	0	1	1	0
625:	1	3	0	0	1	2	1	0
633:	1	0	0	1	1	3	5	6
641:	1	2	1	1	2	5	1	1
649:	3	0	1	1	5	4	2	2
657:	2	3	4	5	3	5	8	5
665:	13	8	9	5	7	3	9	3
673:	1	1	0	1	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	1	0	1	0	1	0	0
737:	0	0	1	0	0	0	0	0
745:	1	1	0	3	2	1	3	1
753:	2	1	0	1	1	1	0	0
761:	0	0	0	0	0	0	0	0
769:	1	0	0	0	0	0	0	0
777:	0	0	0	0	0	1	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	1	0	0	0

801: 0 0 0 2 0 0 1 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:	1	0	0	0	1	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	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	0	1	0	1	0	0	1
945:	0	0	0	0	2	0	0	0
953:	0	0	1	0	0	0	0	1
961:	1	0	0	0	1	0	1	0
969:	0	0	0	1	1	0	0	0
977:	0	0	1	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

AG
10/23/15

Apex-Alpha™

Sample Description: CP0604S06-07
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001320
 Batch Identification: 1510084A-TH
 Sample Identification: 04
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_052
 Chamber Serial Number: 10006123B
 Detector Serial Number: 52
 Env. Background: System Bkgd 131888
 Reagent Blank: <not performed>

Sample Size: 1.523E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 10:28:56 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.230 mL
 Effective Efficiency: 0.1641 +/- 0.0146
 Counting Efficiency: 0.1607 +/- 0.0029 on 12/13/2014 2:40:57 PM
 Chem. Recovery Factor: 1.0213 +/- 0.0929

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	5.826	6.23	86.75	0.77	0.00E+000	2.9
TH-228	5.370	162.68	15.56	2.32	0.00E+000	28.3
TH-229 T	4.868	144.23	16.40	0.77	0.00E+000	5.4
TH-230	4.625	115.00	18.36	0.00	0.00E+000	3.8
TH-232	3.967	158.00	15.64	0.00	0.00E+000	11.1

T = Tracer Peak used for Effective Efficiency

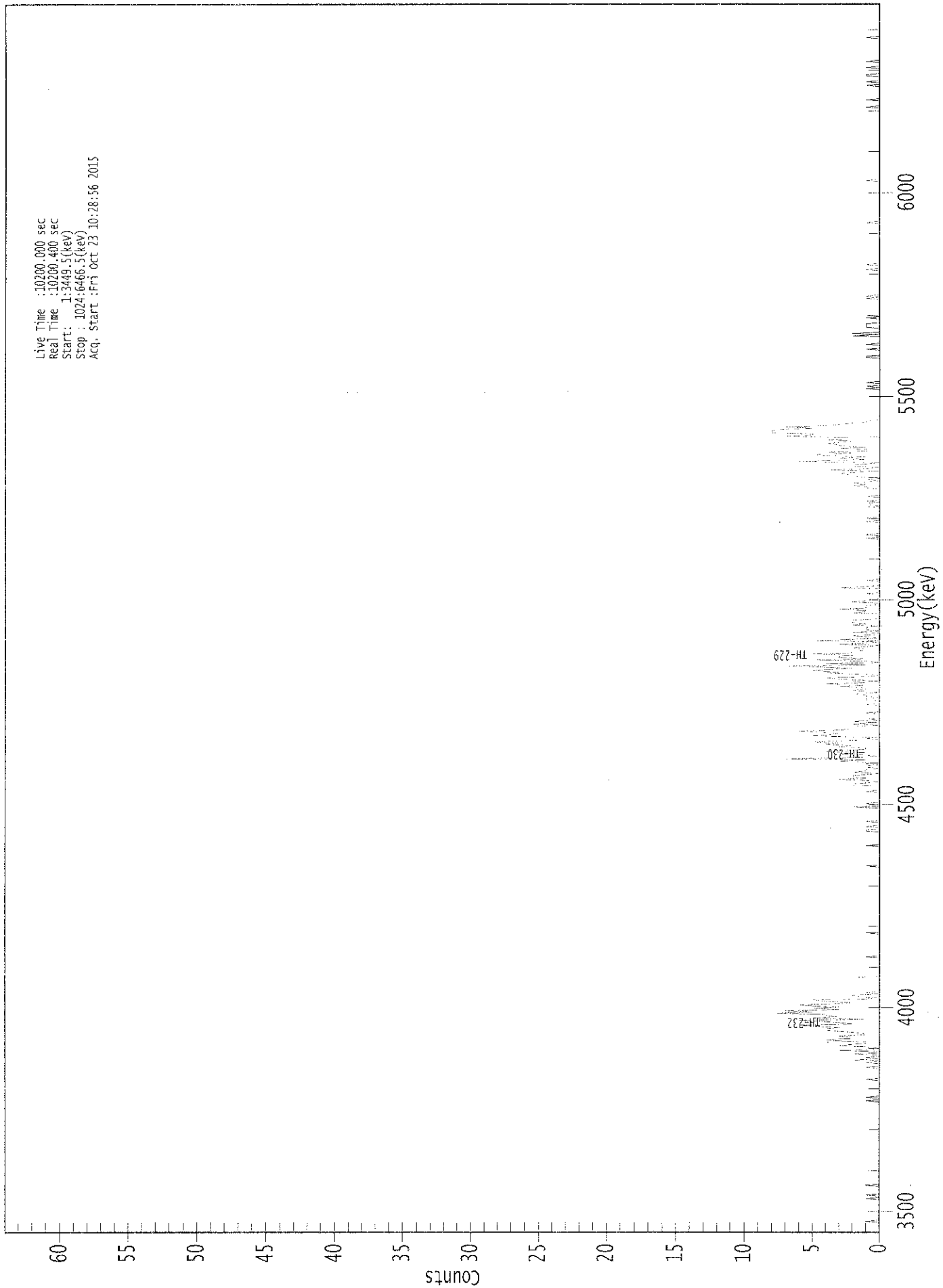
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.997	5850.00*	6.78E-002 +/- 6.00E-002	7.14E-002 +/- 1.25E-002
TH-228	0.995	5400.00*	1.75E+000 +/- 4.10E-001	1.01E-001 +/- 1.76E-002
TH-229	1.000	4872.00*	1.54E+000 +/- 2.69E-001	6.99E-002 +/- 1.22E-002
TH-230	0.989	4672.00*	1.22E+000 +/- 3.10E-001	6.37E-002 +/- 1.11E-002
TH-232	0.995	3997.00*	1.68E+000 +/- 3.93E-001	6.36E-002 +/- 1.11E-002

AG
 10/23/15

0000132089.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3449.5(keV)
Stop : 1024:6466.5(keV)
Acq. Start :Fri Oct 23 10:28:56 2015



: 00227

ROI Type: 1 ROI Type: 3

369: 0 0 0 0 2 2 1 0

Sample Title: 04

Channel	1	2	3	4	5	6	7	8
377:	1	3	1	2	2	1	0	2
385:	1	1	0	1	1	0	1	1
393:	3	1	7	2	0	1	3	1
401:	4	2	1	1	3	2	4	3
409:	5	3	0	1	0	5	4	3
417:	4	6	3	2	2	2	0	2
425:	0	2	0	1	0	0	0	0
433:	1	0	0	0	0	0	0	1
441:	0	0	0	1	1	0	1	1
449:	2	0	1	2	1	1	3	1
457:	4	1	2	1	3	4	1	0
465:	1	4	3	5	4	2	4	7
473:	1	4	0	1	5	1	3	3
481:	2	5	2	2	1	1	2	1
489:	0	3	1	0	5	2	0	1
497:	2	0	0	2	0	1	1	1
505:	0	2	1	2	2	2	0	0
513:	0	0	0	2	1	1	3	1
521:	1	1	0	0	2	1	1	0
529:	0	0	0	1	0	0	0	0
537:	3	1	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	0
569:	0	0	0	0	0	0	0	0
577:	0	1	0	0	1	0	0	0
585:	0	0	0	0	0	0	0	1
593:	0	0	1	0	0	0	0	0
601:	0	0	0	1	0	1	1	0
609:	1	0	0	0	1	0	0	0
617:	0	0	0	1	1	2	1	2
625:	1	0	1	0	1	2	2	3
633:	2	0	4	1	0	2	2	1
641:	0	6	3	1	3	1	4	5
649:	2	4	0	0	3	1	3	3
657:	4	3	2	4	2	2	7	5
665:	5	8	8	8	7	5	7	4
673:	3	2	1	1	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:	1	0	0	1	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	1	1	0	0	0	0	0	1
737:	0	0	0	1	0	0	0	0
745:	0	0	2	0	2	0	0	0
753:	0	1	1	1	1	0	0	0
761:	0	1	0	1	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	1	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 1 0 0 0 1 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:	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	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:	1	0	0	0	0	0	1	0
945:	0	0	0	0	0	0	0	0
953:	0	0	1	0	0	1	0	0
961:	0	0	1	1	0	0	0	0
969:	0	1	0	0	0	0	1	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	1	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
10/23/15

Sample Description: CP0604S09-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001320
 Batch Identification: 1510084A-TH
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_053
 Chamber Serial Number: 10006122A
 Detector Serial Number: 53
 Env. Background: System Bkgd 131889
 Reagent Blank: <not performed>

Sample Size: 1.526E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 10:28:46 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: 0.2062 +/- 0.0168
 Counting Efficiency: 0.1455 +/- 0.0026 on 12/13/2014 2:39:33 PM
 Chem. Recovery Factor: 1.4174 +/- 0.1181

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	5.841	13.15	56.06	0.85	0.00E+000	3.0
TH-228	5.366	171.64	15.03	1.36	0.00E+000	5.1
TH-229 T	4.890	177.49	14.74	0.51	0.00E+000	3.8
TH-230	4.634	173.98	14.91	1.02	0.00E+000	10.6
TH-232	3.962	138.32	16.71	0.68	0.00E+000	4.1

T = Tracer Peak used for Effective Efficiency

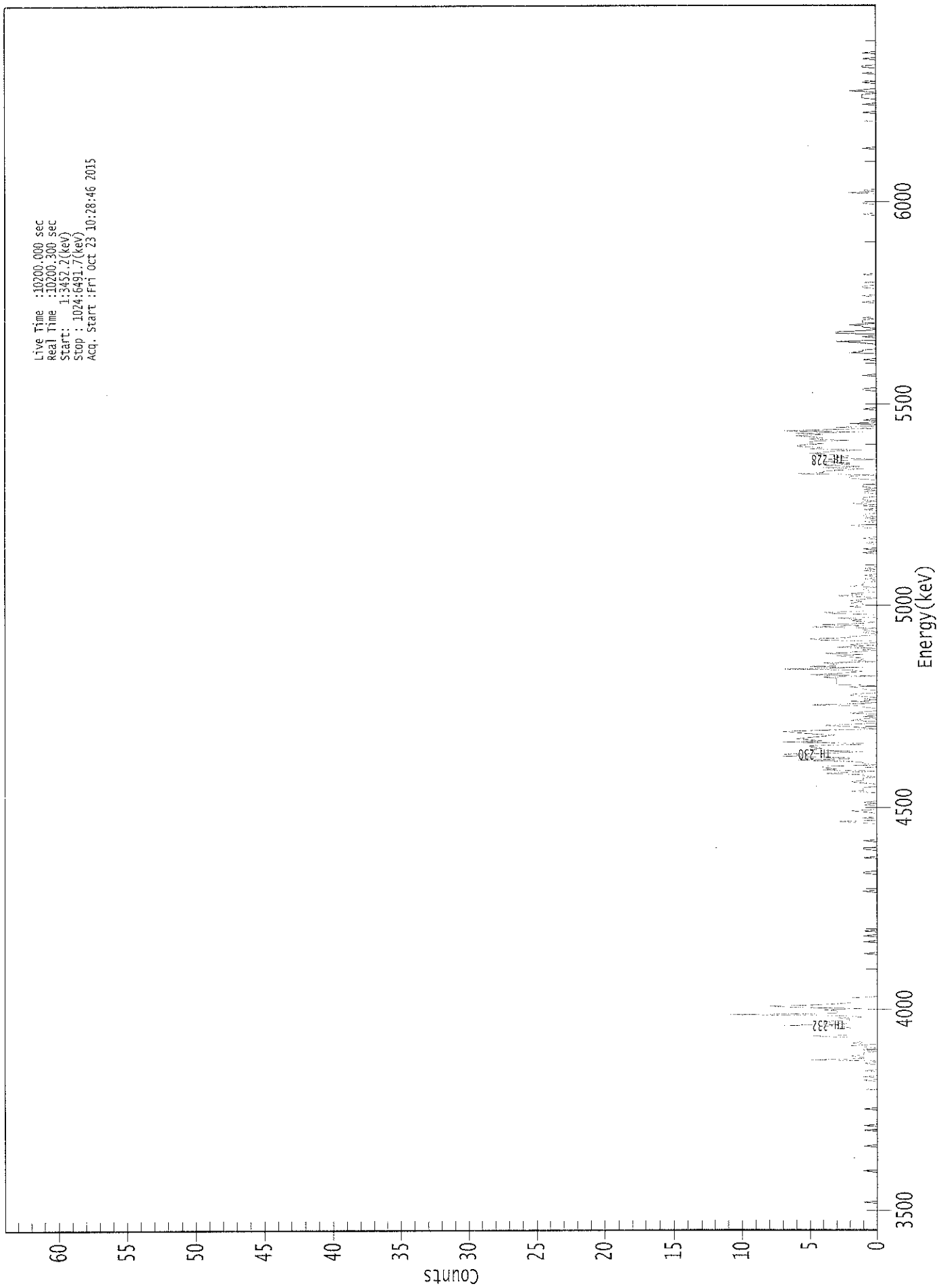
 ----- NUCLIDE ANALYSIS RESULTS -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.14E-001 +/- 6.62E-002	5.17E-002 +/- 8.25E-003
TH-228	0.994	5400.00*	1.47E+000 +/- 3.21E-001	5.86E-002 +/- 9.33E-003
TH-229	0.998	4872.00*	1.50E+000 +/- 2.39E-001	4.44E-002 +/- 7.07E-003
TH-230	0.992	4672.00*	1.47E+000 +/- 3.20E-001	5.31E-002 +/- 8.47E-003
TH-232	0.994	3997.00*	1.16E+000 +/- 2.69E-001	4.75E-002 +/- 7.57E-003

AG
10/23/15

0000132090.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3452.3(rev)
Stop : 1024:6491.7(rev)
Acq. Start : Fri Oct 23 10:28:46 2015



: 00232

369: 1 1 0 0 0 1 2 1

Sample Title: 05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	1	1	0	1	1	4	2	0
385:	4	3	4	4	0	1	1	2
393:	6	2	2	7	5	7	3	1
401:	4	5	4	5	5	1	1	7
409:	4	5	6	5	4	3	5	6
417:	7	4	0	1	2	4	2	0
425:	0	2	1	0	1	0	0	2
433:	1	0	0	0	1	1	5	1
441:	0	2	0	1	0	1	2	2
449:	0	0	0	1	1	2	0	3
457:	3	3	3	3	3	4	0	5
465:	3	2	1	2	7	1	5	3
473:	3	4	0	2	1	1	2	3
481:	1	4	2	0	1	0	3	1
489:	2	1	0	0	4	5	2	2
497:	0	0	1	0	1	1	0	5
505:	1	4	1	0	2	1	3	0
513:	0	0	3	4	1	1	1	1
521:	2	1	1	2	1	2	1	0
529:	1	3	1	2	0	0	1	1
537:	0	2	1	1	1	0	0	1
545:	0	0	1	0	0	0	1	0
553:	1	0	0	0	0	0	0	0
561:	0	0	0	0	0	1	0	0
569:	1	0	0	0	0	1	0	0
577:	0	1	0	0	0	0	0	0
585:	0	0	1	1	2	0	0	1
593:	0	0	1	0	1	1	0	0
601:	0	1	0	0	1	0	2	1
609:	0	1	1	1	0	0	0	1
617:	1	0	1	0	1	1	1	0
625:	0	0	0	2	2	2	0	6
633:	4	4	3	1	4	1	4	2
641:	2	4	3	0	2	3	2	3
649:	5	4	3	1	5	4	6	6
657:	4	5	5	2	5	4	5	6
665:	4	6	1	7	4	0	3	0
673:	0	2	0	0	1	0	0	0
681:	0	0	0	0	0	1	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	1	1	0
705:	0	0	0	0	0	0	0	0
713:	0	1	0	0	0	0	0	0
721:	0	0	0	0	0	0	1	0
729:	0	0	0	0	2	1	1	0
737:	0	0	0	0	1	3	0	0
745:	0	1	0	0	3	3	1	0
753:	0	1	1	2	0	1	1	1
761:	0	1	0	0	0	0	0	0
769:	0	0	0	0	0	0	1	0
777:	0	0	0	1	0	0	0	0
785:	0	0	1	1	0	0	0	0
793:	0	0	0	0	0	1	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	1
849:	0	0	0	0	0	0	0	0
857:	1	0	0	0	0	0	0	0
865:	0	2	0	1	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	1	0	0	0
937:	0	0	0	1	0	0	0	0
945:	1	1	1	1	0	0	2	1
953:	0	0	0	0	0	1	0	0
961:	0	0	0	0	0	1	0	0
969:	0	0	1	1	0	0	0	0
977:	0	1	0	0	0	0	1	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
10/23/15

Sample Description: CP0604S11-12
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001320
 Batch Identification: 1510084A-TH
 Sample Identification: 06
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_054
 Chamber Serial Number: 10006122B
 Detector Serial Number: 54
 Env. Background: System Bkgd 131890
 Reagent Blank: <not performed>

Sample Size: 1.520E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 10:28:49 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: 0.1976 +/- 0.0164
 Counting Efficiency: 0.1452 +/- 0.0026 on 12/13/2014 2:38:19 PM
 Chem. Recovery Factor: 1.3609 +/- 0.1153

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	5.842	10.49	62.21	0.51	0.00E+000	3.0
TH-228	5.361	115.15	18.34	0.85	0.00E+000	4.8
TH-229 T	4.859	169.83	15.05	0.17	0.00E+000	3.2
TH-230	4.618	131.66	17.11	0.34	0.00E+000	6.3
TH-232	3.942	131.83	17.08	0.17	0.00E+000	3.6

T = Tracer Peak used for Effective Efficiency

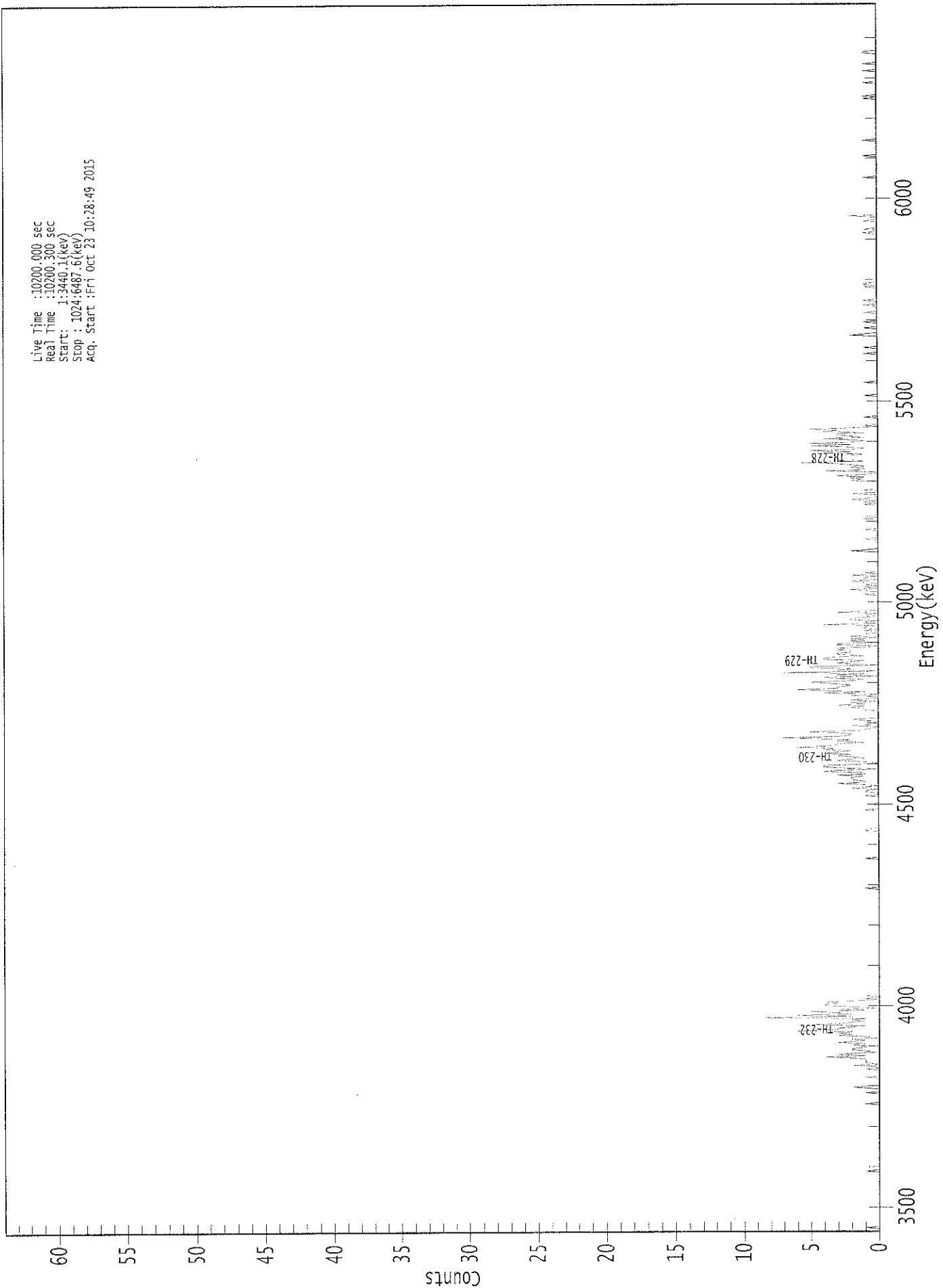
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	9.51E-002 +/- 6.11E-002	4.76E-002 +/- 7.72E-003
TH-228	0.992	5400.00*	1.03E+000 +/- 2.53E-001	5.36E-002 +/- 8.70E-003
TH-229	0.999	4872.00*	1.51E+000 +/- 2.44E-001	3.70E-002 +/- 6.01E-003
TH-230	0.985	4672.00*	1.16E+000 +/- 2.74E-001	4.23E-002 +/- 6.86E-003
TH-232	0.984	3997.00*	1.16E+000 +/- 2.74E-001	3.68E-002 +/- 5.98E-003

AG
10/23/15

0000132091.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3440.1(keV)
Stop : 1024:6487.6(keV)
Acq. Start : Fri Oct 23 10:28:49 2015



: 00237

 ***** 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:	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	1	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	1	0	0	0	0	0
113:	0	0	0	1	0	0	0	1
121:	2	0	0	0	0	0	0	0
129:	1	0	0	0	0	0	0	1
137:	0	0	2	0	1	1	1	1
145:	2	4	1	3	2	0	1	2
153:	2	1	1	2	1	3	2	1
161:	2	0	1	3	2	3	2	6
169:	3	3	2	1	5	3	2	1
177:	2	1	9	2	6	2	3	5
185:	1	3	0	2	4	4	3	4
193:	2	0	1	0	1	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	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	1	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	1
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	0	0	0	0
345:	0	0	0	0	0	0	0	1
353:	0	0	0	0	1	0	0	0
361:	0	0	0	1	0	0	1	1

369: 0 2 1 0 1 3 1 1

Sample Title: 06

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	2	2	2	1	3	1	1	4
385:	3	0	3	4	4	1	0	1
393:	3	2	1	2	3	2	4	3
401:	2	4	3	6	4	3	3	1
409:	3	2	4	7	3	2	2	3
417:	5	1	1	0	0	2	0	0
425:	0	1	2	0	0	0	0	0
433:	0	0	1	1	2	1	3	1
441:	2	0	2	1	0	0	2	0
449:	4	1	4	6	3	3	2	2
457:	4	5	2	1	3	4	0	3
465:	1	7	0	3	2	5	5	0
473:	2	3	2	1	4	4	3	1
481:	3	3	2	2	3	3	1	0
489:	3	3	0	2	1	2	0	2
497:	1	1	0	0	1	0	1	1
505:	0	4	0	1	0	2	2	1
513:	0	1	0	3	1	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	1	0	0	1	2	0
537:	1	0	1	0	1	2	0	1
545:	1	0	2	0	1	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	2	1
569:	0	0	0	0	0	0	0	0
577:	1	0	0	0	0	0	0	0
585:	1	0	0	0	0	0	0	0
593:	0	1	0	1	0	0	0	0
601:	0	0	0	0	0	1	0	1
609:	0	2	1	0	0	0	2	0
617:	0	1	0	0	0	0	0	0
625:	0	2	1	2	1	3	1	0
633:	0	4	1	1	2	1	2	3
641:	6	1	2	2	2	2	2	1
649:	4	2	5	2	1	2	5	2
657:	5	2	1	2	4	1	2	3
665:	3	1	4	3	5	2	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:	1	0	0	0	0	0	0	0
705:	0	0	0	1	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	1	0	0	0	0
737:	1	0	0	0	0	0	0	0
745:	0	0	2	1	0	0	0	0
753:	1	0	0	0	0	1	0	0
761:	0	0	0	0	0	1	0	0
769:	0	0	0	1	0	0	0	1
777:	0	0	0	0	0	0	0	0
785:	0	0	1	0	1	1	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	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	1	0	0	0	0	0
841:	0	1	0	0	0	2	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	1	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	1
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	1	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	1
945:	0	1	0	0	0	0	0	0
953:	0	0	0	0	1	0	0	0
961:	0	0	0	0	0	0	1	0
969:	0	0	0	0	1	0	0	0
977:	0	0	0	0	0	1	1	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
10/23/15

Sample Description: CP0604S14-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001320
 Batch Identification: 1510084A-TH
 Sample Identification: 07
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_055
 Chamber Serial Number: 10006124A
 Detector Serial Number: 55
 Env. Background: System Bkgd 131891
 Reagent Blank: <not performed>

Sample Size: 1.509E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 10:28:59 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.226 mL
 Effective Efficiency: 0.1414 +/- 0.0136
 Counting Efficiency: 0.1564 +/- 0.0028 on 12/13/2014 2:35:48 PM
 Chem. Recovery Factor: 0.9042 +/- 0.0885

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	5.850	9.49	65.59	0.51	0.00E+000	3.0
TH-228	5.348	111.30	18.74	1.70	0.00E+000	4.9
TH-229	4.866	121.81	17.86	1.19	0.00E+000	3.3
TH-230	4.616	159.81	15.57	1.19	0.00E+000	5.2
TH-232	3.943	122.83	17.70	0.17	0.00E+000	6.9

T = Tracer Peak used for Effective Efficiency

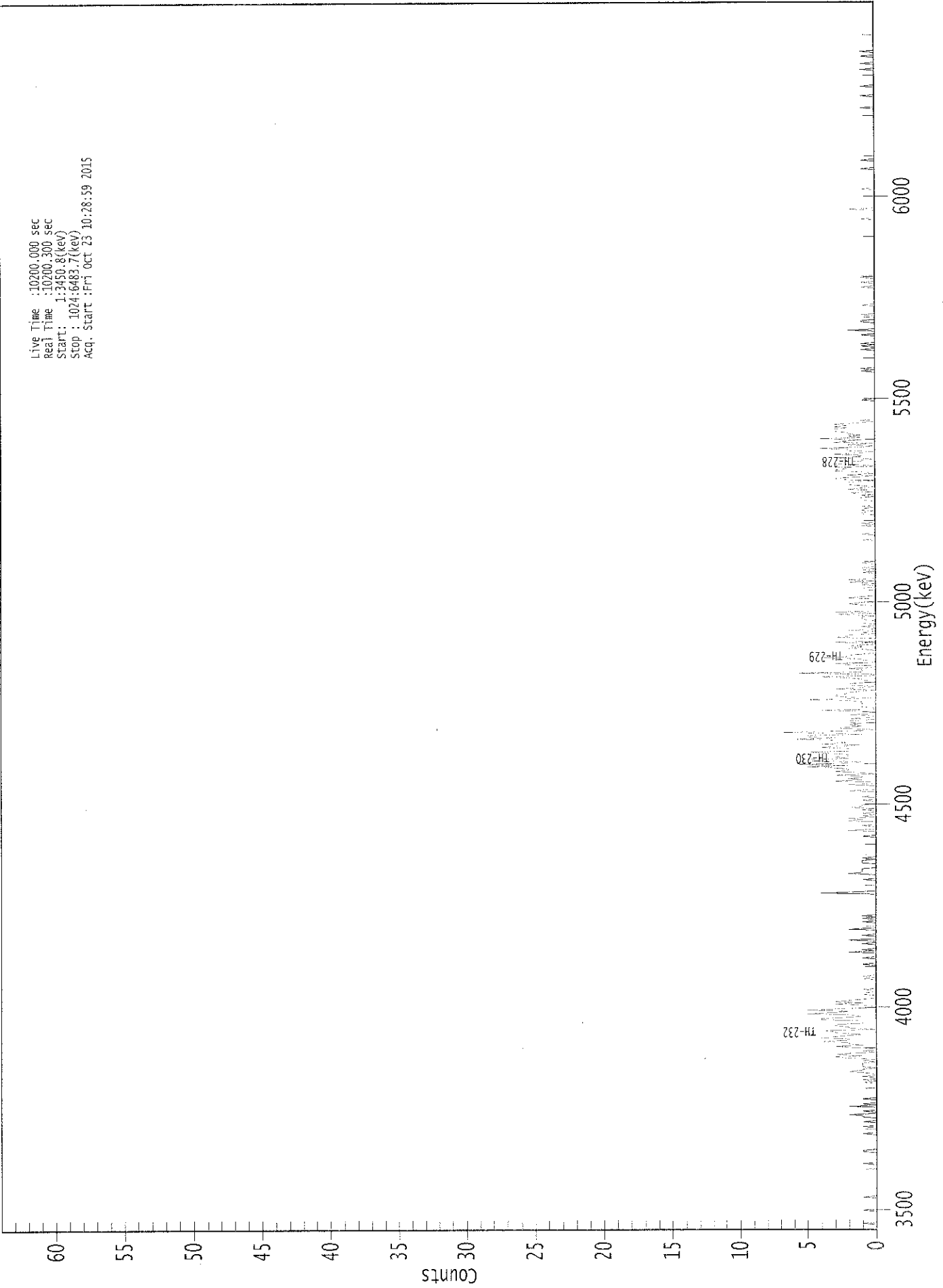
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.21E-001 +/- 8.26E-002	6.69E-002 +/- 1.26E-002
TH-228	0.986	5400.00*	1.40E+000 +/- 3.73E-001	9.26E-002 +/- 1.75E-002
TH-229	1.000	4872.00*	1.52E+000 +/- 2.87E-001	8.22E-002 +/- 1.55E-002
TH-230	0.984	4672.00*	1.99E+000 +/- 4.86E-001	8.19E-002 +/- 1.55E-002
TH-232	0.985	3997.00*	1.53E+000 +/- 3.95E-001	5.18E-002 +/- 9.78E-003

AG
10/23/15

0000132092.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3450.8(kev)
Stop : 1024:6483.7(kev)
Acq. Start :Fri Oct 23 10:28:59 2015



24200 :

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: 07

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

369: 0 0 2 0 0 3 1 2

Sample Title: 07

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

801: 0 0 0 0 0 0 0 0

Sample Title: 07

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	0	0
841:	0	1	0	0	0	0	0	0
849:	0	2	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	1	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	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	1	0
937:	0	0	0	0	0	0	0	0
945:	1	0	0	0	0	0	0	0
953:	1	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	1	0
969:	0	0	0	1	0	0	0	0
977:	0	1	0	0	0	1	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™

LB
10/23/15

Sample Description: CP0604S16-17
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001320
 Batch Identification: 1510084A-TH
 Sample Identification: 08
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_056
 Chamber Serial Number: 10006124B
 Detector Serial Number: 56
 Env. Background: System Bkgd 131892
 Reagent Blank: <not performed>

Sample Size: 1.521E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 10:29:02 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.220 mL
 Effective Efficiency: 0.2020 +/- 0.0168
 Counting Efficiency: 0.1600 +/- 0.0028 on 12/13/2014 2:30:22 PM
 Chem. Recovery Factor: 1.2622 +/- 0.1075

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	5.867	14.98	52.62	1.02	0.00E+000	3.0
TH-228	5.357	132.64	17.12	1.36	0.00E+000	5.2
TH-229 T	4.860	169.30	15.15	1.70	0.00E+000	4.0
TH-230	4.616	153.62	15.96	2.38	0.00E+000	4.1
TH-232	3.947	121.32	17.85	0.68	0.00E+000	6.9

T = Tracer Peak used for Effective Efficiency

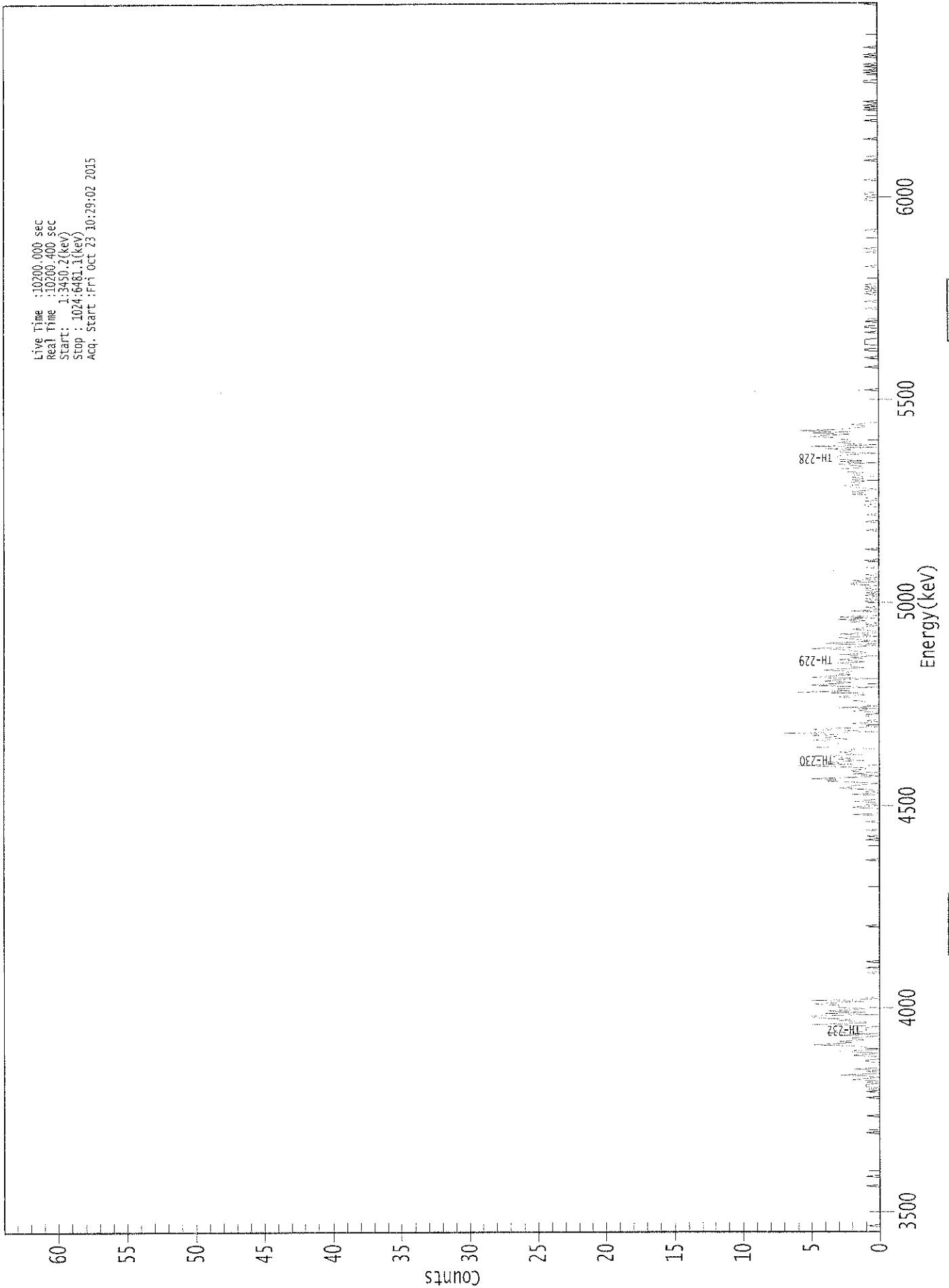
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	1.33E-001 +/- 7.31E-002	5.58E-002 +/- 9.11E-003
TH-228	0.991	5400.00*	1.16E+000 +/- 2.75E-001	6.00E-002 +/- 9.79E-003
TH-229	0.999	4872.00*	1.47E+000 +/- 2.39E-001	6.36E-002 +/- 1.04E-002
TH-230	0.984	4672.00*	1.33E+000 +/- 3.03E-001	7.08E-002 +/- 1.16E-002
TH-232	0.987	3997.00*	1.05E+000 +/- 2.53E-001	4.86E-002 +/- 7.94E-003

AG
10/23/15

0000132093.CNF

Live Time :10230.000 sec
Real Time :10260.400 sec
Start: 1:3450.2(kev)
Stop : 1024.6481.1(kev)
Acq. Start :Fri Oct 23 10:29:02 2015



: 00247

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: 08

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	1	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	1	0
41:	0	0	0	0	0	0	1	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	1	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	1	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	1
113:	0	0	0	0	1	0	0	0
121:	1	1	1	0	1	0	2	1
129:	0	1	3	0	0	1	0	2
137:	0	0	0	0	0	1	1	0
145:	0	0	2	1	0	2	2	0
153:	1	1	2	5	3	2	3	1
161:	2	2	0	3	0	4	1	1
169:	1	1	0	2	5	1	1	3
177:	2	4	5	5	0	4	1	4
185:	2	1	3	3	3	5	3	1
193:	5	0	1	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	1
217:	0	0	0	1	0	0	0	0
225:	1	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	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	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	1	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	1	0
329:	0	1	0	0	0	0	1	0
337:	0	0	0	0	0	1	0	0
345:	0	0	0	2	0	0	0	0
353:	0	2	1	1	0	0	2	1
361:	0	0	0	0	2	0	1	0

369: 1 3 2 2 1 0 2 4

Sample Title: 08

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

801: 0 0 0 1 0 0 0 0

Sample Title: 08

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	1
817:	0	0	1	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	1	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	1	1	0	0	0	1
865:	1	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	1	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	1	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	1	0	1
937:	0	1	0	0	1	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	1	1	0	0
961:	0	0	0	0	1	0	1	0
969:	0	1	0	1	0	0	0	0
977:	0	1	0	1	0	0	0	0
985:	0	1	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



10/23/15

Sample Description: CP0604S19-20
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001320
 Batch Identification: 1510084A-TH
 Sample Identification: 09
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_057
 Chamber Serial Number: 01017326A
 Detector Serial Number: 57
 Env. Background: System Bkgd 131893
 Reagent Blank: <not performed>

Sample Size: 1.514E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 10:28:42 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.229 mL
 Effective Efficiency: 0.1825 +/- 0.0155
 Counting Efficiency: 0.1577 +/- 0.0028 on 12/13/2014 2:27:38 PM
 Chem. Recovery Factor: 1.1576 +/- 0.1005

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	5.837	16.00	50.51	0.00	0.00E+000	3.0
TH-228	5.381	149.49	16.06	0.51	0.00E+000	6.1
TH-229 T	4.878	159.83	15.51	0.17	0.00E+000	5.2
TH-230	4.631	148.66	16.10	0.34	0.00E+000	6.0
TH-232	3.956	115.32	18.31	0.68	0.00E+000	4.0

T = Tracer Peak used for Effective Efficiency

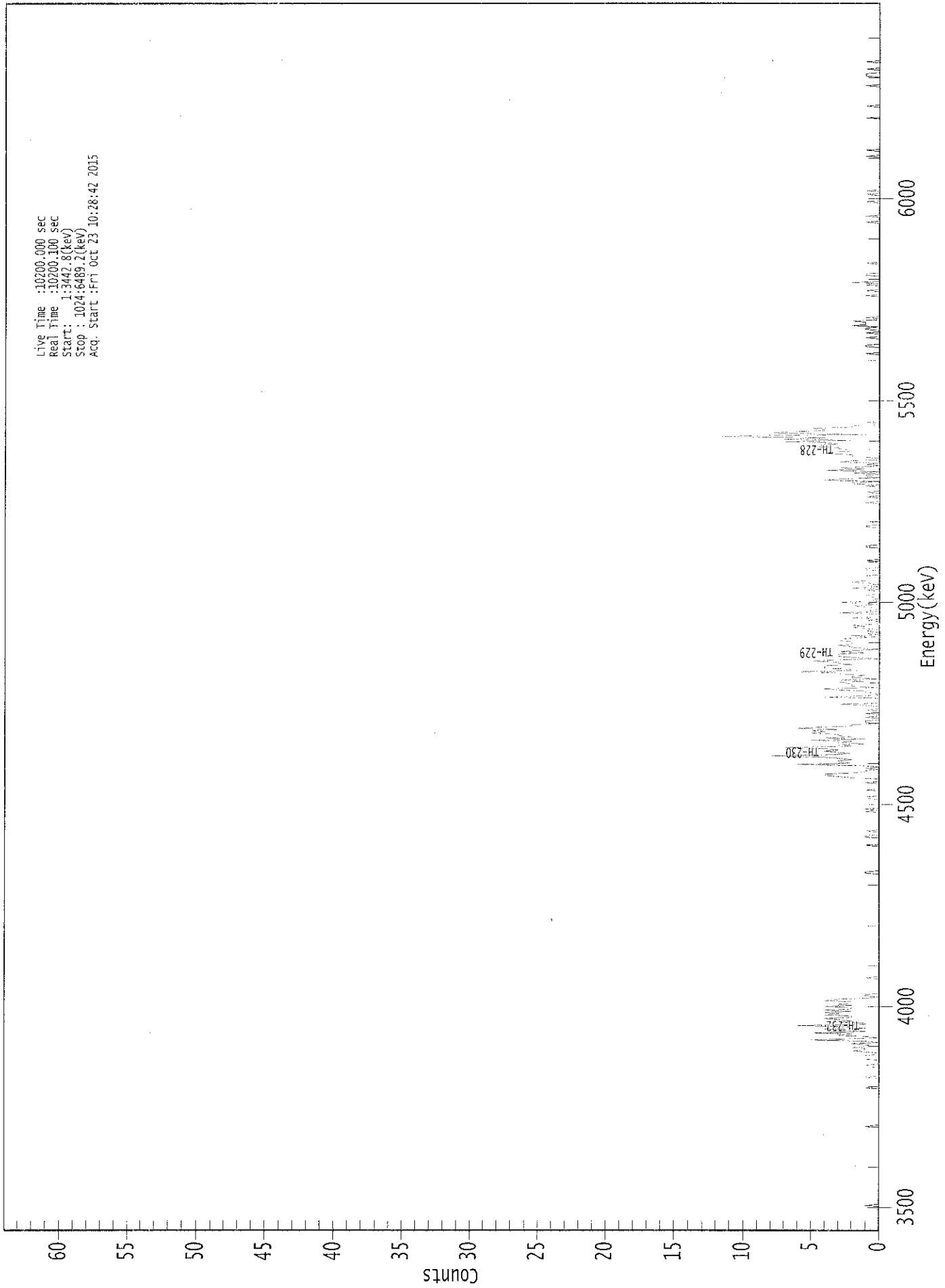
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	1.58E-001 +/- 8.38E-002	5.90E-002 +/- 9.83E-003
TH-228	0.998	5400.00*	1.45E+000 +/- 3.37E-001	5.10E-002 +/- 8.50E-003
TH-229	1.000	4872.00*	1.54E+000 +/- 2.56E-001	4.02E-002 +/- 6.70E-003
TH-230	0.991	4672.00*	1.43E+000 +/- 3.31E-001	4.59E-002 +/- 7.65E-003
TH-232	0.991	3997.00*	1.11E+000 +/- 2.74E-001	5.41E-002 +/- 9.01E-003

AKB
 10/23/15

0000132094.CNF

Live Time :10200.000 sec
Real Time :10200.100 sec
Start : 1:3442.8(kev)
Stop : 1024:6489.2(kev)
Acq. Start :Fri Oct 23 10:28:42 2015



00252

***** 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	0	0	0	0	0	0
17:	0	0	0	0	0	0	1	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	1
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	1
121:	0	0	0	0	0	0	0	0	0
129:	1	0	0	0	0	0	0	0	0
137:	0	1	1	0	0	0	0	0	1
145:	1	1	1	0	0	1	2	1	1
153:	1	2	0	1	2	0	1	5	5
161:	2	0	1	3	2	5	1	2	2
169:	4	1	2	6	1	1	3	2	2
177:	3	4	2	2	4	3	4	2	2
185:	4	2	2	4	2	3	2	2	2
193:	4	3	1	0	1	1	0	0	0
201:	0	0	0	0	0	0	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:	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	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	1	1	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	1	0	0	0	0	0	0	0
329:	1	1	0	0	0	1	0	0	0
337:	0	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	1	0	1	1
353:	0	0	0	0	0	0	0	0	0
361:	1	1	0	0	0	0	0	1	1

369: 0 0 0 0 0 1 0 0

Sample Title: 09

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

801: 0 0 0 0 0 1 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	1
841:	0	0	0	0	1	0	0	0
849:	0	0	0	0	0	0	0	0
857:	1	0	0	0	0	0	1	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	1	0
897:	0	0	0	1	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	1	0
929:	0	0	0	0	0	0	0	0
937:	1	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	1	0	0	0	0	0	0
961:	0	1	1	1	0	0	0	1
969:	0	0	0	0	0	1	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
10/23/15

Apex-Alpha™

Sample Description: CP0604S21-22
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001320
 Batch Identification: 1510084A-TH
 Sample Identification: 10
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_058
 Chamber Serial Number: 01017326B
 Detector Serial Number: 58
 Env. Background: System Bkgd 131894
 Reagent Blank: <not performed>

Sample Size: 1.543E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 10:28:44 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.227 mL
 Effective Efficiency: 0.1771 +/- 0.0153
 Counting Efficiency: 0.1640 +/- 0.0029 on 12/13/2014 2:26:06 PM
 Chem. Recovery Factor: 1.0797 +/- 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	5.885	9.49	65.59	0.51	0.00E+000	3.0
TH-228	5.385	103.15	19.39	0.85	0.00E+000	5.4
TH-229 T	4.879	153.49	15.85	0.51	0.00E+000	3.5
TH-230	4.648	114.83	18.31	0.17	0.00E+000	4.6
TH-232	3.978	101.32	19.55	0.68	0.00E+000	5.4

T = Tracer Peak used for Effective Efficiency

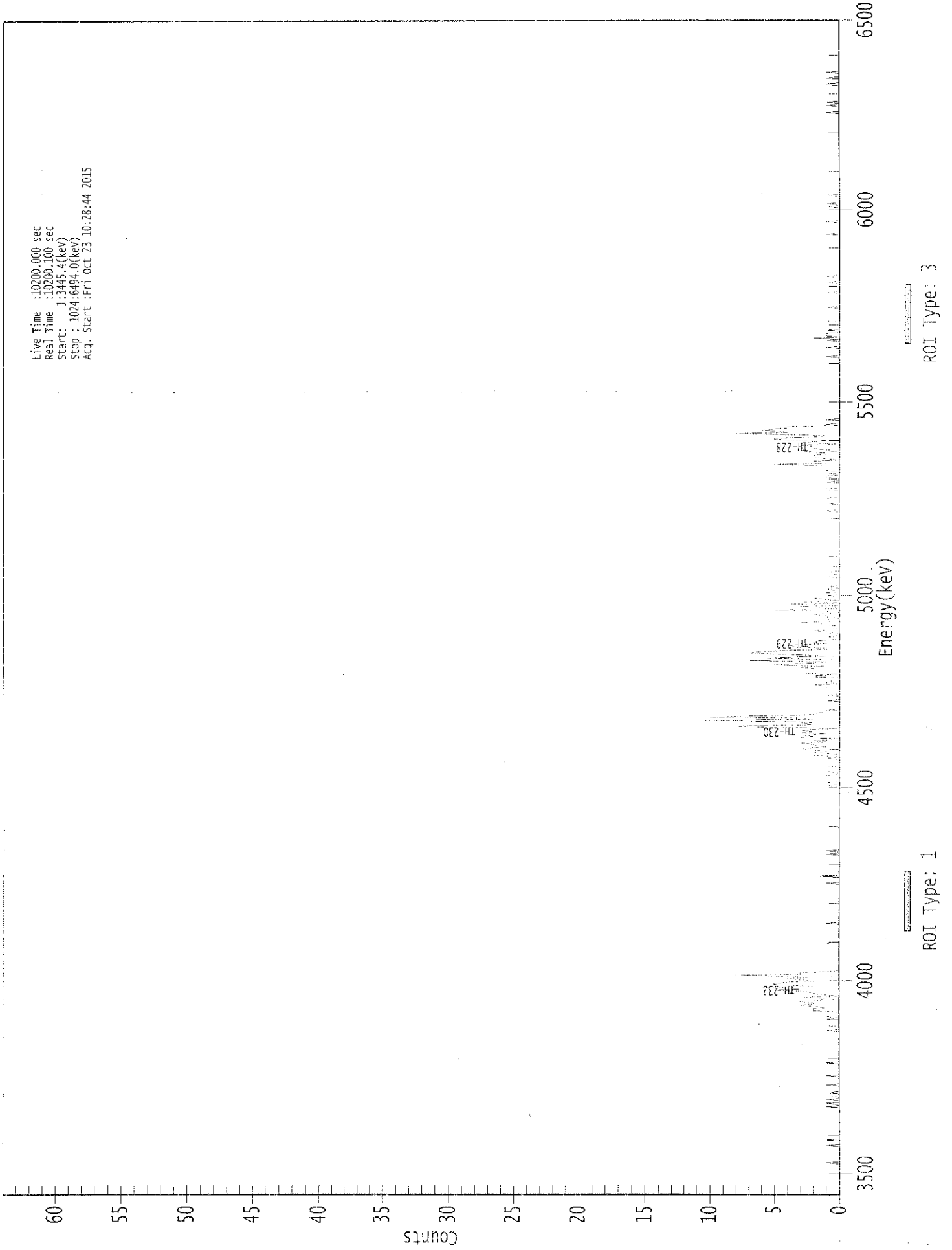
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.994	5850.00*	9.45E-002 +/- 6.40E-002	5.23E-002 +/- 8.87E-003
TH-228	0.999	5400.00*	1.02E+000 +/- 2.62E-001	5.89E-002 +/- 1.00E-002
TH-229	1.000	4872.00*	1.50E+000 +/- 2.54E-001	5.11E-002 +/- 8.68E-003
TH-230	0.997	4672.00*	1.12E+000 +/- 2.79E-001	4.06E-002 +/- 6.88E-003
TH-232	0.998	3997.00*	9.83E-001 +/- 2.54E-001	5.47E-002 +/- 9.29E-003

AG
10/23/15

0000132095.CNF

Live Time : 10200.000 sec
Real Time : 10200.100 sec
Start : 1:3445.4(kev)
Stop : 104:6494.0(kev)
Acq. Start : Fri Oct 23 10:28:44 2015



: 00257

 ***** 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	1	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	1	0	0	0	0
49:	1	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	1	0	0
81:	1	0	0	1	0	0	0	0
89:	0	1	0	0	0	0	0	0
97:	1	0	0	0	0	0	0	0
105:	1	0	0	0	0	0	0	0
113:	0	0	0	1	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	1
145:	0	0	0	1	0	0	0	0
153:	0	1	0	1	0	0	0	0
161:	2	2	2	1	2	3	2	2
169:	3	2	1	1	3	0	1	2
177:	2	3	5	3	6	2	3	5
185:	5	4	2	3	4	2	4	8
193:	3	3	1	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	1	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	1	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	1
273:	0	0	0	0	0	2	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	1	0	0	1	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	0	0
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	1	0	0	1
361:	0	0	0	0	0	1	0	0

369: 1 0 0 0 0 1 0 0

Sample Title: 10

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

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	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	1	0	0	1
865:	0	0	0	0	0	0	1	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	1	0
945:	0	0	0	0	1	0	0	1
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	1	1
969:	0	0	0	0	1	0	0	0
977:	0	1	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
10/23/15

Sample Description: CP0604S24-25
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001320
 Batch Identification: 1510084A-TH
 Sample Identification: 11
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_059
 Chamber Serial Number: 10006125A
 Detector Serial Number: 59
 Env. Background: System Bkgd 131895
 Reagent Blank: <not performed>

Sample Size: 1.533E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 10:29:05 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: 0.1824 +/- 0.0156
 Counting Efficiency: 0.1717 +/- 0.0030 on 12/13/2014 2:24:23 PM
 Chem. Recovery Factor: 1.0622 +/- 0.0929

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	5.851	17.32	48.17	0.68	0.00E+000	3.0
TH-228	5.375	168.47	15.18	1.53	0.00E+000	13.3
TH-229 T	4.889	156.83	15.66	0.17	0.00E+000	4.7
TH-230	4.636	169.32	15.10	0.68	0.00E+000	10.7
TH-232	3.968	157.49	15.65	0.51	0.00E+000	15.5

T = Tracer Peak used for Effective Efficiency

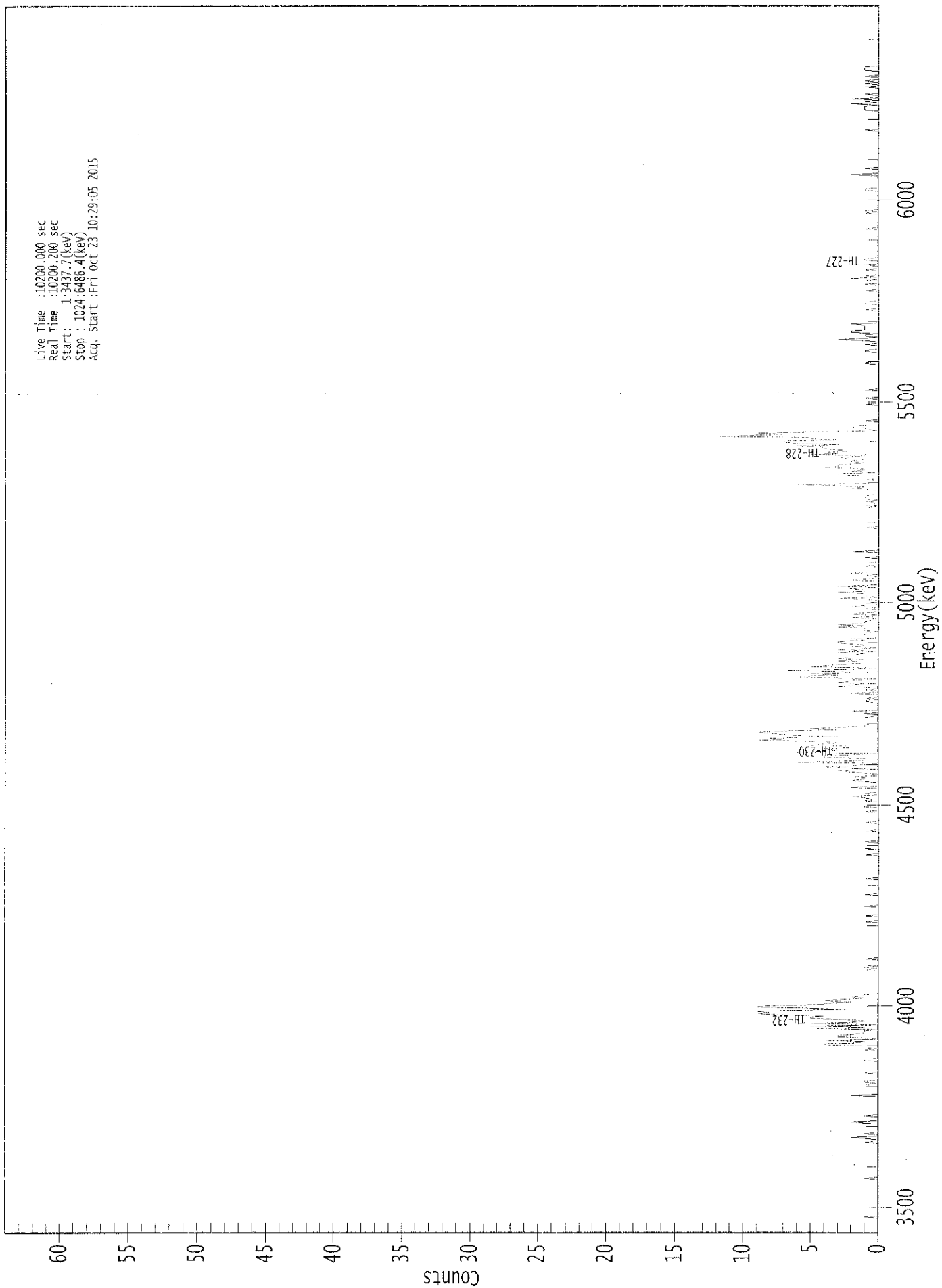
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.69E-001 +/- 8.60E-002	5.49E-002 +/- 9.22E-003
TH-228	0.997	5400.00*	1.62E+000 +/- 3.67E-001	6.84E-002 +/- 1.15E-002
TH-229	0.998	4872.00*	1.49E+000 +/- 2.51E-001	3.98E-002 +/- 6.68E-003
TH-230	0.993	4672.00*	1.61E+000 +/- 3.63E-001	5.36E-002 +/- 9.00E-003
TH-232	0.995	3997.00*	1.49E+000 +/- 3.43E-001	4.97E-002 +/- 8.36E-003

AS
10/23/15

0000132098.CNF

Live Time : 10200.000 sec
Real Time : 10200.200 sec
Start : 1:3437.7 (Rev)
Stop : 1024:6486.4 (keV)
Acq. Start : Fri Oct 23 10:29:05 2015



: 00262

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: 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	0	0	0	0	0	1	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	1	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	1	2
81:	0	0	1	0	0	0	0	0	0
89:	0	0	0	1	2	0	0	0	0
97:	0	1	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	2	0	0	0	0	0	0
121:	0	0	0	1	0	1	1	1	0
129:	0	0	0	0	0	1	0	0	0
137:	0	0	0	0	0	0	0	0	1
145:	1	0	0	0	0	0	0	0	0
153:	1	0	1	1	4	4	1	1	1
161:	4	0	1	3	3	2	1	1	1
169:	1	0	5	1	5	0	5	2	2
177:	1	2	5	5	4	7	9	8	8
185:	9	6	2	6	9	8	4	4	4
193:	2	4	3	1	2	1	1	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	1	0	1	0	0	0
225:	0	0	0	0	1	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	1	0	0	0	0	0
265:	1	0	0	0	0	0	0	0	0
273:	1	0	0	0	0	0	0	0	0
281:	0	0	1	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	1
297:	0	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	1	0	0	0	0	0
321:	1	0	0	0	0	0	1	0	0
329:	0	0	0	0	0	0	0	1	1
337:	0	0	0	0	0	0	1	0	0
345:	0	0	0	0	0	0	0	0	1
353:	0	0	0	1	1	0	0	0	0
361:	1	0	1	1	2	0	1	0	0

369: 0 0 0 2 0 0 0 0

Sample Title: 11

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

801: 0 0 1 0 0 0 1 0

Sample Title: 11

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	1	1	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	1	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	1	0	1	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	1	1	0	0
873:	0	0	0	0	0	0	0	0
881:	0	2	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	1	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	1
937:	1	1	1	0	2	0	1	0
945:	2	0	0	0	1	0	0	0
953:	0	0	1	0	0	1	0	1
961:	0	0	0	1	0	0	0	0
969:	1	1	1	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

KBS
10/23/15

Apex-Alpha™

Sample Description: CP0604S26-27
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001320
 Batch Identification: 1510084A-TH
 Sample Identification: 12
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_060
 Chamber Serial Number: 10006125B
 Detector Serial Number: 60
 Env. Background: System Bkgd 131896
 Reagent Blank: <not performed>

Sample Size: 1.529E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 10:29:07 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: 0.1881 +/- 0.0159
 Counting Efficiency: 0.1543 +/- 0.0028 on 12/13/2014 2:22:05 PM
 Chem. Recovery Factor: 1.2191 +/- 0.1055

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	5.821	19.49	45.07	0.51	0.00E+000	3.0
TH-228	5.374	126.81	17.50	1.19	0.00E+000	3.6
TH-229 T	4.871	161.66	15.43	0.34	0.00E+000	4.3
TH-230	4.626	139.66	16.61	0.34	0.00E+000	4.9
TH-232	3.960	125.83	17.49	0.17	0.00E+000	5.3

T = Tracer Peak used for Effective Efficiency

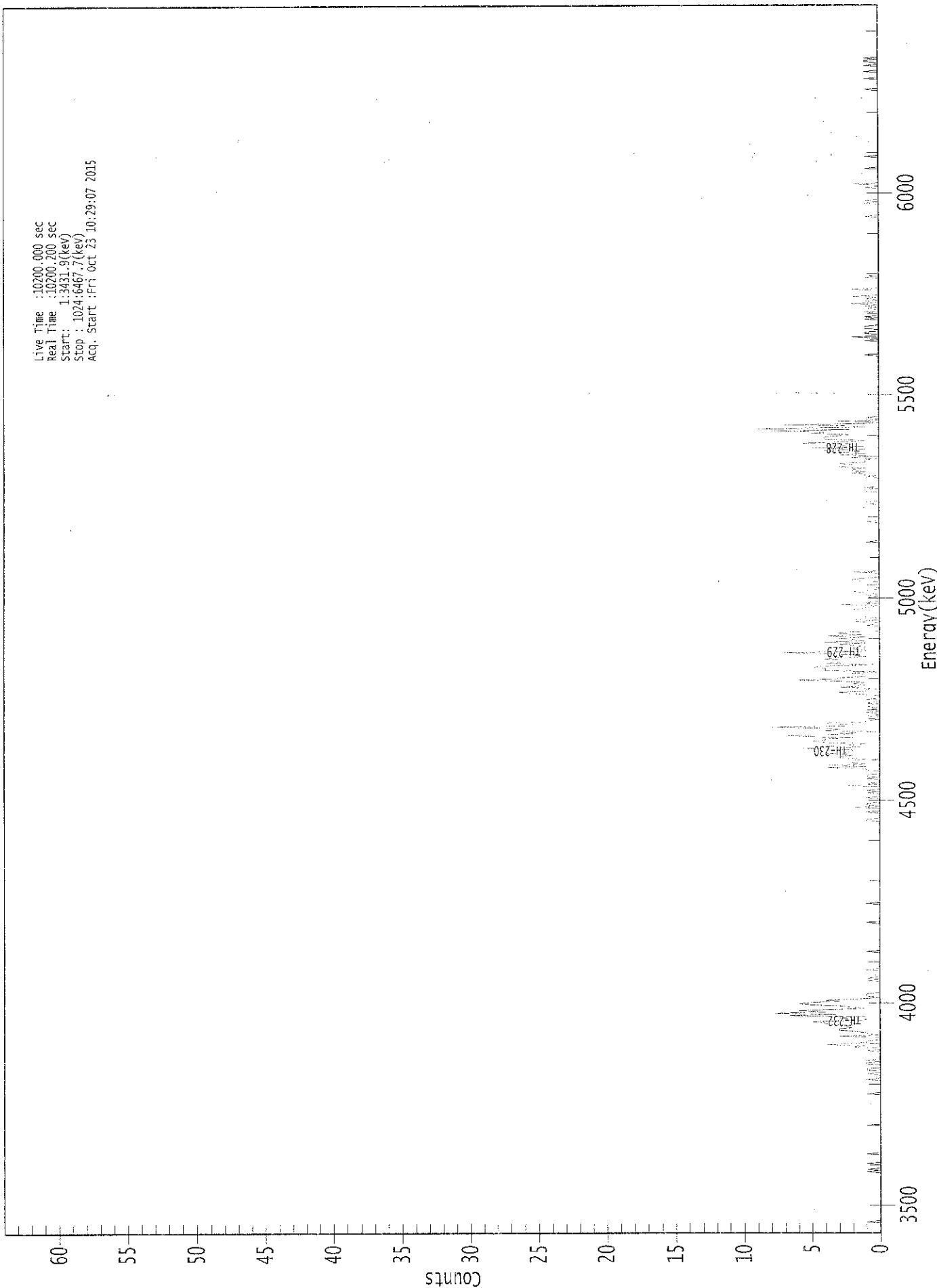
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.996	5850.00*	1.84E-001 +/- 8.85E-002	4.96E-002 +/- 8.23E-003
TH-228	0.996	5400.00*	1.19E+000 +/- 2.86E-001	6.16E-002 +/- 1.02E-002
TH-229	1.000	4872.00*	1.50E+000 +/- 2.48E-001	4.43E-002 +/- 7.34E-003
TH-230	0.989	4672.00*	1.29E+000 +/- 3.03E-001	4.41E-002 +/- 7.32E-003
TH-232	0.993	3997.00*	1.16E+000 +/- 2.79E-001	3.84E-002 +/- 6.38E-003

AG
10/23/15

0000132099.CNF

Live Time : 10200.000 sec
Real Time : 10200.200 sec
Start: 1:3431.9(kev)
Stop : 1024:0467.7(kev)
Acq. Start : Fri Oct 23 10:29:07 2015



: 00267

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	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:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	1	0	1	0	0
57:	0	0	1	0	0	0	0	0
65:	0	0	1	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	1	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:	1	0	0	0	0	1	0	0
137:	1	1	0	0	0	1	1	0
145:	1	0	0	0	0	0	0	0
153:	1	0	0	2	1	4	2	1
161:	1	0	0	0	3	0	1	1
169:	2	3	3	2	3	2	4	4
177:	5	1	1	3	1	7	3	8
185:	4	6	4	1	2	3	5	6
193:	5	3	4	1	0	1	1	1
201:	0	0	0	0	0	0	0	0
209:	0	0	1	0	1	0	0	0
217:	0	0	0	1	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	1	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	1	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	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	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	1
345:	1	0	0	0	0	0	1	0
353:	0	0	2	0	1	1	0	0
361:	0	0	1	0	0	0	1	0

369: 1 0 0 0 3 0 1 0

Sample Title: 12

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

801: 0 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	1	0
849:	0	0	0	0	0	0	0	0
857:	0	1	0	1	0	0	0	0
865:	0	0	0	0	0	0	1	0
873:	0	2	0	0	0	0	0	0
881:	0	0	0	0	0	0	1	0
889:	0	0	0	0	0	0	0	0
897:	1	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	0	0	0	0
961:	0	1	0	0	0	0	0	1
969:	0	0	0	0	1	0	0	1
977:	1	0	1	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



100
10/23/14

Sample Description: CP0604S28-29
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001321
 Batch Identification: 1510084A-TH
 Sample Identification: 13
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_033
 Chamber Serial Number: 04026479A
 Detector Serial Number: 91132
 Env. Background: System Bkgd 131869
 Reagent Blank: <not performed>

Sample Size: 1.546E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/9/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 11:20:37 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.226 mL
 Effective Efficiency: 0.1764 +/- 0.0153
 Counting Efficiency: 0.1805 +/- 0.0032 on 10/25/2014 2:26:39 PM
 Chem. Recovery Factor: 0.9774 +/- 0.0866

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	5.848	15.66	50.15	0.34	0.00E+000	3.0
TH-228	5.363	140.81	16.60	1.19	0.00E+000	16.7
TH-229 T	4.862	152.49	15.90	0.51	0.00E+000	10.1
TH-230	4.623	137.49	16.75	0.51	0.00E+000	16.7
TH-232	3.942	126.00	17.53	0.00	0.00E+000	4.5

T = Tracer Peak used for Effective Efficiency

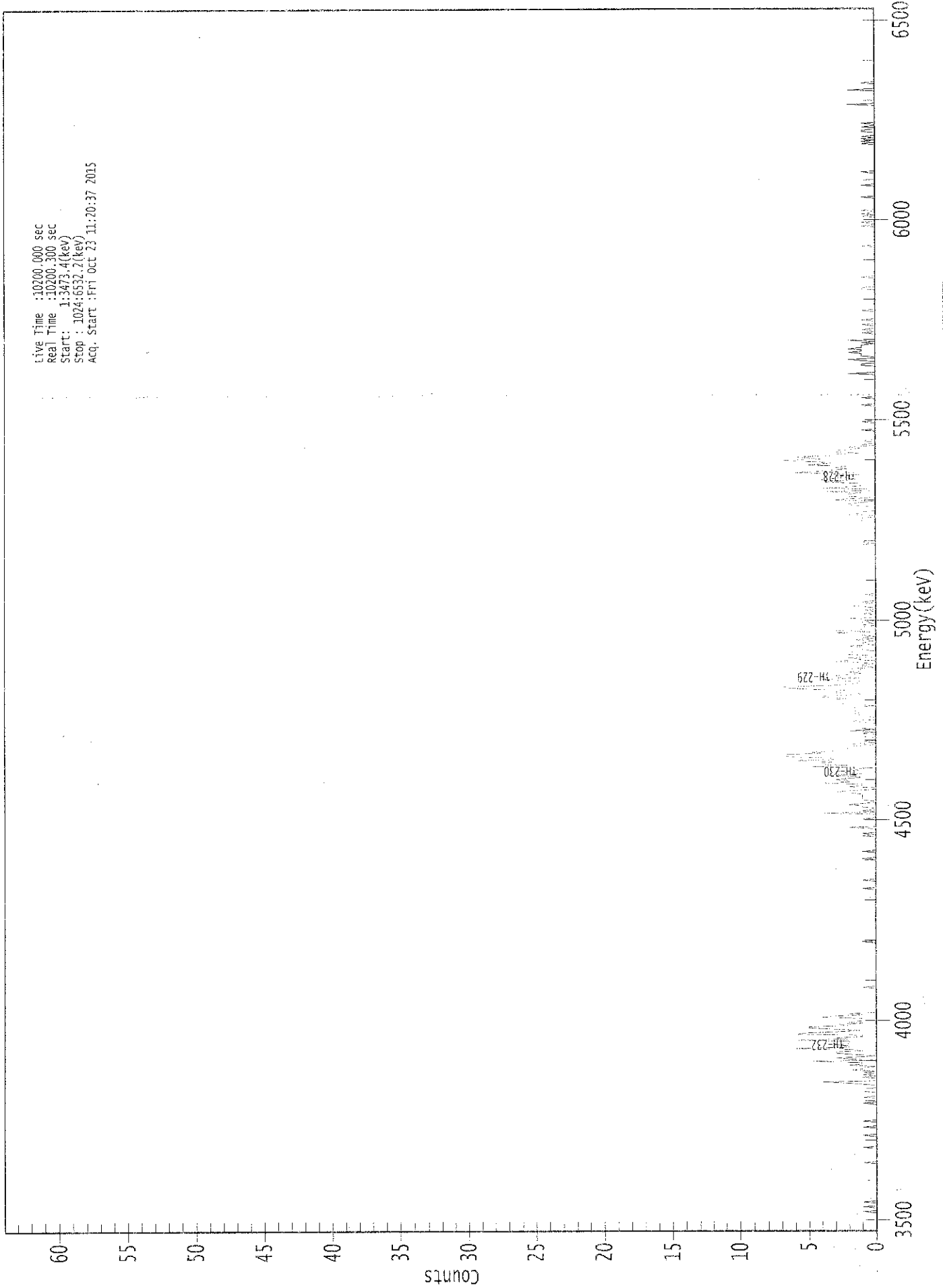
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.56E-001 +/- 8.27E-002	4.77E-002 +/- 8.12E-003
TH-228	0.993	5400.00*	1.39E+000 +/- 3.30E-001	6.49E-002 +/- 1.11E-002
TH-229	0.999	4872.00*	1.49E+000 +/- 2.53E-001	5.12E-002 +/- 8.72E-003
TH-230	0.988	4672.00*	1.34E+000 +/- 3.20E-001	5.11E-002 +/- 8.69E-003
TH-232	0.984	3997.00*	1.22E+000 +/- 2.99E-001	5.82E-002 +/- 9.92E-003

AG
10/23/15

0000132111.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3473.4(keV)
Stop : 1024:6532.2(keV)
Acq. Start : Fri Oct 23 11:20:37 2015



00272

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	0	0
9:	0	0	0	0	0	0	0	0	0
17:	1	0	0	0	1	0	0	0	0
25:	1	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	1	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	1	0	0
73:	0	0	0	0	0	0	0	0	0
81:	1	0	0	0	0	0	0	0	1
89:	0	0	0	0	1	0	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	0	0	0	0	1	1	1	1
121:	0	0	0	1	2	4	0	0	0
129:	0	1	0	1	0	1	0	2	2
137:	1	1	0	2	1	1	5	0	0
145:	2	3	1	0	2	3	3	1	1
153:	2	6	2	2	3	2	2	2	2
161:	6	2	3	1	1	6	5	3	3
169:	1	3	5	5	2	3	1	2	2
177:	1	1	1	4	3	1	2	0	0
185:	0	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0	0
201:	0	0	0	0	1	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	1	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	0	0	0	0	0	1	0	0
289:	0	0	0	0	0	1	0	0	0
297:	0	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	1
313:	0	0	0	0	0	1	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	1	0	1	0	0	0	0
337:	0	2	0	0	0	0	0	0	0
345:	1	0	0	0	0	4	0	0	1
353:	0	0	1	1	2	1	0	0	0
361:	1	1	1	1	1	1	2	3	3

369: 1 0 0 2 1 1 4 2

Sample Title: 13

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

801: 0 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	1
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	1	0	0	1	0	0	0	0
849:	1	0	1	0	0	1	0	0
857:	0	0	0	0	0	0	0	0
865:	1	0	0	0	0	0	0	0
873:	0	0	1	0	0	0	0	0
881:	0	0	0	0	0	1	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	1	0	1
913:	0	1	0	1	0	0	0	1
921:	1	0	0	1	0	0	1	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	2	0
945:	0	0	0	0	0	0	0	0
953:	0	0	2	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

WJ
10/23/15

Apex-Alpha™

Sample Description: CP1803S03-04
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001321
 Batch Identification: 1510084A-TH
 Sample Identification: 14
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_034
 Chamber Serial Number: 04026479B
 Detector Serial Number: 91136
 Env. Background: System Bkgd 131870
 Reagent Blank: <not performed>

Sample Size: 1.598E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/10/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 11:20:39 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.226 mL
 Effective Efficiency: 0.1765 +/- 0.0154
 Counting Efficiency: 0.1789 +/- 0.0031 on 10/25/2014 2:30:05 PM
 Chem. Recovery Factor: 0.9866 +/- 0.0876

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	5.847	11.15	61.26	0.85	0.00E+000	6.0
TH-228	5.334	148.66	16.10	0.34	0.00E+000	4.2
TH-229 T	4.859	152.00	15.95	0.00	0.00E+000	6.6
TH-230	4.612	162.47	15.46	1.53	0.00E+000	4.7
TH-232	3.926	141.49	16.51	0.51	0.00E+000	12.6

T = Tracer Peak used for Effective Efficiency

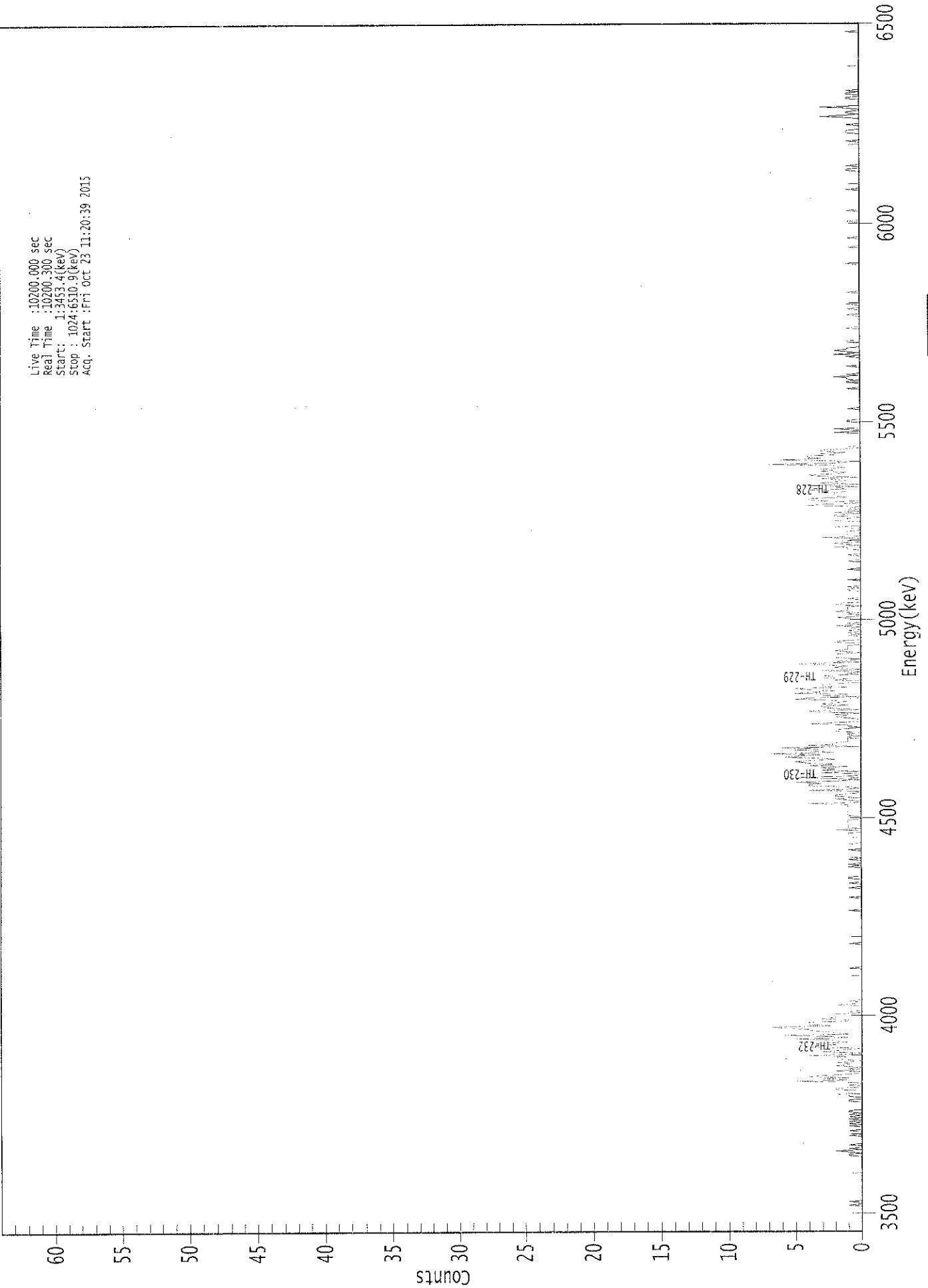
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.08E-001 +/- 6.84E-002	5.78E-002 +/- 9.86E-003
TH-228	0.978	5400.00*	1.42E+000 +/- 3.32E-001	4.56E-002 +/- 7.78E-003
TH-229	0.999	4872.00*	1.44E+000 +/- 2.45E-001	5.66E-002 +/- 9.67E-003
TH-230	0.982	4672.00*	1.53E+000 +/- 3.52E-001	6.69E-002 +/- 1.14E-002
TH-232	0.974	3997.00*	1.33E+000 +/- 3.16E-001	4.93E-002 +/- 8.42E-003

Ag
10/23/15

0000132112.CNF

Live Time : 10210.000 sec
Real Time : 10210.300 sec
Start : 1:3453.4(kev)
Stop : 1024:6510.9(kev)
Acq. Start : Fri Oct 23 11:20:39 2015



ROI Type: 3

ROI Type: 1

47200

 ***** 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	1	0
25:	0	1	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	1	0	1	2	0	1	0	0
73:	0	1	0	0	0	0	0	0	0
81:	0	1	0	0	0	1	0	0	0
89:	0	1	0	1	0	1	0	1	1
97:	0	1	0	1	0	1	1	1	0
105:	0	0	0	0	0	0	1	1	1
113:	0	0	1	1	2	0	0	0	0
121:	2	2	0	0	1	0	0	0	5
129:	1	3	1	4	3	1	0	0	0
137:	2	0	1	0	2	1	1	2	2
145:	0	1	2	2	1	4	1	0	0
153:	3	2	1	0	4	3	2	4	4
161:	1	2	2	5	1	2	6	1	1
169:	2	3	4	4	6	7	2	4	4
177:	4	4	1	1	3	2	2	2	2
185:	2	0	1	0	0	0	0	0	0
193:	2	0	0	1	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	1
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	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	1	0	0	0	0	0	0	0	0
281:	0	0	0	1	0	0	0	0	0
289:	0	0	0	1	0	0	0	0	1
297:	0	0	0	1	1	0	0	0	0
305:	0	0	0	0	0	1	0	0	1
313:	0	0	0	1	0	0	0	0	0
321:	0	0	0	1	0	0	0	0	0
329:	1	0	0	0	0	0	1	1	1
337:	1	1	0	0	2	0	1	1	1
345:	1	1	1	1	1	0	0	0	0
353:	1	1	1	1	1	1	1	1	1
361:	1	1	4	0	0	1	2	0	0

369: 2 2 1 0 0 4 1 0

Sample Title: 14

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	1	4	4	3	5	2	0	2
385:	5	1	0	0	3	0	3	2
393:	3	1	4	2	4	5	4	2
401:	3	6	5	3	7	2	3	5
409:	3	6	0	4	2	2	1	1
417:	1	1	1	0	1	1	0	2
425:	2	1	0	1	1	4	2	0
433:	0	0	1	2	1	2	0	3
441:	4	0	2	3	3	1	3	2
449:	1	2	5	4	0	3	1	5
457:	3	2	4	5	1	3	3	2
465:	0	0	2	1	3	2	3	0
473:	1	0	3	0	1	2	1	3
481:	5	0	2	0	0	2	2	2
489:	2	0	1	2	1	1	1	1
497:	0	0	2	2	0	0	0	0
505:	1	0	1	0	1	0	1	0
513:	2	0	1	0	0	0	0	2
521:	0	0	1	0	2	1	1	1
529:	1	0	2	2	0	0	0	1
537:	0	0	0	0	0	0	1	1
545:	0	1	0	0	0	0	0	1
553:	0	0	0	0	0	0	0	0
561:	1	0	0	0	0	0	0	1
569:	0	0	0	0	1	0	0	0
577:	0	1	1	2	0	1	2	0
585:	1	0	0	3	0	1	1	1
593:	1	0	0	1	2	0	0	0
601:	0	2	1	1	0	2	2	0
609:	2	0	1	0	1	0	4	3
617:	0	1	3	4	4	1	2	2
625:	2	2	1	4	1	2	0	4
633:	0	3	2	1	2	3	0	3
641:	4	2	1	3	2	3	1	2
649:	2	7	2	1	2	6	3	4
657:	4	2	3	1	3	3	1	0
665:	1	0	0	0	0	0	0	0
673:	0	0	0	0	2	0	0	2
681:	0	0	0	0	0	1	1	0
689:	0	0	0	0	0	0	0	0
697:	1	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	1	0	0	0	0	1	1
721:	0	1	1	2	0	1	0	0
729:	0	0	0	0	1	0	0	0
737:	0	0	0	0	1	0	2	0
745:	1	2	1	1	0	0	0	0
753:	1	1	0	0	0	0	0	0
761:	0	0	0	0	1	0	0	0
769:	0	0	0	0	0	0	0	1
777:	0	0	0	0	1	0	0	0
785:	1	0	0	0	0	0	0	0
793:	0	0	1	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	1	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	1	0	0	0	0	0	0	0
841:	1	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	1	0
857:	0	0	0	0	0	0	0	1
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	1	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	1	1	0	0	1	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	1	0	0	0	0	0
929:	0	1	1	1	0	0	0	0
937:	1	0	0	0	0	0	1	3
945:	1	0	1	1	0	0	1	3
953:	0	0	0	0	0	0	1	1
961:	0	0	1	1	0	1	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	1
1017:	0	0	0	0	0	0	0	0



KB
10/23/15

Sample Description: CP1803S06-07
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001321
 Batch Identification: 1510084A-TH
 Sample Identification: 15
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_035
 Chamber Serial Number: 04026477A
 Detector Serial Number: 58771
 Env. Background: System Bkgd 131871
 Reagent Blank: <not performed>

Sample Size: 1.579E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/10/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 11:20:41 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: 0.1642 +/- 0.0148
 Counting Efficiency: 0.1647 +/- 0.0029 on 10/25/2014 2:34:10 PM
 Chem. Recovery Factor: 0.9966 +/- 0.0914

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	5.844	18.15	47.25	0.85	0.00E+000	3.0
TH-228	5.345	176.15	14.81	0.85	0.00E+000	9.5
TH-229 T	4.860	141.00	16.56	0.00	0.00E+000	12.0
TH-230	4.607	178.32	14.71	0.68	0.00E+000	6.9
TH-232	3.949	146.00	16.28	0.00	0.00E+000	4.2

T = Tracer Peak used for Effective Efficiency

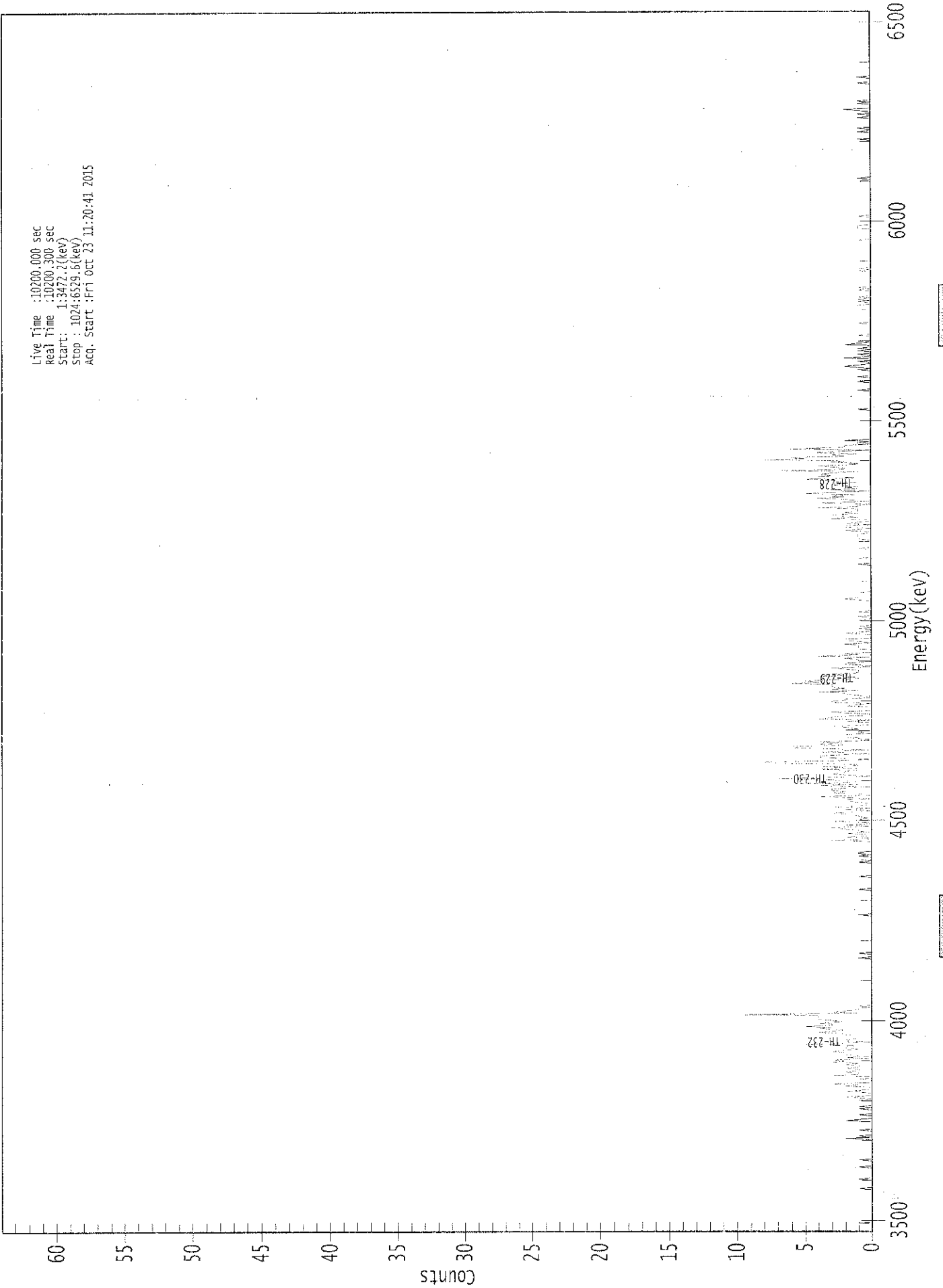
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.90E-001 +/- 9.60E-002	6.28E-002 +/- 1.11E-002
TH-228	0.984	5400.00*	1.82E+000 +/- 4.20E-001	6.20E-002 +/- 1.09E-002
TH-229	0.999	4872.00*	1.45E+000 +/- 2.55E-001	6.16E-002 +/- 1.09E-002
TH-230	0.978	4672.00*	1.83E+000 +/- 4.19E-001	5.77E-002 +/- 1.02E-002
TH-232	0.988	3997.00*	1.49E+000 +/- 3.58E-001	6.13E-002 +/- 1.08E-002

AG
10/23/15

0000132110.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3472.2(keV)
Stop : 1024.6529.6(keV)
Acq. Start : Fri Oct 23 11:20:41 2015



: 00282

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	1
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	1	0	0	0	0
41:	0	0	0	0	1	0	0	0	0
49:	0	0	0	0	0	0	1	0	0
57:	0	0	0	0	1	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	2	0	0
81:	1	0	0	0	0	1	0	0	0
89:	0	0	0	0	0	2	1	0	0
97:	0	0	1	0	0	0	0	0	1
105:	0	1	0	0	0	0	1	0	0
113:	1	2	0	0	0	1	2	0	0
121:	0	0	2	1	3	0	0	0	0
129:	1	0	0	3	1	1	2	1	1
137:	1	2	1	1	2	1	3	2	2
145:	3	0	2	0	2	2	2	3	3
153:	2	1	2	2	1	5	2	0	0
161:	2	2	1	1	1	2	2	4	4
169:	3	2	4	3	5	3	3	4	4
177:	2	3	4	4	4	4	10	1	1
185:	3	2	1	1	0	1	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	1	0	0	0
233:	0	1	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	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	1	0	0	0
313:	0	0	1	0	1	1	0	0	0
321:	0	0	0	0	0	0	0	0	3
329:	0	0	2	0	0	2	0	0	1
337:	1	3	3	0	2	0	0	0	3
345:	0	1	0	1	1	2	3	1	1
353:	0	2	0	3	1	0	0	0	1
361:	2	2	0	2	4	0	1	0	3

369: 2 3 3 2 0 4 1 5

Sample Title: 15

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

801: 0 0 0 0 1 0 1 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	1	0
833:	0	0	0	0	0	0	0	0
841:	1	1	1	0	0	0	0	0
849:	0	0	1	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	1	0	0	0	0
921:	0	1	0	0	1	0	0	0
929:	0	0	0	0	0	1	0	0
937:	1	0	0	1	2	0	0	0
945:	0	1	0	1	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	1	0	0	0	0	1
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

16B
10/23/15

Apex-Alpha™

Sample Description: CP1803S08-09
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001321
 Batch Identification: 1510084A-TH
 Sample Identification: 16
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_036
 Chamber Serial Number: 04026477B
 Detector Serial Number: 84167
 Env. Background: System Bkgd 131872
 Reagent Blank: <not performed>

Sample Size: 1.518E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/10/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 11:20:43 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.226 mL
 Effective Efficiency: 0.1604 +/- 0.0146
 Counting Efficiency: 0.1806 +/- 0.0032 on 10/25/2014 2:38:17 PM
 Chem. Recovery Factor: 0.8885 +/- 0.0821

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	6.15	85.19	0.85	0.00E+000	3.0
TH-228	5.353	166.47	15.27	1.53	0.00E+000	12.4
TH-229 T	4.866	138.32	16.71	0.68	0.00E+000	9.0
TH-230	4.611	174.32	14.88	0.68	0.00E+000	5.2
TH-232	3.936	130.66	17.17	0.34	0.00E+000	9.0

T = Tracer Peak used for Effective Efficiency

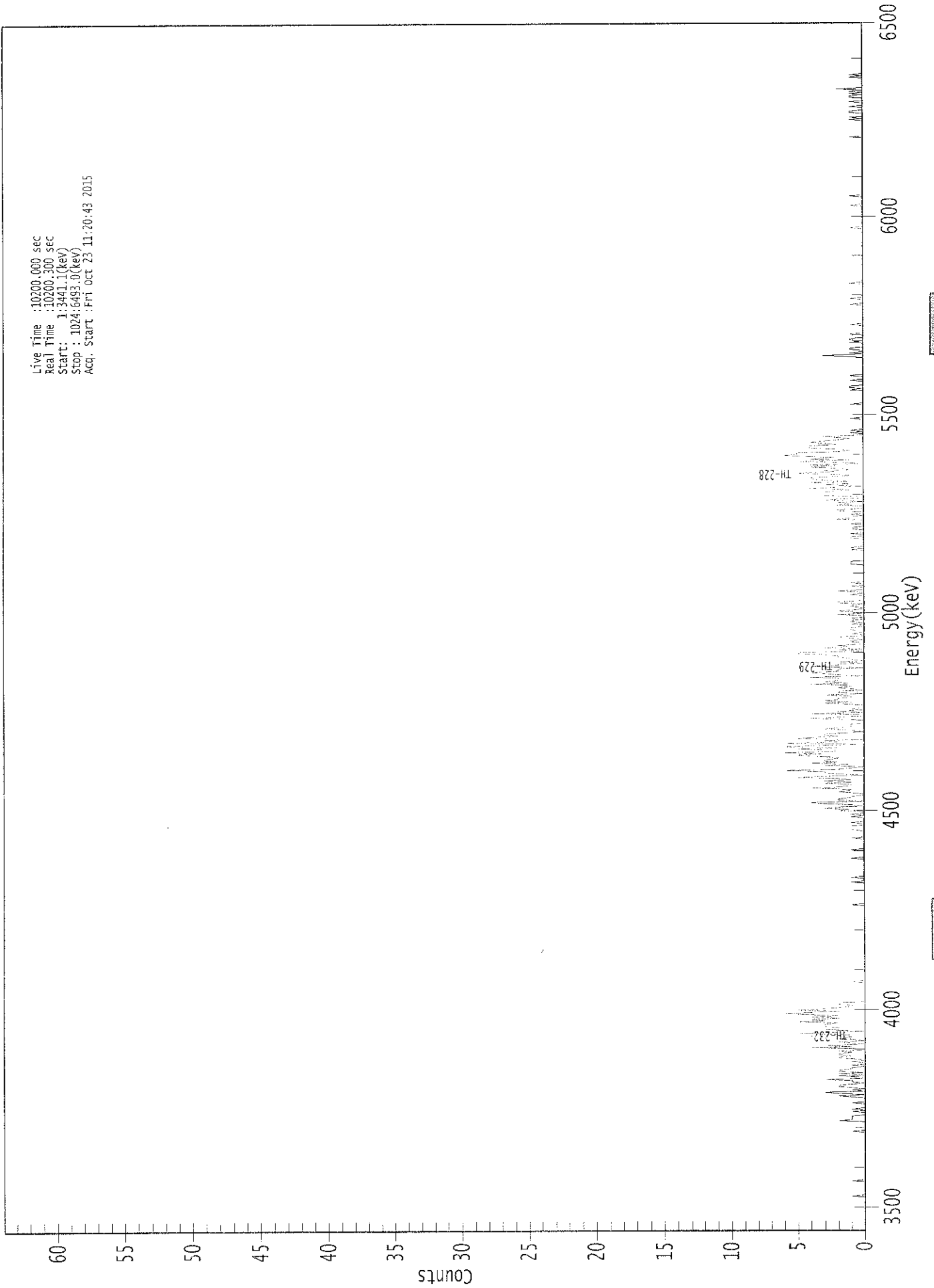
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.998	5850.00*	6.87E-002 +/- 5.98E-002	6.69E-002 +/- 1.19E-002
TH-228	0.989	5400.00*	1.84E+000 +/- 4.30E-001	7.84E-002 +/- 1.39E-002
TH-229	1.000	4872.00*	1.51E+000 +/- 2.69E-001	6.17E-002 +/- 1.10E-002
TH-230	0.981	4672.00*	1.90E+000 +/- 4.41E-001	6.15E-002 +/- 1.09E-002
TH-232	0.981	3997.00*	1.42E+000 +/- 3.51E-001	5.20E-002 +/- 9.25E-003

AG
10/23/15

0000132107.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3441.1(keV)
Stop : 1024:6493.0(keV)
Acq. Start : Fri Oct 23 11:20:43 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: 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	1	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	1	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	1	0	0	0
89:	0	0	0	0	0	2	1	1
97:	1	1	0	0	0	1	0	1
105:	0	0	0	0	1	0	0	0
113:	0	1	2	0	2	3	0	1
121:	0	1	2	2	1	0	1	1
129:	3	0	0	2	0	2	0	2
137:	2	1	1	0	1	0	0	1
145:	0	0	2	2	1	2	2	1
153:	2	0	0	4	1	3	0	1
161:	2	0	1	2	1	2	1	5
169:	2	0	3	2	2	3	3	3
177:	2	5	3	4	2	4	2	4
185:	6	4	2	5	3	2	1	1
193:	2	2	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	1	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	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	1
297:	0	0	0	1	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	1	0	0	0	0
321:	0	0	1	0	0	0	0	0
329:	0	0	0	0	1	0	0	0
337:	0	0	0	1	1	1	1	0
345:	0	1	0	0	0	0	1	0
353:	1	0	0	2	1	3	2	0
361:	1	3	4	0	2	2	1	1

369: 0 0 1 2 1 1 4 2

Sample Title: 16

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

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:	1	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	1	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	1	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	1	0	1	0
945:	0	0	1	1	0	0	0	1
953:	0	0	0	1	0	0	0	1
961:	1	0	1	0	1	0	2	0
969:	0	0	0	0	0	0	0	0
977:	1	0	1	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
10/23/15

Sample Description: CP1803S10-11
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001321
 Batch Identification: 1510084A-TH
 Sample Identification: 17
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_037
 Chamber Serial Number: 04026478A
 Detector Serial Number: 91133
 Env. Background: System Bkgd 131873
 Reagent Blank: <not performed>

Sample Size: 1.513E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/10/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 11:20:44 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: 0.1565 +/- 0.0144
 Counting Efficiency: 0.1709 +/- 0.0030 on 10/25/2014 2:46:09 PM
 Chem. Recovery Factor: 0.9156 +/- 0.0858

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	5.844	10.49	62.21	0.51	0.00E+000	3.0
TH-228	5.377	141.66	16.49	0.34	0.00E+000	10.2
TH-229 T	4.881	134.00	16.99	0.00	0.00E+000	4.2
TH-230	4.643	153.66	15.83	0.34	0.00E+000	14.3
TH-232	3.965	120.83	17.85	0.17	0.00E+000	4.2

T = Tracer Peak used for Effective Efficiency

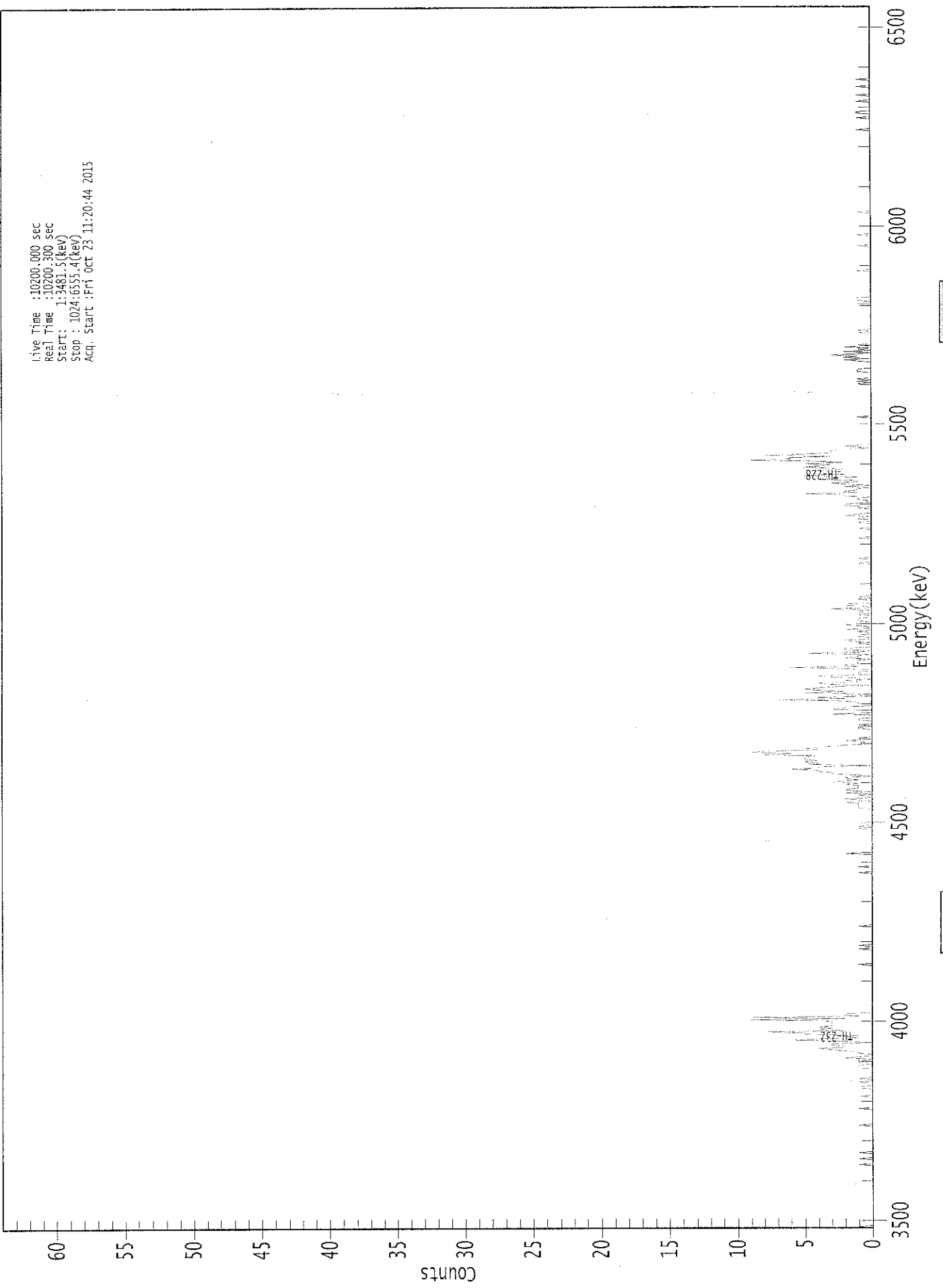
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.21E-001 +/- 7.81E-002	6.03E-002 +/- 1.09E-002
TH-228	0.997	5400.00*	1.61E+000 +/- 3.93E-001	5.43E-002 +/- 9.79E-003
TH-229	1.000	4872.00*	1.51E+000 +/- 2.72E-001	6.74E-002 +/- 1.22E-002
TH-230	0.996	4672.00*	1.72E+000 +/- 4.14E-001	5.36E-002 +/- 9.68E-003
TH-232	0.995	3997.00*	1.35E+000 +/- 3.43E-001	4.67E-002 +/- 8.43E-003

AG
10/23/15

0000132108.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3481.5 (keV)
Stop : 1024:6553.4 (keV)
Acq. Start : Fri Oct 23 11:20:44 2015



: 00292

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: 17

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	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	1	0	0	0
57:	0	0	1	0	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	1	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	1	0	0	0	0
105:	0	0	0	0	0	0	1	0	0
113:	0	0	0	0	0	1	1	0	0
121:	0	0	1	0	0	1	0	0	0
129:	0	0	0	0	0	0	1	1	0
137:	1	0	0	1	1	0	2	1	0
145:	0	0	1	1	2	3	4	2	0
153:	2	3	3	0	2	6	4	1	0
161:	2	1	5	5	8	2	4	3	0
169:	4	3	3	3	3	3	9	2	0
177:	9	1	2	2	0	0	0	0	0
185:	0	0	0	0	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	1	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	1	0	0	1	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	1	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	1	0	0	0	0	1	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	2	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	1	0	0
337:	1	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	1	0
353:	1	1	1	1	2	0	1	2	0
361:	0	0	1	0	2	0	2	2	0

369: 1 1 1 2 1 3 2 1

Sample Title: 17

Channel	1	2	3	4	5	6	7	8
377:	2	2	0	1	3	3	4	4
385:	6	4	4	0	5	4	5	4
393:	5	5	5	4	8	6	9	8
401:	4	5	4	3	2	0	0	1
409:	2	0	1	0	0	0	0	0
417:	0	0	1	1	0	1	0	0
425:	0	1	1	0	0	0	3	0
433:	0	0	3	2	2	0	0	1
441:	1	2	7	2	4	0	2	0
449:	5	2	4	5	4	3	0	3
457:	4	1	2	0	1	3	4	0
465:	1	1	0	0	2	6	1	2
473:	1	1	1	1	0	2	1	1
481:	0	5	1	0	2	2	0	0
489:	0	1	0	2	2	0	0	1
497:	1	0	0	1	0	2	0	0
505:	1	2	0	0	1	1	1	0
513:	0	1	0	1	1	0	3	0
521:	0	2	2	0	0	0	1	0
529:	1	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:	0	0	0	0	1	0	0	0
561:	1	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	1	0	0	0	0	0	0
585:	0	1	0	0	0	0	1	0
593:	0	1	0	0	2	1	0	0
601:	0	0	1	0	2	2	1	0
609:	0	1	1	0	2	2	5	1
617:	2	1	1	0	2	0	2	3
625:	1	1	4	2	1	5	2	2
633:	2	5	2	3	5	4	3	5
641:	2	4	9	6	6	3	8	5
649:	3	3	3	2	0	1	2	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	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	0	1	0	1	0	1	0
713:	0	0	0	0	1	1	1	0
721:	0	0	0	0	0	1	2	0
729:	2	1	3	1	0	2	0	1
737:	0	2	0	1	0	0	0	0
745:	0	0	0	0	0	1	0	1
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	1	0	0
777:	1	1	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 1 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	1	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	1	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	1
921:	0	0	0	0	0	0	0	0
929:	0	1	0	0	0	1	1	0
937:	0	0	0	0	0	0	0	1
945:	0	0	0	0	1	0	0	0
953:	0	0	0	1	0	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

KP
10/23/15

Apex-Alpha™

Sample Description: CP1803S12-13
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001321
 Batch Identification: 1510084A-TH
 Sample Identification: 18
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_038
 Chamber Serial Number: 04026478B
 Detector Serial Number: 91134
 Env. Background: System Bkgd 131874
 Reagent Blank: <not performed>

Sample Size: 1.595E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/10/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 11:20:46 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.226 mL
 Effective Efficiency: 0.2060 +/- 0.0167
 Counting Efficiency: 0.1615 +/- 0.0029 on 10/25/2014 2:50:18 PM
 Chem. Recovery Factor: 1.2751 +/- 0.1060

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	11.15	61.26	0.85	0.00E+000	3.0
TH-228	5.390	148.15	16.16	0.85	0.00E+000	12.5
TH-229 T	4.895	177.66	14.72	0.34	0.00E+000	5.8
TH-230	4.650	137.49	16.75	0.51	0.00E+000	6.8
TH-232	3.982	166.66	15.20	0.34	0.00E+000	7.2

T = Tracer Peak used for Effective Efficiency

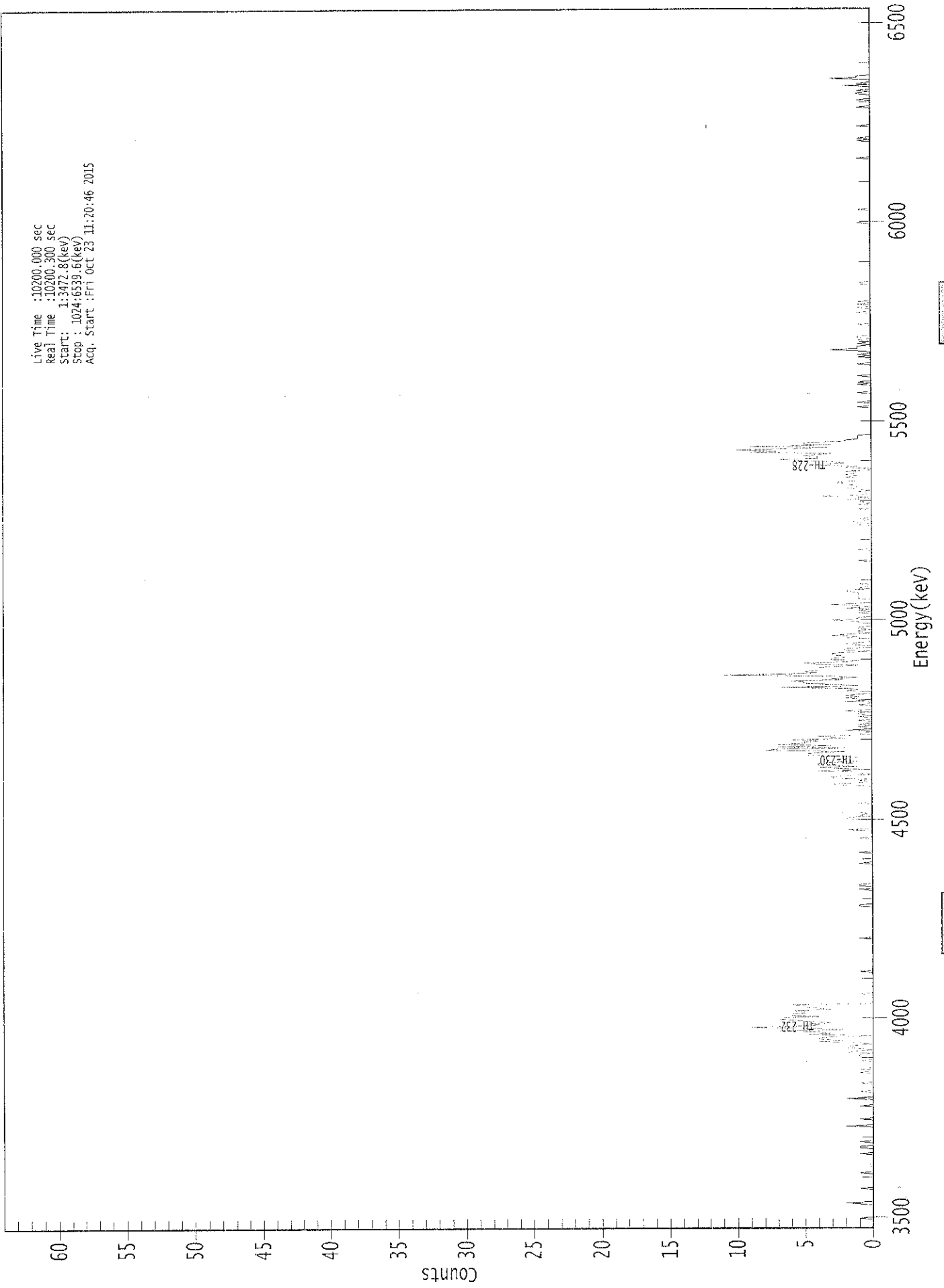
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.992	5850.00*	9.24E-002 +/- 5.85E-002	4.96E-002 +/- 7.90E-003
TH-228	1.000	5400.00*	1.21E+000 +/- 2.75E-001	4.90E-002 +/- 7.80E-003
TH-229	0.997	4872.00*	1.44E+000 +/- 2.29E-001	3.88E-002 +/- 6.17E-003
TH-230	0.997	4672.00*	1.11E+000 +/- 2.57E-001	4.24E-002 +/- 6.75E-003
TH-232	0.999	3997.00*	1.34E+000 +/- 2.96E-001	3.86E-002 +/- 6.14E-003

AG
10/23/15

0000132109.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3472.8(keV)
Stop : 1024:6539.6(keV)
Acq. Start : Fri Oct 23 11:20:46 2015



ROI Type: 3

ROI Type: 1

76200 : 00207

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

Sample Title: 18

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

369: 0 0 0 2 3 1 0 1

Sample Title: 18

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 18

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	1	0	0	0	0	0
849:	0	0	0	0	0	1	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:	1	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	1
913:	0	1	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	1	0	0	0	0
945:	0	1	0	0	0	0	1	1
953:	0	1	0	0	0	2	0	1
961:	0	0	0	3	1	1	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™

10/23/15

Sample Description: CP1803S15-16
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001321
 Batch Identification: 1510084A-TH
 Sample Identification: 19
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_039
 Chamber Serial Number: 06027396A
 Detector Serial Number: 83109
 Env. Background: System Bkgd 131875
 Reagent Blank: <not performed>

Sample Size: 1.508E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/10/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 11:20:48 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.226 mL
 Effective Efficiency: 0.2029 +/- 0.0167
 Counting Efficiency: 0.1934 +/- 0.0034 on 10/25/2014 2:53:34 PM
 Chem. Recovery Factor: 1.0491 +/- 0.0883

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	5.768	16.79	51.38	2.21	0.00E+000	3.0
TH-228	5.389	141.94	16.66	3.06	0.00E+000	16.7
TH-229 T	4.888	175.11	14.95	2.89	0.00E+000	18.0
TH-230	4.655	146.77	16.39	3.23	0.00E+000	4.1
TH-232	3.985	183.47	14.54	1.53	0.00E+000	4.5

T = Tracer Peak used for Effective Efficiency

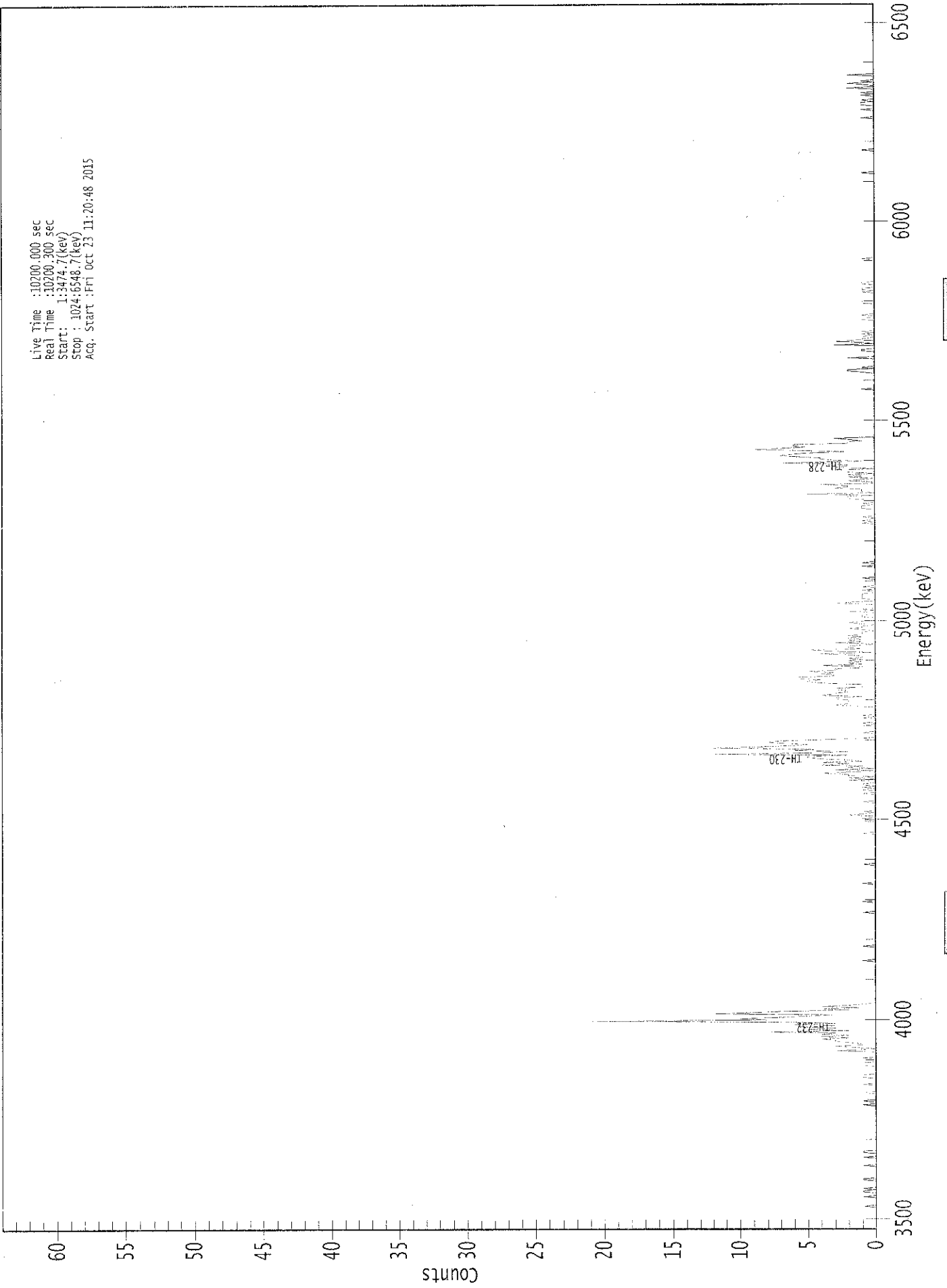
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.965	5850.00*	1.49E-001 +/- 8.04E-002	7.11E-002 +/- 1.15E-002
TH-228	0.999	5400.00*	1.25E+000 +/- 2.89E-001	7.84E-002 +/- 1.27E-002
TH-229	0.999	4872.00*	1.52E+000 +/- 2.46E-001	7.62E-002 +/- 1.23E-002
TH-230	0.998	4672.00*	1.27E+000 +/- 2.93E-001	7.89E-002 +/- 1.27E-002
TH-232	0.999	3997.00*	1.59E+000 +/- 3.45E-001	6.15E-002 +/- 9.93E-003

AG
 10/23/15

0000132113.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:34:4.7(keV)
Stop : 1024:6548.7(keV)
Acq. Start : Fri Oct 23 11:20:48 2015



20300 :

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: 19

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	1	0	0	0	0	0
25:	0	0	0	1	0	0	0	0	1
33:	1	0	1	0	0	0	0	0	0
41:	0	1	1	0	0	0	0	0	0
49:	0	0	0	0	0	1	0	0	0
57:	0	0	0	0	1	0	0	0	0
65:	1	1	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:	1	0	0	1	0	0	0	0	0
113:	0	0	1	0	0	0	0	0	0
121:	0	1	0	0	0	0	0	0	1
129:	1	1	0	0	0	0	0	0	0
137:	0	1	1	1	0	0	0	0	1
145:	0	0	0	0	0	3	1	0	0
153:	2	3	1	1	2	3	3	4	4
161:	2	4	2	4	3	8	2	5	5
169:	3	6	3	6	3	6	21	8	8
177:	10	7	5	3	12	9	7	2	2
185:	4	1	4	2	1	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	0	0	0	0
225:	1	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	0
257:	0	0	0	0	0	0	0	0	0
265:	1	0	0	0	0	0	0	0	0
273:	0	1	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	1	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0	0
305:	1	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	1	0	0	0	0	0	0
337:	0	0	0	0	1	0	1	0	0
345:	0	2	1	0	1	0	0	0	0
353:	0	0	0	0	1	0	0	0	0
361:	0	0	0	1	0	0	1	0	0

369: 1 0 1 1 0 0 2 0

Sample Title: 19

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 19

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	1	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	1	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	1	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	1
929:	0	0	0	0	0	0	1	0
937:	0	0	1	1	1	0	1	0
945:	0	0	1	0	1	0	0	0
953:	2	0	0	1	2	0	1	0
961:	0	0	0	2	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™

10/23/15

Sample Description: CP1803S18-19
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001321
 Batch Identification: 1510084A-TH
 Sample Identification: 20
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_040
 Chamber Serial Number: 06027396B
 Detector Serial Number: 91135
 Env. Background: System Bkgd 131876
 Reagent Blank: <not performed>

Sample Size: 1.544E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/10/2015 6:49:22 AM
 Acquisition Date/Time: 10/23/2015 11:20:49 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.226 mL
 Effective Efficiency: 0.1914 +/- 0.0161
 Counting Efficiency: 0.1856 +/- 0.0032 on 10/25/2014 2:57:14 PM
 Chem. Recovery Factor: 1.0316 +/- 0.0884

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	5.849	13.66	53.80	0.34	0.00E+000	3.0
TH-228	5.362	140.47	16.64	1.53	0.00E+000	12.6
TH-229 T	4.879	164.83	15.28	0.17	0.00E+000	7.2
TH-230	4.629	193.49	14.11	0.51	0.00E+000	24.2
TH-232	3.963	143.00	16.45	0.00	0.00E+000	30.7

T = Tracer Peak used for Effective Efficiency

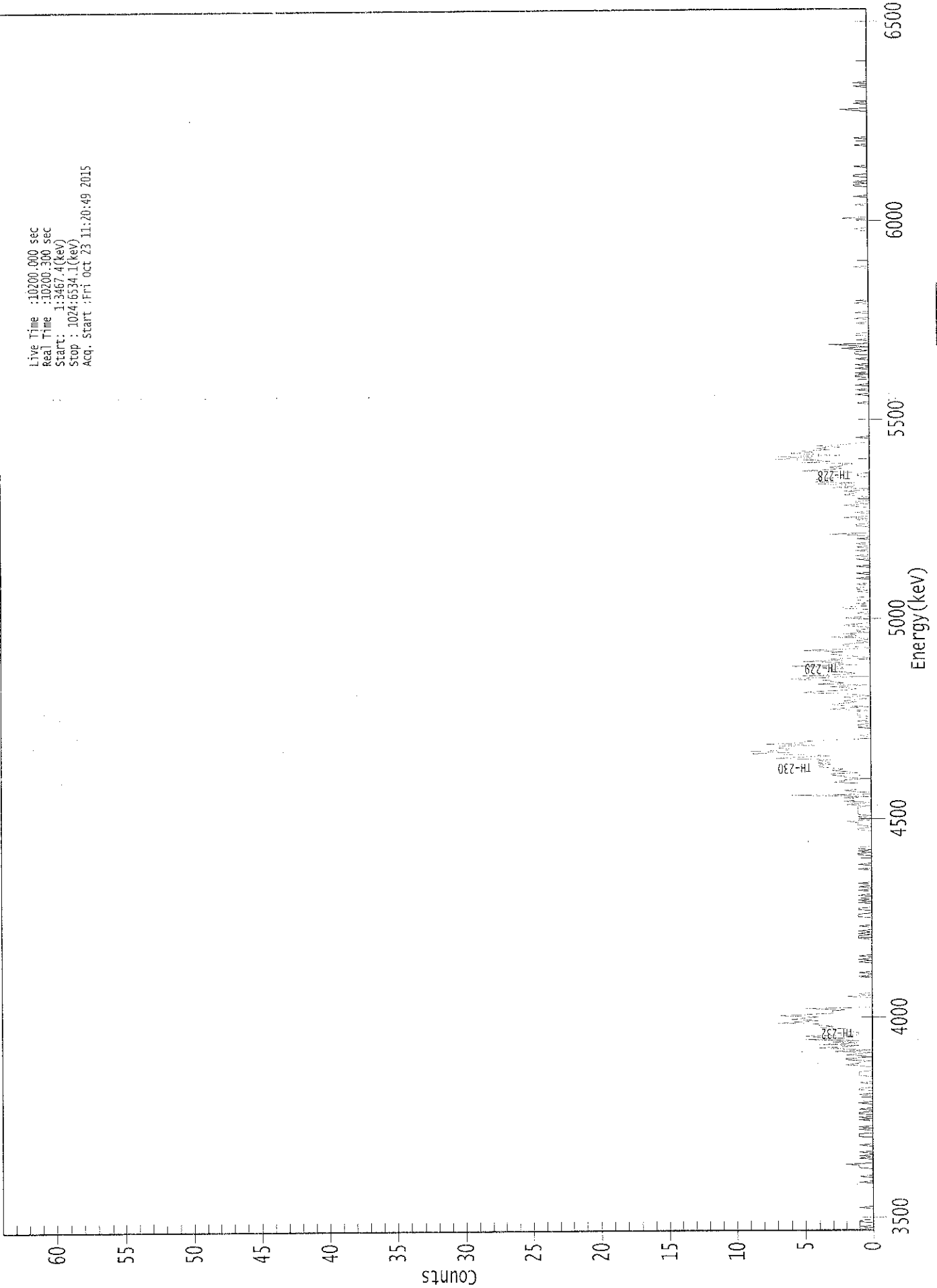
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.26E-001 +/- 7.07E-002	4.40E-002 +/- 7.24E-003
TH-228	0.993	5400.00*	1.28E+000 +/- 2.99E-001	6.46E-002 +/- 1.06E-002
TH-229	1.000	4872.00*	1.48E+000 +/- 2.44E-001	3.76E-002 +/- 6.18E-003
TH-230	0.991	4672.00*	1.74E+000 +/- 3.77E-001	4.71E-002 +/- 7.75E-003
TH-232	0.994	3997.00*	1.28E+000 +/- 2.98E-001	5.38E-002 +/- 8.84E-003

AG
 10/23/15

0000132114.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3467.4(keV)
Stop : 1024:6534.1(keV)
Acq. Start : Fri Oct 23 11:20:49 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: 20

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 2 1 1 1 1 1 1 3

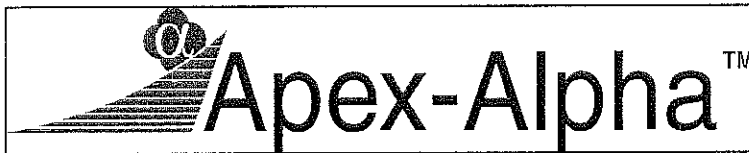
Sample Title: 20

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

Sample Title: 20

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	1	1	0
841:	0	0	0	0	0	0	0	2
849:	0	0	0	0	0	0	0	0
857:	0	0	1	0	0	0	0	0
865:	0	1	0	0	0	0	0	0
873:	0	0	1	1	0	1	0	0
881:	0	0	1	1	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	1	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	1	2	0	0	0	0	1
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	1	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



QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 10/23/2015
Time : 5:17:32 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	10/23/2015 5:02:43 AM
Alpha 004	21f	ALL	Passed	10/23/2015 5:02:44 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	10/23/2015 5:02:45 AM
Alpha 011	21f	ALL	Passed	10/23/2015 5:02:46 AM
Alpha 012	21f	ALL	Passed	10/23/2015 5:02:46 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Passed	10/23/2015 5:02:47 AM
Alpha 015	21f	ALL	Passed	10/23/2015 5:02:48 AM
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:02:49 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:02:51 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:02:52 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:02:54 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:02:55 AM
Alpha 038	Alpha Analyst100DC	Peak Energy	Action	10/23/2015 5:02:57 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:02:58 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:00 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:01 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:03 AM
Alpha 043	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:04 AM
Alpha 044	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:06 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:08 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:10 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:11 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:13 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:14 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:16 AM
Alpha 051	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:19 AM
Alpha 052	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:21 AM
Alpha 053	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:23 AM
Alpha 054	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:25 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:28 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:30 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:32 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:35 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 059	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:38 AM
Alpha 060	Alpha Analyst100DC	ALL	Passed	10/23/2015 5:03:41 AM

APPROVED BY: ✓

APPROVAL DATE: 10/23

***** 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	15-10084
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	CP0604S06-07	38	10/09/15 13:00	6.5380E+02
04	DO	CP0604S06-07	38	10/09/15 13:00	6.5380E+02
05	TRG	CP0604S09-10	34	10/09/15 13:10	6.0333E+02
06	TRG	CP0604S11-12	35	10/09/15 13:20	5.6006E+02
07	TRG	CP0604S14-15	36	10/09/15 13:30	5.5936E+02
08	TRG	CP0604S16-17	34	10/09/15 13:40	5.6147E+02
09	TRG	CP0604S19-20	35	10/09/15 13:50	5.6693E+02
10	TRG	CP0604S21-22	32	10/09/15 14:00	5.7084E+02
11	TRG	CP0604S24-25	37	10/09/15 14:10	5.8340E+02
12	TRG	CP0604S26-27	35	10/09/15 14:20	5.4581E+02
13	TRG	CP0604S28-29	36	10/09/15 14:30	5.4637E+02
14	TRG	CP1803S03-04	34	10/10/15 11:30	5.9422E+02
15	TRG	CP1803S06-07	34	10/10/15 11:40	5.3995E+02
16	TRG	CP1803S08-09	38	10/10/15 11:50	6.4101E+02
17	TRG	CP1803S10-11	33	10/10/15 12:00	6.3731E+02
18	TRG	CP1803S12-13	35	10/10/15 12:10	6.4471E+02
19	TRG	CP1803S15-16	35	10/10/15 12:20	6.2345E+02
20	TRG	CP1803S18-19	35	10/10/15 12:30	5.9607E+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.

15-10084

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				0.00								
02	MBL				0.00								
03	DUP				0.00								
04	DO				0.00								
05	TRG				0.00								
06	TRG				0.00								
07	TRG				0.00								
08	TRG				0.00								
09	TRG				0.00								
10	TRG				0.00								
11	TRG				0.00								
12	TRG				0.00								
13	TRG				0.00								
14	TRG				0.00								
15	TRG				0.00								
16	TRG				0.00								
17	TRG				0.00								
18	TRG				0.00								
19	TRG				0.00								
20	TRG				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								
02	MBL								
03	DUP								
04	DO	10/15/15 07:34	KSALLINGS						
05	TRG	10/15/15 07:34	KSALLINGS						
06	TRG	10/15/15 07:34	KSALLINGS						
07	TRG	10/15/15 07:34	KSALLINGS						
08	TRG	10/15/15 07:34	KSALLINGS						
09	TRG	10/15/15 07:34	KSALLINGS						
10	TRG	10/15/15 07:34	KSALLINGS						
11	TRG	10/15/15 07:34	KSALLINGS						
12	TRG	10/15/15 07:34	KSALLINGS						
13	TRG	10/15/15 07:34	KSALLINGS						
14	TRG	10/15/15 07:34	KSALLINGS						
15	TRG	10/15/15 07:34	KSALLINGS						
16	TRG	10/15/15 07:34	KSALLINGS						
17	TRG	10/15/15 07:34	KSALLINGS						
18	TRG	10/15/15 07:34	KSALLINGS						
19	TRG	10/15/15 07:34	KSALLINGS						
20	TRG	10/15/15 07:34	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.

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	1.34E+02	9.26E+00	1.58E+00	1.37E+02	97.50	OK		10/14/15 00:00	1.00E+00	11/04/15 10:41	YES
01	CS-137	LCS	LCS	pCi/g	8.37E+01	8.09E+00	2.38E+00	8.69E+01	96.23	OK		10/14/15 00:00	1.00E+00	11/04/15 10:41	YES
02	AC-228	MBL	BLANK	pCi/g	-8.72E-02	1.44E-01	2.10E-01					10/14/15 00:00	1.00E+00	11/04/15 11:12	NO
02	BI-214	MBL	BLANK	pCi/g	-6.06E-02	8.88E-02	1.28E-01					10/14/15 00:00	1.00E+00	11/04/15 11:12	NO
02	K-40	MBL	BLANK	pCi/g	2.13E-01	3.60E-01	8.01E-01					10/14/15 00:00	1.00E+00	11/04/15 11:12	NO
02	PB-212	MBL	BLANK	pCi/g	4.34E-02	5.71E-02	9.87E-02					10/14/15 00:00	1.00E+00	11/04/15 11:12	NO
02	PB-214	MBL	BLANK	pCi/g	6.86E-03	8.49E-02	1.39E-01					10/14/15 00:00	1.00E+00	11/04/15 11:12	NO
02	RA-226	MBL	BLANK	pCi/g	-6.06E-02	8.88E-02	1.28E-01					10/14/15 00:00	1.00E+00	11/04/15 11:12	NO
02	RA-228	MBL	BLANK	pCi/g	-8.72E-02	1.44E-01	2.10E-01					10/14/15 00:00	1.00E+00	11/04/15 11:12	NO
02	TH-234	MBL	BLANK	pCi/g	2.52E-01	4.14E-01	6.61E-01					10/14/15 00:00	1.00E+00	11/04/15 11:12	NO
02	TL-208	MBL	BLANK	pCi/g	-1.72E-02	1.23E-01	1.84E-01					10/14/15 00:00	1.00E+00	11/04/15 11:12	NO
03	AC-228	DUP	CP0604S06-07	pCi/g	1.38E+00	2.18E-01	7.18E-01				OK	10/09/15 13:00	6.54E+02	11/04/15 08:42	YES
03	BI-214	DUP	CP0604S06-07	pCi/g	9.32E-01	1.73E-01	1.85E-01				OK	10/09/15 13:00	6.54E+02	11/04/15 08:42	YES
03	K-40	DUP	CP0604S06-07	pCi/g	2.01E+01	2.32E+00	6.68E-01				OK	10/09/15 13:00	6.54E+02	11/04/15 08:42	YES
03	PB-212	DUP	CP0604S06-07	pCi/g	1.60E+00	1.77E-01	3.18E-01					10/09/15 13:00	6.54E+02	11/04/15 08:42	YES
03	PB-214	DUP	CP0604S06-07	pCi/g	9.33E-01	1.48E-01	2.13E-01					10/09/15 13:00	6.54E+02	11/04/15 08:42	YES
03	RA-226	DUP	CP0604S06-07	pCi/g	9.32E-01	1.73E-01	1.85E-01					10/09/15 13:00	6.54E+02	11/04/15 08:42	YES
03	RA-228	DUP	CP0604S06-07	pCi/g	1.36E+00	2.15E-01	7.18E-01					10/09/15 13:00	6.54E+02	11/04/15 08:42	YES
03	TH-234	DUP	CP0604S06-07	pCi/g	1.83E+00	1.47E+00	2.43E+00					10/09/15 13:00	6.54E+02	11/04/15 08:42	YES
03	TL-208	DUP	CP0604S06-07	pCi/g	1.60E+00	2.92E-01	3.36E-01					10/09/15 13:00	6.54E+02	11/04/15 08:42	YES
04	AC-228	DO	CP0604S06-07	pCi/g	1.38E+00	2.27E-01	6.43E-01					10/09/15 13:00	6.54E+02	11/04/15 09:43	YES
04	BI-214	DO	CP0604S06-07	pCi/g	9.02E-01	1.67E-01	4.77E-01					10/09/15 13:00	6.54E+02	11/04/15 09:43	YES
04	K-40	DO	CP0604S06-07	pCi/g	1.95E+01	2.28E+00	2.15E+00					10/09/15 13:00	6.54E+02	11/04/15 09:43	YES
04	PB-212	DO	CP0604S06-07	pCi/g	1.60E+00	1.73E-01	2.35E-01					10/09/15 13:00	6.54E+02	11/04/15 09:43	YES
04	PB-214	DO	CP0604S06-07	pCi/g	8.78E-01	1.53E-01	2.76E-01					10/09/15 13:00	6.54E+02	11/04/15 09:43	YES
04	RA-226	DO	CP0604S06-07	pCi/g	9.02E-01	1.67E-01	4.77E-01					10/09/15 13:00	6.54E+02	11/04/15 09:43	YES
04	RA-228	DO	CP0604S06-07	pCi/g	1.38E+00	2.27E-01	6.43E-01					10/09/15 13:00	6.54E+02	11/04/15 09:43	YES
04	TH-234	DO	CP0604S06-07	pCi/g	1.37E+00	1.33E+00	2.22E+00					10/09/15 13:00	6.54E+02	11/04/15 09:43	YES
04	TL-208	DO	CP0604S06-07	pCi/g	1.50E+00	2.94E-01	3.66E-01					10/09/15 13:00	6.54E+02	11/04/15 09:43	YES
05	AC-228	TRG	CP0604S09-10	pCi/g	1.35E+00	4.92E-01	8.54E-01					10/09/15 13:10	6.03E+02	11/04/15 08:36	YES
05	BI-214	TRG	CP0604S09-10	pCi/g	1.48E+00	3.33E-01	5.39E-01					10/09/15 13:10	6.03E+02	11/04/15 08:36	YES
05	K-40	TRG	CP0604S09-10	pCi/g	1.94E+01	3.26E+00	1.67E+00					10/09/15 13:10	6.03E+02	11/04/15 08:36	YES
05	PB-212	TRG	CP0604S09-10	pCi/g	1.86E+00	3.45E-01	4.41E-01					10/09/15 13:10	6.03E+02	11/04/15 08:36	YES
05	PB-214	TRG	CP0604S09-10	pCi/g	1.27E+00	2.64E-01	4.33E-01					10/09/15 13:10	6.03E+02	11/04/15 08:36	YES
05	RA-226	TRG	CP0604S09-10	pCi/g	1.48E+00	3.33E-01	5.39E-01					10/09/15 13:10	6.03E+02	11/04/15 08:36	YES
05	RA-228	TRG	CP0604S09-10	pCi/g	1.35E+00	4.92E-01	8.54E-01					10/09/15 13:10	6.03E+02	11/04/15 08:36	YES
05	TH-234	TRG	CP0604S09-10	pCi/g	1.37E+00	1.38E+00	2.16E+00					10/09/15 13:10	6.03E+02	11/04/15 08:36	NO
05	TL-208	TRG	CP0604S09-10	pCi/g	1.36E+00	3.26E-01	2.17E-01					10/09/15 13:10	6.03E+02	11/04/15 08:36	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	CP0604S11-12	pCi/g	1.66E+00	2.18E-01	3.25E-01					10/09/15 13:20	5.60E+02	11/04/15 09:38	YES
06	BI-214	TRG	CP0604S11-12	pCi/g	1.45E+00	1.83E-01	2.22E-01					10/09/15 13:20	5.60E+02	11/04/15 09:38	YES
06	K-40	TRG	CP0604S11-12	pCi/g	2.28E+01	2.47E+00	1.70E+00					10/09/15 13:20	5.60E+02	11/04/15 09:38	YES
06	PB-212	TRG	CP0604S11-12	pCi/g	1.54E+00	1.76E-01	2.77E-01					10/09/15 13:20	5.60E+02	11/04/15 09:38	YES
06	PB-214	TRG	CP0604S11-12	pCi/g	1.61E+00	1.68E-01	2.24E-01					10/09/15 13:20	5.60E+02	11/04/15 09:38	YES
06	RA-226	TRG	CP0604S11-12	pCi/g	1.45E+00	1.83E-01	2.22E-01					10/09/15 13:20	5.60E+02	11/04/15 09:38	YES
06	RA-228	TRG	CP0604S11-12	pCi/g	1.66E+00	2.18E-01	3.25E-01					10/09/15 13:20	5.60E+02	11/04/15 09:38	YES
06	TH-234	TRG	CP0604S11-12	pCi/g	3.30E+00	1.43E+00	1.99E+00					10/09/15 13:20	5.60E+02	11/04/15 09:38	NO
06	TL-208	TRG	CP0604S11-12	pCi/g	1.32E+00	1.77E-01	9.16E-02					10/09/15 13:20	5.60E+02	11/04/15 09:38	YES
07	AC-228	TRG	CP0604S14-15	pCi/g	1.62E+00	2.32E-01	3.71E-01					10/09/15 13:30	5.59E+02	11/04/15 09:38	YES
07	BI-214	TRG	CP0604S14-15	pCi/g	1.53E+00	1.82E-01	1.96E-01					10/09/15 13:30	5.59E+02	11/04/15 09:38	YES
07	K-40	TRG	CP0604S14-15	pCi/g	2.11E+01	2.66E+00	1.05E+00					10/09/15 13:30	5.59E+02	11/04/15 09:38	YES
07	PB-212	TRG	CP0604S14-15	pCi/g	1.48E+00	1.85E-01	2.15E-01					10/09/15 13:30	5.59E+02	11/04/15 09:38	YES
07	PB-214	TRG	CP0604S14-15	pCi/g	1.72E+00	1.80E-01	2.03E-01					10/09/15 13:30	5.59E+02	11/04/15 09:38	YES
07	RA-226	TRG	CP0604S14-15	pCi/g	1.53E+00	1.82E-01	1.96E-01					10/09/15 13:30	5.59E+02	11/04/15 09:38	YES
07	RA-228	TRG	CP0604S14-15	pCi/g	1.62E+00	2.32E-01	3.71E-01					10/09/15 13:30	5.59E+02	11/04/15 09:38	YES
07	TH-234	TRG	CP0604S14-15	pCi/g	1.81E+00	1.63E+00	2.71E+00					10/09/15 13:30	5.59E+02	11/04/15 09:38	YES
07	TL-208	TRG	CP0604S14-15	pCi/g	1.31E+00	1.73E-01	1.11E-01					10/09/15 13:30	5.59E+02	11/04/15 09:38	YES
08	AC-228	TRG	CP0604S16-17	pCi/g	1.40E+00	4.42E-01	8.43E-01					10/09/15 13:40	5.61E+02	11/04/15 09:38	YES
08	BI-214	TRG	CP0604S16-17	pCi/g	1.65E+00	3.05E-01	3.90E-01					10/09/15 13:40	5.61E+02	11/04/15 09:38	YES
08	K-40	TRG	CP0604S16-17	pCi/g	2.07E+01	3.44E+00	1.48E+00					10/09/15 13:40	5.61E+02	11/04/15 09:38	YES
08	PB-212	TRG	CP0604S16-17	pCi/g	2.04E+00	3.57E-01	4.15E-01					10/09/15 13:40	5.61E+02	11/04/15 09:38	YES
08	PB-214	TRG	CP0604S16-17	pCi/g	1.56E+00	3.40E-01	5.51E-01					10/09/15 13:40	5.61E+02	11/04/15 09:38	YES
08	RA-226	TRG	CP0604S16-17	pCi/g	1.65E+00	3.05E-01	3.90E-01					10/09/15 13:40	5.61E+02	11/04/15 09:38	YES
08	RA-228	TRG	CP0604S16-17	pCi/g	1.48E+00	4.42E-01	8.43E-01					10/09/15 13:40	5.61E+02	11/04/15 09:38	YES
08	TH-234	TRG	CP0604S16-17	pCi/g	2.24E+00	1.46E+00	2.30E+00					10/09/15 13:40	5.61E+02	11/04/15 09:38	YES
08	TL-208	TRG	CP0604S16-17	pCi/g	1.38E+00	3.43E-01	2.33E-01					10/09/15 13:40	5.61E+02	11/04/15 09:38	NO
09	AC-228	TRG	CP0604S19-20	pCi/g	1.51E+00	2.78E-01	4.74E-01					10/09/15 13:50	5.67E+02	11/04/15 10:45	YES
09	BI-214	TRG	CP0604S19-20	pCi/g	1.23E+00	1.79E-01	3.51E-01					10/09/15 13:50	5.67E+02	11/04/15 10:45	YES
09	K-40	TRG	CP0604S19-20	pCi/g	1.95E+01	2.48E+00	1.53E+00					10/09/15 13:50	5.67E+02	11/04/15 10:45	YES
09	PB-212	TRG	CP0604S19-20	pCi/g	1.60E+00	1.84E-01	3.61E-01					10/09/15 13:50	5.67E+02	11/04/15 10:45	YES
09	PB-214	TRG	CP0604S19-20	pCi/g	1.30E+00	1.85E-01	2.83E-01					10/09/15 13:50	5.67E+02	11/04/15 10:45	YES
09	RA-226	TRG	CP0604S19-20	pCi/g	1.23E+00	1.79E-01	3.51E-01					10/09/15 13:50	5.67E+02	11/04/15 10:45	YES
09	RA-228	TRG	CP0604S19-20	pCi/g	1.51E+00	2.78E-01	4.74E-01					10/09/15 13:50	5.67E+02	11/04/15 10:45	YES
09	TH-234	TRG	CP0604S19-20	pCi/g	1.06E+00	1.68E+00	2.20E+00					10/09/15 13:50	5.67E+02	11/04/15 10:45	NO
09	TL-208	TRG	CP0604S19-20	pCi/g	1.26E+00	2.91E-01	5.20E-01					10/09/15 13:50	5.67E+02	11/04/15 10:45	NO
10	AC-228	TRG	CP0604S21-22	pCi/g	1.53E+00	2.38E-01	3.75E-01					10/09/15 14:00	5.71E+02	11/04/15 10:40	YES
10	BI-214	TRG	CP0604S21-22	pCi/g	1.48E+00	1.64E-01	1.90E-01					10/09/15 14:00	5.71E+02	11/04/15 10:40	YES

Preliminary Data Report & Analytical Calculations
Work Order: 15-10084-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
10	K-40	TRG	CP0604S21-22	pCi/g	2.11E+01	2.30E+00	9.55E-01					10/09/15 14:00	5.71E+02	11/04/15 10:40	YES
10	PB-212	TRG	CP0604S21-22	pCi/g	1.53E+00	1.73E-01	2.36E-01					10/09/15 14:00	5.71E+02	11/04/15 10:40	YES
10	PB-214	TRG	CP0604S21-22	pCi/g	1.45E+00	1.70E-01	2.13E-01					10/09/15 14:00	5.71E+02	11/04/15 10:40	YES
10	RA-226	TRG	CP0604S21-22	pCi/g	1.46E+00	1.64E-01	1.90E-01					10/09/15 14:00	5.71E+02	11/04/15 10:40	YES
10	RA-228	TRG	CP0604S21-22	pCi/g	1.53E+00	2.38E-01	3.75E-01					10/09/15 14:00	5.71E+02	11/04/15 10:40	YES
10	TH-234	TRG	CP0604S21-22	pCi/g	1.65E+00	1.48E+00	2.46E+00					10/09/15 14:00	5.71E+02	11/04/15 10:40	YES
10	TL-208	TRG	CP0604S21-22	pCi/g	1.26E+00	1.80E-01	8.99E-02					10/09/15 14:00	5.71E+02	11/04/15 10:40	YES
11	AC-228	TRG	CP0604S24-25	pCi/g	1.46E+00	2.24E-01	4.46E-01					10/09/15 14:10	5.83E+02	11/04/15 10:40	YES
11	BI-214	TRG	CP0604S24-25	pCi/g	1.38E+00	1.59E-01	1.97E-01					10/09/15 14:10	5.83E+02	11/04/15 10:40	YES
11	K-40	TRG	CP0604S24-25	pCi/g	2.00E+01	2.55E+00	1.12E+00					10/09/15 14:10	5.83E+02	11/04/15 10:40	YES
11	PB-212	TRG	CP0604S24-25	pCi/g	1.28E+00	1.58E-01	3.12E-01					10/09/15 14:10	5.83E+02	11/04/15 10:40	YES
11	PB-214	TRG	CP0604S24-25	pCi/g	1.47E+00	1.67E-01	2.36E-01					10/09/15 14:10	5.83E+02	11/04/15 10:40	YES
11	RA-226	TRG	CP0604S24-25	pCi/g	1.38E+00	1.59E-01	1.97E-01					10/09/15 14:10	5.83E+02	11/04/15 10:40	YES
11	RA-228	TRG	CP0604S24-25	pCi/g	1.46E+00	2.24E-01	4.46E-01					10/09/15 14:10	5.83E+02	11/04/15 10:40	YES
11	TH-234	TRG	CP0604S24-25	pCi/g	1.36E+00	9.33E-01	1.49E+00					10/09/15 14:10	5.83E+02	11/04/15 10:40	YES
11	TL-208	TRG	CP0604S24-25	pCi/g	1.22E+00	1.52E-01	1.47E-01					10/09/15 14:10	5.83E+02	11/04/15 10:40	YES
12	AC-228	TRG	CP0604S26-27	pCi/g	1.49E+00	2.07E-01	3.66E-01					10/09/15 14:20	5.46E+02	11/04/15 11:42	YES
12	BI-214	TRG	CP0604S26-27	pCi/g	1.23E+00	1.49E-01	2.19E-01					10/09/15 14:20	5.46E+02	11/04/15 11:42	YES
12	K-40	TRG	CP0604S26-27	pCi/g	1.99E+01	2.26E+00	8.30E-01					10/09/15 14:20	5.46E+02	11/04/15 11:42	YES
12	PB-212	TRG	CP0604S26-27	pCi/g	1.57E+00	1.79E-01	2.55E-01					10/09/15 14:20	5.46E+02	11/04/15 11:42	YES
12	PB-214	TRG	CP0604S26-27	pCi/g	1.29E+00	1.63E-01	2.16E-01					10/09/15 14:20	5.46E+02	11/04/15 11:42	YES
12	RA-226	TRG	CP0604S26-27	pCi/g	1.23E+00	1.49E-01	2.19E-01					10/09/15 14:20	5.46E+02	11/04/15 11:42	YES
12	RA-228	TRG	CP0604S26-27	pCi/g	1.49E+00	2.07E-01	3.66E-01					10/09/15 14:20	5.46E+02	11/04/15 11:42	YES
12	TH-234	TRG	CP0604S26-27	pCi/g	1.50E+00	1.46E+00	1.96E+00					10/09/15 14:20	5.46E+02	11/04/15 11:42	NO
12	TL-208	TRG	CP0604S26-27	pCi/g	1.30E+00	1.66E-01	1.97E-01					10/09/15 14:20	5.46E+02	11/04/15 11:42	YES
13	AC-228	TRG	CP0604S28-29	pCi/g	1.26E+00	2.07E-01	3.05E-01					10/09/15 14:30	5.46E+02	11/04/15 11:42	YES
13	BI-214	TRG	CP0604S28-29	pCi/g	1.03E+00	1.54E-01	1.85E-01					10/09/15 14:30	5.46E+02	11/04/15 11:42	YES
13	K-40	TRG	CP0604S28-29	pCi/g	1.96E+01	2.54E+00	1.19E+00					10/09/15 14:30	5.46E+02	11/04/15 11:42	YES
13	PB-212	TRG	CP0604S28-29	pCi/g	1.43E+00	1.72E-01	2.43E-01					10/09/15 14:30	5.46E+02	11/04/15 11:42	YES
13	PB-214	TRG	CP0604S28-29	pCi/g	9.86E-01	1.37E-01	2.05E-01					10/09/15 14:30	5.46E+02	11/04/15 11:42	YES
13	RA-226	TRG	CP0604S28-29	pCi/g	1.03E+00	1.54E-01	1.85E-01					10/09/15 14:30	5.46E+02	11/04/15 11:42	YES
13	RA-228	TRG	CP0604S28-29	pCi/g	1.26E+00	2.07E-01	3.05E-01					10/09/15 14:30	5.46E+02	11/04/15 11:42	YES
13	TH-234	TRG	CP0604S28-29	pCi/g	1.68E+00	1.53E+00	2.55E+00					10/09/15 14:30	5.46E+02	11/04/15 11:42	YES
13	TL-208	TRG	CP0604S28-29	pCi/g	1.04E+00	1.69E-01	1.96E-01					10/09/15 14:30	5.46E+02	11/04/15 11:42	YES
14	AC-228	TRG	CP1803S03-04	pCi/g	1.26E+00	2.61E-01	4.82E-01					10/10/15 11:30	5.94E+02	11/04/15 11:42	YES
14	BI-214	TRG	CP1803S03-04	pCi/g	1.46E+00	2.27E-01	3.04E-01					10/10/15 11:30	5.94E+02	11/04/15 11:46	YES
14	K-40	TRG	CP1803S03-04	pCi/g	1.75E+01	2.27E+00	1.45E+00					10/10/15 11:30	5.94E+02	11/04/15 11:46	YES
14	PB-212	TRG	CP1803S03-04	pCi/g	1.64E+00	1.82E-01	2.66E-01					10/10/15 11:30	5.94E+02	11/04/15 11:46	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	CP1803S03-04	pCi/g	1.37E+00	1.79E-01	2.46E-01					10/10/15 11:30	5.94E+02	11/04/15 11:46	YES
14	RA-226	TRG	CP1803S03-04	pCi/g	1.46E+00	2.27E-01	3.04E-01					10/10/15 11:30	5.94E+02	11/04/15 11:46	YES
14	RA-228	TRG	CP1803S03-04	pCi/g	1.26E+00	2.61E-01	4.82E-01					10/10/15 11:30	5.94E+02	11/04/15 11:46	YES
14	TH-234	TRG	CP1803S03-04	pCi/g	1.49E+00	1.66E+00	2.77E+00					10/10/15 11:30	5.94E+02	11/04/15 11:46	YES
14	TL-208	TRG	CP1803S03-04	pCi/g	1.50E+00	2.87E-01	5.19E-01					10/10/15 11:30	5.94E+02	11/04/15 11:46	NO
15	AC-228	TRG	CP1803S06-07	pCi/g	1.67E+00	2.51E-01	4.22E-01					10/10/15 11:40	6.40E+02	11/04/15 13:52	YES
15	BI-214	TRG	CP1803S06-07	pCi/g	1.32E+00	1.66E-01	2.27E-01					10/10/15 11:40	5.40E+02	11/04/15 13:52	YES
15	K-40	TRG	CP1803S06-07	pCi/g	2.01E+01	2.27E+00	8.27E-01					10/10/15 11:40	5.40E+02	11/04/15 13:52	YES
15	PB-212	TRG	CP1803S06-07	pCi/g	1.95E+00	2.07E-01	3.04E-01					10/10/15 11:40	5.40E+02	11/04/15 13:52	YES
15	PB-214	TRG	CP1803S06-07	pCi/g	1.55E+00	1.67E-01	2.40E-01					10/10/15 11:40	5.40E+02	11/04/15 13:52	YES
15	RA-226	TRG	CP1803S06-07	pCi/g	1.32E+00	1.66E-01	2.27E-01					10/10/15 11:40	5.40E+02	11/04/15 13:52	YES
15	RA-228	TRG	CP1803S06-07	pCi/g	1.67E+00	2.51E-01	4.22E-01					10/10/15 11:40	5.40E+02	11/04/15 13:52	YES
15	TH-234	TRG	CP1803S06-07	pCi/g	3.81E+00	1.98E+00	3.24E+00					10/10/15 11:40	5.40E+02	11/04/15 13:52	YES
15	TL-208	TRG	CP1803S06-07	pCi/g	1.42E+00	1.94E-01	1.51E-01					10/10/15 11:40	5.40E+02	11/04/15 13:52	YES
16	AC-228	TRG	CP1803S08-09	pCi/g	1.70E+00	2.10E-01	3.86E-01					10/10/15 11:50	6.41E+02	11/04/15 13:52	YES
16	BI-214	TRG	CP1803S08-09	pCi/g	1.34E+00	1.70E-01	2.26E-01					10/10/15 11:50	6.41E+02	11/04/15 13:52	YES
16	K-40	TRG	CP1803S08-09	pCi/g	1.66E+01	2.18E+00	1.13E+00					10/10/15 11:50	6.41E+02	11/04/15 13:52	YES
16	PB-212	TRG	CP1803S08-09	pCi/g	1.71E+00	1.88E-01	2.58E-01					10/10/15 11:50	6.41E+02	11/04/15 13:52	YES
16	PB-214	TRG	CP1803S08-09	pCi/g	1.37E+00	1.59E-01	2.33E-01					10/10/15 11:50	6.41E+02	11/04/15 13:52	YES
16	RA-226	TRG	CP1803S08-09	pCi/g	1.34E+00	1.70E-01	2.26E-01					10/10/15 11:50	6.41E+02	11/04/15 13:52	YES
16	RA-228	TRG	CP1803S08-09	pCi/g	1.70E+00	2.10E-01	3.86E-01					10/10/15 11:50	6.41E+02	11/04/15 13:52	YES
16	TH-234	TRG	CP1803S08-09	pCi/g	1.35E+00	1.51E+00	2.52E+00					10/10/15 11:50	6.41E+02	11/04/15 13:52	YES
16	TL-208	TRG	CP1803S08-09	pCi/g	1.22E+00	1.58E-01	9.69E-02					10/10/15 11:50	6.41E+02	11/04/15 13:52	YES
17	AC-228	TRG	CP1803S10-11	pCi/g	1.33E+00	2.55E-01	5.58E-01					10/10/15 12:00	6.37E+02	11/04/15 13:43	YES
17	BI-214	TRG	CP1803S10-11	pCi/g	1.31E+00	1.77E-01	1.98E-01					10/10/15 12:00	6.37E+02	11/04/15 13:43	YES
17	K-40	TRG	CP1803S10-11	pCi/g	1.48E+01	1.95E+00	1.17E+00					10/10/15 12:00	6.37E+02	11/04/15 13:43	YES
17	PB-212	TRG	CP1803S10-11	pCi/g	1.48E+00	1.64E-01	2.53E-01					10/10/15 12:00	6.37E+02	11/04/15 13:43	YES
17	PB-214	TRG	CP1803S10-11	pCi/g	1.50E+00	1.67E-01	2.15E-01					10/10/15 12:00	6.37E+02	11/04/15 13:43	YES
17	RA-226	TRG	CP1803S10-11	pCi/g	1.31E+00	1.77E-01	1.98E-01					10/10/15 12:00	6.37E+02	11/04/15 13:43	YES
17	RA-228	TRG	CP1803S10-11	pCi/g	1.33E+00	2.55E-01	5.58E-01					10/10/15 12:00	6.37E+02	11/04/15 13:43	YES
17	TH-234	TRG	CP1803S10-11	pCi/g	1.77E+00	1.37E+00	2.26E+00					10/10/15 12:00	6.37E+02	11/04/15 13:43	YES
17	TL-208	TRG	CP1803S10-11	pCi/g	1.16E+00	2.54E-01	4.50E-01					10/10/15 12:00	6.37E+02	11/04/15 13:43	NO
18	AC-228	TRG	CP1803S12-13	pCi/g	1.42E+00	3.51E-01	6.32E-01					10/10/15 12:10	6.45E+02	11/04/15 13:43	YES
18	BI-214	TRG	CP1803S12-13	pCi/g	9.79E-01	2.82E-01	4.81E-01					10/10/15 12:10	6.45E+02	11/04/15 13:43	YES
18	K-40	TRG	CP1803S12-13	pCi/g	1.61E+01	2.95E+00	2.18E+00					10/10/15 12:10	6.45E+02	11/04/15 13:43	YES
18	PB-212	TRG	CP1803S12-13	pCi/g	1.99E+00	3.57E-01	4.47E-01					10/10/15 12:10	6.45E+02	11/04/15 13:43	YES
18	PB-214	TRG	CP1803S12-13	pCi/g	1.11E+00	2.38E-01	4.46E-01					10/10/15 12:10	6.45E+02	11/04/15 13:43	YES
18	RA-226	TRG	CP1803S12-13	pCi/g	9.79E-01	2.82E-01	4.81E-01					10/10/15 12:10	6.45E+02	11/04/15 13:43	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
18	RA-228	TRG	CP1803S12-13	pCi/g	1.42E+00	3.51E-01	6.32E-01					10/10/15 12:10	6.45E+02	11/04/15 13:43	YES
18	TH-234	TRG	CP1803S12-13	pCi/g	2.55E+00	1.51E+00	5.11E+00					10/10/15 12:10	6.45E+02	11/04/15 13:43	YES
18	TL-208	TRG	CP1803S12-13	pCi/g	1.47E+00	3.18E-01	2.03E-01					10/10/15 12:10	6.45E+02	11/04/15 13:43	YES
19	AC-228	TRG	CP1803S15-16	pCi/g	1.58E+00	3.58E-01	6.11E-01					10/10/15 12:20	6.23E+02	11/04/15 14:45	YES
19	BI-214	TRG	CP1803S15-16	pCi/g	9.20E-01	2.85E-01	4.71E-01					10/10/15 12:20	6.23E+02	11/04/15 14:45	YES
19	K-40	TRG	CP1803S15-16	pCi/g	1.65E+01	2.90E+00	1.60E+00					10/10/15 12:20	6.23E+02	11/04/15 14:45	YES
19	PB-212	TRG	CP1803S15-16	pCi/g	1.78E+00	3.45E-01	4.38E-01					10/10/15 12:20	6.23E+02	11/04/15 14:45	YES
19	PB-214	TRG	CP1803S15-16	pCi/g	1.17E+00	2.58E-01	7.77E-01					10/10/15 12:20	6.23E+02	11/04/15 14:45	YES
19	RA-226	TRG	CP1803S15-16	pCi/g	9.20E-01	2.88E-01	4.71E-01					10/10/15 12:20	6.23E+02	11/04/15 14:45	YES
19	RA-228	TRG	CP1803S15-16	pCi/g	1.58E+00	3.58E-01	6.11E-01					10/10/15 12:20	6.23E+02	11/04/15 14:45	YES
19	TH-234	TRG	CP1803S15-16	pCi/g	2.36E+00	1.30E+00	2.07E+00					10/10/15 12:20	6.23E+02	11/04/15 14:45	NO
19	TL-208	TRG	CP1803S15-16	pCi/g	1.41E+00	3.42E-01	2.10E-01					10/10/15 12:20	6.23E+02	11/04/15 14:45	YES
20	AC-228	TRG	CP1803S18-19	pCi/g	1.51E+00	5.28E-01	8.79E-01					10/10/15 12:30	5.96E+02	11/04/15 15:46	YES
20	BI-214	TRG	CP1803S18-19	pCi/g	1.28E+00	2.54E-01	3.18E-01					10/10/15 12:30	5.96E+02	11/04/15 15:46	YES
20	K-40	TRG	CP1803S18-19	pCi/g	1.74E+01	3.03E+00	1.59E+00					10/10/15 12:30	5.96E+02	11/04/15 15:46	YES
20	PB-212	TRG	CP1803S18-19	pCi/g	1.70E+00	3.26E-01	4.06E-01					10/10/15 12:30	5.96E+02	11/04/15 15:46	YES
20	PB-214	TRG	CP1803S18-19	pCi/g	1.19E+00	3.28E-01	5.66E-01					10/10/15 12:30	5.96E+02	11/04/15 15:46	YES
20	RA-226	TRG	CP1803S18-19	pCi/g	1.28E+00	2.54E-01	3.18E-01					10/10/15 12:30	5.96E+02	11/04/15 15:46	YES
20	RA-228	TRG	CP1803S18-19	pCi/g	1.51E+00	5.28E-01	8.79E-01					10/10/15 12:30	5.96E+02	11/04/15 15:46	YES
20	TH-234	TRG	CP1803S18-19	pCi/g	2.29E+00	1.33E+00	2.12E+00					10/10/15 12:30	5.96E+02	11/04/15 15:46	NO
20	TL-208	TRG	CP1803S18-19	pCi/g	1.29E+00	3.21E-01	2.19E-01					10/10/15 12:30	5.96E+02	11/04/15 15:46	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	CP0604S06-07	10/09/15 13:00	653.8000				0.00		
04	DO	CP0604S06-07	10/09/15 13:00	653.8000				0.00		
05	TRG	CP0604S09-10	10/09/15 13:10	603.3300				0.00		
06	TRG	CP0604S11-12	10/09/15 13:20	560.0600				0.00		
07	TRG	CP0604S14-15	10/09/15 13:30	559.3600				0.00		
08	TRG	CP0604S16-17	10/09/15 13:40	561.4700				0.00		
09	TRG	CP0604S19-20	10/09/15 13:50	566.9300				0.00		
10	TRG	CP0604S21-22	10/09/15 14:00	570.8400				0.00		
11	TRG	CP0604S24-25	10/09/15 14:10	583.4000				0.00		
12	TRG	CP0604S26-27	10/09/15 14:20	545.8100				0.00		
13	TRG	CP0604S28-29	10/09/15 14:30	546.3700				0.00		
14	TRG	CP1803S03-04	10/10/15 11:30	594.2200				0.00		
15	TRG	CP1803S06-07	10/10/15 11:40	539.9500				0.00		
16	TRG	CP1803S08-09	10/10/15 11:50	641.0100				0.00		
17	TRG	CP1803S10-11	10/10/15 12:00	637.3100				0.00		
18	TRG	CP1803S12-13	10/10/15 12:10	644.7100				0.00		
19	TRG	CP1803S15-16	10/10/15 12:20	623.4500				0.00		
20	TRG	CP1803S18-19	10/10/15 12:30	596.0700				0.00		

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
15-10084	1	Gamma	grams	11/6/2015	KSALLINGS

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 Dilis	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	CP0604S06-07		DUP						6.5380E+02	6.5380E+02					
04	CP0604S06-07		DO						6.5380E+02	6.5380E+02					
05	CP0604S09-10		TRG						6.0333E+02	6.0333E+02					
06	CP0604S11-12		TRG						5.6006E+02	5.6006E+02					
07	CP0604S14-15		TRG						5.5936E+02	5.5936E+02					
08	CP0604S16-17		TRG						5.6147E+02	5.6147E+02					
09	CP0604S19-20		TRG						5.6693E+02	5.6693E+02					
10	CP0604S21-22		TRG						5.7084E+02	5.7084E+02					
11	CP0604S24-25		TRG						5.8340E+02	5.8340E+02					
12	CP0604S26-27		TRG						5.4581E+02	5.4581E+02					
13	CP0604S28-29		TRG						5.4637E+02	5.4637E+02					
14	CP1803S03-04		TRG						5.9422E+02	5.9422E+02					
15	CP1803S06-07		TRG						5.3995E+02	5.3995E+02					
16	CP1803S08-09		TRG						6.4101E+02	6.4101E+02					
17	CP1803S10-11		TRG						6.3731E+02	6.3731E+02					
18	CP1803S12-13		TRG						6.4471E+02	6.4471E+02					
19	CP1803S15-16		TRG						6.2345E+02	6.2345E+02					
20	CP1803S18-19		TRG						5.9607E+02	5.9607E+02					

Comments

Technician: Kenny Soes Date: 10/15/15

**Rough Sample Preparation
 Log Book**

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
15-10084	11/6/2015	10/14/2015	10/15/2015	10/16/2015	KSALLINGS

Eberline Fraction	Auxier & Associates, Inc. Client ID	Tare (g)		Gross (g)		Net (g)		Percent		Gamma		Special Info
		Pan Wt	Dry Wt	Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	
04	CP0604S06-07	14.2300	747.6000	920.4200	747.6000	906.1900	733.3700	19.07%	80.93%			
05	CP0604S09-10	14.2200	757.0600	925.7600	757.0600	911.5400	742.8400	18.51%	81.49%			
06	CP0604S11-12	14.2600	631.9100	797.1100	631.9100	782.8500	617.6500	21.10%	78.90%			
07	CP0604S14-15	14.1900	728.7400	910.8800	728.7400	896.6900	714.5500	20.31%	79.69%			
08	CP0604S16-17	14.1200	750.1100	934.8200	750.1100	920.7000	735.9900	20.06%	79.94%			
09	CP0604S19-20	14.1800	826.6200	1022.5400	826.6200	1008.3600	812.4400	19.43%	80.57%			
10	CP0604S21-22	14.5200	743.5000	929.6600	743.5000	915.1400	728.9800	20.34%	79.66%			
11	CP0604S24-25	14.5700	797.8900	1005.9400	797.8900	991.3700	783.3200	20.99%	79.01%			
12	CP0604S26-27	14.5600	881.2800	1145.0800	881.2800	1130.5200	866.7200	23.33%	76.67%			
13	CP0604S28-29	14.6200	1005.7000	1252.7600	1005.7000	1238.1400	991.0800	19.95%	80.05%			
14	CP1803S03-04	14.5400	665.8800	820.4400	665.8800	805.9000	651.3400	19.18%	80.82%			
15	CP1803S06-07	14.6300	607.3600	753.9500	607.3600	739.3200	592.7300	19.83%	80.17%			
16	CP1803S08-09	14.5900	733.5400	925.0200	733.5400	910.4300	718.9500	21.03%	78.97%			
17	CP1803S10-11	14.6000	980.0000	1197.3600	980.0000	1182.7600	965.4000	18.38%	81.62%			
18	CP1803S12-13	14.5900	728.8200	893.3600	728.8200	878.7700	714.2300	18.72%	81.28%			
19	CP1803S15-16	14.5700	817.0800	1007.4000	817.0800	992.8300	802.5100	19.17%	80.83%			
20	CP1803S18-19	14.6600	864.3400	1078.4800	864.3400	1063.8200	849.6800	20.13%	79.87%			

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

Technician: *Kerry Sues*

00325

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 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* yps/gram	This Source yps	Uncertainty*, %			Calibration Method*
					u _A	u _B	U	
Am-241	59.5	1.580E+05	—	2.094E+03	0.1	1.7	3.5	4π 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 Analytics' 8-isotope mixture which is calibrated quarterly.

Calibration Methods: 4π 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)



KCB
11/4/15Analysis Report for 1510084-01
GAS-1302

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-01
Sample Description : GAS-1302
Sample Type : SOIL

Sample Size : 7.360E+02 grams
Facility : Countroom

Sample Taken On : 7/1/2013 9:44:35AM
Acquisition Started : 11/4/2015 10:41:06AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 1800.0 seconds
Real Time : 1839.8 seconds

Dead Time : 2.16 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 14 - 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 : 29107

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-01

GAS-1302

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 11:11:49AM
 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	22.32	21.56	0.0000	0.00
2	31.91	31.16	0.0000	0.00
3	53.81	53.07	0.0000	0.00
4	59.37	58.64	0.0000	0.00
5	67.21	66.48	0.0000	0.00
6	87.76	87.03	0.0000	0.00
7	115.23	114.52	0.0000	0.00
8	122.00	121.29	0.0000	0.00
9	136.47	135.77	0.0000	0.00
10	165.38	164.68	0.0000	0.00
11	392.12	391.53	0.0000	0.00
12	661.63	661.16	0.0000	0.00
13	682.61	682.15	0.0000	0.00
14	897.89	897.54	0.0000	0.00
15	1113.14	1112.91	0.0000	0.00
16	1173.21	1173.02	0.0000	0.00
17	1332.50	1332.40	0.0000	0.00
18	1424.63	1424.58	0.0000	0.00
19	1709.30	1709.42	0.0000	0.00
20	1781.30	1781.47	0.0000	0.00
21	1802.10	1802.29	0.0000	0.00
22	1814.09	1814.29	0.0000	0.00
23	1836.11	1836.32	0.0000	0.00
24	1878.26	1878.50	0.0000	0.00
25	1893.24	1893.49	0.0000	0.00
26	1912.63	1912.89	0.0000	0.00
27	1992.21	1992.52	0.0000	0.00
28	2057.81	2058.17	0.0000	0.00
29	2152.45	2152.88	0.0000	0.00
30	2245.67	2246.16	0.0000	0.00
31	2276.76	2277.28	0.0000	0.00
32	2505.75	2506.43	0.0000	0.00
33	2614.98	2615.75	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1510084-01

GAS-1302

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 11:11:49AM

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	22.32	19 -	25	21.56	7.27E+04	779.94	5.87E+04	2.59
2	31.91	29 -	34	31.16	1.07E+03	235.83	1.03E+04	2.48
M 3	53.81	42 -	63	53.07	1.84E+04	988.35	5.45E+04	6.63
m 4	59.37	42 -	63	58.64	5.54E+04	599.47	1.85E+04	2.32
5	67.21	64 -	70	66.48	5.43E+02	332.90	1.99E+04	2.45
6	87.76	80 -	91	87.03	2.59E+04	574.39	2.85E+04	2.47
M 7	115.23	111 -	126	114.52	1.79E+02	241.74	1.07E+04	3.15
m 8	122.00	111 -	126	121.29	5.37E+03	279.45	1.01E+04	2.43
9	136.47	133 -	140	135.77	4.86E+02	257.88	1.07E+04	2.67
10	165.38	160 -	169	164.68	9.92E+02	286.75	1.12E+04	2.78
11	392.12	388 -	395	391.53	2.67E+02	173.49	4.83E+03	2.92
12	661.63	655 -	668	661.16	1.18E+04	296.98	4.52E+03	2.69
13	682.61	680 -	685	682.15	1.18E+02	91.40	1.57E+03	4.84
14	897.89	894 -	901	897.54	1.63E+02	134.43	2.90E+03	3.52
15	1113.14	1109 -	1117	1112.91	1.38E+02	122.67	2.22E+03	4.64
16	1173.21	1167 -	1179	1173.02	9.79E+03	237.82	2.02E+03	2.87
17	1332.50	1326 -	1339	1332.40	8.96E+03	199.05	4.02E+02	2.89
18	1424.63	1419 -	1429	1424.58	3.20E+01	21.40	4.40E+01	3.98
19	1709.30	1703 -	1714	1709.42	1.99E+01	18.97	3.22E+01	7.01
20	1781.30	1776 -	1790	1781.47	1.60E+01	18.68	3.00E+01	4.66
21	1802.10	1791 -	1811	1802.29	3.75E+01	20.31	2.10E+01	8.27
22	1814.09	1811 -	1817	1814.29	6.23E+00	8.99	9.55E+00	3.44
23	1836.11	1831 -	1842	1836.32	8.30E+01	24.90	3.60E+01	2.96
24	1878.26	1876 -	1881	1878.50	7.57E+00	9.59	1.29E+01	1.54
25	1893.24	1889 -	1901	1893.49	1.60E+01	17.00	2.80E+01	6.02
26	1912.63	1908 -	1916	1912.89	1.46E+01	9.39	4.76E+00	3.05
27	1992.21	1987 -	1997	1992.52	1.15E+01	14.46	2.09E+01	7.86
28	2057.81	2054 -	2063	2058.17	1.00E+01	10.49	1.00E+01	2.05
29	2152.45	2145 -	2160	2152.88	1.60E+01	14.97	1.60E+01	4.96
30	2245.67	2241 -	2251	2246.16	1.19E+01	14.46	2.03E+01	7.12
31	2276.76	2275 -	2283	2277.28	7.50E+00	9.41	9.00E+00	1.49
32	2505.75	2502 -	2509	2506.43	3.70E+01	12.17	0.00E+00	3.28
33	2614.98	2611 -	2618	2615.75	1.20E+01	6.93	0.00E+00	2.94

Analysis Report for 1510084-01

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 : 11/4/2015 11:11:49AM

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	22.32	19 - 25	7.27E+04	779.94	5.87E+04	4.63E+02
	2	31.91	29 - 34	1.07E+03	235.83	1.03E+04	1.86E+02
M	3	53.81	42 - 63	1.84E+04	988.35	5.45E+04	3.84E+02
m	4	59.37	42 - 63	5.54E+04	599.47	1.85E+04	2.23E+02
	5	67.21	64 - 70	5.43E+02	332.90	1.99E+04	2.71E+02
	6	87.76	80 - 91	2.59E+04	574.39	2.85E+04	3.91E+02
M	7	115.23	111 - 126	1.79E+02	241.74	1.07E+04	1.70E+02
m	8	122.00	111 - 126	5.37E+03	279.45	1.01E+04	1.66E+02
	9	136.47	133 - 140	4.86E+02	257.88	1.07E+04	2.09E+02
	10	165.38	160 - 169	9.92E+02	286.75	1.12E+04	2.30E+02
	11	392.12	388 - 395	2.67E+02	173.49	4.83E+03	1.40E+02
	12	661.63	655 - 668	1.18E+04	296.98	4.52E+03	1.66E+02
	13	682.61	680 - 685	1.18E+02	91.40	1.57E+03	7.30E+01
	14	897.89	894 - 901	1.63E+02	134.43	2.90E+03	1.08E+02
	15	1113.14	1109 - 1117	1.38E+02	122.67	2.22E+03	9.90E+01
	16	1173.21	1167 - 1179	9.79E+03	237.82	2.02E+03	1.08E+02
	17	1332.50	1326 - 1339	8.96E+03	199.05	4.02E+02	5.06E+01
	18	1424.63	1419 - 1429	3.20E+01	21.40	4.40E+01	1.49E+01
	19	1709.30	1703 - 1714	1.99E+01	18.97	3.22E+01	1.38E+01
	20	1781.30	1776 - 1790	1.60E+01	18.68	3.00E+01	1.39E+01
	21	1802.10	1791 - 1811	3.75E+01	20.31	2.10E+01	1.33E+01
	22	1814.09	1811 - 1817	6.23E+00	8.99	9.55E+00	6.14E+00
	23	1836.11	1831 - 1842	8.30E+01	24.90	3.60E+01	1.39E+01
	24	1878.26	1876 - 1881	7.57E+00	9.59	1.29E+01	6.46E+00
	25	1893.24	1889 - 1901	1.60E+01	17.00	2.80E+01	1.23E+01
	26	1912.63	1908 - 1916	1.46E+01	9.39	4.76E+00	4.49E+00
	27	1992.21	1987 - 1997	1.15E+01	14.46	2.09E+01	1.05E+01
	28	2057.81	2054 - 2063	1.00E+01	10.49	1.00E+01	6.88E+00
	29	2152.45	2145 - 2160	1.60E+01	14.97	1.60E+01	1.04E+01
	30	2245.67	2241 - 2251	1.19E+01	14.46	2.03E+01	1.04E+01
	31	2276.76	2275 - 2283	7.50E+00	9.41	9.00E+00	6.29E+00

Analysis Report for 1510084-01

GAS-1302

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2505.75	2502 -	2509	3.70E+01	12.17	0.00E+00	0.00E+00
33	2614.98	2611 -	2618	1.20E+01	6.93	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 : 11/4/2015 11:11:49AM

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	22.32	19 - 25	21.56	7.27E+04	779.94	5.87E+04	.....
	2	31.91	29 - 34	31.16	1.07E+03	235.83	1.03E+04	.....
M	3	53.81	42 - 63	53.07	1.84E+04	988.35	5.45E+04	.....
m	4	59.37	42 - 63	58.64	5.54E+04	599.47	1.85E+04	AM-241
	5	67.21	64 - 70	66.48	5.43E+02	332.90	1.99E+04	TH-230 TM-171 TA-182 TI-44
	6	87.76	80 - 91	87.03	2.59E+04	574.39	2.85E+04	SN-126 CD-109 LU-176
M	7	115.23	111 - 126	114.52	1.79E+02	241.74	1.07E+04	.....
m	8	122.00	111 - 126	121.29	5.37E+03	279.45	1.01E+04	CO-57 EU-152 SE-75
	9	136.47	133 - 140	135.77	4.86E+02	257.88	1.07E+04	CO-57 SE-75
	10	165.38	160 - 169	164.68	9.92E+02	286.75	1.12E+04	CE-139
	11	392.12	388 - 395	391.53	2.67E+02	173.49	4.83E+03	SN-113
	12	661.63	655 - 668	661.16	1.18E+04	296.98	4.52E+03	CS-137
	13	682.61	680 - 685	682.15	1.18E+02	91.40	1.57E+03	.....
	14	897.89	894 - 901	897.54	1.63E+02	134.43	2.90E+03	Y-88
	15	1113.14	1109 - 1117	1112.91	1.38E+02	122.67	2.22E+03	.....
	16	1173.21	1167 - 1179	1173.02	9.79E+03	237.82	2.02E+03	CO-60

Analysis Report for 1510084-01

GAS-1302

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
17	1332.50	1326 -	1339	1332.40	8.96E+03	199.05	4.02E+02	CO-60
18	1424.63	1419 -	1429	1424.58	3.20E+01	21.40	4.40E+01	.....
19	1709.30	1703 -	1714	1709.42	1.99E+01	18.97	3.22E+01	.....
20	1781.30	1776 -	1790	1781.47	1.60E+01	18.68	3.00E+01	.....
21	1802.10	1791 -	1811	1802.29	3.75E+01	20.31	2.10E+01	.....
22	1814.09	1811 -	1817	1814.29	6.23E+00	8.99	9.55E+00	.....
23	1836.11	1831 -	1842	1836.32	8.30E+01	24.90	3.60E+01	Y-88
24	1878.26	1876 -	1881	1878.50	7.57E+00	9.59	1.29E+01	.....
25	1893.24	1889 -	1901	1893.49	1.60E+01	17.00	2.80E+01	.....
26	1912.63	1908 -	1916	1912.89	1.46E+01	9.39	4.76E+00	.....
27	1992.21	1987 -	1997	1992.52	1.15E+01	14.46	2.09E+01	.....
28	2057.81	2054 -	2063	2058.17	1.00E+01	10.49	1.00E+01	.....
29	2152.45	2145 -	2160	2152.88	1.60E+01	14.97	1.60E+01	.....
30	2245.67	2241 -	2251	2246.16	1.19E+01	14.46	2.03E+01	.....
31	2276.76	2275 -	2283	2277.28	7.50E+00	9.41	9.00E+00	.....
32	2505.75	2502 -	2509	2506.43	3.70E+01	12.17	0.00E+00	.....
33	2614.98	2611 -	2618	2615.75	1.20E+01	6.93	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 : 11/4/2015 11:11:49AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
	1	22.32	7.27E+04	779.94	3.04E-02	1.78E-03
	2	31.91	1.07E+03	235.83	2.91E-02	1.78E-03
M	3	53.81	1.84E+04	988.35	2.49E-02	1.78E-03
m	4	59.37	5.54E+04	599.47	2.39E-02	1.78E-03
	5	67.21	5.43E+02	332.90	2.26E-02	1.74E-03
	6	87.76	2.59E+04	574.39	1.96E-02	1.63E-03
M	7	115.23	1.79E+02	241.74	1.66E-02	1.55E-03
m	8	122.00	5.37E+03	279.45	1.60E-02	1.53E-03
	9	136.47	4.86E+02	257.88	1.47E-02	1.42E-03
	10	165.38	9.92E+02	286.75	1.28E-02	1.22E-03
	11	392.12	2.67E+02	173.49	5.96E-03	7.35E-04
	12	661.63	1.18E+04	296.98	3.57E-03	3.40E-04
	13	682.61	1.18E+02	91.40	3.46E-03	3.29E-04

: 00332

Analysis Report for 1510084-01

GAS-1302

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
14	897.89	1.63E+02	134.43	2.65E-03	2.08E-04
15	1113.14	1.38E+02	122.67	2.16E-03	1.80E-04
16	1173.21	9.79E+03	237.82	2.05E-03	1.73E-04
17	1332.50	8.96E+03	199.05	1.83E-03	2.16E-04
18	1424.63	3.20E+01	21.40	1.72E-03	1.97E-04
19	1709.30	1.99E+01	18.97	1.47E-03	1.37E-04
20	1781.30	1.60E+01	18.68	1.42E-03	1.22E-04
21	1802.10	3.75E+01	20.31	1.41E-03	1.18E-04
22	1814.09	6.23E+00	8.99	1.40E-03	1.16E-04
23	1836.11	8.30E+01	24.90	1.39E-03	1.11E-04
24	1878.26	7.57E+00	9.59	1.36E-03	1.11E-04
25	1893.24	1.60E+01	17.00	1.36E-03	1.11E-04
26	1912.63	1.46E+01	9.39	1.34E-03	1.11E-04
27	1992.21	1.15E+01	14.46	1.30E-03	1.11E-04
28	2057.81	1.00E+01	10.49	1.27E-03	1.11E-04
29	2152.45	1.60E+01	14.97	1.23E-03	1.11E-04
30	2245.67	1.19E+01	14.46	1.19E-03	1.11E-04
31	2276.76	7.50E+00	9.41	1.18E-03	1.11E-04
32	2505.75	3.70E+01	12.17	1.10E-03	1.11E-04
33	2614.98	1.20E+01	6.93	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 : 11/4/2015 11:11:49AM

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	22.32	7.27E+04	779.94			7.27E+04	7.80E+02
2	31.91	1.07E+03	235.83			1.07E+03	2.36E+02
M	3	53.81	1.84E+04	988.35		1.84E+04	9.88E+02
m	4	59.37	5.54E+04	599.47		5.54E+04	5.99E+02
	5	67.21	5.43E+02	332.90		5.43E+02	3.33E+02
	6	87.76	2.59E+04	574.39		2.59E+04	5.74E+02
M	7	115.23	1.79E+02	241.74		1.79E+02	2.42E+02
m	8	122.00	5.37E+03	279.45		5.37E+03	2.79E+02
	9	136.47	4.86E+02	257.88		4.86E+02	2.58E+02
	10	165.38	9.92E+02	286.75		9.92E+02	2.87E+02

: 00333

Analysis Report for 1510084-01

GAS-1302

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
11	392.12	2.67E+02	173.49			2.67E+02	1.73E+02
12	661.63	1.18E+04	296.98			1.18E+04	2.97E+02
13	682.61	1.18E+02	91.40			1.18E+02	9.14E+01
14	897.89	1.63E+02	134.43			1.63E+02	1.34E+02
15	1113.14	1.38E+02	122.67			1.38E+02	1.23E+02
16	1173.21	9.79E+03	237.82			9.79E+03	2.38E+02
17	1332.50	8.96E+03	199.05			8.96E+03	1.99E+02
18	1424.63	3.20E+01	21.40			3.20E+01	2.14E+01
19	1709.30	1.99E+01	18.97			1.99E+01	1.90E+01
20	1781.30	1.60E+01	18.68			1.60E+01	1.87E+01
21	1802.10	3.75E+01	20.31			3.75E+01	2.03E+01
22	1814.09	6.23E+00	8.99			6.23E+00	8.99E+00
23	1836.11	8.30E+01	24.90			8.30E+01	2.49E+01
24	1878.26	7.57E+00	9.59			7.57E+00	9.59E+00
25	1893.24	1.60E+01	17.00			1.60E+01	1.70E+01
26	1912.63	1.46E+01	9.39			1.46E+01	9.39E+00
27	1992.21	1.15E+01	14.46			1.15E+01	1.45E+01
28	2057.81	1.00E+01	10.49			1.00E+01	1.05E+01
29	2152.45	1.60E+01	14.97			1.60E+01	1.50E+01
30	2245.67	1.19E+01	14.46			1.19E+01	1.45E+01
31	2276.76	7.50E+00	9.41			7.50E+00	9.41E+00
32	2505.75	3.70E+01	12.17			3.70E+01	1.22E+01
33	2614.98	1.20E+01	6.93	6.02E-01	5.09E-01	1.14E+01	6.95E+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 : 11/4/2015 11:11:49AM
 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	22.32	7.27E+04	779.94			7.27E+04	7.80E+02
2	31.91	1.07E+03	235.83			1.07E+03	2.36E+02
M	3	53.81	1.84E+04	988.35		1.84E+04	9.88E+02
m	4	59.37	5.54E+04	599.47		5.54E+04	5.99E+02
	5	67.21	5.43E+02	332.90		5.43E+02	3.33E+02

Analysis Report for 1510084-01

GAS-1302

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	6	87.76	2.59E+04	574.39		2.59E+04	5.74E+02
m	7	115.23	1.79E+02	241.74		1.79E+02	2.42E+02
	8	122.00	5.37E+03	279.45		5.37E+03	2.79E+02
	9	136.47	4.86E+02	257.88		4.86E+02	2.58E+02
	10	165.38	9.92E+02	286.75		9.92E+02	2.87E+02
	11	392.12	2.67E+02	173.49		2.67E+02	1.73E+02
	12	661.63	1.18E+04	296.98		1.18E+04	2.97E+02
	13	682.61	1.18E+02	91.40		1.18E+02	9.14E+01
	14	897.89	1.63E+02	134.43		1.63E+02	1.34E+02
	15	1113.14	1.38E+02	122.67		1.38E+02	1.23E+02
	16	1173.21	9.79E+03	237.82		9.79E+03	2.38E+02
	17	1332.50	8.96E+03	199.05		8.96E+03	1.99E+02
	18	1424.63	3.20E+01	21.40		3.20E+01	2.14E+01
	19	1709.30	1.99E+01	18.97		1.99E+01	1.90E+01
	20	1781.30	1.60E+01	18.68		1.60E+01	1.87E+01
	21	1802.10	3.75E+01	20.31		3.75E+01	2.03E+01
	22	1814.09	6.23E+00	8.99		6.23E+00	8.99E+00
	23	1836.11	8.30E+01	24.90		8.30E+01	2.49E+01
	24	1878.26	7.57E+00	9.59		7.57E+00	9.59E+00
	25	1893.24	1.60E+01	17.00		1.60E+01	1.70E+01
	26	1912.63	1.46E+01	9.39		1.46E+01	9.39E+00
	27	1992.21	1.15E+01	14.46		1.15E+01	1.45E+01
	28	2057.81	1.00E+01	10.49		1.00E+01	1.05E+01
	29	2152.45	1.60E+01	14.97		1.60E+01	1.50E+01
	30	2245.67	1.19E+01	14.46		1.19E+01	1.45E+01
	31	2276.76	7.50E+00	9.41		7.50E+00	9.41E+00
	32	2505.75	3.70E+01	12.17		3.70E+01	1.22E+01
	33	2614.98	1.20E+01	6.93	6.02E-01 5.09E-01	1.14E+01	6.95E+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
CO-57	0.951	122.06 *	85.51	7.17E+01	7.85E+00
		136.48 *	10.60	5.67E+01	3.07E+01
CO-60	0.999	1173.22 *	100.00	1.32E+02	1.16E+01

: 00335

Analysis Report for 1510084-01
 GAS-1302

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-60	0.999	1332.49 *	100.00	1.36E+02	1.63E+01
Y-88	0.723	898.02 *	93.40	3.52E+02	2.91E+02
		1836.01 *	99.38	3.21E+02	9.96E+01
CD-109	0.971	88.03 *	3.72	2.60E+03	2.71E+02
SN-113	0.694	255.12	1.93		
		391.69 *	64.90	2.44E+02	1.62E+02
SN-126	0.994	87.57 *	37.00	7.27E+01	6.25E+00
CS-137	1.000	661.65 *	85.12	8.37E+01	8.25E+00
CE-139	0.795	165.85 *	80.35	1.47E+02	4.48E+01
TM-171	0.955	66.72 *	0.14	8.15E+02	5.04E+02
AM-241	0.996	59.54 *	35.90	1.32E+02	9.93E+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 : 11/4/2015 11:11:49AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	22.32	4.03739E+01	0.54		
	31.91	5.96214E-01	10.99		
M	53.81	1.02081E+01	2.69		
M	7	9.95436E-02	67.46		
	13	6.57459E-02	38.62		
	15	7.69101E-02	44.31		
	18	1.77778E-02	33.44		
	19	1.10648E-02	47.63		
	20	8.88889E-03	58.38		
	21	2.08333E-02	27.08		
	22	3.45960E-03	72.15		
	24	4.20635E-03	63.34		
	25	8.88889E-03	53.12		
	26	8.12091E-03	32.13		
	27	6.41414E-03	62.61		
	28	5.55556E-03	52.44		
	29	8.88889E-03	46.77		
	30	6.59091E-03	60.93		

Analysis Report for 1510084-01
GAS-1302

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
31	2276.76	4.16667E-03	62.72		
32	2505.75	2.05556E-02	16.44	Sum	
33	2614.98	6.33207E-03	30.47	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	7.17E+01	7.85E+00
		136.48	*	10.60	5.67E+01	3.07E+01
CO-60	0.99	1173.22	*	100.00	1.32E+02	1.16E+01
		1332.49	*	100.00	1.36E+02	1.63E+01
Y-88	0.72	898.02	*	93.40	3.52E+02	2.91E+02
		1836.01	*	99.38	3.21E+02	9.96E+01
CD-109	0.97	88.03	*	3.72	2.60E+03	2.71E+02
SN-113	0.69	255.12		1.93		
		391.69	*	64.90	2.44E+02	1.62E+02
SN-126	0.99	87.57	*	37.00	7.27E+01	6.25E+00
CS-137	1.00	661.65	*	85.12	8.37E+01	8.25E+00
CE-139	0.79	165.85	*	80.35	1.47E+02	4.48E+01
TM-171	0.95	66.72	*	0.14	8.15E+02	5.04E+02
AM-241	0.99	59.54	*	35.90	1.32E+02	9.93E+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 1510084-01

GAS-1302

INTERFERENCE CORRECTED REPORT

<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>
CO-57	0.951	7.08E+01	7.61E+00	
CO-60	0.999	1.34E+02	9.45E+00	
Y-88	0.723	3.24E+02	9.42E+01	
? CD-109	0.971	2.60E+03	2.71E+02	
SN-113	0.694	2.44E+02	1.62E+02	
? SN-126	0.994	7.27E+01	6.25E+00	
CS-137	1.000	8.37E+01	8.25E+00	
CE-139	0.795	1.47E+02	4.48E+01	
TM-171	0.955	8.15E+02	5.04E+02	
AM-241	0.996	1.32E+02	9.93E+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 1510084-01
GAS-1302

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 11:11:49AM
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	22.32	4.03739E+01	0.54		
2	31.91	5.96214E-01	10.99		
M 3	53.81	1.02081E+01	2.69		
M 7	115.23	9.95436E-02	67.46		
13	682.61	6.57459E-02	38.62		
15	1113.14	7.69101E-02	44.31		
18	1424.63	1.77778E-02	33.44		
19	1709.30	1.10648E-02	47.63		
20	1781.30	8.88889E-03	58.38		
21	1802.10	2.08333E-02	27.08		
22	1814.09	3.45960E-03	72.15		
24	1878.26	4.20635E-03	63.34		
25	1893.24	8.88889E-03	53.12		
26	1912.63	8.12091E-03	32.13		
27	1992.21	6.41414E-03	62.61		
28	2057.81	5.55556E-03	52.44		
29	2152.45	8.88889E-03	46.77		
30	2245.67	6.59091E-03	60.93		
31	2276.76	4.16667E-03	62.72		
32	2505.75	2.05556E-02	16.44	Sum	
33	2614.98	6.33207E-03	30.47	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 MDA REPORT

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

Analysis Report for 1510084-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	3.43E+05	6.44E+05	6.44E+05
+	NA-22	1274.54	99.94	-3.38E-01	1.29E+00	1.29E+00
+	@ 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	1.19E-01	3.84E-01	3.84E-01
+	K-40	1460.81	10.67	-7.72E-01	3.65E+00	3.65E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.33E+01	5.30E-01	5.30E-01
		78.34	96.00	-4.29E-02		5.79E-01
+	SC-46	889.25	99.98	-1.50E+01	1.72E+03	1.74E+03
		1120.51	99.99	5.30E+02		1.72E+03
+	V-48	983.52	99.98	-7.52E+15	9.37E+15	2.03E+16
		1312.10	97.50	3.55E+15		9.37E+15
+	CR-51	320.08	9.83	2.74E+09	1.55E+10	1.55E+10
+	MN-54	834.83	99.97	-1.59E+00	8.59E+00	8.59E+00
+	CO-56	846.75	99.96	7.61E+02	5.68E+02	2.46E+03
		1037.75	14.03	-7.21E+03		2.01E+04
		1238.25	67.00	7.41E+02		2.21E+03
		1771.40	15.51	-1.23E+03		3.95E+03
		2598.48	16.90	0.00E+00		5.68E+02
+	CO-57	122.06	* 85.51	7.17E+01	1.01E+01	1.01E+01
		136.48	* 10.60	5.67E+01		4.91E+01
+	CO-58	810.76	99.40	2.34E+03	5.58E+03	5.58E+03
+	FE-59	1099.22	56.50	1.35E+05	9.52E+05	1.68E+06
		1291.56	43.20	1.02E+04		9.52E+05
+	CO-60	1173.22	* 100.00	1.32E+02	1.58E+00	2.97E+00
		1332.49	* 100.00	1.36E+02		1.58E+00
+	ZN-65	1115.52	50.75	1.54E+00	3.47E+01	3.47E+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	5.67E+03	1.25E+02	5.54E+02
		136.00	59.20	-3.36E+01		1.25E+02
		264.65	59.80	-2.14E+01		1.65E+02
		279.53	25.20	-3.09E+01		3.99E+02
		400.65	11.40	-7.41E+02		1.07E+03
+	RB-82	776.52	13.00	4.35E+10	1.09E+11	1.09E+11
+	RB-83	520.41	46.00	1.27E+02	2.00E+03	2.00E+03
		529.64	30.30	-6.81E+02		2.97E+03
		552.65	16.40	-5.13E+02		5.52E+03
+	KR-85	513.99	0.43	2.48E+01	2.55E+02	2.55E+02
+	SR-85	513.99	99.27	8.79E+02	9.04E+03	9.04E+03
+	Y-88	898.02	* 93.40	3.52E+02	1.18E+02	4.74E+02
		1836.01	* 99.38	3.21E+02		1.18E+02
+	NB-93M	16.57	9.43	-2.42E+02	6.23E+00	6.23E+00
+	NB-94	702.63	100.00	2.66E-01	1.04E+00	1.04E+00
		871.10	100.00	-3.95E-01		1.39E+00

Analysis Report for 1510084-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-95	765.79	99.81	7.35E+06	2.58E+07	2.58E+07
+	@ NB-95M	235.69	25.00	1.00E+26	1.00E+26	1.00E+26
+	ZR-95	724.18	43.70	6.97E+03	2.14E+04	2.61E+04
		756.72	55.30	-1.96E+03		2.14E+04
+	@ 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	1.65E+06	3.77E+06	3.77E+06
+	RU-106	621.84	9.80	2.02E+01	5.07E+01	5.07E+01
+	AG-108M	433.93	89.90	3.24E-01	1.09E+00	1.09E+00
		614.37	90.40	-1.54E-02		1.09E+00
		722.95	90.50	4.69E-01		1.21E+00
+	CD-109	88.03	* 3.72	2.60E+03	7.87E+01	7.87E+01
+	AG-110M	657.75	93.14	3.78E-01	1.78E+01	2.90E+01
		677.61	10.53	-5.28E+00		1.03E+02
		706.67	16.46	-3.81E+01		6.69E+01
		763.93	21.98	2.09E+01		5.62E+01
		884.67	71.63	-1.30E+01		2.15E+01
		1384.27	23.94	6.14E+00		1.78E+01
+	CD-113M	263.70	0.02	1.26E+03	3.42E+03	3.42E+03
+	SN-113	255.12	1.93	-9.27E+02	2.59E+02	6.25E+03
		391.69	* 64.90	2.44E+02		2.59E+02
+	TE123M	159.00	84.10	-1.35E+01	9.07E+01	9.07E+01
+	SB-124	602.71	97.87	2.03E+03	1.23E+04	1.90E+04
		645.85	7.26	3.90E+03		2.69E+05
		722.78	11.10	3.26E+04		1.84E+05
		1691.02	49.00	2.14E+03		1.23E+04
+	I-125	35.49	6.49	-2.00E+05	9.70E+04	9.70E+04
+	SB-125	176.33	6.89	1.19E+01	5.70E+00	1.50E+01
		427.89	29.33	-1.45E+00		5.70E+00
		463.38	10.35	2.61E+00		1.77E+01
		600.56	17.80	1.85E+00		9.81E+00
		635.90	11.32	1.26E+00		1.61E+01
+	@ 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	7.27E+01	2.20E+00	2.20E+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	-5.06E+00	7.23E-01	7.23E-01
		33.60	13.20	-7.83E-01		2.42E+00
		39.58	7.52	-1.54E+01		4.74E+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

Analysis Report for 1510084-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	@ 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	-5.66E-01	1.58E+00	1.97E+00
		302.84	17.80	-3.45E-01		4.78E+00
		356.01	60.00	5.36E-01		1.58E+00
+	@ 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	1.61E-01	2.20E+00	2.45E+01
		569.32	15.43	-2.56E+00		1.33E+01
		604.70	97.60	-4.40E-01		2.20E+00
		795.84	85.40	-4.14E-01		3.03E+00
		801.93	8.73	-4.14E+00		3.04E+01
+	CS-135	268.24	16.00	3.60E-01	4.40E+00	4.40E+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	2.51E+20	4.84E+19	2.72E+20
		163.89	4.61	9.53E+20		4.77E+20
		176.55	13.56	1.29E+20		1.63E+20
		273.65	12.66	5.30E+19		2.14E+20
		340.57	48.50	2.11E+19		6.15E+19
		818.50	99.70	-2.70E+18		4.84E+19
		1048.07	79.60	1.72E+19		7.39E+19
		1235.34	19.70	3.66E+19		1.54E+20
+	CS-137	661.65	* 85.12	8.37E+01	2.38E+00	2.38E+00
+	LA-138	788.74	34.00	-1.10E-01	5.32E-01	3.41E+00
		1435.80	66.00	-1.39E-01		5.32E-01
+	CE-139	165.85	* 80.35	1.47E+02	6.86E+01	6.86E+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	9.58E+06	9.11E+07	9.11E+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	-1.30E+01	3.88E+01	3.88E+01
+	PM-144	476.78	42.00	8.12E+00	5.03E+00	1.24E+01
		618.01	98.60	-1.92E+00		5.03E+00
		696.49	99.49	3.22E+00		5.40E+00
+	PM-145	36.85	21.70	-5.07E+00	9.14E-01	1.65E+00
		37.36	39.70	-3.16E+00		9.14E-01
		42.30	15.10	-4.04E+00		2.96E+00

Analysis Report for 1510084-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-145	72.40	2.31	-1.06E-01	9.14E-01	2.44E+01
+	PM-146	453.90	39.94	1.46E+00	3.39E+00	3.39E+00
		735.90	14.01	2.73E+00		1.07E+01
		747.13	13.10	-2.68E+00		1.12E+01
+	@ 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	3.77E+01	2.64E+00	3.59E+00
		244.69	5.40	-7.42E+00		1.45E+01
		344.27	19.13	-6.57E-02		4.64E+00
		778.89	9.20	-2.28E+00		1.41E+01
		964.01	10.40	5.11E+00		1.74E+01
		1085.78	7.22	-1.38E+01		2.39E+01
		1112.02	9.60	1.43E+01		1.86E+01
		1407.95	14.94	-2.32E-01		2.64E+00
+	GD-153	97.43	31.30	-1.29E+01	1.61E+01	1.61E+01
		103.18	22.20	1.25E+01		2.36E+01
+	EU-154	123.07	40.50	2.04E+01	1.95E+00	1.95E+00
		723.30	19.70	2.56E+00		6.59E+00
		873.19	11.50	-4.13E+00		1.47E+01
		996.32	10.30	-3.59E+00		1.75E+01
		1004.76	17.90	-2.84E+00		1.01E+01
		1274.45	35.50	-6.13E-01		2.33E+00
+	EU-155	86.50	30.90	1.17E+02	3.05E+00	4.10E+00
		105.30	20.70	3.65E-01		3.05E+00
+	EU-156	811.77	10.40	3.27E+17	8.11E+17	1.13E+18
		1153.47	7.20	-6.45E+17		1.54E+18
		1230.71	8.90	-8.57E+16		8.11E+17
+	HO-166M	184.41	72.60	-4.52E-01	8.17E-01	8.17E-01
		280.45	29.60	-1.15E+00		2.40E+00
		410.94	11.10	2.73E-01		8.17E+00
		711.69	54.10	3.31E-01		1.92E+00
+	TM-171	66.72	* 0.14	8.15E+02	8.18E+02	8.18E+02
+	HF-172	81.75	4.52	-6.71E+00	1.32E+01	3.05E+01
		125.81	11.30	-1.38E+00		1.32E+01
+	@ 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	5.30E+00	1.09E+01	2.77E+01
		272.11	21.20	9.64E-01		1.09E+01
+	HF-175	343.40	84.00	1.50E+03	4.50E+03	4.50E+03
+	LU-176	88.34	13.30	1.93E+02	7.41E-01	6.79E+00
		201.83	86.00	-3.81E-01		7.41E-01
		306.78	94.00	-5.51E-02		7.84E-01
+	TA-182	67.75	41.20	-5.30E+03	2.11E+02	2.11E+02
		1121.30	34.90	3.25E+02		7.33E+02
		1189.05	16.23	1.02E+02		1.14E+03
		1221.41	26.98	-4.73E+01		5.54E+02

Analysis Report for 1510084-01

GAS-1302

	<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	1231.02	11.44	-1.29E+02	2.11E+02	1.22E+03
+	IR-192	308.46	29.68	-1.65E+03	6.41E+03	7.54E+03
		468.07	48.10	5.23E+00		6.41E+03
+	HG-203	279.19	77.30	-2.40E+04	3.11E+05	3.11E+05
+	BI-207	569.67	97.72	-1.93E-01	1.00E+00	1.00E+00
		1063.62	74.90	-6.72E-01		2.13E+00
+	TL-208	583.14	30.22	2.18E+00	1.03E+00	3.22E+00
		860.37	4.48	-1.17E+01		3.01E+01
		2614.66	35.85	6.03E-01		1.03E+00
+	BI-210M	262.00	45.00	-3.41E-01	1.55E+00	1.55E+00
		300.00	23.00	7.35E-01		3.17E+00
+	PB-210	46.50	4.25	2.29E+01	1.36E+01	1.36E+01
+	PB-211	404.84	2.90	-2.11E+00	3.06E+01	3.06E+01
		831.96	2.90	8.87E-01		4.44E+01
+	BI-212	727.17	11.80	-3.44E+00	9.16E+00	9.16E+00
		1620.62	2.75	-1.33E+00		1.40E+01
+	PB-212	238.63	44.60	-5.84E-02	1.57E+00	1.57E+00
		300.09	3.41	4.96E+00		2.14E+01
+	BI-214	609.31	46.30	6.53E-01	2.11E+00	2.11E+00
		1120.29	15.10	2.96E+00		9.64E+00
		1764.49	15.80	8.58E-01		2.62E+00
		2204.22	4.98	-1.65E+00		7.44E+00
+	PB-214	295.21	19.19	8.26E-01	2.14E+00	3.77E+00
		351.92	37.19	-3.00E-01		2.14E+00
+	RN-219	401.80	6.50	7.23E-01	1.35E+01	1.35E+01
+	RA-223	323.87	3.88	1.11E+01	1.98E+01	1.98E+01
+	RA-224	240.98	3.95	1.67E+01	1.79E+01	1.79E+01
+	RA-225	40.00	31.00	-9.69E+17	2.98E+17	2.98E+17
+	RA-226	186.21	3.28	3.36E+00	1.84E+01	1.84E+01
+	TH-227	50.10	8.40	1.93E+01	6.10E+00	7.42E+00
		236.00	11.50	2.91E+00		6.10E+00
		256.20	6.30	-9.32E-01		1.10E+01
+	AC-228	338.32	11.40	-2.85E+00	5.65E+00	6.77E+00
		911.07	27.70	3.09E+00		5.65E+00
		969.11	16.60	-4.24E+00		9.19E+00
+	TH-230	48.44	16.90	1.04E+01	3.51E+00	3.51E+00
		62.85	4.60	7.88E+02		2.21E+01
		67.67	0.37	-3.30E+03		1.31E+02
+	PA-231	283.67	1.60	9.25E+00	3.17E+01	4.49E+01
		302.67	2.30	-2.29E+00		3.17E+01
+	TH-231	25.64	14.70	-1.92E+01	6.25E+00	6.25E+00
		84.21	6.40	1.19E+02		1.26E+01
+	PA-233	311.98	38.60	2.10E+09	6.79E+09	6.79E+09
+	PA-234	131.20	20.40	-2.04E+00	2.43E+00	2.43E+00
		733.99	8.80	-7.08E-01		1.25E+01
		946.00	12.00	2.71E-01		1.42E+01
+	PA-234M	1001.03	0.92	1.50E+02	1.67E+02	1.67E+02

Analysis Report for 1510084-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-234	63.29	3.80	3.54E+02	2.24E+01	2.24E+01
+	U-235	143.76	10.50	3.75E-01	4.90E+00	4.90E+00
		163.35	4.70	2.44E+01		1.22E+01
		205.31	4.70	3.66E+00		1.38E+01
+	NP-237	86.50	12.60	2.08E+02	7.25E+00	7.25E+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	1.32E+02	3.26E+00	3.26E+00
+	AM-243	74.67	66.00	-2.89E-01	7.93E-01	7.93E-01
+	CM-243	209.75	3.29	-1.21E+01	5.34E+00	2.12E+01
		228.14	10.60	2.83E+00		6.99E+00
		277.60	14.00	-1.35E+00		5.34E+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	6.44E+05	6.44E+05	3.43E+05	3.18E+05
	NA-22	1274.54	99.94	1.29E+00	1.29E+00	-3.38E-01	6.16E-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	3.84E-01	3.84E-01	1.19E-01	1.73E-01
	K-40	1460.81	10.67	3.65E+00	3.65E+00	-7.72E-01	1.67E+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	5.30E-01	5.30E-01	-1.33E+01	2.63E-01
		78.34	96.00	5.79E-01		-4.29E-02	2.88E-01

Analysis Report for 1510084-01

GAS-1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SC-46	889.25	99.98	1.74E+03	1.72E+03	-1.50E+01	8.58E+02
	1120.51	99.99	1.72E+03		5.30E+02	8.47E+02
V-48	983.52	99.98	2.03E+16	9.37E+15	-7.52E+15	1.00E+16
	1312.10	97.50	9.37E+15		3.55E+15	4.48E+15
CR-51	320.08	9.83	1.55E+10	1.55E+10	2.74E+09	7.68E+09
MN-54	834.83	99.97	8.59E+00	8.59E+00	-1.59E+00	4.23E+00
CO-56	846.75	99.96	2.46E+03	5.68E+02	7.61E+02	1.21E+03
	1037.75	14.03	2.01E+04		-7.21E+03	9.88E+03
	1238.25	67.00	2.21E+03		7.41E+02	1.07E+03
	1771.40	15.51	3.95E+03		-1.23E+03	1.74E+03
	2598.48	16.90	5.68E+02		0.00E+00	0.00E+00
+ CO-57	122.06	* 85.51	1.01E+01	1.01E+01	7.17E+01	5.03E+00
	136.48	* 10.60	4.91E+01		5.67E+01	2.44E+01
CO-58	810.76	99.40	5.58E+03	5.58E+03	2.34E+03	2.75E+03
FE-59	1099.22	56.50	1.68E+06	9.52E+05	1.35E+05	8.27E+05
	1291.56	43.20	9.52E+05		1.02E+04	4.56E+05
+ CO-60	1173.22	* 100.00	2.97E+00	1.58E+00	1.32E+02	1.47E+00
	1332.49	* 100.00	1.58E+00		1.36E+02	7.70E-01
ZN-65	1115.52	50.75	3.47E+01	3.47E+01	1.54E+00	1.71E+01
@ 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	5.54E+02	1.25E+02	5.67E+03	2.76E+02
	136.00	59.20	1.25E+02		-3.36E+01	6.22E+01
	264.65	59.80	1.65E+02		-2.14E+01	8.20E+01
	279.53	25.20	3.99E+02		-3.09E+01	1.98E+02
	400.65	11.40	1.07E+03		-7.41E+02	5.31E+02
RB-82	776.52	13.00	1.09E+11	1.09E+11	4.35E+10	5.34E+10
RB-83	520.41	46.00	2.00E+03	2.00E+03	1.27E+02	9.86E+02
	529.64	30.30	2.97E+03		-6.81E+02	1.47E+03
	552.65	16.40	5.52E+03		-5.13E+02	2.72E+03
KR-85	513.99	0.43	2.55E+02	2.55E+02	2.48E+01	1.26E+02
SR-85	513.99	99.27	9.04E+03	9.04E+03	8.79E+02	4.46E+03
+ Y-88	898.02	* 93.40	4.74E+02	1.18E+02	3.52E+02	2.34E+02
	1836.01	* 99.38	1.18E+02		3.21E+02	5.39E+01
NB-93M	16.57	9.43	6.23E+00	6.23E+00	-2.42E+02	3.11E+00
NB-94	702.63	100.00	1.04E+00	1.04E+00	2.66E-01	5.11E-01
	871.10	100.00	1.39E+00		-3.95E-01	6.85E-01
NB-95	765.79	99.81	2.58E+07	2.58E+07	7.35E+06	1.27E+07
@ NB-95M	235.69	25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
ZR-95	724.18	43.70	2.61E+04	2.14E+04	6.97E+03	1.29E+04
	756.72	55.30	2.14E+04		-1.96E+03	1.05E+04
@ 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	3.77E+06	3.77E+06	1.65E+06	1.86E+06
RU-106	621.84	9.80	5.07E+01	5.07E+01	2.02E+01	2.50E+01
AG-108M	433.93	89.90	1.09E+00	1.09E+00	3.24E-01	5.37E-01
	614.37	90.40	1.09E+00		-1.54E-02	5.36E-01
	722.95	90.50	1.21E+00		4.69E-01	5.94E-01
+ CD-109	88.03	* 3.72	7.87E+01	7.87E+01	2.60E+03	3.92E+01
AG-110M	657.75	93.14	2.90E+01	1.78E+01	3.78E-01	1.44E+01
	677.61	10.53	1.03E+02		-5.28E+00	5.05E+01

Analysis Report for 1510084-01

GAS-1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AG-110M	706.67	16.46	6.69E+01	1.78E+01	-3.81E+01	3.29E+01
	763.93	21.98	5.62E+01		2.09E+01	2.77E+01
	884.67	71.63	2.15E+01		-1.30E+01	1.06E+01
	1384.27	23.94	1.78E+01		6.14E+00	8.18E+00
CD-113M	263.70	0.02	3.42E+03	3.42E+03	1.26E+03	1.69E+03
+ SN-113	255.12	1.93	6.25E+03	2.59E+02	-9.27E+02	3.10E+03
	391.69	*	2.59E+02		2.44E+02	1.28E+02
TE123M	159.00	84.10	9.07E+01	9.07E+01	-1.35E+01	4.50E+01
SB-124	602.71	97.87	1.90E+04	1.23E+04	2.03E+03	9.35E+03
	645.85	7.26	2.69E+05		3.90E+03	1.32E+05
	722.78	11.10	1.84E+05		3.26E+04	9.08E+04
	1691.02	49.00	1.23E+04		2.14E+03	5.42E+03
I-125	35.49	6.49	9.70E+04	9.70E+04	-2.00E+05	4.82E+04
SB-125	176.33	6.89	1.50E+01	5.70E+00	1.19E+01	7.46E+00
	427.89	29.33	5.70E+00		-1.45E+00	2.82E+00
	463.38	10.35	1.77E+01		2.61E+00	8.77E+00
	600.56	17.80	9.81E+00		1.85E+00	4.83E+00
	635.90	11.32	1.61E+01		1.26E+00	7.94E+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	*	2.20E+00	2.20E+00	7.27E+01	1.10E+00
@ 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	7.23E-01	7.23E-01	-5.06E+00	3.60E-01
	33.60	13.20	2.42E+00		-7.83E-01	1.20E+00
	39.58	7.52	4.74E+00		-1.54E+01	2.36E+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	1.97E+00	1.58E+00	-5.66E-01	9.82E-01
	302.84	17.80	4.78E+00		-3.45E-01	2.37E+00
	356.01	60.00	1.58E+00		5.36E-01	7.80E-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	2.45E+01	2.20E+00	1.61E-01	1.21E+01
	569.32	15.43	1.33E+01		-2.56E+00	6.54E+00
	604.70	97.60	2.20E+00		-4.40E-01	1.08E+00
	795.84	85.40	3.03E+00		-4.14E-01	1.49E+00
	801.93	8.73	3.04E+01		-4.14E+00	1.49E+01
CS-135	268.24	16.00	4.40E+00	4.40E+00	3.60E-01	2.18E+00
@ 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	2.72E+20	4.84E+19	2.51E+20	1.35E+20
	163.89	4.61	4.77E+20		9.53E+20	2.37E+20
	176.55	13.56	1.63E+20		1.29E+20	8.06E+19
	273.65	12.66	2.14E+20		5.30E+19	1.06E+20

Analysis Report for 1510084-01

GAS-1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)		
CS-136	340.57	48.50	6.15E+19	4.84E+19	2.11E+19	3.05E+19		
	818.50	99.70	4.84E+19		-2.70E+18	2.39E+19		
	1048.07	79.60	7.39E+19		1.72E+19	3.64E+19		
	1235.34	19.70	1.54E+20		3.66E+19	7.43E+19		
+ CS-137	661.65	* 85.12	2.38E+00	2.38E+00	8.37E+01	1.18E+00		
	LA-138	788.74	34.00		3.41E+00	5.32E-01	-1.10E-01	1.68E+00
	1435.80	66.00	5.32E-01		-1.39E-01	2.42E-01		
+ CE-139	165.85	* 80.35	6.86E+01	6.86E+01	1.47E+02	3.41E+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	1.00E+26	
	@	423.70	3.20		1.00E+26	1.00E+26	1.00E+26	
	@	437.55	2.00		1.00E+26	1.00E+26	1.00E+26	
	@	537.32	25.00		1.00E+26	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	1.00E+26	
	@	815.85	23.50		1.00E+26	1.00E+26	1.00E+26	
	@	1596.49	95.49		1.00E+26	1.00E+26	1.00E+26	
	CE-141	145.44	48.40		9.11E+07	9.11E+07	9.58E+06	4.52E+07
	@ CE-143	57.36	11.80		1.00E+26	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00		1.00E+26	1.00E+26	1.00E+26	1.00E+26
@	664.55	5.20	1.00E+26	1.00E+26	1.00E+26	1.00E+26		
CE-144	133.54	10.80	3.88E+01	3.88E+01	-1.30E+01	1.93E+01		
PM-144	476.78	42.00	1.24E+01	5.03E+00	8.12E+00	6.12E+00		
	618.01	98.60	5.03E+00		-1.92E+00	2.48E+00		
	696.49	99.49	5.40E+00		3.22E+00	2.66E+00		
PM-145	36.85	21.70	1.65E+00	9.14E-01	-5.07E+00	8.21E-01		
	37.36	39.70	9.14E-01		-3.16E+00	4.54E-01		
	42.30	15.10	2.96E+00		-4.04E+00	1.47E+00		
	72.40	2.31	2.44E+01		-1.06E-01	1.22E+01		
PM-146	453.90	39.94	3.39E+00	3.39E+00	1.46E+00	1.68E+00		
	735.90	14.01	1.07E+01		2.73E+00	5.25E+00		
	747.13	13.10	1.12E+01		-2.68E+00	5.53E+00		
@ ND-147	91.11	28.90	1.00E+26	1.00E+26	1.00E+26	1.00E+26		
@	531.02	13.10	1.00E+26	1.00E+26	1.00E+26	1.00E+26		
@ PM-149	285.90	3.10	1.00E+26	1.00E+26	1.00E+26	1.00E+26		
EU-152	121.78	20.50	3.59E+00	2.64E+00	3.77E+01	1.79E+00		
	244.69	5.40	1.45E+01		-7.42E+00	7.20E+00		
	344.27	19.13	4.64E+00		-6.57E-02	2.30E+00		
	778.89	9.20	1.41E+01		-2.28E+00	6.94E+00		
	964.01	10.40	1.74E+01		5.11E+00	8.59E+00		
	1085.78	7.22	2.39E+01		-1.38E+01	1.18E+01		
	1112.02	9.60	1.86E+01		1.43E+01	9.17E+00		
	1407.95	14.94	2.64E+00		-2.32E-01	1.20E+00		
	GD-153	97.43	31.30		1.61E+01	1.61E+01	-1.29E+01	8.00E+00
		103.18	22.20		2.36E+01		1.25E+01	1.17E+01
EU-154	123.07	40.50	1.95E+00	1.95E+00	2.04E+01	9.68E-01		
	723.30	19.70	6.59E+00		2.56E+00	3.24E+00		
	873.19	11.50	1.47E+01		-4.13E+00	7.24E+00		
	996.32	10.30	1.75E+01		-3.59E+00	8.61E+00		
	1004.76	17.90	1.01E+01		-2.84E+00	4.98E+00		
	1274.45	35.50	2.33E+00		-6.13E-01	1.12E+00		
EU-155	86.50	30.90	4.10E+00	3.05E+00	1.17E+02	2.05E+00		
	105.30	20.70	3.05E+00		3.65E-01	1.51E+00		

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Analysis Report for 1510084-01

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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	811.77	10.40	1.13E+18	8.11E+17	3.27E+17	5.56E+17
	1153.47	7.20	1.54E+18		-6.45E+17	7.52E+17
	1230.71	8.90	8.11E+17		-8.57E+16	3.91E+17
HO-166M	184.41	72.60	8.17E-01	8.17E-01	-4.52E-01	4.05E-01
	280.45	29.60	2.40E+00		-1.15E+00	1.19E+00
	410.94	11.10	8.17E+00		2.73E-01	4.04E+00
	711.69	54.10	1.92E+00		3.31E-01	9.46E-01
+ TM-171	66.72	* 0.14	8.18E+02	8.18E+02	8.15E+02	4.07E+02
HF-172	81.75	4.52	3.05E+01	1.32E+01	-6.71E+00	1.52E+01
	125.81	11.30	1.32E+01		-1.38E+00	6.57E+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	2.77E+01	1.09E+01	5.30E+00	1.37E+01
	272.11	21.20	1.09E+01		9.64E-01	5.41E+00
HF-175	343.40	84.00	4.50E+03	4.50E+03	1.50E+03	2.23E+03
LU-176	88.34	13.30	6.79E+00	7.41E-01	1.93E+02	3.38E+00
	201.83	86.00	7.41E-01		-3.81E-01	3.68E-01
	306.78	94.00	7.84E-01		-5.51E-02	3.88E-01
TA-182	67.75	41.20	2.11E+02	2.11E+02	-5.30E+03	1.05E+02
	1121.30	34.90	7.33E+02		3.25E+02	3.60E+02
	1189.05	16.23	1.14E+03		1.02E+02	5.53E+02
	1221.41	26.98	5.54E+02		-4.73E+01	2.68E+02
	1231.02	11.44	1.22E+03		-1.29E+02	5.89E+02
IR-192	308.46	29.68	7.54E+03	6.41E+03	-1.65E+03	3.73E+03
	468.07	48.10	6.41E+03		5.23E+00	3.17E+03
HG-203	279.19	77.30	3.11E+05	3.11E+05	-2.40E+04	1.54E+05
BI-207	569.67	97.72	1.00E+00	1.00E+00	-1.93E-01	4.94E-01
	1063.62	74.90	2.13E+00		-6.72E-01	1.05E+00
TL-208	583.14	30.22	3.22E+00	1.03E+00	2.18E+00	1.59E+00
	860.37	4.48	3.01E+01		-1.17E+01	1.48E+01
	2614.66	35.85	1.03E+00		6.03E-01	4.45E-01
BI-210M	262.00	45.00	1.55E+00	1.55E+00	-3.41E-01	7.66E-01
	300.00	23.00	3.17E+00		7.35E-01	1.57E+00
PB-210	46.50	4.25	1.36E+01	1.36E+01	2.29E+01	6.77E+00
PB-211	404.84	2.90	3.06E+01	3.06E+01	-2.11E+00	1.51E+01
	831.96	2.90	4.44E+01		8.87E-01	2.19E+01
BI-212	727.17	11.80	9.16E+00	9.16E+00	-3.44E+00	4.51E+00
	1620.62	2.75	1.40E+01		-1.33E+00	6.34E+00
PB-212	238.63	44.60	1.57E+00	1.57E+00	-5.84E-02	7.79E-01
	300.09	3.41	2.14E+01		4.96E+00	1.06E+01
BI-214	609.31	46.30	2.11E+00	2.11E+00	6.53E-01	1.04E+00
	1120.29	15.10	9.64E+00		2.96E+00	4.73E+00
	1764.49	15.80	2.62E+00		8.58E-01	1.19E+00
	2204.22	4.98	7.44E+00		-1.65E+00	3.26E+00
PB-214	295.21	19.19	3.77E+00	2.14E+00	8.26E-01	1.87E+00
	351.92	37.19	2.14E+00		-3.00E-01	1.06E+00
RN-219	401.80	6.50	1.35E+01	1.35E+01	7.23E-01	6.65E+00
RA-223	323.87	3.88	1.98E+01	1.98E+01	1.11E+01	9.82E+00
RA-224	240.98	3.95	1.79E+01	1.79E+01	1.67E+01	8.88E+00
RA-225	40.00	31.00	2.98E+17	2.98E+17	-9.69E+17	1.48E+17
RA-226	186.21	3.28	1.84E+01	1.84E+01	3.36E+00	9.12E+00

Analysis Report for 1510084-01

GAS-1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TH-227	50.10	8.40	7.42E+00	6.10E+00	1.93E+01	3.69E+00
	236.00	11.50	6.10E+00		2.91E+00	3.03E+00
	256.20	6.30	1.10E+01		-9.32E-01	5.47E+00
AC-228	338.32	11.40	6.77E+00	5.65E+00	-2.85E+00	3.35E+00
	911.07	27.70	5.65E+00		3.09E+00	2.78E+00
	969.11	16.60	9.19E+00		-4.24E+00	4.53E+00
TH-230	48.44	16.90	3.51E+00	3.51E+00	1.04E+01	1.75E+00
	62.85	4.60	2.21E+01		7.88E+02	1.10E+01
	67.67	0.37	1.31E+02		-3.30E+03	6.54E+01
PA-231	283.67	1.60	4.49E+01	3.17E+01	9.25E+00	2.22E+01
	302.67	2.30	3.17E+01		-2.29E+00	1.57E+01
TH-231	25.64	14.70	6.25E+00	6.25E+00	-1.92E+01	3.12E+00
	84.21	6.40	1.26E+01		1.19E+02	6.29E+00
PA-233	311.98	38.60	6.79E+09	6.79E+09	2.10E+09	3.36E+09
PA-234	131.20	20.40	2.43E+00	2.43E+00	-2.04E+00	1.21E+00
	733.99	8.80	1.25E+01		-7.08E-01	6.17E+00
	946.00	12.00	1.42E+01		2.71E-01	6.99E+00
PA-234M	1001.03	0.92	1.67E+02	1.67E+02	1.50E+02	8.22E+01
TH-234	63.29	3.80	2.24E+01	2.24E+01	3.54E+02	1.12E+01
U-235	143.76	10.50	4.90E+00	4.90E+00	3.75E-01	2.43E+00
	163.35	4.70	1.22E+01		2.44E+01	6.07E+00
	205.31	4.70	1.38E+01		3.66E+00	6.85E+00
NP-237	86.50	12.60	7.25E+00	7.25E+00	2.08E+02	3.62E+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	3.26E+00	3.26E+00	1.32E+02	1.63E+00
AM-243	74.67	66.00	7.93E-01	7.93E-01	-2.89E-01	3.94E-01
CM-243	209.75	3.29	2.12E+01	5.34E+00	-1.21E+01	1.05E+01
	228.14	10.60	6.99E+00		2.83E+00	3.47E+00
	277.60	14.00	5.34E+00		-1.35E+00	2.65E+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.

Analysis Report for 1510084-01
GAS-1302

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

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: GAS-1302

Elapsed Live time: 1800
 Elapsed Real Time: 1840

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	3	517	1483
17:	1665	1954	5243	17428	28887	21968	11552	10174
25:	6771	2376	938	734	835	1060	1302	1242
33:	957	851	983	1035	1009	1013	1051	1171
41:	1391	1442	1574	1699	1911	2209	2680	3286
49:	3575	3594	3542	3525	3740	3846	4038	4704
57:	9380	20188	22377	10261	2422	1210	1189	1356
65:	1425	1549	1555	1492	1571	1544	1532	1501
73:	1506	1594	1570	1533	1521	1555	1552	1593
81:	1614	1578	1734	1783	2432	6169	10647	8097
89:	2802	935	771	787	810	768	775	735
97:	787	786	741	763	823	797	814	776
105:	773	769	743	741	779	796	767	785
113:	823	821	814	752	807	764	941	1677
121:	2727	2371	1201	801	679	694	695	653
129:	691	702	638	707	661	744	809	878
137:	807	647	654	657	667	677	616	676
145:	697	591	603	645	659	603	669	638
153:	624	659	635	603	580	618	552	567
161:	608	619	633	755	861	780	612	595
169:	552	565	562	561	594	634	598	587
177:	585	582	612	591	570	572	558	578
185:	627	570	603	583	631	617	593	552
193:	602	583	615	631	592	598	585	550
201:	582	612	557	617	549	594	613	580
209:	577	557	581	590	610	592	592	654
217:	630	590	637	626	581	533	600	586
225:	603	590	562	543	537	558	548	558
233:	525	522	518	540	520	566	567	489
241:	518	507	524	532	495	479	452	485
249:	526	455	484	483	454	474	476	460
257:	445	438	446	447	466	429	424	427
265:	440	455	449	385	434	431	448	420
273:	451	402	411	424	391	411	404	399
281:	390	415	422	378	376	441	434	397
289:	418	364	404	368	362	389	396	402
297:	369	386	371	347	387	355	389	358
305:	373	377	357	336	391	398	386	341
313:	401	342	378	369	338	354	380	359
321:	383	376	356	354	380	346	353	338
329:	334	361	350	344	338	347	310	330
337:	349	325	350	361	338	338	349	348
345:	372	333	298	333	322	342	361	348
353:	334	330	338	326	347	309	356	336
361:	326	317	325	296	337	353	301	318

369: 333 327 296 340 302 321 318 313

Sample Title: GAS-1302

377:	285	330	326	322	319	328	303	312
385:	294	338	331	291	338	345	385	360
393:	339	314	309	280	329	300	293	333
401:	285	332	306	302	337	326	326	308
409:	333	322	331	339	285	327	335	313
417:	329	315	306	290	300	309	288	310
425:	310	306	306	313	330	338	325	347
433:	342	328	299	314	326	347	333	303
441:	325	315	296	332	335	317	303	278
449:	339	330	338	318	319	326	328	364
457:	308	308	351	338	330	283	319	329
465:	322	329	309	317	300	323	292	314
473:	310	326	319	304	298	304	266	275
481:	284	250	270	274	244	248	259	238
489:	254	235	263	225	261	258	240	220
497:	225	249	236	234	264	237	230	209
505:	219	226	218	232	240	240	254	216
513:	233	209	237	210	220	241	236	205
521:	218	195	208	230	212	200	215	197
529:	208	192	187	204	206	201	216	197
537:	201	225	210	191	183	175	176	207
545:	201	213	180	198	170	206	175	185
553:	187	189	188	191	183	198	168	177
561:	172	172	214	180	180	203	186	184
569:	154	194	169	162	175	183	176	175
577:	200	167	181	172	188	185	184	198
585:	194	185	189	175	173	145	188	170
593:	196	154	173	179	170	168	166	182
601:	184	184	158	180	165	179	159	170
609:	181	194	180	165	150	145	175	154
617:	168	171	161	183	151	164	184	160
625:	185	162	155	176	168	172	178	175
633:	164	194	165	163	163	155	175	180
641:	152	166	158	158	171	177	160	191
649:	172	167	169	157	180	177	172	185
657:	181	236	705	2671	4430	3485	1174	282
665:	125	150	138	140	162	139	120	160
673:	137	141	161	144	159	163	107	160
681:	152	139	182	151	121	138	137	151
689:	137	133	136	145	160	150	134	152
697:	163	142	153	161	142	142	145	130
705:	147	150	142	133	127	148	157	161
713:	133	140	141	128	149	133	148	145
721:	149	133	165	145	165	144	148	137
729:	159	141	127	164	143	187	141	165
737:	137	155	160	140	167	144	127	162
745:	144	148	133	154	140	141	150	142
753:	142	159	140	138	149	164	137	138
761:	133	162	155	149	135	181	158	155
769:	132	140	148	147	150	132	162	154
777:	156	141	144	155	138	137	152	140
785:	160	151	134	134	133	143	160	152
793:	147	160	139	139	150	139	138	170

801: 151 158 145 150 152 164 154 185

Sample Title: GAS-1302

Channel	1	2	3	4	5	6	7	8
809:	154	160	188	181	151	154	164	154
817:	173	163	152	153	180	154	140	174
825:	144	157	180	166	171	152	178	146
833:	154	177	155	156	179	144	163	155
841:	153	175	175	161	159	154	154	157
849:	167	155	146	147	171	188	169	186
857:	143	146	172	172	179	177	174	146
865:	166	186	165	174	201	152	160	175
873:	147	191	184	171	194	198	176	183
881:	188	196	174	161	170	163	201	159
889:	199	183	189	204	190	176	175	221
897:	232	230	212	188	180	180	182	189
905:	176	205	206	188	211	184	223	213
913:	207	186	183	199	173	187	222	200
921:	186	174	193	218	207	222	185	191
929:	214	206	211	202	174	214	207	196
937:	227	190	198	228	204	206	196	222
945:	223	206	205	230	240	250	224	230
953:	228	224	213	216	210	205	222	190
961:	200	207	207	195	176	168	166	197
969:	158	168	157	170	159	142	160	175
977:	185	159	140	171	165	161	150	159
985:	151	145	154	141	151	170	157	138
993:	156	125	165	147	168	148	173	165
1001:	156	153	161	168	152	132	146	142
1009:	155	151	158	152	153	151	151	137
1017:	131	145	136	149	164	156	142	135
1025:	133	127	174	142	134	150	145	143
1033:	132	144	138	154	145	134	143	152
1041:	152	146	162	155	166	157	143	147
1049:	132	131	144	155	137	134	136	134
1057:	145	134	151	131	130	148	157	125
1065:	127	137	155	149	166	143	133	130
1073:	135	161	150	146	127	144	138	163
1081:	116	152	150	134	122	153	131	136
1089:	129	125	164	157	141	135	158	149
1097:	133	146	135	149	153	139	144	147
1105:	133	149	137	131	135	138	143	154
1113:	164	135	124	139	114	117	114	123
1121:	91	108	130	104	106	86	81	92
1129:	86	97	81	83	83	83	76	95
1137:	92	70	83	97	76	99	91	69
1145:	94	84	80	87	64	64	75	88
1153:	90	86	55	67	76	64	93	72
1161:	67	81	61	76	66	101	85	87
1169:	82	212	861	2384	3402	2434	898	178
1177:	67	54	58	72	69	53	48	45
1185:	45	62	60	59	52	44	44	45
1193:	50	55	55	44	47	42	52	50
1201:	45	38	43	37	43	51	40	38
1209:	39	43	44	35	39	44	33	28
1217:	33	29	39	32	37	29	30	25
1225:	30	34	33	24	23	27	28	30

1233: 24 24 31 29 27 24 33 27

Sample Title: GAS-1302

Channel	1	2	3	4	5	6	7	8	9
1241:	30	23	24	17	27	23	19	29	
1249:	24	28	19	19	22	24	22	15	
1257:	18	17	12	14	15	29	20	26	
1265:	16	22	18	28	23	22	22	16	
1273:	23	18	14	17	18	25	24	21	
1281:	15	20	17	16	24	13	21	20	
1289:	25	21	17	17	17	20	14	19	
1297:	17	24	16	13	19	14	18	25	
1305:	15	20	13	21	17	18	16	12	
1313:	20	20	16	15	10	13	18	18	
1321:	15	11	18	11	29	21	22	25	
1329:	66	415	1571	2851	2637	1208	281	33	
1337:	13	9	6	5	6	11	6	6	
1345:	1	4	3	5	9	2	3	11	
1353:	5	11	6	5	2	5	4	6	
1361:	6	4	5	7	9	6	6	5	
1369:	3	4	5	7	5	3	5	5	
1377:	2	4	3	5	7	8	3	3	
1385:	9	2	6	3	2	8	3	2	
1393:	3	7	4	2	4	7	3	6	
1401:	7	4	4	5	2	2	5	6	
1409:	4	3	4	3	4	2	4	7	
1417:	4	1	3	4	5	1	5	6	
1425:	9	7	8	3	3	1	9	3	
1433:	3	4	5	3	4	7	2	2	
1441:	6	3	5	2	5	4	5	2	
1449:	4	3	6	4	3	7	7	6	
1457:	4	3	6	5	3	4	9	2	
1465:	4	4	3	5	3	6	3	5	
1473:	8	2	2	3	4	2	5	3	
1481:	4	1	5	5	6	4	5	6	
1489:	1	5	7	5	1	5	8	3	
1497:	4	6	4	5	1	5	5	5	
1505:	3	3	4	5	5	2	4	3	
1513:	2	5	1	5	3	6	1	0	
1521:	4	4	8	7	7	6	4	8	
1529:	5	5	4	6	8	6	3	6	
1537:	5	3	6	2	1	3	6	5	
1545:	4	6	7	4	3	5	7	3	
1553:	2	3	2	5	4	4	6	1	
1561:	3	4	5	3	4	5	3	8	
1569:	6	1	4	3	4	3	3	3	
1577:	3	3	6	4	5	3	3	4	
1585:	2	2	2	5	5	4	4	5	
1593:	4	5	3	9	7	2	3	3	
1601:	5	3	3	2	7	6	4	0	
1609:	5	5	2	4	0	5	2	4	
1617:	5	2	3	6	6	2	2	1	
1625:	5	5	4	3	1	3	5	4	
1633:	6	4	6	5	3	5	2	3	
1641:	1	4	5	1	5	3	3	5	
1649:	5	4	3	4	2	6	5	3	
1657:	2	2	2	4	3	3	1	3	

1665: 3 4 3 1 0 2 3 0

Sample Title: GAS-1302

Channel	1	2	3	4	5	6	7	8
1673:	3	3	3	3	3	4	2	4
1681:	3	2	2	1	3	1	1	2
1689:	2	1	3	1	2	3	4	3
1697:	2	0	3	2	3	2	4	1
1705:	1	4	5	6	1	2	5	2
1713:	5	0	0	2	2	6	0	3
1721:	4	3	4	2	2	2	1	1
1729:	4	1	3	8	2	3	3	3
1737:	2	2	3	4	1	3	3	4
1745:	3	2	4	5	2	1	3	2
1753:	3	1	2	3	4	0	1	3
1761:	4	2	0	3	7	4	2	4
1769:	2	1	2	4	1	0	2	0
1777:	1	4	2	6	1	5	2	2
1785:	1	1	2	1	1	2	0	2
1793:	4	1	1	0	2	3	8	2
1801:	2	1	3	1	3	5	3	2
1809:	2	3	0	0	4	3	2	2
1817:	0	0	1	3	3	2	2	2
1825:	3	1	0	6	1	1	2	1
1833:	3	9	12	25	26	16	2	2
1841:	2	1	2	0	2	0	5	2
1849:	2	2	3	4	3	0	1	2
1857:	1	5	2	1	2	2	1	1
1865:	1	5	4	0	0	3	0	3
1873:	2	3	0	1	0	6	4	3
1881:	0	3	1	0	0	2	1	0
1889:	0	2	3	1	3	5	4	4
1897:	2	1	2	1	2	2	2	3
1905:	2	1	1	0	0	2	2	3
1913:	3	5	2	0	0	3	2	2
1921:	2	6	0	3	1	2	2	3
1929:	2	0	2	3	4	2	4	3
1937:	2	1	1	1	4	4	2	5
1945:	0	2	1	4	1	4	4	0
1953:	2	4	0	3	1	3	3	1
1961:	1	4	2	1	7	4	3	1
1969:	1	2	2	0	4	2	1	2
1977:	2	6	1	1	2	2	3	3
1985:	2	2	1	3	3	0	3	0
1993:	3	4	3	2	0	1	1	2
2001:	0	2	1	2	2	0	0	3
2009:	0	2	2	4	1	2	3	1
2017:	5	3	2	2	2	1	2	1
2025:	0	2	2	1	2	2	3	3
2033:	3	0	1	2	0	2	2	1
2041:	1	3	1	2	0	1	1	0
2049:	1	2	0	1	1	0	2	0
2057:	4	3	2	1	1	2	0	1
2065:	0	3	1	2	1	0	2	1
2073:	1	2	3	3	1	0	2	2
2081:	3	3	3	1	1	0	1	2
2089:	1	1	0	0	0	1	1	2

2097: 0 1 3 2 2 3 2 2

Sample Title: GAS-1302

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

2529: 0 0 0 0 0 1 0 0

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	1	0	0	0	0	0	0
2545:	0	1	1	0	0	0	0	0
2553:	0	0	0	0	0	1	0	1
2561:	0	0	0	2	0	0	0	0
2569:	0	0	0	0	0	0	0	0
2577:	0	0	0	0	0	0	0	0
2585:	0	0	0	0	0	0	0	0
2593:	0	0	0	0	0	0	0	0
2601:	0	0	0	0	0	0	0	0
2609:	0	0	0	0	1	0	4	3
2617:	4	0	0	1	0	0	1	0
2625:	0	0	0	0	0	0	0	0
2633:	0	1	0	0	0	0	0	0
2641:	0	0	1	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	0	1	0	0	0	0
2673:	0	0	0	0	0	0	0	0
2681:	0	0	0	0	0	0	0	0
2689:	0	0	0	0	0	0	0	0
2697:	0	0	0	0	0	0	0	0
2705:	0	0	0	0	0	0	0	0
2713:	0	0	0	0	1	0	0	0
2721:	0	0	0	0	0	0	0	0
2729:	0	0	0	0	0	0	0	0
2737:	0	0	0	0	0	0	0	0
2745:	1	0	0	0	0	0	0	1
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	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	1	0	0	0	0	0	0
2793:	0	1	0	0	0	1	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	1	0	0
2825:	0	0	0	1	0	0	0	1
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	0	1
2849:	0	0	0	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	0	1	0	0	1	0	1	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	1	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	1	0	0	0	0	0	0
2913:	1	0	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	1	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0

2961: 0 0 0 0 1 1 0 0

Sample Title: GAS-1302

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:	0	0	0	2	0	0	0	0
2993:	0	0	0	0	0	0	0	1
3001:	0	0	0	0	0	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:	0	0	0	0	0	1	0	0
3041:	0	0	1	0	1	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	1	0	0	0	0	0	0	0
3065:	0	0	1	1	0	0	0	1
3073:	0	1	1	0	0	0	0	0
3081:	0	0	0	0	0	0	0	1
3089:	0	0	0	0	0	1	0	0
3097:	0	0	1	0	0	0	0	0
3105:	0	0	0	0	0	0	0	0
3113:	0	0	0	0	0	0	0	1
3121:	0	0	0	0	0	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	0	0	0	0	0	0	0	1
3153:	0	0	1	0	0	0	0	0
3161:	0	0	0	1	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	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:	0	0	0	0	2	0	0	0
3225:	0	1	1	0	0	0	0	0
3233:	0	1	0	0	0	0	2	0
3241:	0	0	0	0	0	0	0	1
3249:	0	0	0	0	0	0	0	0
3257:	0	0	1	0	0	0	0	0
3265:	0	0	0	0	1	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	1	0	0	0	0	1
3289:	0	0	0	0	0	0	0	0
3297:	0	0	1	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	1	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	1	0	0	0	0	0	0	0
3345:	0	0	1	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	1	0	0	0
3369:	0	0	0	0	0	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 1 0 0

Sample Title: GAS-1302

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0	0
3425:	0	1	1	0	0	0	0	0	0
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	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	1	0
3497:	0	0	0	0	1	0	0	0	0
3505:	0	0	0	0	0	0	0	0	0
3513:	0	0	0	0	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	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	0	0	0	0	0
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	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0	0
3633:	0	0	1	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0	1
3697:	0	0	0	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	0	0	0	0	0	0
3753:	1	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	1	0	0	0
3769:	0	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	0
3793:	0	0	0	0	0	0	0	0	0
3801:	0	1	0	0	0	0	0	0	0
3809:	1	0	1	0	0	0	0	0	0
3817:	0	1	0	0	0	0	0	0	0

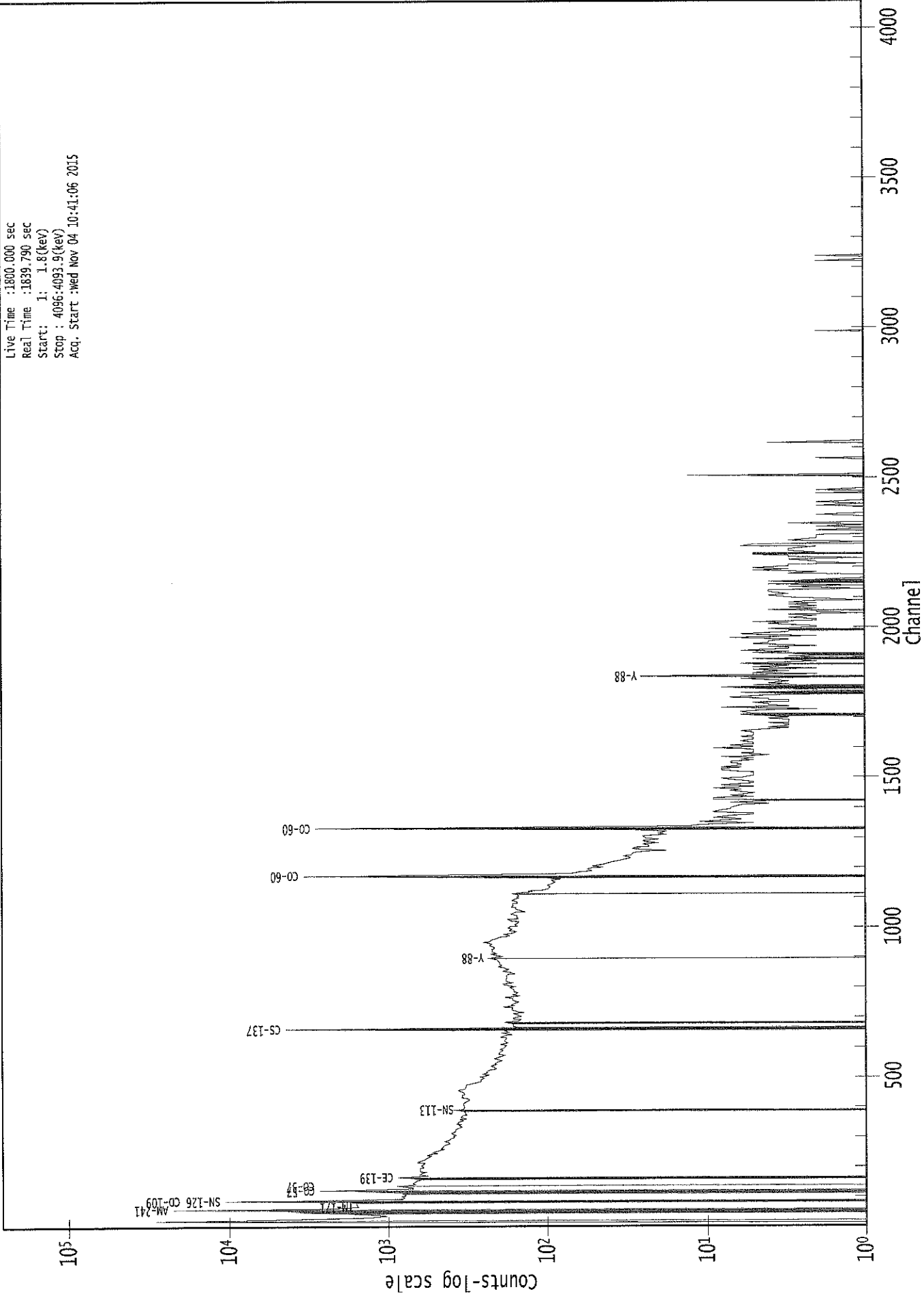
3825: 0 0 0 0 0 0 0 0

Sample Title: GAS-1302

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:	1	0	0	0	0	0	0	0
3881:	1	0	0	0	0	1	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	1	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	1	0	1	0	0	0	1	0
3953:	0	0	0	0	1	0	1	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	1	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	0	1	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	1	0
4025:	0	0	0	0	0	0	1	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	1	0	0	0	0	0
4057:	1	0	0	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	0	0	0	0	0	0	0

0000029107.CNF

Live Time : 1800.000 sec
Real Time : 1839.790 sec
Start : 1: 1.8 (keV)
Stop : 4096: 4093.9 (keV)
Acq. Start : Wed Nov 04 10:41:06 2015



ROI Type: 2

ROI Type: 1

KB
11/4/15Analysis Report for 1510084-02
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GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-02
Sample Description : BLANK
Sample Type : SOIL

Sample Size : 7.834E+02 grams
Facility : Countroom

Sample Taken On : 11/4/2015 9:44:55AM
Acquisition Started : 11/4/2015 11:12:42AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3703.6 seconds

Dead Time : 2.80 %

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 : 29110

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-02

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PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 12:14:27PM
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	61.49	60.75	0.0000	0.00
2	91.31	90.59	0.0000	0.00
3	223.13	222.46	0.0000	0.00
4	230.44	229.78	0.0000	0.00
5	360.10	359.49	0.0000	0.00
6	629.15	628.67	0.0000	0.00
7	1304.08	1303.96	0.0000	0.00
8	1539.18	1539.20	0.0000	0.00
9	1701.21	1701.33	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510084-02

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PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 12:14:27PM

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	61.49	57 -	66	60.75	4.42E+01	42.79	2.40E+02	5.76
2	91.31	80 -	98	90.59	1.33E+02	65.99	3.32E+02	2.95
3	223.13	220 -	225	222.46	2.60E+01	19.34	5.40E+01	3.71
4	230.44	227 -	232	229.78	1.77E+01	20.17	6.47E+01	3.00
5	360.10	348 -	374	359.49	6.62E+01	46.22	1.16E+02	23.12
6	629.15	625 -	631	628.67	1.00E+01	10.82	1.40E+01	1.74
7	1304.08	1300 -	1306	1303.96	8.10E+00	7.23	3.80E+00	2.70
8	1539.18	1534 -	1541	1539.20	5.00E+00	4.47	0.00E+00	2.75
9	1701.21	1698 -	1703	1701.33	6.00E+00	4.90	0.00E+00	1.92

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 : 11/4/2015 12:14:27PM

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	61.49	57 -	66	4.42E+01	42.79	2.40E+02	3.34E+01
2	91.31	80 -	98	1.33E+02	65.99	3.32E+02	2.18E+01
3	223.13	220 -	225	2.60E+01	19.34	5.40E+01	1.35E+01
4	230.44	227 -	232	1.77E+01	20.17	6.47E+01	1.51E+01
5	360.10	348 -	374	6.62E+01	46.22	1.16E+02	3.56E+01
6	629.15	625 -	631	1.00E+01	10.82	1.40E+01	7.21E+00

: 00365

Analysis Report for 1510084-02

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Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
7	1304.08	1300 -	1306	8.10E+00	7.23	3.80E+00	3.66E+00
8	1539.18	1534 -	1541	5.00E+00	4.47	0.00E+00	0.00E+00
9	1701.21	1698 -	1703	6.00E+00	4.90	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 : 11/4/2015 12:14:27PM

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	61.49	57 -	66	60.75	4.42E+01	42.79	2.40E+02	.....
2	91.31	80 -	98	90.59	1.33E+02	65.99	3.32E+02	ND-147
3	223.13	220 -	225	222.46	2.60E+01	19.34	5.40E+01	.....
4	230.44	227 -	232	229.78	1.77E+01	20.17	6.47E+01	.....
5	360.10	348 -	374	359.49	6.62E+01	46.22	1.16E+02	.....
6	629.15	625 -	631	628.67	1.00E+01	10.82	1.40E+01	.....
7	1304.08	1300 -	1306	1303.96	8.10E+00	7.23	3.80E+00	.....
8	1539.18	1534 -	1541	1539.20	5.00E+00	4.47	0.00E+00	.....
9	1701.21	1698 -	1703	1701.33	6.00E+00	4.90	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 1510084-02

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PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/4/2015 12:14:27PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	61.49	4.42E+01	42.79	2.36E-02	1.77E-03
2	91.31	1.33E+02	65.99	1.92E-02	1.62E-03
3	223.13	2.60E+01	19.34	9.98E-03	1.04E-03
4	230.44	1.77E+01	20.17	9.71E-03	1.01E-03
5	360.10	6.62E+01	46.22	6.47E-03	7.71E-04
6	629.15	1.00E+01	10.82	3.75E-03	3.88E-04
7	1304.08	8.10E+00	7.23	1.86E-03	2.08E-04
8	1539.18	5.00E+00	4.47	1.61E-03	1.73E-04
9	1701.21	6.00E+00	4.90	1.48E-03	1.39E-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 : 11/4/2015 12:14:27PM

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	61.49	4.42E+01	42.79			4.42E+01	4.28E+01
2	91.31	1.33E+02	65.99			1.33E+02	6.60E+01
3	223.13	2.60E+01	19.34			2.60E+01	1.93E+01
4	230.44	1.77E+01	20.17			1.77E+01	2.02E+01
5	360.10	6.62E+01	46.22			6.62E+01	4.62E+01
6	629.15	1.00E+01	10.82			1.00E+01	1.08E+01
7	1304.08	8.10E+00	7.23			8.10E+00	7.23E+00
8	1539.18	5.00E+00	4.47			5.00E+00	4.47E+00
9	1701.21	6.00E+00	4.90			6.00E+00	4.90E+00

Analysis Report for 1510084-02

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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 : 11/4/2015 12:14:27PM
 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	61.49	4.42E+01	42.79			4.42E+01	4.28E+01
2	91.31	1.33E+02	65.99			1.33E+02	6.60E+01
3	223.13	2.60E+01	19.34			2.60E+01	1.93E+01
4	230.44	1.77E+01	20.17			1.77E+01	2.02E+01
5	360.10	6.62E+01	46.22			6.62E+01	4.62E+01
6	629.15	1.00E+01	10.82			1.00E+01	1.08E+01
7	1304.08	8.10E+00	7.23			8.10E+00	7.23E+00
8	1539.18	5.00E+00	4.47			5.00E+00	4.47E+00
9	1701.21	6.00E+00	4.90			6.00E+00	4.90E+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
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: 00368

Analysis Report for 1510084-02
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Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
ND-147	0.709	91.11 * 531.02	28.90 13.10	2.31E-01	1.16E-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 : 11/4/2015 12:14:27PM
 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	61.49	1.22891E-02	48.36		
3	223.13	7.22222E-03	37.19		
4	230.44	4.90833E-03	57.09		
5	360.10	1.83961E-02	34.90		
6	629.15	2.77778E-03	54.08		
7	1304.08	2.25000E-03	44.62		
8	1539.18	1.38889E-03	44.72		
9	1701.21	1.66667E-03	40.82		

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 1510084-02
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Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
ND-147	0.70	91.11 * 531.02	28.90 13.10	2.31E-01	1.16E-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
ND-147	0.709	2.31E-01	1.16E-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 1510084-02

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 12:14:27PM
 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	61.49	1.22891E-02	48.36		
3	223.13	7.22222E-03	37.19		
4	230.44	4.90833E-03	57.09		
5	360.10	1.83961E-02	34.90		
6	629.15	2.77778E-03	54.08		
7	1304.08	2.25000E-03	44.62		
8	1539.18	1.38889E-03	44.72		
9	1701.21	1.66667E-03	40.82		

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	1.71E-01	5.11E-01	5.11E-01
+	NA-22	1274.54	99.94	-1.28E-02	6.61E-02	6.61E-02
+	NA-24	1368.53	99.99	1.05E-02	6.33E-02	6.33E-02
		2754.09	99.86	5.07E-03		9.42E-02
+	AL-26	1808.65	99.76	-6.38E-02	5.03E-02	5.03E-02
+	K-40	1460.81	10.67	2.13E-01	8.01E-01	8.01E-01
+	AR-41	1293.64	99.16	1.08E-02	1.63E-01	1.63E-01
+	TI-44	67.88	94.40	4.18E-03	2.73E-02	2.74E-02
		78.34	96.00	1.80E-02		2.73E-02

Analysis Report for 1510084-02

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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>
+	SC-46	889.25	99.98	-2.01E-02	6.25E-02	6.25E-02
		1120.51	99.99	5.47E-03		9.27E-02
+	V-48	983.52	99.98	4.41E-04	6.61E-02	6.61E-02
		1312.10	97.50	-5.32E-03		9.65E-02
+	CR-51	320.08	9.83	-8.47E-02	5.03E-01	5.03E-01
+	MN-54	834.83	99.97	-1.17E-02	5.62E-02	5.62E-02
+	CO-56	846.75	99.96	5.40E-03	7.09E-02	7.09E-02
		1037.75	14.03	1.06E-01		5.38E-01
		1238.25	67.00	1.90E-02		1.43E-01
		1771.40	15.51	3.75E-02		5.67E-01
		2598.48	16.90	1.76E-02		3.88E-01
+	CO-57	122.06	85.51	4.64E-03	3.34E-02	3.34E-02
		136.48	10.60	9.71E-02		2.93E-01
+	CO-58	810.76	99.40	-3.30E-03	6.64E-02	6.64E-02
+	FE-59	1099.22	56.50	-7.78E-03	1.36E-01	1.36E-01
		1291.56	43.20	2.64E-02		1.77E-01
+	CO-60	1173.22	100.00	0.00E+00	7.78E-02	7.78E-02
		1332.49	100.00	2.39E-02		8.74E-02
+	ZN-65	1115.52	50.75	-5.27E-03	1.53E-01	1.53E-01
+	GA-67	93.31	35.70	1.31E-01	9.16E-02	9.16E-02
		208.95	2.24	4.93E-02		1.85E+00
		300.22	16.00	-1.04E-01		2.61E-01
+	SE-75	121.11	16.70	-2.94E-02	5.08E-02	1.69E-01
		136.00	59.20	1.42E-02		5.08E-02
		264.65	59.80	3.42E-02		7.45E-02
		279.53	25.20	-6.48E-02		1.80E-01
		400.65	11.40	2.02E-01		4.35E-01
+	RB-82	776.52	13.00	-8.66E-02	4.39E-01	4.39E-01
+	RB-83	520.41	46.00	-1.06E-01	1.03E-01	1.03E-01
		529.64	30.30	8.83E-02		1.81E-01
		552.65	16.40	-7.70E-02		3.74E-01
+	KR-85	513.99	0.43	1.50E+01	1.84E+01	1.84E+01
+	SR-85	513.99	99.27	6.55E-02	8.04E-02	8.04E-02
+	Y-88	898.02	93.40	-1.16E-02	5.82E-02	5.82E-02
		1836.01	99.38	1.16E-02		9.11E-02
+	NB-93M	16.57	9.43	3.00E-01	2.17E-01	2.17E-01
+	NB-94	702.63	100.00	1.26E-02	7.39E-02	7.39E-02
		871.10	100.00	8.86E-03		7.49E-02
+	NB-95	765.79	99.81	4.15E-03	6.25E-02	6.25E-02
+	NB-95M	235.69	25.00	-3.82E-03	1.70E-01	1.70E-01
+	ZR-95	724.18	43.70	-3.82E-02	1.04E-01	1.47E-01
		756.72	55.30	-2.12E-02		1.04E-01
+	MO-99	181.06	6.20	-6.40E-01	4.65E-01	5.71E-01
		739.58	12.80	8.76E-02		4.65E-01
		778.00	4.50	-2.71E-01		1.24E+00
+	RU-103	497.08	89.00	-1.92E-02	5.81E-02	5.81E-02
+	RU-106	621.84	9.80	4.44E-02	5.78E-01	5.78E-01

Analysis Report for 1510084-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	AG-108M	433.93	89.90	-2.34E-02	5.03E-02	5.03E-02
		614.37	90.40	-1.03E-02		6.76E-02
		722.95	90.50	-4.31E-03		7.26E-02
+	CD-109	88.03	3.72	-3.64E-01	7.71E-01	7.71E-01
+	AG-110M	657.75	93.14	3.31E-02	7.30E-02	7.30E-02
		677.61	10.53	-5.81E-01		4.35E-01
		706.67	16.46	1.98E-01		4.52E-01
		763.93	21.98	-8.57E-02		2.55E-01
		884.67	71.63	3.59E-02		1.00E-01
		1384.27	23.94	4.53E-02		2.97E-01
+	CD-113M	263.70	0.02	4.04E+01	1.89E+02	1.89E+02
+	SN-113	255.12	1.93	-7.11E-01	6.98E-02	1.97E+00
		391.69	64.90	-8.14E-03		6.98E-02
+	TE123M	159.00	84.10	7.11E-03	4.04E-02	4.04E-02
+	SB-124	602.71	97.87	3.25E-02	7.46E-02	7.46E-02
		645.85	7.26	3.30E-01		7.70E-01
		722.78	11.10	6.07E-02		6.21E-01
		1691.02	49.00	-4.54E-02		1.42E-01
+	I-125	35.49	6.49	-8.84E-02	2.84E-01	2.84E-01
+	SB-125	176.33	6.89	1.72E-01	1.55E-01	5.26E-01
		427.89	29.33	-3.22E-02		1.55E-01
		463.38	10.35	2.78E-01		5.45E-01
		600.56	17.80	6.13E-02		4.03E-01
		635.90	11.32	-9.87E-02		4.99E-01
+	SB-126	414.70	83.30	1.09E-02	6.42E-02	6.42E-02
		666.33	99.60	1.79E-02		7.56E-02
		695.00	99.60	4.14E-02		7.64E-02
		720.50	53.80	1.18E-02		1.28E-01
+	SN-126	87.57	37.00	-3.65E-02	7.73E-02	7.73E-02
+	SB-127	473.00	25.00	-8.98E-02	1.49E-01	1.80E-01
		685.20	35.70	-8.77E-02		1.49E-01
		783.80	14.70	-4.09E-02		3.81E-01
+	I-129	29.78	57.00	-1.89E-02	3.36E-02	3.36E-02
		33.60	13.20	-7.60E-02		1.38E-01
		39.58	7.52	-1.20E-01		2.53E-01
+	I-131	284.30	6.05	-4.87E-01	5.76E-02	7.18E-01
		364.48	81.20	4.77E-03		5.76E-02
		636.97	7.26	-1.45E-01		8.05E-01
		722.89	1.80	3.77E-01		3.85E+00
+	TE-132	49.72	13.10	9.95E-02	4.99E-02	1.69E-01
		228.16	88.00	2.39E-02		4.99E-02
+	BA-133	81.00	33.00	2.41E-02	8.05E-02	8.05E-02
		302.84	17.80	-1.50E-02		2.35E-01
		356.01	60.00	2.95E-02		8.78E-02
+	I-133	529.87	86.30	3.31E-02	6.80E-02	6.80E-02
+	XE-133	81.00	38.00	2.12E-02	7.07E-02	7.07E-02
+	CS-134	563.23	8.38	-7.48E-02	7.40E-02	7.46E-01
		569.32	15.43	-1.87E-02		3.82E-01
		604.70	97.60	3.36E-02		7.40E-02

Analysis Report for 1510084-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-134	795.84	85.40	1.80E-02	7.40E-02	7.81E-02
		801.93	8.73	5.98E-02		8.34E-01
+	CS-135	268.24	16.00	9.41E-03	2.80E-01	2.80E-01
+	I-135	1131.51	22.50	-2.47E-02	3.02E-01	3.48E-01
		1260.41	28.60	2.62E-02		3.02E-01
		1678.03	9.54	2.39E-01		1.17E+00
+	CS-136	153.22	7.46	-1.30E-01	6.27E-02	4.20E-01
		163.89	4.61	1.04E-01		7.96E-01
		176.55	13.56	8.77E-02		2.69E-01
		273.65	12.66	2.29E-02		3.72E-01
		340.57	48.50	-3.71E-02		8.45E-02
		818.50	99.70	6.11E-03		6.27E-02
		1048.07	79.60	1.06E-02		9.61E-02
		1235.34	19.70	1.25E-01		5.02E-01
+	CS-137	661.65	85.12	4.57E-03	7.89E-02	7.89E-02
+	LA-138	788.74	34.00	2.60E-02	1.20E-01	1.63E-01
		1435.80	66.00	-1.18E-02		1.20E-01
+	CE-139	165.85	80.35	4.33E-03	4.66E-02	4.66E-02
+	BA-140	162.64	6.70	1.28E-01	1.87E-01	5.47E-01
		304.84	4.50	5.41E-01		1.01E+00
		423.70	3.20	5.89E-01		1.62E+00
		437.55	2.00	7.49E-01		2.82E+00
		537.32	25.00	-4.94E-03		1.87E-01
+	LA-140	328.77	20.50	-3.70E-02	1.03E-01	2.14E-01
		487.03	45.50	-8.76E-03		1.20E-01
		815.85	23.50	7.05E-02		2.83E-01
		1596.49	95.49	2.24E-02		1.03E-01
+	CE-141	145.44	48.40	-2.02E-02	6.14E-02	6.14E-02
+	CE-143	57.36	11.80	-6.75E-02	1.18E-01	1.81E-01
		293.26	42.00	3.82E-02		1.18E-01
		664.55	5.20	-2.03E-01		1.43E+00
+	CE-144	133.54	10.80	-2.96E-02	2.75E-01	2.75E-01
+	PM-144	476.78	42.00	4.64E-02	6.72E-02	1.24E-01
		618.01	98.60	3.68E-02		6.72E-02
		696.49	99.49	3.03E-02		7.75E-02
+	PM-145	36.85	21.70	8.51E-03	4.88E-02	8.68E-02
		37.36	39.70	9.51E-03		4.88E-02
		42.30	15.10	2.22E-02		1.37E-01
		72.40	2.31	1.71E-01		1.15E+00
+	PM-146	453.90	39.94	3.91E-02	1.40E-01	1.40E-01
		735.90	14.01	-5.32E-02		4.00E-01
		747.13	13.10	-6.27E-02		4.64E-01
+	ND-147	91.11	* 28.90	2.31E-01	1.81E-01	1.81E-01
		531.02	13.10	1.55E-01		3.98E-01
+	PM-149	285.90	3.10	-8.79E-01	1.43E+00	1.43E+00
+	EU-152	121.78	20.50	1.93E-02	1.39E-01	1.39E-01
		244.69	5.40	-3.64E-01		7.41E-01
		344.27	19.13	-3.79E-02		2.19E-01
		778.89	9.20	-1.30E-01		5.97E-01

Analysis Report for 1510084-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-152	964.01	10.40	1.04E-01	1.39E-01	7.02E-01
		1085.78	7.22	4.72E-01		1.17E+00
		1112.02	9.60	-2.31E-02		8.06E-01
		1407.95	14.94	-1.00E-01		5.54E-01
+	GD-153	97.43	31.30	-1.96E-02	8.39E-02	8.39E-02
		103.18	22.20	9.58E-03		1.14E-01
+	EU-154	123.07	40.50	1.54E-02	7.17E-02	7.17E-02
		723.30	19.70	-1.98E-02		3.34E-01
		873.19	11.50	6.13E-02		6.35E-01
		996.32	10.30	-2.72E-01		6.16E-01
		1004.76	17.90	8.84E-02		4.39E-01
		1274.45	35.50	-3.59E-02		1.86E-01
+	EU-155	86.50	30.90	-1.35E-01	8.57E-02	8.57E-02
		105.30	20.70	4.15E-02		1.28E-01
+	EU-156	811.77	10.40	-2.42E-01	5.74E-01	5.74E-01
		1153.47	7.20	1.92E-01		1.07E+00
		1230.71	8.90	-4.58E-02		9.58E-01
+	HO-166M	184.41	72.60	2.82E-02	5.31E-02	5.31E-02
		280.45	29.60	2.36E-03		1.58E-01
		410.94	11.10	4.85E-02		4.27E-01
		711.69	54.10	-4.00E-02		1.20E-01
+	TM-171	66.72	0.14	4.53E+00	1.88E+01	1.88E+01
+	HF-172	81.75	4.52	1.27E-01	2.56E-01	5.80E-01
		125.81	11.30	4.74E-02		2.56E-01
+	LU-172	181.53	20.60	-1.00E-01	1.18E-01	1.75E-01
		810.06	16.63	-1.99E-02		3.99E-01
		912.12	15.25	-1.35E-01		4.23E-01
		1093.66	62.50	-1.99E-02		1.18E-01
+	LU-173	100.72	5.24	-1.31E-01	2.07E-01	4.56E-01
		272.11	21.20	-1.52E-01		2.07E-01
+	HF-175	343.40	84.00	-2.28E-03	5.23E-02	5.23E-02
+	LU-176	88.34	13.30	5.10E-02	4.46E-02	2.28E-01
		201.83	86.00	-7.67E-03		4.55E-02
		306.78	94.00	-4.00E-02		4.46E-02
+	TA-182	67.75	41.20	9.58E-03	6.28E-02	6.28E-02
		1121.30	34.90	-5.88E-02		2.41E-01
		1189.05	16.23	1.36E-01		4.11E-01
		1221.41	26.98	-8.98E-02		2.16E-01
		1231.02	11.44	-3.56E-02		7.43E-01
+	IR-192	308.46	29.68	6.95E-02	9.12E-02	1.61E-01
		468.07	48.10	-6.41E-02		9.12E-02
+	HG-203	279.19	77.30	-2.11E-02	5.87E-02	5.87E-02
+	BI-207	569.67	97.72	-2.96E-03	6.04E-02	6.04E-02
		1063.62	74.90	-2.03E-02		8.53E-02
+	TL-208	583.14	30.22	-1.72E-02	1.84E-01	1.84E-01
		860.37	4.48	-4.04E-01		1.56E+00
		2614.66	35.85	7.48E-02		2.68E-01
+	BI-210M	262.00	45.00	-2.45E-02	9.22E-02	9.22E-02
		300.00	23.00	-6.81E-02		1.77E-01

Analysis Report for 1510084-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PB-210	46.50	4.25	5.93E-02	5.02E-01	5.02E-01
+	PB-211	404.84	2.90	-1.00E-01	1.56E+00	1.56E+00
		831.96	2.90	-3.38E-01		1.84E+00
+	BI-212	727.17	11.80	2.21E-01	5.87E-01	5.87E-01
		1620.62	2.75	0.00E+00		2.44E+00
+	PB-212	238.63	44.60	4.34E-02	9.87E-02	9.87E-02
		300.09	3.41	-4.59E-01		1.19E+00
+	BI-214	609.31	46.30	-6.06E-02	1.28E-01	1.28E-01
		1120.29	15.10	3.62E-02		6.14E-01
		1764.49	15.80	4.23E-01		7.37E-01
		2204.22	4.98	1.77E-02		1.72E+00
+	PB-214	295.21	19.19	-3.13E-03	1.39E-01	2.33E-01
		351.92	37.19	6.86E-03		1.39E-01
+	RN-219	401.80	6.50	1.05E-02	7.03E-01	7.03E-01
+	RA-223	323.87	3.88	-3.90E-01	1.17E+00	1.17E+00
+	RA-224	240.98	3.95	6.17E-01	1.12E+00	1.12E+00
+	RA-225	40.00	31.00	-2.92E-02	6.19E-02	6.19E-02
+	RA-226	186.21	3.28	4.96E-01	1.18E+00	1.18E+00
+	TH-227	50.10	8.40	1.53E-01	2.60E-01	2.60E-01
		236.00	11.50	-8.18E-03		3.65E-01
		256.20	6.30	-8.98E-02		6.12E-01
+	AC-228	338.32	11.40	4.66E-02	2.10E-01	3.70E-01
		911.07	27.70	-8.72E-02		2.10E-01
		969.11	16.60	1.68E-01		4.42E-01
+	TH-230	48.44	16.90	1.08E-01	1.33E-01	1.33E-01
		62.85	4.60	2.62E-01		5.43E-01
		67.67	0.37	1.07E+00		6.99E+00
+	PA-231	283.67	1.60	-1.68E+00	1.82E+00	2.71E+00
		302.67	2.30	-1.16E-01		1.82E+00
+	TH-231	25.64	14.70	2.05E-02	1.49E-01	1.49E-01
		84.21	6.40	-1.58E-01		3.96E-01
+	PA-233	311.98	38.60	-2.21E-02	1.23E-01	1.23E-01
+	PA-234	131.20	20.40	-7.36E-02	1.40E-01	1.40E-01
		733.99	8.80	-6.75E-02		6.58E-01
		946.00	12.00	-2.61E-01		4.76E-01
+	PA-234M	1001.03	0.92	4.37E-01	7.92E+00	7.92E+00
+	TH-234	63.29	3.80	2.52E-01	6.61E-01	6.61E-01
+	U-235	143.76	10.50	-2.44E-02	2.95E-01	2.95E-01
		163.35	4.70	1.02E-01		7.76E-01
		205.31	4.70	-6.92E-02		8.63E-01
+	NP-237	86.50	12.60	-3.32E-01	2.10E-01	2.10E-01
+	NP-239	106.10	22.70	3.89E-02	1.20E-01	1.20E-01
		228.18	10.70	-2.01E-02		3.90E-01
		277.60	14.10	1.42E-01		3.55E-01
+	AM-241	59.54	35.90	-1.08E-02	6.34E-02	6.34E-02
+	AM-243	74.67	66.00	1.59E-02	4.08E-02	4.08E-02
+	CM-243	209.75	3.29	3.40E-01	3.48E-01	1.26E+00

Analysis Report for 1510084-02

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Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
CM-243	228.14	10.60	1.95E-01	3.48E-01	4.07E-01
	277.60	14.00	1.40E-01		3.48E-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	5.11E-01	5.11E-01	1.71E-01	2.30E-01
NA-22	1274.54	99.94	6.61E-02	6.61E-02	-1.28E-02	2.62E-02
NA-24	1368.53	99.99	6.33E-02	6.33E-02	1.05E-02	2.37E-02
	2754.09	99.86	9.42E-02		5.07E-03	3.34E-02
AL-26	1808.65	99.76	5.03E-02	5.03E-02	-6.38E-02	1.59E-02
K-40	1460.81	10.67	8.01E-01	8.01E-01	2.13E-01	3.28E-01
AR-41	1293.64	99.16	1.63E-01	1.63E-01	1.08E-02	6.67E-02
TI-44	67.88	94.40	2.74E-02	2.73E-02	4.18E-03	1.31E-02
	78.34	96.00	2.73E-02		1.80E-02	1.30E-02
SC-46	889.25	99.98	6.25E-02	6.25E-02	-2.01E-02	2.64E-02
	1120.51	99.99	9.27E-02		5.47E-03	4.03E-02
V-48	983.52	99.98	6.61E-02	6.61E-02	4.41E-04	2.77E-02
	1312.10	97.50	9.65E-02		-5.32E-03	4.11E-02
CR-51	320.08	9.83	5.03E-01	5.03E-01	-8.47E-02	2.33E-01
MN-54	834.83	99.97	5.62E-02	5.62E-02	-1.17E-02	2.35E-02
CO-56	846.75	99.96	7.09E-02	7.09E-02	5.40E-03	3.08E-02
	1037.75	14.03	5.38E-01		1.06E-01	2.29E-01
	1238.25	67.00	1.43E-01		1.90E-02	6.15E-02
	1771.40	15.51	5.67E-01		3.75E-02	2.25E-01
	2598.48	16.90	3.88E-01		1.76E-02	1.23E-01
CO-57	122.06	85.51	3.34E-02	3.34E-02	4.64E-03	1.58E-02
	136.48	10.60	2.93E-01		9.71E-02	1.38E-01

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Analysis Report for 1510084-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-58	810.76	99.40	6.64E-02	6.64E-02	-3.30E-03	2.87E-02
FE-59	1099.22	56.50	1.36E-01	1.36E-01	-7.78E-03	5.73E-02
	1291.56	43.20	1.77E-01		2.64E-02	7.27E-02
CO-60	1173.22	100.00	7.78E-02	7.78E-02	0.00E+00	3.26E-02
	1332.49	100.00	8.74E-02		2.39E-02	3.66E-02
ZN-65	1115.52	50.75	1.53E-01	1.53E-01	-5.27E-03	6.46E-02
GA-67	93.31	35.70	9.16E-02	9.16E-02	1.31E-01	4.38E-02
	208.95	2.24	1.85E+00		4.93E-02	8.69E-01
	300.22	16.00	2.61E-01		-1.04E-01	1.20E-01
SE-75	121.11	16.70	1.69E-01	5.08E-02	-2.94E-02	7.99E-02
	136.00	59.20	5.08E-02		1.42E-02	2.39E-02
	264.65	59.80	7.45E-02		3.42E-02	3.47E-02
	279.53	25.20	1.80E-01		-6.48E-02	8.38E-02
	400.65	11.40	4.35E-01		2.02E-01	1.98E-01
RB-82	776.52	13.00	4.39E-01	4.39E-01	-8.66E-02	1.87E-01
RB-83	520.41	46.00	1.03E-01	1.03E-01	-1.06E-01	4.54E-02
	529.64	30.30	1.81E-01		8.83E-02	8.11E-02
	552.65	16.40	3.74E-01		-7.70E-02	1.69E-01
KR-85	513.99	0.43	1.84E+01	1.84E+01	1.50E+01	8.54E+00
SR-85	513.99	99.27	8.04E-02	8.04E-02	6.55E-02	3.74E-02
Y-88	898.02	93.40	5.82E-02	5.82E-02	-1.16E-02	2.39E-02
	1836.01	99.38	9.11E-02		1.16E-02	3.61E-02
NB-93M	16.57	9.43	2.17E-01	2.17E-01	3.00E-01	1.04E-01
NB-94	702.63	100.00	7.39E-02	7.39E-02	1.26E-02	3.31E-02
	871.10	100.00	7.49E-02		8.86E-03	3.27E-02
NB-95	765.79	99.81	6.25E-02	6.25E-02	4.15E-03	2.71E-02
NB-95M	235.69	25.00	1.70E-01	1.70E-01	-3.82E-03	7.96E-02
ZR-95	724.18	43.70	1.47E-01	1.04E-01	-3.82E-02	6.44E-02
	756.72	55.30	1.04E-01		-2.12E-02	4.47E-02
MO-99	181.06	6.20	5.71E-01	4.65E-01	-6.40E-01	2.68E-01
	739.58	12.80	4.65E-01		8.76E-02	2.00E-01
	778.00	4.50	1.24E+00		-2.71E-01	5.25E-01
RU-103	497.08	89.00	5.81E-02	5.81E-02	-1.92E-02	2.59E-02
RU-106	621.84	9.80	5.78E-01	5.78E-01	4.44E-02	2.54E-01
AG-108M	433.93	89.90	5.03E-02	5.03E-02	-2.34E-02	2.25E-02
	614.37	90.40	6.76E-02		-1.03E-02	3.01E-02
	722.95	90.50	7.26E-02		-4.31E-03	3.19E-02
CD-109	88.03	3.72	7.71E-01	7.71E-01	-3.64E-01	3.68E-01
AG-110M	657.75	93.14	7.30E-02	7.30E-02	3.31E-02	3.26E-02
	677.61	10.53	4.35E-01		-5.81E-01	1.82E-01
	706.67	16.46	4.52E-01		1.98E-01	2.02E-01
	763.93	21.98	2.55E-01		-8.57E-02	1.09E-01
	884.67	71.63	1.00E-01		3.59E-02	4.34E-02
	1384.27	23.94	2.97E-01		4.53E-02	1.18E-01
CD-113M	263.70	0.02	1.89E+02	1.89E+02	4.04E+01	8.78E+01
SN-113	255.12	1.93	1.97E+00	6.98E-02	-7.11E-01	9.11E-01
	391.69	64.90	6.98E-02		-8.14E-03	3.15E-02
TE123M	159.00	84.10	4.04E-02	4.04E-02	7.11E-03	1.90E-02
SB-124	602.71	97.87	7.46E-02	7.46E-02	3.25E-02	3.39E-02
	645.85	7.26	7.70E-01		3.30E-01	3.36E-01
	722.78	11.10	6.21E-01		6.07E-02	2.75E-01
	1691.02	49.00	1.42E-01		-4.54E-02	5.31E-02
I-125	35.49	6.49	2.84E-01	2.84E-01	-8.84E-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)
SB-125	176.33	6.89	5.26E-01	1.55E-01	1.72E-01	2.47E-01
	427.89	29.33	1.55E-01		-3.22E-02	6.93E-02
	463.38	10.35	5.45E-01		2.78E-01	2.48E-01
	600.56	17.80	4.03E-01		6.13E-02	1.83E-01
	635.90	11.32	4.99E-01		-9.87E-02	2.19E-01
SB-126	414.70	83.30	6.42E-02	6.42E-02	1.09E-02	2.93E-02
	666.33	99.60	7.56E-02		1.79E-02	3.41E-02
	695.00	99.60	7.64E-02		4.14E-02	3.43E-02
	720.50	53.80	1.28E-01		1.18E-02	5.67E-02
SN-126	87.57	37.00	7.73E-02	7.73E-02	-3.65E-02	3.69E-02
SB-127	473.00	25.00	1.80E-01	1.49E-01	-8.98E-02	7.93E-02
	685.20	35.70	1.49E-01		-8.77E-02	6.36E-02
	783.80	14.70	3.81E-01		-4.09E-02	1.61E-01
I-129	29.78	57.00	3.36E-02	3.36E-02	-1.89E-02	1.61E-02
	33.60	13.20	1.38E-01		-7.60E-02	6.54E-02
	39.58	7.52	2.53E-01		-1.20E-01	1.20E-01
I-131	284.30	6.05	7.18E-01	5.76E-02	-4.87E-01	3.32E-01
	364.48	81.20	5.76E-02		4.77E-03	2.63E-02
	636.97	7.26	8.05E-01		-1.45E-01	3.54E-01
	722.89	1.80	3.85E+00		3.77E-01	1.70E+00
TE-132	49.72	13.10	1.69E-01	4.99E-02	9.95E-02	8.06E-02
	228.16	88.00	4.99E-02		2.39E-02	2.34E-02
BA-133	81.00	33.00	8.05E-02	8.05E-02	2.41E-02	3.83E-02
	302.84	17.80	2.35E-01		-1.50E-02	1.08E-01
	356.01	60.00	8.78E-02		2.95E-02	4.06E-02
I-133	529.87	86.30	6.80E-02	6.80E-02	3.31E-02	3.04E-02
XE-133	81.00	38.00	7.07E-02	7.07E-02	2.12E-02	3.37E-02
CS-134	563.23	8.38	7.46E-01	7.40E-02	-7.48E-02	3.36E-01
	569.32	15.43	3.82E-01		-1.87E-02	1.71E-01
	604.70	97.60	7.40E-02		3.36E-02	3.36E-02
	795.84	85.40	7.81E-02		1.80E-02	3.39E-02
	801.93	8.73	8.34E-01		5.98E-02	3.67E-01
CS-135	268.24	16.00	2.80E-01	2.80E-01	9.41E-03	1.30E-01
I-135	1131.51	22.50	3.48E-01	3.02E-01	-2.47E-02	1.41E-01
	1260.41	28.60	3.02E-01		2.62E-02	1.22E-01
	1678.03	9.54	1.17E+00		2.39E-01	4.71E-01
CS-136	153.22	7.46	4.20E-01	6.27E-02	-1.30E-01	1.97E-01
	163.89	4.61	7.96E-01		1.04E-01	3.76E-01
	176.55	13.56	2.69E-01		8.77E-02	1.26E-01
	273.65	12.66	3.72E-01		2.29E-02	1.74E-01
	340.57	48.50	8.45E-02		-3.71E-02	3.83E-02
	818.50	99.70	6.27E-02		6.11E-03	2.68E-02
	1048.07	79.60	9.61E-02		1.06E-02	4.09E-02
	1235.34	19.70	5.02E-01		1.25E-01	2.17E-01
CS-137	661.65	85.12	7.89E-02	7.89E-02	4.57E-03	3.52E-02
LA-138	788.74	34.00	1.63E-01	1.20E-01	2.60E-02	6.90E-02
	1435.80	66.00	1.20E-01		-1.18E-02	4.84E-02
CE-139	165.85	80.35	4.66E-02	4.66E-02	4.33E-03	2.20E-02
BA-140	162.64	6.70	5.47E-01	1.87E-01	1.28E-01	2.59E-01
	304.84	4.50	1.01E+00		5.41E-01	4.66E-01
	423.70	3.20	1.62E+00		5.89E-01	7.37E-01
	437.55	2.00	2.82E+00		7.49E-01	1.29E+00
	537.32	25.00	1.87E-01		-4.94E-03	8.17E-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)		
LA-140	328.77	20.50	2.14E-01	1.03E-01	-3.70E-02	9.81E-02		
	487.03	45.50	1.20E-01		-8.76E-03	5.39E-02		
	815.85	23.50	2.83E-01		7.05E-02	1.23E-01		
	1596.49	95.49	1.03E-01		2.24E-02	4.25E-02		
CE-141	145.44	48.40	6.14E-02	6.14E-02	-2.02E-02	2.88E-02		
CE-143	57.36	11.80	1.81E-01	1.18E-01	-6.75E-02	8.58E-02		
	293.26	42.00	1.18E-01		3.82E-02	5.47E-02		
	664.55	5.20	1.43E+00		-2.03E-01	6.41E-01		
CE-144	133.54	10.80	2.75E-01	2.75E-01	-2.96E-02	1.29E-01		
PM-144	476.78	42.00	1.24E-01	6.72E-02	4.64E-02	5.59E-02		
	618.01	98.60	6.72E-02		3.68E-02	3.02E-02		
	696.49	99.49	7.75E-02		3.03E-02	3.49E-02		
PM-145	36.85	21.70	8.68E-02	4.88E-02	8.51E-03	4.13E-02		
	37.36	39.70	4.88E-02		9.51E-03	2.32E-02		
	42.30	15.10	1.37E-01		2.22E-02	6.53E-02		
	72.40	2.31	1.15E+00		1.71E-01	5.51E-01		
PM-146	453.90	39.94	1.40E-01	1.40E-01	3.91E-02	6.38E-02		
	735.90	14.01	4.00E-01		-5.32E-02	1.71E-01		
	747.13	13.10	4.64E-01		-6.27E-02	2.01E-01		
+ ND-147	91.11	* 28.90	1.81E-01	1.81E-01	2.31E-01	8.83E-02		
	531.02	13.10	3.98E-01		1.55E-01	1.77E-01		
PM-149	285.90	3.10	1.43E+00	1.43E+00	-8.79E-01	6.64E-01		
EU-152	121.78	20.50	1.39E-01	1.39E-01	1.93E-02	6.56E-02		
	244.69	5.40	7.41E-01		-3.64E-01	3.44E-01		
	344.27	19.13	2.19E-01		-3.79E-02	9.92E-02		
	778.89	9.20	5.97E-01		-1.30E-01	2.52E-01		
	964.01	10.40	7.02E-01		1.04E-01	3.00E-01		
	1085.78	7.22	1.17E+00		4.72E-01	5.04E-01		
	1112.02	9.60	8.06E-01		-2.31E-02	3.40E-01		
	1407.95	14.94	5.54E-01		-1.00E-01	2.27E-01		
	GD-153	97.43	31.30		8.39E-02	8.39E-02	-1.96E-02	3.97E-02
		103.18	22.20		1.14E-01		9.58E-03	5.35E-02
EU-154	123.07	40.50	7.17E-02	7.17E-02	1.54E-02	3.38E-02		
	723.30	19.70	3.34E-01		-1.98E-02	1.47E-01		
	873.19	11.50	6.35E-01		6.13E-02	2.76E-01		
	996.32	10.30	6.16E-01		-2.72E-01	2.56E-01		
	1004.76	17.90	4.39E-01		8.84E-02	1.89E-01		
EU-155	1274.45	35.50	1.86E-01	8.57E-02	-3.59E-02	7.38E-02		
	86.50	30.90	8.57E-02		-1.35E-01	4.07E-02		
	105.30	20.70	1.28E-01		4.15E-02	6.06E-02		
EU-156	811.77	10.40	5.74E-01	5.74E-01	-2.42E-01	2.44E-01		
	1153.47	7.20	1.07E+00		1.92E-01	4.47E-01		
	1230.71	8.90	9.58E-01		-4.58E-02	4.05E-01		
HO-166M	184.41	72.60	5.31E-02	5.31E-02	2.82E-02	2.50E-02		
	280.45	29.60	1.58E-01		2.36E-03	7.39E-02		
	410.94	11.10	4.27E-01		4.85E-02	1.93E-01		
	711.69	54.10	1.20E-01		-4.00E-02	5.26E-02		
TM-171	66.72	0.14	1.88E+01	1.88E+01	4.53E+00	8.98E+00		
HF-172	81.75	4.52	5.80E-01	2.56E-01	1.27E-01	2.76E-01		
	125.81	11.30	2.56E-01		4.74E-02	1.21E-01		
LU-172	181.53	20.60	1.75E-01	1.18E-01	-1.00E-01	8.24E-02		
	810.06	16.63	3.99E-01		-1.99E-02	1.73E-01		
	912.12	15.25	4.23E-01		-1.35E-01	1.79E-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)
LU-172	1093.66	62.50	1.18E-01	1.18E-01	-1.99E-02	4.92E-02
LU-173	100.72	5.24	4.56E-01	2.07E-01	-1.31E-01	2.14E-01
	272.11	21.20	2.07E-01		-1.52E-01	9.64E-02
HF-175	343.40	84.00	5.23E-02	5.23E-02	-2.28E-03	2.39E-02
LU-176	88.34	13.30	2.28E-01	4.46E-02	5.10E-02	1.09E-01
	201.83	86.00	4.55E-02		-7.67E-03	2.13E-02
	306.78	94.00	4.46E-02		-4.00E-02	2.05E-02
TA-182	67.75	41.20	6.28E-02	6.28E-02	9.58E-03	3.00E-02
	1121.30	34.90	2.41E-01		-5.88E-02	1.03E-01
	1189.05	16.23	4.11E-01		1.36E-01	1.66E-01
	1221.41	26.98	2.16E-01		-8.98E-02	8.36E-02
	1231.02	11.44	7.43E-01		-3.56E-02	3.14E-01
IR-192	308.46	29.68	1.61E-01	9.12E-02	6.95E-02	7.46E-02
	468.07	48.10	9.12E-02		-6.41E-02	4.03E-02
HG-203	279.19	77.30	5.87E-02	5.87E-02	-2.11E-02	2.73E-02
BI-207	569.67	97.72	6.04E-02	6.04E-02	-2.96E-03	2.70E-02
	1063.62	74.90	8.53E-02		-2.03E-02	3.50E-02
TL-208	583.14	30.22	1.84E-01	1.84E-01	-1.72E-02	8.15E-02
	860.37	4.48	1.56E+00		-4.04E-01	6.75E-01
	2614.66	35.85	2.68E-01		7.48E-02	1.00E-01
BI-210M	262.00	45.00	9.22E-02	9.22E-02	-2.45E-02	4.28E-02
	300.00	23.00	1.77E-01		-6.81E-02	8.09E-02
PB-210	46.50	4.25	5.02E-01	5.02E-01	5.93E-02	2.39E-01
PB-211	404.84	2.90	1.56E+00	1.56E+00	-1.00E-01	7.03E-01
	831.96	2.90	1.84E+00		-3.38E-01	7.62E-01
BI-212	727.17	11.80	5.87E-01	5.87E-01	2.21E-01	2.60E-01
	1620.62	2.75	2.44E+00		0.00E+00	9.12E-01
PB-212	238.63	44.60	9.87E-02	9.87E-02	4.34E-02	4.63E-02
	300.09	3.41	1.19E+00		-4.59E-01	5.46E-01
BI-214	609.31	46.30	1.28E-01	1.28E-01	-6.06E-02	5.69E-02
	1120.29	15.10	6.14E-01		3.62E-02	2.67E-01
	1764.49	15.80	7.37E-01		4.23E-01	3.11E-01
	2204.22	4.98	1.72E+00		1.77E-02	6.43E-01
PB-214	295.21	19.19	2.33E-01	1.39E-01	-3.13E-03	1.08E-01
	351.92	37.19	1.39E-01		6.86E-03	6.41E-02
RN-219	401.80	6.50	7.03E-01	7.03E-01	1.05E-02	3.17E-01
RA-223	323.87	3.88	1.17E+00	1.17E+00	-3.90E-01	5.39E-01
RA-224	240.98	3.95	1.12E+00	1.12E+00	6.17E-01	5.27E-01
RA-225	40.00	31.00	6.19E-02	6.19E-02	-2.92E-02	2.94E-02
RA-226	186.21	3.28	1.18E+00	1.18E+00	4.96E-01	5.55E-01
TH-227	50.10	8.40	2.60E-01	2.60E-01	1.53E-01	1.24E-01
	236.00	11.50	3.65E-01		-8.18E-03	1.71E-01
	256.20	6.30	6.12E-01		-8.98E-02	2.83E-01
AC-228	338.32	11.40	3.70E-01	2.10E-01	4.66E-02	1.69E-01
	911.07	27.70	2.10E-01		-8.72E-02	8.72E-02
	969.11	16.60	4.42E-01		1.68E-01	1.89E-01
TH-230	48.44	16.90	1.33E-01	1.33E-01	1.08E-01	6.35E-02
	62.85	4.60	5.43E-01		2.62E-01	2.59E-01
	67.67	0.37	6.99E+00		1.07E+00	3.34E+00
PA-231	283.67	1.60	2.71E+00	1.82E+00	-1.68E+00	1.26E+00
	302.67	2.30	1.82E+00		-1.16E-01	8.35E-01
TH-231	25.64	14.70	1.49E-01	1.49E-01	2.05E-02	7.13E-02
	84.21	6.40	3.96E-01		-1.58E-01	1.88E-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)
PA-233	311.98	38.60	1.23E-01	1.23E-01	-2.21E-02	5.70E-02
PA-234	131.20	20.40	1.40E-01	1.40E-01	-7.36E-02	6.57E-02
	733.99	8.80	6.58E-01		-6.75E-02	2.83E-01
	946.00	12.00	4.76E-01		-2.61E-01	1.95E-01
PA-234M	1001.03	0.92	7.92E+00	7.92E+00	4.37E-01	3.37E+00
TH-234	63.29	3.80	6.61E-01	6.61E-01	2.52E-01	3.16E-01
U-235	143.76	10.50	2.95E-01	2.95E-01	-2.44E-02	1.39E-01
	163.35	4.70	7.76E-01		1.02E-01	3.66E-01
	205.31	4.70	8.63E-01		-6.92E-02	4.06E-01
NP-237	86.50	12.60	2.10E-01	2.10E-01	-3.32E-01	9.98E-02
NP-239	106.10	22.70	1.20E-01	1.20E-01	3.89E-02	5.69E-02
	228.18	10.70	3.90E-01		-2.01E-02	1.82E-01
	277.60	14.10	3.55E-01		1.42E-01	1.66E-01
AM-241	59.54	35.90	6.34E-02	6.34E-02	-1.08E-02	3.02E-02
AM-243	74.67	66.00	4.08E-02	4.08E-02	1.59E-02	1.95E-02
CM-243	209.75	3.29	1.26E+00	3.48E-01	3.40E-01	5.94E-01
	228.14	10.60	4.07E-01		1.95E-01	1.91E-01
	277.60	14.00	3.48E-01		1.40E-01	1.63E-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.

Analysis Report for 1510084-02
BLANK

 ***** 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: 3704

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	9	36
17:	31	46	25	33	29	25	30	22
25:	23	19	20	18	14	15	14	9
33:	14	18	17	14	9	14	15	18
41:	16	13	10	21	23	14	16	18
49:	15	14	22	13	8	14	11	6
57:	8	16	17	12	20	23	22	16
65:	14	16	17	20	19	17	15	12
73:	15	21	18	18	20	17	13	8
81:	11	11	21	17	13	11	13	13
89:	10	16	31	38	30	14	13	10
97:	9	10	4	6	10	12	10	12
105:	13	13	12	6	10	11	9	13
113:	16	10	10	6	10	10	11	13
121:	9	5	16	12	7	12	12	7
129:	11	7	7	8	10	9	9	12
137:	15	9	9	13	7	5	15	9
145:	7	10	11	7	6	12	7	11
153:	10	10	12	7	4	13	11	9
161:	10	13	8	9	9	18	12	17
169:	6	14	9	9	10	13	12	12
177:	9	4	9	8	7	2	11	13
185:	17	15	14	4	5	9	8	10
193:	5	12	11	10	7	9	6	12
201:	10	10	13	4	9	7	10	9
209:	12	11	10	10	7	10	4	8
217:	11	7	4	5	12	10	13	11
225:	2	7	8	7	12	8	11	4
233:	4	5	6	5	15	14	6	8
241:	11	6	2	9	8	3	8	4
249:	8	8	4	4	2	9	5	9
257:	7	1	5	8	8	4	5	11
265:	7	9	4	8	3	7	7	7
273:	6	11	6	12	8	11	6	5
281:	6	2	4	10	8	7	5	5
289:	5	10	11	6	4	10	2	5
297:	7	0	7	8	5	3	4	3
305:	6	7	7	7	2	3	2	18
313:	7	2	5	11	4	8	5	8
321:	5	6	3	5	6	5	2	5
329:	7	4	2	4	5	3	8	4
337:	1	4	6	4	3	2	3	5
345:	2	8	4	2	7	7	4	10
353:	10	4	2	8	4	5	4	3
361:	5	3	3	3	2	10	2	6

369: 2 6 2 6 3 1 2 4

Sample Title: BLANK

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

801: 2 1 1 2 2 4 1 3

Sample Title: BLANK

Channel	1	2	3	4	5	6	7	8
809:	0	1	1	3	0	1	1	2
817:	2	1	3	2	0	0	1	0
825:	2	2	1	2	0	3	0	0
833:	2	0	1	0	1	2	0	0
841:	5	1	2	1	3	1	1	1
849:	4	1	3	0	1	4	2	2
857:	1	3	2	1	1	1	1	2
865:	0	3	3	0	2	1	1	2
873:	1	4	2	1	1	2	1	0
881:	4	1	2	3	0	1	1	2
889:	0	0	1	1	4	2	0	2
897:	0	1	0	1	1	0	0	2
905:	0	2	0	1	0	1	1	0
913:	3	1	1	2	2	2	5	1
921:	2	5	0	2	4	2	0	0
929:	2	2	1	0	1	2	0	1
937:	1	1	3	0	1	2	0	0
945:	1	0	1	0	3	0	0	4
953:	2	2	1	1	1	1	2	1
961:	2	1	0	0	2	1	2	3
969:	0	0	2	1	1	0	1	1
977:	0	1	0	1	1	1	1	2
985:	0	2	1	0	2	2	1	2
993:	2	0	0	0	1	2	1	0
1001:	1	3	1	1	1	2	3	1
1009:	0	2	0	1	0	2	1	0
1017:	1	0	1	2	0	1	0	0
1025:	2	2	2	0	1	0	2	1
1033:	1	2	1	0	1	2	0	3
1041:	1	1	1	0	3	2	1	1
1049:	1	0	2	1	1	0	2	0
1057:	2	1	0	1	0	2	1	1
1065:	0	2	0	2	0	2	1	0
1073:	1	1	3	0	0	0	0	0
1081:	0	2	1	0	3	0	4	1
1089:	2	0	1	2	0	0	0	2
1097:	2	1	1	1	1	0	2	3
1105:	1	1	2	0	2	1	2	0
1113:	1	1	0	3	0	2	1	1
1121:	2	1	2	3	0	4	3	0
1129:	0	1	1	1	0	0	0	1
1137:	0	0	2	1	0	2	0	1
1145:	0	0	2	0	0	2	2	0
1153:	0	1	1	0	3	0	2	0
1161:	0	1	2	3	0	1	1	1
1169:	1	2	0	1	1	1	1	0
1177:	2	1	2	0	1	1	0	0
1185:	1	1	0	0	1	1	0	2
1193:	0	0	0	0	0	1	0	2
1201:	1	0	2	3	0	0	2	0
1209:	1	0	1	1	0	1	1	1
1217:	0	0	0	1	1	1	1	0
1225:	0	1	1	1	1	1	1	1

1233: 2 0 2 0 3 3 2 1

Sample Title: BLANK

Channel	1	2	3	4	5	6	7	8
1241:	0	2	2	1	0	1	0	1
1249:	2	0	0	2	0	0	1	1
1257:	0	0	0	3	2	0	0	0
1265:	2	0	0	0	3	0	0	1
1273:	1	1	0	1	0	1	0	2
1281:	0	1	0	0	0	1	1	0
1289:	1	2	1	0	1	0	1	2
1297:	0	0	1	0	1	0	3	2
1305:	4	0	0	1	1	0	1	3
1313:	1	0	1	3	0	2	2	0
1321:	0	0	0	2	1	1	0	0
1329:	2	2	0	0	1	2	0	2
1337:	0	0	1	1	0	0	0	1
1345:	1	1	0	0	1	0	1	0
1353:	1	1	2	0	1	0	0	0
1361:	0	0	1	1	0	0	0	1
1369:	0	0	1	0	0	0	0	0
1377:	0	1	0	1	2	0	1	0
1385:	0	1	0	0	0	0	1	1
1393:	0	0	1	1	0	1	0	1
1401:	1	1	0	2	0	2	0	0
1409:	1	0	1	1	1	1	2	0
1417:	0	1	1	1	1	0	1	1
1425:	0	0	0	1	1	1	0	0
1433:	0	0	1	2	1	1	1	0
1441:	0	1	2	1	0	0	0	2
1449:	1	1	2	0	1	1	0	0
1457:	1	2	1	0	0	1	1	0
1465:	1	1	0	0	0	0	0	0
1473:	0	2	1	0	1	1	0	1
1481:	0	0	0	1	0	1	1	0
1489:	1	1	0	1	1	1	0	2
1497:	1	0	0	0	0	0	0	0
1505:	1	0	1	0	0	2	0	0
1513:	1	0	1	0	1	1	0	1
1521:	1	1	1	0	0	1	1	0
1529:	0	0	1	0	0	0	0	0
1537:	0	2	0	3	0	0	0	1
1545:	1	0	0	1	0	1	0	0
1553:	1	0	1	0	0	1	1	1
1561:	0	1	0	2	0	0	0	0
1569:	0	0	0	0	1	0	0	0
1577:	0	0	0	0	1	1	1	0
1585:	1	2	0	0	0	1	0	0
1593:	0	1	1	1	0	3	1	0
1601:	1	2	0	0	0	2	0	0
1609:	0	0	0	0	0	0	1	0
1617:	0	1	0	0	2	0	0	0
1625:	0	0	1	0	0	0	0	0
1633:	0	0	1	1	1	0	0	0
1641:	0	0	0	1	2	0	0	0
1649:	0	0	1	0	0	0	1	0
1657:	0	0	0	1	0	0	0	1

1665: 1 0 0 0 0 0 0 0

Sample Title: BLANK

Channel	1	2	3	4	5	6	7	8
1673:	0	0	2	0	1	0	0	1
1681:	1	1	0	1	1	1	1	1
1689:	0	1	0	0	0	0	0	2
1697:	0	0	0	1	2	3	0	0
1705:	1	0	1	0	0	0	1	1
1713:	1	2	0	0	0	0	0	0
1721:	0	0	0	0	1	0	1	0
1729:	0	0	0	1	0	1	0	0
1737:	0	1	0	1	0	1	1	1
1745:	0	0	0	2	0	0	0	0
1753:	0	0	1	0	0	0	0	1
1761:	0	0	2	0	0	2	1	2
1769:	1	1	0	0	0	0	0	0
1777:	0	0	0	1	0	0	0	1
1785:	0	0	0	0	0	1	0	0
1793:	0	1	0	0	1	0	0	0
1801:	2	1	0	0	0	0	0	0
1809:	0	0	0	0	1	0	1	0
1817:	1	0	0	0	1	0	0	1
1825:	1	1	0	0	1	1	0	1
1833:	0	0	1	1	1	0	0	1
1841:	0	0	0	0	0	0	0	0
1849:	0	0	0	0	0	0	0	1
1857:	0	0	2	0	0	0	1	1
1865:	0	1	0	0	0	1	0	1
1873:	0	0	0	1	0	0	1	0
1881:	0	0	0	0	1	1	0	0
1889:	0	0	0	0	1	0	0	0
1897:	1	0	1	0	0	0	0	0
1905:	0	1	0	0	1	1	0	1
1913:	0	0	0	0	0	0	1	0
1921:	0	0	0	1	1	0	1	0
1929:	0	1	0	0	0	0	1	0
1937:	2	0	1	0	0	0	0	0
1945:	0	0	0	0	0	0	0	0
1953:	0	0	1	0	0	2	0	0
1961:	0	0	1	0	0	0	0	0
1969:	1	1	0	0	0	0	1	0
1977:	0	0	0	0	0	0	0	0
1985:	0	0	1	1	0	1	0	1
1993:	1	0	0	0	0	1	0	0
2001:	1	0	0	0	0	0	0	0
2009:	0	0	0	0	0	0	0	0
2017:	0	1	1	0	0	0	1	0
2025:	0	0	0	0	0	1	0	0
2033:	0	0	0	0	1	1	0	0
2041:	1	0	0	0	0	0	0	1
2049:	0	0	0	0	0	1	0	0
2057:	0	0	0	0	0	0	0	2
2065:	0	1	0	0	0	0	0	0
2073:	0	0	2	0	0	0	0	0
2081:	0	0	0	0	1	0	0	0
2089:	0	0	0	0	0	0	0	0

2097: 0 0 1 1 0 0 1 1

Sample Title: BLANK

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

2529: 0 0 0 0 0 0 0 0 0

Sample Title: BLANK

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

2961: 0 1 0 0 0 0 0 0 0

Sample Title: BLANK

Channel	1	0	0	1	0	0	0	0
2969:	1	0	0	1	0	0	0	0
2977:	0	0	0	0	0	0	0	0
2985:	0	0	0	0	0	0	0	0
2993:	1	0	0	0	0	0	0	0
3001:	1	0	0	0	0	0	0	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	1	0	0
3033:	0	0	1	0	0	0	0	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	1	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	0	0
3081:	1	0	0	0	0	1	0	1
3089:	0	0	1	0	0	0	0	1
3097:	1	0	0	0	0	0	0	1
3105:	0	0	0	0	0	0	0	0
3113:	0	0	1	2	0	0	0	0
3121:	0	0	0	0	0	0	0	0
3129:	0	0	0	1	0	0	0	0
3137:	2	0	1	0	1	0	1	0
3145:	0	0	0	0	0	0	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	0	1	0	0
3177:	0	0	0	0	0	0	0	2
3185:	0	0	0	0	0	0	0	0
3193:	1	0	1	0	0	0	0	0
3201:	0	0	1	1	0	0	0	1
3209:	0	0	0	0	0	0	0	1
3217:	1	0	0	0	0	0	0	1
3225:	0	0	0	0	0	0	0	1
3233:	0	0	1	0	0	0	0	0
3241:	0	0	0	1	0	1	0	0
3249:	2	0	0	0	0	0	0	0
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	0	0	0	0	0	0
3289:	1	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	1	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:	2	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	1	0	0	0	0	0	0
3353:	0	0	0	1	0	0	0	0
3361:	0	0	0	0	0	0	0	1
3369:	0	0	0	0	0	1	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	1	0	0	0

3393: 0 0 0 0 1 1 0 0

Sample Title: BLANK

3401:	0	0	0	0	1	0	0	0
3409:	0	0	1	0	0	0	0	0
3417:	0	0	0	0	0	0	0	1
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	1	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	1	0
3465:	0	0	0	0	0	0	0	1
3473:	0	0	0	0	0	1	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	1	0	0	0	0	0	1
3497:	0	0	0	0	0	0	0	0
3505:	0	0	1	0	1	1	1	0
3513:	0	0	0	0	1	0	1	0
3521:	0	0	0	0	0	0	0	0
3529:	1	0	1	0	0	0	0	0
3537:	0	0	0	0	0	0	0	1
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	1	0	0	0
3561:	0	0	0	1	0	0	0	0
3569:	0	1	0	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	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	1	0	0	1	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	1
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	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	1	0	0	1	2	0	0
3689:	0	0	0	0	1	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	1	0	0	1	1	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	1	1	0	0
3737:	1	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	1	0	0	0	0	0
3761:	0	0	0	2	0	0	1	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	1	0
3793:	0	0	0	0	0	1	0	0
3801:	0	0	1	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	1	0	0	0	0	0	1	0

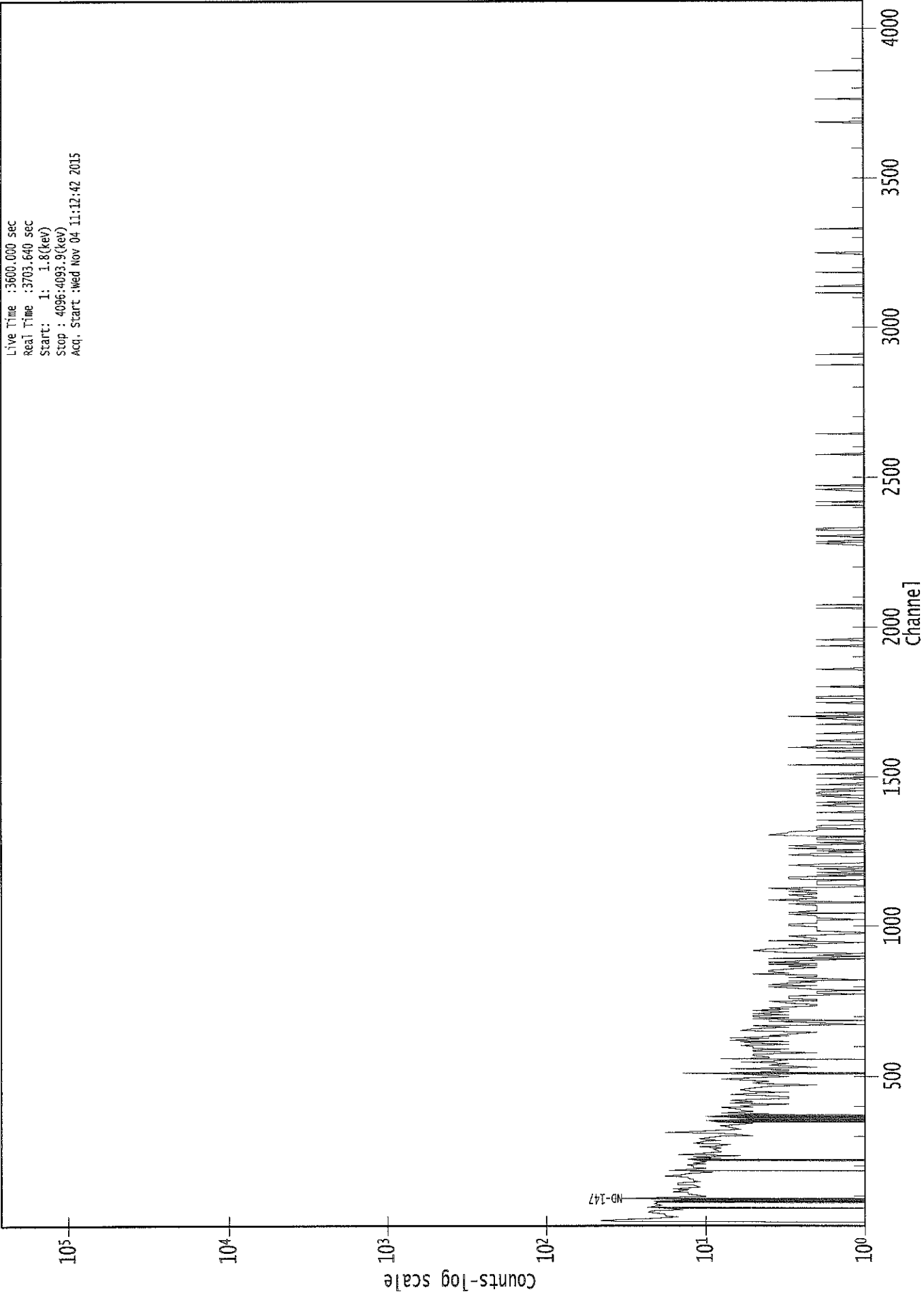
3825: 0 0 0 0 0 0 0 0 0

Sample Title: BLANK

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	2	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	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	1	0	0	0	0	0	0
3905:	0	0	0	0	0	1	0	1
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	1	0	0	0
3953:	0	0	0	1	0	0	0	1
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	0	0	0	0	0	0	0
4009:	0	0	1	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	1	0	0	0	0	1
4033:	0	0	0	0	0	0	0	1
4041:	1	0	0	0	0	0	0	1
4049:	0	0	0	0	0	0	0	1
4057:	0	0	0	0	0	0	1	0
4065:	0	0	0	0	0	0	0	1
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	1	0	0	0
4089:	0	0	0	0	0	1	0	0

0000029110.CNF

Live Time : 3600.000 sec
Real Time : 3703.640 sec
Start : 1: 1.8(keV)
Stop : 4096:4093.9(keV)
Acq. Start : Wed Nov 04 11:12:42 2015



ROI Type: 1

Analysis Report for 1510084-03
CP0604S06-07-DUP


1114

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-03
Sample Description : CP0604S06-07-DUP
Sample Type : SOIL

Sample Size : 6.538E+02 grams
Facility : Countroom

Sample Taken On : 10/9/2015 9:45:24AM
Acquisition Started : 11/4/2015 8:42:06AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3617.3 seconds

Dead Time : 0.48 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 9 - 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 : 29098

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-03
CP0604S06-07-DUP

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 9:42:25AM
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	63.69	63.91	0.0000	0.00
2	74.94	75.15	0.0000	0.00
3	77.63	77.85	0.0000	0.00
4	87.52	87.73	0.0000	0.00
5	92.95	93.16	0.0000	0.00
6	185.50	185.65	0.0000	0.00
7	201.21	201.35	0.0000	0.00
8	208.93	209.08	0.0000	0.00
9	239.00	239.13	0.0000	0.00
10	241.98	242.11	0.0000	0.00
11	270.32	270.44	0.0000	0.00
12	277.18	277.29	0.0000	0.00
13	295.56	295.66	0.0000	0.00
14	339.04	339.11	0.0000	0.00
15	352.38	352.45	0.0000	0.00
16	409.99	410.03	0.0000	0.00
17	463.26	463.27	0.0000	0.00
18	511.36	511.35	0.0000	0.00
19	583.86	583.82	0.0000	0.00
20	609.68	609.62	0.0000	0.00
21	727.83	727.71	0.0000	0.00
22	861.12	860.95	0.0000	0.00
23	911.91	911.72	0.0000	0.00
24	917.14	916.94	0.0000	0.00
25	933.95	933.75	0.0000	0.00
26	965.17	964.96	0.0000	0.00
27	969.68	969.46	0.0000	0.00
28	1121.60	1121.31	0.0000	0.00
29	1157.33	1157.03	0.0000	0.00
30	1170.97	1170.66	0.0000	0.00
31	1180.64	1180.33	0.0000	0.00
32	1190.43	1190.12	0.0000	0.00
33	1237.41	1237.08	0.0000	0.00
34	1252.34	1252.00	0.0000	0.00
35	1378.65	1378.26	0.0000	0.00
36	1386.66	1386.27	0.0000	0.00
37	1461.66	1461.24	0.0000	0.00
38	1509.95	1509.51	0.0000	0.00
39	1589.22	1588.75	0.0000	0.00
40	1593.72	1593.25	0.0000	0.00
41	1631.27	1630.79	0.0000	0.00
42	1730.56	1730.04	0.0000	0.00

Analysis Report for 1510084-03
CP0604S06-07-DUP

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1757.63	1757.10	0.0000	0.00
44	1765.63	1765.09	0.0000	0.00
45	1928.08	1927.50	0.0000	0.00
46	2021.36	2020.75	0.0000	0.00
47	2074.43	2073.80	0.0000	0.00
48	2104.37	2103.73	0.0000	0.00
49	2133.57	2132.92	0.0000	0.00
50	2203.25	2202.58	0.0000	0.00
51	2321.92	2321.22	0.0000	0.00
52	2357.60	2356.88	0.0000	0.00
53	2615.94	2615.17	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510084-03

CP0604S06-07-DUP

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 9:42:25AM

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	63.69	61 -	67	63.91	1.86E+02	104.94	1.88E+03	1.46
M	2	74.94	72 -	83	75.15	4.45E+02	99.67	1.57E+03	1.66
m	3	77.63	72 -	83	77.85	6.49E+02	104.78	1.49E+03	1.67
	4	87.52	86 -	90	87.73	1.02E+02	86.02	1.57E+03	1.33
	5	92.95	90 -	96	93.16	2.92E+02	103.88	1.69E+03	1.95
	6	185.50	181 -	190	185.65	2.06E+02	90.50	1.06E+03	1.95
	7	201.21	199 -	204	201.35	5.65E+01	57.10	5.99E+02	2.89
	8	208.93	205 -	213	209.08	1.40E+02	78.64	8.68E+02	2.04
M	9	239.00	234 -	249	239.13	9.60E+02	77.00	4.61E+02	1.73
m	10	241.98	234 -	249	242.11	2.13E+02	81.99	4.99E+02	1.89
	11	270.32	268 -	273	270.44	7.93E+01	46.24	3.61E+02	2.94
	12	277.18	274 -	281	277.29	9.04E+01	56.99	4.83E+02	1.47
	13	295.56	292 -	298	295.66	1.72E+02	56.18	4.49E+02	1.66
	14	339.04	335 -	343	339.11	1.76E+02	54.66	3.42E+02	1.69
	15	352.38	349 -	357	352.45	3.59E+02	58.21	2.99E+02	1.95
	16	409.99	407 -	413	410.03	4.43E+01	38.17	2.29E+02	2.41
	17	463.26	459 -	466	463.27	3.86E+01	42.80	2.79E+02	1.40
	18	511.36	507 -	515	511.35	1.53E+02	45.83	2.27E+02	2.36
	19	583.86	579 -	589	583.82	3.00E+02	50.16	1.73E+02	1.91
	20	609.68	606 -	612	609.62	2.66E+02	43.48	1.50E+02	1.78
	21	727.83	723 -	732	727.71	5.37E+01	39.22	1.87E+02	2.29
	22	861.12	855 -	863	860.95	4.65E+01	30.30	1.13E+02	2.88
M	23	911.91	906 -	923	911.72	1.49E+02	31.62	8.50E+01	2.04
m	24	917.14	906 -	923	916.94	1.93E+01	26.98	8.93E+01	2.63
	25	933.95	928 -	939	933.75	4.04E+01	32.00	1.07E+02	2.72
M	26	965.17	959 -	974	964.96	4.64E+01	26.31	7.40E+01	2.66
m	27	969.68	959 -	974	969.46	9.32E+01	29.87	7.76E+01	2.52
	28	1121.60	1117 -	1128	1121.31	7.26E+01	36.00	1.25E+02	3.03
	29	1157.33	1152 -	1162	1157.03	4.12E+01	30.07	9.76E+01	5.99
	30	1170.97	1165 -	1177	1170.66	3.60E+01	32.06	1.04E+02	7.55
	31	1180.64	1178 -	1183	1180.33	1.59E+01	19.18	6.21E+01	2.91
	32	1190.43	1185 -	1195	1190.12	2.83E+01	33.77	1.36E+02	3.05
M	33	1237.41	1233 -	1258	1237.08	3.40E+01	25.85	8.52E+01	3.40
m	34	1252.34	1233 -	1258	1252.00	1.81E+01	21.75	6.54E+01	2.33
	35	1378.65	1375 -	1381	1378.26	1.35E+01	14.21	2.49E+01	2.85
	36	1386.66	1383 -	1390	1386.27	1.20E+01	11.83	1.40E+01	1.96
	37	1461.66	1457 -	1465	1461.24	6.13E+02	50.69	1.75E+01	2.23
	38	1509.95	1507 -	1511	1509.51	9.23E+00	8.41	7.54E+00	1.30
M	39	1589.22	1583 -	1598	1588.75	2.39E+01	12.33	1.33E+01	2.71
m	40	1593.72	1583 -	1598	1593.25	1.91E+01	13.42	1.03E+01	2.71

Analysis Report for 1510084-03

CP0604S06-07-DUP

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1631.27	1626 -	1633	1630.79	9.13E+00	12.49	1.97E+01	2.28
42	1730.56	1726 -	1734	1730.04	1.25E+01	10.42	9.00E+00	2.67
43	1757.63	1753 -	1759	1757.10	5.56E+00	7.78	6.89E+00	2.06
44	1765.63	1761 -	1769	1765.09	3.36E+01	12.82	4.83E+00	1.56
45	1928.08	1923 -	1931	1927.50	9.50E+00	9.82	9.00E+00	4.83
46	2021.36	2018 -	2023	2020.75	6.56E+00	7.35	4.89E+00	2.46
47	2074.43	2069 -	2079	2073.80	1.50E+01	7.75	0.00E+00	8.00
48	2104.37	2099 -	2111	2103.73	1.68E+01	13.44	1.44E+01	3.57
49	2133.57	2130 -	2135	2132.92	5.00E+00	7.07	6.00E+00	1.96
50	2203.25	2198 -	2207	2202.58	8.50E+00	11.79	1.50E+01	2.81
51	2321.92	2317 -	2324	2321.22	9.09E+00	7.75	3.82E+00	1.62
52	2357.60	2350 -	2360	2356.88	9.13E+00	10.98	1.17E+01	2.21
53	2615.94	2610 -	2620	2615.17	1.03E+02	20.30	0.00E+00	2.82

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 : 11/4/2015 9:42:25AM

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	61 -	67	1.86E+02	104.94	1.88E+03	8.33E+01
M	2	72 -	83	4.45E+02	99.67	1.57E+03	6.52E+01
m	3	72 -	83	6.49E+02	104.78	1.49E+03	6.35E+01
	4	86 -	90	1.02E+02	86.02	1.57E+03	6.87E+01
	5	90 -	96	2.92E+02	103.88	1.69E+03	8.06E+01
	6	181 -	190	2.06E+02	90.50	1.06E+03	7.05E+01
	7	199 -	204	5.65E+01	57.10	5.99E+02	4.53E+01
	8	205 -	213	1.40E+02	78.64	8.68E+02	6.16E+01
M	9	234 -	249	9.60E+02	77.00	4.61E+02	3.53E+01
m	10	234 -	249	2.13E+02	81.99	4.99E+02	3.67E+01
	11	268 -	273	7.93E+01	46.24	3.61E+02	3.51E+01
	12	274 -	281	9.04E+01	56.99	4.83E+02	4.42E+01
	13	292 -	298	1.72E+02	56.18	4.49E+02	4.08E+01
	14	335 -	343	1.76E+02	54.66	3.42E+02	3.93E+01
	15	349 -	357	3.59E+02	58.21	2.99E+02	3.63E+01

Analysis Report for 1510084-03

CP0604S06-07-DUP

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level	
16	409.99	407 -	413	4.43E+01	38.17	2.29E+02	2.94E+01	
17	463.26	459 -	466	3.86E+01	42.80	2.79E+02	3.37E+01	
18	511.36	507 -	515	1.53E+02	45.83	2.27E+02	3.17E+01	
19	583.86	579 -	589	3.00E+02	50.16	1.73E+02	2.98E+01	
20	609.68	606 -	612	2.66E+02	43.48	1.50E+02	2.36E+01	
21	727.83	723 -	732	5.37E+01	39.22	1.87E+02	2.99E+01	
22	861.12	855 -	863	4.65E+01	30.30	1.13E+02	2.22E+01	
M	23	911.91	906 -	923	1.49E+02	31.62	8.50E+01	1.52E+01
m	24	917.14	906 -	923	1.93E+01	26.98	8.93E+01	1.55E+01
	25	933.95	928 -	939	4.04E+01	32.00	1.07E+02	2.41E+01
M	26	965.17	959 -	974	4.64E+01	26.31	7.40E+01	1.41E+01
m	27	969.68	959 -	974	9.32E+01	29.87	7.76E+01	1.45E+01
	28	1121.60	1117 -	1128	7.26E+01	36.00	1.25E+02	2.61E+01
	29	1157.33	1152 -	1162	4.12E+01	30.07	9.76E+01	2.24E+01
	30	1170.97	1165 -	1177	3.60E+01	32.06	1.04E+02	2.44E+01
	31	1180.64	1178 -	1183	1.59E+01	19.18	6.21E+01	1.43E+01
	32	1190.43	1185 -	1195	2.83E+01	33.77	1.36E+02	2.63E+01
M	33	1237.41	1233 -	1258	3.40E+01	25.85	8.52E+01	1.52E+01
m	34	1252.34	1233 -	1258	1.81E+01	21.75	6.54E+01	1.33E+01
	35	1378.65	1375 -	1381	1.35E+01	14.21	2.49E+01	1.00E+01
	36	1386.66	1383 -	1390	1.20E+01	11.83	1.40E+01	7.88E+00
	37	1461.66	1457 -	1465	6.13E+02	50.69	1.75E+01	8.85E+00
	38	1509.95	1507 -	1511	9.23E+00	8.41	7.54E+00	4.78E+00
M	39	1589.22	1583 -	1598	2.39E+01	12.33	1.33E+01	6.01E+00
m	40	1593.72	1583 -	1598	1.91E+01	13.42	1.03E+01	5.27E+00
	41	1631.27	1626 -	1633	9.13E+00	12.49	1.97E+01	8.98E+00
	42	1730.56	1726 -	1734	1.25E+01	10.42	9.00E+00	6.29E+00
	43	1757.63	1753 -	1759	5.56E+00	7.78	6.89E+00	5.09E+00
	44	1765.63	1761 -	1769	3.36E+01	12.82	4.83E+00	4.50E+00
	45	1928.08	1923 -	1931	9.50E+00	9.82	9.00E+00	6.29E+00
	46	2021.36	2018 -	2023	6.56E+00	7.35	4.89E+00	4.33E+00
	47	2074.43	2069 -	2079	1.50E+01	7.75	0.00E+00	0.00E+00
	48	2104.37	2099 -	2111	1.68E+01	13.44	1.44E+01	8.75E+00
	49	2133.57	2130 -	2135	5.00E+00	7.07	6.00E+00	4.50E+00
	50	2203.25	2198 -	2207	8.50E+00	11.79	1.50E+01	8.42E+00
	51	2321.92	2317 -	2324	9.09E+00	7.75	3.82E+00	4.00E+00
	52	2357.60	2350 -	2360	9.13E+00	10.98	1.17E+01	7.53E+00
	53	2615.94	2610 -	2620	1.03E+02	20.30	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 1510084-03

CP0604S06-07-DUP

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/4/2015 9:42:25AM

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	63.69	61 -	67	63.91	1.86E+02	104.94	1.88E+03	TH-234 TH-230
M m 2	74.94	72 -	83	75.15	4.45E+02	99.67	1.57E+03	AM-243
3	77.63	72 -	83	77.85	6.49E+02	104.78	1.49E+03	TI-44
4	87.52	86 -	90	87.73	1.02E+02	86.02	1.57E+03	SN-126 CD-109 LU-176
5	92.95	90 -	96	93.16	2.92E+02	103.88	1.69E+03	GA-67
6	185.50	181 -	190	185.65	2.06E+02	90.50	1.06E+03	RA-226
7	201.21	199 -	204	201.35	5.65E+01	57.10	5.99E+02	LU-176
8	208.93	205 -	213	209.08	1.40E+02	78.64	8.68E+02	GA-67 CM-243
M m 9	239.00	234 -	249	239.13	9.60E+02	77.00	4.61E+02	PB-212
10	241.98	234 -	249	242.11	2.13E+02	81.99	4.99E+02	.....
11	270.32	268 -	273	270.44	7.93E+01	46.24	3.61E+02	.....
12	277.18	274 -	281	277.29	9.04E+01	56.99	4.83E+02	CM-243 NP-239
13	295.56	292 -	298	295.66	1.72E+02	56.18	4.49E+02	PB-214
14	339.04	335 -	343	339.11	1.76E+02	54.66	3.42E+02	AC-228
15	352.38	349 -	357	352.45	3.59E+02	58.21	2.99E+02	PB-214
16	409.99	407 -	413	410.03	4.43E+01	38.17	2.29E+02	HO-166M
17	463.26	459 -	466	463.27	3.86E+01	42.80	2.79E+02	SB-125
18	511.36	507 -	515	511.35	1.53E+02	45.83	2.27E+02	.....
19	583.86	579 -	589	583.82	3.00E+02	50.16	1.73E+02	TL-208
20	609.68	606 -	612	609.62	2.66E+02	43.48	1.50E+02	BI-214
21	727.83	723 -	732	727.71	5.37E+01	39.22	1.87E+02	BI-212
22	861.12	855 -	863	860.95	4.65E+01	30.30	1.13E+02	TL-208
M m 23	911.91	906 -	923	911.72	1.49E+02	31.62	8.50E+01	LU-172 AC-228
24	917.14	906 -	923	916.94	1.93E+01	26.98	8.93E+01	.....
25	933.95	928 -	939	933.75	4.04E+01	32.00	1.07E+02	.....
M m 26	965.17	959 -	974	964.96	4.64E+01	26.31	7.40E+01	.....
27	969.68	959 -	974	969.46	9.32E+01	29.87	7.76E+01	AC-228
28	1121.60	1117 -	1128	1121.31	7.26E+01	36.00	1.25E+02	TA-182
29	1157.33	1152 -	1162	1157.03	4.12E+01	30.07	9.76E+01	.....
30	1170.97	1165 -	1177	1170.66	3.60E+01	32.06	1.04E+02	.....
31	1180.64	1178 -	1183	1180.33	1.59E+01	19.18	6.21E+01	.....
32	1190.43	1185 -	1195	1190.12	2.83E+01	33.77	1.36E+02	.....
M m 33	1237.41	1233 -	1258	1237.08	3.40E+01	25.85	8.52E+01	CO-56
34	1252.34	1233 -	1258	1252.00	1.81E+01	21.75	6.54E+01	.....
35	1378.65	1375 -	1381	1378.26	1.35E+01	14.21	2.49E+01	.....

: 00401

Analysis Report for 1510084-03

CP0604S06-07-DUP

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
36	1386.66	1383 -	1390	1386.27	1.20E+01	11.83	1.40E+01	.....
37	1461.66	1457 -	1465	1461.24	6.13E+02	50.69	1.75E+01	K-40
38	1509.95	1507 -	1511	1509.51	9.23E+00	8.41	7.54E+00	.....
M 39	1589.22	1583 -	1598	1588.75	2.39E+01	12.33	1.33E+01	.....
m 40	1593.72	1583 -	1598	1593.25	1.91E+01	13.42	1.03E+01	.....
41	1631.27	1626 -	1633	1630.79	9.13E+00	12.49	1.97E+01	.....
42	1730.56	1726 -	1734	1730.04	1.25E+01	10.42	9.00E+00	.....
43	1757.63	1753 -	1759	1757.10	5.56E+00	7.78	6.89E+00	.....
44	1765.63	1761 -	1769	1765.09	3.36E+01	12.82	4.83E+00	.....
45	1928.08	1923 -	1931	1927.50	9.50E+00	9.82	9.00E+00	.....
46	2021.36	2018 -	2023	2020.75	6.56E+00	7.35	4.89E+00	.....
47	2074.43	2069 -	2079	2073.80	1.50E+01	7.75	0.00E+00	.....
48	2104.37	2099 -	2111	2103.73	1.68E+01	13.44	1.44E+01	.....
49	2133.57	2130 -	2135	2132.92	5.00E+00	7.07	6.00E+00	.....
50	2203.25	2198 -	2207	2202.58	8.50E+00	11.79	1.50E+01	BI-214
51	2321.92	2317 -	2324	2321.22	9.09E+00	7.75	3.82E+00	.....
52	2357.60	2350 -	2360	2356.88	9.13E+00	10.98	1.17E+01	.....
53	2615.94	2610 -	2620	2615.17	1.03E+02	20.30	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 : 11/4/2015 9:42:25AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	63.69	1.86E+02	104.94	2.17E-02	1.72E-03
M 2	74.94	4.45E+02	99.67	2.36E-02	2.09E-03
m 3	77.63	6.49E+02	104.78	2.39E-02	2.18E-03
4	87.52	1.02E+02	86.02	2.44E-02	2.51E-03
5	92.95	2.92E+02	103.88	2.44E-02	2.41E-03
6	185.50	2.06E+02	90.50	1.83E-02	1.42E-03
7	201.21	5.65E+01	57.10	1.73E-02	1.35E-03
8	208.93	1.40E+02	78.64	1.68E-02	1.32E-03
M 9	239.00	9.60E+02	77.00	1.52E-02	1.18E-03
m 10	241.98	2.13E+02	81.99	1.51E-02	1.17E-03
11	270.32	7.93E+01	46.24	1.38E-02	1.04E-03
12	277.18	9.04E+01	56.99	1.35E-02	1.01E-03

: 00402

Analysis Report for 1510084-03

CP0604S06-07-DUP

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	13	295.56	1.72E+02	56.18	1.28E-02	9.74E-04
	14	339.04	1.76E+02	54.66	1.14E-02	9.12E-04
	15	352.38	3.59E+02	58.21	1.10E-02	8.93E-04
	16	409.99	4.43E+01	38.17	9.70E-03	8.19E-04
	17	463.26	3.86E+01	42.80	8.73E-03	7.66E-04
	18	511.36	1.53E+02	45.83	8.01E-03	7.18E-04
	19	583.86	3.00E+02	50.16	7.13E-03	6.45E-04
	20	609.68	2.66E+02	43.48	6.87E-03	6.20E-04
	21	727.83	5.37E+01	39.22	5.89E-03	5.14E-04
	22	861.12	4.65E+01	30.30	5.09E-03	4.05E-04
M	23	911.91	1.49E+02	31.62	4.85E-03	3.72E-04
m	24	917.14	1.93E+01	26.98	4.83E-03	3.71E-04
	25	933.95	4.04E+01	32.00	4.75E-03	3.68E-04
M	26	965.17	4.64E+01	26.31	4.62E-03	3.62E-04
m	27	969.68	9.32E+01	29.87	4.60E-03	3.61E-04
	28	1121.60	7.26E+01	36.00	4.07E-03	3.33E-04
	29	1157.33	4.12E+01	30.07	3.97E-03	3.26E-04
	30	1170.97	3.60E+01	32.06	3.93E-03	3.24E-04
	31	1180.64	1.59E+01	19.18	3.90E-03	3.22E-04
	32	1190.43	2.83E+01	33.77	3.88E-03	3.20E-04
M	33	1237.41	3.40E+01	25.85	3.76E-03	3.09E-04
m	34	1252.34	1.81E+01	21.75	3.72E-03	3.06E-04
	35	1378.65	1.35E+01	14.21	3.44E-03	2.82E-04
	36	1386.66	1.20E+01	11.83	3.43E-03	2.80E-04
	37	1461.66	6.13E+02	50.69	3.29E-03	2.69E-04
	38	1509.95	9.23E+00	8.41	3.21E-03	2.62E-04
M	39	1589.22	2.39E+01	12.33	3.09E-03	2.50E-04
m	40	1593.72	1.91E+01	13.42	3.08E-03	2.49E-04
	41	1631.27	9.13E+00	12.49	3.03E-03	2.44E-04
	42	1730.56	1.25E+01	10.42	2.90E-03	2.29E-04
	43	1757.63	5.56E+00	7.78	2.87E-03	2.25E-04
	44	1765.63	3.36E+01	12.82	2.86E-03	2.24E-04
	45	1928.08	9.50E+00	9.82	2.69E-03	2.13E-04
	46	2021.36	6.56E+00	7.35	2.60E-03	2.13E-04
	47	2074.43	1.50E+01	7.75	2.56E-03	2.13E-04
	48	2104.37	1.68E+01	13.44	2.54E-03	2.13E-04
	49	2133.57	5.00E+00	7.07	2.51E-03	2.13E-04
	50	2203.25	8.50E+00	11.79	2.46E-03	2.13E-04
	51	2321.92	9.09E+00	7.75	2.39E-03	2.13E-04
	52	2357.60	9.13E+00	10.98	2.37E-03	2.13E-04
	53	2615.94	1.03E+02	20.30	2.24E-03	2.13E-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 1510084-03

CP0604S06-07-DUP

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/4/2015 9:42:25AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028943.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	1.86E+02	104.94	5.52E+01	2.05E+01	1.31E+02	1.07E+02
M	2	4.45E+02	99.67			4.45E+02	9.97E+01
m	3	6.49E+02	104.78			6.49E+02	1.05E+02
	4	1.02E+02	86.02	1.52E+01	5.37E+00	8.68E+01	8.62E+01
	5	2.92E+02	103.88	9.04E+01	2.62E+01	2.01E+02	1.07E+02
	6	2.06E+02	90.50	3.93E+01	6.56E+00	1.67E+02	9.07E+01
	7	5.65E+01	57.10			5.65E+01	5.71E+01
	8	1.40E+02	78.64			1.40E+02	7.86E+01
M	9	9.60E+02	77.00	1.34E+01	2.14E+00	9.47E+02	7.70E+01
m	10	2.13E+02	81.99	2.69E+00	1.46E+00	2.10E+02	8.20E+01
	11	7.93E+01	46.24			7.93E+01	4.62E+01
	12	9.04E+01	56.99			9.04E+01	5.70E+01
	13	1.72E+02	56.18			1.72E+02	5.62E+01
	14	1.76E+02	54.66			1.76E+02	5.47E+01
	15	3.59E+02	58.21	3.99E+00	4.73E+00	3.55E+02	5.84E+01
	16	4.43E+01	38.17			4.43E+01	3.82E+01
	17	3.86E+01	42.80			3.86E+01	4.28E+01
	18	1.53E+02	45.83	5.78E+01	4.60E+00	9.55E+01	4.61E+01
	19	3.00E+02	50.16	5.96E+00	3.46E+00	2.94E+02	5.03E+01
	20	2.66E+02	43.48	6.71E+00	3.44E+00	2.59E+02	4.36E+01
	21	5.37E+01	39.22			5.37E+01	3.92E+01
	22	4.65E+01	30.30			4.65E+01	3.03E+01
M	23	1.49E+02	31.62			1.49E+02	3.16E+01
m	24	1.93E+01	26.98			1.93E+01	2.70E+01
	25	4.04E+01	32.00			4.04E+01	3.20E+01
M	26	4.64E+01	26.31			4.64E+01	2.63E+01
m	27	9.32E+01	29.87			9.32E+01	2.99E+01
	28	7.26E+01	36.00			7.26E+01	3.60E+01
	29	4.12E+01	30.07			4.12E+01	3.01E+01
	30	3.60E+01	32.06			3.60E+01	3.21E+01
	31	1.59E+01	19.18			1.59E+01	1.92E+01
	32	2.83E+01	33.77			2.83E+01	3.38E+01
M	33	3.40E+01	25.85			3.40E+01	2.58E+01
m	34	1.81E+01	21.75			1.81E+01	2.17E+01
	35	1.35E+01	14.21			1.35E+01	1.42E+01
	36	1.20E+01	11.83			1.20E+01	1.18E+01
	37	6.13E+02	50.69			6.13E+02	5.07E+01
	38	9.23E+00	8.41			9.23E+00	8.41E+00
M	39	2.39E+01	12.33			2.39E+01	1.23E+01
m	40	1.91E+01	13.42			1.91E+01	1.34E+01
	41	9.13E+00	12.49			9.13E+00	1.25E+01
	42	1.25E+01	10.42			1.25E+01	1.04E+01
	43	5.56E+00	7.78			5.56E+00	7.78E+00
	44	3.36E+01	12.82	1.45E+00	1.16E+00	3.21E+01	1.29E+01

Analysis Report for 1510084-03

CP0604S06-07-DUP

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
45	1928.08	9.50E+00	9.82			9.50E+00	9.82E+00
46	2021.36	6.56E+00	7.35			6.56E+00	7.35E+00
47	2074.43	1.50E+01	7.75			1.50E+01	7.75E+00
48	2104.37	1.68E+01	13.44			1.68E+01	1.34E+01
49	2133.57	5.00E+00	7.07			5.00E+00	7.07E+00
50	2203.25	8.50E+00	11.79			8.50E+00	1.18E+01
51	2321.92	9.09E+00	7.75			9.09E+00	7.75E+00
52	2357.60	9.13E+00	10.98			9.13E+00	1.10E+01
53	2615.94	1.03E+02	20.30			1.03E+02	2.03E+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 : 11/4/2015 9:42:25AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028943.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	1.86E+02	104.94	5.52E+01	2.05E+01	1.31E+02	1.07E+02
M	2	4.45E+02	99.67			4.45E+02	9.97E+01
m	3	6.49E+02	104.78			6.49E+02	1.05E+02
	4	1.02E+02	86.02	1.52E+01	5.37E+00	8.68E+01	8.62E+01
	5	2.92E+02	103.88	9.04E+01	2.62E+01	2.01E+02	1.07E+02
	6	185.50	90.50	3.93E+01	6.56E+00	1.67E+02	9.07E+01
	7	201.21	57.10			5.65E+01	5.71E+01
	8	208.93	78.64			1.40E+02	7.86E+01
M	9	9.60E+02	77.00	1.34E+01	2.14E+00	9.47E+02	7.70E+01
m	10	241.98	81.99	2.69E+00	1.46E+00	2.10E+02	8.20E+01
	11	7.93E+01	46.24			7.93E+01	4.62E+01
	12	277.18	56.99			9.04E+01	5.70E+01
	13	295.56	56.18			1.72E+02	5.62E+01
	14	339.04	54.66			1.76E+02	5.47E+01
	15	352.38	58.21	3.99E+00	4.73E+00	3.55E+02	5.84E+01
	16	409.99	38.17			4.43E+01	3.82E+01
	17	463.26	42.80			3.86E+01	4.28E+01
	18	511.36	45.83	5.78E+01	4.60E+00	9.55E+01	4.61E+01
	19	583.86	50.16	5.96E+00	3.46E+00	2.94E+02	5.03E+01

: 00405

Analysis Report for 1510084-03

CP0604S06-07-DUP

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	20	609.68	2.66E+02	43.48	6.71E+00	3.44E+00	2.59E+02	4.36E+01
	21	727.83	5.37E+01	39.22			5.37E+01	3.92E+01
	22	861.12	4.65E+01	30.30			4.65E+01	3.03E+01
M	23	911.91	1.49E+02	31.62			1.49E+02	3.16E+01
m	24	917.14	1.93E+01	26.98			1.93E+01	2.70E+01
	25	933.95	4.04E+01	32.00			4.04E+01	3.20E+01
M	26	965.17	4.64E+01	26.31			4.64E+01	2.63E+01
m	27	969.68	9.32E+01	29.87			9.32E+01	2.99E+01
	28	1121.60	7.26E+01	36.00			7.26E+01	3.60E+01
	29	1157.33	4.12E+01	30.07			4.12E+01	3.01E+01
	30	1170.97	3.60E+01	32.06			3.60E+01	3.21E+01
	31	1180.64	1.59E+01	19.18			1.59E+01	1.92E+01
	32	1190.43	2.83E+01	33.77			2.83E+01	3.38E+01
M	33	1237.41	3.40E+01	25.85			3.40E+01	2.58E+01
m	34	1252.34	1.81E+01	21.75			1.81E+01	2.17E+01
	35	1378.65	1.35E+01	14.21			1.35E+01	1.42E+01
	36	1386.66	1.20E+01	11.83			1.20E+01	1.18E+01
	37	1461.66	6.13E+02	50.69			6.13E+02	5.07E+01
	38	1509.95	9.23E+00	8.41			9.23E+00	8.41E+00
M	39	1589.22	2.39E+01	12.33			2.39E+01	1.23E+01
m	40	1593.72	1.91E+01	13.42			1.91E+01	1.34E+01
	41	1631.27	9.13E+00	12.49			9.13E+00	1.25E+01
	42	1730.56	1.25E+01	10.42			1.25E+01	1.04E+01
	43	1757.63	5.56E+00	7.78			5.56E+00	7.78E+00
	44	1765.63	3.36E+01	12.82	1.45E+00	1.16E+00	3.21E+01	1.29E+01
	45	1928.08	9.50E+00	9.82			9.50E+00	9.82E+00
	46	2021.36	6.56E+00	7.35			6.56E+00	7.35E+00
	47	2074.43	1.50E+01	7.75			1.50E+01	7.75E+00
	48	2104.37	1.68E+01	13.44			1.68E+01	1.34E+01
	49	2133.57	5.00E+00	7.07			5.00E+00	7.07E+00
	50	2203.25	8.50E+00	11.79			8.50E+00	1.18E+01
	51	2321.92	9.09E+00	7.75			9.09E+00	7.75E+00
	52	2357.60	9.13E+00	10.98			9.13E+00	1.10E+01
	53	2615.94	1.03E+02	20.30			1.03E+02	2.03E+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 1510084-03
 CP0604S06-07-DUP

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.891	1460.81 *	10.67	2.01E+01	2.37E+00
GA-67	0.445	93.31 *	35.70	6.63E+01	2.39E+02
		208.95 *	2.24	1.07E+03	3.66E+03
		300.22	16.00		
CD-109	0.959	88.03 *	3.72	1.14E+00	1.14E+00
SN-126	1.000	87.57 *	37.00	1.10E-01	1.10E-01
TL-208	0.366	583.14 *	30.22	1.57E+00	3.03E-01
		860.37 *	4.48	2.34E+00	1.54E+00
BI-212	0.716	2614.66	35.85		
		727.17 *	11.80	8.88E-01	6.53E-01
		1620.62	2.75		
PB-212	0.875	238.63 *	44.60	1.60E+00	1.80E-01
		300.09	3.41		
BI-214	0.488	609.31 *	46.30	9.36E-01	1.79E-01
		1120.29	15.10		
		1764.49	15.80		
		2204.22 *	4.98	7.96E-01	1.11E+00
PB-214	0.971	295.21 *	19.19	8.05E-01	2.69E-01
		351.92 *	37.19	9.91E-01	1.82E-01
RA-226	0.921	186.21 *	3.28	3.19E+00	6.08E+00
AC-228	0.915	338.32 *	11.40	1.55E+00	4.98E-01
		911.07 *	27.70	1.27E+00	2.88E-01
		969.11 *	16.60	1.40E+00	4.62E-01
TH-234	0.975	63.29 *	3.80	1.83E+00	1.50E+00
AM-243	0.989	74.67 *	66.00	3.28E-01	7.89E-02
CM-243	0.344	209.75 *	3.29	2.91E+00	1.65E+00
		228.14	10.60		
		277.60 *	14.00	5.50E-01	3.49E-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 : 11/4/2015 9:42:25AM
 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 3	77.63	1.80290E-01	8.07	Tol.	TI-44

Analysis Report for 1510084-03

CP0604S06-07-DUP

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	7	201.21	1.56913E-02		
m	10	241.98	5.84039E-02		LU-176
	11	270.32	2.20299E-02		
	16	409.99	1.23166E-02		
	17	463.26	1.07085E-02		
	18	511.36	2.65318E-02		
m	24	917.14	5.35274E-03		
	25	933.95	1.12264E-02		
M	26	965.17	1.28799E-02		
	28	1121.60	2.01728E-02		
	29	1157.33	1.14506E-02	Sum	
	30	1170.97	1.00000E-02	Sum	
	31	1180.64	4.42671E-03		
	32	1190.43	7.84722E-03		D-Esc
M	33	1237.41	9.45617E-03		
m	34	1252.34	5.03134E-03		
	35	1378.65	3.76068E-03		
	36	1386.66	3.33333E-03		
	38	1509.95	2.56410E-03		
M	39	1589.22	6.62803E-03		
m	40	1593.72	5.31036E-03		
	41	1631.27	2.53655E-03		
	42	1730.56	3.47222E-03		
	43	1757.63	1.54321E-03		
	44	1765.63	8.92512E-03		
	45	1928.08	2.63889E-03		
	46	2021.36	1.82099E-03		
	47	2074.43	4.16667E-03		
	48	2104.37	4.66435E-03		
	49	2133.57	1.38889E-03		
	51	2321.92	2.52525E-03		
	52	2357.60	2.53704E-03		
	53	2615.94	2.86111E-02	Sum	
					9.85

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 1510084-03

CP0604S06-07-DUP

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.89	1460.81 *	10.67	2.01E+01	2.37E+00
GA-67	0.44	93.31 *	35.70	6.63E+01	2.39E+02
		208.95 *	2.24	1.07E+03	3.66E+03
		300.22	16.00		
CD-109	0.95	88.03 *	3.72	1.14E+00	1.14E+00
SN-126	1.00	87.57 *	37.00	1.10E-01	1.10E-01
TL-208	0.36	583.14 *	30.22	1.57E+00	3.03E-01
		860.37 *	4.48	2.34E+00	1.54E+00
		2614.66	35.85		
BI-212	0.71	727.17 *	11.80	8.88E-01	6.53E-01
		1620.62	2.75		
PB-212	0.87	238.63 *	44.60	1.60E+00	1.80E-01
		300.09	3.41		
BI-214	0.48	609.31 *	46.30	9.36E-01	1.79E-01
		1120.29	15.10		
		1764.49	15.80		
		2204.22 *	4.98	7.96E-01	1.11E+00
PB-214	0.97	295.21 *	19.19	8.05E-01	2.69E-01
		351.92 *	37.19	9.91E-01	1.82E-01
RA-226	0.92	186.21 *	3.28	3.19E+00	6.08E+00
AC-228	0.91	338.32 *	11.40	1.55E+00	4.98E-01
		911.07 *	27.70	1.27E+00	2.88E-01
		969.11 *	16.60	1.40E+00	4.62E-01
TH-234	0.97	63.29 *	3.80	1.83E+00	1.50E+00
AM-243	0.98	74.67 *	66.00	3.28E-01	7.89E-02
CM-243	0.34	209.75 *	3.29	2.91E+00	1.65E+00
		228.14	10.60		
		277.60 *	14.00	5.50E-01	3.49E-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

Analysis Report for 1510084-03

CP0604S06-07-DUP

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.891	2.01E+01	2.37E+00	
GA-67	0.445	6.90E+01	2.36E+02	
? CD-109	0.959	1.14E+00	1.14E+00	
? SN-126	1.000	1.10E-01	1.10E-01	
TL-208	0.366	1.60E+00	2.97E-01	
BI-212	0.716	8.88E-01	6.53E-01	
PB-212	0.875	1.60E+00	1.80E-01	
BI-214	0.488	9.32E-01	1.76E-01	
PB-214	0.971	9.33E-01	1.51E-01	
RA-226	0.921	3.19E+00	6.08E+00	
AC-228	0.915	1.36E+00	2.19E-01	
TH-234	0.975	1.83E+00	1.50E+00	
AM-243	0.989	3.28E-01	7.89E-02	
CM-243	0.344	6.43E-01	3.42E-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 1510084-03

CP0604S06-07-DUP

 UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 9:42:25AM

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 3	77.63	1.80290E-01	8.07	Tol.	TI-44
7	201.21	1.56913E-02	50.54	Tol.	LU-176
m 10	241.98	5.84039E-02	19.50		
11	270.32	2.20299E-02	29.15		
16	409.99	1.23166E-02	43.04	Tol.	HO-166M
17	463.26	1.07085E-02	55.51	Sum	
18	511.36	2.65318E-02	24.11		
m 24	917.14	5.35274E-03	70.01		
25	933.95	1.12264E-02	39.59		
M 26	965.17	1.28799E-02	28.37		
28	1121.60	2.01728E-02	24.79	Sum	
29	1157.33	1.14506E-02	36.48	Sum	
30	1170.97	1.00000E-02	44.53		
31	1180.64	4.42671E-03	60.19	D-Esc	
32	1190.43	7.84722E-03	59.77		
M 33	1237.41	9.45617E-03	37.96		
m 34	1252.34	5.03134E-03	60.04		
35	1378.65	3.76068E-03	52.49		
36	1386.66	3.33333E-03	49.30		
38	1509.95	2.56410E-03	45.56		
M 39	1589.22	6.62803E-03	25.83	Sum	
m 40	1593.72	5.31036E-03	35.09		
41	1631.27	2.53655E-03	68.39		
42	1730.56	3.47222E-03	41.67		
43	1757.63	1.54321E-03	70.00	Sum	
44	1765.63	8.92512E-03	20.03		
45	1928.08	2.63889E-03	51.70		
46	2021.36	1.82099E-03	56.05		
47	2074.43	4.16667E-03	25.82		
48	2104.37	4.66435E-03	40.01		
49	2133.57	1.38889E-03	70.71		
51	2321.92	2.52525E-03	42.60	Sum	
52	2357.60	2.53704E-03	60.09		
53	2615.94	2.86111E-02	9.85		

Analysis Report for 1510084-03
CP0604S06-07-DUP

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	3.18E-01	9.52E-01	9.52E-01
+	NA-22	1274.54	99.94	-1.61E-02	1.12E-01	1.12E-01
+	NA-24	1368.53	99.99	-1.31E+11	1.59E+11	2.36E+11
		2754.09	99.86	1.14E+10		1.59E+11
+	AL-26	1808.65	99.76	-8.20E-03	6.16E-02	6.16E-02
+	K-40	1460.81	* 10.67	2.01E+01	6.68E-01	6.68E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-2.66E-02	6.94E-02	6.94E-02
		78.34	96.00	2.02E-01		8.57E-02
+	SC-46	889.25	99.98	-2.88E-02	1.04E-01	1.04E-01
		1120.51	99.99	1.79E-01		1.77E-01
+	V-48	983.52	99.98	-2.50E-02	2.75E-01	2.75E-01
		1312.10	97.50	-7.61E-02		3.33E-01
+	CR-51	320.08	9.83	1.17E-01	1.23E+00	1.23E+00
+	MN-54	834.83	99.97	-4.02E-02	8.28E-02	8.28E-02
+	CO-56	846.75	99.96	4.61E-02	1.04E-01	1.04E-01
		1037.75	14.03	1.20E-01		8.35E-01
		1238.25	67.00	1.55E-01		2.59E-01
		1771.40	15.51	6.53E-02		5.92E-01
		2598.48	16.90	0.00E+00		2.80E-01
+	CO-57	122.06	85.51	1.52E-02	6.03E-02	6.03E-02
		136.48	10.60	1.08E-01		5.01E-01
+	CO-58	810.76	99.40	-3.21E-02	1.06E-01	1.06E-01
+	FE-59	1099.22	56.50	1.31E-01	2.98E-01	2.98E-01
		1291.56	43.20	6.98E-03		3.68E-01
+	CO-60	1173.22	100.00	3.08E-03	1.03E-01	1.03E-01
		1332.49	100.00	3.44E-02		1.08E-01
+	ZN-65	1115.52	50.75	5.74E-02	2.14E-01	2.14E-01
+	GA-67	93.31	* 35.70	6.63E+01	5.68E+01	5.68E+01
		208.95	* 2.24	1.07E+03		9.60E+02
		300.22	16.00	1.54E+01		1.14E+02
+	SE-75	121.11	16.70	2.92E-02	9.52E-02	3.27E-01

Analysis Report for 1510084-03

CP0604S06-07-DUP

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	-3.49E-02	9.52E-02	9.52E-02
		264.65	59.80	-3.35E-02		1.17E-01
		279.53	25.20	-2.76E-02		3.18E-01
		400.65	11.40	-8.67E-02		6.88E-01
+	RB-82	776.52	13.00	7.62E-01	1.41E+00	1.41E+00
+	RB-83	520.41	46.00	4.46E-02	1.96E-01	1.96E-01
		529.64	30.30	3.96E-02		2.77E-01
		552.65	16.40	-3.36E-02		5.91E-01
+	KR-85	513.99	0.43	-3.23E+00	2.31E+01	2.31E+01
+	SR-85	513.99	99.27	-1.86E-02	1.33E-01	1.33E-01
+	Y-88	898.02	93.40	5.17E-02	8.58E-02	1.13E-01
		1836.01	99.38	4.01E-02		8.58E-02
+	NB-93M	16.57	9.43	6.21E+01	7.82E+01	7.82E+01
+	NB-94	702.63	100.00	-1.22E-02	8.38E-02	8.38E-02
		871.10	100.00	4.94E-02		8.89E-02
+	NB-95	765.79	99.81	7.01E-02	1.49E-01	1.49E-01
+	NB-95M	235.69	25.00	1.82E+02	6.67E+01	6.67E+01
+	ZR-95	724.18	43.70	2.06E-02	1.87E-01	2.90E-01
		756.72	55.30	7.41E-02		1.87E-01
+	MO-99	181.06	6.20	-4.30E+01	4.20E+02	5.67E+02
		739.58	12.80	-1.94E+02		4.20E+02
		778.00	4.50	-9.15E+02		1.25E+03
+	RU-103	497.08	89.00	1.41E-03	1.29E-01	1.29E-01
+	RU-106	621.84	9.80	5.64E-01	7.93E-01	7.93E-01
+	AG-108M	433.93	89.90	2.78E-03	7.66E-02	7.66E-02
		614.37	90.40	-4.22E-02		9.17E-02
		722.95	90.50	1.07E-03		9.39E-02
+	CD-109	88.03	* 3.72	1.14E+00	1.86E+00	1.86E+00
+	AG-110M	657.75	93.14	7.34E-03	9.29E-02	9.29E-02
		677.61	10.53	1.90E-01		8.63E-01
		706.67	16.46	-6.56E-02		5.44E-01
		763.93	21.98	-3.09E-01		3.61E-01
		884.67	71.63	-2.16E-03		1.26E-01
		1384.27	23.94	-1.95E-02		3.90E-01
+	CD-113M	263.70	0.02	-1.16E+02	2.65E+02	2.65E+02
+	SN-113	255.12	1.93	-1.03E+00	1.32E-01	3.72E+00
		391.69	64.90	2.33E-02		1.32E-01
+	TE123M	159.00	84.10	-2.09E-02	6.65E-02	6.65E-02
+	SB-124	602.71	97.87	4.51E-02	1.14E-01	1.14E-01
		645.85	7.26	2.42E-01		1.43E+00
		722.78	11.10	1.18E-02		1.03E+00
		1691.02	49.00	-7.86E-02		1.51E-01
+	I-125	35.49	6.49	-4.89E-01	2.82E+00	2.82E+00
+	SB-125	176.33	6.89	2.27E-01	2.32E-01	7.54E-01
		427.89	29.33	-6.73E-02		2.32E-01
		463.38	10.35	5.08E-01		7.99E-01
		600.56	17.80	2.75E-01		4.67E-01
		635.90	11.32	-2.35E-01		6.36E-01

Analysis Report for 1510084-03

CP0604S06-07-DUP

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-8.00E-02	3.26E-01	3.26E-01
		666.33	99.60	1.43E-01		3.78E-01
		695.00	99.60	1.90E-01		3.82E-01
		720.50	53.80	-3.07E-02		6.43E-01
+	SN-126	87.57	* 37.00	1.10E-01	1.80E-01	1.80E-01
+	SB-127	473.00	25.00	3.44E+00	2.27E+01	3.05E+01
		685.20	35.70	-1.32E+00		2.27E+01
		783.80	14.70	4.47E+00		6.24E+01
+	I-129	29.78	57.00	-2.97E-01	4.04E-01	4.04E-01
		33.60	13.20	-1.08E-01		1.21E+00
		39.58	7.52	-5.57E-01		1.41E+00
+	I-131	284.30	6.05	3.19E-01	6.87E-01	9.68E+00
		364.48	81.20	-7.65E-02		6.87E-01
		636.97	7.26	1.13E+00		9.35E+00
		722.89	1.80	5.06E-01		4.43E+01
+	TE-132	49.72	13.10	-2.54E+02	1.82E+01	1.43E+02
		228.16	88.00	4.14E+00		1.82E+01
+	BA-133	81.00	33.00	-1.01E+00	1.42E-01	1.75E-01
		302.84	17.80	1.60E-01		3.93E-01
		356.01	60.00	-6.85E-04		1.42E-01
+	I-133	529.87	86.30	1.19E+07	8.33E+07	8.33E+07
+	XE-133	81.00	38.00	-2.72E+01	4.70E+00	4.70E+00
+	CS-134	563.23	8.38	2.42E-01	9.24E-02	9.86E-01
		569.32	15.43	-2.09E-01		4.77E-01
		604.70	97.60	1.33E-02		9.24E-02
		795.84	85.40	1.03E-01		1.18E-01
		801.93	8.73	-6.32E-01		9.18E-01
+	CS-135	268.24	16.00	5.17E-03	4.33E-01	4.33E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	0.00E+00		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	1.84E+00	3.14E-01	2.74E+00
		163.89	4.61	-2.95E-01		4.18E+00
		176.55	13.56	1.43E+00		1.51E+00
		273.65	12.66	-1.86E+00		2.13E+00
		340.57	48.50	9.45E-01		6.69E-01
		818.50	99.70	-6.08E-02		3.14E-01
		1048.07	79.60	2.05E-01		4.64E-01
		1235.34	19.70	-5.86E-01		2.43E+00
+	CS-137	661.65	85.12	-6.86E-02	9.58E-02	9.58E-02
+	LA-138	788.74	34.00	-4.92E-02	1.20E-01	2.46E-01
		1435.80	66.00	-7.37E-02		1.20E-01
+	CE-139	165.85	80.35	-1.15E-02	6.99E-02	6.99E-02
+	BA-140	162.64	6.70	-4.40E-01	1.24E+00	2.94E+00
		304.84	4.50	-2.96E+00		5.87E+00
		423.70	3.20	-3.29E+00		8.28E+00
		437.55	2.00	2.38E+00		1.37E+01
		537.32	25.00	-1.51E-02		1.24E+00
+	LA-140	328.77	20.50	7.35E-02	4.00E-01	1.36E+00

Analysis Report for 1510084-03

CP0604S06-07-DUP

<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>	
LA-140	487.03	45.50	1.66E-01	4.00E-01	6.47E-01	
	815.85	23.50	6.31E-01		1.46E+00	
	1596.49	95.49	0.00E+00		4.00E-01	
+	CE-141	145.44	48.40	6.21E-02	1.85E-01	1.85E-01
+	CE-143	57.36	11.80	-2.33E+04	9.55E+04	2.85E+05
	293.26	42.00	-7.29E+03		9.55E+04	
	664.55	5.20	1.44E+05		8.02E+05	
+	CE-144	133.54	10.80	-2.53E-01	4.78E-01	4.78E-01
+	PM-144	476.78	42.00	1.20E-01	7.36E-02	1.82E-01
	618.01	98.60	-3.31E-02		7.36E-02	
	696.49	99.49	-8.03E-03		8.99E-02	
+	PM-145	36.85	21.70	-1.07E-01	3.01E-01	5.69E-01
	37.36	39.70	-1.52E-01		3.01E-01	
	42.30	15.10	-2.02E-01		6.31E-01	
	72.40	2.31	-2.54E+00		3.44E+00	
+	PM-146	453.90	39.94	-3.99E-02	1.70E-01	1.70E-01
	735.90	14.01	-1.06E-01		5.70E-01	
	747.13	13.10	3.57E-01		6.69E-01	
+	ND-147	91.11	28.90	-6.98E-01	1.18E+00	1.18E+00
	531.02	13.10	1.08E+00		2.77E+00	
+	PM-149	285.90	3.10	4.81E+02	6.85E+03	6.85E+03
+	EU-152	121.78	20.50	5.94E-02	2.36E-01	2.36E-01
	244.69	5.40	-1.67E+00		1.44E+00	
	344.27	19.13	9.22E-02		3.10E-01	
	778.89	9.20	-6.56E-02		9.08E-01	
	964.01	10.40	-8.42E-01		1.08E+00	
	1085.78	7.22	-1.72E-01		1.33E+00	
	1112.02	9.60	4.03E-01		1.08E+00	
	1407.95	14.94	1.15E-01		5.91E-01	
+	GD-153	97.43	31.30	8.64E-02	1.72E-01	1.72E-01
	103.18	22.20	-1.97E-01		2.21E-01	
+	EU-154	123.07	40.50	4.90E-02	1.21E-01	1.21E-01
	723.30	19.70	4.95E-03		4.34E-01	
	873.19	11.50	-1.88E-02		7.36E-01	
	996.32	10.30	-1.32E-01		8.19E-01	
	1004.76	17.90	5.83E-02		4.64E-01	
	1274.45	35.50	-4.48E-02		3.10E-01	
+	EU-155	86.50	30.90	1.80E-01	2.18E-01	2.18E-01
	105.30	20.70	-4.00E-02		2.27E-01	
+	EU-156	811.77	10.40	-6.74E-02	2.65E+00	2.65E+00
	1153.47	7.20	9.83E-02		4.92E+00	
	1230.71	8.90	-8.13E-01		3.79E+00	
+	HO-166M	184.41	72.60	1.43E-01	8.73E-02	8.73E-02
	280.45	29.60	5.31E-03		2.31E-01	
	410.94	11.10	1.75E-01		6.50E-01	
	711.69	54.10	-7.50E-02		1.43E-01	
+	TM-171	66.72	0.14	-3.22E-01	4.86E+01	4.86E+01
+	HF-172	81.75	4.52	-4.73E+00	4.41E-01	1.31E+00
	125.81	11.30	-4.81E-01		4.41E-01	

Analysis Report for 1510084-03

CP0604S06-07-DUP

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	-6.20E+00	2.35E+00	3.54E+00
		810.06	16.63	-3.24E+00		7.09E+00
		912.12	15.25	3.02E+01		1.53E+01
		1093.66	62.50	-4.04E-01		2.35E+00
+	LU-173	100.72	5.24	6.20E-01	3.44E-01	9.74E-01
		272.11	21.20	1.01E-01		3.44E-01
+	HF-175	343.40	84.00	1.58E-02	1.01E-01	1.01E-01
+	LU-176	88.34	13.30	3.43E-01	6.75E-02	5.16E-01
		201.83	86.00	-3.51E-02		7.38E-02
		306.78	94.00	6.95E-03		6.75E-02
+	TA-182	67.75	41.20	-7.13E-02	1.86E-01	1.86E-01
		1121.30	34.90	6.09E-01		4.81E-01
		1189.05	16.23	3.65E-01		8.88E-01
		1221.41	26.98	-2.89E-02		5.20E-01
		1231.02	11.44	-1.84E-01		1.02E+00
+	IR-192	308.46	29.68	-9.22E-02	1.89E-01	2.61E-01
		468.07	48.10	2.28E-02		1.89E-01
+	HG-203	279.19	77.30	7.38E-02	1.34E-01	1.34E-01
+	BI-207	569.67	97.72	-3.45E-02	7.12E-02	7.12E-02
		1063.62	74.90	-2.60E-02		1.28E-01
+	TL-208	583.14	* 30.22	1.57E+00	3.36E-01	3.36E-01
		860.37	* 4.48	2.34E+00		2.38E+00
		2614.66	35.85	1.44E+00		7.11E-01
+	BI-210M	262.00	45.00	-4.03E-03	1.38E-01	1.38E-01
		300.00	23.00	4.27E-02		3.17E-01
+	PB-210	46.50	4.25	1.16E+00	2.08E+00	2.08E+00
+	PB-211	404.84	2.90	4.36E-01	2.28E+00	2.28E+00
		831.96	2.90	-7.55E-02		2.81E+00
+	BI-212	727.17	* 11.80	8.88E-01	1.03E+00	1.03E+00
		1620.62	2.75	-1.20E-01		2.93E+00
+	PB-212	238.63	* 44.60	1.60E+00	3.18E-01	3.18E-01
		300.09	3.41	2.88E-01		2.14E+00
+	BI-214	609.31	* 46.30	9.36E-01	1.85E-01	1.85E-01
		1120.29	15.10	9.57E-01		9.44E-01
		1764.49	15.80	5.99E-01		7.79E-01
		2204.22	* 4.98	7.96E-01		1.83E+00
+	PB-214	295.21	* 19.19	8.05E-01	2.13E-01	3.94E-01
		351.92	* 37.19	9.91E-01		2.13E-01
+	RN-219	401.80	6.50	-1.39E-01	1.03E+00	1.03E+00
+	RA-223	323.87	3.88	-4.08E-01	1.70E+00	1.70E+00
+	RA-224	240.98	3.95	2.16E+01	3.45E+00	3.45E+00
+	RA-225	40.00	31.00	-4.45E-01	1.13E+00	1.13E+00
+	RA-226	186.21	* 3.28	3.19E+00	2.79E+00	2.79E+00
+	TH-227	50.10	8.40	-1.56E+00	8.78E-01	8.78E-01
		236.00	11.50	2.69E+00		9.90E-01
		256.20	6.30	-2.04E-02		9.79E-01
+	AC-228	338.32	* 11.40	1.55E+00	7.18E-01	7.18E-01
		911.07	* 27.70	1.27E+00		7.18E-01

Analysis Report for 1510084-03

CP0604S06-07-DUP

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.40E+00	7.18E-01	9.56E-01
+	TH-230	48.44		16.90	3.70E-01	4.95E-01	4.95E-01
		62.85		4.60	1.62E+00		1.59E+00
		67.67		0.37	-6.79E+00		1.77E+01
+	PA-231	283.67		1.60	1.28E-01	3.03E+00	3.89E+00
		302.67		2.30	1.23E+00		3.03E+00
+	TH-231	25.64		14.70	4.30E-01	9.16E-01	3.06E+00
		84.21		6.40	2.60E-01		9.16E-01
+	PA-233	311.98		38.60	-2.87E-02	3.05E-01	3.05E-01
+	PA-234	131.20		20.40	2.77E-01	2.63E-01	2.63E-01
		733.99		8.80	-2.70E-01		8.72E-01
		946.00		12.00	-4.24E-01		7.11E-01
+	PA-234M	1001.03		0.92	-4.63E+00	8.31E+00	8.31E+00
+	TH-234	63.29	*	3.80	1.83E+00	2.43E+00	2.43E+00
+	U-235	143.76		10.50	2.07E-01	4.89E-01	4.89E-01
		163.35		4.70	-7.35E-02		1.04E+00
		205.31		4.70	-2.47E+00		1.36E+00
+	NP-237	86.50		12.60	4.36E-01	5.29E-01	5.29E-01
+	NP-239	106.10		22.70	1.53E+01	4.28E+02	4.28E+02
		228.18		10.70	2.84E+02		1.25E+03
		277.60		14.10	1.04E+03		1.05E+03
+	AM-241	59.54		35.90	2.68E-02	1.90E-01	1.90E-01
+	AM-243	74.67	*	66.00	3.28E-01	1.94E-01	1.94E-01
+	CM-243	209.75	*	3.29	2.91E+00	5.54E-01	2.62E+00
		228.14		10.60	1.37E-01		6.04E-01
		277.60	*	14.00	5.50E-01		5.54E-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

: 00417

Analysis Report for 1510084-03

CP0604S06-07-DUP

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	9.52E-01	9.52E-01	3.18E-01	4.51E-01
NA-22	1274.54	99.94	1.12E-01	1.12E-01	-1.61E-02	5.14E-02
NA-24	1368.53	99.99	2.36E+11	1.59E+11	-1.31E+11	1.03E+11
	2754.09	99.86	1.59E+11		1.14E+10	5.63E+10
AL-26	1808.65	99.76	6.16E-02	6.16E-02	-8.20E-03	2.52E-02
+ K-40	1460.81	* 10.67	6.68E-01	6.68E-01	2.01E+01	2.90E-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	6.94E-02	6.94E-02	-2.66E-02	3.40E-02
	78.34	96.00	8.57E-02		2.02E-01	4.22E-02
SC-46	889.25	99.98	1.04E-01	1.04E-01	-2.88E-02	4.82E-02
	1120.51	99.99	1.77E-01		1.79E-01	8.36E-02
V-48	983.52	99.98	2.75E-01	2.75E-01	-2.50E-02	1.27E-01
	1312.10	97.50	3.33E-01		-7.61E-02	1.53E-01
CR-51	320.08	9.83	1.23E+00	1.23E+00	1.17E-01	5.89E-01
MN-54	834.83	99.97	8.28E-02	8.28E-02	-4.02E-02	3.83E-02
CO-56	846.75	99.96	1.04E-01	1.04E-01	4.61E-02	4.82E-02
	1037.75	14.03	8.35E-01		1.20E-01	3.85E-01
	1238.25	67.00	2.59E-01		1.55E-01	1.22E-01
	1771.40	15.51	5.92E-01		6.53E-02	2.52E-01
	2598.48	16.90	2.80E-01		0.00E+00	8.84E-02
CO-57	122.06	85.51	6.03E-02	6.03E-02	1.52E-02	2.93E-02
	136.48	10.60	5.01E-01		1.08E-01	2.43E-01
CO-58	810.76	99.40	1.06E-01	1.06E-01	-3.21E-02	4.92E-02
FE-59	1099.22	56.50	2.98E-01	2.98E-01	1.31E-01	1.39E-01
	1291.56	43.20	3.68E-01		6.98E-03	1.69E-01
CO-60	1173.22	100.00	1.03E-01	1.03E-01	3.08E-03	4.76E-02
	1332.49	100.00	1.08E-01		3.44E-02	4.94E-02
ZN-65	1115.52	50.75	2.14E-01	2.14E-01	5.74E-02	9.89E-02
+ GA-67	93.31	* 35.70	5.68E+01	5.68E+01	6.63E+01	2.80E+01
	208.95	* 2.24	9.60E+02		1.07E+03	4.70E+02
	300.22	16.00	1.14E+02		1.54E+01	5.51E+01
SE-75	121.11	16.70	3.27E-01	9.52E-02	2.92E-02	1.59E-01
	136.00	59.20	9.52E-02		-3.49E-02	4.62E-02
	264.65	59.80	1.17E-01		-3.35E-02	5.64E-02
	279.53	25.20	3.18E-01		-2.76E-02	1.54E-01
	400.65	11.40	6.88E-01		-8.67E-02	3.28E-01
RB-82	776.52	13.00	1.41E+00	1.41E+00	7.62E-01	6.60E-01
RB-83	520.41	46.00	1.96E-01	1.96E-01	4.46E-02	9.26E-02
	529.64	30.30	2.77E-01		3.96E-02	1.31E-01
	552.65	16.40	5.91E-01		-3.36E-02	2.80E-01
KR-85	513.99	0.43	2.31E+01	2.31E+01	-3.23E+00	1.11E+01
SR-85	513.99	99.27	1.33E-01	1.33E-01	-1.86E-02	6.38E-02
Y-88	898.02	93.40	1.13E-01	8.58E-02	5.17E-02	5.25E-02
	1836.01	99.38	8.58E-02		4.01E-02	3.62E-02
NB-93M	16.57	9.43	7.82E+01	7.82E+01	6.21E+01	3.81E+01
NB-94	702.63	100.00	8.38E-02	8.38E-02	-1.22E-02	3.94E-02
	871.10	100.00	8.89E-02		4.94E-02	4.14E-02
NB-95	765.79	99.81	1.49E-01	1.49E-01	7.01E-02	7.01E-02
NB-95M	235.69	25.00	6.67E+01	6.67E+01	1.82E+02	3.28E+01
ZR-95	724.18	43.70	2.90E-01	1.87E-01	2.06E-02	1.37E-01
	756.72	55.30	1.87E-01		7.41E-02	8.71E-02

Analysis Report for 1510084-03

CP0604S06-07-DUP

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	5.67E+02	4.20E+02	-4.30E+01	2.74E+02	
	739.58	12.80	4.20E+02		-1.94E+02	1.95E+02	
	778.00	4.50	1.25E+03		-9.15E+02	5.81E+02	
RU-103	497.08	89.00	1.29E-01	1.29E-01	1.41E-03	6.09E-02	
RU-106	621.84	9.80	7.93E-01	7.93E-01	5.64E-01	3.72E-01	
AG-108M	433.93	89.90	7.66E-02	7.66E-02	2.78E-03	3.64E-02	
	614.37	90.40	9.17E-02		-4.22E-02	4.33E-02	
	722.95	90.50	9.39E-02		1.07E-03	4.40E-02	
+ CD-109	88.03	*	3.72	1.86E+00	1.86E+00	1.14E+00	9.10E-01
AG-110M	657.75	93.14	9.29E-02	9.29E-02	7.34E-03	4.37E-02	
	677.61	10.53	8.63E-01		1.90E-01	4.06E-01	
	706.67	16.46	5.44E-01		-6.56E-02	2.55E-01	
	763.93	21.98	3.61E-01		-3.09E-01	1.67E-01	
	884.67	71.63	1.26E-01		-2.16E-03	5.81E-02	
	1384.27	23.94	3.90E-01		-1.95E-02	1.75E-01	
CD-113M	263.70	0.02	2.65E+02	2.65E+02	-1.16E+02	1.28E+02	
SN-113	255.12	1.93	3.72E+00	1.32E-01	-1.03E+00	1.79E+00	
	391.69	64.90	1.32E-01		2.33E-02	6.33E-02	
	TE123M	159.00	84.10		6.65E-02	6.65E-02	-2.09E-02	3.22E-02
SB-124	602.71	97.87	1.14E-01	1.14E-01	4.51E-02	5.39E-02	
	645.85	7.26	1.43E+00		2.42E-01	6.71E-01	
	722.78	11.10	1.03E+00		1.18E-02	4.84E-01	
	1691.02	49.00	1.51E-01		-7.86E-02	6.11E-02	
	I-125	35.49	6.49		2.82E+00	2.82E+00	-4.89E-01	1.37E+00
SB-125	176.33	6.89	7.54E-01	2.32E-01	2.27E-01	3.65E-01	
	427.89	29.33	2.32E-01		-6.73E-02	1.10E-01	
	463.38	10.35	7.99E-01		5.08E-01	3.82E-01	
	600.56	17.80	4.67E-01		2.75E-01	2.21E-01	
	635.90	11.32	6.36E-01		-2.35E-01	2.97E-01	
	SB-126	414.70	83.30		3.26E-01	3.26E-01	-8.00E-02	1.55E-01
SB-126	666.33	99.60	3.78E-01	3.26E-01	1.43E-01	1.78E-01	
	695.00	99.60	3.82E-01		1.90E-01	1.80E-01	
	720.50	53.80	6.43E-01		-3.07E-02	3.01E-01	
	+ SN-126	87.57	*		37.00	1.80E-01	1.80E-01	1.10E-01	8.80E-02
SB-127	473.00	25.00	3.05E+01	2.27E+01	3.44E+00	1.45E+01	
	685.20	35.70	2.27E+01		-1.32E+00	1.06E+01	
	783.80	14.70	6.24E+01		4.47E+00	2.92E+01	
I-129	29.78	57.00	4.04E-01	4.04E-01	-2.97E-01	1.96E-01	
	33.60	13.20	1.21E+00		-1.08E-01	5.87E-01	
	39.58	7.52	1.41E+00		-5.57E-01	6.86E-01	
I-131	284.30	6.05	9.68E+00	6.87E-01	3.19E-01	4.66E+00	
	364.48	81.20	6.87E-01		-7.65E-02	3.27E-01	
	636.97	7.26	9.35E+00		1.13E+00	4.37E+00	
	722.89	1.80	4.43E+01		5.06E-01	2.08E+01	
TE-132	49.72	13.10	1.43E+02	1.82E+01	-2.54E+02	6.97E+01	
	228.16	88.00	1.82E+01		4.14E+00	8.84E+00	
BA-133	81.00	33.00	1.75E-01	1.42E-01	-1.01E+00	8.57E-02	
	302.84	17.80	3.93E-01		1.60E-01	1.90E-01	
	356.01	60.00	1.42E-01		-6.85E-04	6.85E-02	
I-133	529.87	86.30	8.33E+07	8.33E+07	1.19E+07	3.92E+07	
XE-133	81.00	38.00	4.70E+00	4.70E+00	-2.72E+01	2.30E+00	
CS-134	563.23	8.38	9.86E-01	9.24E-02	2.42E-01	4.67E-01	
	569.32	15.43	4.77E-01		-2.09E-01	2.24E-01	

Analysis Report for 1510084-03

CP0604S06-07-DUP

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	9.24E-02	9.24E-02	1.33E-02	4.38E-02	
	795.84	85.40	1.18E-01		1.03E-01	5.58E-02	
	801.93	8.73	9.18E-01		-6.32E-01	4.25E-01	
CS-135	268.24	16.00	4.33E-01	4.33E-01	5.17E-03	2.10E-01	
	@ I-135	1131.51	22.50		1.00E+26	1.00E+26	1.00E+20
	@	1260.41	28.60		1.00E+26	0.00E+00	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20	
CS-136	153.22	7.46	2.74E+00	3.14E-01	1.84E+00	1.33E+00	
	163.89	4.61	4.18E+00		-2.95E-01	2.02E+00	
	176.55	13.56	1.51E+00		1.43E+00	7.33E-01	
	273.65	12.66	2.13E+00		-1.86E+00	1.03E+00	
	340.57	48.50	6.69E-01		9.45E-01	3.23E-01	
	818.50	99.70	3.14E-01		-6.08E-02	1.45E-01	
	1048.07	79.60	4.64E-01		2.05E-01	2.14E-01	
	1235.34	19.70	2.43E+00		-5.86E-01	1.13E+00	
CS-137	661.65	85.12	9.58E-02	9.58E-02	-6.86E-02	4.50E-02	
LA-138	788.74	34.00	2.46E-01	1.20E-01	-4.92E-02	1.14E-01	
	1435.80	66.00	1.20E-01		-7.37E-02	5.29E-02	
CE-139	165.85	80.35	6.99E-02	6.99E-02	-1.15E-02	3.38E-02	
BA-140	162.64	6.70	2.94E+00	1.24E+00	-4.40E-01	1.42E+00	
	304.84	4.50	5.87E+00		-2.96E+00	2.82E+00	
	423.70	3.20	8.28E+00		-3.29E+00	3.93E+00	
	437.55	2.00	1.37E+01		2.38E+00	6.52E+00	
	537.32	25.00	1.24E+00		-1.51E-02	5.89E-01	
LA-140	328.77	20.50	1.36E+00	4.00E-01	7.35E-02	6.55E-01	
	487.03	45.50	6.47E-01		1.66E-01	3.07E-01	
	815.85	23.50	1.46E+00		6.31E-01	6.80E-01	
	1596.49	95.49	4.00E-01		0.00E+00	1.78E-01	
CE-141	145.44	48.40	1.85E-01	1.85E-01	6.21E-02	8.98E-02	
CE-143	57.36	11.80	2.85E+05	9.55E+04	-2.33E+04	1.39E+05	
	293.26	42.00	9.55E+04		-7.29E+03	4.64E+04	
	664.55	5.20	8.02E+05		1.44E+05	3.78E+05	
CE-144	133.54	10.80	4.78E-01	4.78E-01	-2.53E-01	2.32E-01	
PM-144	476.78	42.00	1.82E-01	7.36E-02	1.20E-01	8.64E-02	
	618.01	98.60	7.36E-02		-3.31E-02	3.43E-02	
	696.49	99.49	8.99E-02		-8.03E-03	4.23E-02	
PM-145	36.85	21.70	5.69E-01	3.01E-01	-1.07E-01	2.76E-01	
	37.36	39.70	3.01E-01		-1.52E-01	1.47E-01	
	42.30	15.10	6.31E-01		-2.02E-01	3.07E-01	
	72.40	2.31	3.44E+00		-2.54E+00	1.69E+00	
PM-146	453.90	39.94	1.70E-01	1.70E-01	-3.99E-02	8.08E-02	
	735.90	14.01	5.70E-01		-1.06E-01	2.66E-01	
	747.13	13.10	6.69E-01		3.57E-01	3.14E-01	
ND-147	91.11	28.90	1.18E+00	1.18E+00	-6.98E-01	5.78E-01	
	531.02	13.10	2.77E+00		1.08E+00	1.31E+00	
PM-149	285.90	3.10	6.85E+03	6.85E+03	4.81E+02	3.30E+03	
EU-152	121.78	20.50	2.36E-01	2.36E-01	5.94E-02	1.15E-01	
	244.69	5.40	1.44E+00		-1.67E+00	7.02E-01	
	344.27	19.13	3.10E-01		9.22E-02	1.48E-01	
	778.89	9.20	9.08E-01		-6.56E-02	4.23E-01	
	964.01	10.40	1.08E+00		-8.42E-01	5.08E-01	
	1085.78	7.22	1.33E+00		-1.72E-01	6.15E-01	
1112.02	9.60	1.08E+00		4.03E-01	5.00E-01		

Analysis Report for 1510084-03

CP0604S06-07-DUP

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	5.91E-01	2.36E-01	1.15E-01	2.65E-01	
GD-153	97.43	31.30	1.72E-01	1.72E-01	8.64E-02	8.38E-02	
	103.18	22.20	2.21E-01		-1.97E-01	1.08E-01	
EU-154	123.07	40.50	1.21E-01	1.21E-01	4.90E-02	5.90E-02	
	723.30	19.70	4.34E-01		4.95E-03	2.03E-01	
	873.19	11.50	7.36E-01		-1.88E-02	3.41E-01	
	996.32	10.30	8.19E-01		-1.32E-01	3.76E-01	
	1004.76	17.90	4.64E-01		5.83E-02	2.13E-01	
	1274.45	35.50	3.10E-01		-4.48E-02	1.43E-01	
EU-155	86.50	30.90	2.18E-01	2.18E-01	1.80E-01	1.07E-01	
	105.30	20.70	2.27E-01		-4.00E-02	1.10E-01	
EU-156	811.77	10.40	2.65E+00	2.65E+00	-6.74E-02	1.24E+00	
	1153.47	7.20	4.92E+00		9.83E-02	2.28E+00	
	1230.71	8.90	3.79E+00		-8.13E-01	1.75E+00	
HO-166M	184.41	72.60	8.73E-02	8.73E-02	1.43E-01	4.25E-02	
	280.45	29.60	2.31E-01		5.31E-03	1.12E-01	
	410.94	11.10	6.50E-01		1.75E-01	3.10E-01	
	711.69	54.10	1.43E-01		-7.50E-02	6.68E-02	
TM-171	66.72	0.14	4.86E+01	4.86E+01	-3.22E-01	2.38E+01	
HF-172	81.75	4.52	1.31E+00	4.41E-01	-4.73E+00	6.43E-01	
	125.81	11.30	4.41E-01		-4.81E-01	2.14E-01	
LU-172	181.53	20.60	3.54E+00	2.35E+00	-6.20E+00	1.71E+00	
	810.06	16.63	7.09E+00		-3.24E+00	3.29E+00	
	912.12	15.25	1.53E+01		3.02E+01	7.36E+00	
	1093.66	62.50	2.35E+00		-4.04E-01	1.09E+00	
LU-173	100.72	5.24	9.74E-01	3.44E-01	6.20E-01	4.74E-01	
	272.11	21.20	3.44E-01		1.01E-01	1.66E-01	
HF-175	343.40	84.00	1.01E-01	1.01E-01	1.58E-02	4.86E-02	
LU-176	88.34	13.30	5.16E-01	6.75E-02	3.43E-01	2.53E-01	
	201.83	86.00	7.38E-02		-3.51E-02	3.58E-02	
	306.78	94.00	6.75E-02		6.95E-03	3.24E-02	
TA-182	67.75	41.20	1.86E-01	1.86E-01	-7.13E-02	9.11E-02	
	1121.30	34.90	4.81E-01		6.09E-01	2.27E-01	
	1189.05	16.23	8.88E-01		3.65E-01	4.15E-01	
	1221.41	26.98	5.20E-01		-2.89E-02	2.42E-01	
	1231.02	11.44	1.02E+00		-1.84E-01	4.69E-01	
IR-192	308.46	29.68	2.61E-01	1.89E-01	-9.22E-02	1.25E-01	
	468.07	48.10	1.89E-01		2.28E-02	8.97E-02	
HG-203	279.19	77.30	1.34E-01	1.34E-01	7.38E-02	6.48E-02	
BI-207	569.67	97.72	7.12E-02	7.12E-02	-3.45E-02	3.34E-02	
	1063.62	74.90	1.28E-01		-2.60E-02	5.93E-02	
+ TL-208	583.14	*	30.22	3.36E-01	3.36E-01	1.57E+00	1.61E-01
	860.37	*	4.48	2.38E+00		2.34E+00	1.12E+00
	2614.66		35.85	7.11E-01		1.44E+00	3.36E-01
BI-210M	262.00	45.00	1.38E-01	1.38E-01	-4.03E-03	6.64E-02	
	300.00	23.00	3.17E-01		4.27E-02	1.53E-01	
PB-210	46.50	4.25	2.08E+00	2.08E+00	1.16E+00	1.02E+00	
PB-211	404.84	2.90	2.28E+00	2.28E+00	4.36E-01	1.08E+00	
	831.96	2.90	2.81E+00		-7.55E-02	1.30E+00	
+ BI-212	727.17	*	11.80	1.03E+00	1.03E+00	8.88E-01	4.95E-01
	1620.62		2.75	2.93E+00		-1.20E-01	1.28E+00
+ PB-212	238.63	*	44.60	3.18E-01	3.18E-01	1.60E+00	1.57E-01
	300.09		3.41	2.14E+00		2.88E-01	1.03E+00

Analysis Report for 1510084-03

CP0604S06-07-DUP

	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	1.85E-01	1.85E-01	9.36E-01	8.74E-02
		1120.29		15.10	9.44E-01		9.57E-01	4.47E-01
		1764.49		15.80	7.79E-01		5.99E-01	3.55E-01
		2204.22	*	4.98	1.83E+00		7.96E-01	7.89E-01
+	PB-214	295.21	*	19.19	3.94E-01	2.13E-01	8.05E-01	1.91E-01
		351.92	*	37.19	2.13E-01		9.91E-01	1.03E-01
	RN-219	401.80		6.50	1.03E+00	1.03E+00	-1.39E-01	4.93E-01
	RA-223	323.87		3.88	1.70E+00	1.70E+00	-4.08E-01	8.14E-01
	RA-224	240.98		3.95	3.45E+00	3.45E+00	2.16E+01	1.70E+00
	RA-225	40.00		31.00	1.13E+00	1.13E+00	-4.45E-01	5.49E-01
+	RA-226	186.21	*	3.28	2.79E+00	2.79E+00	3.19E+00	1.37E+00
	TH-227	50.10		8.40	8.78E-01	8.78E-01	-1.56E+00	4.28E-01
		236.00		11.50	9.90E-01		2.69E+00	4.86E-01
		256.20		6.30	9.79E-01		-2.04E-02	4.72E-01
+	AC-228	338.32	*	11.40	7.18E-01	7.18E-01	1.55E+00	3.47E-01
		911.07	*	27.70	7.18E-01		1.27E+00	3.47E-01
		969.11	*	16.60	9.56E-01		1.40E+00	4.58E-01
	TH-230	48.44		16.90	4.95E-01	4.95E-01	3.70E-01	2.42E-01
		62.85		4.60	1.59E+00		1.62E+00	7.79E-01
		67.67		0.37	1.77E+01		-6.79E+00	8.67E+00
	PA-231	283.67		1.60	3.89E+00	3.03E+00	1.28E-01	1.87E+00
		302.67		2.30	3.03E+00		1.23E+00	1.46E+00
	TH-231	25.64		14.70	3.06E+00	9.16E-01	4.30E-01	1.49E+00
		84.21		6.40	9.16E-01		2.60E-01	4.48E-01
	PA-233	311.98		38.60	3.05E-01	3.05E-01	-2.87E-02	1.46E-01
	PA-234	131.20		20.40	2.63E-01	2.63E-01	2.77E-01	1.28E-01
		733.99		8.80	8.72E-01		-2.70E-01	4.06E-01
		946.00		12.00	7.11E-01		-4.24E-01	3.28E-01
	PA-234M	1001.03		0.92	8.31E+00	8.31E+00	-4.63E+00	3.78E+00
+	TH-234	63.29	*	3.80	2.43E+00	2.43E+00	1.83E+00	1.20E+00
	U-235	143.76		10.50	4.89E-01	4.89E-01	2.07E-01	2.38E-01
		163.35		4.70	1.04E+00		-7.35E-02	5.04E-01
		205.31		4.70	1.36E+00		-2.47E+00	6.60E-01
	NP-237	86.50		12.60	5.29E-01	5.29E-01	4.36E-01	2.59E-01
	NP-239	106.10		22.70	4.28E+02	4.28E+02	1.53E+01	2.08E+02
		228.18		10.70	1.25E+03		2.84E+02	6.06E+02
		277.60		14.10	1.05E+03		1.04E+03	5.07E+02
	AM-241	59.54		35.90	1.90E-01	1.90E-01	2.68E-02	9.28E-02
+	AM-243	74.67	*	66.00	1.94E-01	1.94E-01	3.28E-01	9.59E-02
+	CM-243	209.75	*	3.29	2.62E+00	5.54E-01	2.91E+00	1.28E+00
		228.14		10.60	6.04E-01		1.37E-01	2.93E-01
		277.60	*	14.00	5.54E-01		5.50E-01	2.69E-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 1510084-03
CP0604S06-07-DUP

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: CP0604S06-07-DUP

Elapsed Live time: 3600
 Elapsed Real Time: 3617

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	6	189	181	157	145	109	104	117	
17:	97	105	99	73	73	76	99	84	
25:	87	89	86	85	73	77	79	74	
33:	95	80	89	81	90	79	82	93	
41:	99	92	102	92	92	108	187	106	
49:	94	113	101	100	111	104	122	123	
57:	112	137	135	120	131	133	176	238	
65:	152	152	142	139	153	148	174	162	
73:	186	214	419	314	399	505	156	132	
81:	124	128	107	166	160	120	189	256	
89:	165	156	181	137	239	228	111	84	
97:	105	81	106	116	95	71	86	70	
105:	80	90	88	84	93	75	85	90	
113:	97	92	80	97	70	71	56	77	
121:	80	87	89	76	85	87	76	80	
129:	122	100	85	79	92	69	73	69	
137:	83	82	87	72	69	69	80	104	
145:	77	69	71	74	80	63	70	68	
153:	77	82	86	58	59	65	62	64	
161:	61	60	69	58	56	68	59	69	
169:	71	59	61	65	50	51	74	60	
177:	54	68	66	45	48	68	63	55	
185:	77	116	140	55	57	56	61	74	
193:	46	59	46	65	62	62	51	72	
201:	66	64	53	50	41	61	67	56	
209:	79	100	69	47	54	47	59	49	
217:	57	49	39	53	47	51	50	38	
225:	53	52	45	33	57	51	43	33	
233:	58	48	64	55	56	167	585	303	
241:	87	154	98	44	40	43	36	30	
249:	34	42	40	35	37	34	27	40	
257:	40	43	36	41	32	38	35	24	
265:	44	26	38	27	50	57	61	42	
273:	23	34	38	45	44	63	36	42	
281:	30	33	32	38	34	31	23	29	
289:	28	27	31	29	39	25	87	135	
297:	52	30	38	42	55	33	29	42	
305:	28	20	27	32	25	27	32	19	
313:	21	29	23	25	22	29	25	26	
321:	24	28	30	27	26	29	33	27	
329:	42	33	19	25	34	28	21	22	
337:	37	51	106	57	17	28	8	22	
345:	20	26	20	20	15	21	45	187	
353:	154	28	18	24	16	16	25	25	
361:	17	21	13	17	17	26	17	18	

369: 24 12 12 23 21 20 13 18

Sample Title: CP0604S06-07-DUP

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	18	19	21	22	25	26	23	25
385:	18	19	17	33	32	28	21	25
393:	22	20	28	19	26	22	25	22
401:	15	14	20	24	20	21	17	17
409:	35	31	25	19	15	14	17	24
417:	14	15	16	26	10	21	22	19
425:	10	14	22	23	15	18	22	22
433:	17	20	12	15	20	12	26	16
441:	19	12	15	19	23	15	10	15
449:	15	19	18	19	14	16	19	11
457:	16	20	17	11	19	22	46	28
465:	21	14	19	14	16	19	17	15
473:	14	16	20	16	18	15	18	18
481:	9	12	14	15	15	12	16	21
489:	19	16	17	14	14	19	15	18
497:	11	18	19	11	19	15	15	20
505:	17	12	16	14	23	33	67	58
513:	28	20	8	15	9	16	19	19
521:	17	13	11	17	12	9	7	11
529:	8	14	13	17	17	13	12	14
537:	18	19	13	18	14	14	12	17
545:	13	14	10	25	12	14	16	17
553:	16	9	19	18	13	15	16	15
561:	17	15	19	20	10	15	18	8
569:	10	14	10	10	9	21	10	12
577:	13	11	7	9	15	19	107	149
585:	36	13	13	13	6	8	15	5
593:	17	6	11	8	11	9	11	11
601:	18	19	13	20	11	11	16	27
609:	92	149	38	8	13	12	13	12
617:	4	8	15	9	6	14	10	13
625:	10	6	8	14	16	11	14	10
633:	8	14	7	6	10	10	12	11
641:	12	7	6	15	14	12	14	9
649:	8	12	9	19	10	7	10	5
657:	22	14	11	11	10	11	16	10
665:	15	15	16	12	14	12	12	17
673:	9	18	13	12	11	10	16	10
681:	15	10	8	13	8	10	7	11
689:	10	6	12	18	14	13	10	15
697:	15	8	9	12	10	16	9	14
705:	11	8	11	19	9	6	15	8
713:	7	13	8	13	8	10	11	8
721:	12	12	10	11	9	16	30	27
729:	15	10	11	8	8	14	8	6
737:	6	15	8	10	12	4	9	14
745:	9	14	13	3	11	13	10	7
753:	12	9	10	12	6	12	8	3
761:	6	3	8	14	5	6	10	16
769:	19	15	9	9	18	13	7	9
777:	10	15	6	11	3	11	11	8
785:	15	13	7	11	9	7	10	7
793:	10	9	19	19	13	12	8	8

801: 4 12 8 9 5 11 10 8

Sample Title: CP0604S06-07-DUP

Channel	1	2	3	4	5	6	7	8
809:	8	10	10	2	8	12	12	7
817:	11	3	8	9	4	8	8	4
825:	16	11	8	8	7	4	14	8
833:	10	4	8	10	6	4	8	12
841:	15	5	6	9	12	5	4	7
849:	8	10	5	6	4	7	6	7
857:	6	4	6	23	22	23	6	6
865:	9	6	7	8	9	9	11	11
873:	7	6	6	4	5	10	6	6
881:	11	4	10	10	5	3	9	6
889:	11	8	10	5	12	8	12	9
897:	8	7	3	10	9	2	4	7
905:	11	7	7	7	7	17	52	77
913:	26	8	5	5	14	4	4	4
921:	9	4	5	5	9	1	3	7
929:	6	2	7	4	15	18	13	8
937:	5	4	5	3	11	5	8	8
945:	8	6	6	7	5	11	11	6
953:	8	8	7	8	11	6	3	4
961:	5	6	12	15	23	17	5	14
969:	45	35	17	9	5	6	4	6
977:	5	7	6	11	5	9	9	5
985:	6	4	3	13	6	4	9	7
993:	4	8	9	8	7	3	3	8
1001:	4	7	4	5	5	9	6	4
1009:	5	4	1	4	4	6	5	4
1017:	7	5	3	6	5	6	3	6
1025:	4	9	10	4	8	9	14	1
1033:	9	3	6	8	8	2	11	6
1041:	8	6	7	2	8	2	8	7
1049:	8	9	7	6	4	2	2	3
1057:	5	8	6	7	9	3	10	9
1065:	8	4	8	10	4	4	12	4
1073:	1	2	8	8	4	8	4	10
1081:	5	11	5	6	5	8	4	7
1089:	13	9	5	7	8	9	3	11
1097:	7	7	14	11	10	6	6	9
1105:	7	7	6	6	4	8	8	7
1113:	7	8	12	7	4	6	9	31
1121:	21	27	8	5	7	6	8	3
1129:	7	5	7	5	9	6	4	5
1137:	8	8	12	4	10	6	3	9
1145:	6	3	8	3	4	5	5	5
1153:	5	7	15	14	10	8	6	12
1161:	6	2	6	4	4	3	10	9
1169:	12	5	10	3	11	10	3	6
1177:	2	6	7	10	11	9	4	8
1185:	6	7	9	9	14	13	12	6
1193:	7	9	4	7	5	11	17	8
1201:	7	13	6	6	4	9	9	12
1209:	11	13	5	12	7	5	10	11
1217:	5	6	7	8	12	11	8	11
1225:	12	9	9	7	3	9	6	5

1233: 6 6 7 15 9 16 18 10

Sample Title: CP0604S06-07-DUP

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	8	12	7	9	8	12	14	7
1249:	10	7	7	12	3	9	9	7
1257:	5	5	4	7	2	6	6	3
1265:	7	3	7	7	2	5	7	4
1273:	5	6	6	4	5	6	8	6
1281:	1	11	7	4	7	5	8	3
1289:	8	4	2	4	6	5	4	1
1297:	7	9	7	5	9	3	4	0
1305:	3	6	5	0	4	7	4	6
1313:	4	5	10	2	7	4	11	4
1321:	4	2	6	3	4	2	1	3
1329:	5	6	3	7	9	2	5	2
1337:	7	3	4	4	3	1	6	1
1345:	7	6	5	1	2	5	6	2
1353:	4	2	3	2	3	0	0	2
1361:	3	3	3	2	0	2	1	5
1369:	1	0	1	5	5	2	4	2
1377:	4	8	3	5	0	2	1	3
1385:	2	6	4	2	1	0	1	3
1393:	2	1	6	1	3	2	2	1
1401:	5	3	2	4	1	4	2	4
1409:	2	2	3	3	1	3	2	2
1417:	1	3	1	2	0	0	3	3
1425:	1	6	4	3	4	4	4	2
1433:	1	4	3	0	2	2	1	4
1441:	3	3	0	0	2	2	0	2
1449:	4	4	2	2	0	2	4	3
1457:	0	5	23	96	251	201	40	6
1465:	0	1	0	1	1	3	1	1
1473:	0	4	4	1	1	5	0	2
1481:	1	1	2	4	1	3	3	2
1489:	1	3	1	2	1	2	1	2
1497:	2	2	5	1	6	0	4	1
1505:	0	0	1	1	3	7	1	1
1513:	3	2	3	3	0	0	1	0
1521:	1	3	1	0	3	1	2	1
1529:	2	2	3	2	3	1	2	2
1537:	0	3	3	1	0	0	0	3
1545:	1	0	1	0	1	1	1	1
1553:	2	1	1	1	1	0	1	4
1561:	2	0	1	1	0	0	1	1
1569:	4	0	1	1	0	2	0	2
1577:	0	1	1	2	1	2	0	2
1585:	1	2	0	6	10	3	1	3
1593:	8	6	1	1	2	0	1	1
1601:	1	1	1	3	1	1	3	2
1609:	0	2	0	3	0	1	1	2
1617:	1	4	0	1	3	4	0	1
1625:	4	1	3	1	0	4	6	4
1633:	0	0	0	2	1	2	1	1
1641:	1	1	0	0	2	2	3	0
1649:	1	2	1	0	0	2	0	0
1657:	1	1	0	0	2	0	1	0

1665: 1 0 1 0 0 0 0 0 0

Sample Title: CP0604S06-07-DUP

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1673:	0	2	2	1	1	3	1	1
1681:	1	0	1	1	2	1	0	1
1689:	1	0	0	1	0	2	1	3
1697:	2	0	1	2	0	3	1	3
1705:	1	1	2	1	2	0	1	1
1713:	0	1	0	1	1	1	0	3
1721:	1	1	0	2	0	1	0	2
1729:	4	1	7	1	1	0	1	1
1737:	1	1	1	0	0	1	0	0
1745:	1	0	0	0	0	1	0	1
1753:	1	0	1	2	2	3	0	0
1761:	0	0	2	5	18	8	2	1
1769:	0	1	2	1	3	1	0	2
1777:	1	0	2	2	1	0	0	2
1785:	1	0	1	1	2	0	0	1
1793:	3	1	0	1	1	1	1	0
1801:	1	1	1	1	2	1	1	2
1809:	0	0	0	0	1	1	1	0
1817:	0	0	3	0	0	1	0	0
1825:	3	1	0	0	0	0	1	2
1833:	0	1	3	1	2	0	0	0
1841:	0	1	1	3	0	3	4	2
1849:	1	3	0	3	1	2	0	1
1857:	1	0	0	0	1	0	0	0
1865:	1	1	1	1	1	1	0	1
1873:	4	1	1	2	1	2	1	3
1881:	1	0	0	1	0	0	2	3
1889:	0	1	1	1	2	2	2	3
1897:	1	2	1	0	2	1	0	2
1905:	1	1	1	1	0	0	1	0
1913:	1	1	1	0	4	2	0	2
1921:	1	0	1	0	1	4	0	4
1929:	1	3	0	1	0	1	0	2
1937:	0	0	0	1	0	0	1	1
1945:	2	0	1	2	2	0	2	0
1953:	0	1	0	1	0	0	0	1
1961:	2	0	0	0	1	2	0	1
1969:	1	2	1	1	1	1	0	1
1977:	0	1	0	0	0	0	0	0
1985:	1	1	0	2	0	2	0	1
1993:	2	1	1	1	0	0	1	2
2001:	2	0	1	0	0	1	0	2
2009:	1	1	1	1	2	2	2	1
2017:	1	1	0	4	2	2	0	0
2025:	0	0	1	0	2	1	0	3
2033:	0	0	2	0	1	1	0	1
2041:	0	1	2	2	2	1	1	0
2049:	0	1	1	0	1	1	0	0
2057:	2	1	0	1	3	0	1	1
2065:	3	0	1	0	0	4	1	1
2073:	0	1	3	1	3	1	0	0
2081:	1	1	2	2	1	1	1	1
2089:	0	0	2	0	0	0	2	0

2097: 1 0 0 2 1 3 3 2

Sample Title: CP0604S06-07-DUP

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

2529: 0 1 0 1 0 0 0 1

Sample Title: CP0604S06-07-DUP

Channel	1	2	3	4	5	6	7	8	9
2537:	0	1	0	1	0	1	0	1	
2545:	3	1	0	0	2	1	0	0	0
2553:	1	0	0	0	0	0	0	0	0
2561:	0	0	1	0	1	0	1	0	0
2569:	0	0	0	1	1	0	0	0	1
2577:	0	0	0	2	1	0	0	0	0
2585:	0	0	0	0	1	1	0	0	0
2593:	0	0	0	0	0	0	0	0	1
2601:	0	0	1	0	0	0	0	0	0
2609:	0	0	1	2	6	20	34	25	
2617:	12	2	1	0	0	0	1	1	
2625:	0	1	2	0	1	1	0	0	0
2633:	0	0	0	1	0	1	0	0	0
2641:	0	0	0	0	1	0	0	0	0
2649:	0	0	0	1	1	0	0	0	2
2657:	0	1	0	0	2	0	0	0	0
2665:	0	0	0	1	0	0	0	0	1
2673:	1	0	0	0	0	1	0	0	1
2681:	1	0	0	0	0	0	0	0	1
2689:	0	0	0	0	0	1	0	0	1
2697:	0	0	1	0	0	0	0	0	1
2705:	0	0	0	0	0	0	1	0	0
2713:	0	1	1	0	0	0	1	1	
2721:	0	0	1	0	0	0	0	0	0
2729:	0	0	0	1	0	0	0	0	0
2737:	1	0	0	0	0	0	0	0	1
2745:	0	1	0	0	0	0	1	0	0
2753:	0	0	1	0	0	0	0	0	0
2761:	0	0	1	1	0	0	0	0	0
2769:	0	1	0	0	0	1	0	0	0
2777:	0	0	0	0	0	0	0	0	0
2785:	0	0	1	0	0	0	0	0	0
2793:	0	0	0	0	0	0	0	0	0
2801:	0	0	0	0	0	1	0	0	1
2809:	0	0	0	0	1	1	0	0	0
2817:	1	0	0	0	0	1	1	0	0
2825:	0	0	0	1	1	1	0	0	1
2833:	0	0	1	1	0	0	0	0	0
2841:	0	0	0	0	0	0	0	0	0
2849:	0	1	1	1	0	1	0	0	0
2857:	0	1	1	0	1	0	0	0	0
2865:	0	0	0	0	0	1	0	0	0
2873:	0	1	0	0	0	0	0	0	0
2881:	1	1	1	0	0	0	0	0	0
2889:	0	0	0	0	0	0	0	0	0
2897:	0	0	2	0	0	0	0	0	0
2905:	0	0	1	0	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0	0
2921:	0	0	0	1	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0	0
2937:	0	2	0	0	0	0	0	0	1
2945:	0	0	0	1	0	0	0	0	2
2953:	0	2	0	1	0	0	0	0	0

2961: 0 0 0 0 0 0 1 0

Sample Title: CP0604S06-07-DUP

Channel	1	2	3	4	5	6	7	8
2969:	0	1	1	0	0	0	0	0
2977:	0	0	1	0	0	0	1	0
2985:	0	0	0	0	0	0	0	0
2993:	0	2	0	0	0	0	0	1
3001:	0	0	0	0	0	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	1
3033:	0	0	0	1	0	0	0	1
3041:	0	1	1	0	0	0	0	0
3049:	2	0	0	0	0	0	0	0
3057:	1	0	0	0	0	0	0	1
3065:	0	1	0	0	0	0	0	0
3073:	0	0	1	0	0	1	0	0
3081:	0	0	0	0	0	0	0	1
3089:	0	0	0	1	0	0	1	0
3097:	0	0	0	0	0	1	0	0
3105:	0	0	0	0	0	0	2	0
3113:	0	0	0	0	1	0	1	0
3121:	2	0	0	1	1	0	0	0
3129:	0	0	0	1	0	0	0	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	1	0	0
3161:	0	0	0	1	0	0	0	0
3169:	0	0	0	0	1	0	0	0
3177:	0	0	1	0	0	0	0	0
3185:	0	0	1	0	0	0	0	0
3193:	0	0	0	0	0	0	0	0
3201:	0	0	0	0	1	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	1	0	0	0	0	0
3225:	0	0	1	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	1	0	0	0
3249:	1	0	0	0	0	0	0	0
3257:	0	0	0	0	1	0	0	0
3265:	1	0	0	1	0	0	0	1
3273:	0	0	1	1	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	1	0	0	1	0
3297:	0	0	0	0	0	0	0	0
3305:	1	0	1	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	0	1	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	1	0	0	0	0
3361:	0	0	0	0	0	0	0	1
3369:	0	0	0	0	0	0	0	1
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	0

3393: 0 2 0 0 0 0 0 0

Sample Title: CP0604S06-07-DUP

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	0	1
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	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	2	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	1	0	0	0	0	0	1	0
3473:	0	1	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	1
3489:	0	0	0	1	1	0	0	1
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	1	0	0	0	0	0
3521:	0	0	1	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	1	0	0	0	0	0
3553:	0	0	0	2	1	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	1	1	0	0	0	1	0	0
3585:	0	0	0	0	0	0	0	0
3593:	1	0	0	0	0	0	0	1
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	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	0
3649:	0	0	0	1	0	0	0	0
3657:	0	0	0	0	0	0	1	0
3665:	0	0	0	0	1	0	0	0
3673:	0	0	0	1	0	0	0	0
3681:	0	1	0	1	0	1	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	1
3705:	0	1	0	0	0	1	1	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	1	1	0	1
3729:	0	0	0	0	1	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	1	1	0	0	0	0	0
3753:	1	0	0	0	0	0	1	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	1	0	1	0	1	0	0	0
3785:	0	1	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	1	1	0	0	0	0	0
3809:	0	0	0	0	0	1	0	0
3817:	0	0	0	1	0	0	0	0

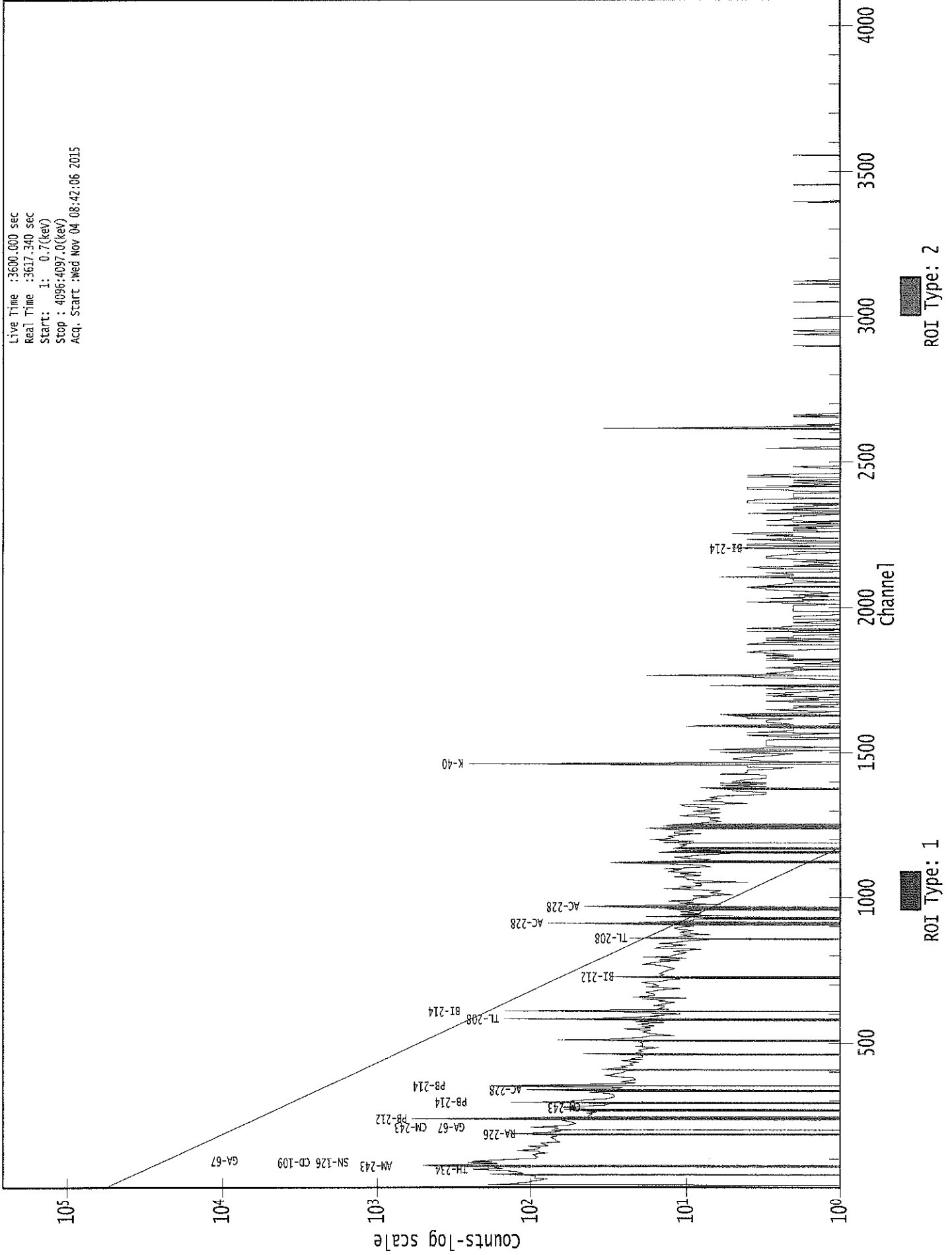
3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP0604S06-07-DUP

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	1	0	1	0
3865:	0	0	0	0	0	1	0	0
3873:	0	0	0	0	0	1	0	0
3881:	0	0	0	0	0	0	0	1
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	1	0
3905:	0	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	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	1	0	1	0	0	0
3969:	0	0	0	0	0	1	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	1	0	0	0	0	0	0
3993:	0	0	0	0	0	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:	0	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	1	0	0	1	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	1	1	0	0	0	1
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000029098.CNF

Live Time : 3600.000 sec
Real Time : 3617.340 sec
Start : 1: 0.7(keV)
Stop : 4096.4097.0(keV)
Acq. Start : Wed Nov 04 08:42:06 2015



Analysis Report for 1510084-04
CP0604S06-07

11/4

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-04
Sample Description : CP0604S06-07
Sample Type : SOIL

Sample Size : 6.538E+02 grams
Facility : Countroom

Sample Taken On : 10/9/2015 9:45:53AM
Acquisition Started : 11/4/2015 9:43:59AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3616.9 seconds

Dead Time : 0.47 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 9 - 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 : 29103

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-04
CP0604S06-07

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 10:44:18AM
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	46.15	46.38	0.0000	0.00
2	63.47	63.69	0.0000	0.00
3	76.40	76.61	0.0000	0.00
4	90.79	91.00	0.0000	0.00
5	129.49	129.68	0.0000	0.00
6	186.23	186.38	0.0000	0.00
7	209.96	210.10	0.0000	0.00
8	238.99	239.12	0.0000	0.00
9	241.83	241.95	0.0000	0.00
10	259.13	259.25	0.0000	0.00
11	270.40	270.51	0.0000	0.00
12	284.94	285.04	0.0000	0.00
13	295.63	295.73	0.0000	0.00
14	300.79	300.88	0.0000	0.00
15	338.68	338.76	0.0000	0.00
16	352.18	352.25	0.0000	0.00
17	417.49	417.53	0.0000	0.00
18	463.49	463.51	0.0000	0.00
19	511.10	511.09	0.0000	0.00
20	561.25	561.22	0.0000	0.00
21	583.73	583.69	0.0000	0.00
22	609.88	609.83	0.0000	0.00
23	621.86	621.80	0.0000	0.00
24	688.80	688.71	0.0000	0.00
25	728.28	728.17	0.0000	0.00
26	796.81	796.66	0.0000	0.00
27	861.28	861.11	0.0000	0.00
28	908.19	908.00	0.0000	0.00
29	911.98	911.78	0.0000	0.00
30	965.00	964.78	0.0000	0.00
31	969.44	969.22	0.0000	0.00
32	1121.02	1120.74	0.0000	0.00
33	1365.08	1364.70	0.0000	0.00
34	1379.26	1378.87	0.0000	0.00
35	1434.91	1434.49	0.0000	0.00
36	1438.67	1438.26	0.0000	0.00
37	1461.64	1461.22	0.0000	0.00
38	1468.30	1467.88	0.0000	0.00
39	1588.61	1588.14	0.0000	0.00
40	1593.99	1593.52	0.0000	0.00
41	1672.94	1672.44	0.0000	0.00
42	1699.12	1698.61	0.0000	0.00

Analysis Report for 1510084-04
CP0604S06-07

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1766.24	1765.71	0.0000	0.00
44	1860.71	1860.14	0.0000	0.00
45	1940.66	1940.07	0.0000	0.00
46	2042.97	2042.35	0.0000	0.00
47	2104.17	2103.53	0.0000	0.00
48	2221.42	2220.75	0.0000	0.00
49	2364.57	2363.86	0.0000	0.00
50	2377.52	2376.80	0.0000	0.00
51	2616.04	2615.26	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510084-04

CP0604S06-07

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 10:44:18AM

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	46.15	43 -	49	46.38	1.44E+02	87.08	1.28E+03	1.99
2	63.47	61 -	66	63.69	1.53E+02	94.77	1.68E+03	1.69
3	76.40	72 -	81	76.61	1.12E+03	154.30	2.74E+03	3.81
m 4	90.79	83 -	97	91.00	1.03E+02	77.35	1.03E+03	1.54
5	129.49	127 -	133	129.68	1.01E+02	74.58	9.44E+02	3.10
6	186.23	183 -	189	186.38	1.88E+02	69.72	7.45E+02	2.19
7	209.96	207 -	214	210.10	1.33E+02	66.66	6.44E+02	1.74
M 8	238.99	233 -	244	239.12	9.58E+02	75.85	4.08E+02	1.73
m 9	241.83	233 -	244	241.95	1.60E+02	74.63	3.57E+02	1.74
10	259.13	256 -	262	259.25	5.50E+01	50.98	4.30E+02	2.51
11	270.40	267 -	274	270.51	1.10E+02	59.40	5.19E+02	1.63
12	284.94	283 -	287	285.04	2.90E+01	36.76	2.74E+02	2.76
M 13	295.63	292 -	305	295.73	1.99E+02	50.30	3.44E+02	2.14
m 14	300.79	292 -	305	300.88	5.81E+01	39.20	2.82E+02	1.81
15	338.68	335 -	344	338.76	1.62E+02	66.32	5.37E+02	1.85
16	352.18	348 -	357	352.25	3.06E+02	67.82	4.87E+02	1.97
17	417.49	415 -	422	417.53	3.12E+01	37.95	2.18E+02	3.01
18	463.49	459 -	467	463.51	3.90E+01	44.76	2.86E+02	1.54
19	511.10	507 -	515	511.09	1.30E+02	44.55	2.26E+02	2.28
20	561.25	557 -	566	561.22	3.48E+01	38.13	1.82E+02	5.75
21	583.73	578 -	589	583.69	2.76E+02	51.77	1.93E+02	2.00
M 22	609.88	603 -	624	609.83	2.53E+02	44.05	1.69E+02	2.20
m 23	621.86	603 -	624	621.80	2.09E+01	30.85	1.56E+02	2.21
24	688.80	685 -	693	688.71	2.89E+01	31.10	1.32E+02	4.48
25	728.28	724 -	733	728.17	9.87E+01	34.09	1.09E+02	2.11
26	796.81	790 -	805	796.66	6.25E+01	47.41	1.99E+02	1.52
27	861.28	856 -	866	861.11	6.45E+01	31.63	9.90E+01	2.52
M 28	908.19	906 -	924	908.00	1.61E+01	18.25	5.00E+01	2.17
m 29	911.98	906 -	924	911.78	1.57E+02	32.08	7.00E+01	2.39
M 30	965.00	961 -	975	964.78	3.20E+01	27.58	1.31E+02	2.42
m 31	969.44	961 -	975	969.22	9.67E+01	31.57	1.12E+02	2.18
32	1121.02	1116 -	1124	1120.74	5.42E+01	29.83	1.04E+02	2.00
33	1365.08	1360 -	1368	1364.70	1.34E+01	17.73	3.93E+01	3.22
34	1379.26	1377 -	1382	1378.87	1.11E+01	12.96	2.58E+01	1.24
M 35	1434.91	1428 -	1442	1434.49	1.32E+01	12.68	1.43E+01	2.91
m 36	1438.67	1428 -	1442	1438.26	1.58E+01	12.99	1.13E+01	3.52
M 37	1461.64	1447 -	1471	1461.22	5.95E+02	50.50	2.96E+01	2.34
m 38	1468.30	1447 -	1471	1467.88	1.00E+01	21.12	1.85E+01	2.93
39	1588.61	1584 -	1591	1588.14	1.22E+01	16.25	3.56E+01	1.82
40	1593.99	1591 -	1597	1593.52	1.14E+01	12.55	1.92E+01	2.01

: 00438

Analysis Report for 1510084-04

CP0604S06-07

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1672.94	1669 - 1676		1672.44	5.80E+00	8.49	8.40E+00	2.95
42	1699.12	1695 - 1703		1698.61	1.52E+01	9.39	3.53E+00	5.49
43	1766.24	1762 - 1769		1765.71	2.71E+01	14.14	1.39E+01	3.29
44	1860.71	1857 - 1862		1860.14	6.00E+00	7.35	6.00E+00	1.28
45	1940.66	1936 - 1943		1940.07	6.00E+00	8.49	8.00E+00	2.63
46	2042.97	2039 - 2045		2042.35	7.22E+00	6.95	3.56E+00	3.35
47	2104.17	2099 - 2106		2103.53	1.70E+01	8.25	0.00E+00	1.81
48	2221.42	2217 - 2224		2220.75	8.00E+00	5.66	0.00E+00	1.98
49	2364.57	2361 - 2366		2363.86	5.64E+00	6.08	2.71E+00	2.99
50	2377.52	2374 - 2379		2376.80	4.88E+00	7.07	6.25E+00	2.99
51	2616.04	2610 - 2618		2615.26	7.30E+01	17.09	0.00E+00	2.64

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 : 11/4/2015 10:44:18AM

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	46.15	43 -	49	1.44E+02	87.08	1.28E+03	6.88E+01
2	63.47	61 -	66	1.53E+02	94.77	1.68E+03	7.52E+01
3	76.40	72 -	81	1.12E+03	154.30	2.74E+03	1.14E+02
m 4	90.79	83 -	97	1.03E+02	77.35	1.03E+03	5.28E+01
5	129.49	127 -	133	1.01E+02	74.58	9.44E+02	5.90E+01
6	186.23	183 -	189	1.88E+02	69.72	7.45E+02	5.27E+01
7	209.96	207 -	214	1.33E+02	66.66	6.44E+02	5.14E+01
M 8	238.99	233 -	244	9.58E+02	75.85	4.08E+02	3.32E+01
m 9	241.83	233 -	244	1.60E+02	74.63	3.57E+02	3.10E+01
10	259.13	256 -	262	5.50E+01	50.98	4.30E+02	4.01E+01
11	270.40	267 -	274	1.10E+02	59.40	5.19E+02	4.57E+01
12	284.94	283 -	287	2.90E+01	36.76	2.74E+02	2.89E+01
M 13	295.63	292 -	305	1.99E+02	50.30	3.44E+02	3.05E+01
m 14	300.79	292 -	305	5.81E+01	39.20	2.82E+02	2.76E+01
15	338.68	335 -	344	1.62E+02	66.32	5.37E+02	5.03E+01
16	352.18	348 -	357	3.06E+02	67.82	4.87E+02	4.78E+01
17	417.49	415 -	422	3.12E+01	37.95	2.18E+02	2.98E+01

: 00439

Analysis Report for 1510084-04

CP0604S06-07

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
18	463.49	459 -	467	3.90E+01	44.76	2.86E+02	3.53E+01
19	511.10	507 -	515	1.30E+02	44.55	2.26E+02	3.15E+01
20	561.25	557 -	566	3.48E+01	38.13	1.82E+02	2.98E+01
21	583.73	578 -	589	2.76E+02	51.77	1.93E+02	3.26E+01
M 22	609.88	603 -	624	2.53E+02	44.05	1.69E+02	2.13E+01
m 23	621.86	603 -	624	2.09E+01	30.85	1.56E+02	2.05E+01
24	688.80	685 -	693	2.89E+01	31.10	1.32E+02	2.40E+01
25	728.28	724 -	733	9.87E+01	34.09	1.09E+02	2.28E+01
26	796.81	790 -	805	6.25E+01	47.41	1.99E+02	1.84E+01
27	861.28	856 -	866	6.45E+01	31.63	9.90E+01	2.24E+01
M 28	908.19	906 -	924	1.61E+01	18.25	5.00E+01	1.16E+01
m 29	911.98	906 -	924	1.57E+02	32.08	7.00E+01	1.38E+01
M 30	965.00	961 -	975	3.20E+01	27.58	1.31E+02	1.88E+01
m 31	969.44	961 -	975	9.67E+01	31.57	1.12E+02	1.74E+01
32	1121.02	1116 -	1124	5.42E+01	29.83	1.04E+02	2.13E+01
33	1365.08	1360 -	1368	1.34E+01	17.73	3.93E+01	1.33E+01
34	1379.26	1377 -	1382	1.11E+01	12.96	2.58E+01	9.14E+00
M 35	1434.91	1428 -	1442	1.32E+01	12.68	1.43E+01	6.22E+00
m 36	1438.67	1428 -	1442	1.58E+01	12.99	1.13E+01	5.52E+00
M 37	1461.64	1447 -	1471	5.95E+02	50.50	2.96E+01	8.95E+00
m 38	1468.30	1447 -	1471	1.00E+01	21.12	1.85E+01	7.08E+00
39	1588.61	1584 -	1591	1.22E+01	16.25	3.56E+01	1.21E+01
40	1593.99	1591 -	1597	1.14E+01	12.55	1.92E+01	8.70E+00
41	1672.94	1669 -	1676	5.80E+00	8.49	8.40E+00	5.74E+00
42	1699.12	1695 -	1703	1.52E+01	9.39	3.53E+00	4.30E+00
43	1766.24	1762 -	1769	2.71E+01	14.14	1.39E+01	7.87E+00
44	1860.71	1857 -	1862	6.00E+00	7.35	6.00E+00	4.50E+00
45	1940.66	1936 -	1943	6.00E+00	8.49	8.00E+00	5.70E+00
46	2042.97	2039 -	2045	7.22E+00	6.95	3.56E+00	3.62E+00
47	2104.17	2099 -	2106	1.70E+01	8.25	0.00E+00	0.00E+00
48	2221.42	2217 -	2224	8.00E+00	5.66	0.00E+00	0.00E+00
49	2364.57	2361 -	2366	5.64E+00	6.08	2.71E+00	3.12E+00
50	2377.52	2374 -	2379	4.88E+00	7.07	6.25E+00	4.54E+00
51	2616.04	2610 -	2618	7.30E+01	17.09	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 1510084-04

CP0604S06-07

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/4/2015 10:44:18AM

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	46.15	43 -	49	46.38	1.44E+02	87.08	1.28E+03	PB-210
2	63.47	61 -	66	63.69	1.53E+02	94.77	1.68E+03	TH-234 TH-230
3	76.40	72 -	81	76.61	1.12E+03	154.30	2.74E+03	.....
m 4	90.79	83 -	97	91.00	1.03E+02	77.35	1.03E+03	ND-147
5	129.49	127 -	133	129.68	1.01E+02	74.58	9.44E+02	.....
6	186.23	183 -	189	186.38	1.88E+02	69.72	7.45E+02	RA-226
7	209.96	207 -	214	210.10	1.33E+02	66.66	6.44E+02	CM-243
M 8	238.99	233 -	244	239.12	9.58E+02	75.85	4.08E+02	PB-212
m 9	241.83	233 -	244	241.95	1.60E+02	74.63	3.57E+02	RA-224
10	259.13	256 -	262	259.25	5.50E+01	50.98	4.30E+02	.....
11	270.40	267 -	274	270.51	1.10E+02	59.40	5.19E+02	.....
12	284.94	283 -	287	285.04	2.90E+01	36.76	2.74E+02	I-131
M 13	295.63	292 -	305	295.73	1.99E+02	50.30	3.44E+02	PM-149 PB-214
m 14	300.79	292 -	305	300.88	5.81E+01	39.20	2.82E+02	GA-67 PB-212 BI-210M
15	338.68	335 -	344	338.76	1.62E+02	66.32	5.37E+02	AC-228
16	352.18	348 -	357	352.25	3.06E+02	67.82	4.87E+02	PB-214
17	417.49	415 -	422	417.53	3.12E+01	37.95	2.18E+02	.....
18	463.49	459 -	467	463.51	3.90E+01	44.76	2.86E+02	SB-125
19	511.10	507 -	515	511.09	1.30E+02	44.55	2.26E+02	.....
20	561.25	557 -	566	561.22	3.48E+01	38.13	1.82E+02	.....
21	583.73	578 -	589	583.69	2.76E+02	51.77	1.93E+02	TL-208
M 22	609.88	603 -	624	609.83	2.53E+02	44.05	1.69E+02	BI-214
m 23	621.86	603 -	624	621.80	2.09E+01	30.85	1.56E+02	RU-106
24	688.80	685 -	693	688.71	2.89E+01	31.10	1.32E+02	.....
25	728.28	724 -	733	728.17	9.87E+01	34.09	1.09E+02	.....
26	796.81	790 -	805	796.66	6.25E+01	47.41	1.99E+02	CS-134
27	861.28	856 -	866	861.11	6.45E+01	31.63	9.90E+01	TL-208
M 28	908.19	906 -	924	908.00	1.61E+01	18.25	5.00E+01	.....
m 29	911.98	906 -	924	911.78	1.57E+02	32.08	7.00E+01	LU-172 AC-228
M 30	965.00	961 -	975	964.78	3.20E+01	27.58	1.31E+02	EU-152
m 31	969.44	961 -	975	969.22	9.67E+01	31.57	1.12E+02	AC-228
32	1121.02	1116 -	1124	1120.74	5.42E+01	29.83	1.04E+02	TA-182 SC-46 BI-214
33	1365.08	1360 -	1368	1364.70	1.34E+01	17.73	3.93E+01	.....
34	1379.26	1377 -	1382	1378.87	1.11E+01	12.96	2.58E+01	.....

Analysis Report for 1510084-04

CP0604S06-07

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	35	1434.91	1428 -	1442	1434.49	1.32E+01	12.68	1.43E+01	LA-138
m	36	1438.67	1428 -	1442	1438.26	1.58E+01	12.99	1.13E+01	.....
M	37	1461.64	1447 -	1471	1461.22	5.95E+02	50.50	2.96E+01	K-40
m	38	1468.30	1447 -	1471	1467.88	1.00E+01	21.12	1.85E+01	.....
	39	1588.61	1584 -	1591	1588.14	1.22E+01	16.25	3.56E+01	.....
	40	1593.99	1591 -	1597	1593.52	1.14E+01	12.55	1.92E+01	.....
	41	1672.94	1669 -	1676	1672.44	5.80E+00	8.49	8.40E+00	.....
	42	1699.12	1695 -	1703	1698.61	1.52E+01	9.39	3.53E+00	.....
	43	1766.24	1762 -	1769	1765.71	2.71E+01	14.14	1.39E+01	.....
	44	1860.71	1857 -	1862	1860.14	6.00E+00	7.35	6.00E+00	.....
	45	1940.66	1936 -	1943	1940.07	6.00E+00	8.49	8.00E+00	.....
	46	2042.97	2039 -	2045	2042.35	7.22E+00	6.95	3.56E+00	.....
	47	2104.17	2099 -	2106	2103.53	1.70E+01	8.25	0.00E+00	.....
	48	2221.42	2217 -	2224	2220.75	8.00E+00	5.66	0.00E+00	.....
	49	2364.57	2361 -	2366	2363.86	5.64E+00	6.08	2.71E+00	.....
	50	2377.52	2374 -	2379	2376.80	4.88E+00	7.07	6.25E+00	.....
	51	2616.04	2610 -	2618	2615.26	7.30E+01	17.09	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 : 11/4/2015 10:44:18AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.15	1.44E+02	87.08	1.48E-02	1.58E-03
	2	63.47	1.53E+02	94.77	2.16E-02	1.71E-03
	3	76.40	1.12E+03	154.30	2.38E-02	2.14E-03
m	4	90.79	1.03E+02	77.35	2.44E-02	2.46E-03
	5	129.49	1.01E+02	74.58	2.25E-02	1.69E-03
	6	186.23	1.88E+02	69.72	1.83E-02	1.42E-03
	7	209.96	1.33E+02	66.66	1.68E-02	1.31E-03
M	8	238.99	9.58E+02	75.85	1.52E-02	1.18E-03
m	9	241.83	1.60E+02	74.63	1.51E-02	1.17E-03
	10	259.13	5.50E+01	50.98	1.43E-02	1.09E-03
	11	270.40	1.10E+02	59.40	1.38E-02	1.04E-03
	12	284.94	2.90E+01	36.76	1.32E-02	9.89E-04
M	13	295.63	1.99E+02	50.30	1.28E-02	9.73E-04

: 00442

Analysis Report for 1510084-04

CP0604S06-07

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	14	300.79	5.81E+01	39.20	1.26E-02	9.66E-04
	15	338.68	1.62E+02	66.32	1.14E-02	9.12E-04
	16	352.18	3.06E+02	67.82	1.11E-02	8.93E-04
	17	417.49	3.12E+01	37.95	9.55E-03	8.11E-04
	18	463.49	3.90E+01	44.76	8.72E-03	7.66E-04
	19	511.10	1.30E+02	44.55	8.01E-03	7.18E-04
	20	561.25	3.48E+01	38.13	7.38E-03	6.68E-04
	21	583.73	2.76E+02	51.77	7.13E-03	6.46E-04
M	22	609.88	2.53E+02	44.05	6.87E-03	6.19E-04
m	23	621.86	2.09E+01	30.85	6.75E-03	6.08E-04
	24	688.80	2.89E+01	31.10	6.18E-03	5.46E-04
	25	728.28	9.87E+01	34.09	5.88E-03	5.13E-04
	26	796.81	6.25E+01	47.41	5.44E-03	4.57E-04
	27	861.28	6.45E+01	31.63	5.09E-03	4.05E-04
M	28	908.19	1.61E+01	18.25	4.87E-03	3.73E-04
m	29	911.98	1.57E+02	32.08	4.85E-03	3.72E-04
M	30	965.00	3.20E+01	27.58	4.62E-03	3.62E-04
m	31	969.44	9.67E+01	31.57	4.60E-03	3.61E-04
	32	1121.02	5.42E+01	29.83	4.07E-03	3.33E-04
	33	1365.08	1.34E+01	17.73	3.47E-03	2.84E-04
	34	1379.26	1.11E+01	12.96	3.44E-03	2.82E-04
M	35	1434.91	1.32E+01	12.68	3.34E-03	2.73E-04
m	36	1438.67	1.58E+01	12.99	3.33E-03	2.73E-04
M	37	1461.64	5.95E+02	50.50	3.29E-03	2.69E-04
m	38	1468.30	1.00E+01	21.12	3.28E-03	2.68E-04
	39	1588.61	1.22E+01	16.25	3.09E-03	2.50E-04
	40	1593.99	1.14E+01	12.55	3.08E-03	2.49E-04
	41	1672.94	5.80E+00	8.49	2.97E-03	2.38E-04
	42	1699.12	1.52E+01	9.39	2.94E-03	2.34E-04
	43	1766.24	2.71E+01	14.14	2.86E-03	2.24E-04
	44	1860.71	6.00E+00	7.35	2.75E-03	2.13E-04
	45	1940.66	6.00E+00	8.49	2.67E-03	2.13E-04
	46	2042.97	7.22E+00	6.95	2.58E-03	2.13E-04
	47	2104.17	1.70E+01	8.25	2.54E-03	2.13E-04
	48	2221.42	8.00E+00	5.66	2.45E-03	2.13E-04
	49	2364.57	5.64E+00	6.08	2.36E-03	2.13E-04
	50	2377.52	4.88E+00	7.07	2.36E-03	2.13E-04
	51	2616.04	7.30E+01	17.09	2.24E-03	2.13E-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 : 11/4/2015 10:44:18AM

: 00443

Analysis Report for 1510084-04

CP0604S06-07

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028943.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.15	1.44E+02	87.08	5.28E+01	1.09E+01	9.13E+01	8.78E+01
	2	63.47	1.53E+02	94.77	5.52E+01	2.05E+01	9.82E+01	9.70E+01
	3	76.40	1.12E+03	154.30			1.12E+03	1.54E+02
m	4	90.79	1.03E+02	77.35			1.03E+02	7.73E+01
	5	129.49	1.01E+02	74.58			1.01E+02	7.46E+01
	6	186.23	1.88E+02	69.72	3.93E+01	6.56E+00	1.48E+02	7.00E+01
	7	209.96	1.33E+02	66.66			1.33E+02	6.67E+01
M	8	238.99	9.58E+02	75.85	1.34E+01	2.14E+00	9.45E+02	7.59E+01
m	9	241.83	1.60E+02	74.63	2.69E+00	1.46E+00	1.57E+02	7.46E+01
	10	259.13	5.50E+01	50.98			5.50E+01	5.10E+01
	11	270.40	1.10E+02	59.40			1.10E+02	5.94E+01
	12	284.94	2.90E+01	36.76			2.90E+01	3.68E+01
M	13	295.63	1.99E+02	50.30			1.99E+02	5.03E+01
m	14	300.79	5.81E+01	39.20			5.81E+01	3.92E+01
	15	338.68	1.62E+02	66.32			1.62E+02	6.63E+01
	16	352.18	3.06E+02	67.82	3.99E+00	4.73E+00	3.02E+02	6.80E+01
	17	417.49	3.12E+01	37.95			3.12E+01	3.79E+01
	18	463.49	3.90E+01	44.76			3.90E+01	4.48E+01
	19	511.10	1.30E+02	44.55	5.78E+01	4.60E+00	7.20E+01	4.48E+01
	20	561.25	3.48E+01	38.13			3.48E+01	3.81E+01
	21	583.73	2.76E+02	51.77	5.96E+00	3.46E+00	2.70E+02	5.19E+01
M	22	609.88	2.53E+02	44.05	6.71E+00	3.44E+00	2.47E+02	4.42E+01
m	23	621.86	2.09E+01	30.85			2.09E+01	3.09E+01
	24	688.80	2.89E+01	31.10			2.89E+01	3.11E+01
	25	728.28	9.87E+01	34.09			9.87E+01	3.41E+01
	26	796.81	6.25E+01	47.41			6.25E+01	4.74E+01
	27	861.28	6.45E+01	31.63			6.45E+01	3.16E+01
M	28	908.19	1.61E+01	18.25			1.61E+01	1.82E+01
m	29	911.98	1.57E+02	32.08			1.57E+02	3.21E+01
M	30	965.00	3.20E+01	27.58			3.20E+01	2.76E+01
m	31	969.44	9.67E+01	31.57			9.67E+01	3.16E+01
	32	1121.02	5.42E+01	29.83			5.42E+01	2.98E+01
	33	1365.08	1.34E+01	17.73			1.34E+01	1.77E+01
	34	1379.26	1.11E+01	12.96			1.11E+01	1.30E+01
M	35	1434.91	1.32E+01	12.68			1.32E+01	1.27E+01
m	36	1438.67	1.58E+01	12.99			1.58E+01	1.30E+01
M	37	1461.64	5.95E+02	50.50			5.95E+02	5.05E+01
m	38	1468.30	1.00E+01	21.12			1.00E+01	2.11E+01
	39	1588.61	1.22E+01	16.25			1.22E+01	1.62E+01
	40	1593.99	1.14E+01	12.55			1.14E+01	1.25E+01
	41	1672.94	5.80E+00	8.49			5.80E+00	8.49E+00
	42	1699.12	1.52E+01	9.39			1.52E+01	9.39E+00
	43	1766.24	2.71E+01	14.14			2.71E+01	1.41E+01
	44	1860.71	6.00E+00	7.35			6.00E+00	7.35E+00
	45	1940.66	6.00E+00	8.49			6.00E+00	8.49E+00
	46	2042.97	7.22E+00	6.95			7.22E+00	6.95E+00
	47	2104.17	1.70E+01	8.25			1.70E+01	8.25E+00
	48	2221.42	8.00E+00	5.66			8.00E+00	5.66E+00
	49	2364.57	5.64E+00	6.08			5.64E+00	6.08E+00

Analysis Report for 1510084-04

CP0604S06-07

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
50	2377.52	4.88E+00	7.07			4.88E+00	7.07E+00
51	2616.04	7.30E+01	17.09			7.30E+01	1.71E+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 : 11/4/2015 10:44:18AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028943.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	46.15	1.44E+02	87.08	5.28E+01	1.09E+01	9.13E+01	8.78E+01
2	63.47	1.53E+02	94.77	5.52E+01	2.05E+01	9.82E+01	9.70E+01
3	76.40	1.12E+03	154.30			1.12E+03	1.54E+02
m 4	90.79	1.03E+02	77.35			1.03E+02	7.73E+01
5	129.49	1.01E+02	74.58			1.01E+02	7.46E+01
6	186.23	1.88E+02	69.72	3.93E+01	6.56E+00	1.48E+02	7.00E+01
7	209.96	1.33E+02	66.66			1.33E+02	6.67E+01
M 8	238.99	9.58E+02	75.85	1.34E+01	2.14E+00	9.45E+02	7.59E+01
m 9	241.83	1.60E+02	74.63	2.69E+00	1.46E+00	1.57E+02	7.46E+01
10	259.13	5.50E+01	50.98			5.50E+01	5.10E+01
11	270.40	1.10E+02	59.40			1.10E+02	5.94E+01
12	284.94	2.90E+01	36.76			2.90E+01	3.68E+01
M 13	295.63	1.99E+02	50.30			1.99E+02	5.03E+01
m 14	300.79	5.81E+01	39.20			5.81E+01	3.92E+01
15	338.68	1.62E+02	66.32			1.62E+02	6.63E+01
16	352.18	3.06E+02	67.82	3.99E+00	4.73E+00	3.02E+02	6.80E+01
17	417.49	3.12E+01	37.95			3.12E+01	3.79E+01
18	463.49	3.90E+01	44.76			3.90E+01	4.48E+01
19	511.10	1.30E+02	44.55	5.78E+01	4.60E+00	7.20E+01	4.48E+01
20	561.25	3.48E+01	38.13			3.48E+01	3.81E+01
21	583.73	2.76E+02	51.77	5.96E+00	3.46E+00	2.70E+02	5.19E+01
M 22	609.88	2.53E+02	44.05	6.71E+00	3.44E+00	2.47E+02	4.42E+01
m 23	621.86	2.09E+01	30.85			2.09E+01	3.09E+01
24	688.80	2.89E+01	31.10			2.89E+01	3.11E+01
25	728.28	9.87E+01	34.09			9.87E+01	3.41E+01
26	796.81	6.25E+01	47.41			6.25E+01	4.74E+01

Analysis Report for 1510084-04

CP0604S06-07

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	27	861.28	6.45E+01	31.63			6.45E+01	3.16E+01
M	28	908.19	1.61E+01	18.25			1.61E+01	1.82E+01
m	29	911.98	1.57E+02	32.08			1.57E+02	3.21E+01
M	30	965.00	3.20E+01	27.58			3.20E+01	2.76E+01
m	31	969.44	9.67E+01	31.57			9.67E+01	3.16E+01
	32	1121.02	5.42E+01	29.83			5.42E+01	2.98E+01
	33	1365.08	1.34E+01	17.73			1.34E+01	1.77E+01
	34	1379.26	1.11E+01	12.96			1.11E+01	1.30E+01
M	35	1434.91	1.32E+01	12.68			1.32E+01	1.27E+01
m	36	1438.67	1.58E+01	12.99			1.58E+01	1.30E+01
M	37	1461.64	5.95E+02	50.50			5.95E+02	5.05E+01
m	38	1468.30	1.00E+01	21.12			1.00E+01	2.11E+01
	39	1588.61	1.22E+01	16.25			1.22E+01	1.62E+01
	40	1593.99	1.14E+01	12.55			1.14E+01	1.25E+01
	41	1672.94	5.80E+00	8.49			5.80E+00	8.49E+00
	42	1699.12	1.52E+01	9.39			1.52E+01	9.39E+00
	43	1766.24	2.71E+01	14.14			2.71E+01	1.41E+01
	44	1860.71	6.00E+00	7.35			6.00E+00	7.35E+00
	45	1940.66	6.00E+00	8.49			6.00E+00	8.49E+00
	46	2042.97	7.22E+00	6.95			7.22E+00	6.95E+00
	47	2104.17	1.70E+01	8.25			1.70E+01	8.25E+00
	48	2221.42	8.00E+00	5.66			8.00E+00	5.66E+00
	49	2364.57	5.64E+00	6.08			5.64E+00	6.08E+00
	50	2377.52	4.88E+00	7.07			4.88E+00	7.07E+00
	51	2616.04	7.30E+01	17.09			7.30E+01	1.71E+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	0.896	1460.81	* 10.67	1.95E+01	2.33E+00
RU-106	1.000	621.84	* 9.80	3.81E-01	5.65E-01
ND-147	0.646	91.11	* 28.90	8.62E-01	6.56E-01
		531.02	13.10		
PM-149	0.432	285.90	* 3.10	2.83E+03	3.60E+03
TL-208	0.374	583.14	* 30.22	1.44E+00	3.06E-01

Analysis Report for 1510084-04
CP0604S06-07

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TL-208	0.374	860.37 *	4.48	3.25E+00	1.61E+00
		2614.66	35.85		
PB-210	0.981	46.50 *	4.25	1.67E+00	1.61E+00
PB-212	0.975	238.63 *	44.60	1.60E+00	1.79E-01
		300.09 *	3.41	1.55E+00	1.05E+00
BI-214	0.659	609.31 *	46.30	8.91E-01	1.79E-01
		1120.29 *	15.10	1.01E+00	5.63E-01
		1764.49	15.80		
		2204.22	4.98		
PB-214	0.984	295.21 *	19.19	9.28E-01	2.45E-01
		351.92 *	37.19	8.45E-01	2.02E-01
RA-224	0.892	240.98 *	3.95	3.04E+00	1.46E+00
RA-226	1.000	186.21 *	3.28	2.84E+00	5.37E+00
AC-228	0.928	338.32 *	11.40	1.43E+00	5.96E-01
		911.07 *	27.70	1.34E+00	2.93E-01
		969.11 *	16.60	1.45E+00	4.88E-01
TH-234	0.995	63.29 *	3.80	1.37E+00	1.36E+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 : 11/4/2015 10:44:18AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
3	76.40	3.10521E-01	6.90		
5	129.49	2.80791E-02	36.89		
7	209.96	3.69536E-02	25.06	Tol.	CM-243
10	259.13	1.52901E-02	46.31		
11	270.40	3.06907E-02	26.88		
17	417.49	8.66072E-03	60.85		
18	463.49	1.08387E-02	57.36	Tol.	SB-125
19	511.10	1.99929E-02	31.11		
20	561.25	9.66931E-03	54.77		
24	688.80	8.02924E-03	53.80		
25	728.28	2.74237E-02	17.26		
26	796.81	1.73714E-02	37.91	Sum	

Analysis Report for 1510084-04

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
M	28	908.19	4.46271E-03	56.79	Sum	
M	30	965.00	8.88948E-03	43.09	Tol.	EU-152
	33	1365.08	3.71212E-03	66.33		
	34	1379.26	3.07870E-03	58.47		
M	35	1434.91	3.65424E-03	48.19	Tol.	LA-138
m	36	1438.67	4.39574E-03	41.04		
m	38	1468.30	2.78294E-03	105.43		
	39	1588.61	3.38426E-03	66.68		
	40	1593.99	3.16138E-03	55.14		
	41	1672.94	1.61111E-03	73.15		
	42	1699.12	4.23203E-03	30.83		
	43	1766.24	7.51634E-03	26.13		
	44	1860.71	1.66667E-03	61.24		
	45	1940.66	1.66667E-03	70.71		
	46	2042.97	2.00617E-03	48.09		
	47	2104.17	4.72222E-03	24.25		
	48	2221.42	2.22222E-03	35.36		
	49	2364.57	1.56746E-03	53.90		
	50	2377.52	1.35417E-03	72.52		
	51	2616.04	2.02778E-02	11.70		

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	0.89	1460.81 *	10.67	1.95E+01	2.33E+00
RU-106	1.00	621.84 *	9.80	3.81E-01	5.65E-01
ND-147	0.64	91.11 *	28.90	8.62E-01	6.56E-01
		531.02	13.10		
PM-149	0.43	285.90 *	3.10	2.83E+03	3.60E+03
TL-208	0.37	583.14 *	30.22	1.44E+00	3.06E-01
		860.37 *	4.48	3.25E+00	1.61E+00
		2614.66	35.85		

Analysis Report for 1510084-04

CP0604S06-07

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-210	0.98	46.50 *	4.25	1.67E+00	1.61E+00
PB-212	0.97	238.63 *	44.60	1.60E+00	1.79E-01
		300.09 *	3.41	1.55E+00	1.05E+00
BI-214	0.65	609.31 *	46.30	8.91E-01	1.79E-01
		1120.29 *	15.10	1.01E+00	5.63E-01
		1764.49	15.80		
		2204.22	4.98		
PB-214	0.98	295.21 *	19.19	9.28E-01	2.45E-01
		351.92 *	37.19	8.45E-01	2.02E-01
RA-224	0.89	240.98 *	3.95	3.04E+00	1.46E+00
RA-226	1.00	186.21 *	3.28	2.84E+00	5.37E+00
AC-228	0.92	338.32 *	11.40	1.43E+00	5.96E-01
		911.07 *	27.70	1.34E+00	2.93E-01
		969.11 *	16.60	1.45E+00	4.88E-01
TH-234	0.99	63.29 *	3.80	1.37E+00	1.36E+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	0.896	1.95E+01	2.33E+00	
RU-106	1.000	3.81E-01	5.65E-01	
ND-147	0.646	8.62E-01	6.56E-01	
PM-149	0.432	2.83E+03	3.60E+03	
TL-208	0.374	1.50E+00	3.00E-01	
PB-210	0.981	1.67E+00	1.61E+00	
PB-212	0.975	1.60E+00	1.76E-01	
BI-214	0.659	9.02E-01	1.70E-01	
PB-214	0.984	8.78E-01	1.56E-01	
RA-224	0.892	3.04E+00	1.46E+00	
RA-226	1.000	2.84E+00	5.37E+00	
AC-228	0.928	1.38E+00	2.31E-01	

Analysis Report for 1510084-04
CP0604S06-07

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
TH-234	0.995	1.37E+00	1.36E+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 1510084-04
CP0604S06-07

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 10:44:18AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
3	76.40	3.10521E-01	6.90		
5	129.49	2.80791E-02	36.89		
7	209.96	3.69536E-02	25.06	Tol.	CM-243
10	259.13	1.52901E-02	46.31		
11	270.40	3.06907E-02	26.88		
17	417.49	8.66072E-03	60.85		
18	463.49	1.08387E-02	57.36	Tol.	SB-125
19	511.10	1.99929E-02	31.11		
20	561.25	9.66931E-03	54.77		
24	688.80	8.02924E-03	53.80		
25	728.28	2.74237E-02	17.26		
26	796.81	1.73714E-02	37.91	Sum	
M 28	908.19	4.46271E-03	56.79	Sum	
M 30	965.00	8.88948E-03	43.09	Tol.	EU-152
33	1365.08	3.71212E-03	66.33		
34	1379.26	3.07870E-03	58.47		
M 35	1434.91	3.65424E-03	48.19	Tol.	LA-138
m 36	1438.67	4.39574E-03	41.04		
m 38	1468.30	2.78294E-03	105.43		
39	1588.61	3.38426E-03	66.68		
40	1593.99	3.16138E-03	55.14		
41	1672.94	1.61111E-03	73.15		
42	1699.12	4.23203E-03	30.83		
43	1766.24	7.51634E-03	26.13		
44	1860.71	1.66667E-03	61.24		
45	1940.66	1.66667E-03	70.71		
46	2042.97	2.00617E-03	48.09		
47	2104.17	4.72222E-03	24.25		
48	2221.42	2.22222E-03	35.36		
49	2364.57	1.56746E-03	53.90		
50	2377.52	1.35417E-03	72.52		
51	2616.04	2.02778E-02	11.70		

Analysis Report for 1510084-04
CP0604S06-07

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	1.13E-01	9.28E-01	9.28E-01
+	NA-22	1274.54	99.94	-4.58E-02	1.13E-01	1.13E-01
+	NA-24	1368.53	99.99	5.43E+10	1.93E+11	3.54E+11
		2754.09	99.86	-4.38E+10		1.93E+11
+	AL-26	1808.65	99.76	2.05E-03	6.50E-02	6.50E-02
+	K-40	1460.81	* 10.67	1.95E+01	2.15E+00	2.15E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	1.75E-02	7.04E-02	7.04E-02
		78.34	96.00	2.17E-01		8.57E-02
+	SC-46	889.25	99.98	-2.73E-02	9.65E-02	9.65E-02
		1120.51	99.99	2.02E-01		1.70E-01
+	V-48	983.52	99.98	6.40E-02	2.73E-01	2.73E-01
		1312.10	97.50	1.18E-01		3.30E-01
+	CR-51	320.08	9.83	-4.77E-01	1.22E+00	1.22E+00
+	MN-54	834.83	99.97	-4.36E-02	8.66E-02	8.66E-02
+	CO-56	846.75	99.96	-3.67E-02	8.88E-02	8.88E-02
		1037.75	14.03	-2.16E-01		8.27E-01
		1238.25	67.00	8.52E-03		2.32E-01
		1771.40	15.51	2.54E-02		7.15E-01
		2598.48	16.90	0.00E+00		1.03E-01
+	CO-57	122.06	85.51	-6.33E-03	5.94E-02	5.94E-02
		136.48	10.60	1.06E-01		4.93E-01
+	CO-58	810.76	99.40	-7.70E-03	1.01E-01	1.01E-01
+	FE-59	1099.22	56.50	3.82E-02	2.74E-01	2.74E-01
		1291.56	43.20	1.45E-02		3.53E-01
+	CO-60	1173.22	100.00	4.11E-03	1.06E-01	1.11E-01
		1332.49	100.00	1.34E-02		1.06E-01
+	ZN-65	1115.52	50.75	3.74E-02	1.98E-01	1.98E-01
+	GA-67	93.31	35.70	5.59E+01	4.32E+01	4.32E+01
		208.95	2.24	7.50E+02		7.65E+02
		300.22	16.00	-1.80E+02		1.15E+02
+	SE-75	121.11	16.70	-1.96E-01	9.56E-02	3.28E-01

Analysis Report for 1510084-04
CP0604S06-07

	<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	1.33E-02	9.56E-02	9.56E-02
		264.65	59.80	2.54E-03		1.14E-01
		279.53	25.20	9.77E-02		3.08E-01
		400.65	11.40	6.60E-02		7.02E-01
+	RB-82	776.52	13.00	-5.05E-01	1.34E+00	1.34E+00
+	RB-83	520.41	46.00	6.13E-02	1.96E-01	1.96E-01
		529.64	30.30	2.16E-02		2.85E-01
		552.65	16.40	-2.25E-01		5.11E-01
+	KR-85	513.99	0.43	1.49E+00	2.26E+01	2.26E+01
+	SR-85	513.99	99.27	8.56E-03	1.30E-01	1.30E-01
+	Y-88	898.02	93.40	-4.30E-02	6.46E-02	9.85E-02
		1836.01	99.38	-9.85E-03		6.46E-02
+	NB-93M	16.57	9.43	-3.68E+00	7.41E+01	7.41E+01
+	NB-94	702.63	100.00	3.00E-02	8.26E-02	8.34E-02
		871.10	100.00	5.15E-02		8.26E-02
+	NB-95	765.79	99.81	4.56E-02	1.52E-01	1.52E-01
+	NB-95M	235.69	25.00	1.61E+02	6.61E+01	6.61E+01
+	ZR-95	724.18	43.70	5.63E-02	2.05E-01	2.76E-01
		756.72	55.30	8.06E-02		2.05E-01
+	MO-99	181.06	6.20	1.00E+02	4.40E+02	5.73E+02
		739.58	12.80	1.17E+02		4.40E+02
		778.00	4.50	3.59E+01		1.44E+03
+	RU-103	497.08	89.00	-4.21E-02	1.11E-01	1.11E-01
+	RU-106	621.84	* 9.80	3.81E-01	2.40E+00	2.40E+00
+	AG-108M	433.93	89.90	1.67E-02	7.66E-02	7.66E-02
		614.37	90.40	-2.50E-01		1.02E-01
		722.95	90.50	2.47E-02		9.22E-02
+	CD-109	88.03	3.72	1.14E+00	1.80E+00	1.80E+00
+	AG-110M	657.75	93.14	-2.36E-02	8.53E-02	8.53E-02
		677.61	10.53	4.01E-01		8.95E-01
		706.67	16.46	3.31E-02		5.24E-01
		763.93	21.98	-1.14E-01		4.06E-01
		884.67	71.63	5.01E-02		1.21E-01
		1384.27	23.94	-6.42E-02		3.61E-01
+	CD-113M	263.70	0.02	5.69E+00	2.62E+02	2.62E+02
+	SN-113	255.12	1.93	-4.27E-01	1.23E-01	3.62E+00
		391.69	64.90	-9.44E-03		1.23E-01
+	TE123M	159.00	84.10	-3.37E-02	6.88E-02	6.88E-02
+	SB-124	602.71	97.87	-7.96E-03	1.10E-01	1.10E-01
		645.85	7.26	-5.45E-01		1.32E+00
		722.78	11.10	2.71E-01		1.01E+00
		1691.02	49.00	-6.74E-02		1.51E-01
+	I-125	35.49	6.49	-1.30E+00	2.79E+00	2.79E+00
+	SB-125	176.33	6.89	-2.07E-01	2.34E-01	7.17E-01
		427.89	29.33	-3.38E-03		2.34E-01
		463.38	10.35	5.31E-01		7.78E-01
		600.56	17.80	-3.71E-02		4.71E-01
		635.90	11.32	1.85E-01		6.75E-01

Analysis Report for 1510084-04

CP0604S06-07

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-8.14E-02	3.31E-01	3.43E-01
		666.33	99.60	4.08E-02		3.58E-01
		695.00	99.60	1.72E-01		3.31E-01
		720.50	53.80	1.73E-01		6.28E-01
+	SN-126	87.57	37.00	1.10E-01	1.74E-01	1.74E-01
+	SB-127	473.00	25.00	-8.15E+00	2.27E+01	2.88E+01
		685.20	35.70	-1.96E+00		2.27E+01
		783.80	14.70	1.73E+01		6.75E+01
+	I-129	29.78	57.00	-1.75E-01	4.20E-01	4.20E-01
		33.60	13.20	-3.98E-01		1.20E+00
		39.58	7.52	-8.70E-02		1.40E+00
+	I-131	284.30	6.05	1.23E-01	7.62E-01	1.00E+01
		364.48	81.20	2.88E-01		7.62E-01
		636.97	7.26	-5.97E+00		8.60E+00
		722.89	1.80	1.17E+01		4.37E+01
+	TE-132	49.72	13.10	4.14E+01	1.79E+01	1.47E+02
		228.16	88.00	-1.37E+01		1.79E+01
+	BA-133	81.00	33.00	-9.83E-01	1.49E-01	1.76E-01
		302.84	17.80	1.19E-01		3.88E-01
		356.01	60.00	2.07E-02		1.49E-01
+	I-133	529.87	86.30	6.72E+06	8.85E+07	8.85E+07
+	XE-133	81.00	38.00	-2.65E+01	4.75E+00	4.75E+00
+	CS-134	563.23	8.38	-3.19E-01	8.74E-02	8.70E-01
		569.32	15.43	2.95E-01		4.90E-01
		604.70	97.60	-6.03E-01		8.74E-02
		795.84	85.40	6.89E-02		1.18E-01
		801.93	8.73	-3.39E-01		9.26E-01
+	CS-135	268.24	16.00	-1.25E-03	4.45E-01	4.45E-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	7.04E-01	3.20E-01	2.80E+00
		163.89	4.61	2.24E+00		4.46E+00
		176.55	13.56	-2.27E-01		1.42E+00
		273.65	12.66	-1.08E-01		2.28E+00
		340.57	48.50	1.35E+00		7.31E-01
		818.50	99.70	-7.54E-02		3.20E-01
		1048.07	79.60	-1.68E-01		4.33E-01
		1235.34	19.70	-3.74E-01		2.52E+00
+	CS-137	661.65	85.12	2.71E-02	9.90E-02	9.90E-02
+	LA-138	788.74	34.00	9.11E-02	1.49E-01	2.59E-01
		1435.80	66.00	8.97E-02		1.49E-01
+	CE-139	165.85	80.35	5.75E-03	7.35E-02	7.35E-02
+	BA-140	162.64	6.70	6.33E-01	1.27E+00	3.14E+00
		304.84	4.50	5.38E-01		5.71E+00
		423.70	3.20	4.32E+00		8.53E+00
		437.55	2.00	-4.54E+00		1.39E+01
		537.32	25.00	1.61E-01		1.27E+00
+	LA-140	328.77	20.50	1.12E+00	4.01E-01	1.48E+00

Analysis Report for 1510084-04

CP0604S06-07

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	487.03	45.50	2.33E-01	4.01E-01	6.26E-01
		815.85	23.50	-3.57E-01		1.34E+00
		1596.49	95.49	0.00E+00		4.01E-01
+	CE-141	145.44	48.40	1.02E-02	1.82E-01	1.82E-01
+	CE-143	57.36	11.80	8.99E+03	9.85E+04	2.93E+05
		293.26	42.00	3.43E+03		9.85E+04
		664.55	5.20	3.27E+05		8.32E+05
+	CE-144	133.54	10.80	3.85E-02	4.66E-01	4.66E-01
+	PM-144	476.78	42.00	1.33E-02	7.92E-02	1.72E-01
		618.01	98.60	-4.03E-02		8.04E-02
		696.49	99.49	2.58E-02		7.92E-02
+	PM-145	36.85	21.70	-3.90E-01	3.04E-01	5.63E-01
		37.36	39.70	9.47E-02		3.04E-01
		42.30	15.10	-2.01E-01		6.09E-01
		72.40	2.31	-5.01E+00		3.28E+00
+	PM-146	453.90	39.94	1.08E-01	1.85E-01	1.85E-01
		735.90	14.01	-1.36E-01		5.45E-01
		747.13	13.10	1.17E-01		6.44E-01
+	ND-147	91.11	* 28.90	8.62E-01	2.26E+00	2.26E+00
		531.02	13.10	-2.38E-01		2.78E+00
+	PM-149	285.90	* 3.10	2.83E+03	5.91E+03	5.91E+03
+	EU-152	121.78	20.50	-2.48E-02	2.32E-01	2.32E-01
		244.69	5.40	-1.71E-02		1.33E+00
		344.27	19.13	-3.38E-02		3.44E-01
		778.89	9.20	3.59E-01		1.02E+00
		964.01	10.40	-1.98E+00		1.10E+00
		1085.78	7.22	-7.77E-03		1.41E+00
		1112.02	9.60	-5.79E-02		9.82E-01
		1407.95	14.94	1.97E-01		6.42E-01
+	GD-153	97.43	31.30	4.71E-02	1.68E-01	1.68E-01
		103.18	22.20	-1.12E-01		2.31E-01
+	EU-154	123.07	40.50	7.69E-02	1.21E-01	1.21E-01
		723.30	19.70	1.14E-01		4.26E-01
		873.19	11.50	-1.03E-01		6.70E-01
		996.32	10.30	9.90E-02		9.12E-01
		1004.76	17.90	1.18E-01		5.14E-01
		1274.45	35.50	-1.27E-01		3.13E-01
+	EU-155	86.50	30.90	1.34E-01	2.11E-01	2.11E-01
		105.30	20.70	3.83E-02		2.34E-01
+	EU-156	811.77	10.40	6.76E-02	2.51E+00	2.51E+00
		1153.47	7.20	-5.88E-02		4.97E+00
		1230.71	8.90	-7.29E-01		4.34E+00
+	HO-166M	184.41	72.60	1.24E-01	8.65E-02	8.65E-02
		280.45	29.60	3.77E-02		2.25E-01
		410.94	11.10	6.63E-02		6.07E-01
		711.69	54.10	2.50E-02		1.45E-01
+	TM-171	66.72	0.14	5.69E+00	4.96E+01	4.96E+01
+	HF-172	81.75	4.52	-4.54E+00	4.38E-01	1.31E+00
		125.81	11.30	1.15E-01		4.38E-01

Analysis Report for 1510084-04
CP0604S06-07

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	2.88E-01	2.30E+00	3.68E+00
		810.06	16.63	-9.77E-01		6.88E+00
		912.12	15.25	2.98E+01		1.55E+01
		1093.66	62.50	-7.54E-01		2.30E+00
+	LU-173	100.72	5.24	5.57E-01	3.66E-01	9.82E-01
		272.11	21.20	3.70E-01		3.66E-01
+	HF-175	343.40	84.00	1.07E-02	1.09E-01	1.09E-01
+	LU-176	88.34	13.30	3.40E-02	6.74E-02	4.93E-01
		201.83	86.00	1.40E-02		7.19E-02
		306.78	94.00	2.71E-02		6.74E-02
+	TA-182	67.75	41.20	4.69E-02	1.89E-01	1.89E-01
		1121.30	34.90	4.60E-01		4.57E-01
		1189.05	16.23	3.67E-01		7.94E-01
		1221.41	26.98	-1.06E-01		5.28E-01
		1231.02	11.44	2.44E-01		1.23E+00
+	IR-192	308.46	29.68	1.23E-01	1.85E-01	2.76E-01
		468.07	48.10	2.94E-02		1.85E-01
+	HG-203	279.19	77.30	4.83E-02	1.30E-01	1.30E-01
+	BI-207	569.67	97.72	2.58E-02	7.80E-02	7.80E-02
		1063.62	74.90	3.83E-02		1.25E-01
+	TL-208	583.14	* 30.22	1.44E+00	3.66E-01	3.66E-01
		860.37	* 4.48	3.25E+00		2.39E+00
		2614.66	35.85	9.58E-01		6.07E-01
+	BI-210M	262.00	45.00	3.28E-02	1.44E-01	1.44E-01
		300.00	23.00	-4.97E-01		3.17E-01
+	PB-210	46.50	* 4.25	1.67E+00	2.62E+00	2.62E+00
+	PB-211	404.84	2.90	-1.94E+00	2.30E+00	2.30E+00
		831.96	2.90	2.19E-01		2.93E+00
+	BI-212	727.17	11.80	7.02E-01	8.97E-01	8.97E-01
		1620.62	2.75	1.03E+00		3.16E+00
+	PB-212	238.63	* 44.60	1.60E+00	2.35E-01	2.35E-01
		300.09	* 3.41	1.55E+00		3.51E+00
+	BI-214	609.31	* 46.30	8.91E-01	4.77E-01	4.77E-01
		1120.29	* 15.10	1.01E+00		8.47E-01
		1764.49	15.80	1.87E-02		8.08E-01
		2204.22	4.98	1.09E+00		2.15E+00
+	PB-214	295.21	* 19.19	9.28E-01	2.76E-01	6.21E-01
		351.92	* 37.19	8.45E-01		2.76E-01
+	RN-219	401.80	6.50	2.69E-01	1.06E+00	1.06E+00
+	RA-223	323.87	3.88	-1.79E+00	1.69E+00	1.69E+00
+	RA-224	240.98	* 3.95	3.04E+00	2.65E+00	2.65E+00
+	RA-225	40.00	31.00	-6.97E-02	1.12E+00	1.12E+00
+	RA-226	186.21	* 3.28	2.84E+00	2.12E+00	2.12E+00
+	TH-227	50.10	8.40	2.52E-01	8.94E-01	8.94E-01
		236.00	11.50	2.37E+00		9.74E-01
		256.20	6.30	-1.10E-01		9.84E-01
+	AC-228	338.32	* 11.40	1.43E+00	6.43E-01	9.12E-01
		911.07	* 27.70	1.34E+00		6.43E-01

Analysis Report for 1510084-04

CP0604S06-07

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.45E+00	6.43E-01	1.18E+00
+	TH-230	48.44		16.90	-6.86E-02	4.85E-01	4.85E-01
		62.85		4.60	2.35E+00		1.62E+00
		67.67		0.37	4.46E+00		1.80E+01
+	PA-231	283.67		1.60	4.95E-02	2.99E+00	4.01E+00
		302.67		2.30	9.16E-01		2.99E+00
+	TH-231	25.64		14.70	8.96E-01	9.20E-01	3.17E+00
		84.21		6.40	-1.28E+00		9.20E-01
+	PA-233	311.98		38.60	-6.07E-02	3.16E-01	3.16E-01
+	PA-234	131.20		20.40	1.46E-01	2.48E-01	2.48E-01
		733.99		8.80	1.20E-01		9.11E-01
		946.00		12.00	2.09E-01		6.91E-01
+	PA-234M	1001.03		0.92	3.37E+00	1.07E+01	1.07E+01
+	TH-234	63.29	*	3.80	1.37E+00	2.22E+00	2.22E+00
+	U-235	143.76		10.50	2.07E-01	4.90E-01	4.90E-01
		163.35		4.70	5.57E-01		1.11E+00
		205.31		4.70	2.51E-01		1.31E+00
+	NP-237	86.50		12.60	3.26E-01	5.13E-01	5.13E-01
+	NP-239	106.10		22.70	-7.80E+01	4.38E+02	4.38E+02
		228.18		10.70	-9.39E+02		1.23E+03
		277.60		14.10	8.15E+02		1.03E+03
+	AM-241	59.54		35.90	2.53E-02	1.97E-01	1.97E-01
+	AM-243	74.67		66.00	2.18E-01	1.33E-01	1.33E-01
+	CM-243	209.75		3.29	2.10E+00	4.92E-01	2.03E+00
		228.14		10.60	-4.48E-01		5.86E-01
		277.60		14.00	3.88E-01		4.92E-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

NUCLIDE MDA REPORT

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

: 00457

Analysis Report for 1510084-04

CP0604S06-07

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	9.28E-01	9.28E-01	1.13E-01	4.39E-01
NA-22	1274.54	99.94	1.13E-01	1.13E-01	-4.58E-02	5.20E-02
NA-24	1368.53	99.99	3.54E+11	1.93E+11	5.43E+10	1.62E+11
	2754.09	99.86	1.93E+11		-4.38E+10	7.22E+10
AL-26	1808.65	99.76	6.50E-02	6.50E-02	2.05E-03	2.70E-02
+ K-40	1460.81	* 10.67	2.15E+00	2.15E+00	1.95E+01	1.03E+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	7.04E-02	7.04E-02	1.75E-02	3.45E-02
	78.34	96.00	8.57E-02		2.17E-01	4.22E-02
SC-46	889.25	99.98	9.65E-02	9.65E-02	-2.73E-02	4.44E-02
	1120.51	99.99	1.70E-01		2.02E-01	8.05E-02
V-48	983.52	99.98	2.73E-01	2.73E-01	6.40E-02	1.26E-01
	1312.10	97.50	3.30E-01		1.18E-01	1.51E-01
CR-51	320.08	9.83	1.22E+00	1.22E+00	-4.77E-01	5.87E-01
MN-54	834.83	99.97	8.66E-02	8.66E-02	-4.36E-02	4.01E-02
CO-56	846.75	99.96	8.88E-02	8.88E-02	-3.67E-02	4.06E-02
	1037.75	14.03	8.27E-01		-2.16E-01	3.82E-01
	1238.25	67.00	2.32E-01		8.52E-03	1.08E-01
	1771.40	15.51	7.15E-01		2.54E-02	3.13E-01
	2598.48	16.90	1.03E-01		0.00E+00	0.00E+00
CO-57	122.06	85.51	5.94E-02	5.94E-02	-6.33E-03	2.88E-02
	136.48	10.60	4.93E-01		1.06E-01	2.39E-01
CO-58	810.76	99.40	1.01E-01	1.01E-01	-7.70E-03	4.66E-02
FE-59	1099.22	56.50	2.74E-01	2.74E-01	3.82E-02	1.27E-01
	1291.56	43.20	3.53E-01		1.45E-02	1.61E-01
CO-60	1173.22	100.00	1.11E-01	1.06E-01	4.11E-03	5.14E-02
	1332.49	100.00	1.06E-01		1.34E-02	4.88E-02
ZN-65	1115.52	50.75	1.98E-01	1.98E-01	3.74E-02	9.08E-02
GA-67	93.31	35.70	4.32E+01	4.32E+01	5.59E+01	2.12E+01
	208.95	2.24	7.65E+02		7.50E+02	3.72E+02
	300.22	16.00	1.15E+02		-1.80E+02	5.55E+01
SE-75	121.11	16.70	3.28E-01	9.56E-02	-1.96E-01	1.59E-01
	136.00	59.20	9.56E-02		1.33E-02	4.64E-02
	264.65	59.80	1.14E-01		2.54E-03	5.49E-02
	279.53	25.20	3.08E-01		9.77E-02	1.49E-01
	400.65	11.40	7.02E-01		6.60E-02	3.35E-01
RB-82	776.52	13.00	1.34E+00	1.34E+00	-5.05E-01	6.26E-01
RB-83	520.41	46.00	1.96E-01	1.96E-01	6.13E-02	9.26E-02
	529.64	30.30	2.85E-01		2.16E-02	1.34E-01
	552.65	16.40	5.11E-01		-2.25E-01	2.40E-01
KR-85	513.99	0.43	2.26E+01	2.26E+01	1.49E+00	1.09E+01
SR-85	513.99	99.27	1.30E-01	1.30E-01	8.56E-03	6.24E-02
Y-88	898.02	93.40	9.85E-02	6.46E-02	-4.30E-02	4.52E-02
	1836.01	99.38	6.46E-02		-9.85E-03	2.56E-02
NB-93M	16.57	9.43	7.41E+01	7.41E+01	-3.68E+00	3.61E+01
NB-94	702.63	100.00	8.34E-02	8.26E-02	3.00E-02	3.91E-02
	871.10	100.00	8.26E-02		5.15E-02	3.82E-02
NB-95	765.79	99.81	1.52E-01	1.52E-01	4.56E-02	7.15E-02
NB-95M	235.69	25.00	6.61E+01	6.61E+01	1.61E+02	3.25E+01
ZR-95	724.18	43.70	2.76E-01	2.05E-01	5.63E-02	1.30E-01
	756.72	55.30	2.05E-01		8.06E-02	9.61E-02

Analysis Report for 1510084-04

CP0604S06-07

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	5.73E+02	4.40E+02	1.00E+02	2.77E+02
	739.58	12.80	4.40E+02		1.17E+02	2.05E+02
	778.00	4.50	1.44E+03		3.59E+01	6.77E+02
RU-103	497.08	89.00	1.11E-01	1.11E-01	-4.21E-02	5.24E-02
+ RU-106	621.84	* 9.80	2.40E+00	2.40E+00	3.81E-01	1.17E+00
AG-108M	433.93	89.90	7.66E-02	7.66E-02	1.67E-02	3.64E-02
	614.37	90.40	1.02E-01		-2.50E-01	4.86E-02
	722.95	90.50	9.22E-02		2.47E-02	4.32E-02
CD-109	88.03	3.72	1.80E+00	1.80E+00	1.14E+00	8.82E-01
AG-110M	657.75	93.14	8.53E-02	8.53E-02	-2.36E-02	3.98E-02
	677.61	10.53	8.95E-01		4.01E-01	4.22E-01
	706.67	16.46	5.24E-01		3.31E-02	2.45E-01
	763.93	21.98	4.06E-01		-1.14E-01	1.89E-01
	884.67	71.63	1.21E-01		5.01E-02	5.58E-02
	1384.27	23.94	3.61E-01		-6.42E-02	1.60E-01
CD-113M	263.70	0.02	2.62E+02	2.62E+02	5.69E+00	1.26E+02
SN-113	255.12	1.93	3.62E+00	1.23E-01	-4.27E-01	1.74E+00
	391.69	64.90	1.23E-01		-9.44E-03	5.86E-02
	TE123M	159.00	84.10	6.88E-02	6.88E-02	-3.37E-02	3.33E-02
SB-124	602.71	97.87	1.10E-01	1.10E-01	-7.96E-03	5.17E-02
	645.85	7.26	1.32E+00		-5.45E-01	6.18E-01
	722.78	11.10	1.01E+00		2.71E-01	4.75E-01
	1691.02	49.00	1.51E-01		-6.74E-02	6.11E-02
	I-125	35.49	6.49	2.79E+00	2.79E+00	-1.30E+00	1.35E+00
SB-125	176.33	6.89	7.17E-01	2.34E-01	-2.07E-01	3.47E-01
	427.89	29.33	2.34E-01		-3.38E-03	1.11E-01
	463.38	10.35	7.78E-01		5.31E-01	3.71E-01
	600.56	17.80	4.71E-01		-3.71E-02	2.23E-01
	635.90	11.32	6.75E-01		1.85E-01	3.16E-01
	SB-126	414.70	83.30	3.43E-01	3.31E-01	-8.14E-02	1.63E-01
SB-126	666.33	99.60	3.58E-01		4.08E-02	1.69E-01
	695.00	99.60	3.31E-01		1.72E-01	1.55E-01
	720.50	53.80	6.28E-01		1.73E-01	2.93E-01
	SN-126	87.57	37.00	1.74E-01	1.74E-01	1.10E-01	8.53E-02
SB-127	473.00	25.00	2.88E+01	2.27E+01	-8.15E+00	1.36E+01
	685.20	35.70	2.27E+01		-1.96E+00	1.06E+01
	783.80	14.70	6.75E+01		1.73E+01	3.17E+01
I-129	29.78	57.00	4.20E-01	4.20E-01	-1.75E-01	2.04E-01
	33.60	13.20	1.20E+00		-3.98E-01	5.82E-01
	39.58	7.52	1.40E+00		-8.70E-02	6.81E-01
I-131	284.30	6.05	1.00E+01	7.62E-01	1.23E-01	4.82E+00
	364.48	81.20	7.62E-01		2.88E-01	3.64E-01
	636.97	7.26	8.60E+00		-5.97E+00	3.99E+00
	722.89	1.80	4.37E+01		1.17E+01	2.05E+01
TE-132	49.72	13.10	1.47E+02	1.79E+01	4.14E+01	7.16E+01
	228.16	88.00	1.79E+01		-1.37E+01	8.65E+00
BA-133	81.00	33.00	1.76E-01	1.49E-01	-9.83E-01	8.62E-02
	302.84	17.80	3.88E-01		1.19E-01	1.87E-01
	356.01	60.00	1.49E-01		2.07E-02	7.20E-02
I-133	529.87	86.30	8.85E+07	8.85E+07	6.72E+06	4.17E+07
XE-133	81.00	38.00	4.75E+00	4.75E+00	-2.65E+01	2.32E+00
CS-134	563.23	8.38	8.70E-01	8.74E-02	-3.19E-01	4.09E-01
	569.32	15.43	4.90E-01		2.95E-01	2.31E-01

Analysis Report for 1510084-04

CP0604S06-07

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	8.74E-02	8.74E-02	-6.03E-01	4.13E-02	
	795.84	85.40	1.18E-01		6.89E-02	5.55E-02	
	801.93	8.73	9.26E-01		-3.39E-01	4.29E-01	
CS-135	268.24	16.00	4.45E-01	4.45E-01	-1.25E-03	2.15E-01	
	@ I-135	1131.51	22.50		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	2.80E+00	3.20E-01	7.04E-01	1.36E+00	
	163.89	4.61	4.46E+00		2.24E+00	2.16E+00	
	176.55	13.56	1.42E+00		-2.27E-01	6.87E-01	
	273.65	12.66	2.28E+00		-1.08E-01	1.10E+00	
	340.57	48.50	7.31E-01		1.35E+00	3.54E-01	
	818.50	99.70	3.20E-01		-7.54E-02	1.48E-01	
	1048.07	79.60	4.33E-01		-1.68E-01	1.99E-01	
	1235.34	19.70	2.52E+00		-3.74E-01	1.18E+00	
CS-137	661.65	85.12	9.90E-02	9.90E-02	2.71E-02	4.66E-02	
LA-138	788.74	34.00	2.59E-01	1.49E-01	9.11E-02	1.21E-01	
	1435.80	66.00	1.49E-01		8.97E-02	6.75E-02	
CE-139	165.85	80.35	7.35E-02	7.35E-02	5.75E-03	3.56E-02	
BA-140	162.64	6.70	3.14E+00	1.27E+00	6.33E-01	1.52E+00	
	304.84	4.50	5.71E+00		5.38E-01	2.74E+00	
	423.70	3.20	8.53E+00		4.32E+00	4.06E+00	
	437.55	2.00	1.39E+01		-4.54E+00	6.59E+00	
	537.32	25.00	1.27E+00		1.61E-01	6.04E-01	
LA-140	328.77	20.50	1.48E+00	4.01E-01	1.12E+00	7.13E-01	
	487.03	45.50	6.26E-01		2.33E-01	2.96E-01	
	815.85	23.50	1.34E+00		-3.57E-01	6.17E-01	
	1596.49	95.49	4.01E-01		0.00E+00	1.79E-01	
CE-141	145.44	48.40	1.82E-01	1.82E-01	1.02E-02	8.82E-02	
CE-143	57.36	11.80	2.93E+05	9.85E+04	8.99E+03	1.43E+05	
	293.26	42.00	9.85E+04		3.43E+03	4.78E+04	
	664.55	5.20	8.32E+05		3.27E+05	3.93E+05	
CE-144	133.54	10.80	4.66E-01	4.66E-01	3.85E-02	2.26E-01	
PM-144	476.78	42.00	1.72E-01	7.92E-02	1.33E-02	8.12E-02	
	618.01	98.60	8.04E-02		-4.03E-02	3.78E-02	
	696.49	99.49	7.92E-02		2.58E-02	3.69E-02	
	36.85	21.70	5.63E-01		3.04E-01	-3.90E-01	2.74E-01
PM-145	37.36	39.70	3.04E-01	3.04E-01	9.47E-02	1.48E-01	
	42.30	15.10	6.09E-01		-2.01E-01	2.96E-01	
	72.40	2.31	3.28E+00		-5.01E+00	1.61E+00	
	453.90	39.94	1.85E-01		1.85E-01	1.08E-01	8.80E-02
PM-146	735.90	14.01	5.45E-01	1.85E-01	-1.36E-01	2.53E-01	
	747.13	13.10	6.44E-01		1.17E-01	3.01E-01	
	91.11	* 28.90	2.26E+00		2.26E+00	8.62E-01	1.12E+00
ND-147	531.02	13.10	2.78E+00		-2.38E-01	1.31E+00	
+ PM-149	285.90	* 3.10	5.91E+03	5.91E+03	2.83E+03	2.82E+03	
	EU-152	121.78	20.50		2.32E-01	2.32E-01	-2.48E-02	1.13E-01
EU-152	244.69	5.40	1.33E+00	2.32E-01	-1.71E-02	6.43E-01	
	344.27	19.13	3.44E-01		-3.38E-02	1.65E-01	
	778.89	9.20	1.02E+00		3.59E-01	4.81E-01	
	964.01	10.40	1.10E+00		-1.98E+00	5.17E-01	
	1085.78	7.22	1.41E+00		-7.77E-03	6.52E-01	
1112.02	9.60	9.82E-01	-5.79E-02	4.52E-01			

Analysis Report for 1510084-04

CP0604S06-07

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	6.42E-01	2.32E-01	1.97E-01	2.90E-01	
GD-153	97.43	31.30	1.68E-01	1.68E-01	4.71E-02	8.17E-02	
	103.18	22.20	2.31E-01		-1.12E-01	1.12E-01	
EU-154	123.07	40.50	1.21E-01	1.21E-01	7.69E-02	5.89E-02	
	723.30	19.70	4.26E-01		1.14E-01	2.00E-01	
	873.19	11.50	6.70E-01		-1.03E-01	3.08E-01	
	996.32	10.30	9.12E-01		9.90E-02	4.22E-01	
	1004.76	17.90	5.14E-01		1.18E-01	2.38E-01	
	1274.45	35.50	3.13E-01		-1.27E-01	1.44E-01	
EU-155	86.50	30.90	2.11E-01	2.11E-01	1.34E-01	1.04E-01	
	105.30	20.70	2.34E-01		3.83E-02	1.14E-01	
EU-156	811.77	10.40	2.51E+00	2.51E+00	6.76E-02	1.17E+00	
	1153.47	7.20	4.97E+00		-5.88E-02	2.31E+00	
	1230.71	8.90	4.34E+00		-7.29E-01	2.02E+00	
HO-166M	184.41	72.60	8.65E-02	8.65E-02	1.24E-01	4.21E-02	
	280.45	29.60	2.25E-01		3.77E-02	1.09E-01	
	410.94	11.10	6.07E-01		6.63E-02	2.89E-01	
	711.69	54.10	1.45E-01		2.50E-02	6.78E-02	
TM-171	66.72	0.14	4.96E+01	4.96E+01	5.69E+00	2.43E+01	
HF-172	81.75	4.52	1.31E+00	4.38E-01	-4.54E+00	6.39E-01	
	125.81	11.30	4.38E-01		1.15E-01	2.13E-01	
LU-172	181.53	20.60	3.68E+00	2.30E+00	2.88E-01	1.78E+00	
	810.06	16.63	6.88E+00		-9.77E-01	3.19E+00	
	912.12	15.25	1.55E+01		2.98E+01	7.43E+00	
	1093.66	62.50	2.30E+00		-7.54E-01	1.06E+00	
LU-173	100.72	5.24	9.82E-01	3.66E-01	5.57E-01	4.78E-01	
	272.11	21.20	3.66E-01		3.70E-01	1.77E-01	
HF-175	343.40	84.00	1.09E-01	1.09E-01	1.07E-02	5.25E-02	
LU-176	88.34	13.30	4.93E-01	6.74E-02	3.40E-02	2.42E-01	
	201.83	86.00	7.19E-02		1.40E-02	3.49E-02	
	306.78	94.00	6.74E-02		2.71E-02	3.24E-02	
TA-182	67.75	41.20	1.89E-01	1.89E-01	4.69E-02	9.26E-02	
	1121.30	34.90	4.57E-01		4.60E-01	2.16E-01	
	1189.05	16.23	7.94E-01		3.67E-01	3.68E-01	
	1221.41	26.98	5.28E-01		-1.06E-01	2.46E-01	
	1231.02	11.44	1.23E+00		2.44E-01	5.71E-01	
IR-192	308.46	29.68	2.76E-01	1.85E-01	1.23E-01	1.32E-01	
	468.07	48.10	1.85E-01		2.94E-02	8.75E-02	
HG-203	279.19	77.30	1.30E-01	1.30E-01	4.83E-02	6.27E-02	
BI-207	569.67	97.72	7.80E-02	7.80E-02	2.58E-02	3.68E-02	
	1063.62	74.90	1.25E-01		3.83E-02	5.75E-02	
+ TL-208	583.14	*	30.22	3.66E-01	3.66E-01	1.44E+00	1.76E-01
	860.37	*	4.48	2.39E+00		3.25E+00	1.13E+00
	2614.66		35.85	6.07E-01		9.58E-01	2.84E-01
BI-210M	262.00		45.00	1.44E-01	1.44E-01	3.28E-02	6.95E-02
	300.00		23.00	3.17E-01		-4.97E-01	1.53E-01
+ PB-210	46.50	*	4.25	2.62E+00	2.62E+00	1.67E+00	1.29E+00
PB-211	404.84		2.90	2.30E+00	2.30E+00	-1.94E+00	1.10E+00
	831.96		2.90	2.93E+00		2.19E-01	1.36E+00
BI-212	727.17		11.80	8.97E-01	8.97E-01	7.02E-01	4.26E-01
	1620.62		2.75	3.16E+00		1.03E+00	1.39E+00
+ PB-212	238.63	*	44.60	2.35E-01	2.35E-01	1.60E+00	1.15E-01
	300.09	*	3.41	3.51E+00		1.55E+00	1.72E+00

Analysis Report for 1510084-04

CP0604S06-07

	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	4.77E-01	4.77E-01	8.91E-01	2.34E-01
		1120.29 *		15.10	8.47E-01		1.01E+00	3.98E-01
		1764.49		15.80	8.08E-01		1.87E-02	3.69E-01
		2204.22		4.98	2.15E+00		1.09E+00	9.49E-01
+	PB-214	295.21 *		19.19	6.21E-01	2.76E-01	9.28E-01	3.04E-01
		351.92 *		37.19	2.76E-01		8.45E-01	1.34E-01
	RN-219	401.80		6.50	1.06E+00	1.06E+00	2.69E-01	5.06E-01
	RA-223	323.87		3.88	1.69E+00	1.69E+00	-1.79E+00	8.12E-01
+	RA-224	240.98 *		3.95	2.65E+00	2.65E+00	3.04E+00	1.30E+00
	RA-225	40.00		31.00	1.12E+00	1.12E+00	-6.97E-02	5.45E-01
+	RA-226	186.21 *		3.28	2.12E+00	2.12E+00	2.84E+00	1.03E+00
	TH-227	50.10		8.40	8.94E-01	8.94E-01	2.52E-01	4.36E-01
		236.00		11.50	9.74E-01		2.37E+00	4.78E-01
		256.20		6.30	9.84E-01		-1.10E-01	4.75E-01
+	AC-228	338.32 *		11.40	9.12E-01	6.43E-01	1.43E+00	4.44E-01
		911.07 *		27.70	6.43E-01		1.34E+00	3.10E-01
		969.11 *		16.60	1.18E+00		1.45E+00	5.71E-01
	TH-230	48.44		16.90	4.85E-01	4.85E-01	-6.86E-02	2.37E-01
		62.85		4.60	1.62E+00		2.35E+00	7.94E-01
		67.67		0.37	1.80E+01		4.46E+00	8.81E+00
	PA-231	283.67		1.60	4.01E+00	2.99E+00	4.95E-02	1.93E+00
		302.67		2.30	2.99E+00		9.16E-01	1.44E+00
	TH-231	25.64		14.70	3.17E+00	9.20E-01	8.96E-01	1.54E+00
		84.21		6.40	9.20E-01		-1.28E+00	4.50E-01
	PA-233	311.98		38.60	3.16E-01	3.16E-01	-6.07E-02	1.52E-01
	PA-234	131.20		20.40	2.48E-01	2.48E-01	1.46E-01	1.21E-01
		733.99		8.80	9.11E-01		1.20E-01	4.25E-01
		946.00		12.00	6.91E-01		2.09E-01	3.18E-01
	PA-234M	1001.03		0.92	1.07E+01	1.07E+01	3.37E+00	4.98E+00
+	TH-234	63.29 *		3.80	2.22E+00	2.22E+00	1.37E+00	1.09E+00
	U-235	143.76		10.50	4.90E-01	4.90E-01	2.07E-01	2.38E-01
		163.35		4.70	1.11E+00		5.57E-01	5.38E-01
		205.31		4.70	1.31E+00		2.51E-01	6.35E-01
	NP-237	86.50		12.60	5.13E-01	5.13E-01	3.26E-01	2.51E-01
	NP-239	106.10		22.70	4.38E+02	4.38E+02	-7.80E+01	2.13E+02
		228.18		10.70	1.23E+03		-9.39E+02	5.95E+02
		277.60		14.10	1.03E+03		8.15E+02	5.00E+02
	AM-241	59.54		35.90	1.97E-01	1.97E-01	2.53E-02	9.66E-02
	AM-243	74.67		66.00	1.33E-01	1.33E-01	2.18E-01	6.56E-02
	CM-243	209.75		3.29	2.03E+00	4.92E-01	2.10E+00	9.88E-01
		228.14		10.60	5.86E-01		-4.48E-01	2.84E-01
		277.60		14.00	4.92E-01		3.88E-01	2.38E-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 1510084-04
CP0604S06-07

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

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: CP0604S06-07

Elapsed Live time: 3600
Elapsed Real Time: 3617

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	13	166	171	150	159	112	89	101
17:	103	83	91	83	69	99	96	97
25:	96	97	89	84	81	75	92	87
33:	94	82	86	63	87	89	88	106
41:	76	79	90	80	118	132	166	111
49:	87	107	105	123	109	118	110	111
57:	116	147	131	133	139	160	171	218
65:	173	131	154	156	156	160	159	142
73:	158	207	386	281	431	475	148	139
81:	123	130	115	143	165	134	189	214
89:	133	161	166	125	242	186	114	82
97:	87	96	89	114	100	86	93	73
105:	87	102	88	71	89	84	70	88
113:	98	99	90	87	86	80	86	78
121:	76	79	73	90	98	62	63	86
129:	89	109	91	74	61	81	64	82
137:	79	73	83	71	75	83	80	71
145:	91	76	62	81	72	70	74	75
153:	83	79	87	81	74	78	66	54
161:	61	72	68	78	67	69	70	59
169:	66	65	70	70	59	50	60	66
177:	38	63	54	60	63	59	53	64
185:	73	132	121	73	44	58	55	53
193:	56	65	58	54	64	53	52	58
201:	52	55	41	60	58	55	36	58
209:	69	98	61	56	38	39	34	45
217:	51	49	45	60	47	51	68	51
225:	34	41	59	40	60	38	42	57
233:	43	45	52	48	50	186	574	287
241:	82	122	68	31	35	39	47	32
249:	33	31	45	35	36	40	27	39
257:	33	32	53	43	41	29	29	39
265:	40	22	32	29	34	66	97	41
273:	35	36	38	38	43	52	36	36
281:	39	30	26	41	34	42	23	31
289:	29	32	32	26	35	41	93	121
297:	46	40	28	47	58	33	26	23
305:	25	31	23	37	27	34	29	22
313:	21	29	27	30	26	22	33	22
321:	28	27	24	36	25	25	31	44
329:	49	31	32	33	27	21	31	28
337:	27	76	111	52	32	26	24	24
345:	31	19	20	22	30	16	51	179
353:	163	27	17	20	25	29	30	32
361:	16	31	21	15	18	25	26	23

369: 17 15 19 26 16 16 30 19

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	16	27	16	22	30	14	18	25
385:	21	20	21	24	16	20	23	20
393:	25	24	23	20	24	18	16	20
401:	25	29	22	18	18	20	15	14
409:	27	30	16	13	19	16	13	25
417:	18	26	16	17	13	12	14	21
425:	19	23	23	15	17	15	14	22
433:	15	22	20	19	16	14	20	15
441:	18	26	16	16	18	19	12	14
449:	11	19	15	18	29	21	17	10
457:	24	11	17	16	11	16	28	45
465:	24	12	13	22	14	14	15	11
473:	19	14	16	13	14	17	15	18
481:	15	14	12	13	6	30	8	15
489:	15	19	12	12	12	15	17	8
497:	8	13	11	10	17	14	12	12
505:	15	15	8	16	27	26	59	57
513:	26	13	11	16	14	18	8	26
521:	17	8	13	12	12	16	10	13
529:	10	17	15	15	12	11	12	17
537:	15	20	17	20	13	20	14	9
545:	8	9	13	15	14	14	13	5
553:	12	13	10	13	10	18	13	13
561:	13	17	20	10	8	4	11	17
569:	12	15	13	18	10	15	16	16
577:	12	9	14	16	14	25	90	126
585:	40	13	8	13	5	7	15	8
593:	9	6	13	18	14	15	16	14
601:	15	13	13	17	11	12	14	24
609:	90	127	48	20	15	14	14	8
617:	7	12	12	9	19	21	9	9
625:	13	12	9	17	11	11	12	11
633:	24	9	12	8	6	6	11	6
641:	10	7	12	9	10	9	8	12
649:	6	14	14	12	6	11	7	10
657:	5	9	11	11	16	15	14	14
665:	9	15	13	10	12	6	12	10
673:	12	12	22	19	16	6	12	3
681:	16	10	9	6	7	12	7	15
689:	15	12	12	9	6	10	10	10
697:	11	12	5	6	9	9	16	17
705:	11	11	9	10	7	7	11	6
713:	16	13	8	9	7	10	7	10
721:	10	15	8	4	11	17	25	39
729:	18	9	13	10	7	3	15	12
737:	7	7	8	9	14	9	8	6
745:	9	12	13	13	12	6	8	11
753:	7	10	18	10	13	8	7	7
761:	8	7	14	9	8	14	7	9
769:	20	14	9	10	8	10	10	6
777:	15	13	8	18	11	13	14	5
785:	5	16	15	8	6	7	10	10
793:	8	11	25	14	11	11	9	5

801: 11 6 13 8 3 9 9 7

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	9	8	7	10	2	9	10	4
817:	11	8	6	11	6	10	14	6
825:	8	4	5	9	5	11	14	7
833:	8	5	10	11	7	7	8	10
841:	8	10	6	4	7	7	5	0
849:	10	6	9	5	8	8	3	6
857:	6	10	5	15	25	23	8	5
865:	10	1	8	8	8	10	6	10
873:	4	6	3	5	7	6	4	5
881:	9	6	6	9	4	5	9	5
889:	5	8	6	6	9	8	5	8
897:	5	5	7	8	5	8	8	12
905:	3	7	5	12	7	21	59	72
913:	21	4	10	6	13	6	10	4
921:	6	11	8	2	8	9	4	4
929:	5	6	5	8	7	6	9	6
937:	5	8	6	5	4	7	8	3
945:	4	7	8	8	7	7	2	4
953:	2	7	10	5	3	8	7	11
961:	9	10	11	15	23	11	7	23
969:	49	39	10	6	8	5	2	12
977:	4	6	2	3	10	8	7	6
985:	8	6	6	8	6	9	5	8
993:	5	8	5	9	5	7	14	3
1001:	12	11	8	4	10	3	5	9
1009:	6	4	4	9	6	4	5	7
1017:	6	6	7	5	6	7	8	7
1025:	6	5	10	9	6	5	10	2
1033:	10	8	6	6	10	7	3	7
1041:	9	7	8	5	4	6	5	6
1049:	8	6	7	11	7	6	3	6
1057:	9	6	6	6	5	6	7	7
1065:	9	7	4	5	10	2	7	10
1073:	4	3	5	12	8	10	4	12
1081:	6	9	4	5	6	7	12	12
1089:	8	6	10	4	5	6	7	11
1097:	8	7	7	9	9	4	9	6
1105:	6	3	10	7	6	4	7	7
1113:	7	7	6	4	6	6	5	26
1121:	33	14	8	4	9	7	4	3
1129:	6	9	4	9	6	6	8	4
1137:	4	9	5	5	10	9	10	11
1145:	13	10	6	9	9	6	4	10
1153:	7	12	13	5	11	4	8	10
1161:	4	4	10	8	12	3	10	3
1169:	10	4	9	8	7	9	8	11
1177:	12	6	9	4	6	5	4	8
1185:	5	6	12	4	7	5	14	7
1193:	2	7	1	7	5	13	13	6
1201:	8	8	9	11	9	9	10	7
1209:	7	4	5	6	11	8	5	10
1217:	13	10	7	8	8	7	10	15
1225:	11	8	8	8	4	8	10	13

1233: 9 10 9 6 8 14 14 10

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Channel	1	2	3	4	5	6	7	8	9
1241:	5	10	8	7	5	13	2	5	
1249:	8	5	8	6	6	9	10	7	
1257:	4	4	10	0	9	7	7	7	
1265:	1	4	6	5	8	7	3	3	
1273:	7	6	4	8	7	4	9	6	
1281:	4	6	5	8	3	5	3	9	
1289:	6	3	5	2	2	6	4	5	
1297:	4	3	10	7	6	5	5	5	
1305:	3	0	9	6	4	4	7	8	
1313:	5	1	3	3	4	1	1	5	
1321:	6	4	3	5	5	3	4	6	
1329:	5	4	3	5	8	6	3	1	
1337:	6	3	4	4	1	3	5	4	
1345:	2	8	4	2	3	5	3	2	
1353:	3	4	2	6	1	4	4	2	
1361:	3	5	1	7	5	5	4	1	
1369:	2	6	4	4	3	3	1	2	
1377:	0	9	5	2	4	4	2	5	
1385:	1	1	2	0	3	1	2	2	
1393:	2	5	2	2	4	1	2	2	
1401:	6	5	2	6	0	1	5	5	
1409:	4	3	5	1	3	0	3	5	
1417:	1	0	2	1	3	1	4	4	
1425:	2	2	1	1	3	1	1	2	
1433:	4	3	6	1	4	3	7	1	
1441:	1	1	0	1	2	4	3	1	
1449:	3	2	4	5	4	2	2	2	
1457:	2	4	18	124	231	180	45	8	
1465:	2	1	2	5	1	2	0	2	
1473:	1	2	0	3	0	4	0	4	
1481:	1	1	6	3	1	2	4	1	
1489:	4	1	0	3	1	0	2	1	
1497:	2	1	1	2	0	0	3	2	
1505:	2	3	0	2	3	3	0	1	
1513:	2	2	2	0	0	1	1	1	
1521:	0	0	1	5	1	1	2	3	
1529:	2	0	2	2	0	0	2	2	
1537:	3	1	0	2	1	0	1	2	
1545:	0	1	0	1	0	2	3	2	
1553:	0	1	1	1	0	2	0	0	
1561:	0	1	1	0	1	1	0	3	
1569:	1	0	3	1	0	1	1	2	
1577:	0	0	0	1	2	0	2	3	
1585:	2	2	4	9	6	3	1	3	
1593:	6	7	2	1	1	1	0	2	
1601:	0	2	1	2	1	1	2	1	
1609:	1	1	2	0	1	1	0	1	
1617:	3	1	2	1	5	1	4	1	
1625:	2	2	0	3	1	1	5	3	
1633:	4	1	1	0	1	2	3	1	
1641:	2	0	2	0	1	1	0	2	
1649:	0	1	0	2	1	1	1	2	
1657:	3	2	0	2	2	3	2	1	

1665: 2 2 1 0 0 0 3 1

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
1673:	3	1	2	0	2	0	3	2
1681:	1	0	1	1	2	1	1	2
1689:	0	0	1	0	1	1	0	4
1697:	1	4	2	3	2	1	0	0
1705:	1	0	2	0	1	2	1	1
1713:	0	0	0	1	1	0	0	1
1721:	3	0	0	0	1	1	0	1
1729:	0	1	4	1	0	1	0	2
1737:	0	3	0	1	1	1	2	2
1745:	2	0	4	1	0	2	1	1
1753:	0	2	2	0	0	2	2	1
1761:	4	0	2	6	10	8	6	2
1769:	0	0	3	1	2	2	1	0
1777:	1	0	0	1	1	0	2	0
1785:	3	1	1	0	0	1	1	3
1793:	1	1	1	0	1	0	2	0
1801:	1	0	1	0	2	0	1	0
1809:	2	1	1	1	1	2	0	0
1817:	1	3	1	1	1	1	2	2
1825:	0	0	0	1	0	0	0	2
1833:	1	1	0	0	0	0	1	2
1841:	0	1	0	1	1	1	1	2
1849:	1	0	1	0	0	1	1	1
1857:	0	1	2	2	4	0	1	0
1865:	2	0	0	0	1	1	2	1
1873:	0	2	3	1	1	1	2	1
1881:	0	0	0	1	0	0	1	2
1889:	2	2	1	1	0	0	1	2
1897:	2	0	1	1	1	2	0	0
1905:	0	0	0	0	2	1	0	0
1913:	4	3	2	1	0	0	0	0
1921:	0	3	0	2	1	1	0	1
1929:	3	2	0	0	1	0	1	0
1937:	1	0	2	3	3	1	0	1
1945:	0	2	1	1	1	0	2	2
1953:	4	1	0	1	2	0	0	1
1961:	3	0	1	2	2	2	2	0
1969:	0	1	0	2	2	1	2	1
1977:	1	1	0	0	2	1	1	1
1985:	1	2	2	0	0	2	2	2
1993:	0	1	2	0	1	1	1	2
2001:	3	0	1	1	0	2	0	2
2009:	1	2	2	1	1	1	0	0
2017:	0	0	1	1	1	0	0	1
2025:	2	2	1	2	1	0	0	2
2033:	0	1	0	2	0	0	0	0
2041:	2	3	2	2	0	1	0	2
2049:	0	0	0	0	1	0	2	0
2057:	0	0	1	0	2	1	1	1
2065:	1	1	0	0	0	0	0	2
2073:	0	0	1	0	0	0	2	3
2081:	2	0	3	1	1	0	3	1
2089:	3	2	1	0	0	1	0	0

2097: 2 0 0 1 0 3 2 7

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

2529: 3 1 0 0 0 0 0 0

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	1	1	0	0	0	0	0
2545:	1	0	1	0	0	0	2	0
2553:	1	0	1	0	1	0	0	1
2561:	0	0	0	1	0	0	0	1
2569:	0	0	0	1	0	0	0	0
2577:	1	0	1	1	1	0	0	0
2585:	0	1	0	1	1	0	0	0
2593:	3	0	0	0	0	0	0	0
2601:	0	0	0	0	0	0	1	1
2609:	0	0	1	0	3	12	25	23
2617:	9	0	0	0	2	0	1	0
2625:	0	0	1	0	0	0	1	0
2633:	0	0	1	0	0	0	0	0
2641:	0	0	0	0	0	0	0	1
2649:	0	0	1	0	0	0	0	0
2657:	0	0	0	1	0	0	0	0
2665:	1	0	0	1	1	0	0	0
2673:	0	1	1	1	0	0	0	0
2681:	0	1	0	0	2	0	0	0
2689:	0	0	1	0	0	0	0	0
2697:	0	0	0	0	0	0	0	0
2705:	1	1	0	1	0	1	0	1
2713:	0	0	0	2	1	0	2	0
2721:	0	0	0	0	0	0	1	0
2729:	0	0	0	0	0	0	1	0
2737:	0	0	0	0	0	0	0	0
2745:	0	0	2	1	1	0	0	0
2753:	1	0	0	1	0	1	0	0
2761:	0	0	0	0	0	0	0	0
2769:	0	0	0	0	0	0	0	0
2777:	0	0	1	0	0	0	0	0
2785:	0	1	0	0	0	0	0	0
2793:	0	0	1	0	0	0	0	0
2801:	0	0	0	1	0	0	1	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	1	1	1	1	0
2825:	0	0	1	0	0	0	0	0
2833:	0	1	0	0	0	0	0	1
2841:	0	0	0	0	0	0	1	0
2849:	0	0	0	0	0	0	0	0
2857:	0	0	1	0	0	0	0	0
2865:	1	0	0	1	0	0	0	0
2873:	0	0	0	1	0	0	0	0
2881:	1	0	0	0	0	0	0	0
2889:	1	0	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	1	0	0	0	0
2913:	0	1	0	0	0	0	0	0
2921:	0	0	1	0	1	0	0	0
2929:	0	2	0	2	0	0	0	1
2937:	0	1	0	0	0	0	1	0
2945:	1	0	0	0	1	0	0	0
2953:	0	0	0	0	0	0	0	1

2961: 1 0 1 0 0 0 0 0

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Channel	1	2	3	4	5	6	7	8
2969:	0	0	1	0	0	0	0	0
2977:	0	0	0	3	0	0	1	0
2985:	0	0	0	0	0	0	0	0
2993:	1	0	0	0	0	0	0	1
3001:	0	0	0	0	0	0	0	0
3009:	1	1	1	0	0	0	0	0
3017:	0	0	1	0	1	0	0	0
3025:	0	0	1	0	0	0	0	0
3033:	0	0	1	0	0	0	0	0
3041:	0	0	1	0	1	0	0	0
3049:	1	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:	1	0	0	1	1	0	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	1	0	1	1	0	0
3097:	1	0	0	0	0	0	1	0
3105:	0	0	0	0	0	0	0	1
3113:	0	0	1	0	0	0	0	0
3121:	0	0	0	0	0	1	1	1
3129:	0	0	0	0	0	1	0	1
3137:	0	0	0	0	1	0	1	0
3145:	0	0	0	0	0	1	0	0
3153:	0	0	0	0	2	0	0	0
3161:	0	0	0	0	0	1	0	0
3169:	0	0	0	0	0	0	0	0
3177:	1	0	0	0	0	1	0	1
3185:	1	0	0	0	0	0	0	0
3193:	0	0	0	0	1	0	0	0
3201:	0	0	0	0	0	1	0	0
3209:	0	0	1	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	1	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	0	2	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	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	1	0
3305:	0	0	0	0	1	0	0	1
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	0	0	0	0	0
3361:	0	0	1	1	0	0	0	0
3369:	0	0	0	0	0	0	1	0
3377:	0	1	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0 1

Sample Title: CP0604S06-07

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	1	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	1
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	1	0	0	1	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	1	0
3481:	1	0	0	0	1	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	0
3513:	0	0	0	0	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	0	0	0	0	0	0
3545:	1	2	0	0	0	0	0	0
3553:	1	1	1	1	0	0	1	0
3561:	0	0	0	1	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	1	0	0	0	0
3585:	1	0	0	0	0	1	0	0
3593:	0	1	0	0	0	0	0	0
3601:	0	0	0	0	0	0	1	0
3609:	0	1	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	1	0	0	1	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	1	0	0	0	1	0
3649:	1	0	0	0	0	0	0	0
3657:	0	0	0	0	0	1	1	0
3665:	0	0	0	0	0	1	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	1	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	1	0
3705:	0	0	0	0	0	0	0	0
3713:	1	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	1	0
3729:	0	2	0	0	0	0	1	0
3737:	1	0	0	1	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	1	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	1	0	1	0	0	0	0
3793:	0	0	0	0	0	0	1	0
3801:	1	0	0	1	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

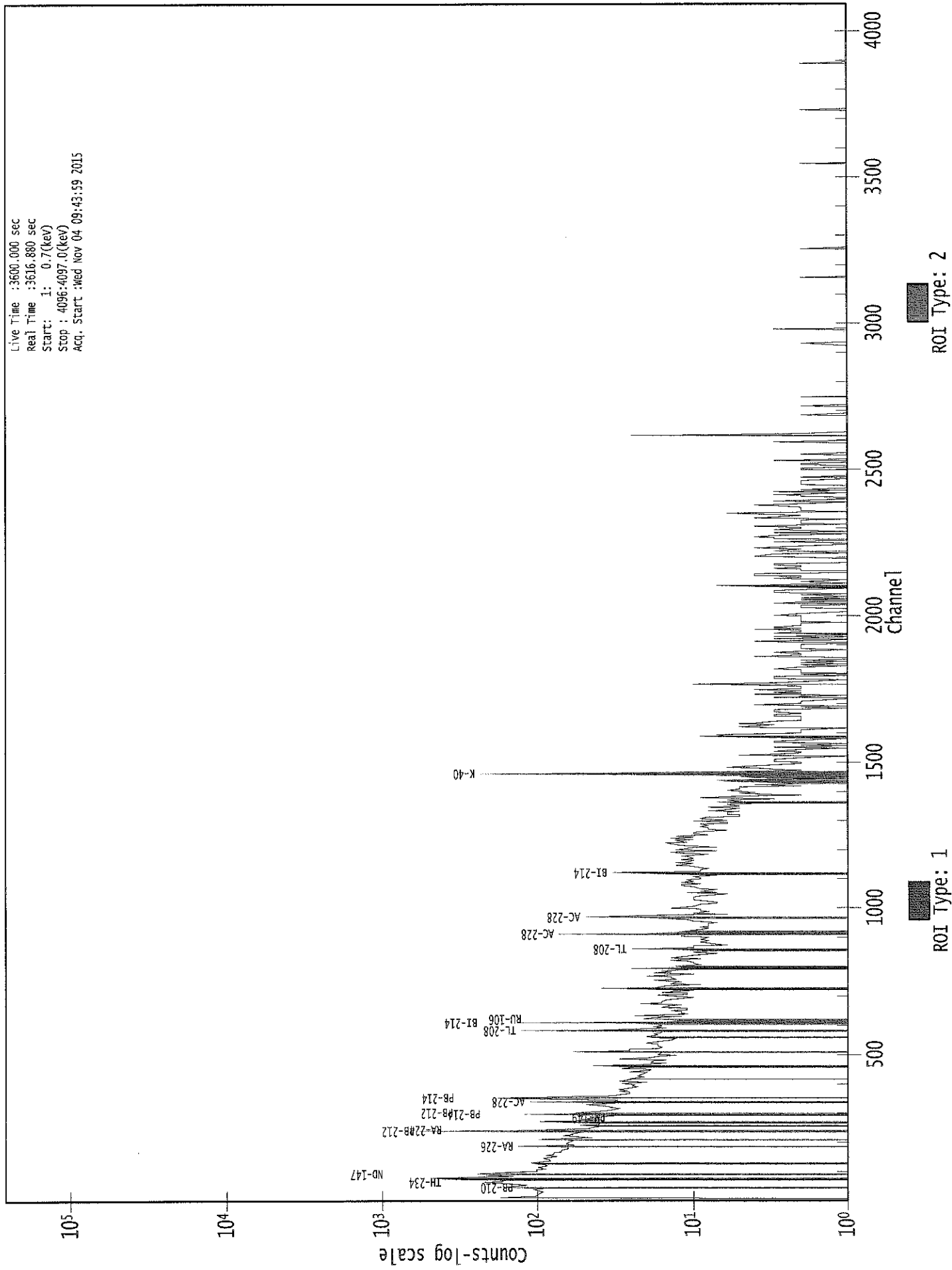
3825: 0 0 0 0 0 1 0 0

Sample Title: CP0604S06-07

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	1	0	0	0	0	0	1
3865:	0	0	0	1	1	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	2	0	0	0	0	1	0	0
3897:	0	1	0	0	0	1	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	1	0	0	0
3945:	0	0	0	1	0	0	0	0
3953:	0	1	0	0	1	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	1	0	0	1
3977:	0	1	0	1	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	1	0	0
4009:	0	0	0	0	0	0	1	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	1	1	0	0	0	0	0
4041:	0	0	1	0	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	1	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	1	0	0	1	0	0
4089:	0	0	0	0	0	0	0	0

0000029103.CNF

Live Time : 3600.000 sec
Real Time : 3616.880 sec
Start: 1: 0.7(keV)
Stop : 4096:4097.0(keV)
Acq. Start : Wed Nov 04 09:43:59 2015



Analysis Report for 1510084-05
CP0604S09-10

Handwritten mark
11/4

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-05
Sample Description : CP0604S09-10
Sample Type : SOIL

Sample Size : 6.033E+02 grams
Facility : Countroom

Sample Taken On : 10/9/2015 9:46:21AM
Acquisition Started : 11/4/2015 8:36:21AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3639.1 seconds

Dead Time : 1.07 %

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 : 29097

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Handwritten:
AG
11/5/15

Analysis Report for 1510084-05
CP0604S09-10

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 9:37:01AM
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	32.31	31.56	0.0000	0.00
2	75.95	75.22	0.0000	0.00
3	87.31	86.58	0.0000	0.00
4	185.43	184.74	0.0000	0.00
5	239.40	238.73	0.0000	0.00
6	270.31	269.66	0.0000	0.00
7	286.53	285.89	0.0000	0.00
8	295.64	295.00	0.0000	0.00
9	299.92	299.28	0.0000	0.00
10	326.82	326.19	0.0000	0.00
11	338.19	337.57	0.0000	0.00
12	351.92	351.30	0.0000	0.00
13	463.12	462.56	0.0000	0.00
14	511.10	510.56	0.0000	0.00
15	562.16	561.64	0.0000	0.00
16	583.18	582.67	0.0000	0.00
17	608.85	608.35	0.0000	0.00
18	706.69	706.25	0.0000	0.00
19	714.92	714.47	0.0000	0.00
20	721.75	721.32	0.0000	0.00
21	727.44	727.00	0.0000	0.00
22	773.07	772.65	0.0000	0.00
23	860.67	860.30	0.0000	0.00
24	911.48	911.14	0.0000	0.00
25	968.09	967.78	0.0000	0.00
26	1120.64	1120.41	0.0000	0.00
27	1206.61	1206.43	0.0000	0.00
28	1237.41	1237.25	0.0000	0.00
29	1266.90	1266.76	0.0000	0.00
30	1310.64	1310.52	0.0000	0.00
31	1358.87	1358.78	0.0000	0.00
32	1370.08	1370.00	0.0000	0.00
33	1460.92	1460.89	0.0000	0.00
34	1498.49	1498.48	0.0000	0.00
35	1511.22	1511.23	0.0000	0.00
36	1555.13	1555.16	0.0000	0.00
37	1574.36	1574.40	0.0000	0.00
38	1586.95	1587.00	0.0000	0.00
39	1641.96	1642.04	0.0000	0.00
40	1764.16	1764.33	0.0000	0.00
41	2160.63	2161.06	0.0000	0.00
42	2338.80	2339.36	0.0000	0.00

Analysis Report for 1510084-05
CP0604S09-10

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	2614.59	2615.36	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510084-05

CP0604S09-10

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 9:37:01AM

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	29 - 34		31.56	5.66E+01	56.75	5.97E+02	1.82
	2	69 - 80		75.22	8.23E+02	149.40	2.37E+03	4.55
M	3	81 - 100		86.58	3.66E+02	121.04	1.81E+03	5.71
	4	179 - 189		184.74	1.11E+02	90.36	1.03E+03	2.09
	5	233 - 246		238.73	6.24E+02	101.31	8.45E+02	2.67
	6	264 - 274		269.66	8.82E+01	65.07	5.04E+02	5.68
M	7	283 - 306		285.89	5.25E+01	36.87	1.80E+02	3.57
m	8	283 - 306		295.00	1.20E+02	47.87	2.47E+02	2.68
m	9	283 - 306		299.28	6.62E+01	44.94	2.78E+02	2.50
	10	322 - 331		326.19	5.23E+01	50.59	3.37E+02	5.10
	11	331 - 342		337.57	1.11E+02	62.42	4.31E+02	2.21
	12	346 - 356		351.30	3.00E+02	60.62	3.31E+02	2.28
	13	457 - 467		462.56	4.95E+01	40.53	1.93E+02	5.81
	14	505 - 517		510.56	1.15E+02	50.11	2.43E+02	3.10
	15	556 - 567		561.64	4.20E+01	37.63	1.56E+02	2.11
	16	577 - 588		582.67	1.37E+02	48.58	2.22E+02	2.57
	17	600 - 613		608.35	2.08E+02	53.79	2.23E+02	2.65
	18	702 - 710		706.25	3.01E+01	26.48	8.78E+01	1.19
M	19	711 - 734		714.47	2.11E+01	17.00	4.57E+01	3.40
m	20	711 - 734		721.32	2.18E+01	24.60	6.84E+01	3.40
m	21	711 - 734		727.00	3.59E+01	23.15	4.76E+01	2.81
	22	770 - 776		772.65	2.08E+01	19.81	5.05E+01	4.34
	23	857 - 864		860.30	1.76E+01	22.09	6.48E+01	2.49
	24	906 - 915		911.14	7.13E+01	32.97	1.13E+02	2.94
	25	962 - 972		967.78	5.48E+01	26.28	8.44E+01	1.70
	26	1113 - 1125		1120.41	3.77E+01	33.02	1.11E+02	2.62
	27	1200 - 1211		1206.43	2.29E+01	24.82	6.43E+01	6.89
	28	1230 - 1244		1237.25	4.44E+01	33.15	9.52E+01	8.15
	29	1261 - 1273		1266.76	2.73E+01	21.01	3.95E+01	7.21
	30	1299 - 1322		1310.52	5.31E+01	29.66	4.58E+01	20.32
	31	1354 - 1364		1358.78	1.34E+01	17.25	3.12E+01	1.83
	32	1367 - 1373		1370.00	1.00E+01	10.82	1.40E+01	3.36
	33	1455 - 1467		1460.89	2.79E+02	35.87	2.11E+01	3.02
	34	1493 - 1503		1498.48	1.24E+01	9.50	5.20E+00	7.52
	35	1504 - 1521		1511.23	3.18E+01	15.13	1.03E+01	3.98
	36	1549 - 1558		1555.16	1.04E+01	12.12	1.52E+01	4.30
	37	1571 - 1576		1574.40	5.00E+00	4.47	0.00E+00	1.70
	38	1581 - 1592		1587.00	2.90E+01	12.81	5.91E+00	7.83
	39	1639 - 1644		1642.04	4.50E+00	5.74	3.00E+00	2.88
	40	1759 - 1769		1764.33	3.22E+01	13.05	5.57E+00	2.14

Analysis Report for 1510084-05
CP0604S09-10

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2160.63	2158 -	2163	2161.06	4.50E+00	5.74	3.00E+00	2.71
42	2338.80	2335 -	2343	2339.36	6.78E+00	7.50	4.44E+00	6.37
43	2614.59	2609 -	2620	2615.36	4.20E+01	12.96	0.00E+00	3.00

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 : 11/4/2015 9:37:01AM

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	32.31	29 -	34	5.66E+01	56.75	5.97E+02	4.50E+01
2	75.95	69 -	80	8.23E+02	149.40	2.37E+03	1.13E+02
M 3	87.31	81 -	100	3.66E+02	121.04	1.81E+03	6.99E+01
4	185.43	179 -	189	1.11E+02	90.36	1.03E+03	7.22E+01
5	239.40	233 -	246	6.24E+02	101.31	8.45E+02	7.24E+01
6	270.31	264 -	274	8.82E+01	65.07	5.04E+02	5.12E+01
M 7	286.53	283 -	306	5.25E+01	36.87	1.80E+02	2.20E+01
m 8	295.64	283 -	306	1.20E+02	47.87	2.47E+02	2.58E+01
m 9	299.92	283 -	306	6.62E+01	44.94	2.78E+02	2.74E+01
10	326.82	322 -	331	5.23E+01	50.59	3.37E+02	3.98E+01
11	338.19	331 -	342	1.11E+02	62.42	4.31E+02	4.83E+01
12	351.92	346 -	356	3.00E+02	60.62	3.31E+02	4.09E+01
13	463.12	457 -	467	4.95E+01	40.53	1.93E+02	3.12E+01
14	511.10	505 -	517	1.15E+02	50.11	2.43E+02	3.72E+01
15	562.16	556 -	567	4.20E+01	37.63	1.56E+02	2.90E+01
16	583.18	577 -	588	1.37E+02	48.58	2.22E+02	3.50E+01
17	608.85	600 -	613	2.08E+02	53.79	2.23E+02	3.73E+01
18	706.69	702 -	710	3.01E+01	26.48	8.78E+01	1.98E+01
M 19	714.92	711 -	734	2.11E+01	17.00	4.57E+01	1.11E+01
m 20	721.75	711 -	734	2.18E+01	24.60	6.84E+01	1.36E+01
m 21	727.44	711 -	734	3.59E+01	23.15	4.76E+01	1.13E+01
22	773.07	770 -	776	2.08E+01	19.81	5.05E+01	1.45E+01
23	860.67	857 -	864	1.76E+01	22.09	6.48E+01	1.68E+01
24	911.48	906 -	915	7.13E+01	32.97	1.13E+02	2.33E+01

Analysis Report for 1510084-05

CP0604S09-10

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
25	968.09	962 -	972	5.48E+01	26.28	8.44E+01	2.19E+01
26	1120.64	1113 -	1125	3.77E+01	33.02	1.11E+02	2.52E+01
27	1206.61	1200 -	1211	2.29E+01	24.82	6.43E+01	1.88E+01
28	1237.41	1230 -	1244	4.44E+01	33.15	9.52E+01	2.50E+01
29	1266.90	1261 -	1273	2.73E+01	21.01	3.95E+01	1.50E+01
30	1310.64	1299 -	1322	5.31E+01	29.66	4.58E+01	2.12E+01
31	1358.87	1354 -	1364	1.34E+01	17.25	3.12E+01	1.28E+01
32	1370.08	1367 -	1373	1.00E+01	10.82	1.40E+01	7.21E+00
33	1460.92	1455 -	1467	2.79E+02	35.87	2.11E+01	1.07E+01
34	1498.49	1493 -	1503	1.24E+01	9.50	5.20E+00	5.24E+00
35	1511.22	1504 -	1521	3.18E+01	15.13	1.03E+01	8.29E+00
36	1555.13	1549 -	1558	1.04E+01	12.12	1.52E+01	8.44E+00
37	1574.36	1571 -	1576	5.00E+00	4.47	0.00E+00	0.00E+00
38	1586.95	1581 -	1592	2.90E+01	12.81	5.91E+00	5.68E+00
39	1641.96	1639 -	1644	4.50E+00	5.74	3.00E+00	3.18E+00
40	1764.16	1759 -	1769	3.22E+01	13.05	5.57E+00	5.29E+00
41	2160.63	2158 -	2163	4.50E+00	5.74	3.00E+00	3.18E+00
42	2338.80	2335 -	2343	6.78E+00	7.50	4.44E+00	4.44E+00
43	2614.59	2609 -	2620	4.20E+01	12.96	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 : 11/4/2015 9:37:01AM

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	32.31	29 -	34	31.56	5.66E+01	56.75	5.97E+02	.....
	2	75.95	69 -	80	75.22	8.23E+02	149.40	2.37E+03	.....
M	3	87.31	81 -	100	86.58	3.66E+02	121.04	1.81E+03	SN-126 CD-109 NP-237 EU-155

Analysis Report for 1510084-05

CP0604S09-10

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	4	185.43	179 -	189	184.74	1.11E+02	90.36	1.03E+03	RA-226
	5	239.40	233 -	246	238.73	6.24E+02	101.31	8.45E+02	PB-212
	6	270.31	264 -	274	269.66	8.82E+01	65.07	5.04E+02	.....
M	7	286.53	283 -	306	285.89	5.25E+01	36.87	1.80E+02	PM-149
m	8	295.64	283 -	306	295.00	1.20E+02	47.87	2.47E+02	PB-214
m	9	299.92	283 -	306	299.28	6.62E+01	44.94	2.78E+02	BI-210M PB-212 GA-67
	10	326.82	322 -	331	326.19	5.23E+01	50.59	3.37E+02	.....
	11	338.19	331 -	342	337.57	1.11E+02	62.42	4.31E+02	AC-228
	12	351.92	346 -	356	351.30	3.00E+02	60.62	3.31E+02	PB-214
	13	463.12	457 -	467	462.56	4.95E+01	40.53	1.93E+02	SB-125
	14	511.10	505 -	517	510.56	1.15E+02	50.11	2.43E+02	.....
	15	562.16	556 -	567	561.64	4.20E+01	37.63	1.56E+02	.....
	16	583.18	577 -	588	582.67	1.37E+02	48.58	2.22E+02	TL-208
	17	608.85	600 -	613	608.35	2.08E+02	53.79	2.23E+02	BI-214
	18	706.69	702 -	710	706.25	3.01E+01	26.48	8.78E+01	AG-110M
M	19	714.92	711 -	734	714.47	2.11E+01	17.00	4.57E+01	.....
m	20	721.75	711 -	734	721.32	2.18E+01	24.60	6.84E+01	.....
m	21	727.44	711 -	734	727.00	3.59E+01	23.15	4.76E+01	BI-212
	22	773.07	770 -	776	772.65	2.08E+01	19.81	5.05E+01	.....
	23	860.67	857 -	864	860.30	1.76E+01	22.09	6.48E+01	TL-208
	24	911.48	906 -	915	911.14	7.13E+01	32.97	1.13E+02	AC-228 LU-172
	25	968.09	962 -	972	967.78	5.48E+01	26.28	8.44E+01	.....
	26	1120.64	1113 -	1125	1120.41	3.77E+01	33.02	1.11E+02	SC-46 BI-214 TA-182
	27	1206.61	1200 -	1211	1206.43	2.29E+01	24.82	6.43E+01	.....
	28	1237.41	1230 -	1244	1237.25	4.44E+01	33.15	9.52E+01	CO-56
	29	1266.90	1261 -	1273	1266.76	2.73E+01	21.01	3.95E+01	.....
	30	1310.64	1299 -	1322	1310.52	5.31E+01	29.66	4.58E+01	.....
	31	1358.87	1354 -	1364	1358.78	1.34E+01	17.25	3.12E+01	.....
	32	1370.08	1367 -	1373	1370.00	1.00E+01	10.82	1.40E+01	.....
	33	1460.92	1455 -	1467	1460.89	2.79E+02	35.87	2.11E+01	K-40
	34	1498.49	1493 -	1503	1498.48	1.24E+01	9.50	5.20E+00	.....
	35	1511.22	1504 -	1521	1511.23	3.18E+01	15.13	1.03E+01	.....
	36	1555.13	1549 -	1558	1555.16	1.04E+01	12.12	1.52E+01	.....
	37	1574.36	1571 -	1576	1574.40	5.00E+00	4.47	0.00E+00	.....
	38	1586.95	1581 -	1592	1587.00	2.90E+01	12.81	5.91E+00	.....
	39	1641.96	1639 -	1644	1642.04	4.50E+00	5.74	3.00E+00	.....
	40	1764.16	1759 -	1769	1764.33	3.22E+01	13.05	5.57E+00	BI-214
	41	2160.63	2158 -	2163	2161.06	4.50E+00	5.74	3.00E+00	.....
	42	2338.80	2335 -	2343	2339.36	6.78E+00	7.50	4.44E+00	.....
	43	2614.59	2609 -	2620	2615.36	4.20E+01	12.96	0.00E+00	TL-208

Analysis Report for 1510084-05
CP0604S09-10

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 : 11/4/2015 9:37:01AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	32.31	5.66E+01	56.75	2.90E-02	1.78E-03
	2	75.95	8.23E+02	149.40	2.13E-02	1.69E-03
M	3	87.31	3.66E+02	121.04	1.97E-02	1.64E-03
	4	185.43	1.11E+02	90.36	1.16E-02	1.15E-03
	5	239.40	6.24E+02	101.31	9.39E-03	9.85E-04
	6	270.31	8.82E+01	65.07	8.43E-03	8.89E-04
M	7	286.53	5.25E+01	36.87	8.00E-03	8.53E-04
m	8	295.64	1.20E+02	47.87	7.77E-03	8.43E-04
m	9	299.92	6.62E+01	44.94	7.67E-03	8.38E-04
	10	326.82	5.23E+01	50.59	7.09E-03	8.08E-04
	11	338.19	1.11E+02	62.42	6.86E-03	7.95E-04
	12	351.92	3.00E+02	60.62	6.61E-03	7.80E-04
	13	463.12	4.95E+01	40.53	5.08E-03	6.31E-04
	14	511.10	1.15E+02	50.11	4.61E-03	5.61E-04
	15	562.16	4.20E+01	37.63	4.20E-03	4.86E-04
	16	583.18	1.37E+02	48.58	4.05E-03	4.55E-04
	17	608.85	2.08E+02	53.79	3.88E-03	4.18E-04
	18	706.69	3.01E+01	26.48	3.35E-03	3.15E-04
M	19	714.92	2.11E+01	17.00	3.31E-03	3.10E-04
m	20	721.75	2.18E+01	24.60	3.28E-03	3.07E-04
m	21	727.44	3.59E+01	23.15	3.25E-03	3.03E-04
	22	773.07	2.08E+01	19.81	3.06E-03	2.78E-04
	23	860.67	1.76E+01	22.09	2.76E-03	2.29E-04
	24	911.48	7.13E+01	32.97	2.61E-03	2.06E-04
	25	968.09	5.48E+01	26.28	2.46E-03	1.99E-04
	26	1120.64	3.77E+01	33.02	2.14E-03	1.79E-04
	27	1206.61	2.29E+01	24.82	2.00E-03	1.82E-04
	28	1237.41	4.44E+01	33.15	1.95E-03	1.90E-04
	29	1266.90	2.73E+01	21.01	1.91E-03	1.98E-04
	30	1310.64	5.31E+01	29.66	1.86E-03	2.10E-04
	31	1358.87	1.34E+01	17.25	1.80E-03	2.10E-04
	32	1370.08	1.00E+01	10.82	1.78E-03	2.08E-04
	33	1460.92	2.79E+02	35.87	1.68E-03	1.89E-04
	34	1498.49	1.24E+01	9.50	1.65E-03	1.81E-04

Analysis Report for 1510084-05
 CP0604S09-10

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	1511.22	3.18E+01	15.13	1.63E-03	1.79E-04
36	1555.13	1.04E+01	12.12	1.59E-03	1.69E-04
37	1574.36	5.00E+00	4.47	1.58E-03	1.65E-04
38	1586.95	2.90E+01	12.81	1.57E-03	1.63E-04
39	1641.96	4.50E+00	5.74	1.52E-03	1.51E-04
40	1764.16	3.22E+01	13.05	1.43E-03	1.26E-04
41	2160.63	4.50E+00	5.74	1.22E-03	1.11E-04
42	2338.80	6.78E+00	7.50	1.16E-03	1.11E-04
43	2614.59	4.20E+01	12.96	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 : 11/4/2015 9:37:01AM

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	32.31	5.66E+01	56.75			5.66E+01	5.67E+01
2	75.95	8.23E+02	149.40			8.23E+02	1.49E+02
M 3	87.31	3.66E+02	121.04			3.66E+02	1.21E+02
4	185.43	1.11E+02	90.36	1.43E+01	7.33E+00	9.68E+01	9.07E+01
5	239.40	6.24E+02	101.31	1.09E+01	6.39E+00	6.13E+02	1.02E+02
6	270.31	8.82E+01	65.07			8.82E+01	6.51E+01
M 7	286.53	5.25E+01	36.87			5.25E+01	3.69E+01
m 8	295.64	1.20E+02	47.87			1.20E+02	4.79E+01
m 9	299.92	6.62E+01	44.94			6.62E+01	4.49E+01
10	326.82	5.23E+01	50.59			5.23E+01	5.06E+01
11	338.19	1.11E+02	62.42			1.11E+02	6.24E+01
12	351.92	3.00E+02	60.62	8.07E+00	5.01E+00	2.92E+02	6.08E+01
13	463.12	4.95E+01	40.53			4.95E+01	4.05E+01
14	511.10	1.15E+02	50.11	4.21E+01	4.92E+00	7.32E+01	5.04E+01
15	562.16	4.20E+01	37.63			4.20E+01	3.76E+01
16	583.18	1.37E+02	48.58			1.37E+02	4.86E+01
17	608.85	2.08E+02	53.79	5.16E+00	1.63E+00	2.02E+02	5.38E+01
18	706.69	3.01E+01	26.48			3.01E+01	2.65E+01
M 19	714.92	2.11E+01	17.00			2.11E+01	1.70E+01
m 20	721.75	2.18E+01	24.60			2.18E+01	2.46E+01
m 21	727.44	3.59E+01	23.15			3.59E+01	2.32E+01

Analysis Report for 1510084-05

CP0604S09-10

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
22	773.07	2.08E+01	19.81			2.08E+01	1.98E+01
23	860.67	1.76E+01	22.09			1.76E+01	2.21E+01
24	911.48	7.13E+01	32.97	1.01E+00	2.85E+00	7.03E+01	3.31E+01
25	968.09	5.48E+01	26.28			5.48E+01	2.63E+01
26	1120.64	3.77E+01	33.02			3.77E+01	3.30E+01
27	1206.61	2.29E+01	24.82			2.29E+01	2.48E+01
28	1237.41	4.44E+01	33.15			4.44E+01	3.32E+01
29	1266.90	2.73E+01	21.01			2.73E+01	2.10E+01
30	1310.64	5.31E+01	29.66			5.31E+01	2.97E+01
31	1358.87	1.34E+01	17.25			1.34E+01	1.72E+01
32	1370.08	1.00E+01	10.82			1.00E+01	1.08E+01
33	1460.92	2.79E+02	35.87			2.79E+02	3.59E+01
34	1498.49	1.24E+01	9.50			1.24E+01	9.50E+00
35	1511.22	3.18E+01	15.13			3.18E+01	1.51E+01
36	1555.13	1.04E+01	12.12			1.04E+01	1.21E+01
37	1574.36	5.00E+00	4.47			5.00E+00	4.47E+00
38	1586.95	2.90E+01	12.81			2.90E+01	1.28E+01
39	1641.96	4.50E+00	5.74			4.50E+00	5.74E+00
40	1764.16	3.22E+01	13.05	1.11E-01	9.77E-01	3.21E+01	1.31E+01
41	2160.63	4.50E+00	5.74			4.50E+00	5.74E+00
42	2338.80	6.78E+00	7.50			6.78E+00	7.50E+00
43	2614.59	4.20E+01	12.96	1.20E+00	1.02E+00	4.08E+01	1.30E+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 : 11/4/2015 9:37:01AM
 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	32.31	5.66E+01	56.75			5.66E+01	5.67E+01
2	75.95	8.23E+02	149.40			8.23E+02	1.49E+02
M 3	87.31	3.66E+02	121.04			3.66E+02	1.21E+02
4	185.43	1.11E+02	90.36	1.43E+01	7.33E+00	9.68E+01	9.07E+01
5	239.40	6.24E+02	101.31	1.09E+01	6.39E+00	6.13E+02	1.02E+02
6	270.31	8.82E+01	65.07			8.82E+01	6.51E+01

Analysis Report for 1510084-05

CP0604S09-10

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	7	286.53	5.25E+01	36.87			5.25E+01	3.69E+01
m	8	295.64	1.20E+02	47.87			1.20E+02	4.79E+01
m	9	299.92	6.62E+01	44.94			6.62E+01	4.49E+01
	10	326.82	5.23E+01	50.59			5.23E+01	5.06E+01
	11	338.19	1.11E+02	62.42			1.11E+02	6.24E+01
	12	351.92	3.00E+02	60.62	8.07E+00	5.01E+00	2.92E+02	6.08E+01
	13	463.12	4.95E+01	40.53			4.95E+01	4.05E+01
	14	511.10	1.15E+02	50.11	4.21E+01	4.92E+00	7.32E+01	5.04E+01
	15	562.16	4.20E+01	37.63			4.20E+01	3.76E+01
	16	583.18	1.37E+02	48.58			1.37E+02	4.86E+01
	17	608.85	2.08E+02	53.79	5.16E+00	1.63E+00	2.02E+02	5.38E+01
	18	706.69	3.01E+01	26.48			3.01E+01	2.65E+01
M	19	714.92	2.11E+01	17.00			2.11E+01	1.70E+01
m	20	721.75	2.18E+01	24.60			2.18E+01	2.46E+01
m	21	727.44	3.59E+01	23.15			3.59E+01	2.32E+01
	22	773.07	2.08E+01	19.81			2.08E+01	1.98E+01
	23	860.67	1.76E+01	22.09			1.76E+01	2.21E+01
	24	911.48	7.13E+01	32.97	1.01E+00	2.85E+00	7.03E+01	3.31E+01
	25	968.09	5.48E+01	26.28			5.48E+01	2.63E+01
	26	1120.64	3.77E+01	33.02			3.77E+01	3.30E+01
	27	1206.61	2.29E+01	24.82			2.29E+01	2.48E+01
	28	1237.41	4.44E+01	33.15			4.44E+01	3.32E+01
	29	1266.90	2.73E+01	21.01			2.73E+01	2.10E+01
	30	1310.64	5.31E+01	29.66			5.31E+01	2.97E+01
	31	1358.87	1.34E+01	17.25			1.34E+01	1.72E+01
	32	1370.08	1.00E+01	10.82			1.00E+01	1.08E+01
	33	1460.92	2.79E+02	35.87			2.79E+02	3.59E+01
	34	1498.49	1.24E+01	9.50			1.24E+01	9.50E+00
	35	1511.22	3.18E+01	15.13			3.18E+01	1.51E+01
	36	1555.13	1.04E+01	12.12			1.04E+01	1.21E+01
	37	1574.36	5.00E+00	4.47			5.00E+00	4.47E+00
	38	1586.95	2.90E+01	12.81			2.90E+01	1.28E+01
	39	1641.96	4.50E+00	5.74			4.50E+00	5.74E+00
	40	1764.16	3.22E+01	13.05	1.11E-01	9.77E-01	3.21E+01	1.31E+01
	41	2160.63	4.50E+00	5.74			4.50E+00	5.74E+00
	42	2338.80	6.78E+00	7.50			6.78E+00	7.50E+00
	43	2614.59	4.20E+01	12.96	1.20E+00	1.02E+00	4.08E+01	1.30E+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

: 00485

Analysis Report for 1510084-05

CP0604S09-10

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.998	1460.81 *	10.67	1.94E+01	3.32E+00
CD-109	0.920	88.03 *	3.72	6.46E+00	2.23E+00
SN-126	0.989	87.57 *	37.00	6.25E-01	2.13E-01
PM-149	0.471	285.90 *	3.10	9.04E+03	6.42E+03
EU-155	0.320	86.50 *	30.90	7.55E-01	2.58E-01
		105.30	20.70		
TL-208	0.999	583.14 *	30.22	1.40E+00	5.19E-01
		860.37 *	4.48	1.77E+00	2.23E+00
		2614.66 *	35.85	1.32E+00	4.43E-01
BI-212	0.770	727.17 *	11.80	1.16E+00	7.58E-01
		1620.62	2.75		
PB-212	0.916	238.63 *	44.60	1.82E+00	3.57E-01
		300.09 *	3.41	3.15E+00	2.17E+00
BI-214	0.910	609.31 *	46.30	1.40E+00	4.02E-01
		1120.29 *	15.10	1.45E+00	1.28E+00
		1764.49 *	15.80	1.76E+00	7.35E-01
		2204.22	4.98		
PB-214	0.990	295.21 *	19.19	1.00E+00	4.14E-01
		351.92 *	37.19	1.48E+00	3.54E-01
RA-226	0.907	186.21 *	3.28	3.15E+00	6.49E+00
AC-228	0.572	338.32 *	11.40	1.76E+00	1.01E+00
		911.07 *	27.70	1.21E+00	5.78E-01
		969.11	16.60		
NP-237	0.901	86.50 *	12.60	1.83E+00	6.25E-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 : 11/4/2015 9:37:01AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	32.31	1.57332E-02	50.09		
2	75.95	2.28661E-01	9.07		

Analysis Report for 1510084-05
CP0604S09-10

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
6	270.31	2.45000E-02	36.89		
10	326.82	1.45186E-02	48.39	Sum	
13	463.12	1.37395E-02	40.97	Tol.	SB-125
14	511.10	2.03282E-02	34.40		
15	562.16	1.16667E-02	44.80		
18	706.69	8.35586E-03	44.01	Tol.	AG-110M
M	19	714.92	5.86461E-03	40.26	
m	20	721.75	6.04249E-03	56.54	
	22	773.07	5.76389E-03	47.72	
	25	968.09	1.52243E-02	23.97	
	27	1206.61	6.35354E-03	54.26	Sum
	28	1237.41	1.23309E-02	37.34	
	29	1266.90	7.57388E-03	38.53	
	30	1310.64	1.47515E-02	27.93	Sum
	31	1358.87	3.71648E-03	64.46	
	32	1370.08	2.77778E-03	54.08	
	34	1498.49	3.44444E-03	38.31	
	35	1511.22	8.84385E-03	23.77	
	36	1555.13	2.89352E-03	58.20	
	37	1574.36	1.38889E-03	44.72	
	38	1586.95	8.06858E-03	22.04	
	39	1641.96	1.25000E-03	63.83	
	41	2160.63	1.25000E-03	63.83	
	42	2338.80	1.88272E-03	55.33	

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	1.94E+01	3.32E+00
CD-109	0.92	88.03 *	3.72	6.46E+00	2.23E+00
SN-126	0.98	87.57 *	37.00	6.25E-01	2.13E-01
PM-149	0.47	285.90 *	3.10	9.04E+03	6.42E+03

: 00487

Analysis Report for 1510084-05
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Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
EU-155	0.32	86.50 *	30.90	7.55E-01	2.58E-01
		105.30	20.70		
TL-208	0.99	583.14 *	30.22	1.40E+00	5.19E-01
		860.37 *	4.48	1.77E+00	2.23E+00
		2614.66 *	35.85	1.32E+00	4.43E-01
BI-212	0.77	727.17 *	11.80	1.16E+00	7.58E-01
		1620.62	2.75		
PB-212	0.91	238.63 *	44.60	1.82E+00	3.57E-01
		300.09 *	3.41	3.15E+00	2.17E+00
BI-214	0.91	609.31 *	46.30	1.40E+00	4.02E-01
		1120.29 *	15.10	1.45E+00	1.28E+00
		1764.49 *	15.80	1.76E+00	7.35E-01
		2204.22	4.98		
PB-214	0.99	295.21 *	19.19	1.00E+00	4.14E-01
		351.92 *	37.19	1.48E+00	3.54E-01
RA-226	0.90	186.21 *	3.28	3.15E+00	6.49E+00
AC-228	0.57	338.32 *	11.40	1.76E+00	1.01E+00
		911.07 *	27.70	1.21E+00	5.78E-01
		969.11	16.60		
NP-237	0.90	86.50 *	12.60	1.83E+00	6.25E-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
	0.998	1.94E+01	3.32E+00	
? K-40	0.920	6.46E+00	2.23E+00	
? CD-109	0.989	6.25E-01	2.13E-01	
? SN-126	0.471	9.04E+03	6.42E+03	
? PM-149	0.320	7.55E-01	2.58E-01	
? EU-155	0.999	1.36E+00	3.33E-01	
? TL-208	0.770	1.16E+00	7.58E-01	
? BI-212				

Analysis Report for 1510084-05

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Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
PB-212	0.916	1.86E+00	3.52E-01	
BI-214	0.910	1.48E+00	3.40E-01	
PB-214	0.990	1.27E+00	2.69E-01	
RA-226	0.907	3.15E+00	6.49E+00	
AC-228	0.572	1.35E+00	5.02E-01	
? NP-237	0.901	1.83E+00	6.25E-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 1510084-05
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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 9:37:01AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	32.31	1.57332E-02	50.09		
2	75.95	2.28661E-01	9.07		
6	270.31	2.45000E-02	36.89		
10	326.82	1.45186E-02	48.39	Sum	
13	463.12	1.37395E-02	40.97	Tol.	SB-125
14	511.10	2.03282E-02	34.40		
15	562.16	1.16667E-02	44.80		
18	706.69	8.35586E-03	44.01	Tol.	AG-110M
M	19	714.92	5.86461E-03	40.26	
m	20	721.75	6.04249E-03	56.54	
22	773.07	5.76389E-03	47.72		
25	968.09	1.52243E-02	23.97		
27	1206.61	6.35354E-03	54.26	Sum	
28	1237.41	1.23309E-02	37.34		
29	1266.90	7.57388E-03	38.53		
30	1310.64	1.47515E-02	27.93	Sum	
31	1358.87	3.71648E-03	64.46		
32	1370.08	2.77778E-03	54.08		
34	1498.49	3.44444E-03	38.31		
35	1511.22	8.84385E-03	23.77		
36	1555.13	2.89352E-03	58.20		
37	1574.36	1.38889E-03	44.72		
38	1586.95	8.06858E-03	22.04		
39	1641.96	1.25000E-03	63.83		
41	2160.63	1.25000E-03	63.83		
42	2338.80	1.88272E-03	55.33		

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 1510084-05
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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	3.23E-01	1.61E+00	1.61E+00
+	NA-22	1274.54	99.94	-4.28E-02	1.79E-01	1.79E-01
+	NA-24	1368.53	99.99	-8.27E+10	1.05E+11	5.06E+11
		2754.09	99.86	0.00E+00		1.05E+11
+	AL-26	1808.65	99.76	-4.14E-03	1.16E-01	1.16E-01
+	K-40	1460.81	* 10.67	1.94E+01	1.67E+00	1.67E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	7.83E-03	8.91E-02	8.91E-02
		78.34	96.00	2.13E-01		1.14E-01
+	SC-46	889.25	99.98	-3.64E-02	1.85E-01	1.85E-01
		1120.51	99.99	3.09E-01		3.17E-01
+	V-48	983.52	99.98	-9.76E-02	4.53E-01	4.53E-01
		1312.10	97.50	-7.15E-02		5.42E-01
+	CR-51	320.08	9.83	4.84E-02	2.17E+00	2.17E+00
+	MN-54	834.83	99.97	2.16E-02	1.71E-01	1.71E-01
+	CO-56	846.75	99.96	4.34E-03	1.89E-01	1.89E-01
		1037.75	14.03	3.27E-01		1.50E+00
		1238.25	67.00	3.20E-01		4.77E-01
		1771.40	15.51	-3.13E-02		1.18E+00
		2598.48	16.90	-5.73E-02		9.26E-01
+	CO-57	122.06	85.51	-3.95E-02	1.08E-01	1.08E-01
		136.48	10.60	-4.46E-01		9.37E-01
+	CO-58	810.76	99.40	-4.42E-02	1.83E-01	1.83E-01
+	FE-59	1099.22	56.50	3.14E-01	5.07E-01	5.07E-01
		1291.56	43.20	4.66E-02		6.47E-01
+	CO-60	1173.22	100.00	-7.95E-03	1.54E-01	2.16E-01
		1332.49	100.00	-2.47E-02		1.54E-01
+	ZN-65	1115.52	50.75	7.72E-03	4.28E-01	4.28E-01
+	GA-67	93.31	35.70	5.14E+01	6.69E+01	6.69E+01
		208.95	2.24	5.54E+02		1.31E+03
		300.22	16.00	-1.12E+02		2.03E+02
+	SE-75	121.11	16.70	-4.09E-01	1.84E-01	5.95E-01
		136.00	59.20	-7.70E-03		1.84E-01
		264.65	59.80	2.73E-02		2.27E-01
		279.53	25.20	-8.66E-02		4.62E-01
		400.65	11.40	-8.67E-01		1.21E+00
+	RB-82	776.52	13.00	3.11E-01	2.34E+00	2.34E+00
+	RB-83	520.41	46.00	-3.58E-02	3.34E-01	3.34E-01
		529.64	30.30	1.50E-01		5.33E-01
		552.65	16.40	-1.22E-01		8.81E-01
+	KR-85	513.99	0.43	7.54E+01	4.31E+01	4.31E+01
+	SR-85	513.99	99.27	4.33E-01	2.47E-01	2.47E-01

Analysis Report for 1510084-05
CP0604S09-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	93.40	1.67E-02	1.51E-01	2.06E-01
		1836.01	99.38	-3.97E-02		1.51E-01
+	NB-93M	16.57	9.43	8.32E-01	4.08E-01	4.08E-01
+	NB-94	702.63	100.00	4.01E-02	1.59E-01	1.71E-01
		871.10	100.00	5.30E-02		1.59E-01
+	NB-95	765.79	99.81	1.90E-01	3.14E-01	3.14E-01
+	NB-95M	235.69	25.00	2.77E+00	1.01E+02	1.01E+02
+	ZR-95	724.18	43.70	4.04E-01	3.80E-01	5.49E-01
		756.72	55.30	-1.98E-03		3.80E-01
+	MO-99	181.06	6.20	1.68E+02	7.45E+02	1.18E+03
		739.58	12.80	-1.59E+02		7.45E+02
		778.00	4.50	-1.26E+02		2.10E+03
+	RU-103	497.08	89.00	-2.24E-02	2.22E-01	2.22E-01
+	RU-106	621.84	9.80	-6.22E-01	1.37E+00	1.37E+00
+	AG-108M	433.93	89.90	-1.26E-01	1.20E-01	1.20E-01
		614.37	90.40	2.22E-03		2.01E-01
		722.95	90.50	-3.28E-03		1.85E-01
+	CD-109	88.03	* 3.72	6.46E+00	5.48E+00	5.48E+00
+	AG-110M	657.75	93.14	-1.75E-02	1.80E-01	1.80E-01
		677.61	10.53	2.11E-01		1.40E+00
		706.67	16.46	-9.99E-02		1.04E+00
		763.93	21.98	5.17E-01		8.95E-01
		884.67	71.63	-3.06E-02		2.23E-01
		1384.27	23.94	-3.39E-03		8.64E-01
+	CD-113M	263.70	0.02	1.73E+02	5.15E+02	5.15E+02
+	SN-113	255.12	1.93	-4.10E+00	2.22E-01	6.27E+00
		391.69	64.90	8.76E-03		2.22E-01
+	TE123M	159.00	84.10	5.71E-03	1.42E-01	1.42E-01
+	SB-124	602.71	97.87	2.99E-02	2.06E-01	2.06E-01
		645.85	7.26	-4.97E-01		2.67E+00
		722.78	11.10	-8.71E-01		1.94E+00
		1691.02	49.00	4.61E-02		3.66E-01
+	I-125	35.49	6.49	-8.36E-02	1.01E+00	1.01E+00
+	SB-125	176.33	6.89	-7.75E-02	4.23E-01	1.47E+00
		427.89	29.33	1.78E-01		4.23E-01
		463.38	10.35	8.84E-01		1.35E+00
		600.56	17.80	2.41E-01		8.61E-01
		635.90	11.32	-2.24E-01		1.18E+00
+	SB-126	414.70	83.30	-1.74E-01	6.30E-01	6.41E-01
		666.33	99.60	6.85E-02		6.30E-01
		695.00	99.60	2.04E-01		6.99E-01
		720.50	53.80	-8.27E-01		1.19E+00
+	SN-126	87.57	* 37.00	6.25E-01	5.30E-01	5.30E-01
+	SB-127	473.00	25.00	-1.67E+01	4.30E+01	4.93E+01
		685.20	35.70	-7.89E+00		4.30E+01
		783.80	14.70	5.62E+01		1.19E+02
+	I-129	29.78	57.00	1.62E-03	8.30E-02	8.30E-02
		33.60	13.20	-1.62E-02		3.60E-01

Analysis Report for 1510084-05
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	-4.95E-01	8.30E-02	6.67E-01
+	I-131	284.30	6.05	-1.04E+00	1.39E+00	1.64E+01
		364.48	81.20	-2.92E-01		1.39E+00
		636.97	7.26	-2.68E+00		1.76E+01
		722.89	1.80	-3.74E+01		8.31E+01
+	TE-132	49.72	13.10	-7.02E+00	3.13E+01	1.18E+02
		228.16	88.00	-3.83E+00		3.13E+01
+	BA-133	81.00	33.00	-3.24E-01	3.01E-01	3.11E-01
		302.84	17.80	-1.09E-02		7.05E-01
		356.01	60.00	1.89E-02		3.01E-01
+	I-133	529.87	86.30	4.49E+07	1.59E+08	1.59E+08
+	XE-133	81.00	38.00	-8.68E+00	8.34E+00	8.34E+00
+	CS-134	563.23	8.38	1.10E+00	1.93E-01	1.77E+00
		569.32	15.43	-2.11E-01		8.73E-01
		604.70	97.60	-2.95E-01		1.99E-01
		795.84	85.40	3.93E-02		1.93E-01
		801.93	8.73	-7.14E-02		1.85E+00
+	CS-135	268.24	16.00	6.80E-01	7.59E-01	7.59E-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	-1.46E+00	5.85E-01	5.18E+00
		163.89	4.61	1.05E+00		8.69E+00
		176.55	13.56	-1.52E-01		2.88E+00
		273.65	12.66	-5.67E-01		3.52E+00
		340.57	48.50	7.00E-02		1.16E+00
		818.50	99.70	1.71E-01		5.85E-01
		1048.07	79.60	-7.34E-02		7.23E-01
		1235.34	19.70	2.55E+00		5.10E+00
+	CS-137	661.65	85.12	1.50E-02	1.82E-01	1.82E-01
+	LA-138	788.74	34.00	1.08E-01	2.48E-01	4.65E-01
		1435.80	66.00	-8.98E-03		2.48E-01
+	CE-139	165.85	80.35	-6.28E-02	1.41E-01	1.41E-01
+	BA-140	162.64	6.70	2.30E+00	2.08E+00	6.27E+00
		304.84	4.50	3.60E-01		1.06E+01
		423.70	3.20	5.86E+00		1.61E+01
		437.55	2.00	4.02E+00		2.40E+01
		537.32	25.00	-2.18E-01		2.08E+00
+	LA-140	328.77	20.50	9.56E-01	6.19E-01	2.42E+00
		487.03	45.50	-8.01E-01		1.03E+00
		815.85	23.50	-2.65E-01		2.50E+00
		1596.49	95.49	-3.28E-01		6.19E-01
+	CE-141	145.44	48.40	-4.53E-02	3.47E-01	3.47E-01
+	CE-143	57.36	11.80	-9.17E+04	1.61E+05	3.00E+05
		293.26	42.00	1.17E+05		1.61E+05
		664.55	5.20	6.80E+05		1.44E+06
+	CE-144	133.54	10.80	-4.02E-01	9.02E-01	9.02E-01
+	PM-144	476.78	42.00	-1.01E-02	1.44E-01	3.00E-01
		618.01	98.60	-3.46E-02		1.44E-01

Analysis Report for 1510084-05
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-144	696.49	99.49	8.25E-02	1.44E-01	1.77E-01
+	PM-145	36.85	21.70	-2.11E-02	1.22E-01	2.26E-01
		37.36	39.70	-3.65E-02		1.22E-01
		42.30	15.10	-5.28E-03		3.57E-01
		72.40	2.31	7.93E+00		4.60E+00
+	PM-146	453.90	39.94	7.84E-02	2.96E-01	2.96E-01
		735.90	14.01	-3.14E-02		9.55E-01
		747.13	13.10	1.14E-02		1.16E+00
+	ND-147	91.11	28.90	3.80E+00	1.84E+00	1.84E+00
		531.02	13.10	-1.08E+00		4.83E+00
+	PM-149	285.90	*	3.10	9.04E+03	2.77E+04
+	EU-152	121.78	20.50	-1.54E-01	4.24E-01	4.24E-01
		244.69	5.40	-1.40E-01		2.41E+00
		344.27	19.13	1.64E-02		5.94E-01
		778.89	9.20	-8.88E-02		1.48E+00
		964.01	10.40	-1.46E-01		1.91E+00
		1085.78	7.22	-1.34E+00		2.37E+00
		1112.02	9.60	4.88E-01		1.96E+00
		1407.95	14.94	-1.91E-01		1.15E+00
+	GD-153	97.43	31.30	-9.42E-02	2.97E-01	2.97E-01
		103.18	22.20	-3.60E-02		3.95E-01
+	EU-154	123.07	40.50	-4.58E-03	2.20E-01	2.20E-01
		723.30	19.70	-1.52E-02		8.55E-01
		873.19	11.50	9.71E-02		1.37E+00
		996.32	10.30	-5.19E-02		1.68E+00
		1004.76	17.90	-2.78E-01		9.77E-01
		1274.45	35.50	-1.19E-01		4.98E-01
+	EU-155	86.50	*	30.90	7.55E-01	3.94E-01
		105.30	20.70	-1.40E-01		3.94E-01
+	EU-156	811.77	10.40	-6.29E-02	4.50E+00	4.50E+00
		1153.47	7.20	1.21E+00		9.83E+00
		1230.71	8.90	0.00E+00		7.81E+00
+	HO-166M	184.41	72.60	1.88E-01	1.63E-01	1.63E-01
		280.45	29.60	4.13E-02		3.51E-01
		410.94	11.10	7.24E-01		1.24E+00
		711.69	54.10	-5.01E-02		2.76E-01
+	TM-171	66.72	0.14	2.15E+01	6.19E+01	6.19E+01
+	HF-172	81.75	4.52	-6.76E+00	8.36E-01	2.18E+00
		125.81	11.30	3.34E-01		8.36E-01
+	LU-172	181.53	20.60	1.98E-02	4.13E+00	7.83E+00
		810.06	16.63	-3.00E+00		1.25E+01
		912.12	15.25	3.55E+01		2.48E+01
		1093.66	62.50	-5.92E-01		4.13E+00
+	LU-173	100.72	5.24	-2.56E-01	5.79E-01	1.58E+00
		272.11	21.20	3.59E-01		5.79E-01
+	HF-175	343.40	84.00	4.81E-03	1.83E-01	1.83E-01
+	LU-176	88.34	13.30	1.02E+00	1.15E-01	7.60E-01
		201.83	86.00	-4.51E-03		1.30E-01
		306.78	94.00	-1.56E-02		1.15E-01

Analysis Report for 1510084-05
CP0604S09-10

	<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>
+	TA-182	67.75	41.20	2.09E-02	2.38E-01	2.38E-01
		1121.30	34.90	8.05E-01		8.38E-01
		1189.05	16.23	-1.44E-01		1.41E+00
		1221.41	26.98	-2.35E-01		9.06E-01
		1231.02	11.44	0.00E+00		2.18E+00
+	IR-192	308.46	29.68	-1.54E-01	3.31E-01	4.51E-01
		468.07	48.10	1.49E-02		3.31E-01
+	HG-203	279.19	77.30	-3.57E-02	1.90E-01	1.90E-01
+	BI-207	569.67	97.72	-3.26E-02	1.35E-01	1.35E-01
		1063.62	74.90	-2.40E-02		2.26E-01
+	TL-208	583.14	* 30.22	1.40E+00	2.17E-01	7.40E-01
		860.37	* 4.48	1.77E+00		3.66E+00
		2614.66	* 35.85	1.32E+00		2.17E-01
+	BI-210M	262.00	45.00	1.16E-01	2.58E-01	2.58E-01
		300.00	23.00	2.56E-01		6.02E-01
+	PB-210	46.50	4.25	2.02E-01	1.38E+00	1.38E+00
+	PB-211	404.84	2.90	9.24E-01	4.46E+00	4.46E+00
		831.96	2.90	-1.91E+00		5.21E+00
+	BI-212	727.17	* 11.80	1.16E+00	2.45E+00	2.45E+00
		1620.62	2.75	4.29E-01		5.72E+00
+	PB-212	238.63	* 44.60	1.82E+00	4.41E-01	4.41E-01
		300.09	* 3.41	3.15E+00		7.75E+00
+	BI-214	609.31	* 46.30	1.40E+00	5.39E-01	5.39E-01
		1120.29	* 15.10	1.45E+00		2.04E+00
		1764.49	* 15.80	1.76E+00		7.39E-01
		2204.22	4.98	5.52E-01		3.61E+00
+	PB-214	295.21	* 19.19	1.00E+00	4.33E-01	1.35E+00
		351.92	* 37.19	1.48E+00		4.33E-01
+	RN-219	401.80	6.50	-1.79E+00	1.81E+00	1.81E+00
+	RA-223	323.87	3.88	-4.58E-01	3.00E+00	3.00E+00
+	RA-224	240.98	3.95	2.02E+01	4.74E+00	4.74E+00
+	RA-225	40.00	31.00	-4.06E-01	5.48E-01	5.48E-01
+	RA-226	186.21	* 3.28	3.15E+00	4.83E+00	4.83E+00
+	TH-227	50.10	8.40	-4.37E-02	7.38E-01	7.38E-01
		236.00	11.50	4.12E-02		1.50E+00
		256.20	6.30	2.16E-01		1.75E+00
+	AC-228	338.32	* 11.40	1.76E+00	8.54E-01	1.58E+00
		911.07	* 27.70	1.21E+00		8.54E-01
		969.11	16.60	1.38E+00		1.38E+00
+	TH-230	48.44	16.90	-3.05E-02	3.60E-01	3.60E-01
		62.85	4.60	1.45E+00		1.77E+00
		67.67	0.37	1.99E+00		2.27E+01
+	PA-231	283.67	1.60	-2.46E-01	5.42E+00	6.60E+00
		302.67	2.30	-8.42E-02		5.42E+00
+	TH-231	25.64	14.70	-4.10E-02	3.09E-01	3.09E-01
		84.21	6.40	-5.49E+00		1.44E+00
+	PA-233	311.98	38.60	-1.02E-01	5.47E-01	5.47E-01
+	PA-234	131.20	20.40	1.58E-01	4.57E-01	4.57E-01

Analysis Report for 1510084-05
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	733.99	8.80	3.55E-02	4.57E-01	1.56E+00
		946.00	12.00	-9.55E-02		1.37E+00
+	PA-234M	1001.03	0.92	1.30E+00	1.88E+01	1.88E+01
+	TH-234	63.29	3.80	1.37E+00	2.16E+00	2.16E+00
+	U-235	143.76	10.50	2.80E-01	9.26E-01	9.26E-01
		163.35	4.70	2.62E-01		2.17E+00
		205.31	4.70	4.40E-01		2.46E+00
+	NP-237	86.50	* 12.60	1.83E+00	1.56E+00	1.56E+00
+	NP-239	106.10	22.70	-2.65E+02	7.47E+02	7.47E+02
		228.18	10.70	-2.62E+02		2.15E+03
		277.60	14.10	2.62E+02		1.55E+03
+	AM-241	59.54	35.90	1.34E-01	2.15E-01	2.15E-01
+	AM-243	74.67	66.00	7.11E-01	1.72E-01	1.72E-01
+	CM-243	209.75	3.29	2.56E+00	7.46E-01	3.59E+00
		228.14	10.60	-1.27E-01		1.04E+00
		277.60	14.00	1.26E-01		7.46E-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	1.61E+00	1.61E+00	3.23E-01	7.58E-01
	NA-22	1274.54	99.94	1.79E-01	1.79E-01	-4.28E-02	8.06E-02
	NA-24	1368.53	99.99	5.06E+11	1.05E+11	-8.27E+10	2.23E+11
		2754.09	99.86	1.05E+11		0.00E+00	0.00E+00
	AL-26	1808.65	99.76	1.16E-01	1.16E-01	-4.14E-03	4.62E-02
+	K-40	1460.81	* 10.67	1.67E+00	1.67E+00	1.94E+01	7.41E-01

Analysis Report for 1510084-05
CP0604S09-10

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	8.91E-02	8.91E-02	7.83E-03	4.38E-02
	78.34	96.00	1.14E-01		2.13E-01	5.61E-02
SC-46	889.25	99.98	1.85E-01	1.85E-01	-3.64E-02	8.49E-02
	1120.51	99.99	3.17E-01		3.09E-01	1.49E-01
V-48	983.52	99.98	4.53E-01	4.53E-01	-9.76E-02	2.05E-01
	1312.10	97.50	5.42E-01		-7.15E-02	2.42E-01
CR-51	320.08	9.83	2.17E+00	2.17E+00	4.84E-02	1.04E+00
MN-54	834.83	99.97	1.71E-01	1.71E-01	2.16E-02	7.93E-02
CO-56	846.75	99.96	1.89E-01	1.89E-01	4.34E-03	8.71E-02
	1037.75	14.03	1.50E+00		3.27E-01	6.85E-01
	1238.25	67.00	4.77E-01		3.20E-01	2.22E-01
	1771.40	15.51	1.18E+00		-3.13E-02	4.92E-01
	2598.48	16.90	9.26E-01		-5.73E-02	3.46E-01
CO-57	122.06	85.51	1.08E-01	1.08E-01	-3.95E-02	5.29E-02
	136.48	10.60	9.37E-01		-4.46E-01	4.57E-01
CO-58	810.76	99.40	1.83E-01	1.83E-01	-4.42E-02	8.42E-02
FE-59	1099.22	56.50	5.07E-01	5.07E-01	3.14E-01	2.33E-01
	1291.56	43.20	6.47E-01		4.66E-02	2.92E-01
CO-60	1173.22	100.00	2.16E-01	1.54E-01	-7.95E-03	9.96E-02
	1332.49	100.00	1.54E-01		-2.47E-02	6.78E-02
ZN-65	1115.52	50.75	4.28E-01	4.28E-01	7.72E-03	1.98E-01
GA-67	93.31	35.70	6.69E+01	6.69E+01	5.14E+01	3.28E+01
	208.95	2.24	1.31E+03		5.54E+02	6.35E+02
	300.22	16.00	2.03E+02		-1.12E+02	9.81E+01
SE-75	121.11	16.70	5.95E-01	1.84E-01	-4.09E-01	2.90E-01
	136.00	59.20	1.84E-01		-7.70E-03	8.99E-02
	264.65	59.80	2.27E-01		2.73E-02	1.10E-01
	279.53	25.20	4.62E-01		-8.66E-02	2.21E-01
	400.65	11.40	1.21E+00		-8.67E-01	5.74E-01
RB-82	776.52	13.00	2.34E+00	2.34E+00	3.11E-01	1.08E+00
RB-83	520.41	46.00	3.34E-01	3.34E-01	-3.58E-02	1.57E-01
	529.64	30.30	5.33E-01		1.50E-01	2.51E-01
	552.65	16.40	8.81E-01		-1.22E-01	4.11E-01
KR-85	513.99	0.43	4.31E+01	4.31E+01	7.54E+01	2.07E+01
SR-85	513.99	99.27	2.47E-01	2.47E-01	4.33E-01	1.19E-01
Y-88	898.02	93.40	2.06E-01	1.51E-01	1.67E-02	9.50E-02
	1836.01	99.38	1.51E-01		-3.97E-02	6.08E-02
NB-93M	16.57	9.43	4.08E-01	4.08E-01	8.32E-01	1.98E-01
NB-94	702.63	100.00	1.71E-01	1.59E-01	4.01E-02	8.07E-02
	871.10	100.00	1.59E-01		5.30E-02	7.35E-02
NB-95	765.79	99.81	3.14E-01	3.14E-01	1.90E-01	1.48E-01
NB-95M	235.69	25.00	1.01E+02	1.01E+02	2.77E+00	4.95E+01
ZR-95	724.18	43.70	5.49E-01	3.80E-01	4.04E-01	2.59E-01
	756.72	55.30	3.80E-01		-1.98E-03	1.77E-01
MO-99	181.06	6.20	1.18E+03	7.45E+02	1.68E+02	5.75E+02
	739.58	12.80	7.45E+02		-1.59E+02	3.44E+02
	778.00	4.50	2.10E+03		-1.26E+02	9.63E+02
RU-103	497.08	89.00	2.22E-01	2.22E-01	-2.24E-02	1.05E-01
RU-106	621.84	9.80	1.37E+00	1.37E+00	-6.22E-01	6.38E-01
AG-108M	433.93	89.90	1.20E-01	1.20E-01	-1.26E-01	5.65E-02
	614.37	90.40	2.01E-01		2.22E-03	9.58E-02
	722.95	90.50	1.85E-01		-3.28E-03	8.69E-02

Analysis Report for 1510084-05
CP0604S09-10

	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	5.48E+00	5.48E+00	6.46E+00
	AG-110M	657.75		93.14	1.80E-01	1.80E-01	-1.75E-02
		677.61		10.53	1.40E+00		2.11E-01
		706.67		16.46	1.04E+00		-9.99E-02
		763.93		21.98	8.95E-01		5.17E-01
		884.67		71.63	2.23E-01		-3.06E-02
		1384.27		23.94	8.64E-01		-3.39E-03
	CD-113M	263.70		0.02	5.15E+02	5.15E+02	1.73E+02
	SN-113	255.12		1.93	6.27E+00	2.22E-01	-4.10E+00
		391.69		64.90	2.22E-01		8.76E-03
	TE123M	159.00		84.10	1.42E-01	1.42E-01	5.71E-03
	SB-124	602.71		97.87	2.06E-01	2.06E-01	2.99E-02
		645.85		7.26	2.67E+00		-4.97E-01
		722.78		11.10	1.94E+00		-8.71E-01
		1691.02		49.00	3.66E-01		4.61E-02
	I-125	35.49		6.49	1.01E+00	1.01E+00	-8.36E-02
	SB-125	176.33		6.89	1.47E+00	4.23E-01	-7.75E-02
		427.89		29.33	4.23E-01		1.78E-01
		463.38		10.35	1.35E+00		8.84E-01
		600.56		17.80	8.61E-01		2.41E-01
		635.90		11.32	1.18E+00		-2.24E-01
	SB-126	414.70		83.30	6.41E-01	6.30E-01	-1.74E-01
		666.33		99.60	6.30E-01		6.85E-02
		695.00		99.60	6.99E-01		2.04E-01
		720.50		53.80	1.19E+00		-8.27E-01
+	SN-126	87.57	*	37.00	5.30E-01	5.30E-01	6.25E-01
	SB-127	473.00		25.00	4.93E+01	4.30E+01	-1.67E+01
		685.20		35.70	4.30E+01		-7.89E+00
		783.80		14.70	1.19E+02		5.62E+01
	I-129	29.78		57.00	8.30E-02	8.30E-02	1.62E-03
		33.60		13.20	3.60E-01		-1.62E-02
		39.58		7.52	6.67E-01		-4.95E-01
	I-131	284.30		6.05	1.64E+01	1.39E+00	-1.04E+00
		364.48		81.20	1.39E+00		-2.92E-01
		636.97		7.26	1.76E+01		-2.68E+00
		722.89		1.80	8.31E+01		-3.74E+01
	TE-132	49.72		13.10	1.18E+02	3.13E+01	-7.02E+00
		228.16		88.00	3.13E+01		-3.83E+00
	BA-133	81.00		33.00	3.11E-01	3.01E-01	-3.24E-01
		302.84		17.80	7.05E-01		-1.09E-02
		356.01		60.00	3.01E-01		1.89E-02
	I-133	529.87		86.30	1.59E+08	1.59E+08	4.49E+07
	XE-133	81.00		38.00	8.34E+00	8.34E+00	-8.68E+00
	CS-134	563.23		8.38	1.77E+00	1.93E-01	1.10E+00
		569.32		15.43	8.73E-01		-2.11E-01
		604.70		97.60	1.99E-01		-2.95E-01
		795.84		85.40	1.93E-01		3.93E-02
		801.93		8.73	1.85E+00		-7.14E-02
	CS-135	268.24		16.00	7.59E-01	7.59E-01	6.80E-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+00	5.85E-01	-1.46E+00

Analysis Report for 1510084-05

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-136	163.89	4.61	8.69E+00	5.85E-01	1.05E+00	4.24E+00
	176.55	13.56	2.88E+00		-1.52E-01	1.40E+00
	273.65	12.66	3.52E+00		-5.67E-01	1.70E+00
	340.57	48.50	1.16E+00		7.00E-02	5.61E-01
	818.50	99.70	5.85E-01		1.71E-01	2.70E-01
	1048.07	79.60	7.23E-01		-7.34E-02	3.25E-01
	1235.34	19.70	5.10E+00		2.55E+00	2.38E+00
CS-137	661.65	85.12	1.82E-01	1.82E-01	1.50E-02	8.53E-02
LA-138	788.74	34.00	4.65E-01	2.48E-01	1.08E-01	2.16E-01
	1435.80	66.00	2.48E-01		-8.98E-03	1.09E-01
CE-139	165.85	80.35	1.41E-01	1.41E-01	-6.28E-02	6.88E-02
BA-140	162.64	6.70	6.27E+00	2.08E+00	2.30E+00	3.05E+00
	304.84	4.50	1.06E+01		3.60E+00	5.08E+00
	423.70	3.20	1.61E+01		5.86E+00	7.67E+00
	437.55	2.00	2.40E+01		4.02E+00	1.14E+01
	537.32	25.00	2.08E+00		-2.18E-01	9.77E-01
LA-140	328.77	20.50	2.42E+00	6.19E-01	9.56E-01	1.16E+00
	487.03	45.50	1.03E+00		-8.01E-01	4.84E-01
	815.85	23.50	2.50E+00		-2.65E-01	1.15E+00
	1596.49	95.49	6.19E-01		-3.28E-01	2.63E-01
CE-141	145.44	48.40	3.47E-01	3.47E-01	-4.53E-02	1.69E-01
CE-143	57.36	11.80	3.00E+05	1.61E+05	-9.17E+04	1.47E+05
	293.26	42.00	1.61E+05		1.17E+05	7.79E+04
	664.55	5.20	1.44E+06		6.80E+05	6.75E+05
CE-144	133.54	10.80	9.02E-01	9.02E-01	-4.02E-01	4.40E-01
PM-144	476.78	42.00	3.00E-01	1.44E-01	-1.01E-02	1.42E-01
	618.01	98.60	1.44E-01		-3.46E-02	6.71E-02
	696.49	99.49	1.77E-01		8.25E-02	8.35E-02
PM-145	36.85	21.70	2.26E-01	1.22E-01	-2.11E-02	1.10E-01
	37.36	39.70	1.22E-01		-3.65E-02	5.95E-02
	42.30	15.10	3.57E-01		-5.28E-03	1.74E-01
	72.40	2.31	4.60E+00		7.93E+00	2.26E+00
PM-146	453.90	39.94	2.96E-01	2.96E-01	7.84E-02	1.40E-01
	735.90	14.01	9.55E-01		-3.14E-02	4.40E-01
	747.13	13.10	1.16E+00		1.14E-02	5.40E-01
ND-147	91.11	28.90	1.84E+00	1.84E+00	3.80E+00	9.05E-01
	531.02	13.10	4.83E+00		-1.08E+00	2.27E+00
+ PM-149	285.90	*	2.77E+04	2.77E+04	9.04E+03	1.36E+04
EU-152	121.78	20.50	4.24E-01	4.24E-01	-1.54E-01	2.07E-01
	244.69	5.40	2.41E+00		-1.40E-01	1.17E+00
	344.27	19.13	5.94E-01		1.64E-02	2.84E-01
	778.89	9.20	1.48E+00		-8.88E-02	6.81E-01
	964.01	10.40	1.91E+00		-1.46E-01	8.90E-01
	1085.78	7.22	2.37E+00		-1.34E+00	1.08E+00
	1112.02	9.60	1.96E+00		4.88E-01	8.98E-01
	1407.95	14.94	1.15E+00		-1.91E-01	5.12E-01
GD-153	97.43	31.30	2.97E-01	2.97E-01	-9.42E-02	1.45E-01
	103.18	22.20	3.95E-01		-3.60E-02	1.93E-01
EU-154	123.07	40.50	2.20E-01	2.20E-01	-4.58E-03	1.07E-01
	723.30	19.70	8.55E-01		-1.52E-02	4.01E-01
	873.19	11.50	1.37E+00		9.71E-02	6.31E-01
	996.32	10.30	1.68E+00		-5.19E-02	7.74E-01
	1004.76	17.90	9.77E-01		-2.78E-01	4.49E-01

Analysis Report for 1510084-05
CP0604S09-10

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	4.98E-01	2.20E-01	-1.19E-01 2.24E-01
+	EU-155	86.50 *	30.90	6.41E-01	3.94E-01	7.55E-01 3.18E-01
		105.30	20.70	3.94E-01		-1.40E-01 1.92E-01
	EU-156	811.77	10.40	4.50E+00	4.50E+00	-6.29E-02 2.07E+00
		1153.47	7.20	9.83E+00		1.21E+00 4.55E+00
		1230.71	8.90	7.81E+00		0.00E+00 3.59E+00
	HO-166M	184.41	72.60	1.63E-01	1.63E-01	1.88E-01 7.96E-02
		280.45	29.60	3.51E-01		4.13E-02 1.69E-01
		410.94	11.10	1.24E+00		7.24E-01 5.91E-01
		711.69	54.10	2.76E-01		-5.01E-02 1.29E-01
	TM-171	66.72	0.14	6.19E+01	6.19E+01	2.15E+01 3.04E+01
	HF-172	81.75	4.52	2.18E+00	8.36E-01	-6.76E+00 1.07E+00
		125.81	11.30	8.36E-01		3.34E-01 4.08E-01
	LU-172	181.53	20.60	7.83E+00	4.13E+00	1.98E-02 3.81E+00
		810.06	16.63	1.25E+01		-3.00E+00 5.73E+00
		912.12	15.25	2.48E+01		3.55E+01 1.18E+01
		1093.66	62.50	4.13E+00		-5.92E-01 1.89E+00
	LU-173	100.72	5.24	1.58E+00	5.79E-01	-2.56E-01 7.72E-01
		272.11	21.20	5.79E-01		3.59E-01 2.80E-01
	HF-175	343.40	84.00	1.83E-01	1.83E-01	4.81E-03 8.77E-02
	LU-176	88.34	13.30	7.60E-01	1.15E-01	1.02E+00 3.73E-01
		201.83	86.00	1.30E-01		-4.51E-03 6.30E-02
		306.78	94.00	1.15E-01		-1.56E-02 5.53E-02
	TA-182	67.75	41.20	2.38E-01	2.38E-01	2.09E-02 1.17E-01
		1121.30	34.90	8.38E-01		8.05E-01 3.92E-01
		1189.05	16.23	1.41E+00		-1.44E-01 6.43E-01
		1221.41	26.98	9.06E-01		-2.35E-01 4.16E-01
		1231.02	11.44	2.18E+00		0.00E+00 1.00E+00
	IR-192	308.46	29.68	4.51E-01	3.31E-01	-1.54E-01 2.16E-01
		468.07	48.10	3.31E-01		1.49E-02 1.57E-01
	HG-203	279.19	77.30	1.90E-01	1.90E-01	-3.57E-02 9.13E-02
	BI-207	569.67	97.72	1.35E-01	1.35E-01	-3.26E-02 6.33E-02
		1063.62	74.90	2.26E-01		-2.40E-02 1.03E-01
+	TL-208	583.14 *	30.22	7.40E-01	2.17E-01	1.40E+00 3.56E-01
		860.37 *	4.48	3.66E+00		1.77E+00 1.69E+00
		2614.66 *	35.85	2.17E-01		1.32E+00 6.45E-02
	BI-210M	262.00	45.00	2.58E-01	2.58E-01	1.16E-01 1.25E-01
		300.00	23.00	6.02E-01		2.56E-01 2.91E-01
	PB-210	46.50	4.25	1.38E+00	1.38E+00	2.02E-01 6.74E-01
	PB-211	404.84	2.90	4.46E+00	4.46E+00	9.24E-01 2.13E+00
		831.96	2.90	5.21E+00		-1.91E+00 2.40E+00
+	BI-212	727.17 *	11.80	2.45E+00	2.45E+00	1.16E+00 1.18E+00
		1620.62	2.75	5.72E+00		4.29E-01 2.46E+00
+	PB-212	238.63 *	44.60	4.41E-01	4.41E-01	1.82E+00 2.17E-01
		300.09 *	3.41	7.75E+00		3.15E+00 3.81E+00
+	BI-214	609.31 *	46.30	5.39E-01	5.39E-01	1.40E+00 2.60E-01
		1120.29 *	15.10	2.04E+00		1.45E+00 9.69E-01
		1764.49 *	15.80	7.39E-01		1.76E+00 2.95E-01
		2204.22	4.98	3.61E+00		5.52E-01 1.52E+00
+	PB-214	295.21 *	19.19	1.35E+00	4.33E-01	1.00E+00 6.66E-01
		351.92 *	37.19	4.33E-01		1.48E+00 2.10E-01
	RN-219	401.80	6.50	1.81E+00	1.81E+00	-1.79E+00 8.62E-01
	RA-223	323.87	3.88	3.00E+00	3.00E+00	-4.58E-01 1.44E+00

Analysis Report for 1510084-05

CP0604S09-10

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	4.74E+00	4.74E+00	2.02E+01	2.32E+00
RA-225	40.00	31.00	5.48E-01	5.48E-01	-4.06E-01	2.67E-01
+ RA-226	186.21 *	3.28	4.83E+00	4.83E+00	3.15E+00	2.37E+00
TH-227	50.10	8.40	7.38E-01	7.38E-01	-4.37E-02	3.61E-01
	236.00	11.50	1.50E+00		4.12E-02	7.36E-01
	256.20	6.30	1.75E+00		2.16E-01	8.44E-01
+ AC-228	338.32 *	11.40	1.58E+00	8.54E-01	1.76E+00	7.69E-01
	911.07 *	27.70	8.54E-01		1.21E+00	4.04E-01
	969.11	16.60	1.38E+00		1.38E+00	6.50E-01
TH-230	48.44	16.90	3.60E-01	3.60E-01	-3.05E-02	1.76E-01
	62.85	4.60	1.77E+00		1.45E+00	8.71E-01
	67.67	0.37	2.27E+01		1.99E+00	1.11E+01
PA-231	283.67	1.60	6.60E+00	5.42E+00	-2.46E-01	3.17E+00
	302.67	2.30	5.42E+00		-8.42E-02	2.62E+00
TH-231	25.64	14.70	3.09E-01	3.09E-01	-4.10E-02	1.51E-01
	84.21	6.40	1.44E+00		-5.49E+00	7.05E-01
PA-233	311.98	38.60	5.47E-01	5.47E-01	-1.02E-01	2.62E-01
PA-234	131.20	20.40	4.57E-01	4.57E-01	1.58E-01	2.23E-01
	733.99	8.80	1.56E+00		3.55E-02	7.21E-01
	946.00	12.00	1.37E+00		-9.55E-02	6.28E-01
PA-234M	1001.03	0.92	1.88E+01	1.88E+01	1.30E+00	8.65E+00
TH-234	63.29	3.80	2.16E+00	2.16E+00	1.37E+00	1.06E+00
U-235	143.76	10.50	9.26E-01	9.26E-01	2.80E-01	4.51E-01
	163.35	4.70	2.17E+00		2.62E-01	1.06E+00
	205.31	4.70	2.46E+00		4.40E-01	1.20E+00
+ NP-237	86.50 *	12.60	1.56E+00	1.56E+00	1.83E+00	7.71E-01
NP-239	106.10	22.70	7.47E+02	7.47E+02	-2.65E+02	3.65E+02
	228.18	10.70	2.15E+03		-2.62E+02	1.04E+03
	277.60	14.10	1.55E+03		2.62E+02	7.42E+02
AM-241	59.54	35.90	2.15E-01	2.15E-01	1.34E-01	1.06E-01
AM-243	74.67	66.00	1.72E-01	1.72E-01	7.11E-01	8.48E-02
CM-243	209.75	3.29	3.59E+00	7.46E-01	2.56E+00	1.75E+00
	228.14	10.60	1.04E+00		-1.27E-01	5.03E-01
	277.60	14.00	7.46E-01		1.26E-01	3.58E-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 1510084-05
CP0604S09-10

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: CP0604S09-10

Elapsed Live time: 3600
 Elapsed Real Time: 3639

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	16	88
17:	83	64	60	73	56	55	66	62
25:	70	67	52	51	52	62	62	75
33:	60	44	53	59	64	61	60	61
41:	60	66	62	76	77	82	77	77
49:	72	85	86	78	87	107	89	79
57:	92	120	109	101	119	132	142	100
65:	105	116	124	109	110	119	105	149
73:	187	232	254	279	233	164	87	88
81:	90	87	125	124	116	148	119	118
89:	126	121	114	142	150	98	59	70
97:	65	67	79	66	70	57	50	71
105:	65	73	55	78	55	80	56	63
113:	68	67	57	59	52	53	60	64
121:	66	63	51	65	70	68	74	63
129:	67	53	64	66	58	55	52	56
137:	61	70	64	51	63	70	71	65
145:	47	51	58	60	38	57	63	55
153:	61	57	68	53	51	57	64	64
161:	49	53	60	55	49	49	44	50
169:	46	60	47	46	42	46	45	56
177:	41	51	35	47	52	55	55	51
185:	92	85	63	46	46	55	49	49
193:	47	44	45	47	48	44	47	46
201:	46	49	45	41	47	50	39	52
209:	63	48	44	47	44	44	33	33
217:	39	40	50	35	29	41	37	36
225:	30	37	32	36	38	36	42	38
233:	34	45	37	52	141	220	164	88
241:	81	60	43	28	28	26	26	21
249:	32	22	24	32	22	24	25	28
257:	29	28	40	36	31	31	29	32
265:	27	24	39	32	42	40	30	31
273:	26	17	17	21	25	24	24	28
281:	21	16	8	31	29	20	23	23
289:	16	25	20	22	36	88	58	43
297:	24	34	42	39	25	22	28	20
305:	20	20	18	21	20	13	20	16
313:	25	18	25	25	22	18	21	15
321:	16	15	21	25	23	25	29	29
329:	15	19	20	16	24	22	16	27
337:	48	63	37	21	20	12	21	17
345:	16	13	20	19	29	52	125	109
353:	44	18	24	12	19	16	23	19
361:	13	19	14	21	18	20	19	18

369: 22 19 17 17 17 14 11 15

Sample Title: CP0604S09-10

Channel								
377:	19	18	10	18	17	13	19	18
385:	14	18	25	19	11	18	15	14
393:	14	18	13	14	20	13	14	12
401:	13	11	18	14	12	23	30	19
409:	16	17	13	18	16	15	15	11
417:	17	13	17	13	9	17	16	15
425:	11	16	18	13	9	12	10	10
433:	12	6	10	7	14	8	23	15
441:	11	12	14	7	14	12	10	11
449:	12	8	13	12	8	20	9	10
457:	6	10	11	16	11	20	20	14
465:	16	15	7	12	13	10	7	11
473:	8	6	12	7	15	6	10	18
481:	10	10	13	4	6	8	12	6
489:	9	13	11	13	15	12	12	16
497:	8	7	8	8	7	9	9	12
505:	4	9	13	11	27	41	47	32
513:	11	17	8	7	10	11	7	6
521:	14	14	10	5	18	7	10	3
529:	9	14	7	9	13	6	7	10
537:	9	8	8	9	12	14	7	7
545:	7	8	11	3	6	9	8	13
553:	7	6	6	7	11	4	9	10
561:	15	19	10	8	12	7	8	5
569:	8	10	11	6	11	7	14	13
577:	11	15	7	13	27	48	58	32
585:	12	9	7	9	5	11	7	14
593:	11	10	7	12	12	18	6	6
601:	10	9	12	8	10	12	23	59
609:	81	54	19	10	6	15	7	7
617:	9	5	6	7	8	5	6	5
625:	10	7	12	5	5	7	4	5
633:	11	7	9	8	7	8	3	8
641:	12	8	10	2	10	5	13	5
649:	7	7	12	13	14	8	9	10
657:	7	6	12	4	13	7	9	11
665:	11	14	5	5	6	3	6	5
673:	7	5	7	7	2	9	6	9
681:	7	7	7	7	11	5	7	8
689:	4	8	8	7	9	10	8	13
697:	6	7	13	13	9	3	11	7
705:	7	18	7	9	10	2	6	3
713:	10	11	6	7	3	7	6	8
721:	9	10	8	5	7	11	15	20
729:	7	9	7	9	2	2	3	4
737:	7	7	5	5	7	7	4	6
745:	8	10	2	7	9	9	4	6
753:	7	7	16	7	6	5	5	5
761:	4	10	7	9	6	10	17	17
769:	9	4	11	11	10	1	6	3
777:	1	7	7	8	3	7	7	7
785:	10	8	6	7	7	4	4	5
793:	2	8	6	9	6	10	9	5

801: 4 7 5 7 5 4 7 4

Sample Title: CP0604S09-10

Channel	1	2	3	4	5	6	7	8
809:	7	2	9	1	5	4	5	7
817:	5	2	6	8	6	4	2	4
825:	4	7	4	6	5	3	7	3
833:	6	5	7	5	8	10	6	9
841:	3	6	6	4	3	5	3	5
849:	7	6	1	7	4	5	9	6
857:	6	6	8	12	10	6	2	0
865:	6	3	5	6	4	4	5	5
873:	3	10	6	2	7	6	4	5
881:	4	6	3	3	5	4	4	6
889:	5	3	5	5	3	4	5	9
897:	5	5	8	2	3	6	5	3
905:	8	7	4	3	9	28	29	32
913:	9	3	4	4	2	7	3	5
921:	4	1	5	6	5	4	8	5
929:	5	3	7	4	4	3	4	1
937:	6	3	6	4	4	4	5	5
945:	3	6	5	8	4	3	2	3
953:	11	5	6	5	2	3	4	5
961:	2	4	5	7	8	4	13	14
969:	24	7	10	1	3	6	2	3
977:	3	5	1	2	3	5	3	4
985:	1	7	5	6	4	4	4	5
993:	5	3	6	4	3	5	6	6
1001:	7	0	10	4	2	5	3	6
1009:	7	6	7	3	4	7	3	6
1017:	4	4	7	9	1	3	5	4
1025:	4	4	2	4	7	3	2	3
1033:	2	1	3	7	6	7	6	3
1041:	2	3	7	2	4	1	5	3
1049:	2	3	1	6	2	0	6	4
1057:	3	5	3	3	3	6	6	2
1065:	6	4	3	7	4	3	4	2
1073:	5	4	6	5	7	2	11	6
1081:	5	3	5	1	2	5	5	6
1089:	5	3	4	3	6	1	6	6
1097:	3	4	1	7	12	4	1	4
1105:	2	0	2	7	2	5	4	5
1113:	5	3	4	6	2	8	11	14
1121:	18	9	6	5	2	5	5	0
1129:	3	5	3	9	1	8	5	6
1137:	8	5	4	2	3	5	5	5
1145:	4	7	6	6	4	4	9	4
1153:	5	5	8	9	4	5	4	4
1161:	4	4	6	6	7	9	6	3
1169:	6	7	8	7	5	4	2	7
1177:	3	6	6	4	4	5	4	4
1185:	5	2	6	2	4	5	9	3
1193:	3	4	5	6	5	3	3	4
1201:	3	5	8	3	2	6	5	6
1209:	10	3	0	4	2	6	7	6
1217:	5	5	7	4	6	6	3	3
1225:	4	6	4	6	3	5	4	4

1233: 9 5 4 10 13 8 8 5

Sample Title: CP0604S09-10

Channel	1	2	3	4	5	6	7	8
1241:	8	3	4	2	3	5	6	5
1249:	6	5	4	3	3	5	8	3
1257:	3	2	0	1	0	1	4	4
1265:	3	5	5	8	6	6	2	2
1273:	1	4	4	3	2	3	5	7
1281:	6	1	2	2	3	6	4	4
1289:	3	0	5	5	2	4	3	1
1297:	5	2	1	3	4	7	6	4
1305:	2	4	2	2	3	3	5	1
1313:	1	3	4	2	4	2	4	3
1321:	6	0	1	1	2	4	0	2
1329:	2	5	1	1	2	1	2	2
1337:	4	2	2	1	2	2	0	3
1345:	1	0	1	2	1	0	2	1
1353:	2	2	1	4	3	6	4	1
1361:	2	3	2	1	1	0	2	0
1369:	5	2	4	3	1	1	3	2
1377:	4	3	4	5	3	2	2	3
1385:	2	1	6	4	1	4	3	1
1393:	4	1	0	4	4	1	3	3
1401:	5	1	3	4	1	4	4	4
1409:	1	2	0	1	1	5	2	2
1417:	2	0	1	2	3	2	0	5
1425:	2	2	0	2	1	2	0	4
1433:	2	3	2	3	0	0	2	2
1441:	2	1	5	2	3	2	3	2
1449:	1	0	1	3	2	0	0	2
1457:	3	6	30	63	89	59	29	5
1465:	1	3	0	3	0	1	0	0
1473:	2	2	1	1	0	0	2	2
1481:	1	0	3	0	1	1	1	3
1489:	0	1	1	1	0	2	1	2
1497:	1	0	3	3	2	1	0	0
1505:	2	1	6	3	2	4	2	1
1513:	3	3	1	1	3	2	1	2
1521:	0	1	3	2	2	0	1	1
1529:	0	0	0	0	2	1	0	2
1537:	1	0	1	0	1	2	0	1
1545:	0	2	0	1	1	1	1	1
1553:	2	4	3	0	4	1	0	1
1561:	3	2	0	1	1	2	3	2
1569:	1	0	0	0	0	3	2	0
1577:	0	0	2	0	0	2	1	4
1585:	5	2	3	3	4	2	6	0
1593:	1	3	0	1	0	2	2	1
1601:	1	3	2	1	3	0	0	0
1609:	1	0	1	3	1	1	2	3
1617:	1	1	2	1	0	5	1	1
1625:	1	0	1	1	2	0	1	1
1633:	0	0	0	1	1	1	0	0
1641:	3	0	3	0	0	0	1	1
1649:	1	2	1	3	3	2	2	2
1657:	1	3	0	3	2	1	0	3

1665: 0 1 1 0 0 0 0 1

Sample Title: CP0604S09-10

Channel	1	2	3	4	5	6	7	8
1673:	1	2	1	0	2	0	2	0
1681:	0	0	0	0	2	0	1	1
1689:	0	1	1	1	1	2	0	1
1697:	1	0	0	0	0	1	2	1
1705:	0	2	0	1	0	1	0	0
1713:	1	1	2	0	0	1	1	1
1721:	1	1	1	1	2	0	0	1
1729:	0	1	1	3	2	1	0	0
1737:	3	2	0	1	1	1	1	1
1745:	1	1	0	2	1	1	1	0
1753:	1	0	1	2	0	0	0	2
1761:	1	2	2	8	12	5	2	1
1769:	0	1	1	0	1	1	1	0
1777:	1	0	1	1	2	1	1	0
1785:	1	3	1	2	0	1	1	1
1793:	0	2	0	1	2	1	0	0
1801:	0	1	0	0	0	1	1	1
1809:	0	0	0	0	1	1	1	0
1817:	1	1	1	1	1	1	0	0
1825:	2	0	0	0	0	2	0	1
1833:	1	1	1	1	0	0	1	0
1841:	0	1	1	1	0	2	1	2
1849:	1	0	0	0	2	3	0	1
1857:	0	1	0	3	0	0	1	0
1865:	1	0	1	0	0	0	1	0
1873:	0	0	2	2	0	1	0	0
1881:	0	0	0	1	0	1	0	1
1889:	1	0	1	0	2	0	2	1
1897:	1	0	0	0	2	2	1	1
1905:	0	1	2	2	0	3	0	2
1913:	2	0	2	0	1	1	1	0
1921:	3	1	0	0	0	0	1	2
1929:	0	0	2	0	0	4	2	1
1937:	3	1	2	1	0	0	0	0
1945:	0	1	0	0	1	0	1	0
1953:	0	0	1	1	0	2	0	1
1961:	1	2	0	1	0	0	1	1
1969:	2	0	1	1	0	0	1	0
1977:	2	0	0	1	1	0	1	0
1985:	1	0	1	0	0	3	1	1
1993:	1	1	1	0	1	1	0	1
2001:	0	1	0	2	1	0	1	0
2009:	0	2	0	0	0	1	0	0
2017:	0	1	0	0	1	2	1	2
2025:	2	2	0	1	1	1	1	0
2033:	0	1	0	0	0	1	0	0
2041:	0	0	0	0	0	2	2	0
2049:	0	2	0	0	1	2	0	0
2057:	2	0	0	1	0	0	1	0
2065:	1	1	0	0	0	0	0	1
2073:	0	2	0	0	1	0	0	0
2081:	0	0	0	2	1	0	0	0
2089:	1	1	1	0	0	0	0	2

2097: 0 1 1 0 2 3 2 2

Sample Title: CP0604S09-10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2105:	2	0	0	1	0	1	1	0
2113:	0	1	1	1	2	4	0	1
2121:	1	0	1	1	3	1	0	0
2129:	1	0	0	1	0	0	1	1
2137:	0	0	1	0	2	1	1	1
2145:	0	0	3	0	2	1	2	1
2153:	1	1	1	0	1	0	0	2
2161:	2	2	0	0	0	1	0	1
2169:	0	0	0	2	1	2	0	0
2177:	1	0	2	1	0	0	1	1
2185:	0	0	0	0	1	0	1	0
2193:	1	1	0	1	0	1	1	1
2201:	1	2	1	2	0	0	1	0
2209:	1	1	0	0	2	0	0	0
2217:	1	1	0	1	0	1	2	0
2225:	0	1	1	0	1	0	0	1
2233:	0	0	1	0	3	2	1	0
2241:	0	2	1	0	0	0	1	1
2249:	0	0	0	0	0	1	0	1
2257:	0	0	0	0	0	0	1	1
2265:	1	1	0	1	0	1	1	1
2273:	1	2	0	0	2	2	0	2
2281:	0	1	1	0	0	2	1	0
2289:	1	2	1	1	0	0	0	0
2297:	0	1	0	0	1	0	1	1
2305:	0	0	1	1	1	0	0	1
2313:	0	0	1	1	0	0	0	1
2321:	0	0	1	0	1	0	2	1
2329:	1	0	1	1	1	0	0	2
2337:	0	0	1	3	1	2	0	1
2345:	0	0	1	0	1	2	1	2
2353:	1	0	3	1	2	1	1	1
2361:	1	3	0	1	1	0	0	1
2369:	1	0	0	3	0	1	2	0
2377:	0	0	0	1	2	1	0	1
2385:	1	0	1	0	0	0	0	0
2393:	0	1	1	1	0	0	0	0
2401:	2	0	1	1	1	0	0	0
2409:	0	0	1	1	1	1	1	0
2417:	0	0	0	0	0	1	0	0
2425:	2	0	0	0	0	0	0	1
2433:	1	1	1	2	0	0	0	0
2441:	2	0	1	1	0	0	1	0
2449:	0	0	0	0	0	0	0	0
2457:	0	0	2	1	0	0	0	0
2465:	2	1	0	0	0	1	0	0
2473:	0	0	2	1	0	0	0	2
2481:	1	1	0	1	0	0	1	1
2489:	0	0	0	1	0	0	0	1
2497:	0	0	1	0	0	0	1	1
2505:	1	1	0	0	0	0	0	0
2513:	0	0	0	1	1	0	0	0
2521:	1	0	0	0	0	0	0	0

2529: 1 0 0 1 0 0 1 0

Sample Title: CP0604S09-10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	0	1	0	2	0	0
2545:	0	1	0	0	0	0	0	1
2553:	0	1	2	1	0	0	0	0
2561:	0	1	0	0	0	0	1	0
2569:	0	0	0	0	0	0	0	0
2577:	0	0	0	1	1	1	0	0
2585:	1	1	0	0	0	0	0	1
2593:	0	0	0	0	0	1	0	0
2601:	1	0	1	0	0	1	0	0
2609:	0	2	2	0	0	6	8	13
2617:	8	2	1	0	0	0	0	0
2625:	0	1	0	0	0	0	0	1
2633:	2	0	0	0	0	0	0	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	1	0	1
2665:	0	0	0	0	0	1	0	0
2673:	0	0	0	0	0	1	0	0
2681:	0	0	0	0	0	0	0	1
2689:	0	0	0	0	0	0	0	0
2697:	0	0	0	0	0	0	0	0
2705:	0	1	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	0	0	0	0	0
2737:	0	0	0	0	0	0	0	0
2745:	0	0	0	0	1	0	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	0	0
2777:	1	1	0	0	0	1	1	1
2785:	0	0	0	0	0	0	0	0
2793:	1	0	0	1	0	1	0	0
2801:	0	0	0	0	0	1	0	0
2809:	0	0	0	0	0	0	0	0
2817:	0	2	0	0	0	1	0	0
2825:	0	0	0	0	0	0	0	0
2833:	0	1	1	0	0	0	0	1
2841:	0	0	0	0	0	0	1	0
2849:	0	0	1	0	0	0	0	0
2857:	0	1	0	0	0	0	0	1
2865:	0	0	0	0	0	0	1	0
2873:	0	0	0	0	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	1	0	0	0	0
2905:	0	0	1	0	0	0	1	1
2913:	0	0	0	1	0	0	0	0
2921:	0	0	2	1	0	0	0	0
2929:	1	0	0	0	0	1	0	0
2937:	0	0	0	1	0	0	0	1
2945:	0	0	0	0	1	0	0	0
2953:	1	0	1	0	0	0	0	0

2961: 0 1 0 0 0 0 0 0 0

Sample Title: CP0604S09-10

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

3393: 0 0 0 0 0 0 0 0 1

Sample Title: CP0604S09-10

3401:	0	0	0	0	0	0	0	0
3409:	1	0	0	0	0	0	0	0
3417:	0	0	0	0	0	2	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	1	2	0
3441:	0	0	0	1	0	0	1	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:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	1
3489:	0	0	0	0	1	0	0	0
3497:	0	0	0	0	0	1	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	1	0	1
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	1	0	0
3537:	0	0	0	0	1	0	0	0
3545:	0	0	0	0	0	0	0	0
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	0
3577:	0	0	0	1	0	0	0	0
3585:	0	0	1	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	1	0	0	0	0	0
3625:	0	1	0	0	0	0	0	0
3633:	0	0	0	0	0	0	1	0
3641:	0	0	0	0	0	0	0	0
3649:	1	0	0	0	0	0	0	1
3657:	0	0	0	0	0	0	1	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	1	0	0	0	0
3705:	0	0	0	1	0	0	0	1
3713:	0	0	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	1	0
3745:	0	0	0	0	0	0	1	1
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	1	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	1	0	0
3809:	0	0	0	0	0	1	1	0
3817:	0	0	0	1	1	0	0	0

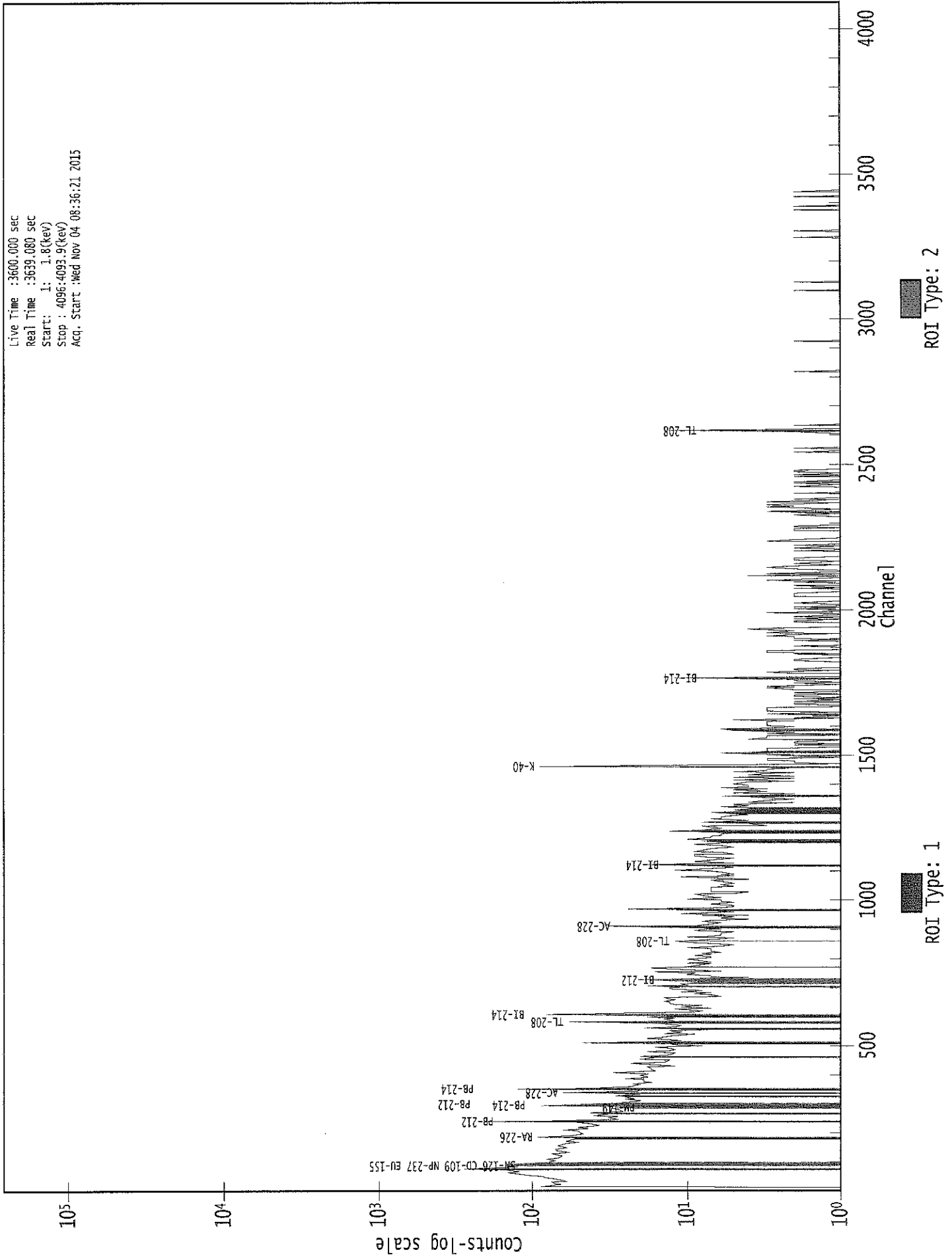
3825: 0 1 0 0 0 0 0 0

Sample Title: CP0604S09-10

Channel	1	2	3	4	5	6	7	8
3833:	0	0	0	0	0	0	0	0
3841:	0	1	0	1	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	1
3873:	0	0	0	1	0	0	0	0
3881:	0	0	1	0	1	0	0	0
3889:	0	0	0	0	0	1	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	1	0
3913:	0	0	0	1	0	0	0	0
3921:	0	0	0	0	1	0	0	1
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	0	0	0	0	0	0	0
3961:	0	0	0	0	1	0	1	1
3969:	0	0	0	0	0	1	0	0
3977:	0	0	0	0	1	0	1	0
3985:	1	0	0	1	1	0	0	0
3993:	0	0	0	0	0	0	0	1
4001:	0	1	0	0	0	0	0	0
4009:	0	1	0	1	0	1	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	1	0	0	0	1	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	1	1
4049:	0	0	0	0	0	0	1	0
4057:	0	1	0	0	0	0	1	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	1	0
4089:	0	0	0	0	0	0	0	0

0000029097.CNF

Live Time : 3600.000 sec
Real Time : 3639.080 sec
Start: 1: 1.8(kev)
Stop : 4096.4093.9(kev)
Acq. Start : Wed Nov 04 08:36:21 2015



Analysis Report for 1510084-06
CP0604S11-12

11/4

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-06
Sample Description : CP0604S11-12
Sample Type : SOIL

Sample Size : 5.601E+02 grams
Facility : Countroom

Sample Taken On : 10/9/2015 9:46:50AM
Acquisition Started : 11/4/2015 9:38:05AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
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) : 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 : 29100

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-06
CP0604S11-12

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 10:38:10AM
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	76.28	76.62	0.0000	0.00
2	106.56	106.89	0.0000	0.00
3	143.82	144.14	0.0000	0.00
4	186.19	186.49	0.0000	0.00
5	209.71	210.01	0.0000	0.00
6	215.87	216.17	0.0000	0.00
7	238.75	239.04	0.0000	0.00
8	241.87	242.15	0.0000	0.00
9	270.77	271.05	0.0000	0.00
10	295.44	295.71	0.0000	0.00
11	300.87	301.14	0.0000	0.00
12	328.14	328.40	0.0000	0.00
13	338.61	338.86	0.0000	0.00
14	352.10	352.35	0.0000	0.00
15	421.20	421.42	0.0000	0.00
16	462.64	462.85	0.0000	0.00
17	511.01	511.21	0.0000	0.00
18	583.61	583.78	0.0000	0.00
19	609.54	609.70	0.0000	0.00
20	726.76	726.88	0.0000	0.00
21	767.07	767.17	0.0000	0.00
22	795.28	795.37	0.0000	0.00
23	808.07	808.16	0.0000	0.00
24	860.56	860.63	0.0000	0.00
25	911.52	911.57	0.0000	0.00
26	934.78	934.83	0.0000	0.00
27	965.38	965.42	0.0000	0.00
28	969.35	969.38	0.0000	0.00
29	1008.67	1008.69	0.0000	0.00
30	1095.30	1095.29	0.0000	0.00
31	1120.49	1120.47	0.0000	0.00
32	1238.00	1237.94	0.0000	0.00
33	1346.00	1345.90	0.0000	0.00
34	1364.16	1364.05	0.0000	0.00
35	1377.74	1377.63	0.0000	0.00
36	1401.83	1401.71	0.0000	0.00
37	1408.50	1408.38	0.0000	0.00
38	1461.41	1461.26	0.0000	0.00
39	1472.69	1472.54	0.0000	0.00
40	1576.19	1576.00	0.0000	0.00
41	1581.45	1581.26	0.0000	0.00
42	1631.36	1631.16	0.0000	0.00

Analysis Report for 1510084-06
CP0604S11-12

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1686.39	1686.16	0.0000	0.00
44	1692.59	1692.37	0.0000	0.00
45	1696.71	1696.48	0.0000	0.00
46	1715.35	1715.12	0.0000	0.00
47	1730.08	1729.83	0.0000	0.00
48	1764.97	1764.72	0.0000	0.00
49	1918.63	1918.31	0.0000	0.00
50	2104.57	2104.18	0.0000	0.00
51	2204.66	2204.24	0.0000	0.00
52	2255.70	2255.26	0.0000	0.00
53	2283.90	2283.44	0.0000	0.00
54	2333.87	2333.40	0.0000	0.00
55	2339.44	2338.96	0.0000	0.00
56	2449.46	2448.94	0.0000	0.00
57	2615.41	2614.82	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510084-06

CP0604S11-12

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 10:38:10AM

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	76.28	72 -	83	76.62	1.37E+03	183.67	3.47E+03	3.65
2	106.56	104 -	110	106.89	1.05E+02	80.94	1.11E+03	3.82
3	143.82	141 -	147	144.14	9.49E+01	78.43	1.05E+03	3.19
4	186.19	183 -	189	186.49	2.54E+02	76.91	8.89E+02	1.97
5	209.71	207 -	213	210.01	1.28E+02	67.99	7.31E+02	1.64
6	215.87	214 -	219	216.17	5.27E+01	56.44	6.01E+02	2.11
M 7	238.75	233 -	248	239.04	1.01E+03	78.88	4.05E+02	1.68
m 8	241.87	233 -	248	242.15	2.66E+02	63.55	3.82E+02	1.68
9	270.77	268 -	274	271.05	6.51E+01	56.30	5.30E+02	2.10
M 10	295.44	292 -	304	295.71	3.89E+02	55.99	3.74E+02	1.56
m 11	300.87	292 -	304	301.14	5.84E+01	48.40	4.23E+02	1.91
12	328.14	325 -	332	328.40	7.01E+01	55.03	4.62E+02	2.13
13	338.61	335 -	343	338.86	2.18E+02	60.62	4.70E+02	1.40
14	352.10	348 -	356	352.35	6.65E+02	74.35	4.42E+02	1.78
15	421.20	418 -	426	421.42	5.98E+01	46.95	3.04E+02	4.34
16	462.64	459 -	465	462.85	5.75E+01	40.68	2.59E+02	1.88
17	511.01	508 -	516	511.21	2.10E+02	48.21	2.37E+02	1.86
18	583.61	579 -	588	583.78	3.35E+02	55.81	2.51E+02	1.79
19	609.54	605 -	614	609.70	4.67E+02	61.54	2.71E+02	1.91
20	726.76	721 -	730	726.88	9.01E+01	41.11	1.90E+02	2.29
21	767.07	762 -	772	767.17	5.10E+01	43.06	2.20E+02	1.88
22	795.28	791 -	798	795.37	4.19E+01	29.80	1.20E+02	2.19
23	808.07	802 -	815	808.16	5.92E+01	41.67	1.62E+02	10.38
24	860.56	856 -	865	860.63	5.74E+01	32.74	1.21E+02	2.10
25	911.52	908 -	916	911.57	2.49E+02	41.60	1.15E+02	2.09
26	934.78	929 -	939	934.83	4.51E+01	32.95	1.20E+02	4.71
M 27	965.38	962 -	973	965.42	6.78E+01	29.38	9.96E+01	2.40
m 28	969.35	962 -	973	969.38	1.38E+02	32.08	8.78E+01	1.96
29	1008.67	1006 -	1011	1008.69	1.66E+01	18.38	5.47E+01	2.51
30	1095.30	1092 -	1099	1095.29	2.88E+01	21.17	5.44E+01	2.64
31	1120.49	1112 -	1125	1120.47	1.07E+02	50.13	2.34E+02	2.10
32	1238.00	1232 -	1245	1237.94	4.24E+01	44.73	2.05E+02	2.78
33	1346.00	1335 -	1357	1345.90	4.58E+01	37.76	9.23E+01	17.33
34	1364.16	1362 -	1366	1364.05	1.05E+01	11.58	2.10E+01	2.73
35	1377.74	1372 -	1383	1377.63	2.80E+01	28.00	8.40E+01	1.92
36	1401.83	1397 -	1406	1401.71	1.52E+01	19.42	4.57E+01	1.41
37	1408.50	1406 -	1412	1408.38	2.92E+01	13.29	1.15E+01	1.98
M 38	1461.41	1456 -	1476	1461.26	9.09E+02	61.55	4.12E+01	2.17
m 39	1472.69	1456 -	1476	1472.54	9.90E+00	18.85	2.77E+01	3.54
M 40	1576.19	1575 -	1596	1576.00	8.22E+00	5.17	3.17E+00	2.24

: 00517

Analysis Report for 1510084-06

CP0604S11-12

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
m	41	1581.45	1575 - 1596		1581.26	1.23E+01	12.68	1.14E+01	2.98
	42	1631.36	1628 - 1633		1631.16	1.50E+01	9.49	6.00E+00	2.06
	43	1686.39	1684 - 1689		1686.16	8.10E+00	7.62	3.80E+00	3.05
M	44	1692.59	1690 - 1702		1692.37	1.05E+01	7.21	1.29E+00	2.67
m	45	1696.71	1690 - 1702		1696.48	1.23E+01	12.81	1.14E+01	2.76
	46	1715.35	1712 - 1717		1715.12	7.00E+00	7.62	6.00E+00	1.83
	47	1730.08	1726 - 1734		1729.83	2.55E+01	12.67	9.00E+00	1.97
	48	1764.97	1759 - 1770		1764.72	9.09E+01	22.54	1.82E+01	2.19
	49	1918.63	1916 - 1920		1918.31	4.67E+00	5.50	2.67E+00	2.48
	50	2104.57	2101 - 2107		2104.18	1.64E+01	9.18	3.11E+00	2.70
	51	2204.66	2201 - 2208		2204.24	2.27E+01	12.81	1.27E+01	1.75
	52	2255.70	2252 - 2257		2255.26	4.42E+00	5.74	3.17E+00	1.88
	53	2283.90	2281 - 2286		2283.44	8.00E+00	7.87	6.00E+00	3.79
	54	2333.87	2329 - 2336		2333.40	7.00E+00	8.72	8.00E+00	1.45
	55	2339.44	2337 - 2341		2338.96	6.00E+00	7.66	8.00E+00	2.76
	56	2449.46	2445 - 2453		2448.94	7.50E+00	9.41	9.00E+00	1.01
	57	2615.41	2610 - 2619		2614.82	1.25E+02	22.36	0.00E+00	2.78

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 : 11/4/2015 10:38:10AM

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	76.28	72 -	83	1.37E+03	183.67	3.47E+03	1.70E+02
	2	106.56	104 -	110	1.05E+02	80.94	1.11E+03	6.44E+01
	3	143.82	141 -	147	9.49E+01	78.43	1.05E+03	6.24E+01
	4	186.19	183 -	189	2.54E+02	76.91	8.89E+02	5.75E+01
	5	209.71	207 -	213	1.28E+02	67.99	7.31E+02	5.27E+01
	6	215.87	214 -	219	5.27E+01	56.44	6.01E+02	4.48E+01
M	7	238.75	233 -	248	1.01E+03	78.88	4.05E+02	3.31E+01
m	8	241.87	233 -	248	2.66E+02	63.55	3.82E+02	3.21E+01
	9	270.77	268 -	274	6.51E+01	56.30	5.30E+02	4.43E+01
M	10	295.44	292 -	304	3.89E+02	55.99	3.74E+02	3.18E+01
m	11	300.87	292 -	304	5.84E+01	48.40	4.23E+02	3.38E+01

Analysis Report for 1510084-06

CP0604S11-12

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level	
12	328.14	325 -	332	7.01E+01	55.03	4.62E+02	4.31E+01	
13	338.61	335 -	343	2.18E+02	60.62	4.70E+02	5.01E+01	
14	352.10	348 -	356	6.65E+02	74.35	4.42E+02	4.40E+01	
15	421.20	418 -	426	5.98E+01	46.95	3.04E+02	3.64E+01	
16	462.64	459 -	465	5.75E+01	40.68	2.59E+02	3.10E+01	
17	511.01	508 -	516	2.10E+02	48.21	2.37E+02	3.17E+01	
18	583.61	579 -	588	3.35E+02	55.81	2.51E+02	3.47E+01	
19	609.54	605 -	614	4.67E+02	61.54	2.71E+02	3.60E+01	
20	726.76	721 -	730	9.01E+01	41.11	1.90E+02	3.00E+01	
21	767.07	762 -	772	5.10E+01	43.06	2.20E+02	3.34E+01	
22	795.28	791 -	798	4.19E+01	29.80	1.20E+02	2.21E+01	
23	808.07	802 -	815	5.92E+01	41.67	1.62E+02	3.18E+01	
24	860.56	856 -	865	5.74E+01	32.74	1.21E+02	2.39E+01	
25	911.52	908 -	916	2.49E+02	41.60	1.15E+02	2.23E+01	
26	934.78	929 -	939	4.51E+01	32.95	1.20E+02	2.47E+01	
M	27	965.38	962 -	973	6.78E+01	29.38	9.96E+01	1.64E+01
m	28	969.35	962 -	973	1.38E+02	32.08	8.78E+01	1.54E+01
	29	1008.67	1006 -	1011	1.66E+01	18.38	5.47E+01	1.35E+01
	30	1095.30	1092 -	1099	2.88E+01	21.17	5.44E+01	1.50E+01
	31	1120.49	1112 -	1125	1.07E+02	50.13	2.34E+02	1.86E+01
	32	1238.00	1232 -	1245	4.24E+01	44.73	2.05E+02	3.52E+01
	33	1346.00	1335 -	1357	4.58E+01	37.76	9.23E+01	2.90E+01
	34	1364.16	1362 -	1366	1.05E+01	11.58	2.10E+01	7.88E+00
	35	1377.74	1372 -	1383	2.80E+01	28.00	8.40E+01	2.13E+01
	36	1401.83	1397 -	1406	1.52E+01	19.42	4.57E+01	1.46E+01
	37	1408.50	1406 -	1412	2.92E+01	13.29	1.15E+01	6.36E+00
M	38	1461.41	1456 -	1476	9.09E+02	61.55	4.12E+01	1.06E+01
m	39	1472.69	1456 -	1476	9.90E+00	18.85	2.77E+01	8.65E+00
M	40	1576.19	1575 -	1596	8.22E+00	5.17	3.17E+00	2.93E+00
m	41	1581.45	1575 -	1596	1.23E+01	12.68	1.14E+01	5.54E+00
	42	1631.36	1628 -	1633	1.50E+01	9.49	6.00E+00	4.50E+00
	43	1686.39	1684 -	1689	8.10E+00	7.62	3.80E+00	4.16E+00
M	44	1692.59	1690 -	1702	1.05E+01	7.21	1.29E+00	1.86E+00
m	45	1696.71	1690 -	1702	1.23E+01	12.81	1.14E+01	5.55E+00
	46	1715.35	1712 -	1717	7.00E+00	7.62	6.00E+00	4.50E+00
	47	1730.08	1726 -	1734	2.55E+01	12.67	9.00E+00	6.29E+00
	48	1764.97	1759 -	1770	9.09E+01	22.54	1.82E+01	9.88E+00
	49	1918.63	1916 -	1920	4.67E+00	5.50	2.67E+00	2.80E+00
	50	2104.57	2101 -	2107	1.64E+01	9.18	3.11E+00	3.53E+00
	51	2204.66	2201 -	2208	2.27E+01	12.81	1.27E+01	7.04E+00
	52	2255.70	2252 -	2257	4.42E+00	5.74	3.17E+00	3.22E+00
	53	2283.90	2281 -	2286	8.00E+00	7.87	6.00E+00	4.50E+00
	54	2333.87	2329 -	2336	7.00E+00	8.72	8.00E+00	5.70E+00
	55	2339.44	2337 -	2341	6.00E+00	7.66	8.00E+00	4.85E+00
	56	2449.46	2445 -	2453	7.50E+00	9.41	9.00E+00	6.29E+00
	57	2615.41	2610 -	2619	1.25E+02	22.36	0.00E+00	0.00E+00

Analysis Report for 1510084-06

CP0604S11-12

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 : 11/4/2015 10:38:10AM

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	76.28	72 -	83	76.62	1.37E+03	183.67	3.47E+03	.....
2	106.56	104 -	110	106.89	1.05E+02	80.94	1.11E+03	NP-239
3	143.82	141 -	147	144.14	9.49E+01	78.43	1.05E+03	U-235
4	186.19	183 -	189	186.49	2.54E+02	76.91	8.89E+02	RA-226
5	209.71	207 -	213	210.01	1.28E+02	67.99	7.31E+02	CM-243 GA-67
6	215.87	214 -	219	216.17	5.27E+01	56.44	6.01E+02	.....
M 7	238.75	233 -	248	239.04	1.01E+03	78.88	4.05E+02	PB-212
m 8	241.87	233 -	248	242.15	2.66E+02	63.55	3.82E+02	RA-224
9	270.77	268 -	274	271.05	6.51E+01	56.30	5.30E+02	.....
M 10	295.44	292 -	304	295.71	3.89E+02	55.99	3.74E+02	PB-214
m 11	300.87	292 -	304	301.14	5.84E+01	48.40	4.23E+02	GA-67 PB-212 BI-210M
12	328.14	325 -	332	328.40	7.01E+01	55.03	4.62E+02	LA-140
13	338.61	335 -	343	338.86	2.18E+02	60.62	4.70E+02	AC-228
14	352.10	348 -	356	352.35	6.65E+02	74.35	4.42E+02	PB-214
15	421.20	418 -	426	421.42	5.98E+01	46.95	3.04E+02	.....
16	462.64	459 -	465	462.85	5.75E+01	40.68	2.59E+02	SB-125
17	511.01	508 -	516	511.21	2.10E+02	48.21	2.37E+02	.....
18	583.61	579 -	588	583.78	3.35E+02	55.81	2.51E+02	TL-208
19	609.54	605 -	614	609.70	4.67E+02	61.54	2.71E+02	BI-214
20	726.76	721 -	730	726.88	9.01E+01	41.11	1.90E+02	BI-212
21	767.07	762 -	772	767.17	5.10E+01	43.06	2.20E+02	.....
22	795.28	791 -	798	795.37	4.19E+01	29.80	1.20E+02	CS-134
23	808.07	802 -	815	808.16	5.92E+01	41.67	1.62E+02	.....
24	860.56	856 -	865	860.63	5.74E+01	32.74	1.21E+02	TL-208
25	911.52	908 -	916	911.57	2.49E+02	41.60	1.15E+02	AC-228 LU-172
26	934.78	929 -	939	934.83	4.51E+01	32.95	1.20E+02	.....

Analysis Report for 1510084-06

CP0604S11-12

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	27	965.38	962 -	973	965.42	6.78E+01	29.38	9.96E+01	.....
m	28	969.35	962 -	973	969.38	1.38E+02	32.08	8.78E+01	AC-228
	29	1008.67	1006 -	1011	1008.69	1.66E+01	18.38	5.47E+01	.....
	30	1095.30	1092 -	1099	1095.29	2.88E+01	21.17	5.44E+01	.....
	31	1120.49	1112 -	1125	1120.47	1.07E+02	50.13	2.34E+02	SC-46 BI-214 TA-182
	32	1238.00	1232 -	1245	1237.94	4.24E+01	44.73	2.05E+02	CO-56
	33	1346.00	1335 -	1357	1345.90	4.58E+01	37.76	9.23E+01	.....
	34	1364.16	1362 -	1366	1364.05	1.05E+01	11.58	2.10E+01	.....
	35	1377.74	1372 -	1383	1377.63	2.80E+01	28.00	8.40E+01	.....
	36	1401.83	1397 -	1406	1401.71	1.52E+01	19.42	4.57E+01	.....
	37	1408.50	1406 -	1412	1408.38	2.92E+01	13.29	1.15E+01	EU-152
M	38	1461.41	1456 -	1476	1461.26	9.09E+02	61.55	4.12E+01	K-40
m	39	1472.69	1456 -	1476	1472.54	9.90E+00	18.85	2.77E+01	.....
M	40	1576.19	1575 -	1596	1576.00	8.22E+00	5.17	3.17E+00	.....
m	41	1581.45	1575 -	1596	1581.26	1.23E+01	12.68	1.14E+01	.....
	42	1631.36	1628 -	1633	1631.16	1.50E+01	9.49	6.00E+00	.....
	43	1686.39	1684 -	1689	1686.16	8.10E+00	7.62	3.80E+00	.....
M	44	1692.59	1690 -	1702	1692.37	1.05E+01	7.21	1.29E+00	.....
m	45	1696.71	1690 -	1702	1696.48	1.23E+01	12.81	1.14E+01	.....
	46	1715.35	1712 -	1717	1715.12	7.00E+00	7.62	6.00E+00	.....
	47	1730.08	1726 -	1734	1729.83	2.55E+01	12.67	9.00E+00	.....
	48	1764.97	1759 -	1770	1764.72	9.09E+01	22.54	1.82E+01	BI-214
	49	1918.63	1916 -	1920	1918.31	4.67E+00	5.50	2.67E+00	.....
	50	2104.57	2101 -	2107	2104.18	1.64E+01	9.18	3.11E+00	.....
	51	2204.66	2201 -	2208	2204.24	2.27E+01	12.81	1.27E+01	BI-214
	52	2255.70	2252 -	2257	2255.26	4.42E+00	5.74	3.17E+00	.....
	53	2283.90	2281 -	2286	2283.44	8.00E+00	7.87	6.00E+00	.....
	54	2333.87	2329 -	2336	2333.40	7.00E+00	8.72	8.00E+00	.....
	55	2339.44	2337 -	2341	2338.96	6.00E+00	7.66	8.00E+00	.....
	56	2449.46	2445 -	2453	2448.94	7.50E+00	9.41	9.00E+00	.....
	57	2615.41	2610 -	2619	2614.82	1.25E+02	22.36	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 : 11/4/2015 10:38:10AM

: 00521

Analysis Report for 1510084-06

CP0604S11-12

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.28	1.37E+03	183.67	2.77E-02	2.35E-03
	2	106.56	1.05E+02	80.94	2.82E-02	2.37E-03
	3	143.82	9.49E+01	78.43	2.56E-02	2.12E-03
	4	186.19	2.54E+02	76.91	2.24E-02	2.03E-03
	5	209.71	1.28E+02	67.99	2.08E-02	1.85E-03
	6	215.87	5.27E+01	56.44	2.05E-02	1.81E-03
M	7	238.75	1.01E+03	78.88	1.92E-02	1.64E-03
m	8	241.87	2.66E+02	63.55	1.91E-02	1.61E-03
	9	270.77	6.51E+01	56.30	1.77E-02	1.40E-03
M	10	295.44	3.89E+02	55.99	1.67E-02	1.31E-03
m	11	300.87	5.84E+01	48.40	1.65E-02	1.30E-03
	12	328.14	7.01E+01	55.03	1.55E-02	1.24E-03
	13	338.61	2.18E+02	60.62	1.52E-02	1.22E-03
	14	352.10	6.65E+02	74.35	1.48E-02	1.19E-03
	15	421.20	5.98E+01	46.95	1.30E-02	1.08E-03
	16	462.64	5.75E+01	40.68	1.21E-02	1.04E-03
	17	511.01	2.10E+02	48.21	1.12E-02	9.90E-04
	18	583.61	3.35E+02	55.81	1.02E-02	9.15E-04
	19	609.54	4.67E+02	61.54	9.82E-03	8.88E-04
	20	726.76	9.01E+01	41.11	8.56E-03	7.76E-04
	21	767.07	5.10E+01	43.06	8.20E-03	7.40E-04
	22	795.28	4.19E+01	29.80	7.97E-03	7.14E-04
	23	808.07	5.92E+01	41.67	7.87E-03	7.03E-04
	24	860.56	5.74E+01	32.74	7.48E-03	6.56E-04
	25	911.52	2.49E+02	41.60	7.15E-03	6.15E-04
	26	934.78	4.51E+01	32.95	7.00E-03	6.03E-04
M	27	965.38	6.78E+01	29.38	6.83E-03	5.87E-04
m	28	969.35	1.38E+02	32.08	6.80E-03	5.85E-04
	29	1008.67	1.66E+01	18.38	6.59E-03	5.65E-04
	30	1095.30	2.88E+01	21.17	6.17E-03	5.20E-04
	31	1120.49	1.07E+02	50.13	6.07E-03	5.07E-04
	32	1238.00	4.24E+01	44.73	5.61E-03	4.68E-04
	33	1346.00	4.58E+01	37.76	5.27E-03	4.48E-04
	34	1364.16	1.05E+01	11.58	5.22E-03	4.43E-04
	35	1377.74	2.80E+01	28.00	5.18E-03	4.40E-04
	36	1401.83	1.52E+01	19.42	5.12E-03	4.34E-04
	37	1408.50	2.92E+01	13.29	5.10E-03	4.32E-04
M	38	1461.41	9.09E+02	61.55	4.97E-03	4.19E-04
m	39	1472.69	9.90E+00	18.85	4.94E-03	4.16E-04
M	40	1576.19	8.22E+00	5.17	4.72E-03	3.91E-04
m	41	1581.45	1.23E+01	12.68	4.71E-03	3.89E-04
	42	1631.36	1.50E+01	9.49	4.61E-03	3.77E-04
	43	1686.39	8.10E+00	7.62	4.52E-03	3.63E-04
M	44	1692.59	1.05E+01	7.21	4.51E-03	3.62E-04
m	45	1696.71	1.23E+01	12.81	4.50E-03	3.61E-04
	46	1715.35	7.00E+00	7.62	4.47E-03	3.56E-04
	47	1730.08	2.55E+01	12.67	4.45E-03	3.52E-04
	48	1764.97	9.09E+01	22.54	4.40E-03	3.44E-04
	49	1918.63	4.67E+00	5.50	4.20E-03	3.26E-04
	50	2104.57	1.64E+01	9.18	4.02E-03	3.26E-04
	51	2204.66	2.27E+01	12.81	3.95E-03	3.26E-04
	52	2255.70	4.42E+00	5.74	3.92E-03	3.26E-04
	53	2283.90	8.00E+00	7.87	3.90E-03	3.26E-04

Analysis Report for 1510084-06
 CP0604S11-12

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	2333.87	7.00E+00	8.72	3.88E-03	3.26E-04
55	2339.44	6.00E+00	7.66	3.87E-03	3.26E-04
56	2449.46	7.50E+00	9.41	3.83E-03	3.26E-04
57	2615.41	1.25E+02	22.36	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 : 11/4/2015 10:38:10AM

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	76.28	1.37E+03	183.67	9.75E+00	8.28E+00	1.36E+03	1.84E+02
2	106.56	1.05E+02	80.94			1.05E+02	8.09E+01
3	143.82	9.49E+01	78.43	7.18E+00	7.25E+00	8.77E+01	7.88E+01
4	186.19	2.54E+02	76.91	6.41E+01	7.38E+00	1.90E+02	7.73E+01
5	209.71	1.28E+02	67.99			1.28E+02	6.80E+01
6	215.87	5.27E+01	56.44			5.27E+01	5.64E+01
M 7	238.75	1.01E+03	78.88	2.34E+01	6.34E+00	9.88E+02	7.91E+01
m 8	241.87	2.66E+02	63.55			2.66E+02	6.35E+01
9	270.77	6.51E+01	56.30			6.51E+01	5.63E+01
M 10	295.44	3.89E+02	55.99	4.17E+00	5.50E+00	3.85E+02	5.63E+01
m 11	300.87	5.84E+01	48.40			5.84E+01	4.84E+01
12	328.14	7.01E+01	55.03			7.01E+01	5.50E+01
13	338.61	2.18E+02	60.62	2.22E-01	4.54E+00	2.18E+02	6.08E+01
14	352.10	6.65E+02	74.35	8.83E+00	4.91E+00	6.56E+02	7.45E+01
15	421.20	5.98E+01	46.95			5.98E+01	4.70E+01
16	462.64	5.75E+01	40.68			5.75E+01	4.07E+01
17	511.01	2.10E+02	48.21	8.12E+01	5.49E+00	1.28E+02	4.85E+01
18	583.61	3.35E+02	55.81	6.34E+00	3.74E+00	3.28E+02	5.59E+01
19	609.54	4.67E+02	61.54	5.20E+00	3.69E+00	4.62E+02	6.16E+01
20	726.76	9.01E+01	41.11			9.01E+01	4.11E+01
21	767.07	5.10E+01	43.06			5.10E+01	4.31E+01
22	795.28	4.19E+01	29.80			4.19E+01	2.98E+01
23	808.07	5.92E+01	41.67			5.92E+01	4.17E+01
24	860.56	5.74E+01	32.74			5.74E+01	3.27E+01
25	911.52	2.49E+02	41.60	3.28E+00	2.53E+00	2.45E+02	4.17E+01
26	934.78	4.51E+01	32.95			4.51E+01	3.29E+01

Analysis Report for 1510084-06

CP0604S11-12

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	27	965.38	6.78E+01	29.38			6.78E+01	2.94E+01
m	28	969.35	1.38E+02	32.08			1.38E+02	3.21E+01
	29	1008.67	1.66E+01	18.38			1.66E+01	1.84E+01
	30	1095.30	2.88E+01	21.17			2.88E+01	2.12E+01
	31	1120.49	1.07E+02	50.13	2.28E+00	2.55E+00	1.05E+02	5.02E+01
	32	1238.00	4.24E+01	44.73			4.24E+01	4.47E+01
	33	1346.00	4.58E+01	37.76			4.58E+01	3.78E+01
	34	1364.16	1.05E+01	11.58			1.05E+01	1.16E+01
	35	1377.74	2.80E+01	28.00			2.80E+01	2.80E+01
	36	1401.83	1.52E+01	19.42			1.52E+01	1.94E+01
	37	1408.50	2.92E+01	13.29			2.92E+01	1.33E+01
M	38	1461.41	9.09E+02	61.55	6.46E+00	2.33E+00	9.02E+02	6.16E+01
m	39	1472.69	9.90E+00	18.85			9.90E+00	1.88E+01
M	40	1576.19	8.22E+00	5.17			8.22E+00	5.17E+00
m	41	1581.45	1.23E+01	12.68			1.23E+01	1.27E+01
	42	1631.36	1.50E+01	9.49			1.50E+01	9.49E+00
	43	1686.39	8.10E+00	7.62			8.10E+00	7.62E+00
M	44	1692.59	1.05E+01	7.21			1.05E+01	7.21E+00
m	45	1696.71	1.23E+01	12.81			1.23E+01	1.28E+01
	46	1715.35	7.00E+00	7.62			7.00E+00	7.62E+00
	47	1730.08	2.55E+01	12.67			2.55E+01	1.27E+01
	48	1764.97	9.09E+01	22.54			9.09E+01	2.25E+01
	49	1918.63	4.67E+00	5.50			4.67E+00	5.50E+00
	50	2104.57	1.64E+01	9.18			1.64E+01	9.18E+00
	51	2204.66	2.27E+01	12.81			2.27E+01	1.28E+01
	52	2255.70	4.42E+00	5.74			4.42E+00	5.74E+00
	53	2283.90	8.00E+00	7.87			8.00E+00	7.87E+00
	54	2333.87	7.00E+00	8.72			7.00E+00	8.72E+00
	55	2339.44	6.00E+00	7.66			6.00E+00	7.66E+00
	56	2449.46	7.50E+00	9.41			7.50E+00	9.41E+00
	57	2615.41	1.25E+02	22.36	3.47E+00	1.48E+00	1.22E+02	2.24E+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 : 11/4/2015 10:38:10AM
 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

Analysis Report for 1510084-06

CP0604S11-12

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	76.28	1.37E+03	183.67	9.75E+00	8.28E+00	1.36E+03	1.84E+02
	2	106.56	1.05E+02	80.94			1.05E+02	8.09E+01
	3	143.82	9.49E+01	78.43	7.18E+00	7.25E+00	8.77E+01	7.88E+01
	4	186.19	2.54E+02	76.91	6.41E+01	7.38E+00	1.90E+02	7.73E+01
	5	209.71	1.28E+02	67.99			1.28E+02	6.80E+01
	6	215.87	5.27E+01	56.44			5.27E+01	5.64E+01
M	7	238.75	1.01E+03	78.88	2.34E+01	6.34E+00	9.88E+02	7.91E+01
m	8	241.87	2.66E+02	63.55			2.66E+02	6.35E+01
	9	270.77	6.51E+01	56.30			6.51E+01	5.63E+01
M	10	295.44	3.89E+02	55.99	4.17E+00	5.50E+00	3.85E+02	5.63E+01
m	11	300.87	5.84E+01	48.40			5.84E+01	4.84E+01
	12	328.14	7.01E+01	55.03			7.01E+01	5.50E+01
	13	338.61	2.18E+02	60.62	2.22E-01	4.54E+00	2.18E+02	6.08E+01
	14	352.10	6.65E+02	74.35	8.83E+00	4.91E+00	6.56E+02	7.45E+01
	15	421.20	5.98E+01	46.95			5.98E+01	4.70E+01
	16	462.64	5.75E+01	40.68			5.75E+01	4.07E+01
	17	511.01	2.10E+02	48.21	8.12E+01	5.49E+00	1.28E+02	4.85E+01
	18	583.61	3.35E+02	55.81	6.34E+00	3.74E+00	3.28E+02	5.59E+01
	19	609.54	4.67E+02	61.54	5.20E+00	3.69E+00	4.62E+02	6.16E+01
	20	726.76	9.01E+01	41.11			9.01E+01	4.11E+01
	21	767.07	5.10E+01	43.06			5.10E+01	4.31E+01
	22	795.28	4.19E+01	29.80			4.19E+01	2.98E+01
	23	808.07	5.92E+01	41.67			5.92E+01	4.17E+01
	24	860.56	5.74E+01	32.74			5.74E+01	3.27E+01
	25	911.52	2.49E+02	41.60	3.28E+00	2.53E+00	2.45E+02	4.17E+01
	26	934.78	4.51E+01	32.95			4.51E+01	3.29E+01
M	27	965.38	6.78E+01	29.38			6.78E+01	2.94E+01
m	28	969.35	1.38E+02	32.08			1.38E+02	3.21E+01
	29	1008.67	1.66E+01	18.38			1.66E+01	1.84E+01
	30	1095.30	2.88E+01	21.17			2.88E+01	2.12E+01
	31	1120.49	1.07E+02	50.13	2.28E+00	2.55E+00	1.05E+02	5.02E+01
	32	1238.00	4.24E+01	44.73			4.24E+01	4.47E+01
	33	1346.00	4.58E+01	37.76			4.58E+01	3.78E+01
	34	1364.16	1.05E+01	11.58			1.05E+01	1.16E+01
	35	1377.74	2.80E+01	28.00			2.80E+01	2.80E+01
	36	1401.83	1.52E+01	19.42			1.52E+01	1.94E+01
	37	1408.50	2.92E+01	13.29			2.92E+01	1.33E+01
M	38	1461.41	9.09E+02	61.55	6.46E+00	2.33E+00	9.02E+02	6.16E+01
m	39	1472.69	9.90E+00	18.85			9.90E+00	1.88E+01
M	40	1576.19	8.22E+00	5.17			8.22E+00	5.17E+00
m	41	1581.45	1.23E+01	12.68			1.23E+01	1.27E+01
	42	1631.36	1.50E+01	9.49			1.50E+01	9.49E+00
	43	1686.39	8.10E+00	7.62			8.10E+00	7.62E+00
M	44	1692.59	1.05E+01	7.21			1.05E+01	7.21E+00
m	45	1696.71	1.23E+01	12.81			1.23E+01	1.28E+01
	46	1715.35	7.00E+00	7.62			7.00E+00	7.62E+00
	47	1730.08	2.55E+01	12.67			2.55E+01	1.27E+01
	48	1764.97	9.09E+01	22.54			9.09E+01	2.25E+01
	49	1918.63	4.67E+00	5.50			4.67E+00	5.50E+00
	50	2104.57	1.64E+01	9.18			1.64E+01	9.18E+00
	51	2204.66	2.27E+01	12.81			2.27E+01	1.28E+01
	52	2255.70	4.42E+00	5.74			4.42E+00	5.74E+00
	53	2283.90	8.00E+00	7.87			8.00E+00	7.87E+00
	54	2333.87	7.00E+00	8.72			7.00E+00	8.72E+00

Analysis Report for 1510084-06

CP0604S11-12

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
55	2339.44	6.00E+00	7.66			6.00E+00	7.66E+00
56	2449.46	7.50E+00	9.41			7.50E+00	9.41E+00
57	2615.41	1.25E+02	22.36	3.47E+00	1.48E+00	1.22E+02	2.24E+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	0.944	1460.81 *	10.67	2.28E+01	2.52E+00
TL-208	0.940	583.14 *	30.22	1.43E+00	2.76E-01
		860.37 *	4.48	2.29E+00	1.32E+00
		2614.66 *	35.85	1.20E+00	2.44E-01
BI-212	0.744	727.17 *	11.80	1.20E+00	5.56E-01
		1620.62	2.75		
PB-212	0.991	238.63 *	44.60	1.55E+00	1.81E-01
		300.09 *	3.41	1.39E+00	1.16E+00
BI-214	0.985	609.31 *	46.30	1.36E+00	2.20E-01
		1120.29 *	15.10	1.54E+00	7.46E-01
		1764.49 *	15.80	1.75E+00	4.56E-01
		2204.22 *	4.98	1.54E+00	8.82E-01
PB-214	0.994	295.21 *	19.19	1.61E+00	2.67E-01
		351.92 *	37.19	1.60E+00	2.23E-01
RA-224	0.882	240.98 *	3.95	4.74E+00	1.20E+00
RA-226	1.000	186.21 *	3.28	3.46E+00	6.50E+00
AC-228	0.979	338.32 *	11.40	1.69E+00	4.90E-01
		911.07 *	27.70	1.66E+00	3.16E-01
		969.11 *	16.60	1.63E+00	4.06E-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 1510084-06
CP0604S11-12

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 10:38:10AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	76.28	3.78498E-01	6.75		
2	106.56	2.92385E-02	38.45	Tol.	NP-239
3	143.82	2.43546E-02	44.92	Tol.	U-235
5	209.71	3.56860E-02	26.46	Tol.	CM-243
6	215.87	1.46337E-02	53.56		
9	270.77	1.80783E-02	43.25		
12	328.14	1.94841E-02	39.23	Tol.	LA-140
15	421.20	1.66110E-02	39.26		
16	462.64	1.59722E-02	35.37	Tol.	SB-125
17	511.01	3.56730E-02	18.89		
21	767.07	1.41727E-02	42.20		
22	795.28	1.16449E-02	35.54	Sum	
23	808.07	1.64544E-02	35.17		
26	934.78	1.25278E-02	36.53	Sum	
M 27	965.38	1.88284E-02	21.67	Sum	
29	1008.67	4.62121E-03	55.25		
30	1095.30	7.99603E-03	36.76		
32	1238.00	1.17730E-02	52.77	Tol.	CO-56
33	1346.00	1.27355E-02	41.18		
34	1364.16	2.91667E-03	55.12		
35	1377.74	7.77778E-03	50.00		
36	1401.83	4.21053E-03	64.05		
37	1408.50	8.12302E-03	22.73	Tol.	EU-152
m 39	1472.69	2.74952E-03	95.21	Sum	
M 40	1576.19	2.28223E-03	31.48		
m 41	1581.45	3.40984E-03	51.64		
42	1631.36	4.16667E-03	31.62		
43	1686.39	2.25000E-03	47.01		
M 44	1692.59	2.90451E-03	34.48		
m 45	1696.71	3.41364E-03	52.10	Sum	
46	1715.35	1.94444E-03	54.40		
47	1730.08	7.08333E-03	24.84	Sum	
49	1918.63	1.29630E-03	58.93		
50	2104.57	4.56790E-03	27.91	S-Esc	
52	2255.70	1.22685E-03	65.03		
53	2283.90	2.22222E-03	49.21		
54	2333.87	1.94444E-03	62.27		
55	2339.44	1.66667E-03	63.87		
56	2449.46	2.08333E-03	62.72		

Analysis Report for 1510084-06

CP0604S11-12

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	0.94	1460.81 *	10.67	2.28E+01	2.52E+00
TL-208	0.94	583.14 *	30.22	1.43E+00	2.76E-01
		860.37 *	4.48	2.29E+00	1.32E+00
		2614.66 *	35.85	1.20E+00	2.44E-01
BI-212	0.74	727.17 *	11.80	1.20E+00	5.56E-01
		1620.62	2.75		
PB-212	0.99	238.63 *	44.60	1.55E+00	1.81E-01
		300.09 *	3.41	1.39E+00	1.16E+00
BI-214	0.98	609.31 *	46.30	1.36E+00	2.20E-01
		1120.29 *	15.10	1.54E+00	7.46E-01
		1764.49 *	15.80	1.75E+00	4.56E-01
		2204.22 *	4.98	1.54E+00	8.82E-01
PB-214	0.99	295.21 *	19.19	1.61E+00	2.67E-01
		351.92 *	37.19	1.60E+00	2.23E-01
RA-224	0.88	240.98 *	3.95	4.74E+00	1.20E+00
RA-226	1.00	186.21 *	3.28	3.46E+00	6.50E+00
AC-228	0.97	338.32 *	11.40	1.69E+00	4.90E-01
		911.07 *	27.70	1.66E+00	3.16E-01
		969.11 *	16.60	1.63E+00	4.06E-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 1510084-06
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INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.944	2.28E+01	2.52E+00	
TL-208	0.940	1.32E+00	1.81E-01	
BI-212	0.744	1.20E+00	5.56E-01	
PB-212	0.991	1.54E+00	1.79E-01	
BI-214	0.985	1.45E+00	1.87E-01	
PB-214	0.994	1.61E+00	1.71E-01	
RA-224	0.882	4.74E+00	1.20E+00	
RA-226	1.000	3.46E+00	6.50E+00	
AC-228	0.979	1.66E+00	2.22E-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 1510084-06
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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 10:38:10AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	76.28	3.78498E-01	6.75		
2	106.56	2.92385E-02	38.45	Tol.	NP-239
3	143.82	2.43546E-02	44.92	Tol.	U-235
5	209.71	3.56860E-02	26.46	Tol.	CM-243
6	215.87	1.46337E-02	53.56		
9	270.77	1.80783E-02	43.25		
12	328.14	1.94841E-02	39.23	Tol.	LA-140
15	421.20	1.66110E-02	39.26		
16	462.64	1.59722E-02	35.37	Tol.	SB-125
17	511.01	3.56730E-02	18.89		
21	767.07	1.41727E-02	42.20		
22	795.28	1.16449E-02	35.54	Sum	
23	808.07	1.64544E-02	35.17		
26	934.78	1.25278E-02	36.53	Sum	
M 27	965.38	1.88284E-02	21.67	Sum	
29	1008.67	4.62121E-03	55.25		
30	1095.30	7.99603E-03	36.76		
32	1238.00	1.17730E-02	52.77	Tol.	CO-56
33	1346.00	1.27355E-02	41.18		
34	1364.16	2.91667E-03	55.12		
35	1377.74	7.77778E-03	50.00		
36	1401.83	4.21053E-03	64.05		
37	1408.50	8.12302E-03	22.73	Tol.	EU-152
m 39	1472.69	2.74952E-03	95.21	Sum	
M 40	1576.19	2.28223E-03	31.48		
m 41	1581.45	3.40984E-03	51.64		
42	1631.36	4.16667E-03	31.62		
43	1686.39	2.25000E-03	47.01		
M 44	1692.59	2.90451E-03	34.48		
m 45	1696.71	3.41364E-03	52.10	Sum	
46	1715.35	1.94444E-03	54.40		
47	1730.08	7.08333E-03	24.84	Sum	
49	1918.63	1.29630E-03	58.93		
50	2104.57	4.56790E-03	27.91	S-Esc	

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
52	2255.70	1.22685E-03	65.03		
53	2283.90	2.22222E-03	49.21		
54	2333.87	1.94444E-03	62.27		
55	2339.44	1.66667E-03	63.87		
56	2449.46	2.08333E-03	62.72		

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	2.20E-01	8.37E-01	8.37E-01
+	NA-22	1274.54	99.94	7.96E-03	8.44E-02	8.44E-02
+	NA-24	1368.53	99.99	4.15E+08	1.12E+11	2.46E+11
		2754.09	99.86	1.00E+10		1.12E+11
+	AL-26	1808.65	99.76	2.04E-02	6.24E-02	6.24E-02
+	K-40	1460.81	* 10.67	2.28E+01	1.70E+00	1.70E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-6.65E-03	7.15E-02	7.15E-02
		78.34	96.00	3.24E-01		9.28E-02
+	SC-46	889.25	99.98	8.30E-03	8.63E-02	8.63E-02
		1120.51	99.99	2.59E-01		1.69E-01
+	V-48	983.52	99.98	-5.55E-02	1.98E-01	1.98E-01
		1312.10	97.50	-5.14E-02		2.23E-01
+	CR-51	320.08	9.83	4.60E-01	1.05E+00	1.05E+00
+	MN-54	834.83	99.97	-9.16E-04	8.63E-02	8.63E-02
+	CO-56	846.75	99.96	-6.18E-02	8.82E-02	8.82E-02
		1037.75	14.03	-2.92E-01		6.45E-01
		1238.25	67.00	2.24E-01		2.19E-01
		1771.40	15.51	4.96E-02		4.49E-01
		2598.48	16.90	0.00E+00		2.83E-01
+	CO-57	122.06	85.51	-2.92E-02	5.86E-02	5.86E-02
		136.48	10.60	2.37E-01		5.33E-01
+	CO-58	810.76	99.40	-6.04E-03	8.72E-02	8.72E-02
+	FE-59	1099.22	56.50	5.68E-02	2.00E-01	2.00E-01

Analysis Report for 1510084-06
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	FE-59	1291.56	43.20	-6.84E-02	2.00E-01	2.45E-01
+	CO-60	1173.22	100.00	-1.75E-02	7.18E-02	8.31E-02
		1332.49	100.00	2.18E-02		7.18E-02
+	ZN-65	1115.52	50.75	-6.96E-01	1.89E-01	1.89E-01
+	GA-67	93.31	35.70	9.01E+01	4.72E+01	4.72E+01
		208.95	2.24	2.66E+02		6.83E+02
		300.22	16.00	-2.98E+02		9.08E+01
+	SE-75	121.11	16.70	-6.20E-02	1.01E-01	3.25E-01
		136.00	59.20	-5.40E-02		1.01E-01
		264.65	59.80	4.98E-02		1.02E-01
		279.53	25.20	-1.22E-02		2.46E-01
		400.65	11.40	1.58E-01		5.68E-01
+	RB-82	776.52	13.00	2.12E-01	1.10E+00	1.10E+00
+	RB-83	520.41	46.00	6.06E-02	1.68E-01	1.68E-01
		529.64	30.30	-8.16E-03		2.44E-01
		552.65	16.40	-2.43E-01		4.77E-01
+	KR-85	513.99	0.43	3.59E+01	2.15E+01	2.15E+01
+	SR-85	513.99	99.27	2.07E-01	1.24E-01	1.24E-01
+	Y-88	898.02	93.40	1.72E-02	4.87E-02	8.89E-02
		1836.01	99.38	-2.45E-02		4.87E-02
+	NB-93M	16.57	9.43	-1.58E+01	7.21E+01	7.21E+01
+	NB-94	702.63	100.00	3.58E-02	7.01E-02	7.89E-02
		871.10	100.00	-1.75E-02		7.01E-02
+	NB-95	765.79	99.81	1.57E-01	1.47E-01	1.47E-01
+	NB-95M	235.69	25.00	-3.22E+02	3.93E+01	3.93E+01
+	ZR-95	724.18	43.70	2.70E-03	1.77E-01	2.61E-01
		756.72	55.30	1.15E-01		1.77E-01
+	MO-99	181.06	6.20	6.02E+01	3.75E+02	5.82E+02
		739.58	12.80	1.05E+02		3.75E+02
		778.00	4.50	-4.26E+02		1.03E+03
+	RU-103	497.08	89.00	4.43E-03	1.07E-01	1.07E-01
+	RU-106	621.84	9.80	-3.58E-01	6.77E-01	6.77E-01
+	AG-108M	433.93	89.90	-3.21E-02	6.55E-02	6.55E-02
		614.37	90.40	1.41E-02		7.55E-02
		722.95	90.50	-1.48E-01		8.28E-02
+	CD-109	88.03	3.72	-1.16E+00	1.85E+00	1.85E+00
+	AG-110M	657.75	93.14	-5.48E-03	7.62E-02	7.62E-02
		677.61	10.53	-3.69E-01		6.17E-01
		706.67	16.46	-5.00E-02		4.92E-01
		763.93	21.98	-4.77E-01		3.43E-01
		884.67	71.63	-8.21E-02		9.79E-02
		1384.27	23.94	-6.99E-02		2.97E-01
+	CD-113M	263.70	0.02	1.16E+01	2.25E+02	2.25E+02
+	SN-113	255.12	1.93	-5.00E-01	9.10E-02	3.01E+00
		391.69	64.90	-1.20E-04		9.10E-02
+	TE123M	159.00	84.10	2.77E-02	7.15E-02	7.15E-02
+	SB-124	602.71	97.87	2.41E-02	9.40E-02	9.40E-02
		645.85	7.26	1.29E-01		1.21E+00

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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	-1.63E+00	9.40E-02	9.11E-01
		1691.02	49.00	-6.75E-02		1.54E-01
+	I-125	35.49	6.49	1.06E+00	3.01E+00	3.01E+00
+	SB-125	176.33	6.89	3.00E-01	2.09E-01	7.48E-01
		427.89	29.33	-1.08E-02		2.09E-01
		463.38	10.35	-3.88E-02		7.30E-01
		600.56	17.80	1.16E-01		3.90E-01
		635.90	11.32	-8.66E-02		5.85E-01
+	SB-126	414.70	83.30	-8.56E-02	3.03E-01	3.09E-01
		666.33	99.60	-1.44E-02		3.05E-01
		695.00	99.60	-6.21E-04		3.03E-01
		720.50	53.80	8.66E-03		5.71E-01
+	SN-126	87.57	37.00	-1.12E-01	1.79E-01	1.79E-01
+	SB-127	473.00	25.00	-3.81E+00	2.17E+01	2.68E+01
		685.20	35.70	-7.23E-03		2.17E+01
		783.80	14.70	1.64E+01		5.20E+01
+	I-129	29.78	57.00	1.12E-01	4.79E-01	4.79E-01
		33.60	13.20	-3.98E-01		1.28E+00
		39.58	7.52	-3.47E-01		1.46E+00
+	I-131	284.30	6.05	-8.62E-01	5.58E-01	7.77E+00
		364.48	81.20	-2.21E-01		5.58E-01
		636.97	7.26	-1.45E+00		8.49E+00
		722.89	1.80	-7.01E+01		3.92E+01
+	TE-132	49.72	13.10	-2.13E+02	1.51E+01	1.43E+02
		228.16	88.00	-1.14E-03		1.51E+01
+	BA-133	81.00	33.00	-1.44E+00	9.15E-02	1.78E-01
		302.84	17.80	2.48E-01		3.27E-01
		356.01	60.00	-3.27E-03		9.15E-02
+	I-133	529.87	86.30	-2.52E+06	7.56E+07	7.56E+07
+	XE-133	81.00	38.00	-3.87E+01	4.79E+00	4.79E+00
+	CS-134	563.23	8.38	4.38E-02	8.14E-02	7.43E-01
		569.32	15.43	-2.19E-01		3.88E-01
		604.70	97.60	1.34E-02		8.14E-02
		795.84	85.40	1.04E-01		1.00E-01
		801.93	8.73	3.33E-02		8.49E-01
+	CS-135	268.24	16.00	4.15E-02	3.48E-01	3.48E-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	-1.45E+00	2.69E-01	2.68E+00
		163.89	4.61	-3.26E-01		4.33E+00
		176.55	13.56	5.89E-01		1.47E+00
		273.65	12.66	-7.78E-01		1.66E+00
		340.57	48.50	7.90E-01		5.76E-01
		818.50	99.70	5.55E-02		2.69E-01
		1048.07	79.60	-9.69E-02		3.92E-01
		1235.34	19.70	-1.07E+00		2.03E+00
+	CS-137	661.65	85.12	-3.66E-02	7.76E-02	7.76E-02
+	LA-138	788.74	34.00	2.93E-02	9.70E-02	1.87E-01

Analysis Report for 1510084-06

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-138	1435.80	66.00	1.35E-03	9.70E-02	9.70E-02
+	CE-139	165.85	80.35	7.89E-03	7.33E-02	7.33E-02
+	BA-140	162.64	6.70	-9.85E-01	9.20E-01	3.07E+00
		304.84	4.50	-8.41E-01		4.68E+00
		423.70	3.20	2.21E-02		8.22E+00
		437.55	2.00	-5.82E+00		1.18E+01
		537.32	25.00	-1.00E+00		9.20E-01
+	LA-140	328.77	20.50	1.05E+00	2.55E-01	1.23E+00
		487.03	45.50	-6.60E-02		5.19E-01
		815.85	23.50	-6.75E-02		1.19E+00
		1596.49	95.49	1.84E-02		2.55E-01
+	CE-141	145.44	48.40	7.77E-02	1.92E-01	1.92E-01
+	CE-143	57.36	11.80	4.44E+03	1.04E+05	2.88E+05
		293.26	42.00	3.15E+05		1.04E+05
		664.55	5.20	1.34E+05		6.72E+05
+	CE-144	133.54	10.80	2.85E-01	5.13E-01	5.13E-01
+	PM-144	476.78	42.00	-6.41E-03	7.06E-02	1.51E-01
		618.01	98.60	6.11E-03		7.06E-02
		696.49	99.49	-5.12E-02		7.09E-02
+	PM-145	36.85	21.70	1.46E-02	3.15E-01	5.92E-01
		37.36	39.70	4.69E-02		3.15E-01
		42.30	15.10	-2.66E-02		6.35E-01
		72.40	2.31	-2.23E+00		3.42E+00
+	PM-146	453.90	39.94	-8.28E-03	1.53E-01	1.53E-01
		735.90	14.01	-8.23E-03		4.81E-01
		747.13	13.10	1.87E-02		5.37E-01
+	ND-147	91.11	28.90	-2.63E+00	1.22E+00	1.22E+00
		531.02	13.10	1.06E+00		2.45E+00
+	PM-149	285.90	3.10	-2.21E+03	5.49E+03	5.49E+03
+	EU-152	121.78	20.50	-1.14E-01	2.29E-01	2.29E-01
		244.69	5.40	-2.32E-01		1.13E+00
		344.27	19.13	5.44E-02		2.56E-01
		778.89	9.20	-2.00E-01		7.10E-01
		964.01	10.40	-1.55E+00		9.88E-01
		1085.78	7.22	-1.24E-02		1.04E+00
		1112.02	9.60	5.52E-02		9.43E-01
		1407.95	14.94	2.73E-01		5.40E-01
+	GD-153	97.43	31.30	-4.41E-02	1.72E-01	1.72E-01
		103.18	22.20	-2.23E-02		2.37E-01
+	EU-154	123.07	40.50	-1.44E-02	1.19E-01	1.19E-01
		723.30	19.70	-6.84E-01		3.83E-01
		873.19	11.50	3.26E-01		6.69E-01
		996.32	10.30	-3.19E-01		7.44E-01
		1004.76	17.90	-3.01E-02		3.86E-01
		1274.45	35.50	2.21E-02		2.34E-01
+	EU-155	86.50	30.90	-2.64E-02	2.16E-01	2.16E-01
		105.30	20.70	4.31E-02		2.43E-01
+	EU-156	811.77	10.40	-2.81E-01	2.02E+00	2.02E+00
		1153.47	7.20	1.87E+00		4.11E+00

Analysis Report for 1510084-06

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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	1.75E-01	2.02E+00	3.26E+00
+	HO-166M	184.41	72.60	1.62E-01	9.29E-02	9.29E-02
		280.45	29.60	-1.08E-01		1.70E-01
		410.94	11.10	2.29E-02		5.74E-01
		711.69	54.10	5.46E-02		1.35E-01
+	TM-171	66.72	0.14	-1.00E+02	4.99E+01	4.99E+01
+	HF-172	81.75	4.52	-1.68E+00	4.55E-01	1.33E+00
		125.81	11.30	-4.96E-01		4.55E-01
+	LU-172	181.53	20.60	3.81E-01	1.87E+00	3.68E+00
		810.06	16.63	-1.80E+00		6.05E+00
		912.12	15.25	4.52E+01		1.50E+01
		1093.66	62.50	7.44E-01		1.87E+00
+	LU-173	100.72	5.24	-5.31E-02	2.87E-01	9.64E-01
		272.11	21.20	2.71E-01		2.87E-01
+	HF-175	343.40	84.00	1.66E-02	7.88E-02	7.88E-02
+	LU-176	88.34	13.30	1.53E+00	5.42E-02	5.26E-01
		201.83	86.00	-4.06E-02		6.18E-02
		306.78	94.00	-7.07E-03		5.42E-02
+	TA-182	67.75	41.20	-1.78E-02	1.92E-01	1.92E-01
		1121.30	34.90	8.75E-01		4.62E-01
		1189.05	16.23	-8.95E-02		5.94E-01
		1221.41	26.98	2.98E-01		4.62E-01
		1231.02	11.44	4.86E-02		9.05E-01
+	IR-192	308.46	29.68	4.61E-03	1.77E-01	2.18E-01
		468.07	48.10	5.72E-02		1.77E-01
+	HG-203	279.19	77.30	6.85E-02	1.07E-01	1.07E-01
+	BI-207	569.67	97.72	4.51E-03	6.28E-02	6.28E-02
		1063.62	74.90	1.52E-03		1.08E-01
+	TL-208	583.14	* 30.22	1.43E+00	9.16E-02	3.18E-01
		860.37	* 4.48	2.29E+00		2.02E+00
		2614.66	* 35.85	1.20E+00		9.16E-02
+	BI-210M	262.00	45.00	1.06E-02	1.16E-01	1.16E-01
		300.00	23.00	-8.23E-01		2.50E-01
+	PB-210	46.50	4.25	1.00E+00	2.04E+00	2.04E+00
+	PB-211	404.84	2.90	5.99E-01	1.88E+00	1.88E+00
		831.96	2.90	6.09E-02		2.70E+00
+	BI-212	727.17	* 11.80	1.20E+00	8.32E-01	8.32E-01
		1620.62	2.75	1.21E+00		2.58E+00
+	PB-212	238.63	* 44.60	1.55E+00	2.77E-01	2.77E-01
		300.09	* 3.41	1.39E+00		3.36E+00
+	BI-214	609.31	* 46.30	1.36E+00	2.22E-01	2.22E-01
		1120.29	* 15.10	1.54E+00		1.14E+00
		1764.49	* 15.80	1.75E+00		4.34E-01
		2204.22	* 4.98	1.54E+00		1.15E+00
+	PB-214	295.21	* 19.19	1.61E+00	2.24E-01	5.88E-01
		351.92	* 37.19	1.60E+00		2.24E-01
+	RN-219	401.80	6.50	2.74E-01	8.59E-01	8.59E-01
+	RA-223	323.87	3.88	-5.71E-02	1.33E+00	1.33E+00

Analysis Report for 1510084-06

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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	4.74E+00	3.13E+00	3.13E+00
+	RA-225	40.00		31.00	-2.77E-01	1.16E+00	1.16E+00
+	RA-226	186.21	*	3.28	3.46E+00	2.22E+00	2.22E+00
+	TH-227	50.10		8.40	-1.30E+00	5.79E-01	8.70E-01
		236.00		11.50	-4.74E+00		5.79E-01
		256.20		6.30	-3.66E-01		7.90E-01
+	AC-228	338.32	*	11.40	1.69E+00	3.25E-01	8.00E-01
		911.07	*	27.70	1.66E+00		3.25E-01
		969.11	*	16.60	1.63E+00		7.14E-01
+	TH-230	48.44		16.90	9.19E-02	4.79E-01	4.79E-01
		62.85		4.60	2.39E+00		1.64E+00
		67.67		0.37	-1.70E+00		1.83E+01
+	PA-231	283.67		1.60	6.82E-01	2.51E+00	3.15E+00
		302.67		2.30	1.91E+00		2.51E+00
+	TH-231	25.64		14.70	-1.38E+00	9.84E-01	3.82E+00
		84.21		6.40	-9.84E-01		9.84E-01
+	PA-233	311.98		38.60	1.65E-02	2.56E-01	2.56E-01
+	PA-234	131.20		20.40	-1.54E-01	2.54E-01	2.54E-01
		733.99		8.80	5.56E-03		7.52E-01
		946.00		12.00	1.61E-02		6.19E-01
+	PA-234M	1001.03		0.92	8.23E+00	9.09E+00	9.09E+00
+	TH-234	63.29		3.80	3.30E+00	1.99E+00	1.99E+00
+	U-235	143.76		10.50	7.05E-01	5.25E-01	5.25E-01
		163.35		4.70	-8.12E-02		1.08E+00
		205.31		4.70	6.60E-01		1.17E+00
+	NP-237	86.50		12.60	-6.41E-02	5.23E-01	5.23E-01
+	NP-239	106.10		22.70	8.25E+01	4.64E+02	4.64E+02
		228.18		10.70	-7.81E-02		1.04E+03
		277.60		14.10	4.36E+02		8.31E+02
+	AM-241	59.54		35.90	-1.51E-01	1.91E-01	1.91E-01
+	AM-243	74.67		66.00	-1.82E-01	1.43E-01	1.43E-01
+	CM-243	209.75		3.29	3.68E+00	3.96E-01	1.89E+00
		228.14		10.60	-3.73E-05		4.95E-01
		277.60		14.00	2.08E-01		3.96E-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

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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	8.37E-01	8.37E-01	2.20E-01	3.98E-01
NA-22	1274.54	99.94	8.44E-02	8.44E-02	7.96E-03	3.88E-02
NA-24	1368.53	99.99	2.46E+11	1.12E+11	4.15E+08	1.11E+11
	2754.09	99.86	1.12E+11		1.00E+10	3.95E+10
AL-26	1808.65	99.76	6.24E-02	6.24E-02	2.04E-02	2.70E-02
+ K-40	1460.81	*	1.70E+00	1.70E+00	2.28E+01	8.18E-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	7.15E-02	7.15E-02	-6.65E-03	3.50E-02
	78.34	96.00	9.28E-02		3.24E-01	4.57E-02
SC-46	889.25	99.98	8.63E-02	8.63E-02	8.30E-03	4.01E-02
	1120.51	99.99	1.69E-01		2.59E-01	8.09E-02
V-48	983.52	99.98	1.98E-01	1.98E-01	-5.55E-02	9.07E-02
	1312.10	97.50	2.23E-01		-5.14E-02	1.01E-01
CR-51	320.08	9.83	1.05E+00	1.05E+00	4.60E-01	5.01E-01
MN-54	834.83	99.97	8.63E-02	8.63E-02	-9.16E-04	4.07E-02
CO-56	846.75	99.96	8.82E-02	8.82E-02	-6.18E-02	4.11E-02
	1037.75	14.03	6.45E-01		-2.92E-01	2.97E-01
	1238.25	67.00	2.19E-01		2.24E-01	1.03E-01
	1771.40	15.51	4.49E-01		4.96E-02	1.91E-01
	2598.48	16.90	2.83E-01		0.00E+00	1.06E-01
CO-57	122.06	85.51	5.86E-02	5.86E-02	-2.92E-02	2.85E-02
	136.48	10.60	5.33E-01		2.37E-01	2.59E-01
CO-58	810.76	99.40	8.72E-02	8.72E-02	-6.04E-03	4.06E-02
FE-59	1099.22	56.50	2.00E-01	2.00E-01	5.68E-02	9.20E-02
	1291.56	43.20	2.45E-01		-6.84E-02	1.11E-01
CO-60	1173.22	100.00	8.31E-02	7.18E-02	-1.75E-02	3.84E-02
	1332.49	100.00	7.18E-02		2.18E-02	3.25E-02
ZN-65	1115.52	50.75	1.89E-01	1.89E-01	-6.96E-01	8.83E-02
GA-67	93.31	35.70	4.72E+01	4.72E+01	9.01E+01	2.32E+01
	208.95	2.24	6.83E+02		2.66E+02	3.32E+02
	300.22	16.00	9.08E+01		-2.98E+02	4.37E+01
SE-75	121.11	16.70	3.25E-01	1.01E-01	-6.20E-02	1.58E-01
	136.00	59.20	1.01E-01		-5.40E-02	4.91E-02
	264.65	59.80	1.02E-01		4.98E-02	4.90E-02
	279.53	25.20	2.46E-01		-1.22E-02	1.18E-01
	400.65	11.40	5.68E-01		1.58E-01	2.70E-01
RB-82	776.52	13.00	1.10E+00	1.10E+00	2.12E-01	5.15E-01
RB-83	520.41	46.00	1.68E-01	1.68E-01	6.06E-02	7.98E-02
	529.64	30.30	2.44E-01		-8.16E-03	1.15E-01
	552.65	16.40	4.77E-01		-2.43E-01	2.26E-01
KR-85	513.99	0.43	2.15E+01	2.15E+01	3.59E+01	1.04E+01
SR-85	513.99	99.27	1.24E-01	1.24E-01	2.07E-01	5.98E-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)
Y-88	898.02	93.40	8.89E-02	4.87E-02	1.72E-02	4.13E-02
	1836.01	99.38	4.87E-02		-2.45E-02	1.93E-02
NB-93M	16.57	9.43	7.21E+01	7.21E+01	-1.58E+01	3.37E+01
NB-94	702.63	100.00	7.89E-02	7.01E-02	3.58E-02	3.74E-02
	871.10	100.00	7.01E-02		-1.75E-02	3.26E-02
NB-95	765.79	99.81	1.47E-01	1.47E-01	1.57E-01	7.00E-02
NB-95M	235.69	25.00	3.93E+01	3.93E+01	-3.22E+02	1.91E+01
ZR-95	724.18	43.70	2.61E-01	1.77E-01	2.70E-03	1.24E-01
	756.72	55.30	1.77E-01		1.15E-01	8.31E-02
MO-99	181.06	6.20	5.82E+02	3.75E+02	6.02E+01	2.82E+02
	739.58	12.80	3.75E+02		1.05E+02	1.76E+02
	778.00	4.50	1.03E+03		-4.26E+02	4.81E+02
RU-103	497.08	89.00	1.07E-01	1.07E-01	4.43E-03	5.09E-02
RU-106	621.84	9.80	6.77E-01	6.77E-01	-3.58E-01	3.19E-01
AG-108M	433.93	89.90	6.55E-02	6.55E-02	-3.21E-02	3.12E-02
	614.37	90.40	7.55E-02		1.41E-02	3.57E-02
	722.95	90.50	8.28E-02		-1.48E-01	3.91E-02
CD-109	88.03	3.72	1.85E+00	1.85E+00	-1.16E+00	9.08E-01
AG-110M	657.75	93.14	7.62E-02	7.62E-02	-5.48E-03	3.58E-02
	677.61	10.53	6.17E-01		-3.69E-01	2.88E-01
	706.67	16.46	4.92E-01		-5.00E-02	2.33E-01
	763.93	21.98	3.43E-01		-4.77E-01	1.61E-01
	884.67	71.63	9.79E-02		-8.21E-02	4.52E-02
	1384.27	23.94	2.97E-01		-6.99E-02	1.33E-01
CD-113M	263.70	0.02	2.25E+02	2.25E+02	1.16E+01	1.08E+02
SN-113	255.12	1.93	3.01E+00	9.10E-02	-5.00E-01	1.44E+00
	391.69	64.90	9.10E-02		-1.20E-04	4.31E-02
TE123M	159.00	84.10	7.15E-02	7.15E-02	2.77E-02	3.47E-02
SB-124	602.71	97.87	9.40E-02	9.40E-02	2.41E-02	4.45E-02
	645.85	7.26	1.21E+00		1.29E-01	5.69E-01
	722.78	11.10	9.11E-01		-1.63E+00	4.30E-01
	1691.02	49.00	1.54E-01		-6.75E-02	6.60E-02
I-125	35.49	6.49	3.01E+00	3.01E+00	1.06E+00	1.46E+00
SB-125	176.33	6.89	7.48E-01	2.09E-01	3.00E-01	3.62E-01
	427.89	29.33	2.09E-01		-1.08E-02	9.95E-02
	463.38	10.35	7.30E-01		-3.88E-02	3.50E-01
	600.56	17.80	3.90E-01		1.16E-01	1.85E-01
	635.90	11.32	5.85E-01		-8.66E-02	2.75E-01
SB-126	414.70	83.30	3.09E-01	3.03E-01	-8.56E-02	1.48E-01
	666.33	99.60	3.05E-01		-1.44E-02	1.44E-01
	695.00	99.60	3.03E-01		-6.21E-04	1.43E-01
	720.50	53.80	5.71E-01		8.66E-03	2.69E-01
SN-126	87.57	37.00	1.79E-01	1.79E-01	-1.12E-01	8.79E-02
SB-127	473.00	25.00	2.68E+01	2.17E+01	-3.81E+00	1.28E+01
	685.20	35.70	2.17E+01		-7.23E-03	1.02E+01
	783.80	14.70	5.20E+01		1.64E+01	2.43E+01
I-129	29.78	57.00	4.79E-01	4.79E-01	1.12E-01	2.32E-01
	33.60	13.20	1.28E+00		-3.98E-01	6.22E-01
	39.58	7.52	1.46E+00		-3.47E-01	7.09E-01
I-131	284.30	6.05	7.77E+00	5.58E-01	-8.62E-01	3.72E+00
	364.48	81.20	5.58E-01		-2.21E-01	2.65E-01
	636.97	7.26	8.49E+00		-1.45E+00	4.00E+00
	722.89	1.80	3.92E+01		-7.01E+01	1.85E+01

Analysis Report for 1510084-06

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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	1.43E+02	1.51E+01	-2.13E+02	6.96E+01
	228.16	88.00	1.51E+01		-1.14E-03	7.27E+00
BA-133	81.00	33.00	1.78E-01	9.15E-02	-1.44E+00	8.70E-02
	302.84	17.80	3.27E-01		2.48E-01	1.57E-01
	356.01	60.00	9.15E-02		-3.27E-03	4.37E-02
I-133	529.87	86.30	7.56E+07	7.56E+07	-2.52E+06	3.57E+07
XE-133	81.00	38.00	4.79E+00	4.79E+00	-3.87E+01	2.34E+00
CS-134	563.23	8.38	7.43E-01	8.14E-02	4.38E-02	3.50E-01
	569.32	15.43	3.88E-01		-2.19E-01	1.82E-01
	604.70	97.60	8.14E-02		1.34E-02	3.88E-02
	795.84	85.40	1.00E-01		1.04E-01	4.74E-02
	801.93	8.73	8.49E-01		3.33E-02	3.98E-01
CS-135	268.24	16.00	3.48E-01	3.48E-01	4.15E-02	1.68E-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	2.68E+00	2.69E-01	-1.45E+00	1.30E+00
	163.89	4.61	4.33E+00		-3.26E-01	2.10E+00
	176.55	13.56	1.47E+00		5.89E-01	7.12E-01
	273.65	12.66	1.66E+00		-7.78E-01	7.98E-01
	340.57	48.50	5.76E-01		7.90E-01	2.78E-01
	818.50	99.70	2.69E-01		5.55E-02	1.25E-01
	1048.07	79.60	3.92E-01		-9.69E-02	1.82E-01
	1235.34	19.70	2.03E+00		-1.07E+00	9.53E-01
CS-137	661.65	85.12	7.76E-02	7.76E-02	-3.66E-02	3.65E-02
LA-138	788.74	34.00	1.87E-01	9.70E-02	2.93E-02	8.71E-02
	1435.80	66.00	9.70E-02		1.35E-03	4.30E-02
CE-139	165.85	80.35	7.33E-02	7.33E-02	7.89E-03	3.56E-02
BA-140	162.64	6.70	3.07E+00	9.20E-01	-9.85E-01	1.49E+00
	304.84	4.50	4.68E+00		-8.41E-01	2.24E+00
	423.70	3.20	8.22E+00		2.21E-02	3.93E+00
	437.55	2.00	1.18E+01		-5.82E+00	5.61E+00
	537.32	25.00	9.20E-01		-1.00E+00	4.33E-01
LA-140	328.77	20.50	1.23E+00	2.55E-01	1.05E+00	5.90E-01
	487.03	45.50	5.19E-01		-6.60E-02	2.46E-01
	815.85	23.50	1.19E+00		-6.75E-02	5.57E-01
	1596.49	95.49	2.55E-01		1.84E-02	1.11E-01
CE-141	145.44	48.40	1.92E-01	1.92E-01	7.77E-02	9.34E-02
CE-143	57.36	11.80	2.88E+05	1.04E+05	4.44E+03	1.40E+05
	293.26	42.00	1.04E+05		3.15E+05	5.09E+04
	664.55	5.20	6.72E+05		1.34E+05	3.17E+05
CE-144	133.54	10.80	5.13E-01	5.13E-01	2.85E-01	2.50E-01
PM-144	476.78	42.00	1.51E-01	7.06E-02	-6.41E-03	7.19E-02
	618.01	98.60	7.06E-02		6.11E-03	3.33E-02
	696.49	99.49	7.09E-02		-5.12E-02	3.33E-02
PM-145	36.85	21.70	5.92E-01	3.15E-01	1.46E-02	2.87E-01
	37.36	39.70	3.15E-01		4.69E-02	1.53E-01
	42.30	15.10	6.35E-01		-2.66E-02	3.09E-01
	72.40	2.31	3.42E+00		-2.23E+00	1.68E+00
PM-146	453.90	39.94	1.53E-01	1.53E-01	-8.28E-03	7.26E-02
	735.90	14.01	4.81E-01		-8.23E-03	2.25E-01
	747.13	13.10	5.37E-01		1.87E-02	2.52E-01
ND-147	91.11	28.90	1.22E+00	1.22E+00	-2.63E+00	5.99E-01

Analysis Report for 1510084-06

CP0604S11-12

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	2.45E+00	1.22E+00	1.06E+00	1.16E+00
PM-149	285.90	3.10	5.49E+03	5.49E+03	-2.21E+03	2.62E+03
EU-152	121.78	20.50	2.29E-01	2.29E-01	-1.14E-01	1.11E-01
	244.69	5.40	1.13E+00		-2.32E-01	5.48E-01
	344.27	19.13	2.56E-01		5.44E-02	1.21E-01
	778.89	9.20	7.10E-01		-2.00E-01	3.31E-01
	964.01	10.40	9.88E-01		-1.55E+00	4.68E-01
	1085.78	7.22	1.04E+00		-1.24E-02	4.78E-01
	1112.02	9.60	9.43E-01		5.52E-02	4.41E-01
	1407.95	14.94	5.40E-01		2.73E-01	2.46E-01
GD-153	97.43	31.30	1.72E-01	1.72E-01	-4.41E-02	8.38E-02
	103.18	22.20	2.37E-01		-2.23E-02	1.15E-01
EU-154	123.07	40.50	1.19E-01	1.19E-01	-1.44E-02	5.77E-02
	723.30	19.70	3.83E-01		-6.84E-01	1.81E-01
	873.19	11.50	6.69E-01		3.26E-01	3.13E-01
	996.32	10.30	7.44E-01		-3.19E-01	3.45E-01
	1004.76	17.90	3.86E-01		-3.01E-02	1.78E-01
	1274.45	35.50	2.34E-01		2.21E-02	1.08E-01
EU-155	86.50	30.90	2.16E-01	2.16E-01	-2.64E-02	1.06E-01
	105.30	20.70	2.43E-01		4.31E-02	1.18E-01
EU-156	811.77	10.40	2.02E+00	2.02E+00	-2.81E-01	9.38E-01
	1153.47	7.20	4.11E+00		1.87E+00	1.92E+00
	1230.71	8.90	3.26E+00		1.75E-01	1.51E+00
HO-166M	184.41	72.60	9.29E-02	9.29E-02	1.62E-01	4.53E-02
	280.45	29.60	1.70E-01		-1.08E-01	8.16E-02
	410.94	11.10	5.74E-01		2.29E-02	2.75E-01
	711.69	54.10	1.35E-01		5.46E-02	6.35E-02
TM-171	66.72	0.14	4.99E+01	4.99E+01	-1.00E+02	2.44E+01
HF-172	81.75	4.52	1.33E+00	4.55E-01	-1.68E+00	6.53E-01
	125.81	11.30	4.55E-01		-4.96E-01	2.21E-01
LU-172	181.53	20.60	3.68E+00	1.87E+00	3.81E-01	1.78E+00
	810.06	16.63	6.05E+00		-1.80E+00	2.82E+00
	912.12	15.25	1.50E+01		4.52E+01	7.24E+00
	1093.66	62.50	1.87E+00		7.44E-01	8.67E-01
LU-173	100.72	5.24	9.64E-01	2.87E-01	-5.31E-02	4.69E-01
	272.11	21.20	2.87E-01		2.71E-01	1.39E-01
HF-175	343.40	84.00	7.88E-02	7.88E-02	1.66E-02	3.76E-02
LU-176	88.34	13.30	5.26E-01	5.42E-02	1.53E+00	2.58E-01
	201.83	86.00	6.18E-02		-4.06E-02	2.99E-02
	306.78	94.00	5.42E-02		-7.07E-03	2.59E-02
TA-182	67.75	41.20	1.92E-01	1.92E-01	-1.78E-02	9.40E-02
	1121.30	34.90	4.62E-01		8.75E-01	2.21E-01
	1189.05	16.23	5.94E-01		-8.95E-02	2.75E-01
	1221.41	26.98	4.62E-01		2.98E-01	2.17E-01
	1231.02	11.44	9.05E-01		4.86E-02	4.20E-01
IR-192	308.46	29.68	2.18E-01	1.77E-01	4.61E-03	1.04E-01
	468.07	48.10	1.77E-01		5.72E-02	8.47E-02
HG-203	279.19	77.30	1.07E-01	1.07E-01	6.85E-02	5.14E-02
BI-207	569.67	97.72	6.28E-02	6.28E-02	4.51E-03	2.96E-02
	1063.62	74.90	1.08E-01		1.52E-03	5.03E-02
+ TL-208	583.14	*	30.22	9.16E-02	1.43E+00	1.53E-01
	860.37	*	4.48		2.29E+00	9.55E-01
	2614.66	*	35.85		1.20E+00	3.25E-02

Analysis Report for 1510084-06

CP0604S11-12

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	1.16E-01	1.16E-01	1.06E-02	5.58E-02	
	300.00	23.00	2.50E-01		-8.23E-01	1.20E-01	
PB-210	46.50	4.25	2.04E+00	2.04E+00	1.00E+00	9.96E-01	
PB-211	404.84	2.90	1.88E+00	1.88E+00	5.99E-01	8.93E-01	
	831.96	2.90	2.70E+00		6.09E-02	1.27E+00	
+ BI-212	727.17	*	11.80	8.32E-01	8.32E-01	1.20E+00	3.98E-01
	1620.62		2.75	2.58E+00		1.21E+00	1.15E+00
+ PB-212	238.63	*	44.60	2.77E-01	2.77E-01	1.55E+00	1.36E-01
	300.09	*	3.41	3.36E+00		1.39E+00	1.65E+00
+ BI-214	609.31	*	46.30	2.22E-01	2.22E-01	1.36E+00	1.07E-01
	1120.29	*	15.10	1.14E+00		1.54E+00	5.52E-01
	1764.49	*	15.80	4.34E-01		1.75E+00	1.91E-01
	2204.22	*	4.98	1.15E+00		1.54E+00	4.80E-01
+ PB-214	295.21	*	19.19	5.88E-01	2.24E-01	1.61E+00	2.88E-01
	351.92	*	37.19	2.24E-01		1.60E+00	1.09E-01
RN-219	401.80		6.50	8.59E-01	8.59E-01	2.74E-01	4.09E-01
RA-223	323.87		3.88	1.33E+00	1.33E+00	-5.71E-02	6.37E-01
+ RA-224	240.98	*	3.95	3.13E+00	3.13E+00	4.74E+00	1.54E+00
RA-225	40.00		31.00	1.16E+00	1.16E+00	-2.77E-01	5.66E-01
+ RA-226	186.21	*	3.28	2.22E+00	2.22E+00	3.46E+00	1.08E+00
TH-227	50.10		8.40	8.70E-01	5.79E-01	-1.30E+00	4.24E-01
	236.00		11.50	5.79E-01		-4.74E+00	2.82E-01
	256.20		6.30	7.90E-01		-3.66E-01	3.80E-01
+ AC-228	338.32	*	11.40	8.00E-01	3.25E-01	1.69E+00	3.90E-01
	911.07	*	27.70	3.25E-01		1.66E+00	1.53E-01
	969.11	*	16.60	7.14E-01		1.63E+00	3.41E-01
TH-230	48.44		16.90	4.79E-01	4.79E-01	9.19E-02	2.34E-01
	62.85		4.60	1.64E+00		2.39E+00	8.06E-01
	67.67		0.37	1.83E+01		-1.70E+00	8.94E+00
PA-231	283.67		1.60	3.15E+00	2.51E+00	6.82E-01	1.51E+00
	302.67		2.30	2.51E+00		1.91E+00	1.21E+00
TH-231	25.64		14.70	3.82E+00	9.84E-01	-1.38E+00	1.85E+00
	84.21		6.40	9.84E-01		-9.84E-01	4.82E-01
PA-233	311.98		38.60	2.56E-01	2.56E-01	1.65E-02	1.22E-01
PA-234	131.20		20.40	2.54E-01	2.54E-01	-1.54E-01	1.24E-01
	733.99		8.80	7.52E-01		5.56E-03	3.52E-01
	946.00		12.00	6.19E-01		1.61E-02	2.88E-01
PA-234M	1001.03		0.92	9.09E+00	9.09E+00	8.23E+00	4.25E+00
TH-234	63.29		3.80	1.99E+00	1.99E+00	3.30E+00	9.78E-01
U-235	143.76		10.50	5.25E-01	5.25E-01	7.05E-01	2.56E-01
	163.35		4.70	1.08E+00		-8.12E-02	5.23E-01
	205.31		4.70	1.17E+00		6.60E-01	5.65E-01
NP-237	86.50		12.60	5.23E-01	5.23E-01	-6.41E-02	2.57E-01
NP-239	106.10		22.70	4.64E+02	4.64E+02	8.25E+01	2.26E+02
	228.18		10.70	1.04E+03		-7.81E-02	5.00E+02
	277.60		14.10	8.31E+02		4.36E+02	4.00E+02
AM-241	59.54		35.90	1.91E-01	1.91E-01	-1.51E-01	9.35E-02
AM-243	74.67		66.00	1.43E-01	1.43E-01	-1.82E-01	7.05E-02
CM-243	209.75		3.29	1.89E+00	3.96E-01	3.68E+00	9.17E-01
	228.14		10.60	4.95E-01		-3.73E-05	2.39E-01
	277.60		14.00	3.96E-01		2.08E-01	1.91E-01

Analysis Report for 1510084-06

CP0604S11-12

-
- + = 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: CP0604S11-12

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	68	77	78	78	87	56
25:	77	82	79	64	72	66	68	92
33:	60	80	58	66	82	90	75	69
41:	84	87	88	79	87	97	151	90
49:	92	102	87	102	108	115	105	99
57:	108	128	138	120	128	132	175	273
65:	159	143	131	201	132	161	154	157
73:	163	218	439	337	517	610	146	135
81:	130	129	125	156	180	99	227	248
89:	116	192	204	118	310	253	120	101
97:	84	106	100	105	94	93	76	88
105:	89	121	92	92	104	75	80	99
113:	89	96	88	97	76	77	84	78
121:	73	78	81	86	92	89	95	81
129:	130	111	79	101	97	75	90	95
137:	81	99	100	90	62	93	91	110
145:	91	99	73	75	76	77	88	77
153:	68	83	84	74	87	73	77	76
161:	72	67	63	81	71	77	74	65
169:	77	68	65	56	66	48	69	56
177:	76	64	64	66	66	69	64	63
185:	77	189	171	78	56	66	82	53
193:	65	59	54	63	67	58	78	67
201:	65	55	62	61	70	79	49	64
209:	94	123	60	64	40	48	59	71
217:	62	55	58	51	52	58	58	60
225:	53	51	65	59	45	37	56	41
233:	46	56	39	56	65	188	670	271
241:	110	188	136	53	46	49	36	35
249:	39	37	45	43	41	38	47	34
257:	38	41	40	57	33	34	46	42
265:	41	42	40	34	39	52	70	58
273:	39	38	39	35	55	61	34	36
281:	39	32	38	40	29	37	28	30
289:	42	37	42	36	29	51	165	256
297:	53	32	27	51	65	40	40	33
305:	36	30	27	32	36	29	35	28
313:	33	31	24	32	29	30	28	32
321:	39	40	30	23	29	32	32	56
329:	64	41	22	25	37	32	25	33
337:	37	82	158	39	26	38	15	20
345:	34	31	24	22	24	34	61	385
353:	263	51	29	17	35	18	30	27
361:	18	21	21	30	28	18	14	33

369: 27 25 19 27 20 19 25 18

Sample Title: CP0604S11-12

Channel	1	2	3	4	5	6	7	8
377:	24	23	22	16	23	18	24	17
385:	31	24	19	28	25	20	24	23
393:	21	22	19	19	22	23	27	29
401:	19	27	29	27	20	22	25	20
409:	20	27	32	26	26	16	23	24
417:	14	17	25	25	32	26	26	20
425:	22	19	17	22	22	20	17	22
433:	18	27	12	16	18	22	25	13
441:	17	17	24	16	13	23	16	18
449:	22	16	15	22	20	17	18	16
457:	20	21	16	23	23	25	46	38
465:	16	21	22	19	25	28	20	11
473:	16	17	20	15	16	19	23	9
481:	24	16	15	12	11	12	16	23
489:	17	13	12	20	14	15	24	11
497:	15	12	16	18	17	12	11	12
505:	18	22	9	9	22	48	105	61
513:	32	15	15	21	11	11	17	14
521:	16	19	14	21	11	11	12	15
529:	9	13	11	17	22	19	16	9
537:	12	10	12	16	9	17	19	14
545:	12	11	9	16	16	12	14	15
553:	17	17	15	14	27	14	17	14
561:	9	11	15	14	17	12	13	8
569:	13	15	10	12	21	10	12	10
577:	14	17	14	12	12	24	128	191
585:	37	13	18	11	9	24	8	11
593:	11	7	16	14	12	14	13	13
601:	16	15	17	18	14	12	25	36
609:	167	241	64	24	13	7	16	12
617:	15	15	13	14	10	10	20	7
625:	11	16	16	7	9	12	10	15
633:	13	13	16	10	17	9	9	14
641:	14	13	18	10	9	10	17	6
649:	15	14	6	11	9	15	14	13
657:	16	12	11	8	11	14	12	9
665:	19	17	15	10	15	14	17	11
673:	16	5	10	10	7	12	5	15
681:	8	9	21	11	8	11	20	14
689:	13	17	12	16	16	10	10	10
697:	13	14	11	12	22	10	20	17
705:	14	16	17	8	12	16	13	17
713:	15	9	10	8	10	13	12	10
721:	12	13	14	13	13	20	42	34
729:	19	5	11	5	13	11	5	13
737:	13	11	6	15	9	10	11	9
745:	9	16	12	8	13	10	8	14
753:	6	7	19	15	14	13	9	8
761:	8	5	10	14	12	15	11	30
769:	29	12	12	11	16	17	8	6
777:	9	14	9	11	7	6	9	9
785:	16	14	12	7	7	6	8	4
793:	10	10	27	24	15	4	12	9

801: 7 8 9 13 16 16 13 9

Sample Title: CP0604S11-12

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	9	5	6	7	15	11	3	6
817:	8	12	9	9	13	6	9	8
825:	11	8	11	8	6	8	17	15
833:	6	14	16	15	12	11	13	13
841:	13	14	18	6	9	6	9	11
849:	6	16	14	6	7	8	4	5
857:	7	9	9	14	29	24	7	7
865:	7	8	9	5	6	5	11	9
873:	12	12	13	10	9	9	8	14
881:	7	6	12	5	8	10	2	7
889:	13	11	8	6	8	9	5	11
897:	14	2	6	8	11	4	8	9
905:	12	7	5	6	6	18	111	113
913:	31	8	7	6	8	12	5	12
921:	8	8	10	7	9	5	8	8
929:	5	8	9	8	9	16	13	12
937:	11	10	4	5	8	8	8	7
945:	11	10	4	12	7	6	11	14
953:	8	8	8	9	6	10	13	12
961:	6	8	13	10	40	17	19	20
969:	71	55	10	7	5	10	11	7
977:	5	11	11	3	8	10	6	7
985:	5	2	2	10	4	7	4	7
993:	9	12	5	9	3	9	10	10
1001:	18	5	11	6	6	1	7	9
1009:	13	10	4	7	6	9	6	8
1017:	9	6	7	3	6	5	6	2
1025:	3	7	7	8	3	7	6	6
1033:	6	9	8	4	9	6	7	8
1041:	5	9	11	5	8	7	9	10
1049:	13	4	6	10	11	4	6	9
1057:	6	6	11	8	11	11	8	7
1065:	14	2	5	8	7	10	16	7
1073:	9	9	6	9	7	9	9	9
1081:	6	7	8	5	4	4	11	10
1089:	5	10	4	4	4	14	11	9
1097:	7	5	2	4	12	8	2	9
1105:	7	3	10	9	10	5	11	8
1113:	6	11	17	4	8	5	15	39
1121:	56	27	11	11	6	8	8	9
1129:	6	10	7	4	10	11	8	10
1137:	5	11	6	4	4	3	11	4
1145:	9	6	6	7	5	4	13	12
1153:	6	5	15	9	7	7	11	11
1161:	9	6	12	7	6	7	13	9
1169:	6	4	11	5	11	9	5	6
1177:	8	10	9	7	8	6	6	9
1185:	5	8	9	6	8	8	5	6
1193:	10	7	10	13	4	12	6	11
1201:	7	5	8	13	6	5	5	13
1209:	13	3	13	7	5	5	15	12
1217:	8	12	9	16	9	14	15	8
1225:	4	8	7	10	6	9	7	6

1233: 9 8 9 13 10 19 22 18

Sample Title: CP0604S11-12

Channel	1	2	3	4	5	6	7	8
1241:	7	6	5	6	7	9	7	12
1249:	11	5	7	7	7	5	9	4
1257:	6	5	10	10	9	8	9	8
1265:	5	4	4	5	5	5	9	10
1273:	6	6	6	1	7	7	6	4
1281:	10	6	7	6	14	7	7	4
1289:	4	6	3	6	4	4	7	2
1297:	6	6	6	4	4	6	6	1
1305:	6	8	10	3	8	5	2	4
1313:	4	4	3	6	3	5	3	4
1321:	4	2	7	5	5	3	7	5
1329:	6	6	8	3	4	1	2	2
1337:	4	4	6	7	3	1	5	5
1345:	1	2	6	4	10	5	3	1
1353:	5	4	3	7	2	3	3	5
1361:	1	2	6	4	8	1	4	5
1369:	4	5	3	4	4	6	5	4
1377:	8	14	9	4	3	5	4	3
1385:	2	4	3	3	6	1	0	4
1393:	3	5	3	2	2	4	2	4
1401:	5	10	4	6	1	0	5	15
1409:	10	3	2	0	2	3	3	2
1417:	2	2	5	4	3	3	4	8
1425:	2	4	3	6	4	2	2	2
1433:	2	2	2	2	4	5	4	4
1441:	4	4	5	4	2	2	4	3
1449:	3	2	2	3	4	4	7	3
1457:	5	6	19	155	400	279	59	12
1465:	6	4	3	2	1	2	2	6
1473:	3	2	3	2	1	2	3	5
1481:	1	2	2	1	2	3	1	2
1489:	3	4	4	5	4	5	1	4
1497:	1	2	0	0	7	6	5	2
1505:	1	3	2	1	6	8	3	0
1513:	6	6	1	1	1	2	2	2
1521:	1	4	2	1	6	1	1	2
1529:	3	3	3	2	3	2	2	2
1537:	3	3	0	3	1	2	3	2
1545:	3	2	3	2	3	1	2	3
1553:	3	4	2	1	4	1	1	4
1561:	2	2	2	1	2	2	0	1
1569:	2	1	2	1	4	0	1	4
1577:	0	2	3	3	4	6	1	3
1585:	3	2	5	6	6	3	2	3
1593:	4	4	1	0	2	2	2	2
1601:	2	0	1	1	0	0	2	2
1609:	0	2	2	0	1	2	3	0
1617:	1	3	4	2	5	5	2	0
1625:	3	2	0	1	0	4	5	8
1633:	0	1	2	0	2	3	2	2
1641:	1	1	2	2	0	1	0	0
1649:	1	3	0	2	2	1	1	2
1657:	3	0	3	1	5	4	6	2

1665: 2 3 2 0 4 2 1 1

Sample Title: CP0604S11-12

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1673:	2	0	0	2	2	0	2	1
1681:	1	1	1	1	3	3	2	1
1689:	0	0	1	3	6	1	1	6
1697:	3	6	3	3	2	0	3	3
1705:	0	1	1	0	0	2	1	0
1713:	0	2	5	3	0	1	0	0
1721:	0	1	2	0	1	0	0	2
1729:	10	12	2	3	1	0	1	0
1737:	2	1	1	1	2	0	0	0
1745:	0	1	1	2	1	2	1	1
1753:	2	1	1	0	1	1	0	2
1761:	3	1	4	29	37	15	4	2
1769:	1	2	0	2	2	2	0	1
1777:	2	2	2	2	1	2	0	1
1785:	1	2	1	1	1	3	2	2
1793:	0	0	1	1	2	0	1	0
1801:	1	1	1	0	1	1	3	5
1809:	1	1	2	2	1	1	1	1
1817:	0	4	2	1	0	2	3	1
1825:	2	2	1	2	1	1	3	0
1833:	0	0	1	0	0	2	2	2
1841:	2	1	2	1	2	1	1	6
1849:	7	3	1	1	1	1	2	0
1857:	0	2	2	0	1	1	1	1
1865:	2	0	0	2	2	1	0	2
1873:	1	1	1	3	0	2	0	0
1881:	3	0	1	1	0	0	2	0
1889:	1	2	0	2	2	0	0	1
1897:	2	0	1	1	3	1	1	2
1905:	0	1	1	1	1	1	1	2
1913:	2	0	0	0	2	0	4	0
1921:	1	0	3	0	0	0	2	1
1929:	0	0	2	0	2	1	1	1
1937:	0	0	1	0	1	1	0	3
1945:	1	2	2	1	0	0	2	0
1953:	2	1	1	0	1	0	0	2
1961:	0	4	0	1	0	0	0	1
1969:	2	0	1	0	0	2	0	2
1977:	0	0	0	3	1	0	1	1
1985:	2	1	0	0	1	1	1	3
1993:	2	1	0	0	2	0	2	1
2001:	1	2	0	1	2	0	2	1
2009:	2	1	0	0	1	3	0	2
2017:	1	1	0	0	1	2	0	0
2025:	1	0	0	1	0	0	0	2
2033:	0	0	1	2	0	1	1	1
2041:	1	1	3	0	0	2	1	0
2049:	2	0	0	1	1	0	0	1
2057:	3	3	1	1	0	1	1	1
2065:	1	1	1	1	0	0	1	0
2073:	1	1	2	1	0	1	1	1
2081:	1	1	0	0	2	1	0	2
2089:	0	1	0	0	0	0	3	1

2097: 2 1 2 1 0 3 2 6

Sample Title: CP0604S11-12

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

2529: 0 0 1 0 0 0 3 1

Sample Title: CP0604S11-12

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	1	0	0	0	0	0	2
2545:	0	0	0	0	0	0	0	2
2553:	0	1	0	0	0	0	1	0
2561:	0	0	2	1	0	1	1	1
2569:	0	0	0	0	0	1	1	0
2577:	0	1	1	0	0	0	0	0
2585:	1	0	0	0	1	1	0	0
2593:	1	1	0	0	0	1	0	1
2601:	0	0	0	1	0	0	0	0
2609:	0	0	2	0	13	31	44	29
2617:	4	2	0	0	0	1	1	1
2625:	0	0	0	0	0	0	0	0
2633:	0	0	1	2	1	0	1	0
2641:	1	0	0	0	0	0	0	0
2649:	2	0	0	0	1	0	1	0
2657:	0	0	0	1	0	0	0	1
2665:	0	0	0	0	1	0	0	0
2673:	0	0	0	0	0	0	1	0
2681:	2	0	0	0	0	1	0	0
2689:	1	0	0	0	1	0	2	0
2697:	1	1	1	0	0	0	0	1
2705:	0	0	0	0	0	0	1	0
2713:	0	1	1	0	2	0	0	0
2721:	0	0	0	0	0	0	1	0
2729:	0	2	1	0	0	0	0	0
2737:	0	0	0	2	0	0	0	0
2745:	0	0	1	0	0	1	0	0
2753:	0	0	1	0	0	0	0	0
2761:	1	0	1	0	0	0	0	2
2769:	0	1	0	0	0	0	0	1
2777:	0	0	0	0	0	0	0	0
2785:	1	0	1	0	1	0	1	0
2793:	0	1	1	1	0	0	0	1
2801:	0	0	0	0	1	0	0	2
2809:	0	0	1	0	0	0	1	0
2817:	0	0	2	0	2	0	0	0
2825:	1	1	0	0	0	1	0	0
2833:	0	1	0	0	0	2	0	1
2841:	0	2	0	0	0	0	0	0
2849:	0	0	1	0	1	0	0	1
2857:	0	1	0	0	0	1	1	0
2865:	0	1	1	1	0	0	1	0
2873:	0	0	1	0	0	0	0	0
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	0
2905:	0	0	1	0	0	0	0	0
2913:	1	0	0	0	0	0	0	1
2921:	1	0	0	0	0	0	1	0
2929:	0	0	0	0	0	0	1	0
2937:	2	0	0	0	0	0	0	0
2945:	1	0	1	0	0	0	0	0
2953:	0	0	0	0	1	0	0	0

2961: 0 0 1 0 0 0 1 0

Sample Title: CP0604S11-12

Channel	1	2	3	4	5	6	7	8
2969:	1	0	0	1	1	0	1	0
2977:	0	0	0	0	0	1	0	0
2985:	0	1	0	1	0	0	0	0
2993:	1	0	0	1	0	0	0	0
3001:	0	0	0	0	0	0	0	0
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	1	0	0	0	0	0	0	1
3033:	0	0	0	0	0	0	0	1
3041:	1	1	0	0	0	0	0	1
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	1	0	0	0	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	0	0	1	0	0	0
3089:	0	0	1	1	0	0	1	0
3097:	0	0	0	0	1	0	0	0
3105:	0	0	0	1	0	0	0	1
3113:	0	0	0	0	0	0	0	0
3121:	0	1	0	1	3	1	1	0
3129:	0	0	0	0	0	0	0	0
3137:	1	0	1	0	0	0	0	0
3145:	0	0	0	0	1	0	1	1
3153:	0	0	0	0	0	0	1	0
3161:	0	0	0	1	0	0	0	0
3169:	1	0	0	0	0	0	0	0
3177:	1	0	0	0	0	0	0	0
3185:	0	0	1	0	0	0	0	0
3193:	1	0	1	1	1	3	0	0
3201:	0	0	0	0	0	1	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	1	0	1	0	0
3225:	0	0	1	0	0	0	0	0
3233:	0	0	1	0	1	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	1	0	0	0	0	1	0	0
3257:	0	0	0	0	0	0	1	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	1	0	0	0	0
3281:	1	0	1	0	0	0	0	0
3289:	0	0	0	0	0	1	1	0
3297:	0	0	1	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	1	0	0	1	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	1	2	0	0
3337:	0	0	1	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	1	0	0	0	0	0	1
3361:	0	2	0	0	0	0	0	0
3369:	0	1	1	0	0	0	0	1
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: CP0604S11-12

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	0	0
3409:	0	0	1	0	0	0	0	0
3417:	0	0	0	0	0	0	0	1
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	1	0	0
3441:	0	0	0	0	0	1	0	1
3449:	0	0	0	0	0	0	1	0
3457:	0	0	0	0	1	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	1	0	1	0	0	0	0
3481:	0	0	0	0	1	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	1	0	0	0	0
3505:	0	0	0	0	0	1	0	0
3513:	0	0	0	0	0	1	0	0
3521:	1	0	1	0	0	1	0	0
3529:	0	0	0	0	0	1	1	0
3537:	0	0	0	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	1	0	0	0
3569:	0	0	0	0	1	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	1	0	0	0	0	1
3593:	0	0	0	0	0	0	0	0
3601:	1	0	0	0	0	0	0	0
3609:	0	0	1	0	0	0	0	0
3617:	0	0	0	0	0	1	0	1
3625:	0	0	0	0	1	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	1	0	0	0	0
3657:	0	0	1	0	0	0	1	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	1	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	1	1	0	0
3697:	0	0	0	0	1	0	0	0
3705:	1	0	0	0	1	0	1	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	1	0
3729:	0	0	0	1	0	0	0	0
3737:	0	0	1	0	1	1	0	0
3745:	0	0	1	0	0	0	0	0
3753:	0	0	1	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	1	0	0	0	0	0
3817:	0	1	0	0	0	0	0	0

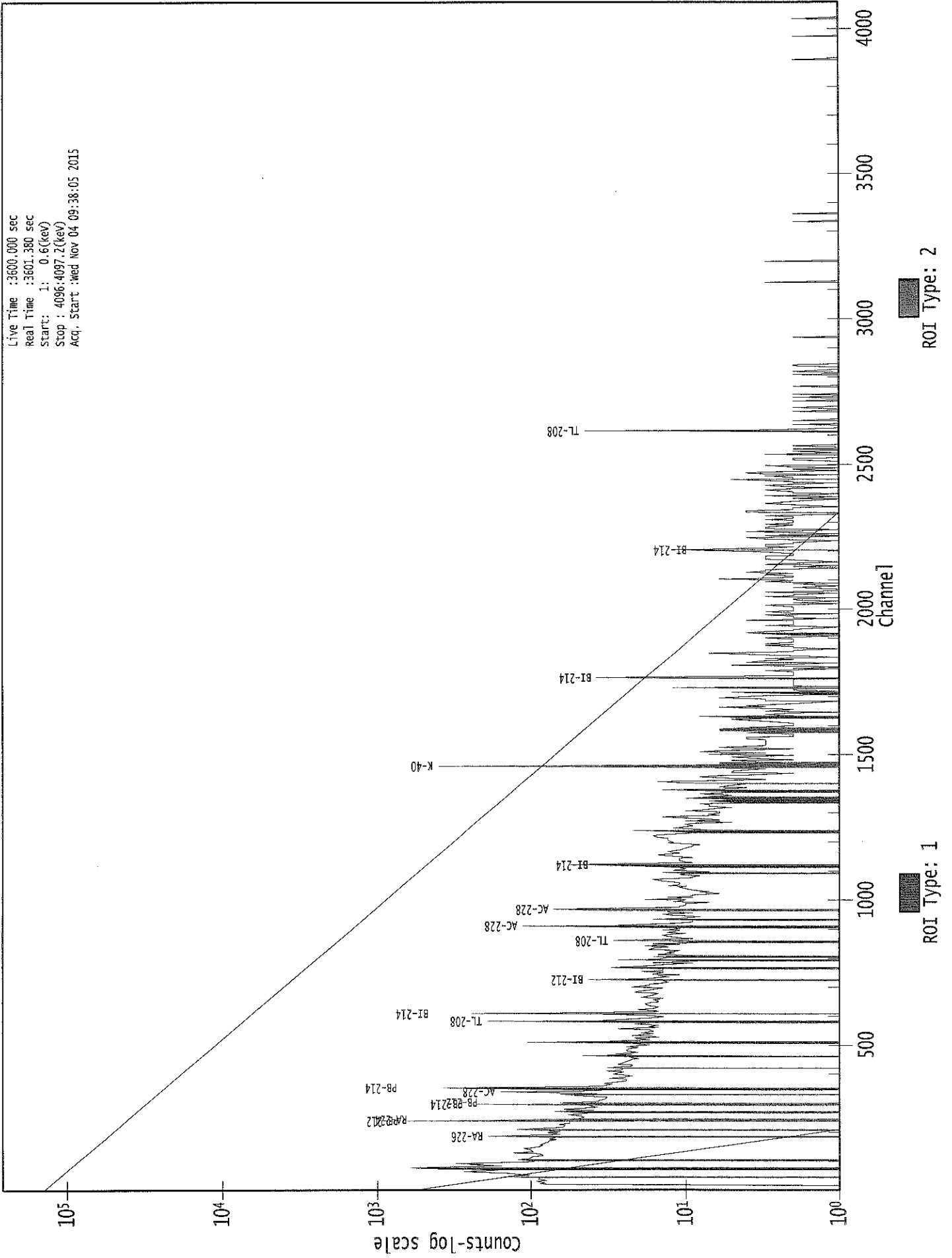
3825: 0 1 0 0 0 0 0 0 0

Sample Title: CP0604S11-12

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	1
3857:	0	0	0	0	0	0	0	0
3865:	1	0	0	0	0	1	0	0
3873:	0	1	1	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	1	0	2	0	0	0
3897:	0	1	0	0	0	0	0	0
3905:	0	1	1	0	0	0	0	0
3913:	0	0	0	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	0	0	0	1	0
3945:	0	0	0	0	0	0	0	0
3953:	1	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	2	0	0	0
3977:	0	0	0	0	0	0	0	1
3985:	0	0	0	0	0	0	1	0
3993:	0	1	0	1	0	1	1	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:	0	2	1	0	0	1	0	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	0	0	0
4065:	0	0	0	0	0	0	1	0
4073:	0	0	0	0	0	1	0	0
4081:	0	0	1	1	0	0	0	1
4089:	0	0	0	0	0	0	0	0

0000029100.CNF

Live Time : 3600.000 sec
Real Time : 3601.380 sec
Start: 1: 0.6(keV)
Stop : 4096.4097.2(keV)
Acq. Start : Wed Nov 04 09:38:05 2015



Analysis Report for 1510084-07
CP0604S14-15


11/4

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-07
Sample Description : CP0604S14-15
Sample Type : SOIL

Sample Size : 5.594E+02 grams
Facility : Countroom

Sample Taken On : 10/9/2015 9:47:18AM
Acquisition Started : 11/4/2015 9:38:17AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
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) : 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 : 29101

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-07
CP0604S14-15

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 10:38:29AM
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	47.28	47.39	0.0000	0.00
2	53.06	53.16	0.0000	0.00
3	63.41	63.50	0.0000	0.00
4	76.08	76.17	0.0000	0.00
5	93.35	93.42	0.0000	0.00
6	114.27	114.34	0.0000	0.00
7	144.81	144.86	0.0000	0.00
8	185.83	185.86	0.0000	0.00
9	198.42	198.44	0.0000	0.00
10	208.99	209.00	0.0000	0.00
11	236.27	236.27	0.0000	0.00
12	238.88	238.88	0.0000	0.00
13	241.73	241.73	0.0000	0.00
14	270.79	270.77	0.0000	0.00
15	295.24	295.20	0.0000	0.00
16	300.18	300.14	0.0000	0.00
17	327.20	327.15	0.0000	0.00
18	338.43	338.37	0.0000	0.00
19	351.97	351.91	0.0000	0.00
20	366.71	366.64	0.0000	0.00
21	463.49	463.37	0.0000	0.00
22	511.33	511.19	0.0000	0.00
23	583.26	583.08	0.0000	0.00
24	609.38	609.19	0.0000	0.00
25	615.94	615.74	0.0000	0.00
26	626.47	626.27	0.0000	0.00
27	650.72	650.51	0.0000	0.00
28	727.70	727.45	0.0000	0.00
29	794.42	794.14	0.0000	0.00
30	828.61	828.32	0.0000	0.00
31	836.88	836.59	0.0000	0.00
32	846.35	846.05	0.0000	0.00
33	854.42	854.12	0.0000	0.00
34	861.49	861.19	0.0000	0.00
35	911.17	910.84	0.0000	0.00
36	935.00	934.66	0.0000	0.00
37	965.15	964.80	0.0000	0.00
38	969.22	968.87	0.0000	0.00
39	1091.03	1090.64	0.0000	0.00
40	1120.27	1119.86	0.0000	0.00
41	1237.39	1236.94	0.0000	0.00
42	1281.87	1281.41	0.0000	0.00

Analysis Report for 1510084-07
CP0604S14-15

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1360.19	1359.70	0.0000	0.00
44	1377.04	1376.55	0.0000	0.00
45	1388.05	1387.55	0.0000	0.00
46	1406.03	1405.52	0.0000	0.00
47	1442.04	1441.53	0.0000	0.00
48	1460.95	1460.42	0.0000	0.00
49	1509.44	1508.90	0.0000	0.00
50	1526.23	1525.69	0.0000	0.00
51	1590.00	1589.44	0.0000	0.00
52	1644.78	1644.21	0.0000	0.00
53	1661.69	1661.11	0.0000	0.00
54	1730.08	1729.49	0.0000	0.00
55	1764.55	1763.94	0.0000	0.00
56	1774.60	1773.99	0.0000	0.00
57	1848.10	1847.47	0.0000	0.00
58	1884.63	1884.00	0.0000	0.00
59	1896.32	1895.69	0.0000	0.00
60	2102.84	2102.16	0.0000	0.00
61	2204.81	2204.12	0.0000	0.00
62	2313.76	2313.05	0.0000	0.00
63	2355.13	2354.41	0.0000	0.00
64	2447.39	2446.67	0.0000	0.00
65	2614.29	2613.55	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510084-07

CP0604S14-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 10:38:29AM

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	47.28	44 -	50	47.39	1.69E+02	100.31	1.69E+03	1.31	
2	53.06	51 -	55	53.16	7.17E+01	69.16	9.89E+02	2.50	
3	63.41	60 -	67	63.50	1.65E+02	111.05	1.96E+03	1.99	
4	76.08	71 -	82	76.17	1.40E+03	168.44	2.85E+03	3.91	
5	93.35	91 -	96	93.42	2.14E+02	89.56	1.35E+03	1.41	
6	114.27	110 -	118	114.34	9.27E+01	94.71	1.31E+03	4.14	
7	144.81	142 -	147	144.86	7.02E+01	67.85	8.66E+02	3.11	
8	185.83	182 -	189	185.86	2.19E+02	83.50	1.01E+03	1.45	
9	198.42	196 -	202	198.44	6.93E+01	65.82	7.35E+02	2.80	
10	208.99	206 -	212	209.00	1.03E+02	68.61	7.77E+02	1.42	
M	11	236.27	235 -	244	236.27	4.32E+01	33.64	3.02E+02	1.55
m	12	238.88	235 -	244	238.88	9.14E+02	79.47	4.54E+02	1.55
m	13	241.73	235 -	244	241.73	2.15E+02	75.28	4.22E+02	1.56
14	270.79	267 -	274	270.77	8.40E+01	62.42	5.96E+02	1.09	
M	15	295.24	291 -	305	295.20	3.74E+02	52.55	2.99E+02	1.51
m	16	300.18	291 -	305	300.14	5.93E+01	45.48	3.63E+02	2.00
17	327.20	323 -	330	327.15	5.62E+01	54.00	4.50E+02	1.30	
18	338.43	333 -	342	338.37	1.98E+02	64.95	4.88E+02	1.77	
19	351.97	348 -	355	351.91	6.83E+02	68.53	3.27E+02	1.33	
20	366.71	364 -	370	366.64	4.60E+01	41.42	2.76E+02	2.81	
21	463.49	459 -	466	463.37	8.74E+01	42.57	2.43E+02	1.31	
22	511.33	507 -	518	511.19	2.12E+02	53.63	2.57E+02	2.70	
23	583.26	578 -	587	583.08	3.46E+02	52.10	1.90E+02	1.61	
24	609.38	605 -	613	609.19	4.78E+02	56.31	1.94E+02	1.58	
25	615.94	614 -	619	615.74	2.23E+01	27.96	1.39E+02	2.93	
26	626.47	623 -	630	626.27	3.30E+01	32.37	1.54E+02	4.45	
27	650.72	646 -	653	650.51	3.99E+01	33.35	1.56E+02	2.77	
28	727.70	723 -	731	727.45	9.43E+01	35.43	1.35E+02	2.32	
29	794.42	791 -	798	794.14	3.03E+01	31.75	1.47E+02	1.77	
30	828.61	826 -	830	828.32	1.35E+01	17.36	5.50E+01	1.24	
31	836.88	832 -	842	836.59	3.44E+01	36.57	1.61E+02	8.22	
32	846.35	844 -	850	846.05	2.45E+01	23.80	7.49E+01	3.11	
33	854.42	852 -	857	854.12	2.20E+01	20.45	6.60E+01	3.14	
34	861.49	857 -	866	861.19	6.51E+01	34.26	1.32E+02	2.10	
35	911.17	907 -	915	910.84	2.12E+02	41.22	1.31E+02	1.69	
36	935.00	931 -	937	934.66	2.43E+01	24.79	9.34E+01	1.35	
M	37	965.15	960 -	973	964.80	3.46E+01	27.88	5.97E+01	2.19
m	38	969.22	960 -	973	968.87	1.47E+02	32.33	8.94E+01	2.19
39	1091.03	1086 -	1097	1090.64	2.87E+01	34.93	1.39E+02	6.78	
40	1120.27	1114 -	1123	1119.86	1.14E+02	35.54	1.16E+02	1.90	

Analysis Report for 1510084-07

CP0604S14-15

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1237.39	1231 -	1241	1236.94	8.42E+01	34.07	1.10E+02	2.69
	42	1281.87	1278 -	1285	1281.41	2.47E+01	20.78	5.46E+01	4.03
	43	1360.19	1354 -	1365	1359.70	2.40E+01	19.60	3.60E+01	4.88
M	44	1377.04	1371 -	1391	1376.55	4.04E+01	19.06	3.36E+01	3.64
m	45	1388.05	1371 -	1391	1387.55	1.68E+01	15.27	1.37E+01	3.66
	46	1406.03	1397 -	1415	1405.52	7.09E+01	28.83	4.82E+01	9.65
	47	1442.04	1437 -	1445	1441.53	1.10E+01	12.69	1.80E+01	1.04
	48	1460.95	1455 -	1466	1460.42	7.93E+02	60.03	5.34E+01	2.41
	49	1509.44	1506 -	1512	1508.90	1.90E+01	12.37	1.40E+01	1.91
	50	1526.23	1524 -	1528	1525.69	5.90E+00	7.66	8.20E+00	1.98
	51	1590.00	1584 -	1595	1589.44	3.35E+01	21.73	4.29E+01	7.33
	52	1644.78	1640 -	1648	1644.21	1.32E+01	11.86	1.35E+01	4.95
	53	1661.69	1658 -	1665	1661.11	9.75E+00	12.65	2.05E+01	1.63
	54	1730.08	1723 -	1734	1729.49	2.19E+01	15.23	1.83E+01	2.21
	55	1764.55	1758 -	1769	1763.94	8.80E+01	23.32	2.40E+01	2.70
	56	1774.60	1770 -	1778	1773.99	9.56E+00	11.17	1.29E+01	2.94
	57	1848.10	1843 -	1851	1847.47	1.79E+01	11.34	8.27E+00	3.63
	58	1884.63	1881 -	1887	1884.00	1.20E+01	6.93	0.00E+00	4.70
	59	1896.32	1889 -	1901	1895.69	1.80E+01	11.24	6.00E+00	2.96
	60	2102.84	2096 -	2108	2102.16	2.91E+01	13.05	5.88E+00	2.53
	61	2204.81	2197 -	2213	2204.12	3.19E+01	19.82	2.42E+01	3.64
	62	2313.76	2309 -	2317	2313.05	1.06E+01	10.02	8.80E+00	1.31
	63	2355.13	2351 -	2358	2354.41	1.09E+01	9.38	6.29E+00	1.76
	64	2447.39	2443 -	2450	2446.67	2.10E+01	9.17	0.00E+00	3.15
	65	2614.29	2607 -	2618	2613.55	1.30E+02	22.80	0.00E+00	2.53

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 : 11/4/2015 10:38:29AM

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	47.28	44 -	50	1.69E+02	100.31	1.69E+03	7.96E+01
2	53.06	51 -	55	7.17E+01	69.16	9.89E+02	5.51E+01
3	63.41	60 -	67	1.65E+02	111.05	1.96E+03	8.88E+01

: 00558

Analysis Report for 1510084-07

CP0604S14-15

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level	
4	76.08	71 -	82	1.40E+03	168.44	2.85E+03	1.24E+02	
5	93.35	91 -	96	2.14E+02	89.56	1.35E+03	6.96E+01	
6	114.27	110 -	118	9.27E+01	94.71	1.31E+03	7.62E+01	
7	144.81	142 -	147	7.02E+01	67.85	8.66E+02	5.40E+01	
8	185.83	182 -	189	2.19E+02	83.50	1.01E+03	6.42E+01	
9	198.42	196 -	202	6.93E+01	65.82	7.35E+02	5.23E+01	
10	208.99	206 -	212	1.03E+02	68.61	7.77E+02	5.39E+01	
M	11	236.27	235 -	244	4.32E+01	33.64	3.02E+02	2.86E+01
m	12	238.88	235 -	244	9.14E+02	79.47	4.54E+02	3.50E+01
m	13	241.73	235 -	244	2.15E+02	75.28	4.22E+02	3.38E+01
	14	270.79	267 -	274	8.40E+01	62.42	5.96E+02	4.90E+01
M	15	295.24	291 -	305	3.74E+02	52.55	2.99E+02	2.84E+01
m	16	300.18	291 -	305	5.93E+01	45.48	3.63E+02	3.13E+01
	17	327.20	323 -	330	5.62E+01	54.00	4.50E+02	4.26E+01
	18	338.43	333 -	342	1.98E+02	64.95	4.88E+02	4.81E+01
	19	351.97	348 -	355	6.83E+02	68.53	3.27E+02	3.64E+01
	20	366.71	364 -	370	4.60E+01	41.42	2.76E+02	3.22E+01
	21	463.49	459 -	466	8.74E+01	42.57	2.43E+02	3.14E+01
	22	511.33	507 -	518	2.12E+02	53.63	2.57E+02	3.70E+01
	23	583.26	578 -	587	3.46E+02	52.10	1.90E+02	3.00E+01
	24	609.38	605 -	613	4.78E+02	56.31	1.94E+02	2.92E+01
	25	615.94	614 -	619	2.23E+01	27.96	1.39E+02	2.16E+01
	26	626.47	623 -	630	3.30E+01	32.37	1.54E+02	2.49E+01
	27	650.72	646 -	653	3.99E+01	33.35	1.56E+02	2.54E+01
	28	727.70	723 -	731	9.43E+01	35.43	1.35E+02	2.44E+01
	29	794.42	791 -	798	3.03E+01	31.75	1.47E+02	2.45E+01
	30	828.61	826 -	830	1.35E+01	17.36	5.50E+01	1.29E+01
	31	836.88	832 -	842	3.44E+01	36.57	1.61E+02	2.85E+01
	32	846.35	844 -	850	2.45E+01	23.80	7.49E+01	1.78E+01
	33	854.42	852 -	857	2.20E+01	20.45	6.60E+01	1.49E+01
	34	861.49	857 -	866	6.51E+01	34.26	1.32E+02	2.48E+01
	35	911.17	907 -	915	2.12E+02	41.22	1.31E+02	2.40E+01
	36	935.00	931 -	937	2.43E+01	24.79	9.34E+01	1.87E+01
M	37	965.15	960 -	973	3.46E+01	27.88	5.97E+01	1.27E+01
m	38	969.22	960 -	973	1.47E+02	32.33	8.94E+01	1.55E+01
	39	1091.03	1086 -	1097	2.87E+01	34.93	1.39E+02	2.73E+01
	40	1120.27	1114 -	1123	1.14E+02	35.54	1.16E+02	2.33E+01
	41	1237.39	1231 -	1241	8.42E+01	34.07	1.10E+02	2.36E+01
	42	1281.87	1278 -	1285	2.47E+01	20.78	5.46E+01	1.50E+01
	43	1360.19	1354 -	1365	2.40E+01	19.60	3.60E+01	1.39E+01
M	44	1377.04	1371 -	1391	4.04E+01	19.06	3.36E+01	9.53E+00
m	45	1388.05	1371 -	1391	1.68E+01	15.27	1.37E+01	6.09E+00
	46	1406.03	1397 -	1415	7.09E+01	28.83	4.82E+01	1.92E+01
	47	1442.04	1437 -	1445	1.10E+01	12.69	1.80E+01	8.89E+00
	48	1460.95	1455 -	1466	7.93E+02	60.03	5.34E+01	1.71E+01
	49	1509.44	1506 -	1512	1.90E+01	12.37	1.40E+01	7.21E+00
	50	1526.23	1524 -	1528	5.90E+00	7.66	8.20E+00	4.87E+00
	51	1590.00	1584 -	1595	3.35E+01	21.73	4.29E+01	1.51E+01
	52	1644.78	1640 -	1648	1.32E+01	11.86	1.35E+01	7.70E+00
	53	1661.69	1658 -	1665	9.75E+00	12.65	2.05E+01	9.04E+00
	54	1730.08	1723 -	1734	2.19E+01	15.23	1.83E+01	9.88E+00

Analysis Report for 1510084-07

CP0604S14-15

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
55	1764.55	1758 -	1769	8.80E+01	23.32	2.40E+01	1.14E+01
56	1774.60	1770 -	1778	9.56E+00	11.17	1.29E+01	7.65E+00
57	1848.10	1843 -	1851	1.79E+01	11.34	8.27E+00	6.21E+00
58	1884.63	1881 -	1887	1.20E+01	6.93	0.00E+00	0.00E+00
59	1896.32	1889 -	1901	1.80E+01	11.24	6.00E+00	6.05E+00
60	2102.84	2096 -	2108	2.91E+01	13.05	5.88E+00	6.04E+00
61	2204.81	2197 -	2213	3.19E+01	19.82	2.42E+01	1.34E+01
62	2313.76	2309 -	2317	1.06E+01	10.02	8.80E+00	6.27E+00
63	2355.13	2351 -	2358	1.09E+01	9.38	6.29E+00	5.49E+00
64	2447.39	2443 -	2450	2.10E+01	9.17	0.00E+00	0.00E+00
65	2614.29	2607 -	2618	1.30E+02	22.80	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 : 11/4/2015 10:38:29AM

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	47.28	44 -	50	47.39	1.69E+02	100.31	1.69E+03	PB-210
2	53.06	51 -	55	53.16	7.17E+01	69.16	9.89E+02	.....
3	63.41	60 -	67	63.50	1.65E+02	111.05	1.96E+03	TH-234 TH-230
4	76.08	71 -	82	76.17	1.40E+03	168.44	2.85E+03	.....
5	93.35	91 -	96	93.42	2.14E+02	89.56	1.35E+03	GA-67
6	114.27	110 -	118	114.34	9.27E+01	94.71	1.31E+03	.....
7	144.81	142 -	147	144.86	7.02E+01	67.85	8.66E+02	CE-141
8	185.83	182 -	189	185.86	2.19E+02	83.50	1.01E+03	RA-226
9	198.42	196 -	202	198.44	6.93E+01	65.82	7.35E+02	.....
10	208.99	206 -	212	209.00	1.03E+02	68.61	7.77E+02	GA-67 CM-243
M 11	236.27	235 -	244	236.27	4.32E+01	33.64	3.02E+02	TH-227 NB-95M
m 12	238.88	235 -	244	238.88	9.14E+02	79.47	4.54E+02	PB-212

Analysis Report for 1510084-07

CP0604S14-15

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	13	241.73	235 -	244	241.73	2.15E+02	75.28	4.22E+02	RA-224
	14	270.79	267 -	274	270.77	8.40E+01	62.42	5.96E+02	.....
M	15	295.24	291 -	305	295.20	3.74E+02	52.55	2.99E+02	PB-214
m	16	300.18	291 -	305	300.14	5.93E+01	45.48	3.63E+02	GA-67 PB-212 BI-210M
	17	327.20	323 -	330	327.15	5.62E+01	54.00	4.50E+02	.....
	18	338.43	333 -	342	338.37	1.98E+02	64.95	4.88E+02	AC-228
	19	351.97	348 -	355	351.91	6.83E+02	68.53	3.27E+02	PB-214
	20	366.71	364 -	370	366.64	4.60E+01	41.42	2.76E+02	.....
	21	463.49	459 -	466	463.37	8.74E+01	42.57	2.43E+02	SB-125
	22	511.33	507 -	518	511.19	2.12E+02	53.63	2.57E+02	.....
	23	583.26	578 -	587	583.08	3.46E+02	52.10	1.90E+02	TL-208
	24	609.38	605 -	613	609.19	4.78E+02	56.31	1.94E+02	BI-214
	25	615.94	614 -	619	615.74	2.23E+01	27.96	1.39E+02	.....
	26	626.47	623 -	630	626.27	3.30E+01	32.37	1.54E+02	.....
	27	650.72	646 -	653	650.51	3.99E+01	33.35	1.56E+02	.....
	28	727.70	723 -	731	727.45	9.43E+01	35.43	1.35E+02	BI-212
	29	794.42	791 -	798	794.14	3.03E+01	31.75	1.47E+02	.....
	30	828.61	826 -	830	828.32	1.35E+01	17.36	5.50E+01	.....
	31	836.88	832 -	842	836.59	3.44E+01	36.57	1.61E+02	.....
	32	846.35	844 -	850	846.05	2.45E+01	23.80	7.49E+01	CO-56
	33	854.42	852 -	857	854.12	2.20E+01	20.45	6.60E+01	.....
	34	861.49	857 -	866	861.19	6.51E+01	34.26	1.32E+02	.....
	35	911.17	907 -	915	910.84	2.12E+02	41.22	1.31E+02	AC-228 LU-172
	36	935.00	931 -	937	934.66	2.43E+01	24.79	9.34E+01	.....
M	37	965.15	960 -	973	964.80	3.46E+01	27.88	5.97E+01	.....
m	38	969.22	960 -	973	968.87	1.47E+02	32.33	8.94E+01	AC-228
	39	1091.03	1086 -	1097	1090.64	2.87E+01	34.93	1.39E+02	.....
	40	1120.27	1114 -	1123	1119.86	1.14E+02	35.54	1.16E+02	BI-214 SC-46
	41	1237.39	1231 -	1241	1236.94	8.42E+01	34.07	1.10E+02	CO-56
	42	1281.87	1278 -	1285	1281.41	2.47E+01	20.78	5.46E+01	.....
	43	1360.19	1354 -	1365	1359.70	2.40E+01	19.60	3.60E+01	.....
M	44	1377.04	1371 -	1391	1376.55	4.04E+01	19.06	3.36E+01	.....
m	45	1388.05	1371 -	1391	1387.55	1.68E+01	15.27	1.37E+01	.....
	46	1406.03	1397 -	1415	1405.52	7.09E+01	28.83	4.82E+01	.....
	47	1442.04	1437 -	1445	1441.53	1.10E+01	12.69	1.80E+01	.....
	48	1460.95	1455 -	1466	1460.42	7.93E+02	60.03	5.34E+01	K-40
	49	1509.44	1506 -	1512	1508.90	1.90E+01	12.37	1.40E+01	.....
	50	1526.23	1524 -	1528	1525.69	5.90E+00	7.66	8.20E+00	.....
	51	1590.00	1584 -	1595	1589.44	3.35E+01	21.73	4.29E+01	.....
	52	1644.78	1640 -	1648	1644.21	1.32E+01	11.86	1.35E+01	.....
	53	1661.69	1658 -	1665	1661.11	9.75E+00	12.65	2.05E+01	.....
	54	1730.08	1723 -	1734	1729.49	2.19E+01	15.23	1.83E+01	.....
	55	1764.55	1758 -	1769	1763.94	8.80E+01	23.32	2.40E+01	BI-214
	56	1774.60	1770 -	1778	1773.99	9.56E+00	11.17	1.29E+01	.....
	57	1848.10	1843 -	1851	1847.47	1.79E+01	11.34	8.27E+00	.....
	58	1884.63	1881 -	1887	1884.00	1.20E+01	6.93	0.00E+00	.....
	59	1896.32	1889 -	1901	1895.69	1.80E+01	11.24	6.00E+00	.....
	60	2102.84	2096 -	2108	2102.16	2.91E+01	13.05	5.88E+00	.....
	61	2204.81	2197 -	2213	2204.12	3.19E+01	19.82	2.42E+01	BI-214
	62	2313.76	2309 -	2317	2313.05	1.06E+01	10.02	8.80E+00	.....

Analysis Report for 1510084-07

CP0604S14-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
63	2355.13	2351 -	2358	2354.41	1.09E+01	9.38	6.29E+00	.....
64	2447.39	2443 -	2450	2446.67	2.10E+01	9.17	0.00E+00	.....
65	2614.29	2607 -	2618	2613.55	1.30E+02	22.80	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 : 11/4/2015 10:38:29AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	47.28	1.69E+02	100.31	1.40E-02	1.68E-03
2	53.06	7.17E+01	69.16	1.82E-02	1.68E-03
3	63.41	1.65E+02	111.05	2.38E-02	2.06E-03
4	76.08	1.40E+03	168.44	2.73E-02	3.32E-03
5	93.35	2.14E+02	89.56	2.85E-02	4.27E-03
6	114.27	9.27E+01	94.71	2.74E-02	3.34E-03
7	144.81	7.02E+01	67.85	2.45E-02	2.31E-03
8	185.83	2.19E+02	83.50	2.11E-02	1.65E-03
9	198.42	6.93E+01	65.82	2.02E-02	1.64E-03
10	208.99	1.03E+02	68.61	1.95E-02	1.63E-03
M	11	236.27	4.32E+01	1.80E-02	1.60E-03
m	12	238.88	9.14E+02	1.79E-02	1.60E-03
m	13	241.73	2.15E+02	1.77E-02	1.60E-03
	14	270.79	8.40E+01	1.64E-02	1.57E-03
M	15	295.24	3.74E+02	1.55E-02	1.48E-03
m	16	300.18	5.93E+01	1.53E-02	1.46E-03
	17	327.20	5.62E+01	1.44E-02	1.33E-03
	18	338.43	1.98E+02	1.41E-02	1.27E-03
	19	351.97	6.83E+02	1.37E-02	1.21E-03
	20	366.71	4.60E+01	1.33E-02	1.14E-03
	21	463.49	8.74E+01	1.13E-02	9.47E-04
	22	511.33	2.12E+02	1.06E-02	8.98E-04
	23	583.26	3.46E+02	9.58E-03	8.25E-04
	24	609.38	4.78E+02	9.27E-03	7.98E-04
	25	615.94	2.23E+01	9.20E-03	7.92E-04
	26	626.47	3.30E+01	9.08E-03	7.81E-04
	27	650.72	3.99E+01	8.82E-03	7.56E-04

Analysis Report for 1510084-07
CP0604S14-15

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	28	727.70	9.43E+01	35.43	8.08E-03	7.03E-04
	29	794.42	3.03E+01	31.75	7.54E-03	6.60E-04
	30	828.61	1.35E+01	17.36	7.29E-03	6.38E-04
	31	836.88	3.44E+01	36.57	7.23E-03	6.33E-04
	32	846.35	2.45E+01	23.80	7.16E-03	6.27E-04
	33	854.42	2.20E+01	20.45	7.11E-03	6.21E-04
	34	861.49	6.51E+01	34.26	7.06E-03	6.17E-04
	35	911.17	2.12E+02	41.22	6.75E-03	5.87E-04
	36	935.00	2.43E+01	24.79	6.60E-03	5.74E-04
M	37	965.15	3.46E+01	27.88	6.44E-03	5.59E-04
m	38	969.22	1.47E+02	32.33	6.41E-03	5.57E-04
	39	1091.03	2.87E+01	34.93	5.83E-03	4.95E-04
	40	1120.27	1.14E+02	35.54	5.70E-03	4.80E-04
	41	1237.39	8.42E+01	34.07	5.27E-03	4.82E-04
	42	1281.87	2.47E+01	20.78	5.13E-03	5.03E-04
	43	1360.19	2.40E+01	19.60	4.91E-03	5.15E-04
M	44	1377.04	4.04E+01	19.06	4.87E-03	5.08E-04
m	45	1388.05	1.68E+01	15.27	4.84E-03	5.03E-04
	46	1406.03	7.09E+01	28.83	4.80E-03	4.96E-04
	47	1442.04	1.10E+01	12.69	4.71E-03	4.81E-04
	48	1460.95	7.93E+02	60.03	4.67E-03	4.73E-04
	49	1509.44	1.90E+01	12.37	4.57E-03	4.53E-04
	50	1526.23	5.90E+00	7.66	4.54E-03	4.46E-04
	51	1590.00	3.35E+01	21.73	4.43E-03	4.20E-04
	52	1644.78	1.32E+01	11.86	4.34E-03	3.97E-04
	53	1661.69	9.75E+00	12.65	4.32E-03	3.90E-04
	54	1730.08	2.19E+01	15.23	4.23E-03	3.62E-04
	55	1764.55	8.80E+01	23.32	4.19E-03	3.47E-04
	56	1774.60	9.56E+00	11.17	4.17E-03	3.43E-04
	57	1848.10	1.79E+01	11.34	4.10E-03	3.18E-04
	58	1884.63	1.20E+01	6.93	4.07E-03	3.18E-04
	59	1896.32	1.80E+01	11.24	4.06E-03	3.18E-04
	60	2102.84	2.91E+01	13.05	3.95E-03	3.18E-04
	61	2204.81	3.19E+01	19.82	3.93E-03	3.18E-04
	62	2313.76	1.06E+01	10.02	3.93E-03	3.18E-04
	63	2355.13	1.09E+01	9.38	3.94E-03	3.18E-04
	64	2447.39	2.10E+01	9.17	3.96E-03	3.18E-04
	65	2614.29	1.30E+02	22.80	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 : 11/4/2015 10:38:29AM

: 00563

Analysis Report for 1510084-07

CP0604S14-15

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	47.28	1.69E+02	100.31	6.46E+01	1.16E+01	1.05E+02	1.01E+02
2	53.06	7.17E+01	69.16			7.17E+01	6.92E+01
3	63.41	1.65E+02	111.05	4.34E+01	1.15E+01	1.22E+02	1.12E+02
4	76.08	1.40E+03	168.44			1.40E+03	1.68E+02
5	93.35	2.14E+02	89.56	5.70E+01	9.03E+00	1.57E+02	9.00E+01
6	114.27	9.27E+01	94.71			9.27E+01	9.47E+01
7	144.81	7.02E+01	67.85	8.10E+00	1.90E+01	6.21E+01	7.05E+01
8	185.83	2.19E+02	83.50	4.72E+01	7.97E+00	1.72E+02	8.39E+01
9	198.42	6.93E+01	65.82	6.20E+00	7.58E+00	6.31E+01	6.63E+01
10	208.99	1.03E+02	68.61			1.03E+02	6.86E+01
M	11	236.27	4.32E+01			4.32E+01	3.36E+01
m	12	238.88	9.14E+02	2.36E+01	1.35E+01	8.91E+02	8.06E+01
m	13	241.73	2.15E+02	6.38E+00	3.91E+00	2.09E+02	7.54E+01
	14	270.79	8.40E+01			8.40E+01	6.24E+01
M	15	295.24	3.74E+02	8.57E+00	6.10E+00	3.66E+02	5.29E+01
m	16	300.18	5.93E+01			5.93E+01	4.55E+01
	17	327.20	5.62E+01	0.00E+00	0.00E+00	5.62E+01	5.40E+01
	18	338.43	1.98E+02			1.98E+02	6.49E+01
	19	351.97	6.83E+02	1.40E+01	5.55E+00	6.69E+02	6.88E+01
	20	366.71	4.60E+01			4.60E+01	4.14E+01
	21	463.49	8.74E+01			8.74E+01	4.26E+01
	22	511.33	2.12E+02	8.41E+01	5.50E+00	1.28E+02	5.39E+01
	23	583.26	3.46E+02	7.32E+00	4.08E+00	3.39E+02	5.23E+01
	24	609.38	4.78E+02	1.30E+01	3.89E+00	4.65E+02	5.64E+01
	25	615.94	2.23E+01			2.23E+01	2.80E+01
	26	626.47	3.30E+01			3.30E+01	3.24E+01
	27	650.72	3.99E+01			3.99E+01	3.33E+01
	28	727.70	9.43E+01			9.43E+01	3.54E+01
	29	794.42	3.03E+01			3.03E+01	3.17E+01
	30	828.61	1.35E+01			1.35E+01	1.74E+01
	31	836.88	3.44E+01			3.44E+01	3.66E+01
	32	846.35	2.45E+01			2.45E+01	2.38E+01
	33	854.42	2.20E+01			2.20E+01	2.04E+01
	34	861.49	6.51E+01			6.51E+01	3.43E+01
	35	911.17	2.12E+02	5.60E+00	3.32E+00	2.07E+02	4.14E+01
	36	935.00	2.43E+01			2.43E+01	2.48E+01
M	37	965.15	3.46E+01			3.46E+01	2.79E+01
m	38	969.22	1.47E+02			1.47E+02	3.23E+01
	39	1091.03	2.87E+01			2.87E+01	3.49E+01
	40	1120.27	1.14E+02	3.93E+00	2.96E+00	1.10E+02	3.57E+01
	41	1237.39	8.42E+01			8.42E+01	3.41E+01
	42	1281.87	2.47E+01			2.47E+01	2.08E+01
	43	1360.19	2.40E+01			2.40E+01	1.96E+01
M	44	1377.04	4.04E+01			4.04E+01	1.91E+01
m	45	1388.05	1.68E+01			1.68E+01	1.53E+01
	46	1406.03	7.09E+01			7.09E+01	2.88E+01
	47	1442.04	1.10E+01			1.10E+01	1.27E+01
	48	1460.95	7.93E+02	1.12E+01	2.55E+00	7.82E+02	6.01E+01
	49	1509.44	1.90E+01			1.90E+01	1.24E+01

Analysis Report for 1510084-07

CP0604S14-15

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
50	1526.23	5.90E+00	7.66			5.90E+00	7.66E+00
51	1590.00	3.35E+01	21.73			3.35E+01	2.17E+01
52	1644.78	1.32E+01	11.86			1.32E+01	1.19E+01
53	1661.69	9.75E+00	12.65			9.75E+00	1.26E+01
54	1730.08	2.19E+01	15.23			2.19E+01	1.52E+01
55	1764.55	8.80E+01	23.32	4.23E+00	2.21E+00	8.38E+01	2.34E+01
56	1774.60	9.56E+00	11.17			9.56E+00	1.12E+01
57	1848.10	1.79E+01	11.34			1.79E+01	1.13E+01
58	1884.63	1.20E+01	6.93			1.20E+01	6.93E+00
59	1896.32	1.80E+01	11.24			1.80E+01	1.12E+01
60	2102.84	2.91E+01	13.05			2.91E+01	1.30E+01
61	2204.81	3.19E+01	19.82	5.94E-01	1.16E+00	3.13E+01	1.99E+01
62	2313.76	1.06E+01	10.02			1.06E+01	1.00E+01
63	2355.13	1.09E+01	9.38			1.09E+01	9.38E+00
64	2447.39	2.10E+01	9.17			2.10E+01	9.17E+00
65	2614.29	1.30E+02	22.80	7.38E+00	1.57E+00	1.23E+02	2.29E+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 : 11/4/2015 10:38:29AM
 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	47.28	1.69E+02	100.31	6.46E+01	1.16E+01	1.05E+02	1.01E+02
2	53.06	7.17E+01	69.16			7.17E+01	6.92E+01
3	63.41	1.65E+02	111.05	4.34E+01	1.15E+01	1.22E+02	1.12E+02
4	76.08	1.40E+03	168.44			1.40E+03	1.68E+02
5	93.35	2.14E+02	89.56	5.70E+01	9.03E+00	1.57E+02	9.00E+01
6	114.27	9.27E+01	94.71			9.27E+01	9.47E+01
7	144.81	7.02E+01	67.85	8.10E+00	1.90E+01	6.21E+01	7.05E+01
8	185.83	2.19E+02	83.50	4.72E+01	7.97E+00	1.72E+02	8.39E+01
9	198.42	6.93E+01	65.82	6.20E+00	7.58E+00	6.31E+01	6.63E+01
10	208.99	1.03E+02	68.61			1.03E+02	6.86E+01
M 11	236.27	4.32E+01	33.64			4.32E+01	3.36E+01
m 12	238.88	9.14E+02	79.47	2.36E+01	1.35E+01	8.91E+02	8.06E+01

Analysis Report for 1510084-07

CP0604S14-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	13	241.73	2.15E+02	75.28	6.38E+00	3.91E+00	2.09E+02	7.54E+01
	14	270.79	8.40E+01	62.42			8.40E+01	6.24E+01
M	15	295.24	3.74E+02	52.55	8.57E+00	6.10E+00	3.66E+02	5.29E+01
m	16	300.18	5.93E+01	45.48			5.93E+01	4.55E+01
	17	327.20	5.62E+01	54.00	0.00E+00	0.00E+00	5.62E+01	5.40E+01
	18	338.43	1.98E+02	64.95			1.98E+02	6.49E+01
	19	351.97	6.83E+02	68.53	1.40E+01	5.55E+00	6.69E+02	6.88E+01
	20	366.71	4.60E+01	41.42			4.60E+01	4.14E+01
	21	463.49	8.74E+01	42.57			8.74E+01	4.26E+01
	22	511.33	2.12E+02	53.63	8.41E+01	5.50E+00	1.28E+02	5.39E+01
	23	583.26	3.46E+02	52.10	7.32E+00	4.08E+00	3.39E+02	5.23E+01
	24	609.38	4.78E+02	56.31	1.30E+01	3.89E+00	4.65E+02	5.64E+01
	25	615.94	2.23E+01	27.96			2.23E+01	2.80E+01
	26	626.47	3.30E+01	32.37			3.30E+01	3.24E+01
	27	650.72	3.99E+01	33.35			3.99E+01	3.33E+01
	28	727.70	9.43E+01	35.43			9.43E+01	3.54E+01
	29	794.42	3.03E+01	31.75			3.03E+01	3.17E+01
	30	828.61	1.35E+01	17.36			1.35E+01	1.74E+01
	31	836.88	3.44E+01	36.57			3.44E+01	3.66E+01
	32	846.35	2.45E+01	23.80			2.45E+01	2.38E+01
	33	854.42	2.20E+01	20.45			2.20E+01	2.04E+01
	34	861.49	6.51E+01	34.26			6.51E+01	3.43E+01
	35	911.17	2.12E+02	41.22	5.60E+00	3.32E+00	2.07E+02	4.14E+01
	36	935.00	2.43E+01	24.79			2.43E+01	2.48E+01
M	37	965.15	3.46E+01	27.88			3.46E+01	2.79E+01
m	38	969.22	1.47E+02	32.33			1.47E+02	3.23E+01
	39	1091.03	2.87E+01	34.93			2.87E+01	3.49E+01
	40	1120.27	1.14E+02	35.54	3.93E+00	2.96E+00	1.10E+02	3.57E+01
	41	1237.39	8.42E+01	34.07			8.42E+01	3.41E+01
	42	1281.87	2.47E+01	20.78			2.47E+01	2.08E+01
	43	1360.19	2.40E+01	19.60			2.40E+01	1.96E+01
M	44	1377.04	4.04E+01	19.06			4.04E+01	1.91E+01
m	45	1388.05	1.68E+01	15.27			1.68E+01	1.53E+01
	46	1406.03	7.09E+01	28.83			7.09E+01	2.88E+01
	47	1442.04	1.10E+01	12.69			1.10E+01	1.27E+01
	48	1460.95	7.93E+02	60.03	1.12E+01	2.55E+00	7.82E+02	6.01E+01
	49	1509.44	1.90E+01	12.37			1.90E+01	1.24E+01
	50	1526.23	5.90E+00	7.66			5.90E+00	7.66E+00
	51	1590.00	3.35E+01	21.73			3.35E+01	2.17E+01
	52	1644.78	1.32E+01	11.86			1.32E+01	1.19E+01
	53	1661.69	9.75E+00	12.65			9.75E+00	1.26E+01
	54	1730.08	2.19E+01	15.23			2.19E+01	1.52E+01
	55	1764.55	8.80E+01	23.32	4.23E+00	2.21E+00	8.38E+01	2.34E+01
	56	1774.60	9.56E+00	11.17			9.56E+00	1.12E+01
	57	1848.10	1.79E+01	11.34			1.79E+01	1.13E+01
	58	1884.63	1.20E+01	6.93			1.20E+01	6.93E+00
	59	1896.32	1.80E+01	11.24			1.80E+01	1.12E+01
	60	2102.84	2.91E+01	13.05			2.91E+01	1.30E+01
	61	2204.81	3.19E+01	19.82	5.94E-01	1.16E+00	3.13E+01	1.99E+01
	62	2313.76	1.06E+01	10.02			1.06E+01	1.00E+01
	63	2355.13	1.09E+01	9.38			1.09E+01	9.38E+00
	64	2447.39	2.10E+01	9.17			2.10E+01	9.17E+00
	65	2614.29	1.30E+02	22.80	7.38E+00	1.57E+00	1.23E+02	2.29E+01

Analysis Report for 1510084-07

CP0604S14-15

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	0.997	1460.81	*	10.67	2.11E+01	2.71E+00
CO-56	0.644	846.75	*	99.96	5.78E-02	5.63E-02
		1037.75		14.03		
		1238.25	*	67.00	4.02E-01	1.67E-01
		1771.40		15.51		
		2598.48		16.90		
GA-67	0.728	93.31	*	35.70	5.22E+01	1.89E+02
		208.95	*	2.24	7.93E+02	2.74E+03
		300.22	*	16.00	8.20E+01	3.00E+02
NB-95M	0.731	235.69	*	25.00	1.90E+01	1.49E+01
CE-141	0.935	145.44	*	48.40	1.22E-01	1.42E-01
TL-208	0.880	583.14	*	30.22	1.57E+00	2.77E-01
		860.37		4.48		
		2614.66	*	35.85	1.13E+00	2.29E-01
PB-210	0.906	46.50	*	4.25	2.37E+00	2.30E+00
BI-212	0.731	727.17	*	11.80	1.33E+00	5.12E-01
		1620.62		2.75		
PB-212	0.991	238.63	*	44.60	1.50E+00	1.91E-01
		300.09	*	3.41	1.53E+00	1.18E+00
BI-214	0.996	609.31	*	46.30	1.45E+00	2.16E-01
		1120.29	*	15.10	1.72E+00	5.74E-01
		1764.49	*	15.80	1.70E+00	4.96E-01
		2204.22	*	4.98	2.15E+00	1.37E+00
PB-214	1.000	295.21	*	19.19	1.65E+00	2.87E-01
		351.92	*	37.19	1.76E+00	2.38E-01
RA-224	0.913	240.98	*	3.95	4.00E+00	1.49E+00
RA-226	0.977	186.21	*	3.28	3.33E+00	6.31E+00
AC-228	0.998	338.32	*	11.40	1.65E+00	5.63E-01
		911.07	*	27.70	1.49E+00	3.24E-01
		969.11	*	16.60	1.86E+00	4.38E-01
TH-234	0.998	63.29	*	3.80	1.81E+00	1.67E+00

Analysis Report for 1510084-07

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* = 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 : 11/4/2015 10:38:29AM

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	53.06	1.99065E-02	48.25		
4	76.08	3.87627E-01	6.04		
6	114.27	2.57458E-02	51.09		
9	198.42	1.75230E-02	52.52		
14	270.79	2.33217E-02	37.17		
17	327.20	1.56079E-02	48.05		
20	366.71	1.27793E-02	45.02		
21	463.49	2.42730E-02	24.36		
22	511.33	3.56259E-02	21.02		
25	615.94	6.20773E-03	62.57		
26	626.47	9.15657E-03	49.10		
27	650.72	1.10852E-02	41.78		
29	794.42	8.42815E-03	52.32	Sum	
30	828.61	3.75000E-03	64.31		
31	836.88	9.54710E-03	53.20		
33	854.42	6.11111E-03	46.47		
34	861.49	1.80958E-02	26.30		
36	935.00	6.75274E-03	51.00	Sum	
M 37	965.15	9.61693E-03	40.27		
39	1091.03	7.96343E-03	60.92		
42	1281.87	6.86432E-03	42.05		
43	1360.19	6.66667E-03	40.82		
M 44	1377.04	1.12195E-02	23.59		
m 45	1388.05	4.66634E-03	45.46		
46	1406.03	1.96901E-02	20.34		
47	1442.04	3.05556E-03	57.68		
49	1509.44	5.27778E-03	32.55		
50	1526.23	1.63889E-03	64.96		
51	1590.00	9.31566E-03	32.39	Sum	
52	1644.78	3.67361E-03	44.85		
53	1661.69	2.70833E-03	64.87		
54	1730.08	6.07527E-03	34.82	Sum	
56	1774.60	2.65625E-03	58.40		
57	1848.10	4.96212E-03	31.73	Sum	

Analysis Report for 1510084-07
CP0604S14-15

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
58	1884.63	3.33333E-03	28.87		
59	1896.32	5.00000E-03	31.21		
60	2102.84	8.07292E-03	22.45	S-Esc	
62	2313.76	2.94444E-03	47.29		
63	2355.13	3.01587E-03	43.20		
64	2447.39	5.83333E-03	21.82	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	0.99	1460.81 *	10.67	2.11E+01	2.71E+00
CO-56	0.64	846.75 *	99.96	5.78E-02	5.63E-02
		1037.75	14.03		
		1238.25 *	67.00	4.02E-01	1.67E-01
		1771.40	15.51		
		2598.48	16.90		
GA-67	0.72	93.31 *	35.70	5.22E+01	1.89E+02
		208.95 *	2.24	7.93E+02	2.74E+03
		300.22 *	16.00	8.20E+01	3.00E+02
NB-95M	0.73	235.69 *	25.00	1.90E+01	1.49E+01
CE-141	0.93	145.44 *	48.40	1.22E-01	1.42E-01
TL-208	0.88	583.14 *	30.22	1.57E+00	2.77E-01
		860.37	4.48		
		2614.66 *	35.85	1.13E+00	2.29E-01
PB-210	0.90	46.50 *	4.25	2.37E+00	2.30E+00
BI-212	0.73	727.17 *	11.80	1.33E+00	5.12E-01
		1620.62	2.75		
PB-212	0.99	238.63 *	44.60	1.50E+00	1.91E-01
		300.09 *	3.41	1.53E+00	1.18E+00
BI-214	0.99	609.31 *	46.30	1.45E+00	2.16E-01
		1120.29 *	15.10	1.72E+00	5.74E-01
		1764.49 *	15.80	1.70E+00	4.96E-01

Analysis Report for 1510084-07
 CP0604S14-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.99	2204.22 *	4.98	2.15E+00	1.37E+00
PB-214	1.00	295.21 *	19.19	1.65E+00	2.87E-01
		351.92 *	37.19	1.76E+00	2.38E-01
RA-224	0.91	240.98 *	3.95	4.00E+00	1.49E+00
RA-226	0.97	186.21 *	3.28	3.33E+00	6.31E+00
AC-228	0.99	338.32 *	11.40	1.65E+00	5.63E-01
		911.07 *	27.70	1.49E+00	3.24E-01
		969.11 *	16.60	1.86E+00	4.38E-01
TH-234	0.99	63.29 *	3.80	1.81E+00	1.67E+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	0.997	2.11E+01	2.71E+00	
CO-56	0.644	9.31E-02	5.34E-02	
GA-67	0.728	4.47E+01	1.54E+02	
NB-95M	0.731	1.90E+01	1.49E+01	
CE-141	0.935	1.22E-01	1.42E-01	
TL-208	0.880	1.31E+00	1.77E-01	
PB-210	0.906	2.37E+00	2.30E+00	
BI-212	0.731	1.33E+00	5.12E-01	
PB-212	0.991	1.48E+00	1.89E-01	
BI-214	0.996	1.53E+00	1.86E-01	
PB-214	1.000	1.72E+00	1.83E-01	
RA-224	0.913	4.00E+00	1.49E+00	
RA-226	0.977	3.33E+00	6.31E+00	
AC-228	0.998	1.62E+00	2.36E-01	
TH-234	0.998	1.81E+00	1.67E+00	

Analysis Report for 1510084-07

CP0604S14-15

- ? = 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 1510084-07

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 UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 10:38:29AM
 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	53.06	1.99065E-02	48.25		
4	76.08	3.87627E-01	6.04		
6	114.27	2.57458E-02	51.09		
9	198.42	1.75230E-02	52.52		
14	270.79	2.33217E-02	37.17		
17	327.20	1.56079E-02	48.05		
20	366.71	1.27793E-02	45.02		
21	463.49	2.42730E-02	24.36		
22	511.33	3.56259E-02	21.02		
25	615.94	6.20773E-03	62.57		
26	626.47	9.15657E-03	49.10		
27	650.72	1.10852E-02	41.78		
29	794.42	8.42815E-03	52.32	Sum	
30	828.61	3.75000E-03	64.31		
31	836.88	9.54710E-03	53.20		
33	854.42	6.11111E-03	46.47		
34	861.49	1.80958E-02	26.30		
36	935.00	6.75274E-03	51.00	Sum	
M 37	965.15	9.61693E-03	40.27		
39	1091.03	7.96343E-03	60.92		
42	1281.87	6.86432E-03	42.05		
43	1360.19	6.66667E-03	40.82		
M 44	1377.04	1.12195E-02	23.59		
m 45	1388.05	4.66634E-03	45.46		
46	1406.03	1.96901E-02	20.34		
47	1442.04	3.05556E-03	57.68		
49	1509.44	5.27778E-03	32.55		
50	1526.23	1.63889E-03	64.96		
51	1590.00	9.31566E-03	32.39	Sum	
52	1644.78	3.67361E-03	44.85		
53	1661.69	2.70833E-03	64.87		
54	1730.08	6.07527E-03	34.82	Sum	
56	1774.60	2.65625E-03	58.40		
57	1848.10	4.96212E-03	31.73	Sum	
58	1884.63	3.33333E-03	28.87		

Analysis Report for 1510084-07
CP0604S14-15

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
59	1896.32	5.00000E-03	31.21		
60	2102.84	8.07292E-03	22.45	S-Esc	
62	2313.76	2.94444E-03	47.29		
63	2355.13	3.01587E-03	43.20		
64	2447.39	5.83333E-03	21.82	Sum	

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	1.64E-01	7.55E-01	7.55E-01
+	NA-22	1274.54	99.94	8.68E-03	8.63E-02	8.63E-02
+	NA-24	1368.53	99.99	6.44E+09	1.02E+11	1.93E+11
		2754.09	99.86	-2.55E+10		1.02E+11
+	AL-26	1808.65	99.76	2.63E-02	6.93E-02	6.93E-02
+	K-40	1460.81	* 10.67	2.11E+01	1.05E+00	1.05E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	5.23E-03	5.24E-02	5.24E-02
		78.34	96.00	3.40E-01		7.91E-02
+	SC-46	889.25	99.98	-7.45E-02	7.95E-02	7.95E-02
		1120.51	99.99	2.75E-01		1.73E-01
+	V-48	983.52	99.98	1.88E-02	2.24E-01	2.24E-01
		1312.10	97.50	1.45E-02		2.45E-01
+	CR-51	320.08	9.83	2.31E-01	1.04E+00	1.04E+00
+	MN-54	834.83	99.97	3.15E-02	8.28E-02	8.28E-02
+	CO-56	846.75	* 99.96	5.78E-02	9.03E-02	9.03E-02
		1037.75	14.03	-1.29E-01		7.25E-01
		1238.25	* 67.00	4.02E-01		2.38E-01
		1771.40	15.51	-1.74E+00		5.70E-01
		2598.48	16.90	-7.41E-02		2.66E-01
+	CO-57	122.06	85.51	-8.25E-03	5.99E-02	5.99E-02
		136.48	10.60	-4.77E-02		5.07E-01
+	CO-58	810.76	99.40	-1.38E-03	9.71E-02	9.71E-02
+	FE-59	1099.22	56.50	-7.84E-03	2.21E-01	2.21E-01

Analysis Report for 1510084-07

CP0604S14-15

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	FE-59	1291.56	43.20	2.22E-01	2.21E-01	3.12E-01
+	CO-60	1173.22	100.00	-2.97E-02	8.32E-02	8.77E-02
		1332.49	100.00	4.53E-02		8.32E-02
+	ZN-65	1115.52	50.75	-1.70E-02	1.88E-01	1.88E-01
+	GA-67	93.31	* 35.70	5.22E+01	4.82E+01	4.82E+01
		208.95	* 2.24	7.93E+02		8.55E+02
		300.22	* 16.00	8.20E+01		2.00E+02
+	SE-75	121.11	16.70	1.88E-01	9.78E-02	3.32E-01
		136.00	59.20	-2.82E-02		9.78E-02
		264.65	59.80	-6.29E-03		1.04E-01
		279.53	25.20	-1.95E-01		2.62E-01
		400.65	11.40	-7.27E-03		5.57E-01
+	RB-82	776.52	13.00	-1.02E-01	1.13E+00	1.13E+00
+	RB-83	520.41	46.00	3.61E-02	1.47E-01	1.47E-01
		529.64	30.30	-7.48E-02		2.13E-01
		552.65	16.40	-2.43E-01		3.95E-01
+	KR-85	513.99	0.43	-1.19E+01	1.53E+01	1.53E+01
+	SR-85	513.99	99.27	-6.84E-02	8.82E-02	8.82E-02
+	Y-88	898.02	93.40	-5.85E-02	7.05E-02	9.12E-02
		1836.01	99.38	7.78E-03		7.05E-02
+	NB-93M	16.57	9.43	-6.03E+03	5.52E+03	5.52E+03
+	NB-94	702.63	100.00	-1.21E-02	7.20E-02	7.20E-02
		871.10	100.00	1.46E-02		7.66E-02
+	NB-95	765.79	99.81	8.61E-02	1.47E-01	1.47E-01
+	NB-95M	235.69	* 25.00	1.90E+01	5.34E+01	5.34E+01
+	ZR-95	724.18	43.70	1.08E-02	1.82E-01	2.54E-01
		756.72	55.30	3.07E-02		1.82E-01
+	MO-99	181.06	6.20	6.08E+01	3.63E+02	6.23E+02
		739.58	12.80	-1.17E+02		3.63E+02
		778.00	4.50	-6.02E+02		1.08E+03
+	RU-103	497.08	89.00	9.93E-03	9.92E-02	9.92E-02
+	RU-106	621.84	9.80	5.62E-02	7.14E-01	7.14E-01
+	AG-108M	433.93	89.90	-4.23E-02	5.17E-02	5.17E-02
		614.37	90.40	-8.44E-01		8.55E-02
		722.95	90.50	1.76E-03		7.55E-02
+	CD-109	88.03	3.72	3.50E+00	1.90E+00	1.90E+00
+	AG-110M	657.75	93.14	-1.51E-02	7.66E-02	7.66E-02
		677.61	10.53	1.16E-01		6.94E-01
		706.67	16.46	6.88E-02		4.94E-01
		763.93	21.98	-6.02E-01		3.61E-01
		884.67	71.63	7.98E-02		1.16E-01
		1384.27	23.94	-4.61E-02		2.98E-01
+	CD-113M	263.70	0.02	-4.25E+01	2.31E+02	2.31E+02
+	SN-113	255.12	1.93	-9.96E-01	1.01E-01	3.07E+00
		391.69	64.90	3.07E-02		1.01E-01
+	TE123M	159.00	84.10	-1.18E-02	6.94E-02	6.94E-02
+	SB-124	602.71	97.87	4.10E-02	9.22E-02	9.22E-02
		645.85	7.26	-1.35E-01		1.25E+00

Analysis Report for 1510084-07
CP0604S14-15

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-124	722.78	11.10	1.93E-02	9.22E-02	8.30E-01
		1691.02	49.00	-2.16E-02		1.57E-01
+	I-125	35.49	6.49	3.46E-01	5.29E+00	5.29E+00
+	SB-125	176.33	6.89	2.57E-01	1.95E-01	7.72E-01
		427.89	29.33	1.21E-02		1.95E-01
		463.38	10.35	1.08E+00		7.26E-01
		600.56	17.80	6.90E-02		3.88E-01
		635.90	11.32	3.44E-01		6.40E-01
+	SB-126	414.70	83.30	1.11E-01	3.01E-01	3.01E-01
		666.33	99.60	1.79E-01		3.48E-01
		695.00	99.60	-2.14E-02		3.16E-01
		720.50	53.80	1.84E-01		5.35E-01
+	SN-126	87.57	37.00	3.39E-01	1.84E-01	1.84E-01
+	SB-127	473.00	25.00	1.47E+01	2.11E+01	2.52E+01
		685.20	35.70	-7.91E+00		2.11E+01
		783.80	14.70	-1.89E+00		5.84E+01
+	I-129	29.78	57.00	-4.07E-01	1.18E+00	1.18E+00
		33.60	13.20	-5.85E-01		2.52E+00
		39.58	7.52	-5.14E-01		2.15E+00
+	I-131	284.30	6.05	-6.02E+00	6.50E-01	8.69E+00
		364.48	81.20	-1.07E-01		6.50E-01
		636.97	7.26	-6.74E-02		8.86E+00
		722.89	1.80	8.31E-01		3.57E+01
+	TE-132	49.72	13.10	-6.70E+01	1.64E+01	1.46E+02
		228.16	88.00	5.14E+00		1.64E+01
+	BA-133	81.00	33.00	-5.97E-02	7.97E-02	1.29E-01
		302.84	17.80	-1.29E-01		3.36E-01
		356.01	60.00	-2.63E-02		7.97E-02
+	I-133	529.87	86.30	-5.70E+07	6.16E+07	6.16E+07
+	XE-133	81.00	38.00	-1.61E+00	3.48E+00	3.48E+00
+	CS-134	563.23	8.38	2.57E-01	9.16E-02	7.13E-01
		569.32	15.43	1.35E-01		3.93E-01
		604.70	97.60	2.35E-02		9.16E-02
		795.84	85.40	4.17E-02		1.02E-01
		801.93	8.73	1.99E-01		8.65E-01
+	CS-135	268.24	16.00	-3.34E-02	3.65E-01	3.65E-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	2.06E+00	2.75E-01	2.97E+00
		163.89	4.61	3.76E+00		4.66E+00
		176.55	13.56	1.85E-02		1.51E+00
		273.65	12.66	-7.02E-01		1.84E+00
		340.57	48.50	-4.05E-01		5.27E-01
		818.50	99.70	4.92E-02		2.75E-01
		1048.07	79.60	2.03E-02		3.85E-01
		1235.34	19.70	2.32E+00		2.57E+00
+	CS-137	661.65	85.12	3.36E-03	8.80E-02	8.80E-02
+	LA-138	788.74	34.00	7.23E-02	8.10E-02	2.46E-01

Analysis Report for 1510084-07

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-138	1435.80	66.00	3.21E-02	8.10E-02	8.10E-02
+	CE-139	165.85	80.35	2.76E-02	7.70E-02	7.70E-02
+	BA-140	162.64	6.70	-6.94E-01	1.00E+00	3.21E+00
		304.84	4.50	-1.89E-01		5.13E+00
		423.70	3.20	3.04E+00		7.70E+00
		437.55	2.00	1.58E+00		1.09E+01
		537.32	25.00	2.52E-01		1.00E+00
+	LA-140	328.77	20.50	9.03E-01	3.67E-01	1.24E+00
		487.03	45.50	-1.04E-01		4.81E-01
		815.85	23.50	2.16E-01		1.28E+00
		1596.49	95.49	5.87E-02		3.67E-01
+	CE-141	145.44	* 48.40	1.22E-01	2.28E-01	2.28E-01
+	CE-143	57.36	11.80	5.27E+04	9.63E+04	2.35E+05
		293.26	42.00	3.34E+04		9.63E+04
		664.55	5.20	3.61E+05		7.66E+05
+	CE-144	133.54	10.80	1.01E-01	4.87E-01	4.87E-01
+	PM-144	476.78	42.00	3.04E-02	7.73E-02	1.40E-01
		618.01	98.60	1.15E-02		7.82E-02
		696.49	99.49	-1.01E-02		7.73E-02
+	PM-145	36.85	21.70	1.07E-02	5.07E-01	9.86E-01
		37.36	39.70	5.48E-03		5.07E-01
		42.30	15.10	5.95E-01		8.86E-01
		72.40	2.31	-8.89E-01		2.23E+00
+	PM-146	453.90	39.94	3.80E-02	1.42E-01	1.42E-01
		735.90	14.01	1.81E-01		4.92E-01
		747.13	13.10	5.81E-02		5.69E-01
+	ND-147	91.11	28.90	5.99E-02	1.18E+00	1.18E+00
		531.02	13.10	-3.03E-01		2.12E+00
+	PM-149	285.90	3.10	-2.61E+03	6.28E+03	6.28E+03
+	EU-152	121.78	20.50	-3.23E-02	2.34E-01	2.34E-01
		244.69	5.40	3.02E-01		1.04E+00
		344.27	19.13	1.36E-01		2.65E-01
		778.89	9.20	-2.81E-01		7.58E-01
		964.01	10.40	-3.23E+00		9.27E-01
		1085.78	7.22	1.40E-01		1.18E+00
		1112.02	9.60	2.15E-02		8.63E-01
		1407.95	14.94	4.98E-01		6.76E-01
+	GD-153	97.43	31.30	2.76E-02	1.60E-01	1.60E-01
		103.18	22.20	-3.55E-01		2.22E-01
+	EU-154	123.07	40.50	3.91E-03	1.21E-01	1.21E-01
		723.30	19.70	8.11E-03		3.49E-01
		873.19	11.50	8.14E-03		6.71E-01
		996.32	10.30	-1.82E-01		6.71E-01
		1004.76	17.90	2.07E-01		4.62E-01
		1274.45	35.50	2.41E-02		2.40E-01
+	EU-155	86.50	30.90	-1.83E-01	2.14E-01	2.14E-01
		105.30	20.70	-1.20E-02		2.28E-01
+	EU-156	811.77	10.40	1.86E-02	2.36E+00	2.36E+00
		1153.47	7.20	2.37E+00		4.71E+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	8.04E-01	2.36E+00	3.41E+00
+	HO-166M	184.41	72.60	4.80E-02	9.46E-02	9.46E-02
		280.45	29.60	-1.43E-01		1.92E-01
		410.94	11.10	2.51E-01		5.47E-01
		711.69	54.10	4.36E-02		1.40E-01
+	TM-171	66.72	0.14	4.69E+00	3.73E+01	3.73E+01
+	HF-172	81.75	4.52	-8.26E-01	4.44E-01	9.74E-01
		125.81	11.30	-6.27E-01		4.44E-01
+	LU-172	181.53	20.60	1.10E+00	2.09E+00	4.03E+00
		810.06	16.63	-9.42E-02		6.64E+00
		912.12	15.25	4.16E+01		1.50E+01
		1093.66	62.50	4.03E-01		2.09E+00
+	LU-173	100.72	5.24	6.88E-01	3.19E-01	9.50E-01
		272.11	21.20	4.33E-01		3.19E-01
+	HF-175	343.40	84.00	3.38E-02	8.35E-02	8.35E-02
+	LU-176	88.34	13.30	9.43E-01	5.62E-02	5.12E-01
		201.83	86.00	-1.74E-02		6.22E-02
		306.78	94.00	-1.20E-02		5.62E-02
+	TA-182	67.75	41.20	1.40E-02	1.41E-01	1.41E-01
		1121.30	34.90	7.10E-01		4.67E-01
		1189.05	16.23	1.29E-02		6.62E-01
		1221.41	26.98	1.31E-01		4.40E-01
		1231.02	11.44	7.57E-02		9.49E-01
+	IR-192	308.46	29.68	8.84E-02	1.38E-01	2.35E-01
		468.07	48.10	-6.38E-02		1.38E-01
+	HG-203	279.19	77.30	3.06E-02	1.13E-01	1.13E-01
+	BI-207	569.67	97.72	2.08E-02	6.07E-02	6.07E-02
		1063.62	74.90	-1.14E-02		9.81E-02
+	TL-208	583.14	* 30.22	1.57E+00	1.11E-01	2.95E-01
		860.37	* 4.48	7.65E-01		2.06E+00
		2614.66	* 35.85	1.13E+00		1.11E-01
+	BI-210M	262.00	45.00	-7.27E-02	1.19E-01	1.19E-01
		300.00	23.00	1.22E-01		2.73E-01
+	PB-210	46.50	* 4.25	2.37E+00	3.74E+00	3.74E+00
+	PB-211	404.84	2.90	3.33E-01	2.01E+00	2.01E+00
		831.96	2.90	-4.73E-01		2.56E+00
+	BI-212	727.17	* 11.80	1.33E+00	7.24E-01	7.24E-01
		1620.62	2.75	8.71E-01		2.95E+00
+	PB-212	238.63	* 44.60	1.50E+00	2.15E-01	2.15E-01
		300.09	* 3.41	1.53E+00		3.73E+00
+	BI-214	609.31	* 46.30	1.45E+00	1.96E-01	1.96E-01
		1120.29	* 15.10	1.72E+00		7.81E-01
		1764.49	* 15.80	1.70E+00		5.43E-01
		2204.22	* 4.98	2.15E+00		2.04E+00
+	PB-214	295.21	* 19.19	1.65E+00	2.03E-01	6.53E-01
		351.92	* 37.19	1.76E+00		2.03E-01
+	RN-219	401.80	6.50	-5.43E-02	8.71E-01	8.71E-01
+	RA-223	323.87	3.88	-7.22E-01	1.42E+00	1.42E+00

Analysis Report for 1510084-07
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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>
+	RA-224	240.98	*	3.95	4.00E+00	2.38E+00	2.38E+00
+	RA-225	40.00		31.00	-4.04E-01	1.70E+00	1.70E+00
+	RA-226	186.21	*	3.28	3.33E+00	2.60E+00	2.60E+00
+	TH-227	50.10		8.40	-4.06E-01	7.43E-01	8.84E-01
		236.00		11.50	-5.52E+00		7.43E-01
		256.20		6.30	-3.74E-01		8.15E-01
+	AC-228	338.32	*	11.40	1.65E+00	3.71E-01	8.27E-01
		911.07	*	27.70	1.49E+00		3.71E-01
		969.11	*	16.60	1.86E+00		7.69E-01
+	TH-230	48.44		16.90	-1.02E-01	5.09E-01	5.09E-01
		62.85		4.60	1.39E+00		1.34E+00
		67.67		0.37	1.34E+00		1.34E+01
+	PA-231	283.67		1.60	-2.41E+00	2.58E+00	3.48E+00
		302.67		2.30	-9.96E-01		2.58E+00
+	TH-231	25.64		14.70	6.14E+00	7.31E-01	1.51E+01
		84.21		6.40	5.31E-01		7.31E-01
+	PA-233	311.98		38.60	5.05E-02	2.66E-01	2.66E-01
+	PA-234	131.20		20.40	6.79E-02	2.52E-01	2.52E-01
		733.99		8.80	9.50E-02		7.64E-01
		946.00		12.00	1.00E-01		6.03E-01
+	PA-234M	1001.03		0.92	3.87E+00	8.98E+00	8.98E+00
+	TH-234	63.29	*	3.80	1.81E+00	2.71E+00	2.71E+00
+	U-235	143.76		10.50	1.14E-01	5.09E-01	5.09E-01
		163.35		4.70	-2.42E-01		1.12E+00
		205.31		4.70	2.37E-01		1.20E+00
+	NP-237	86.50		12.60	-4.45E-01	5.20E-01	5.20E-01
+	NP-239	106.10		22.70	1.30E+02	4.39E+02	4.39E+02
		228.18		10.70	3.53E+02		1.13E+03
		277.60		14.10	7.22E+02		9.07E+02
+	AM-241	59.54		35.90	-5.23E-02	1.50E-01	1.50E-01
+	AM-243	74.67		66.00	-2.11E-01	1.09E-01	1.09E-01
+	CM-243	209.75		3.29	1.65E+00	4.33E-01	1.93E+00
		228.14		10.60	1.69E-01		5.39E-01
		277.60		14.00	3.44E-01		4.33E-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 1510084-07

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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	7.55E-01	7.55E-01	1.64E-01	3.55E-01
NA-22	1274.54	99.94	8.63E-02	8.63E-02	8.68E-03	3.95E-02
NA-24	1368.53	99.99	1.93E+11	1.02E+11	6.44E+09	8.38E+10
	2754.09	99.86	1.02E+11		-2.55E+10	3.60E+10
AL-26	1808.65	99.76	6.93E-02	6.93E-02	2.63E-02	3.03E-02
+ K-40	1460.81	*	10.67	1.05E+00	2.11E+01	4.86E-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	5.24E-02	5.24E-02	5.23E-03	2.54E-02
	78.34	96.00	7.91E-02		3.40E-01	3.89E-02
SC-46	889.25	99.98	7.95E-02	7.95E-02	-7.45E-02	3.65E-02
	1120.51	99.99	1.73E-01		2.75E-01	8.23E-02
V-48	983.52	99.98	2.24E-01	2.24E-01	1.88E-02	1.03E-01
	1312.10	97.50	2.45E-01		1.45E-02	1.11E-01
CR-51	320.08	9.83	1.04E+00	1.04E+00	2.31E-01	4.97E-01
MN-54	834.83	99.97	8.28E-02	8.28E-02	3.15E-02	3.88E-02
+ CO-56	846.75	*	99.96	9.03E-02	5.78E-02	4.20E-02
	1037.75	14.03	7.25E-01		-1.29E-01	3.36E-01
	1238.25	*	67.00	2.38E-01	4.02E-01	1.13E-01
	1771.40	15.51	5.70E-01		-1.74E+00	2.50E-01
	2598.48	16.90	2.66E-01		-7.41E-02	9.96E-02
CO-57	122.06	85.51	5.99E-02	5.99E-02	-8.25E-03	2.91E-02
	136.48	10.60	5.07E-01		-4.77E-02	2.46E-01
CO-58	810.76	99.40	9.71E-02	9.71E-02	-1.38E-03	4.54E-02
FE-59	1099.22	56.50	2.21E-01	2.21E-01	-7.84E-03	1.02E-01
	1291.56	43.20	3.12E-01		2.22E-01	1.44E-01
CO-60	1173.22	100.00	8.77E-02	8.32E-02	-2.97E-02	4.05E-02
	1332.49	100.00	8.32E-02		4.53E-02	3.79E-02
ZN-65	1115.52	50.75	1.88E-01	1.88E-01	-1.70E-02	8.74E-02
+ GA-67	93.31	*	35.70	4.82E+01	5.22E+01	2.37E+01
	208.95	*	2.24	8.55E+02	7.93E+02	4.17E+02
	300.22	*	16.00	2.00E+02	8.20E+01	9.83E+01
SE-75	121.11	16.70	3.32E-01	9.78E-02	1.88E-01	1.61E-01
	136.00	59.20	9.78E-02		-2.82E-02	4.75E-02
	264.65	59.80	1.04E-01		-6.29E-03	5.01E-02
	279.53	25.20	2.62E-01		-1.95E-01	1.26E-01
	400.65	11.40	5.57E-01		-7.27E-03	2.64E-01
RB-82	776.52	13.00	1.13E+00	1.13E+00	-1.02E-01	5.26E-01
RB-83	520.41	46.00	1.47E-01	1.47E-01	3.61E-02	6.91E-02
	529.64	30.30	2.13E-01		-7.48E-02	9.95E-02
	552.65	16.40	3.95E-01		-2.43E-01	1.84E-01
KR-85	513.99	0.43	1.53E+01	1.53E+01	-1.19E+01	7.27E+00
SR-85	513.99	99.27	8.82E-02	8.82E-02	-6.84E-02	4.18E-02

: 00579

Analysis Report for 1510084-07

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
Y-88	898.02	93.40	9.12E-02	7.05E-02	-5.85E-02	4.22E-02
	1836.01	99.38	7.05E-02		7.78E-03	3.00E-02
NB-93M	16.57	9.43	5.52E+03	5.52E+03	-6.03E+03	2.69E+03
NB-94	702.63	100.00	7.20E-02	7.20E-02	-1.21E-02	3.38E-02
	871.10	100.00	7.66E-02		1.46E-02	3.57E-02
NB-95	765.79	99.81	1.47E-01	1.47E-01	8.61E-02	6.97E-02
+ NB-95M	235.69	*	25.00	5.34E+01	1.90E+01	2.61E+01
ZR-95	724.18	43.70	2.54E-01	1.82E-01	1.08E-02	1.20E-01
	756.72	55.30	1.82E-01		3.07E-02	8.54E-02
MO-99	181.06	6.20	6.23E+02	3.63E+02	6.08E+01	3.02E+02
	739.58	12.80	3.63E+02		-1.17E+02	1.69E+02
	778.00	4.50	1.08E+03		-6.02E+02	5.01E+02
RU-103	497.08	89.00	9.92E-02	9.92E-02	9.93E-03	4.66E-02
RU-106	621.84	9.80	7.14E-01	7.14E-01	5.62E-02	3.36E-01
AG-108M	433.93	89.90	5.17E-02	5.17E-02	-4.23E-02	2.41E-02
	614.37	90.40	8.55E-02		-8.44E-01	4.06E-02
	722.95	90.50	7.55E-02		1.76E-03	3.53E-02
CD-109	88.03	3.72	1.90E+00	1.90E+00	3.50E+00	9.34E-01
AG-110M	657.75	93.14	7.66E-02	7.66E-02	-1.51E-02	3.59E-02
	677.61	10.53	6.94E-01		1.16E-01	3.25E-01
	706.67	16.46	4.94E-01		6.88E-02	2.33E-01
	763.93	21.98	3.61E-01		-6.02E-01	1.69E-01
	884.67	71.63	1.16E-01		7.98E-02	5.38E-02
	1384.27	23.94	2.98E-01		-4.61E-02	1.32E-01
CD-113M	263.70	0.02	2.31E+02	2.31E+02	-4.25E+01	1.11E+02
SN-113	255.12	1.93	3.07E+00	1.01E-01	-9.96E-01	1.47E+00
	391.69	64.90	1.01E-01		3.07E-02	4.78E-02
TE123M	159.00	84.10	6.94E-02	6.94E-02	-1.18E-02	3.36E-02
SB-124	602.71	97.87	9.22E-02	9.22E-02	4.10E-02	4.34E-02
	645.85	7.26	1.25E+00		-1.35E-01	5.89E-01
	722.78	11.10	8.30E-01		1.93E-02	3.88E-01
	1691.02	49.00	1.57E-01		-2.16E-02	6.67E-02
I-125	35.49	6.49	5.29E+00	5.29E+00	3.46E-01	2.56E+00
SB-125	176.33	6.89	7.72E-01	1.95E-01	2.57E-01	3.74E-01
	427.89	29.33	1.95E-01		1.21E-02	9.22E-02
	463.38	10.35	7.26E-01		1.08E+00	3.47E-01
	600.56	17.80	3.88E-01		6.90E-02	1.83E-01
	635.90	11.32	6.40E-01		3.44E-01	3.02E-01
SB-126	414.70	83.30	3.01E-01	3.01E-01	1.11E-01	1.43E-01
	666.33	99.60	3.48E-01		1.79E-01	1.65E-01
	695.00	99.60	3.16E-01		-2.14E-02	1.49E-01
	720.50	53.80	5.35E-01		1.84E-01	2.50E-01
SN-126	87.57	37.00	1.84E-01	1.84E-01	3.39E-01	9.04E-02
SB-127	473.00	25.00	2.52E+01	2.11E+01	1.47E+01	1.19E+01
	685.20	35.70	2.11E+01		-7.91E+00	9.92E+00
	783.80	14.70	5.84E+01		-1.89E+00	2.75E+01
I-129	29.78	57.00	1.18E+00	1.18E+00	-4.07E-01	5.72E-01
	33.60	13.20	2.52E+00		-5.85E-01	1.22E+00
	39.58	7.52	2.15E+00		-5.14E-01	1.05E+00
I-131	284.30	6.05	8.69E+00	6.50E-01	-6.02E+00	4.17E+00
	364.48	81.20	6.50E-01		-1.07E-01	3.09E-01
	636.97	7.26	8.86E+00		-6.74E-02	4.17E+00
	722.89	1.80	3.57E+01		8.31E-01	1.67E+01

Analysis Report for 1510084-07

CP0604S14-15

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	1.46E+02	1.64E+01	-6.70E+01	7.08E+01
	228.16	88.00	1.64E+01		5.14E+00	7.92E+00
BA-133	81.00	33.00	1.29E-01	7.97E-02	-5.97E-02	6.26E-02
	302.84	17.80	3.36E-01		-1.29E-01	1.61E-01
	356.01	60.00	7.97E-02		-2.63E-02	3.76E-02
I-133	529.87	86.30	6.16E+07	6.16E+07	-5.70E+07	2.86E+07
XE-133	81.00	38.00	3.48E+00	3.48E+00	-1.61E+00	1.69E+00
CS-134	563.23	8.38	7.13E-01	9.16E-02	2.57E-01	3.34E-01
	569.32	15.43	3.93E-01		1.35E-01	1.84E-01
	604.70	97.60	9.16E-02		2.35E-02	4.37E-02
	795.84	85.40	1.02E-01		4.17E-02	4.80E-02
	801.93	8.73	8.65E-01		1.99E-01	4.04E-01
CS-135	268.24	16.00	3.65E-01	3.65E-01	-3.34E-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	2.97E+00	2.75E-01	2.06E+00	1.44E+00
	163.89	4.61	4.66E+00		3.76E+00	2.26E+00
	176.55	13.56	1.51E+00		1.85E-02	7.31E-01
	273.65	12.66	1.84E+00		-7.02E-01	8.84E-01
	340.57	48.50	5.27E-01		-4.05E-01	2.53E-01
	818.50	99.70	2.75E-01		4.92E-02	1.28E-01
	1048.07	79.60	3.85E-01		2.03E-02	1.78E-01
	1235.34	19.70	2.57E+00		2.32E+00	1.22E+00
CS-137	661.65	85.12	8.80E-02	8.80E-02	3.36E-03	4.16E-02
LA-138	788.74	34.00	2.46E-01	8.10E-02	7.23E-02	1.16E-01
	1435.80	66.00	8.10E-02		3.21E-02	3.47E-02
CE-139	165.85	80.35	7.70E-02	7.70E-02	2.76E-02	3.73E-02
BA-140	162.64	6.70	3.21E+00	1.00E+00	-6.94E-01	1.56E+00
	304.84	4.50	5.13E+00		-1.89E-01	2.46E+00
	423.70	3.20	7.70E+00		3.04E+00	3.66E+00
	437.55	2.00	1.09E+01		1.58E+00	5.14E+00
	537.32	25.00	1.00E+00		2.52E-01	4.71E-01
LA-140	328.77	20.50	1.24E+00	3.67E-01	9.03E-01	5.93E-01
	487.03	45.50	4.81E-01		-1.04E-01	2.26E-01
	815.85	23.50	1.28E+00		2.16E-01	5.99E-01
	1596.49	95.49	3.67E-01		5.87E-02	1.66E-01
+ CE-141	145.44	*	48.40	2.28E-01	1.22E-01	1.11E-01
CE-143	57.36	11.80	2.35E+05	9.63E+04	5.27E+04	1.14E+05
	293.26	42.00	9.63E+04		3.34E+04	4.68E+04
	664.55	5.20	7.66E+05		3.61E+05	3.63E+05
CE-144	133.54	10.80	4.87E-01	4.87E-01	1.01E-01	2.37E-01
PM-144	476.78	42.00	1.40E-01	7.73E-02	3.04E-02	6.60E-02
	618.01	98.60	7.82E-02		1.15E-02	3.70E-02
	696.49	99.49	7.73E-02		-1.01E-02	3.63E-02
PM-145	36.85	21.70	9.86E-01	5.07E-01	1.07E-02	4.79E-01
	37.36	39.70	5.07E-01		5.48E-03	2.46E-01
	42.30	15.10	8.86E-01		5.95E-01	4.31E-01
	72.40	2.31	2.23E+00		-8.89E-01	1.08E+00
PM-146	453.90	39.94	1.42E-01	1.42E-01	3.80E-02	6.72E-02
	735.90	14.01	4.92E-01		1.81E-01	2.30E-01
	747.13	13.10	5.69E-01		5.81E-02	2.67E-01
ND-147	91.11	28.90	1.18E+00	1.18E+00	5.99E-02	5.77E-01

Analysis Report for 1510084-07

CP0604S14-15

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	2.12E+00	1.18E+00	-3.03E-01	9.89E-01
PM-149	285.90	3.10	6.28E+03	6.28E+03	-2.61E+03	3.01E+03
EU-152	121.78	20.50	2.34E-01	2.34E-01	-3.23E-02	1.14E-01
	244.69	5.40	1.04E+00		3.02E-01	5.02E-01
	344.27	19.13	2.65E-01		1.36E-01	1.26E-01
	778.89	9.20	7.58E-01		-2.81E-01	3.53E-01
	964.01	10.40	9.27E-01		-3.23E+00	4.36E-01
	1085.78	7.22	1.18E+00		1.40E-01	5.45E-01
	1112.02	9.60	8.63E-01		2.15E-02	3.98E-01
	1407.95	14.94	6.76E-01		4.98E-01	3.13E-01
GD-153	97.43	31.30	1.60E-01	1.60E-01	2.76E-02	7.80E-02
	103.18	22.20	2.22E-01		-3.55E-01	1.08E-01
EU-154	123.07	40.50	1.21E-01	1.21E-01	3.91E-03	5.87E-02
	723.30	19.70	3.49E-01		8.11E-03	1.63E-01
	873.19	11.50	6.71E-01		8.14E-03	3.13E-01
	996.32	10.30	6.71E-01		-1.82E-01	3.07E-01
	1004.76	17.90	4.62E-01		2.07E-01	2.14E-01
	1274.45	35.50	2.40E-01		2.41E-02	1.10E-01
EU-155	86.50	30.90	2.14E-01	2.14E-01	-1.83E-01	1.05E-01
	105.30	20.70	2.28E-01		-1.20E-02	1.11E-01
EU-156	811.77	10.40	2.36E+00	2.36E+00	1.86E-02	1.10E+00
	1153.47	7.20	4.71E+00		2.37E+00	2.21E+00
	1230.71	8.90	3.41E+00		8.04E-01	1.58E+00
HO-166M	184.41	72.60	9.46E-02	9.46E-02	4.80E-02	4.61E-02
	280.45	29.60	1.92E-01		-1.43E-01	9.22E-02
	410.94	11.10	5.47E-01		2.51E-01	2.60E-01
	711.69	54.10	1.40E-01		4.36E-02	6.58E-02
TM-171	66.72	0.14	3.73E+01	3.73E+01	4.69E+00	1.81E+01
HF-172	81.75	4.52	9.74E-01	4.44E-01	-8.26E-01	4.72E-01
	125.81	11.30	4.44E-01		-6.27E-01	2.16E-01
LU-172	181.53	20.60	4.03E+00	2.09E+00	1.10E+00	1.95E+00
	810.06	16.63	6.64E+00		-9.42E-02	3.10E+00
	912.12	15.25	1.50E+01		4.16E+01	7.25E+00
	1093.66	62.50	2.09E+00		4.03E-01	9.74E-01
LU-173	100.72	5.24	9.50E-01	3.19E-01	6.88E-01	4.62E-01
	272.11	21.20	3.19E-01		4.33E-01	1.54E-01
HF-175	343.40	84.00	8.35E-02	8.35E-02	3.38E-02	3.97E-02
LU-176	88.34	13.30	5.12E-01	5.62E-02	9.43E-01	2.51E-01
	201.83	86.00	6.22E-02		-1.74E-02	3.01E-02
	306.78	94.00	5.62E-02		-1.20E-02	2.68E-02
TA-182	67.75	41.20	1.41E-01	1.41E-01	1.40E-02	6.83E-02
	1121.30	34.90	4.67E-01		7.10E-01	2.23E-01
	1189.05	16.23	6.62E-01		1.29E-02	3.07E-01
	1221.41	26.98	4.40E-01		1.31E-01	2.05E-01
	1231.02	11.44	9.49E-01		7.57E-02	4.39E-01
IR-192	308.46	29.68	2.35E-01	1.38E-01	8.84E-02	1.12E-01
	468.07	48.10	1.38E-01		-6.38E-02	6.46E-02
HG-203	279.19	77.30	1.13E-01	1.13E-01	3.06E-02	5.43E-02
BI-207	569.67	97.72	6.07E-02	6.07E-02	2.08E-02	2.84E-02
	1063.62	74.90	9.81E-02		-1.14E-02	4.50E-02
+ TL-208	583.14	* 30.22	2.95E-01	1.11E-01	1.57E+00	1.41E-01
	860.37	4.48	2.06E+00		7.65E-01	9.71E-01
	2614.66	* 35.85	1.11E-01		1.13E+00	4.30E-02

Analysis Report for 1510084-07
CP0604S14-15

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	1.19E-01	1.19E-01	-7.27E-02	5.69E-02
	300.00	23.00	2.73E-01		1.22E-01	1.32E-01
+ PB-210	46.50 *	4.25	3.74E+00	3.74E+00	2.37E+00	1.84E+00
PB-211	404.84	2.90	2.01E+00	2.01E+00	3.33E-01	9.55E-01
	831.96	2.90	2.56E+00		-4.73E-01	1.20E+00
+ BI-212	727.17 *	11.80	7.24E-01	7.24E-01	1.33E+00	3.43E-01
	1620.62	2.75	2.95E+00		8.71E-01	1.32E+00
+ PB-212	238.63 *	44.60	2.15E-01	2.15E-01	1.50E+00	1.05E-01
	300.09 *	3.41	3.73E+00		1.53E+00	1.83E+00
+ BI-214	609.31 *	46.30	1.96E-01	1.96E-01	1.45E+00	9.36E-02
	1120.29 *	15.10	7.81E-01		1.72E+00	3.70E-01
	1764.49 *	15.80	5.43E-01		1.70E+00	2.44E-01
	2204.22 *	4.98	2.04E+00		2.15E+00	9.25E-01
+ PB-214	295.21 *	19.19	6.53E-01	2.03E-01	1.65E+00	3.20E-01
	351.92 *	37.19	2.03E-01		1.76E+00	9.80E-02
RN-219	401.80	6.50	8.71E-01	8.71E-01	-5.43E-02	4.13E-01
RA-223	323.87	3.88	1.42E+00	1.42E+00	-7.22E-01	6.76E-01
+ RA-224	240.98 *	3.95	2.38E+00	2.38E+00	4.00E+00	1.17E+00
RA-225	40.00	31.00	1.70E+00	1.70E+00	-4.04E-01	8.24E-01
+ RA-226	186.21 *	3.28	2.60E+00	2.60E+00	3.33E+00	1.27E+00
TH-227	50.10	8.40	8.84E-01	7.43E-01	-4.06E-01	4.29E-01
	236.00	11.50	7.43E-01		-5.52E+00	3.63E-01
	256.20	6.30	8.15E-01		-3.74E-01	3.90E-01
+ AC-228	338.32 *	11.40	8.27E-01	3.71E-01	1.65E+00	4.02E-01
	911.07 *	27.70	3.71E-01		1.49E+00	1.76E-01
	969.11 *	16.60	7.69E-01		1.86E+00	3.68E-01
TH-230	48.44	16.90	5.09E-01	5.09E-01	-1.02E-01	2.47E-01
	62.85	4.60	1.34E+00		1.39E+00	6.51E-01
	67.67	0.37	1.34E+01		1.34E+00	6.50E+00
PA-231	283.67	1.60	3.48E+00	2.58E+00	-2.41E+00	1.67E+00
	302.67	2.30	2.58E+00		-9.96E-01	1.24E+00
TH-231	25.64	14.70	1.51E+01	7.31E-01	6.14E+00	7.31E+00
	84.21	6.40	7.31E-01		5.31E-01	3.55E-01
PA-233	311.98	38.60	2.66E-01	2.66E-01	5.05E-02	1.27E-01
PA-234	131.20	20.40	2.52E-01	2.52E-01	6.79E-02	1.22E-01
	733.99	8.80	7.64E-01		9.50E-02	3.56E-01
	946.00	12.00	6.03E-01		1.00E-01	2.78E-01
PA-234M	1001.03	0.92	8.98E+00	8.98E+00	3.87E+00	4.17E+00
+ TH-234	63.29 *	3.80	2.71E+00	2.71E+00	1.81E+00	1.34E+00
U-235	143.76	10.50	5.09E-01	5.09E-01	1.14E-01	2.47E-01
	163.35	4.70	1.12E+00		-2.42E-01	5.43E-01
	205.31	4.70	1.20E+00		2.37E-01	5.80E-01
NP-237	86.50	12.60	5.20E-01	5.20E-01	-4.45E-01	2.55E-01
NP-239	106.10	22.70	4.39E+02	4.39E+02	1.30E+02	2.13E+02
	228.18	10.70	1.13E+03		3.53E+02	5.44E+02
	277.60	14.10	9.07E+02		7.22E+02	4.36E+02
AM-241	59.54	35.90	1.50E-01	1.50E-01	-5.23E-02	7.29E-02
AM-243	74.67	66.00	1.09E-01	1.09E-01	-2.11E-01	5.32E-02
CM-243	209.75	3.29	1.93E+00	4.33E-01	1.65E+00	9.36E-01
	228.14	10.60	5.39E-01		1.69E-01	2.60E-01
	277.60	14.00	4.33E-01		3.44E-01	2.08E-01

Analysis Report for 1510084-07
CP0604S14-15

- + = 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: CP0604S14-15

Elapsed Live time: 3600

Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	4	10	202
9:	615	1229	1159	442	704	1660	258	143
17:	155	133	142	127	116	123	125	108
25:	119	128	112	107	103	100	130	129
33:	121	114	121	124	121	123	123	136
41:	131	145	156	114	123	150	232	145
49:	126	125	95	122	132	127	90	93
57:	118	117	110	113	117	127	198	185
65:	142	130	131	131	119	117	124	156
73:	174	193	500	237	527	432	135	114
81:	115	111	123	156	145	121	248	231
89:	106	220	123	142	276	171	101	74
97:	80	76	92	103	90	85	77	74
105:	76	116	71	83	79	81	83	77
113:	98	86	94	93	74	63	72	78
121:	79	78	88	72	88	82	76	82
129:	120	81	77	70	79	79	74	85
137:	71	77	85	81	75	67	81	99
145:	85	88	83	63	85	87	79	87
153:	84	103	80	63	70	63	73	71
161:	51	72	78	82	67	76	66	74
169:	59	76	60	77	55	61	51	75
177:	53	72	58	62	80	59	76	73
185:	106	203	106	51	49	67	81	47
193:	78	58	45	63	68	60	79	54
201:	57	56	47	60	68	51	72	64
209:	115	79	55	55	50	61	53	44
217:	57	51	53	60	56	59	58	36
225:	45	56	41	48	58	61	50	41
233:	60	53	49	72	59	346	634	119
241:	135	175	68	38	43	46	36	33
249:	37	36	42	44	32	35	30	39
257:	40	36	49	39	38	35	41	36
265:	44	28	40	36	33	84	47	43
273:	52	47	33	45	55	50	38	38
281:	34	36	46	29	37	37	54	28
289:	40	31	28	28	33	48	252	143
297:	27	34	42	61	45	38	45	38
305:	27	34	27	33	27	37	27	23
313:	24	32	26	30	29	30	25	29
321:	30	29	24	35	30	31	40	59
329:	29	33	26	26	27	29	28	27
337:	35	125	91	24	36	20	25	23
345:	29	17	15	29	32	25	135	460
353:	121	24	20	18	15	19	24	25
361:	36	25	19	24	25	38	27	29

369: 23 18 19 26 26 25 20 28

Sample Title: CP0604S14-15

Channel	1	2	3	4	5	6	7	8
377:	21	26	24	14	25	18	25	19
385:	17	17	22	24	22	25	26	20
393:	22	24	19	21	20	24	12	24
401:	26	26	20	20	31	21	30	20
409:	30	40	12	18	30	16	21	32
417:	20	26	20	14	17	25	29	22
425:	24	22	23	23	19	17	26	11
433:	17	9	18	13	12	27	20	13
441:	26	21	17	15	22	17	20	20
449:	25	16	16	24	15	19	24	14
457:	17	17	16	13	19	23	65	30
465:	27	16	12	18	15	16	19	20
473:	15	23	20	8	17	24	19	15
481:	11	17	20	10	20	8	9	21
489:	19	20	18	20	12	24	20	14
497:	18	16	14	13	15	20	18	16
505:	14	9	10	14	22	76	78	50
513:	19	16	16	11	21	8	15	17
521:	18	16	14	13	14	17	23	6
529:	13	7	16	14	18	15	15	24
537:	15	21	13	14	15	14	15	14
545:	18	13	15	18	16	10	16	10
553:	12	13	17	17	12	12	13	13
561:	14	23	12	15	10	8	14	19
569:	11	19	12	13	15	21	17	14
577:	10	11	14	15	20	58	188	92
585:	20	11	12	5	21	6	10	13
593:	13	12	10	17	11	9	14	12
601:	13	14	19	13	8	10	11	80
609:	282	134	31	11	8	14	20	16
617:	17	12	13	11	15	10	6	14
625:	15	19	15	17	12	12	10	11
633:	14	14	13	15	10	15	12	6
641:	12	12	8	10	15	10	16	11
649:	11	23	23	19	5	10	10	12
657:	9	11	14	11	9	15	16	21
665:	19	14	18	11	14	18	7	12
673:	11	9	11	10	10	16	11	9
681:	5	12	7	15	9	7	19	10
689:	26	12	20	16	13	10	14	6
697:	17	10	15	6	12	11	14	16
705:	7	14	10	15	13	16	8	14
713:	9	13	11	8	9	12	13	9
721:	10	7	7	6	7	23	46	39
729:	16	12	6	10	8	9	14	10
737:	8	7	11	6	8	12	11	9
745:	13	10	11	13	11	10	9	10
753:	12	10	15	8	12	11	12	9
761:	13	10	14	6	8	12	11	32
769:	24	10	11	16	12	12	9	12
777:	11	5	8	12	5	10	14	9
785:	17	20	8	11	17	6	13	8
793:	8	27	23	10	7	8	10	13

801: 8 6 8 16 7 8 10 8

Sample Title: CP0604S14-15

Channel	1	2	3	4	5	6	7	8
809:	8	9	9	16	9	10	14	7
817:	5	10	11	5	6	6	6	8
825:	6	5	9	9	14	4	7	5
833:	11	11	13	16	7	9	9	11
841:	14	9	8	11	18	6	13	7
849:	5	2	5	6	14	11	13	8
857:	3	8	11	29	28	10	8	10
865:	14	10	5	8	9	10	11	5
873:	9	12	7	10	8	11	2	7
881:	8	7	16	8	9	8	7	9
889:	2	8	3	5	12	11	6	8
897:	12	9	2	7	9	11	10	10
905:	10	8	6	10	12	64	121	40
913:	12	6	7	8	4	6	9	7
921:	6	5	6	10	9	6	8	8
929:	11	8	7	6	8	21	12	13
937:	4	8	10	9	9	5	7	8
945:	7	4	6	9	8	6	5	4
953:	11	6	9	8	6	7	4	2
961:	8	12	9	19	20	9	10	48
969:	75	32	11	9	6	10	9	3
977:	10	8	6	7	4	7	8	7
985:	6	7	3	8	6	8	4	8
993:	0	9	3	5	6	10	7	8
1001:	8	5	11	10	6	7	11	5
1009:	4	5	4	10	6	8	5	8
1017:	6	3	8	8	8	3	10	8
1025:	4	8	9	8	4	5	8	6
1033:	11	8	9	6	7	10	5	8
1041:	7	10	5	11	6	7	9	4
1049:	9	4	9	7	4	4	5	5
1057:	10	5	9	4	10	5	6	8
1065:	4	4	5	7	12	11	4	7
1073:	6	4	8	8	4	10	10	3
1081:	12	10	11	6	6	5	9	7
1089:	12	12	10	6	8	6	10	7
1097:	6	6	6	9	5	12	6	12
1105:	4	7	4	4	7	6	8	5
1113:	7	7	9	9	8	12	27	56
1121:	31	12	1	8	5	11	5	9
1129:	6	3	7	8	5	9	7	3
1137:	6	6	7	13	11	4	10	9
1145:	9	2	6	5	6	9	6	15
1153:	10	9	12	14	15	4	6	9
1161:	4	12	5	9	9	7	8	9
1169:	14	1	11	9	12	7	8	2
1177:	4	10	7	10	9	7	3	13
1185:	8	8	11	3	11	14	4	4
1193:	6	6	5	7	9	7	10	15
1201:	7	7	6	10	10	9	6	7
1209:	9	8	6	10	8	12	9	6
1217:	8	9	8	12	11	6	10	9
1225:	5	11	10	9	8	7	2	9

1233: 8 10 9 14 27 29 17 11

Sample Title: CP0604S14-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	3	8	7	3	7	6	8	7
1249:	8	6	6	4	6	10	5	6
1257:	8	7	5	8	4	7	7	5
1265:	3	4	1	3	8	4	9	3
1273:	8	6	4	7	4	4	6	9
1281:	10	8	9	2	4	2	3	7
1289:	5	6	10	10	4	4	5	2
1297:	7	2	2	10	9	3	5	6
1305:	6	3	6	6	3	6	5	5
1313:	3	4	6	5	1	4	1	9
1321:	4	9	6	9	5	4	3	6
1329:	5	5	6	5	6	4	5	2
1337:	1	2	2	4	4	4	3	3
1345:	5	5	1	2	5	6	3	7
1353:	0	3	0	4	3	9	2	1
1361:	5	6	3	5	1	2	3	0
1369:	5	3	1	3	4	4	4	7
1377:	19	4	3	1	3	2	1	2
1385:	5	6	2	8	2	7	0	1
1393:	2	2	4	2	0	3	6	7
1401:	8	5	2	5	4	5	13	9
1409:	8	7	4	3	3	3	0	3
1417:	8	1	3	3	5	4	1	1
1425:	2	4	3	1	3	2	0	2
1433:	1	3	4	1	0	1	4	2
1441:	1	2	9	1	0	3	4	5
1449:	4	3	5	3	2	2	3	3
1457:	2	12	122	299	274	84	12	4
1465:	3	2	2	1	1	2	4	3
1473:	2	2	2	2	3	3	2	2
1481:	2	1	2	1	2	1	3	0
1489:	0	1	3	0	2	5	2	2
1497:	2	2	3	5	2	3	3	2
1505:	2	0	3	6	10	4	3	0
1513:	2	4	0	2	5	2	3	3
1521:	4	1	1	0	4	4	2	0
1529:	2	1	3	0	2	1	2	2
1537:	2	4	2	2	1	3	4	3
1545:	3	2	2	1	6	3	2	2
1553:	2	4	3	1	0	5	3	0
1561:	1	1	0	0	3	3	0	3
1569:	1	1	0	1	1	0	3	1
1577:	3	0	2	1	3	3	1	1
1585:	1	5	8	7	5	4	6	8
1593:	7	1	2	3	3	3	2	1
1601:	3	0	1	0	1	1	0	3
1609:	1	1	0	3	1	0	3	2
1617:	0	1	4	9	4	2	2	2
1625:	3	2	2	2	4	1	3	0
1633:	2	1	2	2	2	3	1	0
1641:	1	2	4	4	3	2	3	1
1649:	1	1	2	1	0	0	1	1
1657:	1	1	0	5	7	1	3	1

1665: 2 1 1 2 3 0 1 0

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Channel	1	2	3	4	5	6	7	8
1673:	4	0	0	1	1	3	2	1
1681:	1	1	1	2	1	1	1	1
1689:	1	0	0	1	3	3	1	2
1697:	1	0	1	0	1	0	3	0
1705:	1	1	1	1	0	0	1	0
1713:	2	2	1	2	1	4	1	1
1721:	3	2	0	1	1	0	3	4
1729:	9	6	3	2	1	1	0	2
1737:	0	4	1	2	2	1	1	3
1745:	1	2	0	0	1	1	1	1
1753:	1	1	1	0	2	0	2	3
1761:	3	4	21	30	30	3	2	2
1769:	0	2	1	0	4	2	4	1
1777:	1	1	0	1	0	1	1	1
1785:	1	0	0	1	1	1	2	1
1793:	0	0	2	1	1	0	1	1
1801:	0	2	0	2	4	1	3	0
1809:	2	1	2	1	1	2	0	2
1817:	2	0	2	3	2	2	2	0
1825:	0	0	0	1	2	0	1	0
1833:	1	1	4	0	2	1	1	2
1841:	0	1	1	0	2	4	6	4
1849:	4	1	0	0	1	2	1	2
1857:	1	2	1	3	0	1	2	2
1865:	0	2	1	1	2	0	3	2
1873:	0	1	2	2	1	0	0	0
1881:	0	3	1	3	3	2	0	0
1889:	0	1	1	1	0	2	5	2
1897:	3	1	2	2	1	0	3	1
1905:	2	1	1	3	0	1	1	1
1913:	2	2	1	3	1	0	0	1
1921:	1	1	1	0	2	1	1	4
1929:	2	1	1	1	1	3	2	1
1937:	1	4	0	2	0	0	2	4
1945:	0	1	0	1	0	2	0	1
1953:	2	0	3	0	0	0	2	1
1961:	0	1	1	1	1	0	1	5
1969:	0	1	4	1	2	1	2	2
1977:	3	1	0	1	4	1	0	0
1985:	0	0	3	0	1	0	1	0
1993:	1	0	0	0	0	1	0	1
2001:	0	2	0	1	1	2	1	2
2009:	0	2	0	1	2	1	1	0
2017:	0	0	0	2	1	0	0	0
2025:	0	0	1	0	1	1	1	0
2033:	1	1	1	0	2	1	0	2
2041:	1	0	0	0	1	1	0	2
2049:	0	3	1	0	1	0	1	1
2057:	1	1	0	3	1	0	0	1
2065:	2	1	0	0	0	0	2	0
2073:	1	0	0	0	1	3	0	0
2081:	1	1	0	0	0	0	2	0
2089:	1	0	1	1	1	2	0	1

2097: 2 1 3 1 4 5 8 3

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

2529: 3 0 1 0 0 0 2 0

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	2	0	1	0	2	0	0	1
2545:	1	2	0	1	0	0	0	0
2553:	0	0	1	0	1	2	1	1
2561:	1	0	0	0	1	0	0	0
2569:	1	0	2	0	0	0	0	0
2577:	0	0	0	0	0	0	0	0
2585:	0	1	0	0	1	1	2	0
2593:	0	0	0	1	0	1	1	0
2601:	0	0	2	0	0	0	0	2
2609:	1	2	2	19	42	30	16	12
2617:	4	0	0	0	0	0	0	0
2625:	0	0	0	3	0	0	2	0
2633:	0	0	0	0	0	0	1	0
2641:	0	2	0	0	1	0	0	0
2649:	0	1	1	0	0	0	0	0
2657:	0	0	0	0	1	0	0	0
2665:	0	0	0	1	0	0	0	0
2673:	0	0	0	1	1	0	0	0
2681:	0	0	1	0	1	0	0	1
2689:	1	0	0	0	0	0	0	1
2697:	1	0	0	0	0	0	1	0
2705:	0	0	1	0	0	0	1	0
2713:	0	1	0	0	0	0	0	0
2721:	2	1	2	0	0	1	0	0
2729:	0	0	0	0	0	0	1	0
2737:	2	0	1	0	0	0	0	0
2745:	0	0	1	1	0	0	0	0
2753:	0	0	1	1	0	0	0	0
2761:	0	0	0	2	0	0	0	1
2769:	0	0	0	1	1	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	2	0	0	0	0	0	0	0
2793:	0	0	0	0	0	0	0	1
2801:	0	0	2	0	0	1	0	0
2809:	0	1	0	0	1	1	0	0
2817:	0	1	0	1	1	0	0	0
2825:	0	0	0	0	0	0	0	1
2833:	0	0	0	0	1	0	0	0
2841:	0	1	0	0	0	0	0	0
2849:	0	0	0	0	1	1	0	0
2857:	0	1	0	0	0	0	0	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	0	1	0	1
2881:	0	2	0	0	0	0	0	0
2889:	1	0	0	0	0	0	1	0
2897:	0	0	0	0	0	0	0	1
2905:	0	1	1	0	0	0	1	0
2913:	0	1	0	0	1	0	0	0
2921:	0	0	1	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	1	0	0	0	1	0	0
2945:	0	0	0	0	0	0	1	0
2953:	0	0	1	0	0	0	0	0

2961: 0 1 0 0 0 0 0 1

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

3393: 0 0 1 0 0 0 0 0

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	1	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	1	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	1	0	0	0	1
3449:	0	0	0	0	1	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	1	0	1	0	0	0	0	0
3481:	1	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	2	0	0	0
3505:	2	0	0	1	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	0	0	0	0	0
3537:	0	0	0	1	0	0	1	0
3545:	0	0	0	0	0	0	0	0
3553:	1	0	0	0	0	0	0	0
3561:	0	1	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	1	0
3609:	0	0	0	1	0	1	1	1
3617:	0	0	0	0	1	0	0	0
3625:	0	0	1	0	2	0	0	0
3633:	0	0	1	0	0	0	0	0
3641:	0	0	1	0	0	0	0	0
3649:	1	0	0	0	0	0	0	0
3657:	0	0	0	0	0	1	0	0
3665:	0	1	0	0	0	0	0	0
3673:	1	0	0	1	1	1	0	0
3681:	0	0	0	0	1	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	1	0
3705:	0	0	0	1	0	0	0	0
3713:	0	0	0	0	1	0	1	0
3721:	0	0	0	1	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	1	0
3745:	0	1	0	0	0	0	0	1
3753:	0	0	0	0	0	1	0	0
3761:	0	0	0	0	0	0	1	0
3769:	0	1	0	1	0	0	0	0
3777:	0	0	0	0	1	1	1	0
3785:	0	0	0	0	0	0	0	0
3793:	0	1	1	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	0	0	0	0	0	0

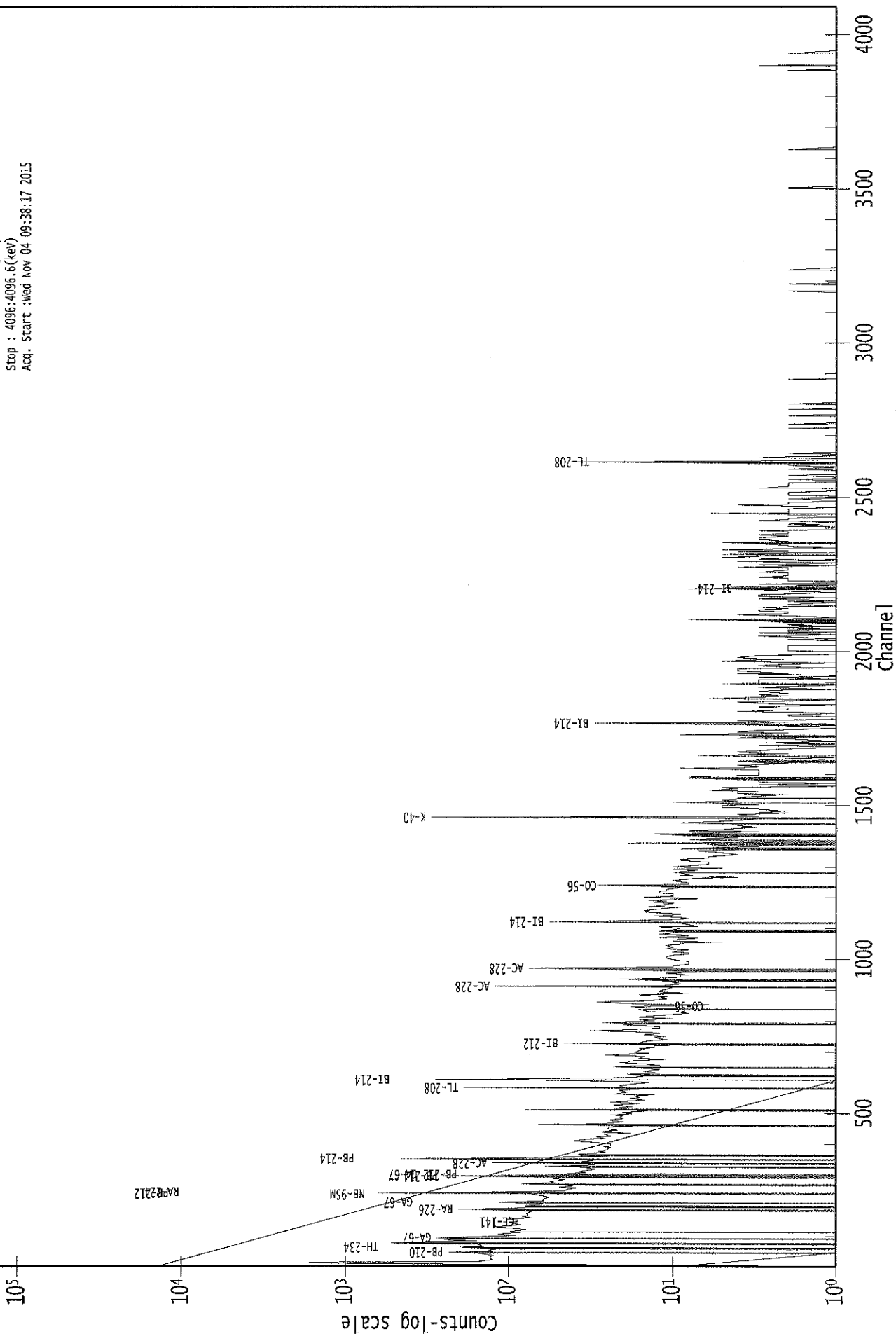
3825: 1 0 0 0 0 0 0 0 0

Sample Title: CP0604S14-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	1	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	1	0	1
3857:	0	0	0	0	0	0	0	0
3865:	0	1	0	0	0	0	0	0
3873:	1	0	0	1	0	1	0	0
3881:	0	0	0	0	0	2	0	0
3889:	0	0	0	0	1	0	0	1
3897:	0	0	0	0	3	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	2	0	0	0
3945:	0	0	0	1	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	1	0	0	0	1	0	1	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	1	0	1	1	0	0	0	0
3993:	0	0	0	1	0	0	0	0
4001:	1	0	0	1	0	0	0	0
4009:	0	1	1	1	0	1	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	0	0	0
4041:	0	0	0	0	0	0	1	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	1	0	0
4065:	0	0	0	0	0	1	0	0
4073:	0	0	0	0	1	0	0	0
4081:	0	0	0	0	0	0	1	0
4089:	1	1	0	0	0	0	0	0

0000029101.CNF

Live Time : 3600.000 sec
 Real Time : 3601.330 sec
 Start : 1: 0.9(keV)
 Stop : 4096.4096.6(keV)
 Acq. Start : Wed Nov 04 09:38:17 2015



Analysis Report for 1510084-08
CP0604S16-17

1114

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-08
Sample Description : CP0604S16-17
Sample Type : SOIL

Sample Size : 5.615E+02 grams
Facility : Countroom

Sample Taken On : 10/9/2015 9:47:46AM
Acquisition Started : 11/4/2015 9:38:25AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3639.0 seconds

Dead Time : 1.07 %

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 : 29102

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-08
CP0604S16-17

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 10:39:05AM
 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	64.33	63.59	0.0000	0.00
2	76.06	75.33	0.0000	0.00
3	86.30	85.57	0.0000	0.00
4	93.09	92.37	0.0000	0.00
5	128.39	127.68	0.0000	0.00
6	185.69	185.00	0.0000	0.00
7	224.28	223.61	0.0000	0.00
8	239.43	238.76	0.0000	0.00
9	270.79	270.14	0.0000	0.00
10	295.04	294.40	0.0000	0.00
11	338.54	337.92	0.0000	0.00
12	351.82	351.20	0.0000	0.00
13	511.47	510.93	0.0000	0.00
14	583.14	582.63	0.0000	0.00
15	609.52	609.02	0.0000	0.00
16	726.85	726.42	0.0000	0.00
17	831.57	831.19	0.0000	0.00
18	860.08	859.72	0.0000	0.00
19	870.11	869.75	0.0000	0.00
20	881.14	880.79	0.0000	0.00
21	911.03	910.69	0.0000	0.00
22	964.31	964.00	0.0000	0.00
23	968.41	968.10	0.0000	0.00
24	1120.48	1120.25	0.0000	0.00
25	1232.07	1231.90	0.0000	0.00
26	1460.85	1460.82	0.0000	0.00
27	1509.73	1509.73	0.0000	0.00
28	1524.75	1524.76	0.0000	0.00
29	1579.94	1579.99	0.0000	0.00
30	1590.63	1590.68	0.0000	0.00
31	1639.78	1639.86	0.0000	0.00
32	1765.42	1765.59	0.0000	0.00
33	1969.48	1969.78	0.0000	0.00
34	2203.06	2203.53	0.0000	0.00
35	2343.93	2344.50	0.0000	0.00
36	2352.41	2352.99	0.0000	0.00
37	2614.61	2615.38	0.0000	0.00

? = Adjacent peak noted
 Errors quoted at 2.000sigma

Analysis Report for 1510084-08
CP0604S16-17

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 10:39:05AM

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	64.33	55 -	81	63.59	3.47E+02	181.10	2.69E+03	6.05
m	2	76.06	55 -	81	75.33	1.04E+03	155.20	2.24E+03	4.60
	3	86.30	82 -	89	85.57	1.38E+02	101.45	1.64E+03	1.84
	4	93.09	89 -	96	92.37	2.10E+02	96.17	1.35E+03	4.48
	5	128.39	124 -	133	127.68	8.55E+01	87.97	1.06E+03	3.97
	6	185.69	181 -	189	185.00	1.41E+02	74.77	7.73E+02	2.93
	7	224.28	219 -	227	223.61	7.07E+01	61.69	5.37E+02	3.57
	8	239.43	234 -	245	238.76	6.51E+02	92.17	7.14E+02	2.56
	9	270.79	267 -	274	270.14	5.80E+01	47.75	3.44E+02	3.81
	10	295.04	289 -	299	294.40	1.55E+02	65.22	4.85E+02	2.71
	11	338.54	333 -	342	337.92	5.18E+01	56.69	4.28E+02	2.38
	12	351.82	345 -	357	351.20	3.12E+02	69.17	4.17E+02	2.49
	13	511.47	504 -	517	510.93	1.20E+02	50.37	2.20E+02	2.74
	14	583.14	576 -	589	582.63	1.29E+02	49.05	2.10E+02	2.53
	15	609.52	605 -	613	609.02	2.18E+02	41.95	1.30E+02	2.42
	16	726.85	723 -	731	726.42	3.20E+01	26.32	9.00E+01	3.56
	17	831.57	817 -	841	831.19	7.41E+01	53.25	1.76E+02	19.23
M	18	860.08	854 -	873	859.72	2.59E+01	23.14	6.24E+01	3.12
m	19	870.11	854 -	873	869.75	1.60E+01	20.67	4.88E+01	3.13
	20	881.14	874 -	889	880.79	3.16E+01	31.75	8.89E+01	10.69
	21	911.03	905 -	916	910.69	9.62E+01	32.43	8.16E+01	2.41
M	22	964.31	960 -	974	964.00	2.00E+01	25.93	9.51E+01	2.86
m	23	968.41	960 -	974	968.10	3.32E+01	27.36	7.62E+01	3.15
	24	1120.48	1115 -	1124	1120.25	5.32E+01	22.91	4.37E+01	3.29
	25	1232.07	1220 -	1240	1231.90	4.27E+01	49.01	1.79E+02	13.84
	26	1460.85	1454 -	1466	1460.82	2.78E+02	34.94	1.23E+01	2.64
	27	1509.73	1506 -	1515	1509.73	1.42E+01	11.40	1.16E+01	5.42
	28	1524.75	1522 -	1527	1524.76	7.67E+00	6.71	2.67E+00	3.17
	29	1579.94	1576 -	1583	1579.99	9.05E+00	7.75	3.91E+00	2.91
	30	1590.63	1586 -	1596	1590.68	2.69E+01	12.26	6.17E+00	6.68
	31	1639.78	1637 -	1642	1639.86	5.64E+00	6.08	2.71E+00	2.99
	32	1765.42	1760 -	1771	1765.59	2.70E+01	14.28	1.20E+01	1.99
	33	1969.48	1966 -	1972	1969.78	6.19E+00	6.65	3.63E+00	1.11
	34	2203.06	2200 -	2206	2203.53	8.96E+00	9.63	1.01E+01	0.95
	35	2343.93	2338 -	2348	2344.50	7.00E+00	8.38	6.00E+00	3.73
	36	2352.41	2350 -	2355	2352.99	7.50E+00	6.71	3.00E+00	1.05
	37	2614.61	2611 -	2619	2615.38	3.90E+01	12.49	0.00E+00	4.50

Analysis Report for 1510084-08

CP0604S16-17

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 : 11/4/2015 10:39:05AM

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	64.33	55 -	81	3.47E+02	181.10	2.69E+03	8.53E+01
m	2	76.06	55 -	81	1.04E+03	155.20	2.24E+03	7.78E+01
	3	86.30	82 -	89	1.38E+02	101.45	1.64E+03	8.11E+01
	4	93.09	89 -	96	2.10E+02	96.17	1.35E+03	7.54E+01
	5	128.39	124 -	133	8.55E+01	87.97	1.06E+03	7.07E+01
	6	185.69	181 -	189	1.41E+02	74.77	7.73E+02	5.83E+01
	7	224.28	219 -	227	7.07E+01	61.69	5.37E+02	4.88E+01
	8	239.43	234 -	245	6.51E+02	92.17	7.14E+02	6.31E+01
	9	270.79	267 -	274	5.80E+01	47.75	3.44E+02	3.72E+01
	10	295.04	289 -	299	1.55E+02	65.22	4.85E+02	4.95E+01
	11	338.54	333 -	342	5.18E+01	56.69	4.28E+02	4.51E+01
	12	351.82	345 -	357	3.12E+02	69.17	4.17E+02	4.89E+01
	13	511.47	504 -	517	1.20E+02	50.37	2.20E+02	3.73E+01
	14	583.14	576 -	589	1.29E+02	49.05	2.10E+02	3.57E+01
	15	609.52	605 -	613	2.18E+02	41.95	1.30E+02	2.45E+01
	16	726.85	723 -	731	3.20E+01	26.32	9.00E+01	1.95E+01
	17	831.57	817 -	841	7.41E+01	53.25	1.76E+02	4.14E+01
M	18	860.08	854 -	873	2.59E+01	23.14	6.24E+01	1.30E+01
m	19	870.11	854 -	873	1.60E+01	20.67	4.88E+01	1.15E+01
	20	881.14	874 -	889	3.16E+01	31.75	8.89E+01	2.44E+01
	21	911.03	905 -	916	9.62E+01	32.43	8.16E+01	2.12E+01
M	22	964.31	960 -	974	2.00E+01	25.93	9.51E+01	1.60E+01
m	23	968.41	960 -	974	3.32E+01	27.36	7.62E+01	1.44E+01
	24	1120.48	1115 -	1124	5.32E+01	22.91	4.37E+01	1.45E+01
	25	1232.07	1220 -	1240	4.27E+01	49.01	1.79E+02	1.50E+01
	26	1460.85	1454 -	1466	2.78E+02	34.94	1.23E+01	8.59E+00
	27	1509.73	1506 -	1515	1.42E+01	11.40	1.16E+01	7.03E+00
	28	1524.75	1522 -	1527	7.67E+00	6.71	2.67E+00	3.11E+00
	29	1579.94	1576 -	1583	9.05E+00	7.75	3.91E+00	4.01E+00
	30	1590.63	1586 -	1596	2.69E+01	12.26	6.17E+00	5.36E+00
	31	1639.78	1637 -	1642	5.64E+00	6.08	2.71E+00	3.12E+00

Analysis Report for 1510084-08

CP0604S16-17

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	1765.42	1760 -	1771	2.70E+01	14.28	1.20E+01	8.05E+00
33	1969.48	1966 -	1972	6.19E+00	6.65	3.63E+00	3.63E+00
34	2203.06	2200 -	2206	8.96E+00	9.63	1.01E+01	6.20E+00
35	2343.93	2338 -	2348	7.00E+00	8.38	6.00E+00	5.34E+00
36	2352.41	2350 -	2355	7.50E+00	6.71	3.00E+00	3.18E+00
37	2614.61	2611 -	2619	3.90E+01	12.49	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 : 11/4/2015 10:39:05AM

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	64.33	55 -	81	63.59	3.47E+02	181.10	2.69E+03	.....
m	2	76.06	55 -	81	75.33	1.04E+03	155.20	2.24E+03	.....
	3	86.30	82 -	89	85.57	1.38E+02	101.45	1.64E+03	EU-155 NP-237
	4	93.09	89 -	96	92.37	2.10E+02	96.17	1.35E+03	GA-67
	5	128.39	124 -	133	127.68	8.55E+01	87.97	1.06E+03	.....
	6	185.69	181 -	189	185.00	1.41E+02	74.77	7.73E+02	RA-226
	7	224.28	219 -	227	223.61	7.07E+01	61.69	5.37E+02	.....
	8	239.43	234 -	245	238.76	6.51E+02	92.17	7.14E+02	PB-212
	9	270.79	267 -	274	270.14	5.80E+01	47.75	3.44E+02	.....
	10	295.04	289 -	299	294.40	1.55E+02	65.22	4.85E+02	PB-214
	11	338.54	333 -	342	337.92	5.18E+01	56.69	4.28E+02	AC-228
	12	351.82	345 -	357	351.20	3.12E+02	69.17	4.17E+02	PB-214
	13	511.47	504 -	517	510.93	1.20E+02	50.37	2.20E+02	.....
	14	583.14	576 -	589	582.63	1.29E+02	49.05	2.10E+02	TL-208
	15	609.52	605 -	613	609.02	2.18E+02	41.95	1.30E+02	BI-214
	16	726.85	723 -	731	726.42	3.20E+01	26.32	9.00E+01	BI-212
	17	831.57	817 -	841	831.19	7.41E+01	53.25	1.76E+02	PB-211
M	18	860.08	854 -	873	859.72	2.59E+01	23.14	6.24E+01	TL-208
m	19	870.11	854 -	873	869.75	1.60E+01	20.67	4.88E+01	NB-94

: 00600

Analysis Report for 1510084-08

CP0604S16-17

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	20	881.14	874 -	889	880.79	3.16E+01	31.75	8.89E+01	.....
	21	911.03	905 -	916	910.69	9.62E+01	32.43	8.16E+01	AC-228
M	22	964.31	960 -	974	964.00	2.00E+01	25.93	9.51E+01	EU-152
m	23	968.41	960 -	974	968.10	3.32E+01	27.36	7.62E+01	AC-228
	24	1120.48	1115 -	1124	1120.25	5.32E+01	22.91	4.37E+01	SC-46 BI-214 TA-182
	25	1232.07	1220 -	1240	1231.90	4.27E+01	49.01	1.79E+02	.....
	26	1460.85	1454 -	1466	1460.82	2.78E+02	34.94	1.23E+01	K-40
	27	1509.73	1506 -	1515	1509.73	1.42E+01	11.40	1.16E+01	.....
	28	1524.75	1522 -	1527	1524.76	7.67E+00	6.71	2.67E+00	.....
	29	1579.94	1576 -	1583	1579.99	9.05E+00	7.75	3.91E+00	.....
	30	1590.63	1586 -	1596	1590.68	2.69E+01	12.26	6.17E+00	.....
	31	1639.78	1637 -	1642	1639.86	5.64E+00	6.08	2.71E+00	.....
	32	1765.42	1760 -	1771	1765.59	2.70E+01	14.28	1.20E+01	BI-214
	33	1969.48	1966 -	1972	1969.78	6.19E+00	6.65	3.63E+00	.....
	34	2203.06	2200 -	2206	2203.53	8.96E+00	9.63	1.01E+01	.....
	35	2343.93	2338 -	2348	2344.50	7.00E+00	8.38	6.00E+00	.....
	36	2352.41	2350 -	2355	2352.99	7.50E+00	6.71	3.00E+00	.....
	37	2614.61	2611 -	2619	2615.38	3.90E+01	12.49	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 : 11/4/2015 10:39:05AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	1	64.33	3.47E+02	181.10	2.31E-02	1.76E-03
m	2	76.06	1.04E+03	155.20	2.13E-02	1.69E-03
	3	86.30	1.38E+02	101.45	1.98E-02	1.64E-03
	4	93.09	2.10E+02	96.17	1.90E-02	1.62E-03
	5	128.39	8.55E+01	87.97	1.54E-02	1.48E-03
	6	185.69	1.41E+02	74.77	1.16E-02	1.15E-03
	7	224.28	7.07E+01	61.69	9.94E-03	1.03E-03
	8	239.43	6.51E+02	92.17	9.39E-03	9.85E-04
	9	270.79	5.80E+01	47.75	8.42E-03	8.87E-04
	10	295.04	1.55E+02	65.22	7.79E-03	8.43E-04

: 00601

Analysis Report for 1510084-08

CP0604S16-17

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	11	338.54	5.18E+01	56.69	6.86E-03	7.95E-04
	12	351.82	3.12E+02	69.17	6.61E-03	7.80E-04
	13	511.47	1.20E+02	50.37	4.61E-03	5.60E-04
	14	583.14	1.29E+02	49.05	4.05E-03	4.55E-04
	15	609.52	2.18E+02	41.95	3.87E-03	4.17E-04
	16	726.85	3.20E+01	26.32	3.26E-03	3.04E-04
	17	831.57	7.41E+01	53.25	2.85E-03	2.45E-04
M	18	860.08	2.59E+01	23.14	2.76E-03	2.29E-04
m	19	870.11	1.60E+01	20.67	2.73E-03	2.24E-04
	20	881.14	3.16E+01	31.75	2.70E-03	2.17E-04
	21	911.03	9.62E+01	32.43	2.61E-03	2.06E-04
M	22	964.31	2.00E+01	25.93	2.47E-03	1.99E-04
m	23	968.41	3.32E+01	27.36	2.46E-03	1.99E-04
	24	1120.48	5.32E+01	22.91	2.14E-03	1.79E-04
	25	1232.07	4.27E+01	49.01	1.96E-03	1.89E-04
	26	1460.85	2.78E+02	34.94	1.68E-03	1.89E-04
	27	1509.73	1.42E+01	11.40	1.64E-03	1.79E-04
	28	1524.75	7.67E+00	6.71	1.62E-03	1.76E-04
	29	1579.94	9.05E+00	7.75	1.57E-03	1.64E-04
	30	1590.63	2.69E+01	12.26	1.56E-03	1.62E-04
	31	1639.78	5.64E+00	6.08	1.52E-03	1.52E-04
	32	1765.42	2.70E+01	14.28	1.43E-03	1.26E-04
	33	1969.48	6.19E+00	6.65	1.31E-03	1.11E-04
	34	2203.06	8.96E+00	9.63	1.21E-03	1.11E-04
	35	2343.93	7.00E+00	8.38	1.15E-03	1.11E-04
	36	2352.41	7.50E+00	6.71	1.15E-03	1.11E-04
	37	2614.61	3.90E+01	12.49	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 : 11/4/2015 10:39:05AM

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	64.33	3.47E+02	181.10	5.38E+01	9.34E+00	2.93E+02	1.81E+02
m	2	76.06	1.04E+03	155.20			1.04E+03	1.55E+02
	3	86.30	1.38E+02	101.45			1.38E+02	1.01E+02

: 00602

Analysis Report for 1510084-08

CP0604S16-17

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
4	93.09	2.10E+02	96.17	5.44E+01	8.36E+00	1.56E+02	9.65E+01
5	128.39	8.55E+01	87.97			8.55E+01	8.80E+01
6	185.69	1.41E+02	74.77	1.43E+01	7.33E+00	1.26E+02	7.51E+01
7	224.28	7.07E+01	61.69			7.07E+01	6.17E+01
8	239.43	6.51E+02	92.17	1.09E+01	6.39E+00	6.40E+02	9.24E+01
9	270.79	5.80E+01	47.75			5.80E+01	4.77E+01
10	295.04	1.55E+02	65.22			1.55E+02	6.52E+01
11	338.54	5.18E+01	56.69			5.18E+01	5.67E+01
12	351.82	3.12E+02	69.17	8.07E+00	5.01E+00	3.04E+02	6.93E+01
13	511.47	1.20E+02	50.37	4.21E+01	4.92E+00	7.81E+01	5.06E+01
14	583.14	1.29E+02	49.05			1.29E+02	4.91E+01
15	609.52	2.18E+02	41.95	5.16E+00	1.63E+00	2.13E+02	4.20E+01
16	726.85	3.20E+01	26.32			3.20E+01	2.63E+01
17	831.57	7.41E+01	53.25			7.41E+01	5.32E+01
M 18	860.08	2.59E+01	23.14			2.59E+01	2.31E+01
m 19	870.11	1.60E+01	20.67			1.60E+01	2.07E+01
20	881.14	3.16E+01	31.75			3.16E+01	3.17E+01
21	911.03	9.62E+01	32.43	1.01E+00	2.85E+00	9.52E+01	3.26E+01
M 22	964.31	2.00E+01	25.93			2.00E+01	2.59E+01
m 23	968.41	3.32E+01	27.36			3.32E+01	2.74E+01
24	1120.48	5.32E+01	22.91			5.32E+01	2.29E+01
25	1232.07	4.27E+01	49.01			4.27E+01	4.90E+01
26	1460.85	2.78E+02	34.94			2.78E+02	3.49E+01
27	1509.73	1.42E+01	11.40			1.42E+01	1.14E+01
28	1524.75	7.67E+00	6.71			7.67E+00	6.71E+00
29	1579.94	9.05E+00	7.75			9.05E+00	7.75E+00
30	1590.63	2.69E+01	12.26			2.69E+01	1.23E+01
31	1639.78	5.64E+00	6.08			5.64E+00	6.08E+00
32	1765.42	2.70E+01	14.28			2.70E+01	1.43E+01
33	1969.48	6.19E+00	6.65			6.19E+00	6.65E+00
34	2203.06	8.96E+00	9.63			8.96E+00	9.63E+00
35	2343.93	7.00E+00	8.38			7.00E+00	8.38E+00
36	2352.41	7.50E+00	6.71			7.50E+00	6.71E+00
37	2614.61	3.90E+01	12.49	1.20E+00	1.02E+00	3.78E+01	1.25E+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 1510084-08

CP0604S16-17

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/4/2015 10:39:05AM
 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	64.33	3.47E+02	181.10	5.38E+01	9.34E+00	2.93E+02	1.81E+02
m	2	76.06	1.04E+03	155.20			1.04E+03	1.55E+02
	3	86.30	1.38E+02	101.45			1.38E+02	1.01E+02
	4	93.09	2.10E+02	96.17	5.44E+01	8.36E+00	1.56E+02	9.65E+01
	5	128.39	8.55E+01	87.97			8.55E+01	8.80E+01
	6	185.69	1.41E+02	74.77	1.43E+01	7.33E+00	1.26E+02	7.51E+01
	7	224.28	7.07E+01	61.69			7.07E+01	6.17E+01
	8	239.43	6.51E+02	92.17	1.09E+01	6.39E+00	6.40E+02	9.24E+01
	9	270.79	5.80E+01	47.75			5.80E+01	4.77E+01
	10	295.04	1.55E+02	65.22			1.55E+02	6.52E+01
	11	338.54	5.18E+01	56.69			5.18E+01	5.67E+01
	12	351.82	3.12E+02	69.17	8.07E+00	5.01E+00	3.04E+02	6.93E+01
	13	511.47	1.20E+02	50.37	4.21E+01	4.92E+00	7.81E+01	5.06E+01
	14	583.14	1.29E+02	49.05			1.29E+02	4.91E+01
	15	609.52	2.18E+02	41.95	5.16E+00	1.63E+00	2.13E+02	4.20E+01
	16	726.85	3.20E+01	26.32			3.20E+01	2.63E+01
	17	831.57	7.41E+01	53.25			7.41E+01	5.32E+01
M	18	860.08	2.59E+01	23.14			2.59E+01	2.31E+01
m	19	870.11	1.60E+01	20.67			1.60E+01	2.07E+01
	20	881.14	3.16E+01	31.75			3.16E+01	3.17E+01
	21	911.03	9.62E+01	32.43	1.01E+00	2.85E+00	9.52E+01	3.26E+01
M	22	964.31	2.00E+01	25.93			2.00E+01	2.59E+01
m	23	968.41	3.32E+01	27.36			3.32E+01	2.74E+01
	24	1120.48	5.32E+01	22.91			5.32E+01	2.29E+01
	25	1232.07	4.27E+01	49.01			4.27E+01	4.90E+01
	26	1460.85	2.78E+02	34.94			2.78E+02	3.49E+01
	27	1509.73	1.42E+01	11.40			1.42E+01	1.14E+01
	28	1524.75	7.67E+00	6.71			7.67E+00	6.71E+00
	29	1579.94	9.05E+00	7.75			9.05E+00	7.75E+00
	30	1590.63	2.69E+01	12.26			2.69E+01	1.23E+01
	31	1639.78	5.64E+00	6.08			5.64E+00	6.08E+00
	32	1765.42	2.70E+01	14.28			2.70E+01	1.43E+01
	33	1969.48	6.19E+00	6.65			6.19E+00	6.65E+00
	34	2203.06	8.96E+00	9.63			8.96E+00	9.63E+00
	35	2343.93	7.00E+00	8.38			7.00E+00	8.38E+00
	36	2352.41	7.50E+00	6.71			7.50E+00	6.71E+00
	37	2614.61	3.90E+01	12.49	1.20E+00	1.02E+00	3.78E+01	1.25E+01

Analysis Report for 1510084-08
CP0604S16-17

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	2.07E+01	3.51E+00
GA-67	0.434	93.31 *	35.70	7.74E+01	2.81E+02
		208.95	2.24		
		300.22	16.00		
EU-155	0.377	86.50 *	30.90	3.04E-01	2.25E-01
		105.30	20.70		
TL-208	0.999	583.14 *	30.22	1.41E+00	5.59E-01
		860.37 *	4.48	2.80E+00	2.51E+00
		2614.66 *	35.85	1.32E+00	4.57E-01
BI-212	0.766	727.17 *	11.80	1.11E+00	9.22E-01
		1620.62	2.75		
PB-212	0.807	238.63 *	44.60	2.04E+00	3.65E-01
		300.09	3.41		
BI-214	0.905	609.31 *	46.30	1.59E+00	3.56E-01
		1120.29 *	15.10	2.20E+00	9.64E-01
		1764.49 *	15.80	1.59E+00	8.55E-01
		2204.22	4.98		
PB-214	0.997	295.21 *	19.19	1.39E+00	6.03E-01
		351.92 *	37.19	1.65E+00	4.25E-01
RA-226	0.957	186.21 *	3.28	4.42E+00	8.52E+00
AC-228	0.975	338.32 *	11.40	8.85E-01	9.75E-01
		911.07 *	27.70	1.76E+00	6.18E-01
		969.11 *	16.60	1.09E+00	8.99E-01
NP-237	0.993	86.50 *	12.60	7.39E-01	5.46E-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 1510084-08
CP0604S16-17

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 10:39:05AM
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	64.33	8.15054E-02	30.90	
m	2	76.06	2.87966E-01	7.49	
	5	128.39	2.37554E-02	51.43	
	7	224.28	1.96448E-02	43.62	
	9	270.79	1.61069E-02	41.17	
	13	511.47	2.16945E-02	32.40	
	17	831.57	2.05933E-02	35.91	Tol. PB-211
m	19	870.11	4.44339E-03	64.61	
	20	881.14	8.77010E-03	50.28	
M	22	964.31	5.55661E-03	64.82	Tol. EU-152
	25	1232.07	1.18571E-02	57.41	
	27	1509.73	3.94444E-03	40.15	
	28	1524.75	2.12963E-03	43.75	
	29	1579.94	2.51263E-03	42.82	
	30	1590.63	7.47685E-03	22.77	
	31	1639.78	1.56746E-03	53.90	
	33	1969.48	1.71875E-03	53.75	
	34	2203.06	2.49008E-03	53.72	
	35	2343.93	1.94444E-03	59.87	
	36	2352.41	2.08333E-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

Analysis Report for 1510084-08

CP0604S16-17

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	1.00	1460.81 *	10.67	2.07E+01	3.51E+00
GA-67	0.43	93.31 *	35.70	7.74E+01	2.81E+02
		208.95	2.24		
		300.22	16.00		
EU-155	0.37	86.50 *	30.90	3.04E-01	2.25E-01
		105.30	20.70		
TL-208	0.99	583.14 *	30.22	1.41E+00	5.59E-01
		860.37 *	4.48	2.80E+00	2.51E+00
		2614.66 *	35.85	1.32E+00	4.57E-01
BI-212	0.76	727.17 *	11.80	1.11E+00	9.22E-01
		1620.62	2.75		
PB-212	0.80	238.63 *	44.60	2.04E+00	3.65E-01
		300.09	3.41		
BI-214	0.90	609.31 *	46.30	1.59E+00	3.56E-01
		1120.29 *	15.10	2.20E+00	9.64E-01
		1764.49 *	15.80	1.59E+00	8.55E-01
		2204.22	4.98		
PB-214	0.99	295.21 *	19.19	1.39E+00	6.03E-01
		351.92 *	37.19	1.65E+00	4.25E-01
RA-226	0.95	186.21 *	3.28	4.42E+00	8.52E+00
AC-228	0.97	338.32 *	11.40	8.85E-01	9.75E-01
		911.07 *	27.70	1.76E+00	6.18E-01
		969.11 *	16.60	1.09E+00	8.99E-01
NP-237	0.99	86.50 *	12.60	7.39E-01	5.46E-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	1.000	2.07E+01	3.51E+00	
GA-67	0.434	7.74E+01	2.81E+02	
? EU-155	0.377	3.04E-01	2.25E-01	

Analysis Report for 1510084-08

CP0604S16-17

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
TL-208	0.999	1.38E+00	3.50E-01	
BI-212	0.766	1.11E+00	9.22E-01	
PB-212	0.807	2.04E+00	3.65E-01	
BI-214	0.905	1.65E+00	3.11E-01	
PB-214	0.997	1.56E+00	3.47E-01	
RA-226	0.957	4.42E+00	8.52E+00	
AC-228	0.975	1.40E+00	4.51E-01	
? NP-237	0.993	7.39E-01	5.46E-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 1510084-08
CP0604S16-17

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 10:39:05AM
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	64.33	8.15054E-02	30.90	
m	2	76.06	2.87966E-01	7.49	
	5	128.39	2.37554E-02	51.43	
	7	224.28	1.96448E-02	43.62	
	9	270.79	1.61069E-02	41.17	
	13	511.47	2.16945E-02	32.40	
	17	831.57	2.05933E-02	35.91	Tol. PB-211
m	19	870.11	4.44339E-03	64.61	
	20	881.14	8.77010E-03	50.28	
M	22	964.31	5.55661E-03	64.82	Tol. EU-152
	25	1232.07	1.18571E-02	57.41	
	27	1509.73	3.94444E-03	40.15	
	28	1524.75	2.12963E-03	43.75	
	29	1579.94	2.51263E-03	42.82	
	30	1590.63	7.47685E-03	22.77	
	31	1639.78	1.56746E-03	53.90	
	33	1969.48	1.71875E-03	53.75	
	34	2203.06	2.49008E-03	53.72	
	35	2343.93	1.94444E-03	59.87	
	36	2352.41	2.08333E-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

: 00609

Analysis Report for 1510084-08
CP0604S16-17

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-3.60E-01	1.70E+00	1.70E+00
+	NA-22	1274.54	99.94	4.22E-04	2.14E-01	2.14E-01
+	NA-24	1368.53	99.99	1.49E+11	4.06E+11	5.70E+11
		2754.09	99.86	3.65E+10		4.06E+11
+	AL-26	1808.65	99.76	5.08E-02	1.59E-01	1.59E-01
+	K-40	1460.81	* 10.67	2.07E+01	1.48E+00	1.48E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-2.39E-01	9.46E-02	9.46E-02
		78.34	96.00	3.26E-01		1.24E-01
+	SC-46	889.25	99.98	1.67E-02	1.97E-01	1.97E-01
		1120.51	99.99	3.25E-01		3.24E-01
+	V-48	983.52	99.98	-2.06E-01	5.42E-01	5.42E-01
		1312.10	97.50	-6.87E-02		5.61E-01
+	CR-51	320.08	9.83	-6.69E-01	2.29E+00	2.29E+00
+	MN-54	834.83	99.97	8.18E-02	2.12E-01	2.12E-01
+	CO-56	846.75	99.96	-4.29E-02	1.91E-01	1.91E-01
		1037.75	14.03	7.34E-01		1.73E+00
		1238.25	67.00	1.32E-02		4.94E-01
		1771.40	15.51	9.10E-02		1.48E+00
		2598.48	16.90	2.77E-01		9.95E-01
+	CO-57	122.06	85.51	-1.28E-02	1.14E-01	1.14E-01
		136.48	10.60	1.97E-01		9.92E-01
+	CO-58	810.76	99.40	6.69E-02	2.13E-01	2.13E-01
+	FE-59	1099.22	56.50	-3.61E-01	4.65E-01	4.65E-01
		1291.56	43.20	-8.14E-02		7.16E-01
+	CO-60	1173.22	100.00	-1.20E-03	1.92E-01	2.21E-01
		1332.49	100.00	4.51E-02		1.92E-01
+	ZN-65	1115.52	50.75	8.53E-03	4.56E-01	4.56E-01
+	GA-67	93.31	* 35.70	7.74E+01	7.76E+01	7.76E+01
		208.95	2.24	2.46E+02		1.37E+03
		300.22	16.00	3.15E+01		2.06E+02
+	SE-75	121.11	16.70	-1.67E-01	1.93E-01	6.28E-01
		136.00	59.20	6.80E-02		1.93E-01
		264.65	59.80	-6.58E-02		2.22E-01
		279.53	25.20	5.81E-02		5.62E-01
		400.65	11.40	-6.18E-01		1.24E+00
+	RB-82	776.52	13.00	-6.63E-01	2.56E+00	2.56E+00
+	RB-83	520.41	46.00	-8.05E-02	3.40E-01	3.40E-01
		529.64	30.30	3.26E-02		5.61E-01
		552.65	16.40	-2.75E-02		1.03E+00
+	KR-85	513.99	0.43	5.53E+01	4.24E+01	4.24E+01
+	SR-85	513.99	99.27	3.18E-01	2.44E-01	2.44E-01
+	Y-88	898.02	93.40	4.48E-02	1.62E-01	2.26E-01
		1836.01	99.38	-5.99E-02		1.62E-01
+	NB-93M	16.57	9.43	1.32E+00	4.77E-01	4.77E-01
+	NB-94	702.63	100.00	-7.24E-02	1.50E-01	1.51E-01
		871.10	100.00	-1.02E-01		1.50E-01

Analysis Report for 1510084-08

CP0604S16-17

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-95	765.79	99.81	-1.13E-01	2.95E-01	2.95E-01
+	NB-95M	235.69	25.00	1.16E+01	1.13E+02	1.13E+02
+	ZR-95	724.18	43.70	-5.58E-03	4.15E-01	5.53E-01
		756.72	55.30	2.00E-01		4.15E-01
+	MO-99	181.06	6.20	4.31E+01	8.89E+02	1.32E+03
		739.58	12.80	-1.78E+02		8.89E+02
		778.00	4.50	-7.49E+02		2.51E+03
+	RU-103	497.08	89.00	3.38E-03	2.55E-01	2.55E-01
+	RU-106	621.84	9.80	-6.12E-01	1.60E+00	1.60E+00
+	AG-108M	433.93	89.90	2.59E-02	1.43E-01	1.43E-01
		614.37	90.40	-2.58E-02		2.11E-01
		722.95	90.50	2.24E-02		1.99E-01
+	CD-109	88.03	3.72	3.02E+00	3.02E+00	3.02E+00
+	AG-110M	657.75	93.14	-5.46E-03	1.71E-01	1.71E-01
		677.61	10.53	7.89E-01		1.65E+00
		706.67	16.46	-3.32E-01		1.01E+00
		763.93	21.98	-2.24E-01		8.54E-01
		884.67	71.63	6.51E-02		2.53E-01
		1384.27	23.94	-5.67E-02		7.25E-01
+	CD-113M	263.70	0.02	-6.26E+01	5.02E+02	5.02E+02
+	SN-113	255.12	1.93	-1.55E+00	2.40E-01	6.87E+00
		391.69	64.90	7.62E-02		2.40E-01
+	TE123M	159.00	84.10	-3.12E-02	1.42E-01	1.42E-01
+	SB-124	602.71	97.87	-9.38E-02	2.10E-01	2.10E-01
		645.85	7.26	3.18E-01		2.97E+00
		722.78	11.10	1.55E-01		2.05E+00
		1691.02	49.00	1.09E-01		4.32E-01
+	I-125	35.49	6.49	-2.06E-01	1.06E+00	1.06E+00
+	SB-125	176.33	6.89	-8.26E-02	4.96E-01	1.61E+00
		427.89	29.33	2.71E-01		4.96E-01
		463.38	10.35	1.16E+00		1.48E+00
		600.56	17.80	-5.88E-01		8.72E-01
		635.90	11.32	-2.56E-01		1.41E+00
+	SB-126	414.70	83.30	2.04E-02	6.34E-01	7.05E-01
		666.33	99.60	1.44E-01		6.56E-01
		695.00	99.60	-2.93E-01		6.34E-01
		720.50	53.80	-2.02E-01		1.24E+00
+	SN-126	87.57	37.00	2.91E-01	2.92E-01	2.92E-01
+	SB-127	473.00	25.00	-2.06E+00	4.65E+01	5.39E+01
		685.20	35.70	-5.40E+00		4.65E+01
		783.80	14.70	5.52E+01		1.23E+02
+	I-129	29.78	57.00	2.21E-02	8.73E-02	8.73E-02
		33.60	13.20	-2.28E-01		3.77E-01
		39.58	7.52	-5.85E-01		7.16E-01
+	I-131	284.30	6.05	-9.94E+00	1.42E+00	1.86E+01
		364.48	81.20	3.92E-01		1.42E+00
		636.97	7.26	-9.94E-01		2.07E+01
		722.89	1.80	6.68E+00		8.84E+01

Analysis Report for 1510084-08
CP0604S16-17

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE-132	49.72	13.10	3.70E+01	3.35E+01	1.25E+02
		228.16	88.00	-1.14E+01		3.35E+01
+	BA-133	81.00	33.00	-4.65E-01	3.23E-01	3.35E-01
		302.84	17.80	-8.89E-02		6.70E-01
		356.01	60.00	-2.70E-02		3.23E-01
+	I-133	529.87	86.30	1.01E+07	1.74E+08	1.74E+08
+	XE-133	81.00	38.00	-1.25E+01	9.04E+00	9.04E+00
+	CS-134	563.23	8.38	-2.85E-01	2.15E-01	1.82E+00
		569.32	15.43	-1.16E-01		9.44E-01
		604.70	97.60	-2.14E-03		2.15E-01
		795.84	85.40	1.88E-01		2.34E-01
		801.93	8.73	-3.98E-01		1.94E+00
+	CS-135	268.24	16.00	-1.22E-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	1.77E+00	5.92E-01	5.48E+00
		163.89	4.61	3.45E-01		8.74E+00
		176.55	13.56	-1.62E-01		3.17E+00
		273.65	12.66	1.11E-01		3.89E+00
		340.57	48.50	-2.59E-02		1.20E+00
		818.50	99.70	-6.68E-02		5.92E-01
		1048.07	79.60	1.26E-01		8.64E-01
		1235.34	19.70	2.81E+00		5.60E+00
+	CS-137	661.65	85.12	1.47E-03	1.76E-01	1.76E-01
+	LA-138	788.74	34.00	-4.36E-01	2.46E-01	4.48E-01
		1435.80	66.00	4.66E-02		2.46E-01
+	CE-139	165.85	80.35	1.87E-03	1.45E-01	1.45E-01
+	BA-140	162.64	6.70	-1.62E+00	2.35E+00	6.19E+00
		304.84	4.50	-1.13E+00		1.08E+01
		423.70	3.20	1.40E+00		1.79E+01
		437.55	2.00	-1.13E+01		2.40E+01
		537.32	25.00	7.55E-01		2.35E+00
+	LA-140	328.77	20.50	1.67E+00	6.92E-01	2.66E+00
		487.03	45.50	4.32E-01		1.23E+00
		815.85	23.50	4.03E-01		2.66E+00
		1596.49	95.49	-1.92E-01		6.92E-01
+	CE-141	145.44	48.40	2.51E-02	3.63E-01	3.63E-01
+	CE-143	57.36	11.80	-3.66E+03	1.82E+05	3.10E+05
		293.26	42.00	2.52E+05		1.82E+05
		664.55	5.20	2.68E+03		1.46E+06
+	CE-144	133.54	10.80	2.26E-01	9.73E-01	9.73E-01
+	PM-144	476.78	42.00	-7.17E-02	1.58E-01	3.11E-01
		618.01	98.60	-2.37E-02		1.58E-01
		696.49	99.49	-6.37E-02		1.59E-01
+	PM-145	36.85	21.70	6.18E-02	1.33E-01	2.42E-01
		37.36	39.70	-3.62E-02		1.33E-01
		42.30	15.10	2.53E-02		3.88E-01
		72.40	2.31	9.27E+00		4.95E+00

Analysis Report for 1510084-08

CP0604S16-17

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-146	453.90	39.94	3.54E-02	3.49E-01	3.49E-01
		735.90	14.01	8.29E-02		1.14E+00
		747.13	13.10	-2.70E-01		1.20E+00
+	ND-147	91.11	28.90	4.75E+00	2.01E+00	2.01E+00
		531.02	13.10	-1.78E+00		5.24E+00
+	PM-149	285.90	3.10	-7.34E+02	1.36E+04	1.36E+04
+	EU-152	121.78	20.50	-5.01E-02	4.47E-01	4.47E-01
		244.69	5.40	1.30E-01		2.60E+00
		344.27	19.13	-1.69E-02		6.57E-01
		778.89	9.20	-5.24E-01		1.75E+00
		964.01	10.40	3.45E-01		2.27E+00
		1085.78	7.22	-5.69E-01		2.19E+00
		1112.02	9.60	-4.10E-01		1.96E+00
		1407.95	14.94	2.20E-01		1.36E+00
+	GD-153	97.43	31.30	-6.90E-02	3.23E-01	3.23E-01
		103.18	22.20	1.99E-01		4.50E-01
+	EU-154	123.07	40.50	1.58E-02	2.30E-01	2.30E-01
		723.30	19.70	1.03E-01		9.19E-01
		873.19	11.50	5.74E-01		1.46E+00
		996.32	10.30	-7.40E-01		1.56E+00
		1004.76	17.90	-1.69E-01		8.91E-01
		1274.45	35.50	1.17E-03		5.94E-01
+	EU-155	86.50	* 30.90	3.04E-01	3.64E-01	3.64E-01
		105.30	20.70	-4.42E-02		4.48E-01
+	EU-156	811.77	10.40	2.61E+00	5.14E+00	5.14E+00
		1153.47	7.20	1.31E+00		8.93E+00
		1230.71	8.90	4.65E-01		9.93E+00
+	HO-166M	184.41	72.60	1.29E-01	1.72E-01	1.72E-01
		280.45	29.60	4.35E-02		4.15E-01
		410.94	11.10	9.10E-01		1.28E+00
		711.69	54.10	1.30E-01		3.16E-01
+	TM-171	66.72	0.14	-4.22E+01	6.57E+01	6.57E+01
+	HF-172	81.75	4.52	-9.29E+00	8.78E-01	2.32E+00
		125.81	11.30	-1.50E-01		8.78E-01
+	LU-172	181.53	20.60	-3.00E-02	4.41E+00	8.60E+00
		810.06	16.63	4.57E+00		1.46E+01
		912.12	15.25	3.82E+01		2.66E+01
		1093.66	62.50	1.06E+00		4.41E+00
+	LU-173	100.72	5.24	-1.13E+00	5.97E-01	1.76E+00
		272.11	21.20	1.19E-02		5.97E-01
+	HF-175	343.40	84.00	-4.96E-03	2.03E-01	2.03E-01
+	LU-176	88.34	13.30	1.23E+00	1.24E-01	8.22E-01
		201.83	86.00	-1.24E-02		1.34E-01
		306.78	94.00	-5.89E-03		1.24E-01
+	TA-182	67.75	41.20	-6.39E-01	2.53E-01	2.53E-01
		1121.30	34.90	7.76E-01		8.66E-01
		1189.05	16.23	-3.38E-01		1.55E+00
		1221.41	26.98	-6.84E-02		8.98E-01
		1231.02	11.44	1.29E-01		2.76E+00

Analysis Report for 1510084-08

CP0604S16-17

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	IR-192	308.46	29.68	1.27E-02	3.54E-01	4.99E-01
		468.07	48.10	-9.12E-02		3.54E-01
+	HG-203	279.19	77.30	2.40E-02	2.32E-01	2.32E-01
+	BI-207	569.67	97.72	-1.80E-02	1.46E-01	1.46E-01
		1063.62	74.90	-7.94E-03		2.40E-01
+	TL-208	583.14	* 30.22	1.41E+00	2.33E-01	8.11E-01
		860.37	* 4.48	2.80E+00		7.00E+00
		2614.66	* 35.85	1.32E+00		2.33E-01
+	BI-210M	262.00	45.00	1.22E-01	2.66E-01	2.66E-01
		300.00	23.00	5.80E-02		6.11E-01
+	PB-210	46.50	4.25	4.16E-01	1.47E+00	1.47E+00
+	PB-211	404.84	2.90	-1.93E+00	4.45E+00	4.45E+00
		831.96	2.90	4.33E+00		7.17E+00
+	BI-212	727.17	* 11.80	1.11E+00	1.45E+00	1.45E+00
		1620.62	2.75	3.68E-01		5.01E+00
+	PB-212	238.63	* 44.60	2.04E+00	4.15E-01	4.15E-01
		300.09	3.41	3.91E-01		4.12E+00
+	BI-214	609.31	* 46.30	1.59E+00	3.90E-01	3.90E-01
		1120.29	* 15.10	2.20E+00		1.31E+00
		1764.49	* 15.80	1.59E+00		1.11E+00
		2204.22	4.98	-3.71E-02		4.99E+00
+	PB-214	295.21	* 19.19	1.39E+00	5.51E-01	9.11E-01
		351.92	* 37.19	1.65E+00		5.51E-01
+	RN-219	401.80	6.50	-7.42E-01	1.92E+00	1.92E+00
+	RA-223	323.87	3.88	3.66E-02	3.20E+00	3.20E+00
+	RA-224	240.98	3.95	2.39E+01	5.22E+00	5.22E+00
+	RA-225	40.00	31.00	-4.81E-01	5.89E-01	5.89E-01
+	RA-226	186.21	* 3.28	4.42E+00	4.23E+00	4.23E+00
+	TH-227	50.10	8.40	2.29E-01	7.75E-01	7.75E-01
		236.00	11.50	1.70E-01		1.66E+00
		256.20	6.30	9.42E-02		1.83E+00
+	AC-228	338.32	* 11.40	8.85E-01	8.43E-01	1.59E+00
		911.07	* 27.70	1.76E+00		8.43E-01
		969.11	* 16.60	1.09E+00		1.93E+00
+	TH-230	48.44	16.90	2.61E-01	3.82E-01	3.82E-01
		62.85	4.60	1.68E+00		1.87E+00
		67.67	0.37	-6.08E+01		2.41E+01
+	PA-231	283.67	1.60	-1.96E+00	5.16E+00	7.52E+00
		302.67	2.30	-6.84E-01		5.16E+00
+	TH-231	25.64	14.70	-3.11E-01	3.31E-01	3.31E-01
		84.21	6.40	-5.85E+00		1.56E+00
+	PA-233	311.98	38.60	6.39E-02	5.92E-01	5.92E-01
+	PA-234	131.20	20.40	2.35E-01	4.92E-01	4.92E-01
		733.99	8.80	3.88E-01		1.81E+00
		946.00	12.00	2.21E-01		1.53E+00
+	PA-234M	1001.03	0.92	-6.57E+00	1.58E+01	1.58E+01
+	TH-234	63.29	3.80	2.24E+00	2.30E+00	2.30E+00

Analysis Report for 1510084-08
CP0604S16-17

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	U-235	143.76		10.50	3.77E-01	9.70E-01	9.70E-01
		163.35		4.70	8.57E-02		2.17E+00
		205.31		4.70	6.81E-01		2.58E+00
+	NP-237	86.50	*	12.60	7.39E-01	8.83E-01	8.83E-01
+	NP-239	106.10		22.70	-8.47E+01	8.60E+02	8.60E+02
		228.18		10.70	-3.67E+02		2.30E+03
		277.60		14.10	1.63E+02		1.83E+03
+	AM-241	59.54		35.90	1.54E-01	2.24E-01	2.24E-01
+	AM-243	74.67		66.00	7.53E-01	1.85E-01	1.85E-01
+	CM-243	209.75		3.29	-1.29E-01	8.71E-01	3.72E+00
		228.14		10.60	-3.76E-01		1.10E+00
		277.60		14.00	7.75E-02		8.71E-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	1.70E+00	1.70E+00	-3.60E-01	8.01E-01
	NA-22	1274.54		99.94	2.14E-01	2.14E-01	4.22E-04	9.72E-02
	NA-24	1368.53		99.99	5.70E+11	4.06E+11	1.49E+11	2.51E+11
		2754.09		99.86	4.06E+11		3.65E+10	1.44E+11
	AL-26	1808.65		99.76	1.59E-01	1.59E-01	5.08E-02	6.65E-02
+	K-40	1460.81	*	10.67	1.48E+00	1.48E+00	2.07E+01	6.39E-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	9.46E-02	9.46E-02	-2.39E-01	4.65E-02
		78.34		96.00	1.24E-01		3.26E-01	6.13E-02
	SC-46	889.25		99.98	1.97E-01	1.97E-01	1.67E-02	9.01E-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	3.24E-01	1.97E-01	3.25E-01	1.52E-01
V-48	983.52	99.98	5.42E-01	5.42E-01	-2.06E-01	2.48E-01
	1312.10	97.50	5.61E-01		-6.87E-02	2.50E-01
CR-51	320.08	9.83	2.29E+00	2.29E+00	-6.69E-01	1.10E+00
MN-54	834.83	99.97	2.12E-01	2.12E-01	8.18E-02	9.91E-02
CO-56	846.75	99.96	1.91E-01	1.91E-01	-4.29E-02	8.72E-02
	1037.75	14.03	1.73E+00		7.34E-01	7.93E-01
	1238.25	67.00	4.94E-01		1.32E-02	2.30E-01
	1771.40	15.51	1.48E+00		9.10E-02	6.36E-01
	2598.48	16.90	9.95E-01		2.77E-01	3.72E-01
CO-57	122.06	85.51	1.14E-01	1.14E-01	-1.28E-02	5.57E-02
	136.48	10.60	9.92E-01		1.97E-01	4.84E-01
CO-58	810.76	99.40	2.13E-01	2.13E-01	6.69E-02	9.86E-02
FE-59	1099.22	56.50	4.65E-01	4.65E-01	-3.61E-01	2.10E-01
	1291.56	43.20	7.16E-01		-8.14E-02	3.25E-01
CO-60	1173.22	100.00	2.21E-01	1.92E-01	-1.20E-03	1.01E-01
	1332.49	100.00	1.92E-01		4.51E-02	8.59E-02
ZN-65	1115.52	50.75	4.56E-01	4.56E-01	8.53E-03	2.10E-01
+ GA-67	93.31	* 35.70	7.76E+01	7.76E+01	7.74E+01	3.81E+01
	208.95	2.24	1.37E+03		2.46E+02	6.67E+02
	300.22	16.00	2.06E+02		3.15E+01	9.94E+01
SE-75	121.11	16.70	6.28E-01	1.93E-01	-1.67E-01	3.06E-01
	136.00	59.20	1.93E-01		6.80E-02	9.43E-02
	264.65	59.80	2.22E-01		-6.58E-02	1.07E-01
	279.53	25.20	5.62E-01		5.81E-02	2.71E-01
	400.65	11.40	1.24E+00		-6.18E-01	5.87E-01
RB-82	776.52	13.00	2.56E+00	2.56E+00	-6.63E-01	1.19E+00
RB-83	520.41	46.00	3.40E-01	3.40E-01	-8.05E-02	1.59E-01
	529.64	30.30	5.61E-01		3.26E-02	2.64E-01
	552.65	16.40	1.03E+00		-2.75E-02	4.81E-01
KR-85	513.99	0.43	4.24E+01	4.24E+01	5.53E+01	2.03E+01
SR-85	513.99	99.27	2.44E-01	2.44E-01	3.18E-01	1.17E-01
Y-88	898.02	93.40	2.26E-01	1.62E-01	4.48E-02	1.04E-01
	1836.01	99.38	1.62E-01		-5.99E-02	6.54E-02
NB-93M	16.57	9.43	4.77E-01	4.77E-01	1.32E+00	2.32E-01
NB-94	702.63	100.00	1.51E-01	1.50E-01	-7.24E-02	7.04E-02
	871.10	100.00	1.50E-01		-1.02E-01	6.84E-02
NB-95	765.79	99.81	2.95E-01	2.95E-01	-1.13E-01	1.38E-01
NB-95M	235.69	25.00	1.13E+02	1.13E+02	1.16E+01	5.52E+01
ZR-95	724.18	43.70	5.53E-01	4.15E-01	-5.58E-03	2.60E-01
	756.72	55.30	4.15E-01		2.00E-01	1.94E-01
MO-99	181.06	6.20	1.32E+03	8.89E+02	4.31E+01	6.41E+02
	739.58	12.80	8.89E+02		-1.78E+02	4.13E+02
	778.00	4.50	2.51E+03		-7.49E+02	1.16E+03
RU-103	497.08	89.00	2.55E-01	2.55E-01	3.38E-03	1.21E-01
RU-106	621.84	9.80	1.60E+00	1.60E+00	-6.12E-01	7.50E-01
AG-108M	433.93	89.90	1.43E-01	1.43E-01	2.59E-02	6.77E-02
	614.37	90.40	2.11E-01		-2.58E-02	1.00E-01
	722.95	90.50	1.99E-01		2.24E-02	9.34E-02
CD-109	88.03	3.72	3.02E+00	3.02E+00	3.02E+00	1.49E+00
AG-110M	657.75	93.14	1.71E-01	1.71E-01	-5.46E-03	7.99E-02
	677.61	10.53	1.65E+00		7.89E-01	7.72E-01
	706.67	16.46	1.01E+00		-3.32E-01	4.70E-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)
AG-110M	763.93	21.98	8.54E-01	1.71E-01	-2.24E-01	3.99E-01
	884.67	71.63	2.53E-01		6.51E-02	1.17E-01
	1384.27	23.94	7.25E-01		-5.67E-02	3.16E-01
CD-113M	263.70	0.02	5.02E+02	5.02E+02	-6.26E+01	2.42E+02
SN-113	255.12	1.93	6.87E+00	2.40E-01	-1.55E+00	3.31E+00
	391.69	64.90	2.40E-01		7.62E-02	1.15E-01
TE123M	159.00	84.10	1.42E-01	1.42E-01	-3.12E-02	6.91E-02
SB-124	602.71	97.87	2.10E-01	2.10E-01	-9.38E-02	9.85E-02
	645.85	7.26	2.97E+00		3.18E-01	1.40E+00
	722.78	11.10	2.05E+00		1.55E-01	9.59E-01
	1691.02	49.00	4.32E-01		1.09E-01	1.82E-01
I-125	35.49	6.49	1.06E+00	1.06E+00	-2.06E-01	5.17E-01
SB-125	176.33	6.89	1.61E+00	4.96E-01	-8.26E-02	7.85E-01
	427.89	29.33	4.96E-01		2.71E-01	2.36E-01
	463.38	10.35	1.48E+00		1.16E+00	7.03E-01
	600.56	17.80	8.72E-01		-5.88E-01	4.10E-01
	635.90	11.32	1.41E+00		-2.56E-01	6.61E-01
SB-126	414.70	83.30	7.05E-01	6.34E-01	2.04E-02	3.36E-01
	666.33	99.60	6.56E-01		1.44E-01	3.06E-01
	695.00	99.60	6.34E-01		-2.93E-01	2.94E-01
	720.50	53.80	1.24E+00		-2.02E-01	5.74E-01
SN-126	87.57	37.00	2.92E-01	2.92E-01	2.91E-01	1.43E-01
SB-127	473.00	25.00	5.39E+01	4.65E+01	-2.06E+00	2.54E+01
	685.20	35.70	4.65E+01		-5.40E+00	2.17E+01
	783.80	14.70	1.23E+02		5.52E+01	5.72E+01
I-129	29.78	57.00	8.73E-02	8.73E-02	2.21E-02	4.26E-02
	33.60	13.20	3.77E-01		-2.28E-01	1.84E-01
	39.58	7.52	7.16E-01		-5.85E-01	3.49E-01
I-131	284.30	6.05	1.86E+01	1.42E+00	-9.94E+00	8.96E+00
	364.48	81.20	1.42E+00		3.92E-01	6.77E-01
	636.97	7.26	2.07E+01		-9.94E-01	9.73E+00
	722.89	1.80	8.84E+01		6.68E+00	4.13E+01
TE-132	49.72	13.10	1.25E+02	3.35E+01	3.70E+01	6.14E+01
	228.16	88.00	3.35E+01		-1.14E+01	1.62E+01
BA-133	81.00	33.00	3.35E-01	3.23E-01	-4.65E-01	1.65E-01
	302.84	17.80	6.70E-01		-8.89E-02	3.22E-01
	356.01	60.00	3.23E-01		-2.70E-02	1.57E-01
I-133	529.87	86.30	1.74E+08	1.74E+08	1.01E+07	8.16E+07
XE-133	81.00	38.00	9.04E+00	9.04E+00	-1.25E+01	4.45E+00
CS-134	563.23	8.38	1.82E+00	2.15E-01	-2.85E-01	8.56E-01
	569.32	15.43	9.44E-01		-1.16E-01	4.43E-01
	604.70	97.60	2.15E-01		-2.14E-03	1.03E-01
	795.84	85.40	2.34E-01		1.88E-01	1.10E-01
	801.93	8.73	1.94E+00		-3.98E-01	8.99E-01
CS-135	268.24	16.00	7.45E-01	7.45E-01	-1.22E-01	3.59E-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	5.48E+00	5.92E-01	1.77E+00	2.67E+00
	163.89	4.61	8.74E+00		3.45E-01	4.25E+00
	176.55	13.56	3.17E+00		-1.62E-01	1.54E+00
	273.65	12.66	3.89E+00		1.11E-01	1.88E+00
	340.57	48.50	1.20E+00		-2.59E-02	5.80E-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)	
CS-136	818.50	99.70	5.92E-01	5.92E-01	-6.68E-02	2.71E-01	
	1048.07	79.60	8.64E-01		1.26E-01	3.93E-01	
	1235.34	19.70	5.60E+00		2.81E+00	2.62E+00	
CS-137	661.65	85.12	1.76E-01	1.76E-01	1.47E-03	8.20E-02	
LA-138	788.74	34.00	4.48E-01	2.46E-01	-4.36E-01	2.07E-01	
	1435.80	66.00	2.46E-01		4.66E-02	1.07E-01	
CE-139	165.85	80.35	1.45E-01	1.45E-01	1.87E-03	7.04E-02	
BA-140	162.64	6.70	6.19E+00	2.35E+00	-1.62E+00	3.01E+00	
	304.84	4.50	1.08E+01		-1.13E+00	5.19E+00	
	423.70	3.20	1.79E+01		1.40E+00	8.54E+00	
	437.55	2.00	2.40E+01		-1.13E+01	1.13E+01	
	537.32	25.00	2.35E+00		7.55E-01	1.11E+00	
LA-140	328.77	20.50	2.66E+00	6.92E-01	1.67E+00	1.28E+00	
	487.03	45.50	1.23E+00		4.32E-01	5.79E-01	
	815.85	23.50	2.66E+00		4.03E-01	1.22E+00	
	1596.49	95.49	6.92E-01		-1.92E-01	2.96E-01	
CE-141	145.44	48.40	3.63E-01	3.63E-01	2.51E-02	1.77E-01	
CE-143	57.36	11.80	3.10E+05	1.82E+05	-3.66E+03	1.52E+05	
	293.26	42.00	1.82E+05		2.52E+05	8.81E+04	
	664.55	5.20	1.46E+06		2.68E+03	6.83E+05	
CE-144	133.54	10.80	9.73E-01	9.73E-01	2.26E-01	4.75E-01	
PM-144	476.78	42.00	3.11E-01	1.58E-01	-7.17E-02	1.46E-01	
	618.01	98.60	1.58E-01		-2.37E-02	7.41E-02	
	696.49	99.49	1.59E-01		-6.37E-02	7.37E-02	
	36.85	21.70	2.42E-01		1.33E-01	6.18E-02	1.18E-01
PM-145	37.36	39.70	1.33E-01	3.49E-01	-3.62E-02	6.48E-02	
	42.30	15.10	3.88E-01		2.53E-02	1.89E-01	
	72.40	2.31	4.95E+00		9.27E+00	2.44E+00	
	453.90	39.94	3.49E-01		3.54E-02	1.66E-01	
PM-146	735.90	14.01	1.14E+00	3.49E-01	8.29E-02	5.30E-01	
	747.13	13.10	1.20E+00		-2.70E-01	5.56E-01	
	91.11	28.90	2.01E+00		2.01E+00	4.75E+00	9.87E-01
ND-147	531.02	13.10	5.24E+00		-1.78E+00	2.46E+00	
PM-149	285.90	3.10	1.36E+04	1.36E+04	-7.34E+02	6.55E+03	
EU-152	121.78	20.50	4.47E-01	4.47E-01	-5.01E-02	2.18E-01	
	244.69	5.40	2.60E+00		1.30E-01	1.26E+00	
	344.27	19.13	6.57E-01		-1.69E-02	3.14E-01	
	778.89	9.20	1.75E+00		-5.24E-01	8.12E-01	
	964.01	10.40	2.27E+00		3.45E-01	1.07E+00	
	1085.78	7.22	2.19E+00		-5.69E-01	9.79E-01	
	1112.02	9.60	1.96E+00		-4.10E-01	8.91E-01	
	1407.95	14.94	1.36E+00		2.20E-01	6.12E-01	
	97.43	31.30	3.23E-01		3.23E-01	-6.90E-02	1.58E-01
	103.18	22.20	4.50E-01			1.99E-01	2.20E-01
EU-154	123.07	40.50	2.30E-01	2.30E-01	1.58E-02	1.12E-01	
	723.30	19.70	9.19E-01		1.03E-01	4.31E-01	
EU-155	873.19	11.50	1.46E+00	3.64E-01	5.74E-01	6.71E-01	
	996.32	10.30	1.56E+00		-7.40E-01	7.06E-01	
	1004.76	17.90	8.91E-01		-1.69E-01	4.03E-01	
	1274.45	35.50	5.94E-01		1.17E-03	2.70E-01	
	86.50	30.90	3.64E-01		3.04E-01	1.79E-01	
	105.30	20.70	4.48E-01		-4.42E-02	2.19E-01	
EU-156	811.77	10.40	5.14E+00	5.14E+00	2.61E+00	2.37E+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)
EU-156	1153.47	7.20	8.93E+00	5.14E+00	1.31E+00	4.07E+00
	1230.71	8.90	9.93E+00		4.65E-01	4.63E+00
HO-166M	184.41	72.60	1.72E-01	1.72E-01	1.29E-01	8.38E-02
	280.45	29.60	4.15E-01		4.35E-02	2.00E-01
	410.94	11.10	1.28E+00		9.10E-01	6.12E-01
	711.69	54.10	3.16E-01		1.30E-01	1.48E-01
TM-171	66.72	0.14	6.57E+01	6.57E+01	-4.22E+01	3.23E+01
HF-172	81.75	4.52	2.32E+00	8.78E-01	-9.29E+00	1.14E+00
	125.81	11.30	8.78E-01		-1.50E-01	4.29E-01
LU-172	181.53	20.60	8.60E+00	4.41E+00	-3.00E-02	4.19E+00
	810.06	16.63	1.46E+01		4.57E+00	6.73E+00
	912.12	15.25	2.66E+01		3.82E+01	1.26E+01
	1093.66	62.50	4.41E+00		1.06E+00	2.01E+00
LU-173	100.72	5.24	1.76E+00	5.97E-01	-1.13E+00	8.61E-01
	272.11	21.20	5.97E-01		1.19E-02	2.88E-01
HF-175	343.40	84.00	2.03E-01	2.03E-01	-4.96E-03	9.74E-02
LU-176	88.34	13.30	8.22E-01	1.24E-01	1.23E+00	4.04E-01
	201.83	86.00	1.34E-01		-1.24E-02	6.52E-02
	306.78	94.00	1.24E-01		-5.89E-03	5.94E-02
TA-182	67.75	41.20	2.53E-01	2.53E-01	-6.39E-01	1.24E-01
	1121.30	34.90	8.66E-01		7.76E-01	4.05E-01
	1189.05	16.23	1.55E+00		-3.38E-01	7.08E-01
	1221.41	26.98	8.98E-01		-6.84E-02	4.09E-01
	1231.02	11.44	2.76E+00		1.29E-01	1.29E+00
IR-192	308.46	29.68	4.99E-01	3.54E-01	1.27E-02	2.39E-01
	468.07	48.10	3.54E-01		-9.12E-02	1.68E-01
HG-203	279.19	77.30	2.32E-01	2.32E-01	2.40E-02	1.12E-01
BI-207	569.67	97.72	1.46E-01	1.46E-01	-1.80E-02	6.84E-02
	1063.62	74.90	2.40E-01		-7.94E-03	1.09E-01
+ TL-208	583.14	* 30.22	8.11E-01	2.33E-01	1.41E+00	3.91E-01
	860.37	* 4.48	7.00E+00		2.80E+00	3.36E+00
	2614.66	* 35.85	2.33E-01		1.32E+00	6.93E-02
BI-210M	262.00	45.00	2.66E-01	2.66E-01	1.22E-01	1.28E-01
	300.00	23.00	6.11E-01		5.80E-02	2.95E-01
PB-210	46.50	4.25	1.47E+00	1.47E+00	4.16E-01	7.17E-01
PB-211	404.84	2.90	4.45E+00	4.45E+00	-1.93E+00	2.11E+00
	831.96	2.90	7.17E+00		4.33E+00	3.36E+00
+ BI-212	727.17	* 11.80	1.45E+00	1.45E+00	1.11E+00	6.80E-01
	1620.62	2.75	5.01E+00		3.68E-01	2.08E+00
+ PB-212	238.63	* 44.60	4.15E-01	4.15E-01	2.04E+00	2.03E-01
	300.09	3.41	4.12E+00		3.91E-01	1.99E+00
+ BI-214	609.31	* 46.30	3.90E-01	3.90E-01	1.59E+00	1.85E-01
	1120.29	* 15.10	1.31E+00		2.20E+00	6.01E-01
	1764.49	* 15.80	1.11E+00		1.59E+00	4.76E-01
	2204.22	4.98	4.99E+00		-3.71E-02	2.20E+00
+ PB-214	295.21	* 19.19	9.11E-01	5.51E-01	1.39E+00	4.44E-01
	351.92	* 37.19	5.51E-01		1.65E+00	2.68E-01
RN-219	401.80	6.50	1.92E+00	1.92E+00	-7.42E-01	9.11E-01
RA-223	323.87	3.88	3.20E+00	3.20E+00	3.66E-02	1.53E+00
RA-224	240.98	3.95	5.22E+00	5.22E+00	2.39E+01	2.56E+00
RA-225	40.00	31.00	5.89E-01	5.89E-01	-4.81E-01	2.87E-01
+ RA-226	186.21	* 3.28	4.23E+00	4.23E+00	4.42E+00	2.07E+00
TH-227	50.10	8.40	7.75E-01	7.75E-01	2.29E-01	3.79E-01

Analysis Report for 1510084-08
CP0604S16-17

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	1.66E+00	7.75E-01	1.70E-01	8.13E-01
	256.20	6.30	1.83E+00		9.42E-02	8.84E-01
+ AC-228	338.32 *	11.40	1.59E+00	8.43E-01	8.85E-01	7.72E-01
	911.07 *	27.70	8.43E-01		1.76E+00	3.96E-01
	969.11 *	16.60	1.93E+00		1.09E+00	9.19E-01
TH-230	48.44	16.90	3.82E-01	3.82E-01	2.61E-01	1.87E-01
	62.85	4.60	1.87E+00		1.68E+00	9.18E-01
	67.67	0.37	2.41E+01		-6.08E+01	1.18E+01
PA-231	283.67	1.60	7.52E+00	5.16E+00	-1.96E+00	3.62E+00
	302.67	2.30	5.16E+00		-6.84E-01	2.48E+00
TH-231	25.64	14.70	3.31E-01	3.31E-01	-3.11E-01	1.61E-01
	84.21	6.40	1.56E+00		-5.85E+00	7.68E-01
PA-233	311.98	38.60	5.92E-01	5.92E-01	6.39E-02	2.83E-01
PA-234	131.20	20.40	4.92E-01	4.92E-01	2.35E-01	2.40E-01
	733.99	8.80	1.81E+00		3.88E-01	8.42E-01
	946.00	12.00	1.53E+00		2.21E-01	7.06E-01
PA-234M	1001.03	0.92	1.58E+01	1.58E+01	-6.57E+00	7.09E+00
TH-234	63.29	3.80	2.30E+00	2.30E+00	2.24E+00	1.13E+00
U-235	143.76	10.50	9.70E-01	9.70E-01	3.77E-01	4.73E-01
	163.35	4.70	2.17E+00		8.57E-02	1.06E+00
	205.31	4.70	2.58E+00		6.81E-01	1.25E+00
+ NP-237	86.50 *	12.60	8.83E-01	8.83E-01	7.39E-01	4.34E-01
NP-239	106.10	22.70	8.60E+02	8.60E+02	-8.47E+01	4.21E+02
	228.18	10.70	2.30E+03		-3.67E+02	1.11E+03
	277.60	14.10	1.83E+03		1.63E+02	8.80E+02
AM-241	59.54	35.90	2.24E-01	2.24E-01	1.54E-01	1.10E-01
AM-243	74.67	66.00	1.85E-01	1.85E-01	7.53E-01	9.11E-02
CM-243	209.75	3.29	3.72E+00	8.71E-01	-1.29E-01	1.81E+00
	228.14	10.60	1.10E+00		-3.76E-01	5.33E-01
	277.60	14.00	8.71E-01		7.75E-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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User
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Analysis Report for 1510084-08
CP0604S16-17

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: CP0604S16-17

Elapsed Live time: 3600

Elapsed Real Time: 3639

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	22	75
17:	102	84	93	81	56	54	57	62
25:	65	70	58	56	47	59	53	59
33:	61	49	56	57	61	68	52	73
41:	58	62	58	83	81	83	80	72
49:	78	64	73	79	78	74	69	85
57:	81	85	109	97	116	138	140	104
65:	110	104	110	113	112	102	111	136
73:	170	240	263	304	248	146	103	95
81:	81	86	114	106	111	164	149	116
89:	111	126	127	133	128	110	79	70
97:	60	77	87	71	63	67	88	58
105:	83	81	67	64	74	51	71	84
113:	61	71	59	53	54	53	78	60
121:	52	63	48	53	61	64	74	75
129:	71	61	58	57	42	68	59	64
137:	56	58	58	55	48	63	68	51
145:	57	47	66	45	48	47	56	52
153:	59	63	53	56	51	40	62	42
161:	25	55	51	53	45	45	45	48
169:	45	41	50	40	45	42	53	50
177:	52	54	52	41	46	55	51	65
185:	81	83	61	41	44	41	53	42
193:	46	48	49	35	36	47	51	35
201:	34	49	49	46	37	39	45	46
209:	67	41	45	39	45	45	37	47
217:	26	37	31	35	34	46	46	42
225:	53	23	29	24	35	27	36	44
233:	45	30	35	60	150	245	172	94
241:	69	54	39	39	21	28	27	34
249:	23	23	30	23	24	26	23	33
257:	32	29	37	24	28	33	27	28
265:	21	21	17	31	32	36	35	25
273:	29	25	22	24	34	36	25	16
281:	30	24	27	25	22	28	29	21
289:	21	29	30	17	37	76	62	51
297:	30	28	17	29	18	25	20	24
305:	14	19	22	21	20	17	23	19
313:	18	15	23	18	15	24	16	21
321:	12	18	24	18	27	27	24	32
329:	21	14	26	22	23	21	13	16
337:	44	52	39	20	17	21	20	16
345:	15	19	22	19	23	66	126	109
353:	48	23	17	16	17	16	15	20
361:	19	22	13	14	12	19	12	13

369: 18 13 8 17 15 17 11 14

Sample Title: CP0604S16-17

Channel	1	2	3	4	5	6	7	8
377:	11	20	19	21	9	21	19	18
385:	13	19	15	17	15	22	14	16
393:	13	22	15	7	13	18	13	17
401:	12	11	10	16	13	16	17	18
409:	20	15	23	15	14	17	11	16
417:	9	21	10	15	15	13	16	15
425:	18	15	24	10	13	22	11	10
433:	10	13	9	14	10	8	13	3
441:	11	13	16	5	20	9	11	11
449:	11	15	10	18	13	18	15	14
457:	5	12	15	16	20	18	13	17
465:	10	12	15	12	10	8	12	8
473:	16	10	5	7	7	10	8	15
481:	11	13	10	14	14	8	15	10
489:	3	13	9	7	7	13	13	14
497:	13	9	13	10	15	17	10	14
505:	6	13	10	20	24	36	36	18
513:	17	8	13	11	4	5	7	10
521:	8	10	9	11	15	11	6	8
529:	4	9	10	8	15	8	7	11
537:	10	9	11	13	7	11	4	9
545:	8	8	7	6	6	9	4	11
553:	12	11	10	8	15	8	6	9
561:	11	16	7	12	10	12	6	17
569:	10	6	8	5	5	9	8	7
577:	4	10	9	11	17	50	54	31
585:	8	7	11	8	7	8	9	5
593:	9	8	16	11	5	6	9	4
601:	10	10	10	17	6	9	27	58
609:	95	60	19	5	4	4	10	11
617:	5	7	6	9	10	11	11	8
625:	6	14	10	10	8	12	9	6
633:	11	6	10	10	12	10	3	12
641:	8	7	11	9	9	11	7	10
649:	6	9	6	9	9	6	9	4
657:	8	5	7	10	6	7	7	6
665:	8	15	4	4	9	6	9	5
673:	2	11	9	8	13	7	7	7
681:	8	6	5	4	2	10	14	5
689:	9	11	5	8	4	3	11	8
697:	9	2	6	7	9	8	7	1
705:	12	6	4	9	10	3	8	10
713:	8	12	9	6	6	6	11	11
721:	9	0	6	3	11	12	16	13
729:	8	5	3	10	5	7	7	9
737:	5	8	4	10	6	6	5	10
745:	7	6	5	9	6	3	3	4
753:	7	9	6	5	4	11	10	10
761:	6	7	6	5	7	5	10	10
769:	11	7	8	9	7	6	7	4
777:	2	9	7	5	6	7	6	3
785:	10	11	2	4	4	4	5	3
793:	12	11	8	8	13	9	8	7

801: 6 3 7 6 3 4 8 4

Sample Title: CP0604S16-17

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	3	8	8	7	5	4	3	4
817:	4	1	7	5	9	4	5	2
825:	7	6	3	7	13	10	8	9
833:	10	8	6	9	7	6	6	9
841:	1	5	7	2	6	8	3	2
849:	2	4	7	6	2	6	4	6
857:	7	9	10	12	11	5	4	5
865:	7	4	3	3	5	8	6	3
873:	2	3	3	8	7	6	3	2
881:	6	9	4	5	4	7	3	5
889:	1	5	3	1	10	6	7	2
897:	6	8	2	4	6	8	5	5
905:	4	5	8	11	14	20	34	24
913:	3	7	5	2	3	5	5	4
921:	3	1	4	5	3	3	5	5
929:	4	3	9	8	9	8	6	5
937:	5	7	4	7	3	2	3	8
945:	5	4	7	4	6	8	3	5
953:	6	6	6	5	3	3	8	5
961:	6	4	7	12	14	4	12	13
969:	22	6	6	3	5	1	4	3
977:	3	7	6	1	3	6	2	5
985:	2	8	6	6	7	8	7	5
993:	3	3	5	5	2	1	3	4
1001:	3	6	1	3	2	6	2	3
1009:	5	5	6	10	3	6	8	3
1017:	2	2	3	5	4	5	3	2
1025:	4	5	7	3	3	2	3	4
1033:	10	4	5	7	3	2	3	3
1041:	6	4	2	4	3	3	3	2
1049:	5	7	5	2	3	2	3	1
1057:	6	5	6	3	5	3	4	5
1065:	3	4	2	4	3	5	4	5
1073:	2	8	5	3	4	7	4	2
1081:	5	0	2	1	3	4	3	2
1089:	4	6	2	3	5	5	3	2
1097:	6	3	2	5	0	4	6	10
1105:	5	7	5	6	2	3	4	4
1113:	6	3	4	3	6	2	15	13
1121:	19	10	2	1	1	4	2	5
1129:	3	4	4	7	8	7	2	1
1137:	4	8	2	5	5	5	8	4
1145:	5	5	3	2	0	3	3	7
1153:	3	6	10	4	0	4	3	4
1161:	2	4	3	8	5	4	5	3
1169:	3	4	6	8	5	6	0	6
1177:	6	6	7	4	2	4	7	8
1185:	8	6	2	4	5	2	5	4
1193:	5	7	3	4	3	5	7	11
1201:	5	7	4	8	3	9	4	3
1209:	7	4	3	6	4	5	4	6
1217:	2	2	6	3	5	2	6	5
1225:	5	12	6	12	3	4	5	8

1233: 9 11 5 5 4 10 11 1

Sample Title: CP0604S16-17

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	7	5	4	4	7	3	6	5
1249:	8	2	5	1	4	3	6	6
1257:	2	1	4	3	2	3	5	4
1265:	3	4	9	2	2	3	7	3
1273:	2	5	0	7	3	4	2	4
1281:	4	6	0	4	3	1	4	2
1289:	4	3	4	5	1	5	4	4
1297:	6	5	4	2	1	7	0	5
1305:	2	3	5	3	3	1	1	1
1313:	6	4	2	1	2	4	1	3
1321:	2	3	3	1	3	2	5	2
1329:	1	2	4	4	4	5	1	2
1337:	1	2	0	4	3	1	3	5
1345:	2	3	2	3	2	1	4	0
1353:	3	3	2	1	3	0	3	3
1361:	0	1	2	2	2	2	0	2
1369:	2	4	2	2	3	1	1	3
1377:	3	6	3	2	2	1	1	4
1385:	3	3	0	0	0	1	1	1
1393:	3	1	2	2	4	0	3	2
1401:	3	3	4	0	3	2	5	6
1409:	6	1	1	2	3	1	1	0
1417:	2	3	3	0	1	1	2	2
1425:	1	3	2	1	2	1	0	6
1433:	0	1	2	2	2	0	0	2
1441:	1	1	2	3	2	1	2	3
1449:	1	2	3	3	0	0	4	1
1457:	4	7	23	54	96	68	25	1
1465:	1	0	2	1	3	0	1	2
1473:	0	0	2	1	0	0	2	0
1481:	1	2	0	4	0	2	2	5
1489:	0	3	0	1	1	3	2	1
1497:	2	0	4	1	1	0	0	0
1505:	0	0	2	4	1	3	4	4
1513:	1	1	0	2	0	1	1	3
1521:	1	0	2	3	0	4	0	0
1529:	0	0	3	0	3	4	0	2
1537:	2	2	2	3	3	2	0	3
1545:	1	1	0	0	0	0	1	0
1553:	1	1	2	2	0	1	1	0
1561:	2	1	0	2	0	1	1	2
1569:	2	1	1	1	0	2	0	0
1577:	0	2	1	4	2	2	0	1
1585:	0	0	4	1	3	5	4	4
1593:	7	1	1	0	1	1	0	1
1601:	0	0	5	1	1	0	1	1
1609:	0	0	1	1	2	3	1	0
1617:	1	0	0	1	0	2	2	0
1625:	2	0	0	0	0	3	1	1
1633:	2	1	1	1	0	1	2	2
1641:	2	0	0	0	0	1	2	1
1649:	3	2	2	0	0	3	1	0
1657:	0	2	0	0	2	1	1	1

1665: 1 2 1 0 0 0 0 0

Sample Title: CP0604S16-17

Channel	1	2	3	4	5	6	7	8	9
1673:	1	1	2	1	0	0	0	0	0
1681:	1	1	3	0	1	0	0	0	1
1689:	1	0	2	1	1	3	1	0	0
1697:	1	2	1	0	0	0	0	0	1
1705:	0	0	0	2	0	0	0	0	1
1713:	0	0	1	2	0	1	0	0	0
1721:	1	0	1	0	3	1	0	0	3
1729:	0	0	2	1	2	0	1	1	1
1737:	0	0	0	0	0	1	0	1	1
1745:	0	0	1	1	1	0	1	1	1
1753:	0	0	1	0	1	0	1	1	0
1761:	1	3	2	2	7	10	3	1	1
1769:	1	3	0	1	2	1	0	0	0
1777:	1	0	0	1	1	0	2	1	1
1785:	0	1	1	0	0	1	0	0	0
1793:	0	0	1	0	1	0	2	0	0
1801:	0	1	0	1	1	2	1	1	1
1809:	1	1	0	0	0	1	1	0	0
1817:	0	2	1	0	0	1	2	3	3
1825:	0	3	3	1	0	1	0	2	2
1833:	0	0	0	1	0	1	1	1	1
1841:	0	1	3	0	0	1	0	1	1
1849:	2	0	0	0	2	1	0	1	1
1857:	3	1	2	2	0	1	1	0	0
1865:	1	0	0	0	3	1	0	0	0
1873:	0	1	0	0	0	0	1	1	1
1881:	1	1	1	2	0	0	3	1	1
1889:	1	1	0	1	0	1	2	1	1
1897:	0	1	0	2	2	1	0	0	0
1905:	0	1	1	1	1	0	1	1	1
1913:	0	0	1	1	1	1	0	0	0
1921:	0	3	0	1	1	2	1	0	0
1929:	0	0	0	4	3	0	2	0	0
1937:	0	0	0	0	0	0	1	0	0
1945:	0	1	2	2	1	0	0	3	3
1953:	0	1	2	2	1	1	1	0	0
1961:	2	1	0	1	1	0	2	0	0
1969:	1	1	4	0	0	0	1	0	0
1977:	0	0	1	1	0	0	1	1	1
1985:	2	0	1	1	0	1	0	0	0
1993:	0	1	2	1	1	0	0	0	0
2001:	0	0	1	0	0	0	0	1	1
2009:	2	1	0	2	2	0	1	1	1
2017:	1	3	0	0	1	0	1	1	1
2025:	0	0	1	1	0	0	2	0	0
2033:	1	1	0	0	1	0	0	0	0
2041:	0	1	1	0	2	1	0	2	2
2049:	1	3	0	1	0	0	2	0	0
2057:	1	0	0	1	2	0	2	1	1
2065:	0	1	0	2	0	1	0	1	1
2073:	0	0	0	1	2	0	0	0	0
2081:	0	0	0	1	0	0	0	0	0
2089:	0	0	1	1	1	1	3	2	2

2097: 0 4 0 1 1 3 3 1

Sample Title: CP0604S16-17

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

2529: 0 0 1 0 0 0 0 0 1

Sample Title: CP0604S16-17

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	1	1	0	1	0	0	0
2545:	0	0	1	0	0	1	0	0
2553:	0	0	0	0	0	0	1	0
2561:	1	1	0	0	0	0	1	0
2569:	0	0	0	0	1	0	2	0
2577:	0	0	0	2	1	0	0	0
2585:	0	0	1	0	0	0	0	0
2593:	0	0	0	0	1	1	0	1
2601:	0	0	0	0	0	0	0	1
2609:	0	0	0	0	4	8	9	8
2617:	7	3	0	0	0	0	0	0
2625:	1	0	0	1	0	1	0	0
2633:	0	0	0	0	0	0	1	0
2641:	0	2	1	1	0	0	0	0
2649:	0	0	0	0	0	0	0	0
2657:	1	0	0	1	0	0	0	0
2665:	0	0	0	0	1	0	0	0
2673:	1	0	0	0	0	0	1	0
2681:	0	0	0	1	0	2	1	0
2689:	0	2	2	0	0	0	1	0
2697:	1	0	0	0	0	0	0	0
2705:	0	1	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	0	0	0	0	1
2737:	0	0	0	0	0	0	0	0
2745:	0	0	0	0	1	0	1	0
2753:	0	0	0	1	0	0	0	0
2761:	0	0	0	0	0	1	0	0
2769:	0	0	0	0	0	1	0	1
2777:	0	1	1	0	0	0	1	0
2785:	0	0	1	0	0	0	0	0
2793:	0	0	0	1	1	0	0	0
2801:	0	1	0	0	0	0	0	0
2809:	0	0	0	0	0	0	0	0
2817:	0	1	1	1	0	0	0	0
2825:	0	0	1	0	0	1	0	0
2833:	0	1	0	0	1	0	0	0
2841:	1	0	0	0	0	0	0	0
2849:	0	1	0	0	0	0	0	1
2857:	0	0	0	1	0	0	0	0
2865:	0	0	0	0	0	0	0	1
2873:	0	0	0	0	0	2	1	1
2881:	1	0	0	0	0	1	0	0
2889:	0	0	0	0	0	0	1	0
2897:	0	1	0	0	1	0	1	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	0	0	1	0	0
2921:	0	0	1	0	0	0	0	0
2929:	1	0	0	0	1	0	1	0
2937:	1	1	0	1	0	0	1	0
2945:	0	1	0	0	0	0	0	1
2953:	0	0	0	0	0	0	0	0

2961: 0 0 0 0 0 0 0 0 0

Sample Title: CP0604S16-17

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

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP0604S16-17

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	1	0	0
3409:	0	0	1	0	0	0	0	0
3417:	0	0	0	1	1	0	0	0
3425:	1	1	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	2	0	0	0	0	1
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	2	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	1
3489:	0	0	0	1	0	0	0	1
3497:	0	0	0	0	0	0	0	0
3505:	0	0	1	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	0	0	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	2	0	0	0
3561:	0	0	0	0	1	0	0	0
3569:	1	0	0	0	0	0	0	1
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	1
3593:	1	1	0	0	1	0	0	0
3601:	0	0	0	1	1	0	0	0
3609:	0	0	0	0	0	0	1	1
3617:	0	1	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	1	0
3641:	0	0	0	1	0	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	1	0	0	1	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	1	0	0	0	1	0	0	0
3697:	0	1	0	0	0	1	0	0
3705:	0	0	0	0	0	0	1	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	1	1	0	0	0	1
3729:	0	1	0	0	0	0	0	0
3737:	0	0	1	0	0	0	0	0
3745:	0	0	0	0	0	0	0	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:	0	0	0	0	0	0	0	0
3801:	0	0	0	1	0	0	0	0
3809:	0	0	0	1	0	0	0	0
3817:	0	0	0	0	0	0	0	0

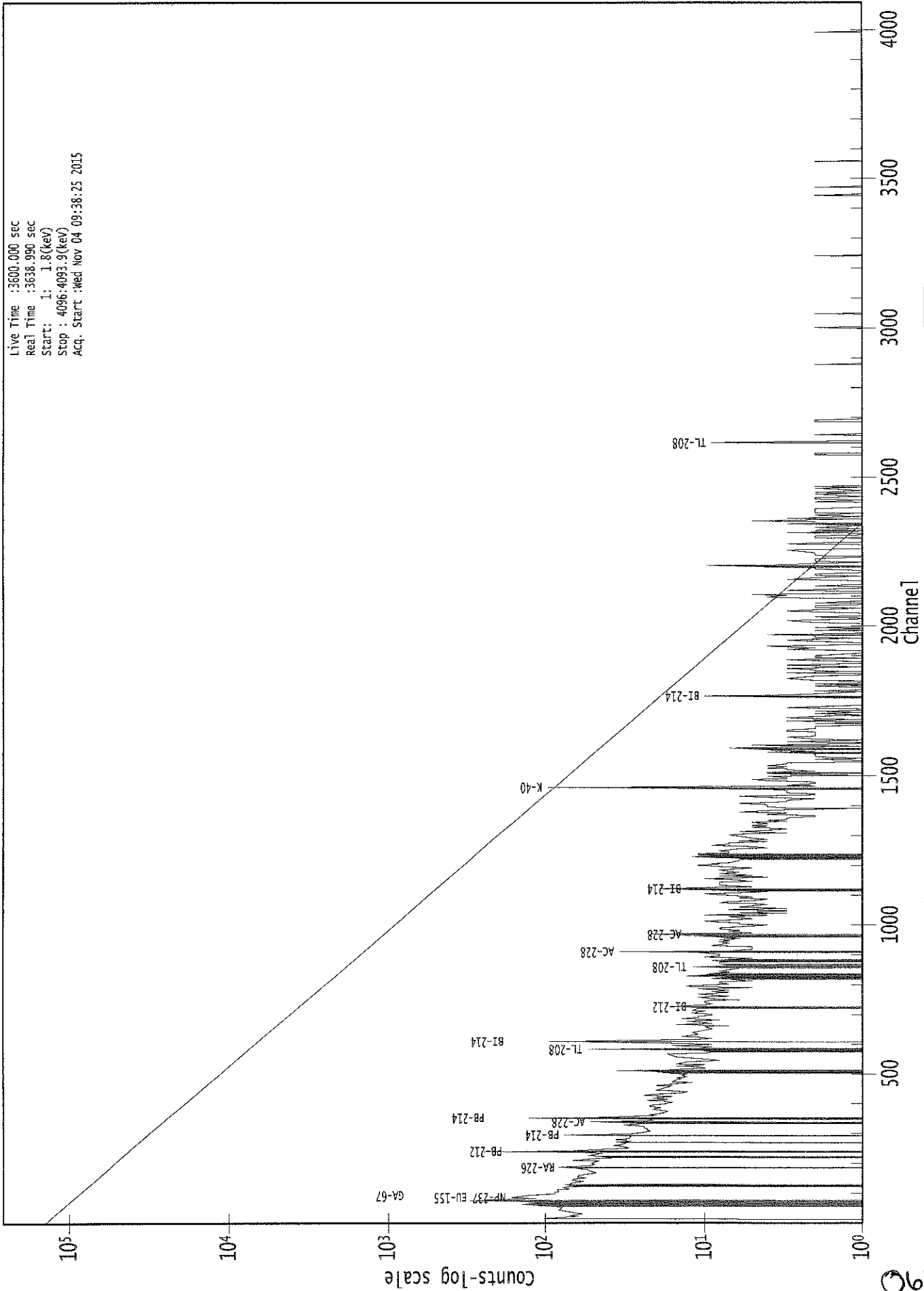
3825: 0 0 0 0 0 1 0 0

Sample Title: CP0604S16-17

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	1	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	1
3857:	0	0	1	0	1	0	0	0
3865:	0	0	0	0	0	0	0	1
3873:	0	0	0	0	0	1	0	0
3881:	1	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:	0	0	0	0	0	0	1	0
3921:	0	0	0	0	1	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	1	1	0	0	0	0	0	0
3953:	0	0	0	1	0	0	0	0
3961:	0	0	0	1	0	0	0	0
3969:	0	0	0	1	0	0	0	0
3977:	0	1	1	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	2	0	0	0	0	0	0	0
4001:	0	0	0	0	0	1	0	0
4009:	0	0	1	0	0	0	1	0
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	0	0	0	0	0	0	0
4057:	0	0	0	0	0	1	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	0	0
4089:	0	0	0	0	0	0	0	0

0000029102.CNF

Live Time :3600.000 sec
Real Time :3638.990 sec
Start: 1: 1.8(keV)
Stop : 4096.4093.9(keV)
Acq. Start :Wed Nov 04 09:38:25 2015



ROI Type: 2

ROI Type: 1

0631A

Analysis Report for 1510084-09
CP0604S19-20

1114

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-09
Sample Description : CP0604S19-20
Sample Type : SOIL

Sample Size : 5.669E+02 grams
Facility : Countroom

Sample Taken On : 10/9/2015 9:48:23AM
Acquisition Started : 11/4/2015 10:45:06AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3617.2 seconds

Dead Time : 0.48 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 9 - 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 : 29108

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-09
CP0604S19-20

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 11:45:25AM
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	76.13	76.35	0.0000	0.00
2	92.63	92.84	0.0000	0.00
3	129.49	129.68	0.0000	0.00
4	186.41	186.57	0.0000	0.00
5	222.61	222.74	0.0000	0.00
6	238.95	239.08	0.0000	0.00
7	242.05	242.17	0.0000	0.00
8	271.02	271.13	0.0000	0.00
9	295.66	295.76	0.0000	0.00
10	300.41	300.51	0.0000	0.00
11	328.92	329.00	0.0000	0.00
12	339.04	339.11	0.0000	0.00
13	352.28	352.35	0.0000	0.00
14	463.54	463.56	0.0000	0.00
15	511.24	511.23	0.0000	0.00
16	583.61	583.56	0.0000	0.00
17	609.78	609.73	0.0000	0.00
18	614.48	614.42	0.0000	0.00
19	625.44	625.38	0.0000	0.00
20	635.60	635.53	0.0000	0.00
21	728.01	727.90	0.0000	0.00
22	796.06	795.92	0.0000	0.00
23	861.83	861.66	0.0000	0.00
24	912.00	911.81	0.0000	0.00
25	935.42	935.22	0.0000	0.00
26	966.00	965.78	0.0000	0.00
27	969.03	968.81	0.0000	0.00
28	1120.81	1120.52	0.0000	0.00
29	1124.29	1124.00	0.0000	0.00
30	1193.84	1193.53	0.0000	0.00
31	1285.24	1284.89	0.0000	0.00
32	1461.74	1461.32	0.0000	0.00
33	1548.73	1548.27	0.0000	0.00
34	1631.95	1631.47	0.0000	0.00
35	1657.86	1657.37	0.0000	0.00
36	1663.45	1662.96	0.0000	0.00
37	1765.39	1764.86	0.0000	0.00
38	2170.37	2169.71	0.0000	0.00
39	2205.29	2204.62	0.0000	0.00
40	2259.89	2259.20	0.0000	0.00
41	2275.63	2274.94	0.0000	0.00
42	2283.80	2283.11	0.0000	0.00

Analysis Report for 1510084-09
CP0604S19-20

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2615.78	2615.00	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.00sigma

Analysis Report for 1510084-09

CP0604S19-20

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 11:45:25AM

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	76.13	71 -	83	76.35	1.24E+03	182.84	3.32E+03	3.89
2	92.63	90 -	97	92.84	4.17E+02	109.95	1.66E+03	1.89
3	129.49	127 -	133	129.68	7.58E+01	77.03	1.02E+03	1.64
4	186.41	183 -	191	186.57	2.23E+02	83.18	9.28E+02	2.15
5	222.61	220 -	225	222.74	5.62E+01	50.48	4.60E+02	1.73
M m 6	238.95	233 -	249	239.08	8.48E+02	72.27	4.04E+02	1.69
7	242.05	233 -	249	242.17	2.17E+02	77.45	4.08E+02	1.89
8	271.02	268 -	273	271.13	7.02E+01	47.00	3.84E+02	2.03
9	295.66	292 -	298	295.76	2.19E+02	54.36	3.78E+02	1.92
10	300.41	299 -	304	300.51	6.59E+01	44.58	3.44E+02	1.85
11	328.92	326 -	332	329.00	4.00E+01	45.66	3.50E+02	2.51
12	339.04	334 -	344	339.11	1.88E+02	65.79	4.72E+02	1.85
13	352.28	348 -	357	352.35	4.32E+02	66.02	3.78E+02	1.93
14	463.54	461 -	467	463.56	3.40E+01	33.36	1.76E+02	2.22
15	511.24	505 -	516	511.23	1.72E+02	52.92	2.64E+02	1.83
16	583.61	578 -	589	583.56	2.49E+02	56.64	2.78E+02	1.94
M m 17	609.78	603 -	617	609.73	2.96E+02	41.89	1.16E+02	2.02
18	614.48	603 -	617	614.42	2.15E+01	31.27	1.22E+02	2.42
19	625.44	618 -	631	625.38	6.60E+01	47.06	2.16E+02	5.20
20	635.60	633 -	639	635.53	2.89E+01	24.46	8.82E+01	2.14
21	728.01	724 -	732	727.90	4.82E+01	36.96	1.82E+02	1.76
22	796.06	792 -	800	795.92	3.55E+01	30.57	1.23E+02	2.05
23	861.83	858 -	867	861.66	2.89E+01	31.97	1.28E+02	1.22
24	912.00	908 -	917	911.81	1.43E+02	36.52	1.06E+02	2.13
25	935.42	930 -	940	935.22	3.20E+01	30.87	1.10E+02	1.18
M m 26	966.00	960 -	973	965.78	2.92E+01	28.92	1.21E+02	2.42
27	969.03	960 -	973	968.81	8.39E+01	31.63	1.11E+02	2.42
M m 28	1120.81	1116 -	1134	1120.52	5.52E+01	26.91	8.80E+01	2.75
29	1124.29	1116 -	1134	1124.00	2.24E+01	23.53	7.70E+01	2.27
30	1193.84	1189 -	1198	1193.53	3.33E+01	25.67	7.55E+01	6.56
31	1285.24	1278 -	1297	1284.89	4.00E+01	40.00	1.20E+02	15.13
32	1461.74	1455 -	1466	1461.32	5.18E+02	51.03	6.75E+01	2.38
33	1548.73	1545 -	1552	1548.27	9.92E+00	9.17	6.15E+00	3.41
34	1631.95	1629 -	1637	1631.47	1.29E+01	9.18	6.19E+00	2.50
M m 35	1657.86	1656 -	1665	1657.37	6.30E+00	3.87	2.19E+00	3.28
36	1663.45	1656 -	1665	1662.96	9.11E+00	8.19	1.03E+01	4.02
37	1765.39	1760 -	1769	1764.86	5.20E+01	17.64	1.41E+01	2.71
38	2170.37	2166 -	2172	2169.71	7.00E+00	5.29	0.00E+00	2.15
39	2205.29	2199 -	2208	2204.62	1.50E+01	11.40	1.00E+01	3.22
40	2259.89	2255 -	2263	2259.20	1.00E+01	6.32	0.00E+00	1.25

: 00635

Analysis Report for 1510084-09

CP0604S19-20

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2275.63	2272 -	2278	2274.94	8.65E+00	7.23	2.70E+00	1.20
42	2283.80	2279 -	2286	2283.11	9.00E+00	6.00	0.00E+00	1.66
43	2615.78	2610 -	2620	2615.00	6.90E+01	16.61	0.00E+00	2.33

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 : 11/4/2015 11:45:25AM

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	76.13	71 -	83	1.24E+03	182.84	3.32E+03	1.39E+02	
2	92.63	90 -	97	4.17E+02	109.95	1.66E+03	8.39E+01	
3	129.49	127 -	133	7.58E+01	77.03	1.02E+03	6.17E+01	
4	186.41	183 -	191	2.23E+02	83.18	9.28E+02	6.38E+01	
5	222.61	220 -	225	5.62E+01	50.48	4.60E+02	3.96E+01	
M	6	238.95	233 -	249	8.48E+02	72.27	4.04E+02	3.30E+01
m	7	242.05	233 -	249	2.17E+02	77.45	4.08E+02	3.32E+01
8	271.02	268 -	273	7.02E+01	47.00	3.84E+02	3.61E+01	
9	295.66	292 -	298	2.19E+02	54.36	3.78E+02	3.75E+01	
10	300.41	299 -	304	6.59E+01	44.58	3.44E+02	3.41E+01	
11	328.92	326 -	332	4.00E+01	45.66	3.50E+02	3.61E+01	
12	339.04	334 -	344	1.88E+02	65.79	4.72E+02	4.92E+01	
13	352.28	348 -	357	4.32E+02	66.02	3.78E+02	4.22E+01	
14	463.54	461 -	467	3.40E+01	33.36	1.76E+02	2.57E+01	
15	511.24	505 -	516	1.72E+02	52.92	2.64E+02	3.78E+01	
16	583.61	578 -	589	2.49E+02	56.64	2.78E+02	3.87E+01	
M	17	609.78	603 -	617	2.96E+02	41.89	1.16E+02	1.77E+01
m	18	614.48	603 -	617	2.15E+01	31.27	1.22E+02	1.81E+01
19	625.44	618 -	631	6.60E+01	47.06	2.16E+02	3.63E+01	
20	635.60	633 -	639	2.89E+01	24.46	8.82E+01	1.81E+01	
21	728.01	724 -	732	4.82E+01	36.96	1.82E+02	2.82E+01	
22	796.06	792 -	800	3.55E+01	30.57	1.23E+02	2.31E+01	
23	861.83	858 -	867	2.89E+01	31.97	1.28E+02	2.47E+01	
24	912.00	908 -	917	1.43E+02	36.52	1.06E+02	2.27E+01	

Analysis Report for 1510084-09

CP0604S19-20

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	25	935.42	930 -	940	3.20E+01	30.87	1.10E+02	2.36E+01
M	26	966.00	960 -	973	2.92E+01	28.92	1.21E+02	1.81E+01
m	27	969.03	960 -	973	8.39E+01	31.63	1.11E+02	1.73E+01
M	28	1120.81	1116 -	1134	5.52E+01	26.91	8.80E+01	1.54E+01
m	29	1124.29	1116 -	1134	2.24E+01	23.53	7.70E+01	1.44E+01
	30	1193.84	1189 -	1198	3.33E+01	25.67	7.55E+01	1.89E+01
	31	1285.24	1278 -	1297	4.00E+01	40.00	1.20E+02	3.12E+01
	32	1461.74	1455 -	1466	5.18E+02	51.03	6.75E+01	1.89E+01
	33	1548.73	1545 -	1552	9.92E+00	9.17	6.15E+00	5.47E+00
	34	1631.95	1629 -	1637	1.29E+01	9.18	6.19E+00	4.70E+00
M	35	1657.86	1656 -	1665	6.30E+00	3.87	2.19E+00	2.43E+00
m	36	1663.45	1656 -	1665	9.11E+00	8.19	1.03E+01	5.26E+00
	37	1765.39	1760 -	1769	5.20E+01	17.64	1.41E+01	8.35E+00
	38	2170.37	2166 -	2172	7.00E+00	5.29	0.00E+00	0.00E+00
	39	2205.29	2199 -	2208	1.50E+01	11.40	1.00E+01	6.88E+00
	40	2259.89	2255 -	2263	1.00E+01	6.32	0.00E+00	0.00E+00
	41	2275.63	2272 -	2278	8.65E+00	7.23	2.70E+00	3.45E+00
	42	2283.80	2279 -	2286	9.00E+00	6.00	0.00E+00	0.00E+00
	43	2615.78	2610 -	2620	6.90E+01	16.61	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 : 11/4/2015 11:45:25AM

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	76.13	71 -	83	76.35	1.24E+03	182.84	3.32E+03	.....
	2	92.63	90 -	97	92.84	4.17E+02	109.95	1.66E+03	GA-67
	3	129.49	127 -	133	129.68	7.58E+01	77.03	1.02E+03	.....
	4	186.41	183 -	191	186.57	2.23E+02	83.18	9.28E+02	RA-226
	5	222.61	220 -	225	222.74	5.62E+01	50.48	4.60E+02	.....
M	6	238.95	233 -	249	239.08	8.48E+02	72.27	4.04E+02	PB-212

Analysis Report for 1510084-09

CP0604S19-20

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	7	242.05	233 -	249	242.17	2.17E+02	77.45	4.08E+02	.....
	8	271.02	268 -	273	271.13	7.02E+01	47.00	3.84E+02	.....
	9	295.66	292 -	298	295.76	2.19E+02	54.36	3.78E+02	PB-214
	10	300.41	299 -	304	300.51	6.59E+01	44.58	3.44E+02	GA-67 PB-212 BI-210M
	11	328.92	326 -	332	329.00	4.00E+01	45.66	3.50E+02	LA-140
	12	339.04	334 -	344	339.11	1.88E+02	65.79	4.72E+02	AC-228
	13	352.28	348 -	357	352.35	4.32E+02	66.02	3.78E+02	PB-214
	14	463.54	461 -	467	463.56	3.40E+01	33.36	1.76E+02	SB-125
	15	511.24	505 -	516	511.23	1.72E+02	52.92	2.64E+02	.....
	16	583.61	578 -	589	583.56	2.49E+02	56.64	2.78E+02	TL-208
M	17	609.78	603 -	617	609.73	2.96E+02	41.89	1.16E+02	BI-214
m	18	614.48	603 -	617	614.42	2.15E+01	31.27	1.22E+02	AG-108M
	19	625.44	618 -	631	625.38	6.60E+01	47.06	2.16E+02	.....
	20	635.60	633 -	639	635.53	2.89E+01	24.46	8.82E+01	SB-125
	21	728.01	724 -	732	727.90	4.82E+01	36.96	1.82E+02	BI-212
	22	796.06	792 -	800	795.92	3.55E+01	30.57	1.23E+02	CS-134
	23	861.83	858 -	867	861.66	2.89E+01	31.97	1.28E+02	.....
	24	912.00	908 -	917	911.81	1.43E+02	36.52	1.06E+02	LU-172 AC-228
	25	935.42	930 -	940	935.22	3.20E+01	30.87	1.10E+02	.....
M	26	966.00	960 -	973	965.78	2.92E+01	28.92	1.21E+02	.....
m	27	969.03	960 -	973	968.81	8.39E+01	31.63	1.11E+02	AC-228
M	28	1120.81	1116 -	1134	1120.52	5.52E+01	26.91	8.80E+01	SC-46 TA-182 BI-214
m	29	1124.29	1116 -	1134	1124.00	2.24E+01	23.53	7.70E+01	.....
	30	1193.84	1189 -	1198	1193.53	3.33E+01	25.67	7.55E+01	.....
	31	1285.24	1278 -	1297	1284.89	4.00E+01	40.00	1.20E+02	.....
	32	1461.74	1455 -	1466	1461.32	5.18E+02	51.03	6.75E+01	K-40
	33	1548.73	1545 -	1552	1548.27	9.92E+00	9.17	6.15E+00	.....
	34	1631.95	1629 -	1637	1631.47	1.29E+01	9.18	6.19E+00	.....
M	35	1657.86	1656 -	1665	1657.37	6.30E+00	3.87	2.19E+00	.....
m	36	1663.45	1656 -	1665	1662.96	9.11E+00	8.19	1.03E+01	.....
	37	1765.39	1760 -	1769	1764.86	5.20E+01	17.64	1.41E+01	BI-214
	38	2170.37	2166 -	2172	2169.71	7.00E+00	5.29	0.00E+00	.....
	39	2205.29	2199 -	2208	2204.62	1.50E+01	11.40	1.00E+01	.....
	40	2259.89	2255 -	2263	2259.20	1.00E+01	6.32	0.00E+00	.....
	41	2275.63	2272 -	2278	2274.94	8.65E+00	7.23	2.70E+00	.....
	42	2283.80	2279 -	2286	2283.11	9.00E+00	6.00	0.00E+00	.....
	43	2615.78	2610 -	2620	2615.00	6.90E+01	16.61	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 1510084-09
CP0604S19-20

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/4/2015 11:45:25AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.13	1.24E+03	182.84	2.38E-02	2.13E-03
	2	92.63	4.17E+02	109.95	2.44E-02	2.42E-03
	3	129.49	7.58E+01	77.03	2.25E-02	1.69E-03
	4	186.41	2.23E+02	83.18	1.83E-02	1.42E-03
	5	222.61	5.62E+01	50.48	1.61E-02	1.25E-03
M	6	238.95	8.48E+02	72.27	1.52E-02	1.18E-03
m	7	242.05	2.17E+02	77.45	1.51E-02	1.17E-03
	8	271.02	7.02E+01	47.00	1.38E-02	1.03E-03
	9	295.66	2.19E+02	54.36	1.28E-02	9.73E-04
	10	300.41	6.59E+01	44.58	1.26E-02	9.67E-04
	11	328.92	4.00E+01	45.66	1.17E-02	9.26E-04
	12	339.04	1.88E+02	65.79	1.14E-02	9.12E-04
	13	352.28	4.32E+02	66.02	1.11E-02	8.93E-04
	14	463.54	3.40E+01	33.36	8.72E-03	7.66E-04
	15	511.24	1.72E+02	52.92	8.01E-03	7.18E-04
	16	583.61	2.49E+02	56.64	7.13E-03	6.46E-04
M	17	609.78	2.96E+02	41.89	6.87E-03	6.20E-04
m	18	614.48	2.15E+01	31.27	6.82E-03	6.15E-04
	19	625.44	6.60E+01	47.06	6.72E-03	6.04E-04
	20	635.60	2.89E+01	24.46	6.62E-03	5.94E-04
	21	728.01	4.82E+01	36.96	5.89E-03	5.14E-04
	22	796.06	3.55E+01	30.57	5.45E-03	4.58E-04
	23	861.83	2.89E+01	31.97	5.09E-03	4.04E-04
	24	912.00	1.43E+02	36.52	4.85E-03	3.72E-04
	25	935.42	3.20E+01	30.87	4.74E-03	3.68E-04
M	26	966.00	2.92E+01	28.92	4.62E-03	3.62E-04
m	27	969.03	8.39E+01	31.63	4.60E-03	3.61E-04
M	28	1120.81	5.52E+01	26.91	4.08E-03	3.33E-04
m	29	1124.29	2.24E+01	23.53	4.07E-03	3.33E-04
	30	1193.84	3.33E+01	25.67	3.87E-03	3.19E-04
	31	1285.24	4.00E+01	40.00	3.64E-03	2.99E-04
	32	1461.74	5.18E+02	51.03	3.29E-03	2.69E-04
	33	1548.73	9.92E+00	9.17	3.15E-03	2.56E-04
	34	1631.95	1.29E+01	9.18	3.03E-03	2.44E-04
M	35	1657.86	6.30E+00	3.87	2.99E-03	2.40E-04
m	36	1663.45	9.11E+00	8.19	2.98E-03	2.39E-04
	37	1765.39	5.20E+01	17.64	2.86E-03	2.24E-04
	38	2170.37	7.00E+00	5.29	2.49E-03	2.13E-04
	39	2205.29	1.50E+01	11.40	2.46E-03	2.13E-04
	40	2259.89	1.00E+01	6.32	2.43E-03	2.13E-04
	41	2275.63	8.65E+00	7.23	2.42E-03	2.13E-04
	42	2283.80	9.00E+00	6.00	2.41E-03	2.13E-04
	43	2615.78	6.90E+01	16.61	2.24E-03	2.13E-04

Analysis Report for 1510084-09

CP0604S19-20

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 : 11/4/2015 11:45:25AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028943.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	76.13	1.24E+03	182.84			1.24E+03	1.83E+02
2	92.63	4.17E+02	109.95	9.04E+01	2.62E+01	3.27E+02	1.13E+02
3	129.49	7.58E+01	77.03			7.58E+01	7.70E+01
4	186.41	2.23E+02	83.18	3.93E+01	6.56E+00	1.83E+02	8.34E+01
5	222.61	5.62E+01	50.48			5.62E+01	5.05E+01
M 6	238.95	8.48E+02	72.27	1.34E+01	2.14E+00	8.35E+02	7.23E+01
m 7	242.05	2.17E+02	77.45	2.69E+00	1.46E+00	2.14E+02	7.75E+01
8	271.02	7.02E+01	47.00			7.02E+01	4.70E+01
9	295.66	2.19E+02	54.36			2.19E+02	5.44E+01
10	300.41	6.59E+01	44.58			6.59E+01	4.46E+01
11	328.92	4.00E+01	45.66			4.00E+01	4.57E+01
12	339.04	1.88E+02	65.79			1.88E+02	6.58E+01
13	352.28	4.32E+02	66.02	3.99E+00	4.73E+00	4.28E+02	6.62E+01
14	463.54	3.40E+01	33.36			3.40E+01	3.34E+01
15	511.24	1.72E+02	52.92	5.78E+01	4.60E+00	1.14E+02	5.31E+01
16	583.61	2.49E+02	56.64	5.96E+00	3.46E+00	2.43E+02	5.67E+01
M 17	609.78	2.96E+02	41.89	6.71E+00	3.44E+00	2.89E+02	4.20E+01
m 18	614.48	2.15E+01	31.27			2.15E+01	3.13E+01
19	625.44	6.60E+01	47.06			6.60E+01	4.71E+01
20	635.60	2.89E+01	24.46			2.89E+01	2.45E+01
21	728.01	4.82E+01	36.96			4.82E+01	3.70E+01
22	796.06	3.55E+01	30.57			3.55E+01	3.06E+01
23	861.83	2.89E+01	31.97			2.89E+01	3.20E+01
24	912.00	1.43E+02	36.52			1.43E+02	3.65E+01
25	935.42	3.20E+01	30.87			3.20E+01	3.09E+01
M 26	966.00	2.92E+01	28.92			2.92E+01	2.89E+01
m 27	969.03	8.39E+01	31.63			8.39E+01	3.16E+01
M 28	1120.81	5.52E+01	26.91	2.00E+00	2.20E+00	5.32E+01	2.70E+01
m 29	1124.29	2.24E+01	23.53			2.24E+01	2.35E+01
30	1193.84	3.33E+01	25.67			3.33E+01	2.57E+01
31	1285.24	4.00E+01	40.00			4.00E+01	4.00E+01
32	1461.74	5.18E+02	51.03			5.18E+02	5.10E+01
33	1548.73	9.92E+00	9.17			9.92E+00	9.17E+00
34	1631.95	1.29E+01	9.18			1.29E+01	9.18E+00
M 35	1657.86	6.30E+00	3.87			6.30E+00	3.87E+00

Analysis Report for 1510084-09
CP0604S19-20

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m 36	1663.45	9.11E+00	8.19			9.11E+00	8.19E+00
37	1765.39	5.20E+01	17.64	1.45E+00	1.16E+00	5.05E+01	1.77E+01
38	2170.37	7.00E+00	5.29			7.00E+00	5.29E+00
39	2205.29	1.50E+01	11.40			1.50E+01	1.14E+01
40	2259.89	1.00E+01	6.32			1.00E+01	6.32E+00
41	2275.63	8.65E+00	7.23			8.65E+00	7.23E+00
42	2283.80	9.00E+00	6.00			9.00E+00	6.00E+00
43	2615.78	6.90E+01	16.61			6.90E+01	1.66E+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 : 11/4/2015 11:45:25AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028943.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	76.13	1.24E+03	182.84			1.24E+03	1.83E+02
2	92.63	4.17E+02	109.95	9.04E+01	2.62E+01	3.27E+02	1.13E+02
3	129.49	7.58E+01	77.03			7.58E+01	7.70E+01
4	186.41	2.23E+02	83.18	3.93E+01	6.56E+00	1.83E+02	8.34E+01
5	222.61	5.62E+01	50.48			5.62E+01	5.05E+01
M 6	238.95	8.48E+02	72.27	1.34E+01	2.14E+00	8.35E+02	7.23E+01
m 7	242.05	2.17E+02	77.45	2.69E+00	1.46E+00	2.14E+02	7.75E+01
8	271.02	7.02E+01	47.00			7.02E+01	4.70E+01
9	295.66	2.19E+02	54.36			2.19E+02	5.44E+01
10	300.41	6.59E+01	44.58			6.59E+01	4.46E+01
11	328.92	4.00E+01	45.66			4.00E+01	4.57E+01
12	339.04	1.88E+02	65.79			1.88E+02	6.58E+01
13	352.28	4.32E+02	66.02	3.99E+00	4.73E+00	4.28E+02	6.62E+01
14	463.54	3.40E+01	33.36			3.40E+01	3.34E+01
15	511.24	1.72E+02	52.92	5.78E+01	4.60E+00	1.14E+02	5.31E+01
16	583.61	2.49E+02	56.64	5.96E+00	3.46E+00	2.43E+02	5.67E+01
M 17	609.78	2.96E+02	41.89	6.71E+00	3.44E+00	2.89E+02	4.20E+01
m 18	614.48	2.15E+01	31.27			2.15E+01	3.13E+01
19	625.44	6.60E+01	47.06			6.60E+01	4.71E+01
20	635.60	2.89E+01	24.46			2.89E+01	2.45E+01

Analysis Report for 1510084-09

CP0604S19-20

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
21	728.01	4.82E+01	36.96			4.82E+01	3.70E+01
22	796.06	3.55E+01	30.57			3.55E+01	3.06E+01
23	861.83	2.89E+01	31.97			2.89E+01	3.20E+01
24	912.00	1.43E+02	36.52			1.43E+02	3.65E+01
25	935.42	3.20E+01	30.87			3.20E+01	3.09E+01
M 26	966.00	2.92E+01	28.92			2.92E+01	2.89E+01
m 27	969.03	8.39E+01	31.63			8.39E+01	3.16E+01
M 28	1120.81	5.52E+01	26.91	2.00E+00	2.20E+00	5.32E+01	2.70E+01
m 29	1124.29	2.24E+01	23.53			2.24E+01	2.35E+01
30	1193.84	3.33E+01	25.67			3.33E+01	2.57E+01
31	1285.24	4.00E+01	40.00			4.00E+01	4.00E+01
32	1461.74	5.18E+02	51.03			5.18E+02	5.10E+01
33	1548.73	9.92E+00	9.17			9.92E+00	9.17E+00
34	1631.95	1.29E+01	9.18			1.29E+01	9.18E+00
M 35	1657.86	6.30E+00	3.87			6.30E+00	3.87E+00
m 36	1663.45	9.11E+00	8.19			9.11E+00	8.19E+00
37	1765.39	5.20E+01	17.64	1.45E+00	1.16E+00	5.05E+01	1.77E+01
38	2170.37	7.00E+00	5.29			7.00E+00	5.29E+00
39	2205.29	1.50E+01	11.40			1.50E+01	1.14E+01
40	2259.89	1.00E+01	6.32			1.00E+01	6.32E+00
41	2275.63	8.65E+00	7.23			8.65E+00	7.23E+00
42	2283.80	9.00E+00	6.00			9.00E+00	6.00E+00
43	2615.78	6.90E+01	16.61			6.90E+01	1.66E+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	0.870	1460.81 *	10.67	1.95E+01	2.53E+00
GA-67	0.647	93.31 *	35.70	1.26E+02	4.54E+02
		208.95	2.24		
		300.22 *	16.00	1.10E+02	4.00E+02
BI-212	0.683	727.17 *	11.80	9.20E-01	7.09E-01
		1620.62	2.75		
PB-212	0.984	238.63 *	44.60	1.63E+00	1.90E-01
		300.09 *	3.41	2.02E+00	1.38E+00

Analysis Report for 1510084-09
 CP0604S19-20

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.881	609.31 *	46.30	1.20E+00	2.06E-01
		1120.29 *	15.10	1.15E+00	5.88E-01
		1764.49 *	15.80	1.48E+00	5.31E-01
		2204.22	4.98		
PB-214	0.976	295.21 *	19.19	1.18E+00	3.06E-01
		351.92 *	37.19	1.38E+00	2.41E-01
RA-226	0.994	186.21 *	3.28	4.06E+00	7.66E+00
AC-228	0.917	338.32 *	11.40	1.91E+00	6.87E-01
		911.07 *	27.70	1.41E+00	3.76E-01
		969.11 *	16.60	1.45E+00	5.60E-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 : 11/4/2015 11:45:25AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	76.13	3.45817E-01	7.34		
3	129.49	2.10597E-02	50.80		
5	222.61	1.56177E-02	44.89		
m 7	242.05	5.95267E-02	18.07		
8	271.02	1.94906E-02	33.49		
11	328.92	1.11111E-02	57.08	Tol.	LA-140
14	463.54	9.45583E-03	49.00	Tol.	SB-125
15	511.24	3.17619E-02	23.23		
16	583.61	6.74958E-02	11.68	Tol.	TL-208
m 18	614.48	5.96200E-03	72.84	Tol.	AG-108M
19	625.44	1.83261E-02	35.67		
20	635.60	8.03082E-03	42.30	Sum	
22	796.06	9.86970E-03	43.02	Sum	
23	861.83	8.02867E-03	55.30		
25	935.42	8.88889E-03	48.24		
M 26	966.00	8.11728E-03	49.48	Sum	
m 29	1124.29	6.22827E-03	52.46		
30	1193.84	9.24296E-03	38.57		
31	1285.24	1.11111E-02	50.00		

Analysis Report for 1510084-09
CP0604S19-20

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	33	1548.73	2.75641E-03	46.18	
	34	1631.95	3.58507E-03	35.56	
M	35	1657.86	1.75016E-03	30.74	
m	36	1663.45	2.53152E-03	44.91	
	38	2170.37	1.94444E-03	37.80	
	39	2205.29	4.16667E-03	38.01	
	40	2259.89	2.77778E-03	31.62	
	41	2275.63	2.40278E-03	41.78	
	42	2283.80	2.50000E-03	33.33	
	43	2615.78	1.91667E-02	12.04	

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	0.87	1460.81 *	10.67	1.95E+01	2.53E+00
GA-67	0.64	93.31 *	35.70	1.26E+02	4.54E+02
		208.95	2.24		
		300.22 *	16.00	1.10E+02	4.00E+02
BI-212	0.68	727.17 *	11.80	9.20E-01	7.09E-01
		1620.62	2.75		
PB-212	0.98	238.63 *	44.60	1.63E+00	1.90E-01
		300.09 *	3.41	2.02E+00	1.38E+00
BI-214	0.88	609.31 *	46.30	1.20E+00	2.06E-01
		1120.29 *	15.10	1.15E+00	5.88E-01
		1764.49 *	15.80	1.48E+00	5.31E-01
		2204.22	4.98		
PB-214	0.97	295.21 *	19.19	1.18E+00	3.06E-01
		351.92 *	37.19	1.38E+00	2.41E-01
RA-226	0.99	186.21 *	3.28	4.06E+00	7.66E+00
AC-228	0.91	338.32 *	11.40	1.91E+00	6.87E-01
		911.07 *	27.70	1.41E+00	3.76E-01
		969.11 *	16.60	1.45E+00	5.60E-01

Analysis Report for 1510084-09

CP0604S19-20

* = 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	0.870	1.95E+01	2.53E+00	
GA-67	0.647	9.84E+01	3.36E+02	
BI-212	0.683	9.20E-01	7.09E-01	
PB-212	0.984	1.60E+00	1.88E-01	
BI-214	0.881	1.23E+00	1.83E-01	
PB-214	0.976	1.30E+00	1.89E-01	
RA-226	0.994	4.06E+00	7.66E+00	
AC-228	0.917	1.51E+00	2.84E-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 1510084-09
CP0604S19-20

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 11:45:25AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	76.13	3.45817E-01	7.34		
3	129.49	2.10597E-02	50.80		
5	222.61	1.56177E-02	44.89		
m 7	242.05	5.95267E-02	18.07		
8	271.02	1.94906E-02	33.49		
11	328.92	1.11111E-02	57.08	Tol.	LA-140
14	463.54	9.45583E-03	49.00	Tol.	SB-125
15	511.24	3.17619E-02	23.23		
16	583.61	6.74958E-02	11.68	Tol.	TL-208
m 18	614.48	5.96200E-03	72.84	Tol.	AG-108M
19	625.44	1.83261E-02	35.67		
20	635.60	8.03082E-03	42.30	Sum	
22	796.06	9.86970E-03	43.02	Sum	
23	861.83	8.02867E-03	55.30		
25	935.42	8.88889E-03	48.24		
M 26	966.00	8.11728E-03	49.48	Sum	
m 29	1124.29	6.22827E-03	52.46		
30	1193.84	9.24296E-03	38.57		
31	1285.24	1.11111E-02	50.00		
33	1548.73	2.75641E-03	46.18		
34	1631.95	3.58507E-03	35.56		
M 35	1657.86	1.75016E-03	30.74		
m 36	1663.45	2.53152E-03	44.91		
38	2170.37	1.94444E-03	37.80		
39	2205.29	4.16667E-03	38.01		
40	2259.89	2.77778E-03	31.62		
41	2275.63	2.40278E-03	41.78		
42	2283.80	2.50000E-03	33.33		
43	2615.78	1.91667E-02	12.04		

Analysis Report for 1510084-09

CP0604S19-20

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	-1.17E-01	1.07E+00	1.07E+00
+	NA-22	1274.54	99.94	7.08E-02	1.27E-01	1.27E-01
+	NA-24	1368.53	99.99	-2.25E+11	2.33E+11	2.82E+11
		2754.09	99.86	6.49E+10		2.33E+11
+	AL-26	1808.65	99.76	-5.25E-04	6.67E-02	6.67E-02
+	K-40	1460.81	* 10.67	1.95E+01	1.53E+00	1.53E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	2.18E-02	7.90E-02	7.90E-02
		78.34	96.00	2.45E-01		9.80E-02
+	SC-46	889.25	99.98	4.50E-03	1.12E-01	1.12E-01
		1120.51	99.99	1.41E-01		1.88E-01
+	V-48	983.52	99.98	2.57E-02	2.87E-01	2.87E-01
		1312.10	97.50	-2.07E-02		3.50E-01
+	CR-51	320.08	9.83	-8.74E-01	1.39E+00	1.39E+00
+	MN-54	834.83	99.97	-2.61E-02	1.01E-01	1.01E-01
+	CO-56	846.75	99.96	2.90E-02	1.23E-01	1.23E-01
		1037.75	14.03	-2.19E-01		9.17E-01
		1238.25	67.00	2.06E-01		2.68E-01
		1771.40	15.51	-1.13E-01		6.56E-01
		2598.48	16.90	1.32E-01		4.72E-01
+	CO-57	122.06	85.51	-1.91E-02	6.59E-02	6.59E-02
		136.48	10.60	-6.89E-02		5.37E-01
+	CO-58	810.76	99.40	2.54E-02	1.21E-01	1.21E-01
+	FE-59	1099.22	56.50	4.12E-02	2.94E-01	2.94E-01
		1291.56	43.20	2.71E-01		4.11E-01
+	CO-60	1173.22	100.00	3.41E-02	1.11E-01	1.27E-01
		1332.49	100.00	-2.83E-02		1.11E-01
+	ZN-65	1115.52	50.75	-6.49E-02	2.28E-01	2.28E-01
+	GA-67	93.31	* 35.70	1.26E+02	6.91E+01	6.91E+01
		208.95	2.24	-2.14E+00		8.50E+02
		300.22	* 16.00	1.10E+02		1.18E+02
+	SE-75	121.11	16.70	3.11E-02	1.05E-01	3.74E-01

: 00647

Analysis Report for 1510084-09
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	-1.11E-02	1.05E-01	1.05E-01
		264.65	59.80	5.79E-02		1.40E-01
		279.53	25.20	-6.70E-02		3.16E-01
		400.65	11.40	2.67E-01		8.28E-01
+	RB-82	776.52	13.00	-9.54E-02	1.47E+00	1.47E+00
+	RB-83	520.41	46.00	-1.50E-01	1.94E-01	1.94E-01
		529.64	30.30	-7.97E-02		3.04E-01
		552.65	16.40	-2.65E-01		5.79E-01
+	KR-85	513.99	0.43	3.48E+01	2.59E+01	2.59E+01
+	SR-85	513.99	99.27	2.00E-01	1.49E-01	1.49E-01
+	Y-88	898.02	93.40	-1.20E-02	1.07E-01	1.12E-01
		1836.01	99.38	1.70E-02		1.07E-01
+	NB-93M	16.57	9.43	1.08E+01	8.39E+01	8.39E+01
+	NB-94	702.63	100.00	-4.05E-03	8.44E-02	9.61E-02
		871.10	100.00	2.56E-03		8.44E-02
+	NB-95	765.79	99.81	3.18E-02	1.67E-01	1.67E-01
+	NB-95M	235.69	25.00	1.77E+02	7.42E+01	7.42E+01
+	ZR-95	724.18	43.70	3.31E-02	2.19E-01	3.10E-01
		756.72	55.30	-7.58E-02		2.19E-01
+	MO-99	181.06	6.20	1.67E+01	4.71E+02	6.43E+02
		739.58	12.80	-3.26E+02		4.71E+02
		778.00	4.50	-7.12E+01		1.51E+03
+	RU-103	497.08	89.00	-1.68E-02	1.44E-01	1.44E-01
+	RU-106	621.84	9.80	1.84E-01	9.74E-01	9.74E-01
+	AG-108M	433.93	89.90	-3.28E-02	8.90E-02	8.90E-02
		614.37	90.40	-3.89E-01		1.18E-01
		722.95	90.50	1.47E-02		1.03E-01
+	CD-109	88.03	3.72	-3.63E-01	2.05E+00	2.05E+00
+	AG-110M	657.75	93.14	-3.36E-02	9.21E-02	9.21E-02
		677.61	10.53	-1.65E-01		8.23E-01
		706.67	16.46	8.67E-02		6.38E-01
		763.93	21.98	-9.08E-02		4.65E-01
		884.67	71.63	-3.75E-02		1.28E-01
		1384.27	23.94	-5.07E-02		4.73E-01
+	CD-113M	263.70	0.02	8.13E+01	3.09E+02	3.09E+02
+	SN-113	255.12	1.93	-3.89E-01	1.37E-01	4.02E+00
		391.69	64.90	8.21E-03		1.37E-01
+	TE123M	159.00	84.10	1.63E-02	7.86E-02	7.86E-02
+	SB-124	602.71	97.87	-3.88E-03	1.24E-01	1.24E-01
		645.85	7.26	1.63E-01		1.59E+00
		722.78	11.10	1.61E-01		1.13E+00
		1691.02	49.00	1.49E-01		2.57E-01
+	I-125	35.49	6.49	-1.95E+00	3.14E+00	3.14E+00
+	SB-125	176.33	6.89	-7.30E-02	2.68E-01	8.24E-01
		427.89	29.33	7.60E-02		2.68E-01
		463.38	10.35	5.41E-01		8.35E-01
		600.56	17.80	-4.75E-03		5.10E-01
		635.90	11.32	1.69E-01		7.64E-01

Analysis Report for 1510084-09
CP0604S19-20

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-1.76E-01	3.99E-01	3.99E-01
		666.33	99.60	2.31E-02		4.09E-01
		695.00	99.60	2.06E-01		4.20E-01
		720.50	53.80	-1.14E-01		7.41E-01
+	SN-126	87.57	37.00	-3.52E-02	1.98E-01	1.98E-01
+	SB-127	473.00	25.00	-2.63E+00	2.66E+01	3.32E+01
		685.20	35.70	2.21E+01		2.66E+01
		783.80	14.70	2.85E+01		7.51E+01
+	I-129	29.78	57.00	1.04E-01	5.00E-01	5.00E-01
		33.60	13.20	-7.16E-01		1.38E+00
		39.58	7.52	-2.84E-01		1.60E+00
+	I-131	284.30	6.05	-4.72E+00	8.24E-01	1.05E+01
		364.48	81.20	1.92E-01		8.24E-01
		636.97	7.26	-5.62E-01		1.12E+01
		722.89	1.80	6.97E+00		4.89E+01
+	TE-132	49.72	13.10	-2.86E+02	1.95E+01	1.61E+02
		228.16	88.00	-8.40E+00		1.95E+01
+	BA-133	81.00	33.00	-1.15E+00	1.72E-01	1.96E-01
		302.84	17.80	1.33E-03		4.60E-01
		356.01	60.00	6.72E-03		1.72E-01
+	I-133	529.87	86.30	-2.56E+07	9.76E+07	9.76E+07
+	XE-133	81.00	38.00	-3.12E+01	5.30E+00	5.30E+00
+	CS-134	563.23	8.38	1.35E-01	1.01E-01	1.01E+00
		569.32	15.43	1.90E-01		5.47E-01
		604.70	97.60	-7.58E-01		1.01E-01
		795.84	85.40	1.08E-01		1.33E-01
		801.93	8.73	2.73E-01		1.14E+00
+	CS-135	268.24	16.00	1.05E-01	4.91E-01	4.91E-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	1.25E+00	3.09E-01	3.07E+00
		163.89	4.61	-2.39E+00		4.69E+00
		176.55	13.56	-5.30E-01		1.60E+00
		273.65	12.66	-6.45E-01		2.44E+00
		340.57	48.50	1.70E+00		8.21E-01
		818.50	99.70	-3.97E-02		3.09E-01
		1048.07	79.60	6.92E-03		5.11E-01
		1235.34	19.70	-3.23E+00		2.42E+00
+	CS-137	661.65	85.12	-1.75E-02	1.06E-01	1.06E-01
+	LA-138	788.74	34.00	7.09E-02	1.67E-01	2.68E-01
		1435.80	66.00	4.18E-02		1.67E-01
+	CE-139	165.85	80.35	1.16E-02	8.09E-02	8.09E-02
+	BA-140	162.64	6.70	-5.05E-01	1.24E+00	3.38E+00
		304.84	4.50	-7.32E-01		6.61E+00
		423.70	3.20	-1.35E+00		9.75E+00
		437.55	2.00	7.42E+00		1.80E+01
		537.32	25.00	-3.49E-01		1.24E+00
+	LA-140	328.77	20.50	7.81E-01	3.95E-01	1.61E+00

Analysis Report for 1510084-09
CP0604S19-20

	<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>
	LA-140	487.03	45.50	-2.85E-01	3.95E-01	7.01E-01
		815.85	23.50	-1.85E-01		1.47E+00
		1596.49	95.49	2.27E-01		3.95E-01
+	CE-141	145.44	48.40	2.14E-02	2.05E-01	2.05E-01
+	CE-143	57.36	11.80	-1.16E+05	1.16E+05	3.37E+05
		293.26	42.00	2.79E+03		1.16E+05
		664.55	5.20	6.05E+05		9.55E+05
+	CE-144	133.54	10.80	1.17E-01	5.34E-01	5.34E-01
+	PM-144	476.78	42.00	-1.11E-01	9.05E-02	1.93E-01
		618.01	98.60	-1.56E-02		9.05E-02
		696.49	99.49	1.47E-02		1.03E-01
+	PM-145	36.85	21.70	-5.56E-01	3.45E-01	6.34E-01
		37.36	39.70	-2.66E-02		3.45E-01
		42.30	15.10	-7.90E-01		6.95E-01
		72.40	2.31	-3.91E+00		3.84E+00
+	PM-146	453.90	39.94	6.16E-03	1.89E-01	1.89E-01
		735.90	14.01	-2.42E-01		6.24E-01
		747.13	13.10	-1.75E-01		7.13E-01
+	ND-147	91.11	28.90	-5.82E-01	1.35E+00	1.35E+00
		531.02	13.10	4.44E-01		3.05E+00
+	PM-149	285.90	3.10	3.48E+03	8.07E+03	8.07E+03
+	EU-152	121.78	20.50	-7.46E-02	2.58E-01	2.58E-01
		244.69	5.40	-1.61E-01		1.67E+00
		344.27	19.13	-5.34E-02		3.77E-01
		778.89	9.20	-2.83E-01		1.02E+00
		964.01	10.40	-1.50E+00		1.31E+00
		1085.78	7.22	8.42E-01		1.55E+00
		1112.02	9.60	4.75E-02		1.19E+00
		1407.95	14.94	-2.25E-01		6.57E-01
+	GD-153	97.43	31.30	6.99E-02	1.87E-01	1.87E-01
		103.18	22.20	-2.98E-01		2.52E-01
+	EU-154	123.07	40.50	-3.44E-02	1.32E-01	1.32E-01
		723.30	19.70	6.77E-02		4.75E-01
		873.19	11.50	-2.28E-01		7.39E-01
		996.32	10.30	-3.48E-01		9.95E-01
		1004.76	17.90	2.60E-01		6.55E-01
		1274.45	35.50	1.97E-01		3.54E-01
+	EU-155	86.50	30.90	2.44E-02	2.35E-01	2.35E-01
		105.30	20.70	1.52E-01		2.72E-01
+	EU-156	811.77	10.40	1.76E+00	3.07E+00	3.07E+00
		1153.47	7.20	-3.94E-01		5.20E+00
		1230.71	8.90	-6.49E-01		4.90E+00
+	HO-166M	184.41	72.60	1.61E-01	1.01E-01	1.01E-01
		280.45	29.60	-1.16E-01		2.29E-01
		410.94	11.10	2.78E-01		7.49E-01
		711.69	54.10	-9.18E-02		1.69E-01
+	TM-171	66.72	0.14	-5.83E+01	5.47E+01	5.47E+01
+	HF-172	81.75	4.52	-5.08E+00	5.03E-01	1.46E+00
		125.81	11.30	1.69E-02		5.03E-01

Analysis Report for 1510084-09
CP0604S19-20

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	-1.99E-01	2.22E+00	4.09E+00
		810.06	16.63	-1.59E+00		8.11E+00
		912.12	15.25	3.82E+01		1.73E+01
		1093.66	62.50	-1.08E+00		2.22E+00
+	LU-173	100.72	5.24	2.07E-01	3.86E-01	1.06E+00
		272.11	21.20	-5.21E-02		3.86E-01
+	HF-175	343.40	84.00	1.20E-03	1.19E-01	1.19E-01
+	LU-176	88.34	13.30	1.32E-01	7.79E-02	5.71E-01
		201.83	86.00	4.12E-03		8.29E-02
		306.78	94.00	8.52E-03		7.79E-02
+	TA-182	67.75	41.20	5.86E-02	2.12E-01	2.12E-01
		1121.30	34.90	5.55E-01		5.21E-01
		1189.05	16.23	-2.67E-01		7.54E-01
		1221.41	26.98	-2.65E-02		5.86E-01
		1231.02	11.44	1.47E-01		1.36E+00
+	IR-192	308.46	29.68	4.97E-02	1.96E-01	3.13E-01
		468.07	48.10	6.02E-02		1.96E-01
+	HG-203	279.19	77.30	4.78E-02	1.34E-01	1.34E-01
+	BI-207	569.67	97.72	2.14E-02	8.49E-02	8.49E-02
		1063.62	74.90	6.99E-02		1.45E-01
+	TL-208	583.14	30.22	1.26E+00	5.20E-01	5.20E-01
		860.37	4.48	1.14E+00		2.45E+00
		2614.66	35.85	1.07E+00		6.77E-01
+	BI-210M	262.00	45.00	3.91E-02	1.56E-01	1.56E-01
		300.00	23.00	-8.99E-01		3.71E-01
+	PB-210	46.50	4.25	1.29E+00	2.34E+00	2.34E+00
+	PB-211	404.84	2.90	-1.45E+00	2.74E+00	2.74E+00
		831.96	2.90	-6.85E-01		3.16E+00
+	BI-212	727.17	* 11.80	9.20E-01	1.13E+00	1.13E+00
		1620.62	2.75	-1.43E+00		2.87E+00
+	PB-212	238.63	* 44.60	1.63E+00	3.61E-01	3.61E-01
		300.09	* 3.41	2.02E+00		2.18E+00
+	BI-214	609.31	* 46.30	1.20E+00	3.51E-01	3.51E-01
		1120.29	* 15.10	1.15E+00		1.71E+00
		1764.49	* 15.80	1.48E+00		5.86E-01
		2204.22	4.98	1.35E+00		2.54E+00
+	PB-214	295.21	* 19.19	1.18E+00	2.83E-01	4.19E-01
		351.92	* 37.19	1.38E+00		2.83E-01
+	RN-219	401.80	6.50	1.12E-02	1.22E+00	1.22E+00
+	RA-223	323.87	3.88	3.75E-01	1.87E+00	1.87E+00
+	RA-224	240.98	3.95	2.19E+01	3.78E+00	3.78E+00
+	RA-225	40.00	31.00	-2.28E-01	1.28E+00	1.28E+00
+	RA-226	186.21	* 3.28	4.06E+00	2.93E+00	2.93E+00
+	TH-227	50.10	8.40	-1.73E+00	9.73E-01	9.73E-01
		236.00	11.50	2.59E+00		1.08E+00
		256.20	6.30	-4.16E-01		1.04E+00
+	AC-228	338.32	* 11.40	1.91E+00	4.74E-01	1.03E+00
		911.07	* 27.70	1.41E+00		4.74E-01

Analysis Report for 1510084-09
CP0604S19-20

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.45E+00	4.74E-01	1.27E+00
+	TH-230	48.44		16.90	3.63E-01	5.49E-01	5.49E-01
		62.85		4.60	3.00E-01		1.79E+00
		67.67		0.37	5.58E+00		2.02E+01
+	PA-231	283.67		1.60	-1.88E+00	3.54E+00	4.19E+00
		302.67		2.30	1.02E-02		3.54E+00
+	TH-231	25.64		14.70	-1.75E+00	1.01E+00	3.59E+00
		84.21		6.40	-1.10E+00		1.01E+00
+	PA-233	311.98		38.60	-2.19E-03	3.75E-01	3.75E-01
+	PA-234	131.20		20.40	1.45E-01	2.87E-01	2.87E-01
		733.99		8.80	-1.47E-01		1.05E+00
		946.00		12.00	5.56E-02		7.63E-01
+	PA-234M	1001.03		0.92	-1.99E+00	1.23E+01	1.23E+01
+	TH-234	63.29		3.80	1.06E+00	2.20E+00	2.20E+00
+	U-235	143.76		10.50	9.92E-02	5.45E-01	5.45E-01
		163.35		4.70	-5.92E-01		1.16E+00
		205.31		4.70	-1.05E+00		1.53E+00
+	NP-237	86.50		12.60	5.91E-02	5.72E-01	5.72E-01
+	NP-239	106.10		22.70	2.94E+02	5.29E+02	5.29E+02
		228.18		10.70	-5.79E+02		1.34E+03
		277.60		14.10	9.09E+02		1.08E+03
+	AM-241	59.54		35.90	-9.90E-02	2.22E-01	2.22E-01
+	AM-243	74.67		66.00	2.82E-01	1.56E-01	1.56E-01
+	CM-243	209.75		3.29	7.87E-01	5.09E-01	2.28E+00
		228.14		10.60	-2.73E-01		6.34E-01
		277.60		14.00	4.28E-01		5.09E-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

: 00652

Analysis Report for 1510084-09
CP0604S19-20

	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	1.07E+00	1.07E+00	-1.17E-01	5.05E-01
	NA-22	1274.54	99.94	1.27E-01	1.27E-01	7.08E-02	5.87E-02
	NA-24	1368.53	99.99	2.82E+11	2.33E+11	-2.25E+11	1.23E+11
		2754.09	99.86	2.33E+11		6.49E+10	8.72E+10
	AL-26	1808.65	99.76	6.67E-02	6.67E-02	-5.25E-04	2.69E-02
+	K-40	1460.81	*	1.53E+00	1.53E+00	1.95E+01	7.15E-01
@	AR-41	1293.64		1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88	94.40	7.90E-02	7.90E-02	2.18E-02	3.87E-02
		78.34	96.00	9.80E-02		2.45E-01	4.82E-02
	SC-46	889.25	99.98	1.12E-01	1.12E-01	4.50E-03	5.18E-02
		1120.51	99.99	1.88E-01		1.41E-01	8.84E-02
	V-48	983.52	99.98	2.87E-01	2.87E-01	2.57E-02	1.31E-01
		1312.10	97.50	3.50E-01		-2.07E-02	1.59E-01
	CR-51	320.08	9.83	1.39E+00	1.39E+00	-8.74E-01	6.66E-01
	MN-54	834.83	99.97	1.01E-01	1.01E-01	-2.61E-02	4.67E-02
	CO-56	846.75	99.96	1.23E-01	1.23E-01	2.90E-02	5.71E-02
		1037.75	14.03	9.17E-01		-2.19E-01	4.22E-01
		1238.25	67.00	2.68E-01		2.06E-01	1.25E-01
		1771.40	15.51	6.56E-01		-1.13E-01	2.77E-01
		2598.48	16.90	4.72E-01		1.32E-01	1.77E-01
	CO-57	122.06	85.51	6.59E-02	6.59E-02	-1.91E-02	3.20E-02
		136.48	10.60	5.37E-01		-6.89E-02	2.60E-01
	CO-58	810.76	99.40	1.21E-01	1.21E-01	2.54E-02	5.63E-02
	FE-59	1099.22	56.50	2.94E-01	2.94E-01	4.12E-02	1.35E-01
		1291.56	43.20	4.11E-01		2.71E-01	1.89E-01
	CO-60	1173.22	100.00	1.27E-01	1.11E-01	3.41E-02	5.88E-02
		1332.49	100.00	1.11E-01		-2.83E-02	5.05E-02
	ZN-65	1115.52	50.75	2.28E-01	2.28E-01	-6.49E-02	1.05E-01
+	GA-67	93.31	*	6.91E+01	6.91E+01	1.26E+02	3.40E+01
		208.95	2.24	8.50E+02		-2.14E+00	4.13E+02
		300.22	*	1.18E+02		1.10E+02	5.69E+01
	SE-75	121.11	16.70	3.74E-01	1.05E-01	3.11E-02	1.81E-01
		136.00	59.20	1.05E-01		-1.11E-02	5.08E-02
		264.65	59.80	1.40E-01		5.79E-02	6.73E-02
		279.53	25.20	3.16E-01		-6.70E-02	1.52E-01
		400.65	11.40	8.28E-01		2.67E-01	3.95E-01
	RB-82	776.52	13.00	1.47E+00	1.47E+00	-9.54E-02	6.85E-01
	RB-83	520.41	46.00	1.94E-01	1.94E-01	-1.50E-01	9.07E-02
		529.64	30.30	3.04E-01		-7.97E-02	1.43E-01
		552.65	16.40	5.79E-01		-2.65E-01	2.72E-01
	KR-85	513.99	0.43	2.59E+01	2.59E+01	3.48E+01	1.24E+01
	SR-85	513.99	99.27	1.49E-01	1.49E-01	2.00E-01	7.15E-02
	Y-88	898.02	93.40	1.12E-01	1.07E-01	-1.20E-02	5.15E-02
		1836.01	99.38	1.07E-01		1.70E-02	4.58E-02
	NB-93M	16.57	9.43	8.39E+01	8.39E+01	1.08E+01	4.08E+01
	NB-94	702.63	100.00	9.61E-02	8.44E-02	-4.05E-03	4.51E-02
		871.10	100.00	8.44E-02		2.56E-03	3.86E-02
	NB-95	765.79	99.81	1.67E-01	1.67E-01	3.18E-02	7.84E-02
	NB-95M	235.69	25.00	7.42E+01	7.42E+01	1.77E+02	3.64E+01
	ZR-95	724.18	43.70	3.10E-01	2.19E-01	3.31E-02	1.46E-01
		756.72	55.30	2.19E-01		-7.58E-02	1.02E-01

Analysis Report for 1510084-09

CP0604S19-20

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	6.43E+02	4.71E+02	1.67E+01	3.11E+02
	739.58	12.80	4.71E+02		-3.26E+02	2.19E+02
	778.00	4.50	1.51E+03		-7.12E+01	7.06E+02
RU-103	497.08	89.00	1.44E-01	1.44E-01	-1.68E-02	6.81E-02
RU-106	621.84	9.80	9.74E-01	9.74E-01	1.84E-01	4.59E-01
AG-108M	433.93	89.90	8.90E-02	8.90E-02	-3.28E-02	4.23E-02
	614.37	90.40	1.18E-01		-3.89E-01	5.59E-02
	722.95	90.50	1.03E-01		1.47E-02	4.81E-02
CD-109	88.03	3.72	2.05E+00	2.05E+00	-3.63E-01	1.00E+00
AG-110M	657.75	93.14	9.21E-02	9.21E-02	-3.36E-02	4.28E-02
	677.61	10.53	8.23E-01		-1.65E-01	3.82E-01
	706.67	16.46	6.38E-01		8.67E-02	3.00E-01
	763.93	21.98	4.65E-01		-9.08E-02	2.17E-01
	884.67	71.63	1.28E-01		-3.75E-02	5.88E-02
	1384.27	23.94	4.73E-01		-5.07E-02	2.13E-01
CD-113M	263.70	0.02	3.09E+02	3.09E+02	8.13E+01	1.49E+02
SN-113	255.12	1.93	4.02E+00	1.37E-01	-3.89E-01	1.94E+00
	391.69	64.90	1.37E-01		8.21E-03	6.53E-02
TE123M	159.00	84.10	7.86E-02	7.86E-02	1.63E-02	3.81E-02
SB-124	602.71	97.87	1.24E-01	1.24E-01	-3.88E-03	5.84E-02
	645.85	7.26	1.59E+00		1.63E-01	7.44E-01
	722.78	11.10	1.13E+00		1.61E-01	5.29E-01
	1691.02	49.00	2.57E-01		1.49E-01	1.12E-01
I-125	35.49	6.49	3.14E+00	3.14E+00	-1.95E+00	1.52E+00
SB-125	176.33	6.89	8.24E-01	2.68E-01	-7.30E-02	3.98E-01
	427.89	29.33	2.68E-01		7.60E-02	1.27E-01
	463.38	10.35	8.35E-01		5.41E-01	3.98E-01
	600.56	17.80	5.10E-01		-4.75E-03	2.40E-01
	635.90	11.32	7.64E-01		1.69E-01	3.58E-01
SB-126	414.70	83.30	3.99E-01	3.99E-01	-1.76E-01	1.90E-01
	666.33	99.60	4.09E-01		2.31E-02	1.93E-01
	695.00	99.60	4.20E-01		2.06E-01	1.97E-01
	720.50	53.80	7.41E-01		-1.14E-01	3.46E-01
SN-126	87.57	37.00	1.98E-01	1.98E-01	-3.52E-02	9.69E-02
SB-127	473.00	25.00	3.32E+01	2.66E+01	-2.63E+00	1.57E+01
	685.20	35.70	2.66E+01		2.21E+01	1.24E+01
	783.80	14.70	7.51E+01		2.85E+01	3.51E+01
I-129	29.78	57.00	5.00E-01	5.00E-01	1.04E-01	2.43E-01
	33.60	13.20	1.38E+00		-7.16E-01	6.69E-01
	39.58	7.52	1.60E+00		-2.84E-01	7.78E-01
I-131	284.30	6.05	1.05E+01	8.24E-01	-4.72E+00	5.03E+00
	364.48	81.20	8.24E-01		1.92E-01	3.93E-01
	636.97	7.26	1.12E+01		-5.62E-01	5.22E+00
	722.89	1.80	4.89E+01		6.97E+00	2.29E+01
TE-132	49.72	13.10	1.61E+02	1.95E+01	-2.86E+02	7.86E+01
BA-133	228.16	88.00	1.95E+01	1.72E-01	-8.40E+00	9.42E+00
	81.00	33.00	1.96E-01		-1.15E+00	9.56E-02
	302.84	17.80	4.60E-01		1.33E-03	2.22E-01
	356.01	60.00	1.72E-01		6.72E-03	8.35E-02
I-133	529.87	86.30	9.76E+07	9.76E+07	-2.56E+07	4.58E+07
XE-133	81.00	38.00	5.30E+00	5.30E+00	-3.12E+01	2.59E+00
CS-134	563.23	8.38	1.01E+00	1.01E-01	1.35E-01	4.74E-01
	569.32	15.43	5.47E-01		1.90E-01	2.57E-01

Analysis Report for 1510084-09

CP0604S19-20

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	1.01E-01	1.01E-01	-7.58E-01	4.79E-02	
	795.84	85.40	1.33E-01		1.08E-01	6.25E-02	
	801.93	8.73	1.14E+00		2.73E-01	5.30E-01	
CS-135	268.24	16.00	4.91E-01	4.91E-01	1.05E-01	2.37E-01	
	@ I-135	1131.51	22.50		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	3.07E+00	3.09E-01	1.25E+00	1.49E+00	
	163.89	4.61	4.69E+00		-2.39E+00	2.27E+00	
	176.55	13.56	1.60E+00		-5.30E-01	7.71E-01	
	273.65	12.66	2.44E+00		-6.45E-01	1.18E+00	
	340.57	48.50	8.21E-01		1.70E+00	3.98E-01	
	818.50	99.70	3.09E-01		-3.97E-02	1.41E-01	
	1048.07	79.60	5.11E-01		6.92E-03	2.35E-01	
1235.34	19.70	2.42E+00	-3.23E+00	1.11E+00			
CS-137	661.65	85.12	1.06E-01	1.06E-01	-1.75E-02	4.97E-02	
LA-138	788.74	34.00	2.68E-01	1.67E-01	7.09E-02	1.25E-01	
	1435.80	66.00	1.67E-01		4.18E-02	7.53E-02	
CE-139	165.85	80.35	8.09E-02	8.09E-02	1.16E-02	3.92E-02	
BA-140	162.64	6.70	3.38E+00	1.24E+00	-5.05E-01	1.63E+00	
	304.84	4.50	6.61E+00		-7.32E-01	3.18E+00	
	423.70	3.20	9.75E+00		-1.35E+00	4.63E+00	
	437.55	2.00	1.80E+01		7.42E+00	8.59E+00	
	537.32	25.00	1.24E+00		-3.49E-01	5.83E-01	
LA-140	328.77	20.50	1.61E+00	3.95E-01	7.81E-01	7.72E-01	
	487.03	45.50	7.01E-01		-2.85E-01	3.31E-01	
	815.85	23.50	1.47E+00		-1.85E-01	6.77E-01	
	1596.49	95.49	3.95E-01		2.27E-01	1.72E-01	
CE-141	145.44	48.40	2.05E-01	2.05E-01	2.14E-02	9.94E-02	
CE-143	57.36	11.80	3.37E+05	1.16E+05	-1.16E+05	1.64E+05	
	293.26	42.00	1.16E+05		2.79E+03	5.65E+04	
	664.55	5.20	9.55E+05		6.05E+05	4.50E+05	
CE-144	133.54	10.80	5.34E-01	5.34E-01	1.17E-01	2.59E-01	
PM-144	476.78	42.00	1.93E-01	9.05E-02	-1.11E-01	9.10E-02	
	618.01	98.60	9.05E-02		-1.56E-02	4.25E-02	
	696.49	99.49	1.03E-01		1.47E-02	4.85E-02	
PM-145	36.85	21.70	6.34E-01	3.45E-01	-5.56E-01	3.08E-01	
	37.36	39.70	3.45E-01		-2.66E-02	1.68E-01	
	42.30	15.10	6.95E-01		-7.90E-01	3.38E-01	
	72.40	2.31	3.84E+00		-3.91E+00	1.88E+00	
PM-146	453.90	39.94	1.89E-01	1.89E-01	6.16E-03	8.94E-02	
	735.90	14.01	6.24E-01		-2.42E-01	2.90E-01	
	747.13	13.10	7.13E-01		-1.75E-01	3.32E-01	
ND-147	91.11	28.90	1.35E+00	1.35E+00	-5.82E-01	6.63E-01	
	531.02	13.10	3.05E+00		4.44E-01	1.43E+00	
PM-149	285.90	3.10	8.07E+03	8.07E+03	3.48E+03	3.88E+03	
EU-152	121.78	20.50	2.58E-01	2.58E-01	-7.46E-02	1.25E-01	
	244.69	5.40	1.67E+00		-1.61E-01	8.13E-01	
	344.27	19.13	3.77E-01		-5.34E-02	1.80E-01	
	778.89	9.20	1.02E+00		-2.83E-01	4.73E-01	
	964.01	10.40	1.31E+00		-1.50E+00	6.20E-01	
	1085.78	7.22	1.55E+00		8.42E-01	7.16E-01	
1112.02	9.60	1.19E+00	4.75E-02	5.50E-01			

Analysis Report for 1510084-09

CP0604S19-20

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	6.57E-01	2.58E-01	-2.25E-01	2.93E-01
GD-153	97.43	31.30	1.87E-01	1.87E-01	6.99E-02	9.09E-02
	103.18	22.20	2.52E-01		-2.98E-01	1.22E-01
EU-154	123.07	40.50	1.32E-01	1.32E-01	-3.44E-02	6.41E-02
	723.30	19.70	4.75E-01		6.77E-02	2.22E-01
	873.19	11.50	7.39E-01		-2.28E-01	3.39E-01
	996.32	10.30	9.95E-01		-3.48E-01	4.58E-01
	1004.76	17.90	6.55E-01		2.60E-01	3.05E-01
	1274.45	35.50	3.54E-01		1.97E-01	1.63E-01
EU-155	86.50	30.90	2.35E-01	2.35E-01	2.44E-02	1.15E-01
	105.30	20.70	2.72E-01		1.52E-01	1.33E-01
EU-156	811.77	10.40	3.07E+00	3.07E+00	1.76E+00	1.43E+00
	1153.47	7.20	5.20E+00		-3.94E-01	2.39E+00
	1230.71	8.90	4.90E+00		-6.49E-01	2.27E+00
HO-166M	184.41	72.60	1.01E-01	1.01E-01	1.61E-01	4.92E-02
	280.45	29.60	2.29E-01		-1.16E-01	1.10E-01
	410.94	11.10	7.49E-01		2.78E-01	3.58E-01
	711.69	54.10	1.69E-01		-9.18E-02	7.88E-02
TM-171	66.72	0.14	5.47E+01	5.47E+01	-5.83E+01	2.68E+01
HF-172	81.75	4.52	1.46E+00	5.03E-01	-5.08E+00	7.13E-01
	125.81	11.30	5.03E-01		1.69E-02	2.44E-01
LU-172	181.53	20.60	4.09E+00	2.22E+00	-1.99E-01	1.98E+00
	810.06	16.63	8.11E+00		-1.59E+00	3.76E+00
	912.12	15.25	1.73E+01		3.82E+01	8.31E+00
	1093.66	62.50	2.22E+00		-1.08E+00	1.01E+00
LU-173	100.72	5.24	1.06E+00	3.86E-01	2.07E-01	5.16E-01
	272.11	21.20	3.86E-01		-5.21E-02	1.87E-01
HF-175	343.40	84.00	1.19E-01	1.19E-01	1.20E-03	5.69E-02
LU-176	88.34	13.30	5.71E-01	7.79E-02	1.32E-01	2.80E-01
	201.83	86.00	8.29E-02		4.12E-03	4.02E-02
	306.78	94.00	7.79E-02		8.52E-03	3.74E-02
TA-182	67.75	41.20	2.12E-01	2.12E-01	5.86E-02	1.04E-01
	1121.30	34.90	5.21E-01		5.55E-01	2.46E-01
	1189.05	16.23	7.54E-01		-2.67E-01	3.44E-01
	1221.41	26.98	5.86E-01		-2.65E-02	2.73E-01
IR-192	1231.02	11.44	1.36E+00		1.47E-01	6.31E-01
	308.46	29.68	3.13E-01	1.96E-01	4.97E-02	1.50E-01
	468.07	48.10	1.96E-01		6.02E-02	9.26E-02
HG-203	279.19	77.30	1.34E-01	1.34E-01	4.78E-02	6.43E-02
BI-207	569.67	97.72	8.49E-02	8.49E-02	2.14E-02	3.99E-02
	1063.62	74.90	1.45E-01		6.99E-02	6.70E-02
TL-208	583.14	30.22	5.20E-01	5.20E-01	1.26E+00	2.52E-01
	860.37	4.48	2.45E+00		1.14E+00	1.15E+00
	2614.66	35.85	6.77E-01		1.07E+00	3.16E-01
BI-210M	262.00	45.00	1.56E-01	1.56E-01	3.91E-02	7.52E-02
	300.00	23.00	3.71E-01		-8.99E-01	1.79E-01
PB-210	46.50	4.25	2.34E+00	2.34E+00	1.29E+00	1.14E+00
PB-211	404.84	2.90	2.74E+00	2.74E+00	-1.45E+00	1.31E+00
	831.96	2.90	3.16E+00		-6.85E-01	1.46E+00
+ BI-212	727.17	* 11.80	1.13E+00	1.13E+00	9.20E-01	5.37E-01
	1620.62	2.75	2.87E+00		-1.43E+00	1.22E+00
+ PB-212	238.63	* 44.60	3.61E-01	3.61E-01	1.63E+00	1.78E-01
	300.09	* 3.41	2.18E+00		2.02E+00	1.05E+00

Analysis Report for 1510084-09
CP0604S19-20

	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	3.51E-01	3.51E-01	1.20E+00	1.70E-01
		1120.29	*	15.10	1.71E+00		1.15E+00	8.25E-01
		1764.49	*	15.80	5.86E-01		1.48E+00	2.53E-01
		2204.22		4.98	2.54E+00		1.35E+00	1.12E+00
+	PB-214	295.21	*	19.19	4.19E-01	2.83E-01	1.18E+00	2.02E-01
		351.92	*	37.19	2.83E-01		1.38E+00	1.37E-01
	RN-219	401.80		6.50	1.22E+00	1.22E+00	1.12E-02	5.82E-01
	RA-223	323.87		3.88	1.87E+00	1.87E+00	3.75E-01	8.98E-01
	RA-224	240.98		3.95	3.78E+00	3.78E+00	2.19E+01	1.86E+00
	RA-225	40.00		31.00	1.28E+00	1.28E+00	-2.28E-01	6.24E-01
+	RA-226	186.21	*	3.28	2.93E+00	2.93E+00	4.06E+00	1.44E+00
	TH-227	50.10		8.40	9.73E-01	9.73E-01	-1.73E+00	4.74E-01
		236.00		11.50	1.08E+00		2.59E+00	5.32E-01
		256.20		6.30	1.04E+00		-4.16E-01	4.98E-01
+	AC-228	338.32	*	11.40	1.03E+00	4.74E-01	1.91E+00	5.00E-01
		911.07	*	27.70	4.74E-01		1.41E+00	2.24E-01
		969.11	*	16.60	1.27E+00		1.45E+00	6.11E-01
	TH-230	48.44		16.90	5.49E-01	5.49E-01	3.63E-01	2.68E-01
		62.85		4.60	1.79E+00		3.00E-01	8.78E-01
		67.67		0.37	2.02E+01		5.58E+00	9.87E+00
	PA-231	283.67		1.60	4.19E+00	3.54E+00	-1.88E+00	2.01E+00
		302.67		2.30	3.54E+00		1.02E-02	1.71E+00
	TH-231	25.64		14.70	3.59E+00	1.01E+00	-1.75E+00	1.75E+00
		84.21		6.40	1.01E+00		-1.10E+00	4.94E-01
	PA-233	311.98		38.60	3.75E-01	3.75E-01	-2.19E-03	1.80E-01
	PA-234	131.20		20.40	2.87E-01	2.87E-01	1.45E-01	1.39E-01
		733.99		8.80	1.05E+00		-1.47E-01	4.90E-01
		946.00		12.00	7.63E-01		5.56E-02	3.50E-01
	PA-234M	1001.03		0.92	1.23E+01	1.23E+01	-1.99E+00	5.69E+00
	TH-234	63.29		3.80	2.20E+00	2.20E+00	1.06E+00	1.08E+00
	U-235	143.76		10.50	5.45E-01	5.45E-01	9.92E-02	2.64E-01
		163.35		4.70	1.16E+00		-5.92E-01	5.63E-01
		205.31		4.70	1.53E+00		-1.05E+00	7.43E-01
	NP-237	86.50		12.60	5.72E-01	5.72E-01	5.91E-02	2.80E-01
	NP-239	106.10		22.70	5.29E+02	5.29E+02	2.94E+02	2.57E+02
		228.18		10.70	1.34E+03		-5.79E+02	6.50E+02
		277.60		14.10	1.08E+03		9.09E+02	5.21E+02
	AM-241	59.54		35.90	2.22E-01	2.22E-01	-9.90E-02	1.08E-01
	AM-243	74.67		66.00	1.56E-01	1.56E-01	2.82E-01	7.68E-02
	CM-243	209.75		3.29	2.28E+00	5.09E-01	7.87E-01	1.11E+00
		228.14		10.60	6.34E-01		-2.73E-01	3.06E-01
		277.60		14.00	5.09E-01		4.28E-01	2.45E-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 1510084-09
CP0604S19-20

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: CP0604S19-20

Elapsed Live time: 3600
 Elapsed Real Time: 3617

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	13	178	164	132	146	112	91	104	
17:	81	97	77	72	75	95	108	95	
25:	81	89	86	95	93	80	90	90	
33:	85	87	75	72	93	61	92	101	
41:	93	83	87	82	89	115	167	98	
49:	88	110	92	86	109	115	120	104	
57:	104	129	128	140	136	139	174	232	
65:	112	164	161	135	131	124	150	160	
73:	171	180	419	312	427	482	141	132	
81:	112	121	100	142	148	112	171	242	
89:	106	176	175	135	267	205	123	83	
97:	82	80	104	86	79	71	81	70	
105:	90	108	101	82	81	81	73	62	
113:	76	95	82	99	80	61	90	77	
121:	71	69	75	74	81	80	71	89	
129:	91	110	83	68	74	68	77	71	
137:	69	56	66	73	66	70	83	89	
145:	62	68	69	75	67	67	63	76	
153:	79	60	79	55	69	70	60	69	
161:	59	64	53	68	54	53	68	69	
169:	65	57	55	53	58	62	51	62	
177:	38	62	52	62	52	50	52	59	
185:	61	140	142	78	54	54	47	57	
193:	41	48	57	49	52	53	52	59	
201:	43	49	45	65	63	54	53	45	
209:	69	73	53	47	54	47	46	45	
217:	49	53	47	39	47	53	67	47	
225:	33	37	37	50	37	40	41	60	
233:	41	39	53	53	48	155	540	235	
241:	81	145	101	42	39	45	45	32	
249:	30	27	39	43	27	29	37	30	
257:	32	26	34	32	28	38	30	35	
265:	44	32	36	33	29	48	70	56	
273:	26	34	26	31	37	46	24	28	
281:	33	17	20	31	35	31	24	38	
289:	34	27	27	23	22	26	111	147	
297:	58	21	37	51	62	30	28	30	
305:	27	29	34	21	33	27	23	29	
313:	28	22	38	33	26	26	27	20	
321:	27	20	30	27	28	22	26	39	
329:	43	35	28	22	28	21	28	22	
337:	27	76	106	40	28	28	29	19	
345:	19	20	15	20	19	16	63	230	
353:	168	41	19	24	21	19	22	16	
361:	19	19	27	19	20	22	16	15	

369: 18 18 12 22 18 24 14 18

Sample Title: CP0604S19-20

Channel	1	2	3	4	5	6	7	8
377:	31	19	22	16	27	16	22	13
385:	26	17	20	17	20	21	24	15
393:	22	15	24	23	18	25	17	19
401:	25	30	21	18	17	20	21	19
409:	26	29	17	21	20	24	19	17
417:	18	13	17	27	17	16	20	14
425:	25	22	8	19	13	20	17	15
433:	14	27	19	24	14	26	25	26
441:	21	20	14	19	13	19	24	9
449:	14	13	10	22	13	12	16	15
457:	16	14	17	15	12	19	26	31
465:	18	10	6	18	14	13	17	16
473:	12	13	16	13	16	12	14	17
481:	19	25	13	17	15	9	16	12
489:	14	16	15	16	9	15	19	14
497:	6	21	18	11	20	16	11	11
505:	12	16	18	12	23	35	70	40
513:	21	25	16	16	5	11	9	16
521:	10	18	6	15	15	10	9	14
529:	10	13	11	7	14	14	12	12
537:	5	15	13	7	12	17	13	17
545:	10	11	11	18	7	13	5	6
553:	14	14	17	8	17	13	14	8
561:	18	13	19	7	13	8	7	13
569:	11	13	17	15	9	10	11	9
577:	7	13	13	14	20	14	104	120
585:	28	11	17	17	17	9	5	8
593:	5	8	14	14	9	12	13	10
601:	17	11	11	16	10	16	15	26
609:	98	151	49	12	11	19	13	14
617:	7	10	11	11	11	8	12	15
625:	20	16	12	16	13	11	8	6
633:	6	14	16	10	11	10	6	7
641:	14	13	10	10	8	10	8	16
649:	10	4	9	8	11	7	4	9
657:	11	10	7	6	13	14	10	11
665:	16	13	14	11	10	10	11	7
673:	12	12	15	5	9	12	7	7
681:	3	9	7	10	10	13	8	10
689:	7	2	10	8	16	17	12	11
697:	12	7	8	13	11	7	15	11
705:	13	9	14	15	13	6	13	8
713:	6	11	12	16	8	9	11	10
721:	14	10	8	10	7	11	25	35
729:	14	12	13	12	10	13	7	3
737:	9	6	10	7	11	9	13	13
745:	7	11	11	8	5	10	8	13
753:	11	7	13	9	9	10	9	5
761:	11	9	9	5	7	11	14	6
769:	21	9	8	9	10	8	12	8
777:	5	10	10	6	14	8	12	9
785:	7	13	9	10	6	7	5	7
793:	5	9	19	22	10	8	12	5

801: 10 10 7 8 11 7 6 3

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	8	7	9	13	8	9	8	7
817:	6	5	2	2	8	2	7	7
825:	12	7	10	6	5	10	6	7
833:	7	10	7	6	12	7	9	12
841:	8	9	5	4	9	5	2	15
849:	13	10	6	8	9	7	9	5
857:	5	9	5	6	23	12	12	10
865:	6	5	5	7	5	3	8	7
873:	4	6	8	4	10	6	7	9
881:	6	6	9	6	6	4	3	8
889:	5	4	9	12	7	6	4	3
897:	9	7	5	7	7	7	6	9
905:	9	6	7	6	5	12	56	68
913:	26	9	5	4	5	4	5	6
921:	6	6	2	3	4	4	4	13
929:	5	5	5	7	5	20	9	8
937:	8	7	7	6	4	6	4	4
945:	6	7	7	5	8	4	8	9
953:	8	6	8	8	9	7	11	8
961:	6	13	1	24	18	20	11	21
969:	44	24	11	7	3	11	3	8
977:	7	4	8	4	6	8	6	2
985:	5	8	1	8	4	5	6	8
993:	10	4	8	5	4	8	8	11
1001:	8	8	7	8	17	8	5	9
1009:	3	6	5	9	4	7	11	7
1017:	8	4	12	9	6	8	5	4
1025:	3	7	8	7	4	5	10	5
1033:	8	13	8	6	8	4	10	3
1041:	5	4	7	3	9	3	11	3
1049:	7	8	3	7	7	6	10	7
1057:	7	3	4	9	7	7	7	13
1065:	2	3	4	6	5	11	7	7
1073:	6	5	5	6	2	2	5	5
1081:	7	3	3	5	6	5	13	11
1089:	6	1	6	3	3	0	11	9
1097:	5	4	3	5	10	11	7	6
1105:	4	12	6	7	7	10	9	4
1113:	4	8	7	4	10	6	6	27
1121:	29	5	6	15	4	7	5	9
1129:	7	6	6	6	4	6	5	8
1137:	5	6	7	5	9	7	6	4
1145:	5	11	9	8	12	9	4	5
1153:	7	6	6	9	4	5	8	6
1161:	8	5	2	4	8	6	6	7
1169:	7	12	8	2	7	7	11	8
1177:	8	4	7	7	4	10	9	6
1185:	11	3	3	5	2	11	7	5
1193:	7	8	13	9	7	2	6	4
1201:	7	11	7	5	4	9	3	9
1209:	11	7	9	7	6	11	9	8
1217:	8	5	9	11	9	7	10	9
1225:	11	8	9	11	8	10	11	6

1233: 2 9 8 6 4 11 17 14

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Channel	1	2	3	4	5	6	7	8	9
1241:	6	5	4	9	7	12	6	6	
1249:	11	12	7	7	7	3	2	4	
1257:	3	7	2	3	1	3	5	7	
1265:	4	6	7	0	4	3	6	6	
1273:	6	7	4	9	3	3	5	9	
1281:	10	8	8	7	5	1	6	3	
1289:	6	3	4	4	2	10	3	3	
1297:	0	6	3	9	5	7	9	3	
1305:	7	8	4	0	4	4	6	3	
1313:	4	5	5	3	1	3	4	6	
1321:	3	1	3	5	3	4	5	0	
1329:	2	4	1	5	1	2	8	10	
1337:	3	6	6	3	4	8	1	1	
1345:	3	2	3	1	2	1	2	5	
1353:	3	3	1	1	3	2	1	2	
1361:	2	4	3	4	3	2	4	0	
1369:	1	0	1	0	5	2	2	3	
1377:	6	6	5	3	2	1	2	4	
1385:	7	4	3	2	0	3	1	3	
1393:	1	1	3	3	0	0	4	7	
1401:	4	6	4	1	0	3	5	4	
1409:	2	2	3	3	0	4	0	0	
1417:	3	4	2	2	2	3	1	3	
1425:	1	5	4	1	2	1	2	2	
1433:	2	4	2	5	4	2	6	4	
1441:	3	2	2	2	1	3	2	0	
1449:	2	1	4	1	4	7	2	3	
1457:	5	2	17	93	206	167	47	5	
1465:	5	0	2	0	1	0	0	1	
1473:	0	2	2	1	3	2	1	1	
1481:	1	2	1	1	2	5	1	2	
1489:	1	1	3	0	2	4	1	3	
1497:	1	0	0	0	2	2	1	1	
1505:	0	2	1	1	3	4	4	1	
1513:	4	1	3	0	3	0	1	3	
1521:	1	2	4	0	2	2	1	1	
1529:	0	0	3	1	2	0	4	5	
1537:	0	2	1	1	2	1	2	2	
1545:	0	2	3	3	3	1	1	0	
1553:	0	1	1	1	2	0	1	4	
1561:	0	0	0	1	2	0	2	1	
1569:	0	1	4	1	1	1	0	1	
1577:	0	2	1	2	2	2	2	1	
1585:	0	0	0	10	5	0	3	4	
1593:	4	2	2	0	1	1	1	1	
1601:	0	0	3	0	2	2	1	1	
1609:	1	1	1	0	1	3	0	1	
1617:	1	0	2	0	1	4	1	1	
1625:	2	4	2	0	0	4	5	3	
1633:	1	1	1	1	0	1	2	2	
1641:	4	0	1	4	1	0	0	0	
1649:	0	2	1	1	2	0	1	0	
1657:	3	2	1	0	1	4	1	4	

1665: 0 2 3 4 1 1 0 1

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Channel	1	2	3	4	1	1	0	1
1673:	1	2	0	1	1	1	0	0
1681:	1	1	0	0	1	0	0	0
1689:	2	4	0	0	3	4	2	1
1697:	0	0	1	3	2	1	1	0
1705:	1	0	3	3	1	2	0	2
1713:	1	1	0	0	1	0	0	0
1721:	3	0	0	1	0	3	2	4
1729:	2	3	4	2	1	2	1	0
1737:	1	2	0	0	2	3	1	0
1745:	3	1	1	1	1	1	0	1
1753:	2	2	2	2	3	0	0	3
1761:	0	0	7	13	19	11	5	1
1769:	0	0	1	1	2	0	0	0
1777:	1	1	1	1	2	0	2	1
1785:	2	0	2	1	2	0	3	1
1793:	2	0	1	2	2	0	0	1
1801:	1	0	0	1	0	0	1	1
1809:	0	2	1	0	1	1	1	1
1817:	0	0	1	0	2	3	0	0
1825:	2	0	2	0	3	0	2	3
1833:	1	1	1	0	0	3	1	1
1841:	0	2	1	0	1	1	3	5
1849:	0	0	1	1	2	3	1	0
1857:	4	1	2	0	2	2	1	1
1865:	3	1	1	2	1	2	0	0
1873:	1	0	1	1	1	0	0	0
1881:	1	1	0	1	0	0	0	1
1889:	3	0	2	3	0	0	3	0
1897:	3	1	0	0	2	0	1	0
1905:	1	1	0	3	0	1	4	2
1913:	0	1	3	0	3	0	0	0
1921:	0	2	1	0	0	0	0	1
1929:	2	1	3	1	0	2	1	4
1937:	1	1	1	0	2	3	0	1
1945:	1	1	0	1	1	3	1	0
1953:	1	3	1	0	2	2	1	1
1961:	1	0	0	0	0	3	1	1
1969:	0	0	2	0	0	2	0	0
1977:	1	0	1	1	0	2	0	0
1985:	1	1	0	1	2	1	3	0
1993:	2	2	0	1	0	1	2	1
2001:	1	1	0	0	0	1	0	0
2009:	2	1	1	3	0	0	0	0
2017:	3	1	1	2	1	0	0	0
2025:	1	2	0	1	3	0	0	0
2033:	0	0	1	1	0	2	1	0
2041:	0	0	0	1	1	0	0	2
2049:	0	2	2	1	3	3	2	0
2057:	2	0	0	0	0	0	0	1
2065:	1	1	1	1	0	0	0	0
2073:	1	0	1	3	1	1	0	0
2081:	2	2	0	2	0	1	0	1
2089:	2	0	0	2	1	1	0	0

2097: 1 2 2 1 0 2 2 1

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

2529: 0 0 0 1 0 0 0 0

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	0	1	0	0	0	0
2545:	1	0	0	1	0	0	1	0
2553:	0	1	0	1	0	1	0	0
2561:	0	0	0	0	0	0	0	0
2569:	2	0	0	3	0	0	1	0
2577:	0	1	0	1	1	0	2	0
2585:	0	0	2	0	1	1	0	0
2593:	0	0	0	0	2	0	1	0
2601:	0	0	0	0	0	0	0	1
2609:	0	0	1	0	6	18	24	10
2617:	7	2	1	0	0	0	0	0
2625:	0	0	1	0	1	2	0	0
2633:	0	0	0	1	0	2	0	0
2641:	0	0	0	0	1	0	0	1
2649:	0	0	0	0	0	0	0	1
2657:	1	0	0	0	2	0	0	0
2665:	0	1	0	0	0	0	0	0
2673:	0	0	0	0	1	0	0	0
2681:	0	0	0	1	0	0	0	0
2689:	0	0	0	0	0	0	0	0
2697:	0	0	0	0	0	0	1	0
2705:	0	0	0	0	0	0	0	0
2713:	0	0	0	0	0	0	0	0
2721:	2	0	0	0	0	1	0	1
2729:	0	0	0	1	0	0	0	0
2737:	0	0	0	0	0	0	1	0
2745:	0	0	0	0	0	1	0	0
2753:	0	0	0	1	1	0	0	0
2761:	0	0	0	0	0	0	0	1
2769:	0	0	1	0	0	1	0	0
2777:	1	1	2	0	0	0	0	0
2785:	0	0	0	0	0	0	1	1
2793:	0	1	0	0	1	0	0	0
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	0	1	0	1	0
2825:	0	0	0	0	0	1	0	0
2833:	0	0	0	2	0	1	0	0
2841:	0	0	0	0	0	0	0	0
2849:	0	0	0	0	0	0	0	0
2857:	0	0	0	1	0	2	0	0
2865:	0	0	1	0	0	0	0	1
2873:	0	0	0	0	1	0	0	0
2881:	0	0	1	0	0	0	0	0
2889:	0	1	1	0	1	0	0	1
2897:	0	1	0	2	0	0	1	0
2905:	1	0	0	0	0	0	0	1
2913:	0	0	0	1	0	0	1	0
2921:	1	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	1	0
2945:	0	0	0	0	0	0	1	0
2953:	0	0	0	0	1	1	0	0

2961: 0 0 0 1 0 0 1 0

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

3393: 0 1 0 0 1 0 0 0

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3401:	1	0	0	0	0	0	0	0
3409:	0	0	1	1	0	0	0	0
3417:	0	0	0	0	0	0	1	0
3425:	0	0	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	1	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	1	1	0	0	0	0
3481:	0	0	0	0	1	0	0	0
3489:	0	1	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:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	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	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	1	1	0	0	1	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	1	0	0	0	0	0
3601:	0	0	0	0	0	0	0	1
3609:	0	0	1	2	0	2	0	1
3617:	0	0	2	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	0	0	0	0	0
3649:	0	0	0	0	0	0	0	1
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	0	0	0	0
3705:	0	0	2	0	0	0	1	0
3713:	0	0	0	0	1	0	1	0
3721:	0	2	0	0	0	0	0	1
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	1	0	0	0
3745:	0	0	0	0	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	1	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	2	0	0	1	0

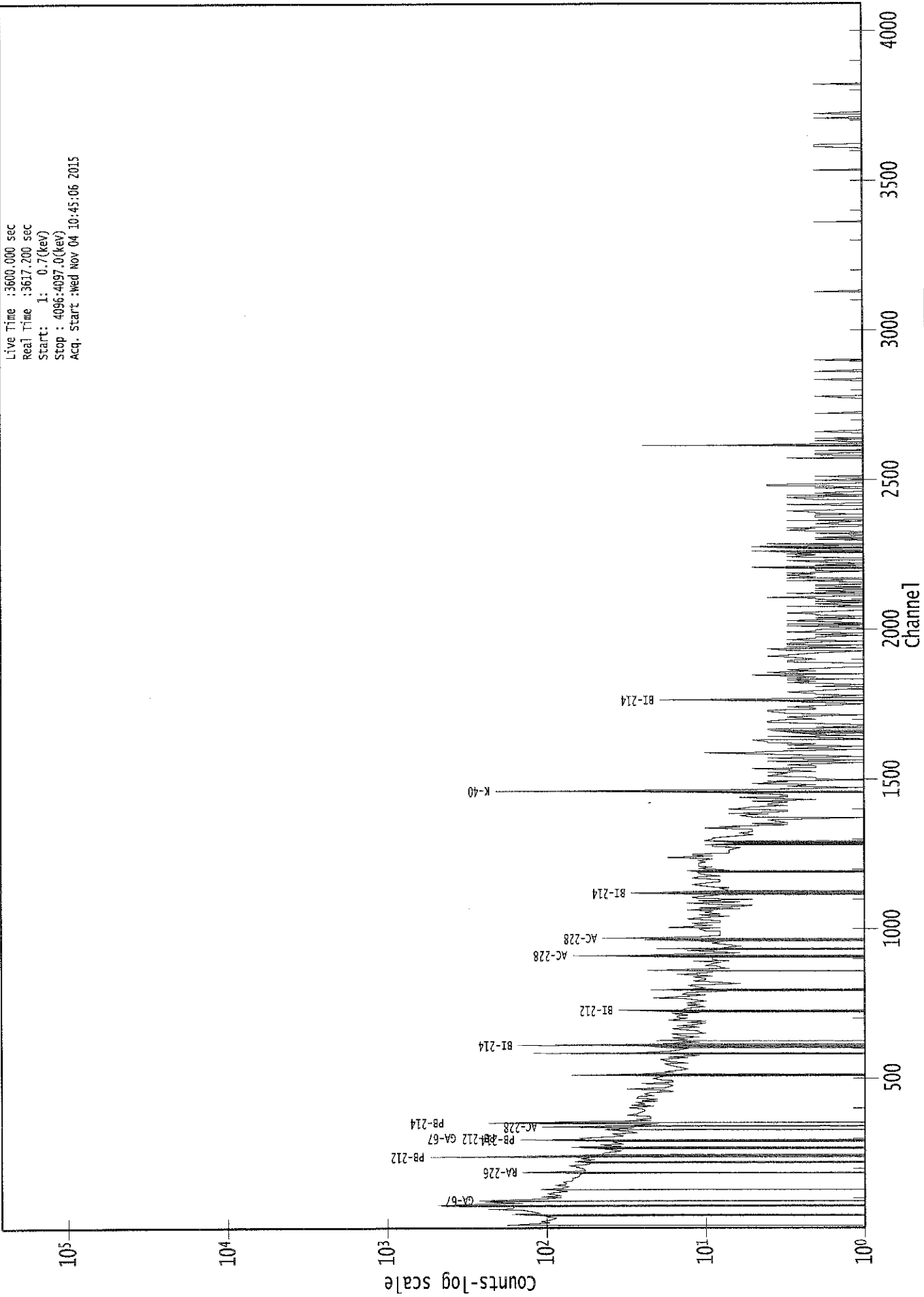
3825: 0 0 0 0 0 0 0 0 1

Sample Title: CP0604S19-20

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	1	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	1	0	0	0	1	1	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	1	0	0	0	1	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	1	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	1	0	1	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	1	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	1	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	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	1	0	0	0	0	1	0
4025:	0	0	0	0	1	0	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	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	0	0
4089:	0	0	1	0	0	0	0	0

0000029108.CNF

Live Time : 3600.000 sec
Real Time : 3617.200 sec
Start: 1: 0.7(keV)
Stop : 4096.4097.0(keV)
Acq. Start: Wed Nov 04 10:45:06 2015



Analysis Report for 1510084-10
CP0604S21-22

✓
1114

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-10
Sample Description : CP0604S21-22
Sample Type : SOIL

Sample Size : 5.708E+02 grams
Facility : Countroom

Sample Taken On : 10/9/2015 9:48:51AM
Acquisition Started : 11/4/2015 10:40:36AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
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) : 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 : 29105

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-10
CP0604S21-22

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 11:40:41AM
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	63.02	63.37	0.0000	0.00
2	76.25	76.59	0.0000	0.00
3	89.53	89.86	0.0000	0.00
4	92.77	93.10	0.0000	0.00
5	186.10	186.41	0.0000	0.00
6	235.78	236.06	0.0000	0.00
7	238.83	239.11	0.0000	0.00
8	242.01	242.29	0.0000	0.00
9	270.19	270.47	0.0000	0.00
10	295.27	295.54	0.0000	0.00
11	301.11	301.38	0.0000	0.00
12	329.34	329.60	0.0000	0.00
13	338.63	338.89	0.0000	0.00
14	351.93	352.18	0.0000	0.00
15	411.41	411.64	0.0000	0.00
16	463.16	463.37	0.0000	0.00
17	501.51	501.71	0.0000	0.00
18	510.75	510.95	0.0000	0.00
19	583.12	583.29	0.0000	0.00
20	609.70	609.86	0.0000	0.00
21	727.44	727.56	0.0000	0.00
22	768.50	768.60	0.0000	0.00
23	772.29	772.40	0.0000	0.00
24	795.51	795.60	0.0000	0.00
25	837.55	837.63	0.0000	0.00
26	860.96	861.03	0.0000	0.00
27	911.70	911.76	0.0000	0.00
28	934.66	934.71	0.0000	0.00
29	969.87	969.90	0.0000	0.00
30	987.14	987.17	0.0000	0.00
31	994.34	994.37	0.0000	0.00
32	1033.78	1033.79	0.0000	0.00
33	1052.28	1052.29	0.0000	0.00
34	1120.81	1120.79	0.0000	0.00
35	1128.23	1128.21	0.0000	0.00
36	1134.18	1134.15	0.0000	0.00
37	1153.65	1153.62	0.0000	0.00
38	1237.85	1237.79	0.0000	0.00
39	1244.27	1244.21	0.0000	0.00
40	1291.32	1291.24	0.0000	0.00
41	1381.44	1381.33	0.0000	0.00
42	1455.30	1455.16	0.0000	0.00

Analysis Report for 1510084-10
CP0604S21-22

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1461.42	1461.28	0.0000	0.00
44	1506.62	1506.46	0.0000	0.00
45	1509.70	1509.54	0.0000	0.00
46	1587.19	1587.00	0.0000	0.00
47	1593.95	1593.76	0.0000	0.00
48	1621.45	1621.25	0.0000	0.00
49	1631.16	1630.95	0.0000	0.00
50	1728.47	1728.23	0.0000	0.00
51	1734.24	1734.00	0.0000	0.00
52	1761.49	1761.23	0.0000	0.00
53	1765.31	1765.05	0.0000	0.00
54	1823.42	1823.14	0.0000	0.00
55	1848.33	1848.04	0.0000	0.00
56	2101.63	2101.24	0.0000	0.00
57	2105.88	2105.49	0.0000	0.00
58	2118.53	2118.14	0.0000	0.00
59	2203.67	2203.25	0.0000	0.00
60	2208.38	2207.95	0.0000	0.00
61	2281.95	2281.50	0.0000	0.00
62	2325.99	2325.52	0.0000	0.00
63	2395.86	2395.36	0.0000	0.00
64	2448.99	2448.48	0.0000	0.00
65	2461.83	2461.31	0.0000	0.00
66	2615.35	2614.76	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1510084-10

CP0604S21-22

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 11:40:41AM

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	63.02	60 -	66	63.37	1.97E+02	107.21	1.95E+03	1.29
2	76.25	71 -	82	76.59	1.38E+03	175.99	3.16E+03	3.78
m 3	89.53	82 -	101	89.86	1.74E+02	68.59	8.35E+02	1.49
m 4	92.77	82 -	101	93.10	3.18E+02	70.09	7.85E+02	1.49
5	186.10	183 -	189	186.41	2.71E+02	75.20	8.28E+02	2.12
M 6	235.78	234 -	247	236.06	6.46E+01	31.94	2.55E+02	1.79
m 7	238.83	234 -	247	239.11	1.02E+03	77.49	3.85E+02	1.59
m 8	242.01	234 -	247	242.29	3.01E+02	87.26	4.94E+02	2.24
9	270.19	266 -	273	270.47	1.09E+02	61.02	5.48E+02	2.05
10	295.27	291 -	298	295.54	3.36E+02	68.76	5.64E+02	1.64
11	301.11	300 -	304	301.38	5.92E+01	40.71	2.98E+02	1.17
12	329.34	324 -	334	329.60	6.87E+01	65.67	5.37E+02	1.94
13	338.63	335 -	343	338.89	2.53E+02	59.85	3.94E+02	1.73
14	351.93	347 -	356	352.18	6.29E+02	72.20	3.85E+02	1.67
15	411.41	407 -	416	411.64	5.75E+01	53.74	3.79E+02	1.85
16	463.16	459 -	467	463.37	6.77E+01	46.22	2.85E+02	2.04
17	501.51	499 -	505	501.71	2.69E+01	33.85	1.82E+02	3.91
18	510.75	506 -	516	510.95	1.88E+02	57.25	3.40E+02	1.95
19	583.12	577 -	588	583.29	3.22E+02	61.87	3.16E+02	1.90
20	609.70	605 -	614	609.86	4.90E+02	58.22	2.01E+02	1.75
21	727.44	724 -	730	727.56	9.77E+01	33.43	1.31E+02	1.95
M 22	768.50	764 -	776	768.60	4.44E+01	29.46	1.46E+02	1.91
m 23	772.29	764 -	776	772.40	2.32E+01	32.37	1.57E+02	2.29
24	795.51	792 -	799	795.60	6.43E+01	29.19	9.74E+01	2.32
25	837.55	833 -	842	837.63	5.37E+01	34.04	1.35E+02	4.00
26	860.96	857 -	865	861.03	4.51E+01	34.30	1.54E+02	1.61
27	911.70	907 -	916	911.76	2.14E+02	43.66	1.49E+02	1.96
28	934.66	931 -	942	934.71	2.80E+01	32.74	1.20E+02	3.82
29	969.87	966 -	977	969.90	1.19E+02	52.31	2.66E+02	1.91
M 30	987.14	983 -	1011	987.17	2.31E+01	18.87	4.00E+01	3.21
m 31	994.34	983 -	1011	994.37	2.36E+01	19.80	4.00E+01	2.66
32	1033.78	1029 -	1039	1033.79	2.81E+01	26.30	7.77E+01	2.56
33	1052.28	1048 -	1056	1052.29	2.50E+01	27.74	1.02E+02	1.81
M 34	1120.81	1115 -	1131	1120.79	9.71E+01	29.90	8.40E+01	2.26
m 35	1128.23	1115 -	1131	1128.21	1.51E+01	21.77	8.40E+01	2.27
36	1134.18	1131 -	1137	1134.15	2.05E+01	22.48	7.70E+01	2.27
37	1153.65	1149 -	1158	1153.62	3.41E+01	33.35	1.38E+02	2.06
M 38	1237.85	1231 -	1251	1237.79	3.77E+01	26.58	1.02E+02	2.32
m 39	1244.27	1231 -	1251	1244.21	2.10E+01	24.31	7.89E+01	2.32
40	1291.32	1289 -	1293	1291.24	1.76E+01	14.60	3.08E+01	2.06

: 00673

Analysis Report for 1510084-10

CP0604S21-22

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1381.44	1373 - 1394		1381.33	6.35E+01	35.37	7.49E+01	7.36
M	42	1455.30	1454 - 1467		1455.16	8.12E+00	7.87	2.09E+01	2.41
m	43	1461.42	1454 - 1467		1461.28	8.56E+02	59.46	2.53E+01	2.12
M	44	1506.62	1504 - 1512		1506.46	1.06E+01	8.25	1.12E+01	2.68
m	45	1509.70	1504 - 1512		1509.54	1.14E+01	11.53	1.33E+01	2.68
	46	1587.19	1583 - 1590		1587.00	2.40E+01	13.86	1.60E+01	5.56
	47	1593.95	1591 - 1598		1593.76	2.66E+01	13.27	1.07E+01	4.23
M	48	1621.45	1618 - 1634		1621.25	2.26E+01	9.85	1.22E+00	3.30
m	49	1631.16	1618 - 1634		1630.95	1.75E+01	11.14	6.26E+00	3.31
M	50	1728.47	1725 - 1736		1728.23	1.65E+01	9.54	3.58E+00	2.52
m	51	1734.24	1725 - 1736		1734.00	6.20E+00	7.40	1.37E+01	2.30
M	52	1761.49	1760 - 1771		1761.23	9.55E+00	4.24	8.89E-02	2.54
m	53	1765.31	1760 - 1771		1765.05	8.56E+01	19.60	7.87E+00	2.54
	54	1823.42	1819 - 1826		1823.14	7.00E+00	5.29	0.00E+00	1.00
	55	1848.33	1844 - 1851		1848.04	1.38E+01	13.11	1.83E+01	2.53
M	56	2101.63	2100 - 2108		2101.24	7.44E+00	3.61	1.36E-01	2.66
m	57	2105.88	2100 - 2108		2105.49	1.39E+01	9.39	4.50E+00	2.93
	58	2118.53	2115 - 2121		2118.14	1.21E+01	8.26	3.79E+00	2.14
M	59	2203.67	2200 - 2210		2203.25	2.76E+01	11.58	3.05E+00	2.70
m	60	2208.38	2200 - 2210		2207.95	7.86E+00	9.49	1.07E+01	2.70
	61	2281.95	2279 - 2284		2281.50	5.00E+00	7.07	6.00E+00	2.13
	62	2325.99	2322 - 2328		2325.52	6.77E+00	8.99	8.45E+00	2.42
	63	2395.86	2392 - 2398		2395.36	1.10E+01	6.63	0.00E+00	2.81
	64	2448.99	2442 - 2453		2448.48	1.07E+01	13.56	1.66E+01	1.45
	65	2461.83	2459 - 2464		2461.31	6.88E+00	6.40	2.25E+00	3.14
	66	2615.35	2610 - 2620		2614.76	1.26E+02	22.45	0.00E+00	2.62

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 : 11/4/2015 11:40:41AM

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	63.02	60 -	66	1.97E+02	107.21	1.95E+03	8.51E+01
2	76.25	71 -	82	1.38E+03	175.99	3.16E+03	1.31E+02

: 00674

Analysis Report for 1510084-10

CP0604S21-22

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	3	89.53	82 -	101	1.74E+02	68.59	8.35E+02	4.75E+01
m	4	92.77	82 -	101	3.18E+02	70.09	7.85E+02	4.61E+01
	5	186.10	183 -	189	2.71E+02	75.20	8.28E+02	5.56E+01
M	6	235.78	234 -	247	6.46E+01	31.94	2.55E+02	2.63E+01
m	7	238.83	234 -	247	1.02E+03	77.49	3.85E+02	3.23E+01
m	8	242.01	234 -	247	3.01E+02	87.26	4.94E+02	3.65E+01
	9	270.19	266 -	273	1.09E+02	61.02	5.48E+02	4.71E+01
	10	295.27	291 -	298	3.36E+02	68.76	5.64E+02	4.78E+01
	11	301.11	300 -	304	5.92E+01	40.71	2.98E+02	3.10E+01
	12	329.34	324 -	334	6.87E+01	65.67	5.37E+02	5.22E+01
	13	338.63	335 -	343	2.53E+02	59.85	3.94E+02	4.17E+01
	14	351.93	347 -	356	6.29E+02	72.20	3.85E+02	4.27E+01
	15	411.41	407 -	416	5.75E+01	53.74	3.79E+02	4.24E+01
	16	463.16	459 -	467	6.77E+01	46.22	2.85E+02	3.55E+01
	17	501.51	499 -	505	2.69E+01	33.85	1.82E+02	2.65E+01
	18	510.75	506 -	516	1.88E+02	57.25	3.40E+02	4.13E+01
	19	583.12	577 -	588	3.22E+02	61.87	3.16E+02	4.14E+01
	20	609.70	605 -	614	4.90E+02	58.22	2.01E+02	3.11E+01
	21	727.44	724 -	730	9.77E+01	33.43	1.31E+02	2.22E+01
M	22	768.50	764 -	776	4.44E+01	29.46	1.46E+02	1.99E+01
m	23	772.29	764 -	776	2.32E+01	32.37	1.57E+02	2.06E+01
	24	795.51	792 -	799	6.43E+01	29.19	9.74E+01	2.00E+01
	25	837.55	833 -	842	5.37E+01	34.04	1.35E+02	2.53E+01
	26	860.96	857 -	865	4.51E+01	34.30	1.54E+02	2.59E+01
	27	911.70	907 -	916	2.14E+02	43.66	1.49E+02	2.66E+01
	28	934.66	931 -	942	2.80E+01	32.74	1.20E+02	2.55E+01
	29	969.87	966 -	977	1.19E+02	52.31	2.66E+02	1.84E+01
M	30	987.14	983 -	1011	2.31E+01	18.87	4.00E+01	1.04E+01
m	31	994.34	983 -	1011	2.36E+01	19.80	4.00E+01	1.04E+01
	32	1033.78	1029 -	1039	2.81E+01	26.30	7.77E+01	1.98E+01
	33	1052.28	1048 -	1056	2.50E+01	27.74	1.02E+02	2.13E+01
M	34	1120.81	1115 -	1131	9.71E+01	29.90	8.40E+01	1.51E+01
m	35	1128.23	1115 -	1131	1.51E+01	21.77	8.40E+01	1.51E+01
	36	1134.18	1131 -	1137	2.05E+01	22.48	7.70E+01	1.69E+01
	37	1153.65	1149 -	1158	3.41E+01	33.35	1.38E+02	2.57E+01
M	38	1237.85	1231 -	1251	3.77E+01	26.58	1.02E+02	1.66E+01
m	39	1244.27	1231 -	1251	2.10E+01	24.31	7.89E+01	1.46E+01
	40	1291.32	1289 -	1293	1.76E+01	14.60	3.08E+01	9.83E+00
	41	1381.44	1373 -	1394	6.35E+01	35.37	7.49E+01	2.60E+01
M	42	1455.30	1454 -	1467	8.12E+00	7.87	2.09E+01	7.51E+00
m	43	1461.42	1454 -	1467	8.56E+02	59.46	2.53E+01	8.27E+00
M	44	1506.62	1504 -	1512	1.06E+01	8.25	1.12E+01	5.50E+00
m	45	1509.70	1504 -	1512	1.14E+01	11.53	1.33E+01	6.00E+00
	46	1587.19	1583 -	1590	2.40E+01	13.86	1.60E+01	8.05E+00
	47	1593.95	1591 -	1598	2.66E+01	13.27	1.07E+01	6.85E+00
M	48	1621.45	1618 -	1634	2.26E+01	9.85	1.22E+00	1.82E+00
m	49	1631.16	1618 -	1634	1.75E+01	11.14	6.26E+00	4.11E+00
M	50	1728.47	1725 -	1736	1.65E+01	9.54	3.58E+00	3.11E+00
m	51	1734.24	1725 -	1736	6.20E+00	7.40	1.37E+01	6.09E+00
M	52	1761.49	1760 -	1771	9.55E+00	4.24	8.89E-02	4.90E-01
m	53	1765.31	1760 -	1771	8.56E+01	19.60	7.87E+00	4.61E+00

Analysis Report for 1510084-10

CP0604S21-22

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	54	1823.42	1819 - 1826	7.00E+00	5.29	0.00E+00	0.00E+00
	55	1848.33	1844 - 1851	1.38E+01	13.11	1.83E+01	8.88E+00
M	56	2101.63	2100 - 2108	7.44E+00	3.61	1.36E-01	6.07E-01
m	57	2105.88	2100 - 2108	1.39E+01	9.39	4.50E+00	3.49E+00
	58	2118.53	2115 - 2121	1.21E+01	8.26	3.79E+00	3.66E+00
M	59	2203.67	2200 - 2210	2.76E+01	11.58	3.05E+00	2.87E+00
m	60	2208.38	2200 - 2210	7.86E+00	9.49	1.07E+01	5.37E+00
	61	2281.95	2279 - 2284	5.00E+00	7.07	6.00E+00	4.50E+00
	62	2325.99	2322 - 2328	6.77E+00	8.99	8.45E+00	6.02E+00
	63	2395.86	2392 - 2398	1.10E+01	6.63	0.00E+00	0.00E+00
	64	2448.99	2442 - 2453	1.07E+01	13.56	1.66E+01	9.77E+00
	65	2461.83	2459 - 2464	6.88E+00	6.40	2.25E+00	3.02E+00
	66	2615.35	2610 - 2620	1.26E+02	22.45	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 : 11/4/2015 11:40:41AM

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	63.02	60 - 66	63.37	1.97E+02	107.21	1.95E+03	TH-230 TH-234
	2	76.25	71 - 82	76.59	1.38E+03	175.99	3.16E+03	.....
m	3	89.53	82 - 101	89.86	1.74E+02	68.59	8.35E+02	.....
m	4	92.77	82 - 101	93.10	3.18E+02	70.09	7.85E+02	GA-67
	5	186.10	183 - 189	186.41	2.71E+02	75.20	8.28E+02	RA-226
M	6	235.78	234 - 247	236.06	6.46E+01	31.94	2.55E+02	NB-95M TH-227
m	7	238.83	234 - 247	239.11	1.02E+03	77.49	3.85E+02	PB-212
m	8	242.01	234 - 247	242.29	3.01E+02	87.26	4.94E+02	.....
	9	270.19	266 - 273	270.47	1.09E+02	61.02	5.48E+02	.....
	10	295.27	291 - 298	295.54	3.36E+02	68.76	5.64E+02	PB-214

Analysis Report for 1510084-10

CP0604S21-22

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
11	301.11	300 -	304	301.38	5.92E+01	40.71	2.98E+02	GA-67
12	329.34	324 -	334	329.60	6.87E+01	65.67	5.37E+02	LA-140
13	338.63	335 -	343	338.89	2.53E+02	59.85	3.94E+02	AC-228
14	351.93	347 -	356	352.18	6.29E+02	72.20	3.85E+02	PB-214
15	411.41	407 -	416	411.64	5.75E+01	53.74	3.79E+02	HO-166M
16	463.16	459 -	467	463.37	6.77E+01	46.22	2.85E+02	SB-125
17	501.51	499 -	505	501.71	2.69E+01	33.85	1.82E+02	.....
18	510.75	506 -	516	510.95	1.88E+02	57.25	3.40E+02	.....
19	583.12	577 -	588	583.29	3.22E+02	61.87	3.16E+02	TL-208
20	609.70	605 -	614	609.86	4.90E+02	58.22	2.01E+02	BI-214
21	727.44	724 -	730	727.56	9.77E+01	33.43	1.31E+02	BI-212
M 22	768.50	764 -	776	768.60	4.44E+01	29.46	1.46E+02	.....
m 23	772.29	764 -	776	772.40	2.32E+01	32.37	1.57E+02	.....
24	795.51	792 -	799	795.60	6.43E+01	29.19	9.74E+01	CS-134
25	837.55	833 -	842	837.63	5.37E+01	34.04	1.35E+02	.....
26	860.96	857 -	865	861.03	4.51E+01	34.30	1.54E+02	TL-208
27	911.70	907 -	916	911.76	2.14E+02	43.66	1.49E+02	LU-172 AC-228
28	934.66	931 -	942	934.71	2.80E+01	32.74	1.20E+02	.....
29	969.87	966 -	977	969.90	1.19E+02	52.31	2.66E+02	AC-228
M 30	987.14	983 -	1011	987.17	2.31E+01	18.87	4.00E+01	.....
m 31	994.34	983 -	1011	994.37	2.36E+01	19.80	4.00E+01	.....
32	1033.78	1029 -	1039	1033.79	2.81E+01	26.30	7.77E+01	.....
33	1052.28	1048 -	1056	1052.29	2.50E+01	27.74	1.02E+02	.....
M 34	1120.81	1115 -	1131	1120.79	9.71E+01	29.90	8.40E+01	SC-46 TA-182 BI-214
m 35	1128.23	1115 -	1131	1128.21	1.51E+01	21.77	8.40E+01	.....
36	1134.18	1131 -	1137	1134.15	2.05E+01	22.48	7.70E+01	.....
37	1153.65	1149 -	1158	1153.62	3.41E+01	33.35	1.38E+02	EU-156
M 38	1237.85	1231 -	1251	1237.79	3.77E+01	26.58	1.02E+02	CO-56
m 39	1244.27	1231 -	1251	1244.21	2.10E+01	24.31	7.89E+01	.....
40	1291.32	1289 -	1293	1291.24	1.76E+01	14.60	3.08E+01	FE-59
41	1381.44	1373 -	1394	1381.33	6.35E+01	35.37	7.49E+01	.....
M 42	1455.30	1454 -	1467	1455.16	8.12E+00	7.87	2.09E+01	.....
m 43	1461.42	1454 -	1467	1461.28	8.56E+02	59.46	2.53E+01	K-40
M 44	1506.62	1504 -	1512	1506.46	1.06E+01	8.25	1.12E+01	.....
m 45	1509.70	1504 -	1512	1509.54	1.14E+01	11.53	1.33E+01	.....
46	1587.19	1583 -	1590	1587.00	2.40E+01	13.86	1.60E+01	.....
47	1593.95	1591 -	1598	1593.76	2.66E+01	13.27	1.07E+01	.....
M 48	1621.45	1618 -	1634	1621.25	2.26E+01	9.85	1.22E+00	BI-212
m 49	1631.16	1618 -	1634	1630.95	1.75E+01	11.14	6.26E+00	.....
M 50	1728.47	1725 -	1736	1728.23	1.65E+01	9.54	3.58E+00	.....
m 51	1734.24	1725 -	1736	1734.00	6.20E+00	7.40	1.37E+01	.....
M 52	1761.49	1760 -	1771	1761.23	9.55E+00	4.24	8.89E-02	.....
m 53	1765.31	1760 -	1771	1765.05	8.56E+01	19.60	7.87E+00	BI-214
54	1823.42	1819 -	1826	1823.14	7.00E+00	5.29	0.00E+00	.....
55	1848.33	1844 -	1851	1848.04	1.38E+01	13.11	1.83E+01	.....
M 56	2101.63	2100 -	2108	2101.24	7.44E+00	3.61	1.36E-01	.....
m 57	2105.88	2100 -	2108	2105.49	1.39E+01	9.39	4.50E+00	.....
58	2118.53	2115 -	2121	2118.14	1.21E+01	8.26	3.79E+00	.....
M 59	2203.67	2200 -	2210	2203.25	2.76E+01	11.58	3.05E+00	BI-214
m 60	2208.38	2200 -	2210	2207.95	7.86E+00	9.49	1.07E+01	.....
61	2281.95	2279 -	2284	2281.50	5.00E+00	7.07	6.00E+00	.....

Analysis Report for 1510084-10

CP0604S21-22

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
62	2325.99	2322 -	2328	2325.52	6.77E+00	8.99	8.45E+00	.....
63	2395.86	2392 -	2398	2395.36	1.10E+01	6.63	0.00E+00	.....
64	2448.99	2442 -	2453	2448.48	1.07E+01	13.56	1.66E+01	.....
65	2461.83	2459 -	2464	2461.31	6.88E+00	6.40	2.25E+00	.....
66	2615.35	2610 -	2620	2614.76	1.26E+02	22.45	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 : 11/4/2015 11:40:41AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	63.02	1.97E+02	107.21	2.48E-02	1.90E-03
2	76.25	1.38E+03	175.99	2.77E-02	2.34E-03
m 3	89.53	1.74E+02	68.59	2.85E-02	2.71E-03
m 4	92.77	3.18E+02	70.09	2.86E-02	2.65E-03
5	186.10	2.71E+02	75.20	2.24E-02	2.03E-03
M 6	235.78	6.46E+01	31.94	1.94E-02	1.66E-03
m 7	238.83	1.02E+03	77.49	1.92E-02	1.64E-03
m 8	242.01	3.01E+02	87.26	1.90E-02	1.61E-03
9	270.19	1.09E+02	61.02	1.77E-02	1.41E-03
10	295.27	3.36E+02	68.76	1.67E-02	1.31E-03
11	301.11	5.92E+01	40.71	1.65E-02	1.30E-03
12	329.34	6.87E+01	65.67	1.55E-02	1.24E-03
13	338.63	2.53E+02	59.85	1.52E-02	1.22E-03
14	351.93	6.29E+02	72.20	1.48E-02	1.19E-03
15	411.41	5.75E+01	53.74	1.32E-02	1.09E-03
16	463.16	6.77E+01	46.22	1.21E-02	1.04E-03
17	501.51	2.69E+01	33.85	1.14E-02	1.00E-03
18	510.75	1.88E+02	57.25	1.12E-02	9.91E-04
19	583.12	3.22E+02	61.87	1.02E-02	9.16E-04
20	609.70	4.90E+02	58.22	9.82E-03	8.88E-04
21	727.44	9.77E+01	33.43	8.55E-03	7.75E-04
M 22	768.50	4.44E+01	29.46	8.19E-03	7.38E-04
m 23	772.29	2.32E+01	32.37	8.16E-03	7.35E-04
24	795.51	6.43E+01	29.19	7.97E-03	7.14E-04
25	837.55	5.37E+01	34.04	7.65E-03	6.77E-04

Analysis Report for 1510084-10

CP0604S21-22

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	26	860.96	4.51E+01	34.30	7.48E-03	6.56E-04
	27	911.70	2.14E+02	43.66	7.14E-03	6.15E-04
	28	934.66	2.80E+01	32.74	7.00E-03	6.03E-04
	29	969.87	1.19E+02	52.31	6.80E-03	5.85E-04
M	30	987.14	2.31E+01	18.87	6.71E-03	5.76E-04
m	31	994.34	2.36E+01	19.80	6.67E-03	5.72E-04
	32	1033.78	2.81E+01	26.30	6.46E-03	5.52E-04
	33	1052.28	2.50E+01	27.74	6.37E-03	5.42E-04
M	34	1120.81	9.71E+01	29.90	6.06E-03	5.06E-04
m	35	1128.23	1.51E+01	21.77	6.03E-03	5.03E-04
	36	1134.18	2.05E+01	22.48	6.01E-03	4.99E-04
	37	1153.65	3.41E+01	33.35	5.93E-03	4.89E-04
M	38	1237.85	3.77E+01	26.58	5.62E-03	4.68E-04
m	39	1244.27	2.10E+01	24.31	5.59E-03	4.67E-04
	40	1291.32	1.76E+01	14.60	5.44E-03	4.58E-04
	41	1381.44	6.35E+01	35.37	5.17E-03	4.39E-04
M	42	1455.30	8.12E+00	7.87	4.98E-03	4.21E-04
m	43	1461.42	8.56E+02	59.46	4.97E-03	4.19E-04
M	44	1506.62	1.06E+01	8.25	4.86E-03	4.08E-04
m	45	1509.70	1.14E+01	11.53	4.86E-03	4.07E-04
	46	1587.19	2.40E+01	13.86	4.70E-03	3.88E-04
	47	1593.95	2.66E+01	13.27	4.68E-03	3.86E-04
M	48	1621.45	2.26E+01	9.85	4.63E-03	3.79E-04
m	49	1631.16	1.75E+01	11.14	4.61E-03	3.77E-04
M	50	1728.47	1.65E+01	9.54	4.45E-03	3.53E-04
m	51	1734.24	6.20E+00	7.40	4.44E-03	3.51E-04
M	52	1761.49	9.55E+00	4.24	4.40E-03	3.44E-04
m	53	1765.31	8.56E+01	19.60	4.39E-03	3.43E-04
	54	1823.42	7.00E+00	5.29	4.31E-03	3.29E-04
	55	1848.33	1.38E+01	13.11	4.28E-03	3.26E-04
M	56	2101.63	7.44E+00	3.61	4.02E-03	3.26E-04
m	57	2105.88	1.39E+01	9.39	4.02E-03	3.26E-04
	58	2118.53	1.21E+01	8.26	4.01E-03	3.26E-04
M	59	2203.67	2.76E+01	11.58	3.95E-03	3.26E-04
m	60	2208.38	7.86E+00	9.49	3.95E-03	3.26E-04
	61	2281.95	5.00E+00	7.07	3.90E-03	3.26E-04
	62	2325.99	6.77E+00	8.99	3.88E-03	3.26E-04
	63	2395.86	1.10E+01	6.63	3.85E-03	3.26E-04
	64	2448.99	1.07E+01	13.56	3.83E-03	3.26E-04
	65	2461.83	6.88E+00	6.40	3.83E-03	3.26E-04
	66	2615.35	1.26E+02	22.45	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 1510084-10

CP0604S21-22

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/4/2015 11:40:41AM

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	63.02	1.97E+02	107.21	7.80E+01	1.33E+01	1.19E+02	1.08E+02
	2	76.25	1.38E+03	175.99	9.75E+00	8.28E+00	1.37E+03	1.76E+02
m	3	89.53	1.74E+02	68.59			1.74E+02	6.86E+01
m	4	92.77	3.18E+02	70.09	1.34E+02	9.83E+00	1.84E+02	7.08E+01
	5	186.10	2.71E+02	75.20	6.41E+01	7.38E+00	2.07E+02	7.56E+01
M	6	235.78	6.46E+01	31.94			6.46E+01	3.19E+01
m	7	238.83	1.02E+03	77.49	2.34E+01	6.34E+00	9.97E+02	7.77E+01
m	8	242.01	3.01E+02	87.26			3.01E+02	8.73E+01
	9	270.19	1.09E+02	61.02			1.09E+02	6.10E+01
	10	295.27	3.36E+02	68.76	4.17E+00	5.50E+00	3.32E+02	6.90E+01
	11	301.11	5.92E+01	40.71			5.92E+01	4.07E+01
	12	329.34	6.87E+01	65.67			6.87E+01	6.57E+01
	13	338.63	2.53E+02	59.85	2.22E-01	4.54E+00	2.53E+02	6.00E+01
	14	351.93	6.29E+02	72.20	8.83E+00	4.91E+00	6.21E+02	7.24E+01
	15	411.41	5.75E+01	53.74			5.75E+01	5.37E+01
	16	463.16	6.77E+01	46.22			6.77E+01	4.62E+01
	17	501.51	2.69E+01	33.85			2.69E+01	3.38E+01
	18	510.75	1.88E+02	57.25	8.12E+01	5.49E+00	1.07E+02	5.75E+01
	19	583.12	3.22E+02	61.87	6.34E+00	3.74E+00	3.16E+02	6.20E+01
	20	609.70	4.90E+02	58.22	5.20E+00	3.69E+00	4.85E+02	5.83E+01
	21	727.44	9.77E+01	33.43			9.77E+01	3.34E+01
M	22	768.50	4.44E+01	29.46			4.44E+01	2.95E+01
m	23	772.29	2.32E+01	32.37			2.32E+01	3.24E+01
	24	795.51	6.43E+01	29.19			6.43E+01	2.92E+01
	25	837.55	5.37E+01	34.04			5.37E+01	3.40E+01
	26	860.96	4.51E+01	34.30			4.51E+01	3.43E+01
	27	911.70	2.14E+02	43.66	3.28E+00	2.53E+00	2.11E+02	4.37E+01
	28	934.66	2.80E+01	32.74			2.80E+01	3.27E+01
	29	969.87	1.19E+02	52.31			1.19E+02	5.23E+01
M	30	987.14	2.31E+01	18.87			2.31E+01	1.89E+01
m	31	994.34	2.36E+01	19.80			2.36E+01	1.98E+01
	32	1033.78	2.81E+01	26.30			2.81E+01	2.63E+01
	33	1052.28	2.50E+01	27.74			2.50E+01	2.77E+01
M	34	1120.81	9.71E+01	29.90	2.28E+00	2.55E+00	9.48E+01	3.00E+01
m	35	1128.23	1.51E+01	21.77			1.51E+01	2.18E+01
	36	1134.18	2.05E+01	22.48			2.05E+01	2.25E+01
	37	1153.65	3.41E+01	33.35			3.41E+01	3.33E+01
M	38	1237.85	3.77E+01	26.58			3.77E+01	2.66E+01
m	39	1244.27	2.10E+01	24.31			2.10E+01	2.43E+01
	40	1291.32	1.76E+01	14.60			1.76E+01	1.46E+01
	41	1381.44	6.35E+01	35.37			6.35E+01	3.54E+01
M	42	1455.30	8.12E+00	7.87			8.12E+00	7.87E+00
m	43	1461.42	8.56E+02	59.46	6.46E+00	2.33E+00	8.50E+02	5.95E+01
M	44	1506.62	1.06E+01	8.25			1.06E+01	8.25E+00

Analysis Report for 1510084-10

CP0604S21-22

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	45	1509.70	1.14E+01	11.53			1.14E+01	1.15E+01
	46	1587.19	2.40E+01	13.86			2.40E+01	1.39E+01
	47	1593.95	2.66E+01	13.27			2.66E+01	1.33E+01
M	48	1621.45	2.26E+01	9.85			2.26E+01	9.85E+00
m	49	1631.16	1.75E+01	11.14			1.75E+01	1.11E+01
M	50	1728.47	1.65E+01	9.54			1.65E+01	9.54E+00
m	51	1734.24	6.20E+00	7.40			6.20E+00	7.40E+00
M	52	1761.49	9.55E+00	4.24			9.55E+00	4.24E+00
m	53	1765.31	8.56E+01	19.60			8.56E+01	1.96E+01
	54	1823.42	7.00E+00	5.29			7.00E+00	5.29E+00
	55	1848.33	1.38E+01	13.11			1.38E+01	1.31E+01
M	56	2101.63	7.44E+00	3.61			7.44E+00	3.61E+00
m	57	2105.88	1.39E+01	9.39			1.39E+01	9.39E+00
	58	2118.53	1.21E+01	8.26			1.21E+01	8.26E+00
M	59	2203.67	2.76E+01	11.58			2.76E+01	1.16E+01
m	60	2208.38	7.86E+00	9.49			7.86E+00	9.49E+00
	61	2281.95	5.00E+00	7.07			5.00E+00	7.07E+00
	62	2325.99	6.77E+00	8.99			6.77E+00	8.99E+00
	63	2395.86	1.10E+01	6.63			1.10E+01	6.63E+00
	64	2448.99	1.07E+01	13.56			1.07E+01	1.36E+01
	65	2461.83	6.88E+00	6.40			6.88E+00	6.40E+00
	66	2615.35	1.26E+02	22.45	3.47E+00	1.48E+00	1.23E+02	2.25E+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 : 11/4/2015 11:40:41AM
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	63.02	1.97E+02	107.21	7.80E+01	1.33E+01	1.19E+02	1.08E+02
	2	76.25	1.38E+03	175.99	9.75E+00	8.28E+00	1.37E+03	1.76E+02
m	3	89.53	1.74E+02	68.59			1.74E+02	6.86E+01
m	4	92.77	3.18E+02	70.09	1.34E+02	9.83E+00	1.84E+02	7.08E+01
	5	186.10	2.71E+02	75.20	6.41E+01	7.38E+00	2.07E+02	7.56E+01
M	6	235.78	6.46E+01	31.94			6.46E+01	3.19E+01

: 00681

Analysis Report for 1510084-10

CP0604S21-22

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	7	238.83	1.02E+03	77.49	2.34E+01	6.34E+00	9.97E+02	7.77E+01
m	8	242.01	3.01E+02	87.26			3.01E+02	8.73E+01
	9	270.19	1.09E+02	61.02			1.09E+02	6.10E+01
	10	295.27	3.36E+02	68.76	4.17E+00	5.50E+00	3.32E+02	6.90E+01
	11	301.11	5.92E+01	40.71			5.92E+01	4.07E+01
	12	329.34	6.87E+01	65.67			6.87E+01	6.57E+01
	13	338.63	2.53E+02	59.85	2.22E-01	4.54E+00	2.53E+02	6.00E+01
	14	351.93	6.29E+02	72.20	8.83E+00	4.91E+00	6.21E+02	7.24E+01
	15	411.41	5.75E+01	53.74			5.75E+01	5.37E+01
	16	463.16	6.77E+01	46.22			6.77E+01	4.62E+01
	17	501.51	2.69E+01	33.85			2.69E+01	3.38E+01
	18	510.75	1.88E+02	57.25	8.12E+01	5.49E+00	1.07E+02	5.75E+01
	19	583.12	3.22E+02	61.87	6.34E+00	3.74E+00	3.16E+02	6.20E+01
	20	609.70	4.90E+02	58.22	5.20E+00	3.69E+00	4.85E+02	5.83E+01
	21	727.44	9.77E+01	33.43			9.77E+01	3.34E+01
M	22	768.50	4.44E+01	29.46			4.44E+01	2.95E+01
m	23	772.29	2.32E+01	32.37			2.32E+01	3.24E+01
	24	795.51	6.43E+01	29.19			6.43E+01	2.92E+01
	25	837.55	5.37E+01	34.04			5.37E+01	3.40E+01
	26	860.96	4.51E+01	34.30			4.51E+01	3.43E+01
	27	911.70	2.14E+02	43.66	3.28E+00	2.53E+00	2.11E+02	4.37E+01
	28	934.66	2.80E+01	32.74			2.80E+01	3.27E+01
	29	969.87	1.19E+02	52.31			1.19E+02	5.23E+01
M	30	987.14	2.31E+01	18.87			2.31E+01	1.89E+01
m	31	994.34	2.36E+01	19.80			2.36E+01	1.98E+01
	32	1033.78	2.81E+01	26.30			2.81E+01	2.63E+01
	33	1052.28	2.50E+01	27.74			2.50E+01	2.77E+01
M	34	1120.81	9.71E+01	29.90	2.28E+00	2.55E+00	9.48E+01	3.00E+01
m	35	1128.23	1.51E+01	21.77			1.51E+01	2.18E+01
	36	1134.18	2.05E+01	22.48			2.05E+01	2.25E+01
	37	1153.65	3.41E+01	33.35			3.41E+01	3.33E+01
M	38	1237.85	3.77E+01	26.58			3.77E+01	2.66E+01
m	39	1244.27	2.10E+01	24.31			2.10E+01	2.43E+01
	40	1291.32	1.76E+01	14.60			1.76E+01	1.46E+01
	41	1381.44	6.35E+01	35.37			6.35E+01	3.54E+01
M	42	1455.30	8.12E+00	7.87			8.12E+00	7.87E+00
m	43	1461.42	8.56E+02	59.46	6.46E+00	2.33E+00	8.50E+02	5.95E+01
M	44	1506.62	1.06E+01	8.25			1.06E+01	8.25E+00
m	45	1509.70	1.14E+01	11.53			1.14E+01	1.15E+01
	46	1587.19	2.40E+01	13.86			2.40E+01	1.39E+01
	47	1593.95	2.66E+01	13.27			2.66E+01	1.33E+01
M	48	1621.45	2.26E+01	9.85			2.26E+01	9.85E+00
m	49	1631.16	1.75E+01	11.14			1.75E+01	1.11E+01
M	50	1728.47	1.65E+01	9.54			1.65E+01	9.54E+00
m	51	1734.24	6.20E+00	7.40			6.20E+00	7.40E+00
M	52	1761.49	9.55E+00	4.24			9.55E+00	4.24E+00
m	53	1765.31	8.56E+01	19.60			8.56E+01	1.96E+01
	54	1823.42	7.00E+00	5.29			7.00E+00	5.29E+00
	55	1848.33	1.38E+01	13.11			1.38E+01	1.31E+01
M	56	2101.63	7.44E+00	3.61			7.44E+00	3.61E+00
m	57	2105.88	1.39E+01	9.39			1.39E+01	9.39E+00
	58	2118.53	1.21E+01	8.26			1.21E+01	8.26E+00
M	59	2203.67	2.76E+01	11.58			2.76E+01	1.16E+01
m	60	2208.38	7.86E+00	9.49			7.86E+00	9.49E+00

Analysis Report for 1510084-10

CP0604S21-22

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
61	2281.95	5.00E+00	7.07			5.00E+00	7.07E+00
62	2325.99	6.77E+00	8.99			6.77E+00	8.99E+00
63	2395.86	1.10E+01	6.63			1.10E+01	6.63E+00
64	2448.99	1.07E+01	13.56			1.07E+01	1.36E+01
65	2461.83	6.88E+00	6.40			6.88E+00	6.40E+00
66	2615.35	1.26E+02	22.45	3.47E+00	1.48E+00	1.23E+02	2.25E+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	0.942	1460.81 *	10.67	2.11E+01	2.35E+00
GA-67	0.634	93.31 *	35.70	6.04E+01	2.17E+02
		208.95	2.24		
		300.22 *	16.00	7.51E+01	2.74E+02
NB-95M	0.770	235.69 *	25.00	2.61E+01	1.31E+01
TL-208	0.959	583.14 *	30.22	1.35E+00	2.92E-01
		860.37 *	4.48	1.77E+00	1.36E+00
		2614.66 *	35.85	1.18E+00	2.40E-01
BI-212	0.970	727.17 *	11.80	1.27E+00	4.51E-01
		1620.62 *	2.75	2.34E+00	1.03E+00
PB-212	0.889	238.63 *	44.60	1.53E+00	1.77E-01
		300.09	3.41		
BI-214	0.956	609.31 *	46.30	1.40E+00	2.11E-01
		1120.29 *	15.10	1.36E+00	4.46E-01
		1764.49 *	15.80	1.62E+00	3.92E-01
		2204.22 *	4.98	1.84E+00	7.89E-01
PB-214	1.000	295.21 *	19.19	1.36E+00	3.03E-01
		351.92 *	37.19	1.49E+00	2.11E-01
RA-226	0.998	186.21 *	3.28	3.70E+00	6.92E+00
AC-228	0.939	338.32 *	11.40	1.92E+00	4.82E-01
		911.07 *	27.70	1.40E+00	3.15E-01
		969.11 *	16.60	1.39E+00	6.21E-01
TH-234	0.989	63.29 *	3.80	1.65E+00	1.51E+00

Analysis Report for 1510084-10

CP0604S21-22

* = 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 : 11/4/2015 11:40:41AM

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	76.25	3.81735E-01		
m	3	89.53	4.84117E-02		
m	8	242.01	8.34833E-02		
	9	270.19	3.02564E-02		
	12	329.34	1.90900E-02		
	15	411.41	1.59717E-02		
	16	463.16	1.88056E-02		
	17	501.51	7.46469E-03		
	18	510.75	2.96762E-02		
M	22	768.50	1.23274E-02	Sum	
m	23	772.29	6.43828E-03		
	24	795.51	1.78564E-02	Sum	
	25	837.55	1.49082E-02		
	28	934.66	7.77778E-03	Sum	
M	30	987.14	6.42503E-03		
m	31	994.34	6.56622E-03		
	32	1033.78	7.81924E-03	Sum	
	33	1052.28	6.95541E-03		
m	35	1128.23	4.20146E-03		
	36	1134.18	5.69444E-03		
	37	1153.65	9.48490E-03	Tol.	EU-156
M	38	1237.85	1.04680E-02	Tol.	CO-56
m	39	1244.27	5.82344E-03		
	40	1291.32	4.88636E-03	Tol.	FE-59
	41	1381.44	1.76499E-02		
M	42	1455.30	2.25680E-03	Sum	
M	44	1506.62	2.95808E-03		
m	45	1509.70	3.17311E-03		
	46	1587.19	6.66667E-03		
	47	1593.95	7.40017E-03		
	49	1631.16	4.86038E-03	D-Esc	
M	50	1728.47	4.58700E-03		
m	51	1734.24	1.72275E-03		
M	52	1761.49	2.65254E-03		

: 00684

Analysis Report for 1510084-10
CP0604S21-22

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	54	1823.42	1.94444E-03	37.80	Sum
	55	1848.33	3.84662E-03	47.35	Sum
M	56	2101.63	2.06753E-03	24.22	
m	57	2105.88	3.87418E-03	33.68	
	58	2118.53	3.36310E-03	34.12	
m	60	2208.38	2.18286E-03	60.36	
	61	2281.95	1.38889E-03	70.71	
	62	2325.99	1.88131E-03	66.34	
	63	2395.86	3.05556E-03	30.15	
	64	2448.99	2.97515E-03	63.32	
	65	2461.83	1.90972E-03	46.57	

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	0.94	1460.81 *	10.67	2.11E+01	2.35E+00
GA-67	0.63	93.31 *	35.70	6.04E+01	2.17E+02
		208.95	2.24		
		300.22 *	16.00	7.51E+01	2.74E+02
NB-95M	0.77	235.69 *	25.00	2.61E+01	1.31E+01
TL-208	0.95	583.14 *	30.22	1.35E+00	2.92E-01
		860.37 *	4.48	1.77E+00	1.36E+00
		2614.66 *	35.85	1.18E+00	2.40E-01
BI-212	0.97	727.17 *	11.80	1.27E+00	4.51E-01
		1620.62 *	2.75	2.34E+00	1.03E+00
PB-212	0.88	238.63 *	44.60	1.53E+00	1.77E-01
		300.09	3.41		
BI-214	0.95	609.31 *	46.30	1.40E+00	2.11E-01
		1120.29 *	15.10	1.36E+00	4.46E-01
		1764.49 *	15.80	1.62E+00	3.92E-01
		2204.22 *	4.98	1.84E+00	7.89E-01
PB-214	1.00	295.21 *	19.19	1.36E+00	3.03E-01

Analysis Report for 1510084-10

CP0604S21-22

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	1.00	351.92 *	37.19	1.49E+00	2.11E-01
RA-226	0.99	186.21 *	3.28	3.70E+00	6.92E+00
AC-228	0.93	338.32 *	11.40	1.92E+00	4.82E-01
		911.07 *	27.70	1.40E+00	3.15E-01
		969.11 *	16.60	1.39E+00	6.21E-01
TH-234	0.98	63.29 *	3.80	1.65E+00	1.51E+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	0.942	2.11E+01	2.35E+00	
GA-67	0.634	6.55E+01	2.30E+02	
NB-95M	0.770	2.61E+01	1.31E+01	
TL-208	0.959	1.26E+00	1.84E-01	
BI-212	0.970	1.44E+00	4.13E-01	
PB-212	0.889	1.53E+00	1.77E-01	
BI-214	0.956	1.46E+00	1.68E-01	
PB-214	1.000	1.45E+00	1.73E-01	
RA-226	0.998	3.70E+00	6.92E+00	
AC-228	0.939	1.53E+00	2.43E-01	
TH-234	0.989	1.65E+00	1.51E+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 1510084-10
 CP0604S21-22

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 11:40:41AM
 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	76.25	3.81735E-01		
m	3	89.53	4.84117E-02		
m	8	242.01	8.34833E-02		
	9	270.19	3.02564E-02		
	12	329.34	1.90900E-02	Sum	
	15	411.41	1.59717E-02	Tol.	HO-166M
	16	463.16	1.88056E-02	Tol.	SB-125
	17	501.51	7.46469E-03		
	18	510.75	2.96762E-02		
M	22	768.50	1.23274E-02	Sum	
m	23	772.29	6.43828E-03		
	24	795.51	1.78564E-02	Sum	
	25	837.55	1.49082E-02		
	28	934.66	7.77778E-03	Sum	
M	30	987.14	6.42503E-03		
m	31	994.34	6.56622E-03		
	32	1033.78	7.81924E-03	Sum	
	33	1052.28	6.95541E-03		
m	35	1128.23	4.20146E-03		
	36	1134.18	5.69444E-03		
	37	1153.65	9.48490E-03	Tol.	EU-156
M	38	1237.85	1.04680E-02	Tol.	CO-56
m	39	1244.27	5.82344E-03		
	40	1291.32	4.88636E-03	Tol.	FE-59
	41	1381.44	1.76499E-02		
M	42	1455.30	2.25680E-03	Sum	
M	44	1506.62	2.95808E-03		
m	45	1509.70	3.17311E-03		
	46	1587.19	6.66667E-03		
	47	1593.95	7.40017E-03	D-Esc	
m	49	1631.16	4.86038E-03		
M	50	1728.47	4.58700E-03		
m	51	1734.24	1.72275E-03		
M	52	1761.49	2.65254E-03		
	54	1823.42	1.94444E-03	Sum	

Analysis Report for 1510084-10
CP0604S21-22

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	55	1848.33	3.84662E-03	47.35	Sum
M	56	2101.63	2.06753E-03	24.22	
m	57	2105.88	3.87418E-03	33.68	
	58	2118.53	3.36310E-03	34.12	
m	60	2208.38	2.18286E-03	60.36	
	61	2281.95	1.38889E-03	70.71	
	62	2325.99	1.88131E-03	66.34	
	63	2395.86	3.05556E-03	30.15	
	64	2448.99	2.97515E-03	63.32	
	65	2461.83	1.90972E-03	46.57	

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	5.18E-02	8.55E-01	8.55E-01
+	NA-22	1274.54	99.94	6.42E-03	8.37E-02	8.37E-02
+	NA-24	1368.53	99.99	-3.42E+10	1.33E+11	2.06E+11
		2754.09	99.86	1.23E+10		1.33E+11
+	AL-26	1808.65	99.76	2.32E-02	5.93E-02	5.93E-02
+	K-40	1460.81	* 10.67	2.11E+01	9.55E-01	9.55E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	2.23E-02	6.92E-02	6.92E-02
		78.34	96.00	2.81E-01		8.79E-02
+	SC-46	889.25	99.98	1.34E-02	8.67E-02	8.67E-02
		1120.51	99.99	3.00E-01		1.61E-01
+	V-48	983.52	99.98	-1.04E-02	1.95E-01	1.95E-01
		1312.10	97.50	-3.65E-03		2.26E-01
+	CR-51	320.08	9.83	-2.93E-02	9.30E-01	9.30E-01
+	MN-54	834.83	99.97	1.85E-03	8.29E-02	8.29E-02
+	CO-56	846.75	99.96	-3.74E-02	6.98E-02	7.56E-02
		1037.75	14.03	-5.91E-02		5.95E-01
		1238.25	67.00	9.50E-02		2.09E-01

Analysis Report for 1510084-10
CP0604S21-22

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CO-56	1771.40	15.51	8.31E-02	6.98E-02	4.41E-01
		2598.48	16.90	0.00E+00		6.98E-02
+	CO-57	122.06	85.51	1.20E-02	5.86E-02	5.86E-02
		136.48	10.60	2.73E-01		4.97E-01
+	CO-58	810.76	99.40	-7.78E-03	7.89E-02	7.89E-02
+	FE-59	1099.22	56.50	-7.20E-02	2.14E-01	2.14E-01
		1291.56	43.20	-8.87E-02		2.73E-01
+	CO-60	1173.22	100.00	-3.74E-02	6.83E-02	7.62E-02
		1332.49	100.00	-3.40E-02		6.83E-02
+	ZN-65	1115.52	50.75	1.08E-02	1.79E-01	1.79E-01
+	GA-67	93.31	* 35.70	6.04E+01	8.22E+01	1.13E+02
		208.95	2.24	1.53E+02		6.55E+02
		300.22	* 16.00	7.51E+01		8.22E+01
+	SE-75	121.11	16.70	-1.78E-01	9.46E-02	3.20E-01
		136.00	59.20	-5.05E-02		9.46E-02
		264.65	59.80	3.37E-02		9.49E-02
		279.53	25.20	1.13E-02		2.37E-01
		400.65	11.40	7.79E-02		5.04E-01
+	RB-82	776.52	13.00	-1.65E-01	1.10E+00	1.10E+00
+	RB-83	520.41	46.00	-7.66E-02	1.54E-01	1.54E-01
		529.64	30.30	-8.84E-02		2.28E-01
		552.65	16.40	1.14E-01		4.83E-01
+	KR-85	513.99	0.43	4.00E+01	2.16E+01	2.16E+01
+	SR-85	513.99	99.27	2.30E-01	1.24E-01	1.24E-01
+	Y-88	898.02	93.40	1.05E-02	5.79E-02	8.66E-02
		1836.01	99.38	8.89E-03		5.79E-02
+	NB-93M	16.57	9.43	-5.68E+01	7.07E+01	7.07E+01
+	NB-94	702.63	100.00	-1.42E-02	6.32E-02	7.19E-02
		871.10	100.00	-3.55E-03		6.32E-02
+	NB-95	765.79	99.81	1.62E-01	1.50E-01	1.50E-01
+	NB-95M	235.69	* 25.00	2.61E+01	6.06E+01	6.06E+01
+	ZR-95	724.18	43.70	-9.96E-04	1.55E-01	2.51E-01
		756.72	55.30	1.25E-02		1.55E-01
+	MO-99	181.06	6.20	1.89E+02	3.65E+02	5.76E+02
		739.58	12.80	3.42E+01		3.65E+02
		778.00	4.50	-8.42E+01		1.14E+03
+	RU-103	497.08	89.00	2.52E-03	1.08E-01	1.08E-01
+	RU-106	621.84	9.80	-3.52E-02	6.79E-01	6.79E-01
+	AG-108M	433.93	89.90	7.65E-03	6.68E-02	6.68E-02
		614.37	90.40	-1.90E-03		6.68E-02
		722.95	90.50	-6.96E-03		8.17E-02
+	CD-109	88.03	3.72	1.65E+00	1.89E+00	1.89E+00
+	AG-110M	657.75	93.14	6.35E-03	7.80E-02	7.80E-02
		677.61	10.53	-6.89E-02		6.81E-01
		706.67	16.46	7.72E-02		4.69E-01
		763.93	21.98	8.04E-03		3.60E-01
		884.67	71.63	2.29E-02		1.08E-01
		1384.27	23.94	-1.47E-01		3.22E-01

Analysis Report for 1510084-10

CP0604S21-22

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CD-113M	263.70	0.02	4.39E+01	2.06E+02	2.06E+02
+	SN-113	255.12	1.93	-7.90E-01	9.56E-02	2.92E+00
		391.69	64.90	-1.33E-02		9.56E-02
+	TE123M	159.00	84.10	4.44E-02	6.92E-02	6.92E-02
+	SB-124	602.71	97.87	1.66E-02	8.57E-02	8.57E-02
		645.85	7.26	-3.91E-01		1.08E+00
		722.78	11.10	-7.66E-02		8.98E-01
		1691.02	49.00	4.60E-02		1.46E-01
+	I-125	35.49	6.49	1.08E+00	2.87E+00	2.87E+00
+	SB-125	176.33	6.89	1.90E-01	1.95E-01	7.49E-01
		427.89	29.33	-7.29E-03		1.95E-01
		463.38	10.35	4.17E-01		6.82E-01
		600.56	17.80	-1.48E-01		3.49E-01
		635.90	11.32	-2.73E-01		5.48E-01
+	SB-126	414.70	83.30	1.28E-02	2.97E-01	3.10E-01
		666.33	99.60	4.37E-02		2.97E-01
		695.00	99.60	1.40E-01		3.21E-01
		720.50	53.80	-1.93E-02		5.58E-01
+	SN-126	87.57	37.00	1.60E-01	1.83E-01	1.83E-01
+	SB-127	473.00	25.00	-4.67E-01	2.10E+01	2.74E+01
		685.20	35.70	7.39E+00		2.10E+01
		783.80	14.70	3.61E+01		5.81E+01
+	I-129	29.78	57.00	6.64E-02	4.34E-01	4.34E-01
		33.60	13.20	-1.55E-01		1.23E+00
		39.58	7.52	-4.89E-01		1.38E+00
+	I-131	284.30	6.05	-3.13E+00	6.10E-01	7.73E+00
		364.48	81.20	3.25E-01		6.10E-01
		636.97	7.26	-4.10E+00		7.90E+00
		722.89	1.80	-3.31E+00		3.88E+01
+	TE-132	49.72	13.10	-3.17E+02	1.51E+01	1.41E+02
		228.16	88.00	-2.32E+00		1.51E+01
+	BA-133	81.00	33.00	-1.15E+00	8.01E-02	1.75E-01
		302.84	17.80	4.12E-03		2.99E-01
		356.01	60.00	1.05E-04		8.01E-02
+	I-133	529.87	86.30	-2.83E+07	7.30E+07	7.30E+07
+	XE-133	81.00	38.00	-3.13E+01	4.75E+00	4.75E+00
+	CS-134	563.23	8.38	-8.72E-02	7.16E-02	7.40E-01
		569.32	15.43	6.74E-02		4.13E-01
		604.70	97.60	6.28E-03		7.16E-02
		795.84	85.40	1.08E-01		1.01E-01
		801.93	8.73	2.41E-02		7.07E-01
+	CS-135	268.24	16.00	3.30E-01	3.65E-01	3.65E-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	8.83E-01	2.59E-01	2.64E+00
		163.89	4.61	1.93E+00		4.17E+00
		176.55	13.56	3.75E-01		1.47E+00
		273.65	12.66	-6.00E-01		1.64E+00

Analysis Report for 1510084-10
 CP0604S21-22

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-136	340.57	48.50	9.48E-01	2.59E-01	5.73E-01
		818.50	99.70	6.35E-02		2.59E-01
		1048.07	79.60	-3.62E-02		3.56E-01
		1235.34	19.70	6.94E-01		2.19E+00
+	CS-137	661.65	85.12	-2.42E-02	7.95E-02	7.95E-02
+	LA-138	788.74	34.00	6.49E-02	9.10E-02	1.95E-01
		1435.80	66.00	3.37E-02		9.10E-02
+	CE-139	165.85	80.35	2.84E-02	6.91E-02	6.91E-02
+	BA-140	162.64	6.70	-1.17E+00	9.35E-01	2.93E+00
		304.84	4.50	9.47E-01		4.42E+00
		423.70	3.20	3.54E+00		7.82E+00
		437.55	2.00	3.65E+00		1.24E+01
		537.32	25.00	-5.03E-01		9.35E-01
+	LA-140	328.77	20.50	6.45E-01	3.14E-01	1.11E+00
		487.03	45.50	1.87E-01		5.51E-01
		815.85	23.50	5.14E-02		1.13E+00
		1596.49	95.49	1.29E-01		3.14E-01
+	CE-141	145.44	48.40	2.09E-03	1.81E-01	1.81E-01
+	CE-143	57.36	11.80	1.67E+05	1.01E+05	2.90E+05
		293.26	42.00	2.99E+05		1.01E+05
		664.55	5.20	3.56E+04		6.67E+05
+	CE-144	133.54	10.80	-1.52E-01	4.83E-01	4.83E-01
+	PM-144	476.78	42.00	-6.60E-03	6.61E-02	1.59E-01
		618.01	98.60	5.21E-03		6.61E-02
		696.49	99.49	-1.22E-02		7.50E-02
+	PM-145	36.85	21.70	-5.57E-01	3.11E-01	5.66E-01
		37.36	39.70	7.94E-02		3.11E-01
		42.30	15.10	-8.65E-01		5.79E-01
		72.40	2.31	-3.23E+00		3.27E+00
+	PM-146	453.90	39.94	2.85E-02	1.59E-01	1.59E-01
		735.90	14.01	2.40E-01		4.95E-01
		747.13	13.10	-1.12E-01		4.39E-01
+	ND-147	91.11	28.90	-2.34E+00	1.19E+00	1.19E+00
		531.02	13.10	4.16E-01		2.28E+00
+	PM-149	285.90	3.10	-6.60E+02	5.72E+03	5.72E+03
+	EU-152	121.78	20.50	4.71E-02	2.29E-01	2.29E-01
		244.69	5.40	2.16E-01		1.10E+00
		344.27	19.13	-3.68E-02		2.35E-01
		778.89	9.20	1.24E-01		7.94E-01
		964.01	10.40	2.57E-01		7.99E-01
		1085.78	7.22	3.26E-02		1.13E+00
		1112.02	9.60	-4.23E-02		8.02E-01
		1407.95	14.94	8.19E-02		4.58E-01
+	GD-153	97.43	31.30	3.41E-02	1.74E-01	1.74E-01
		103.18	22.20	2.25E-01		2.41E-01
+	EU-154	123.07	40.50	1.20E-02	1.17E-01	1.17E-01
		723.30	19.70	-3.22E-02		3.77E-01
		873.19	11.50	1.92E-01		5.69E-01
		996.32	10.30	1.44E-01		7.65E-01

Analysis Report for 1510084-10
CP0604S21-22

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	1004.76	17.90	-3.48E-03	1.17E-01	4.36E-01
		1274.45	35.50	1.78E-02		2.32E-01
+	EU-155	86.50	30.90	2.40E-02	2.19E-01	2.19E-01
		105.30	20.70	2.35E-02		2.41E-01
+	EU-156	811.77	10.40	-2.85E-01	1.94E+00	1.94E+00
		1153.47	7.20	3.02E+00		4.54E+00
		1230.71	8.90	4.26E-01		3.61E+00
+	HO-166M	184.41	72.60	1.67E-01	9.08E-02	9.08E-02
		280.45	29.60	-1.00E-01		1.64E-01
		410.94	11.10	2.92E-01		5.86E-01
		711.69	54.10	-3.21E-03		1.19E-01
+	TM-171	66.72	0.14	1.27E+01	4.85E+01	4.85E+01
+	HF-172	81.75	4.52	-2.21E+00	4.22E-01	1.30E+00
		125.81	11.30	-2.29E-01		4.22E-01
+	LU-172	181.53	20.60	-2.08E-01	1.97E+00	3.53E+00
		810.06	16.63	-6.14E-01		5.46E+00
		912.12	15.25	3.97E+01		1.42E+01
		1093.66	62.50	3.03E-01		1.97E+00
+	LU-173	100.72	5.24	-1.36E-01	2.90E-01	9.69E-01
		272.11	21.20	2.57E-01		2.90E-01
+	HF-175	343.40	84.00	-1.08E-02	7.12E-02	7.12E-02
+	LU-176	88.34	13.30	1.11E+00	4.94E-02	5.16E-01
		201.83	86.00	3.71E-02		6.32E-02
		306.78	94.00	-5.84E-03		4.94E-02
+	TA-182	67.75	41.20	5.99E-02	1.86E-01	1.86E-01
		1121.30	34.90	7.47E-01		4.29E-01
		1189.05	16.23	4.93E-02		6.20E-01
		1221.41	26.98	-5.76E-02		3.90E-01
		1231.02	11.44	1.18E-01		1.00E+00
+	IR-192	308.46	29.68	-1.10E-01	1.61E-01	1.97E-01
		468.07	48.10	5.91E-02		1.61E-01
+	HG-203	279.19	77.30	1.78E-02	9.93E-02	9.93E-02
+	BI-207	569.67	97.72	4.77E-02	6.62E-02	6.62E-02
		1063.62	74.90	1.41E-02		1.07E-01
+	TL-208	583.14	* 30.22	1.35E+00	8.99E-02	3.69E-01
		860.37	* 4.48	1.77E+00		2.14E+00
		2614.66	* 35.85	1.18E+00		8.99E-02
+	BI-210M	262.00	45.00	-1.30E-02	1.06E-01	1.06E-01
		300.00	23.00	-6.04E-01		2.47E-01
+	PB-210	46.50	4.25	2.22E+00	2.07E+00	2.07E+00
+	PB-211	404.84	2.90	-5.12E-01	1.62E+00	1.62E+00
		831.96	2.90	1.21E+00		2.47E+00
+	BI-212	727.17	* 11.80	1.27E+00	6.13E-01	6.13E-01
		1620.62	* 2.75	2.34E+00		1.75E+00
+	PB-212	238.63	* 44.60	1.53E+00	2.36E-01	2.36E-01
		300.09	3.41	-4.08E+00		1.67E+00
+	BI-214	609.31	* 46.30	1.40E+00	1.90E-01	1.90E-01
		1120.29	* 15.10	1.36E+00		1.07E+00

Analysis Report for 1510084-10

CP0604S21-22

Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	1764.49	*	15.80	1.62E+00	3.43E-01
		2204.22	*	4.98	1.84E+00	1.08E+00
+	PB-214	295.21	*	19.19	1.36E+00	4.07E-01
		351.92	*	37.19	1.49E+00	2.13E-01
+	RN-219	401.80		6.50	-5.46E-02	7.35E-01
+	RA-223	323.87		3.88	-2.43E-02	1.15E+00
+	RA-224	240.98		3.95	1.84E+01	3.03E+00
+	RA-225	40.00		31.00	-3.91E-01	1.10E+00
+	RA-226	186.21	*	3.28	3.70E+00	2.11E+00
+	TH-227	50.10		8.40	-1.91E+00	5.70E-01
		236.00		11.50	-4.82E+00	5.70E-01
		256.20		6.30	-4.88E-01	7.60E-01
+	AC-228	338.32	*	11.40	1.92E+00	3.75E-01
		911.07	*	27.70	1.40E+00	3.75E-01
		969.11	*	16.60	1.39E+00	9.42E-01
+	TH-230	48.44		16.90	5.81E-01	4.96E-01
		62.85		4.60	3.11E+00	1.66E+00
		67.67		0.37	5.70E+00	1.77E+01
+	PA-231	283.67		1.60	4.53E-01	2.30E+00
		302.67		2.30	3.18E-02	2.30E+00
+	TH-231	25.64		14.70	8.95E-01	9.84E-01
		84.21		6.40	-1.49E+00	9.84E-01
+	PA-233	311.98		38.60	6.94E-02	2.46E-01
+	PA-234	131.20		20.40	-7.10E-03	2.48E-01
		733.99		8.80	-4.56E-01	7.38E-01
		946.00		12.00	-4.53E-02	5.78E-01
+	PA-234M	1001.03		0.92	3.11E+00	8.98E+00
+	TH-234	63.29	*	3.80	1.65E+00	2.46E+00
+	U-235	143.76		10.50	1.66E-01	4.90E-01
		163.35		4.70	4.78E-01	1.04E+00
		205.31		4.70	-1.47E+00	1.10E+00
+	NP-237	86.50		12.60	5.83E-02	5.32E-01
+	NP-239	106.10		22.70	4.54E+01	4.66E+02
		228.18		10.70	-1.60E+02	1.04E+03
		277.60		14.10	5.18E+01	7.90E+02
+	AM-241	59.54		35.90	4.22E-02	1.93E-01
+	AM-243	74.67		66.00	-1.23E-01	1.36E-01
+	CM-243	209.75		3.29	2.53E+00	3.72E-01
		228.14		10.60	-7.56E-02	4.93E-01
		277.60		14.00	2.44E-02	3.72E-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

Analysis Report for 1510084-10
CP0604S21-22

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	8.55E-01	8.55E-01	5.18E-02	4.07E-01
NA-22	1274.54	99.94	8.37E-02	8.37E-02	6.42E-03	3.85E-02
NA-24	1368.53	99.99	2.06E+11	1.33E+11	-3.42E+10	9.09E+10
	2754.09	99.86	1.33E+11		1.23E+10	4.98E+10
AL-26	1808.65	99.76	5.93E-02	5.93E-02	2.32E-02	2.55E-02
+ K-40	1460.81	*	10.67	9.55E-01	2.11E+01	4.44E-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	6.92E-02	6.92E-02	2.23E-02	3.39E-02
	78.34	96.00	8.79E-02		2.81E-01	4.33E-02
SC-46	889.25	99.98	8.67E-02	8.67E-02	1.34E-02	4.03E-02
	1120.51	99.99	1.61E-01		3.00E-01	7.66E-02
V-48	983.52	99.98	1.95E-01	1.95E-01	-1.04E-02	8.92E-02
	1312.10	97.50	2.26E-01		-3.65E-03	1.02E-01
CR-51	320.08	9.83	9.30E-01	9.30E-01	-2.93E-02	4.43E-01
MN-54	834.83	99.97	8.29E-02	8.29E-02	1.85E-03	3.90E-02
CO-56	846.75	99.96	7.56E-02	6.98E-02	-3.74E-02	3.48E-02
	1037.75	14.03	5.95E-01		-5.91E-02	2.73E-01
	1238.25	67.00	2.09E-01		9.50E-02	9.87E-02
	1771.40	15.51	4.41E-01		8.31E-02	1.88E-01
	2598.48	16.90	6.98E-02		0.00E+00	0.00E+00
CO-57	122.06	85.51	5.86E-02	5.86E-02	1.20E-02	2.85E-02
	136.48	10.60	4.97E-01		2.73E-01	2.42E-01
CO-58	810.76	99.40	7.89E-02	7.89E-02	-7.78E-03	3.65E-02
FE-59	1099.22	56.50	2.14E-01	2.14E-01	-7.20E-02	9.95E-02
	1291.56	43.20	2.73E-01		-8.87E-02	1.25E-01
CO-60	1173.22	100.00	7.62E-02	6.83E-02	-3.74E-02	3.50E-02
	1332.49	100.00	6.83E-02		-3.40E-02	3.08E-02
ZN-65	1115.52	50.75	1.79E-01	1.79E-01	1.08E-02	8.33E-02
+ GA-67	93.31	*	35.70	8.22E+01	6.04E+01	5.63E+01
	208.95		2.24	6.55E+02	1.53E+02	3.18E+02
	300.22	*	16.00	8.22E+01	7.51E+01	3.94E+01
SE-75	121.11	16.70	3.20E-01	9.46E-02	-1.78E-01	1.55E-01
	136.00	59.20	9.46E-02		-5.05E-02	4.60E-02
	264.65	59.80	9.49E-02		3.37E-02	4.55E-02
	279.53	25.20	2.37E-01		1.13E-02	1.14E-01
	400.65	11.40	5.04E-01		7.79E-02	2.39E-01
RB-82	776.52	13.00	1.10E+00	1.10E+00	-1.65E-01	5.16E-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	1.54E-01	1.54E-01	-7.66E-02	7.29E-02
	529.64	30.30	2.28E-01		-8.84E-02	1.07E-01
	552.65	16.40	4.83E-01		1.14E-01	2.29E-01
KR-85	513.99	0.43	2.16E+01	2.16E+01	4.00E+01	1.04E+01
SR-85	513.99	99.27	1.24E-01	1.24E-01	2.30E-01	6.00E-02
Y-88	898.02	93.40	8.66E-02	5.79E-02	1.05E-02	4.02E-02
	1836.01	99.38	5.79E-02		8.89E-03	2.40E-02
NB-93M	16.57	9.43	7.07E+01	7.07E+01	-5.68E+01	3.30E+01
NB-94	702.63	100.00	7.19E-02	6.32E-02	-1.42E-02	3.39E-02
	871.10	100.00	6.32E-02		-3.55E-03	2.92E-02
NB-95	765.79	99.81	1.50E-01	1.50E-01	1.62E-01	7.12E-02
+ NB-95M	235.69	*	6.06E+01	6.06E+01	2.61E+01	2.98E+01
ZR-95	724.18	43.70	2.51E-01	1.55E-01	-9.96E-04	1.19E-01
	756.72	55.30	1.55E-01		1.25E-02	7.24E-02
MO-99	181.06	6.20	5.76E+02	3.65E+02	1.89E+02	2.79E+02
	739.58	12.80	3.65E+02		3.42E+01	1.71E+02
	778.00	4.50	1.14E+03		-8.42E+01	5.36E+02
RU-103	497.08	89.00	1.08E-01	1.08E-01	2.52E-03	5.15E-02
RU-106	621.84	9.80	6.79E-01	6.79E-01	-3.52E-02	3.20E-01
AG-108M	433.93	89.90	6.68E-02	6.68E-02	7.65E-03	3.18E-02
	614.37	90.40	6.68E-02		-1.90E-03	3.14E-02
	722.95	90.50	8.17E-02		-6.96E-03	3.86E-02
CD-109	88.03	3.72	1.89E+00	1.89E+00	1.65E+00	9.30E-01
AG-110M	657.75	93.14	7.80E-02	7.80E-02	6.35E-03	3.68E-02
	677.61	10.53	6.81E-01		-6.89E-02	3.20E-01
	706.67	16.46	4.69E-01		7.72E-02	2.21E-01
	763.93	21.98	3.60E-01		8.04E-03	1.70E-01
	884.67	71.63	1.08E-01		2.29E-02	5.02E-02
	1384.27	23.94	3.22E-01		-1.47E-01	1.46E-01
	263.70	0.02	2.06E+02		2.06E+02	4.39E+01	9.89E+01
SN-113	255.12	1.93	2.92E+00	9.56E-02	-7.90E-01	1.40E+00
	391.69	64.90	9.56E-02		-1.33E-02	4.54E-02
TE123M	159.00	84.10	6.92E-02	6.92E-02	4.44E-02	3.36E-02
SB-124	602.71	97.87	8.57E-02	8.57E-02	1.66E-02	4.04E-02
	645.85	7.26	1.08E+00		-3.91E-01	5.03E-01
	722.78	11.10	8.98E-01		-7.66E-02	4.24E-01
	1691.02	49.00	1.46E-01		4.60E-02	6.20E-02
I-125	35.49	6.49	2.87E+00	2.87E+00	1.08E+00	1.39E+00
SB-125	176.33	6.89	7.49E-01	1.95E-01	1.90E-01	3.63E-01
	427.89	29.33	1.95E-01		-7.29E-03	9.29E-02
	463.38	10.35	6.82E-01		4.17E-01	3.26E-01
	600.56	17.80	3.49E-01		-1.48E-01	1.64E-01
	635.90	11.32	5.48E-01		-2.73E-01	2.57E-01
	414.70	83.30	3.10E-01		2.97E-01	1.28E-02	1.48E-01
SB-126	666.33	99.60	2.97E-01	2.97E-01	4.37E-02	1.40E-01
	695.00	99.60	3.21E-01		1.40E-01	1.52E-01
	720.50	53.80	5.58E-01		-1.93E-02	2.63E-01
SN-126	87.57	37.00	1.83E-01	1.83E-01	1.60E-01	8.99E-02
SB-127	473.00	25.00	2.74E+01	2.10E+01	-4.67E-01	1.31E+01
	685.20	35.70	2.10E+01		7.39E+00	9.88E+00
	783.80	14.70	5.81E+01		3.61E+01	2.74E+01
I-129	29.78	57.00	4.34E-01	4.34E-01	6.64E-02	2.10E-01
	33.60	13.20	1.23E+00		-1.55E-01	5.94E-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)
I-129	39.58	7.52	1.38E+00	4.34E-01	-4.89E-01	6.70E-01
I-131	284.30	6.05	7.73E+00	6.10E-01	-3.13E+00	3.70E+00
	364.48	81.20	6.10E-01		3.25E-01	2.91E-01
	636.97	7.26	7.90E+00		-4.10E+00	3.71E+00
	722.89	1.80	3.88E+01		-3.31E+00	1.83E+01
TE-132	49.72	13.10	1.41E+02	1.51E+01	-3.17E+02	6.86E+01
	228.16	88.00	1.51E+01		-2.32E+00	7.31E+00
BA-133	81.00	33.00	1.75E-01	8.01E-02	-1.15E+00	8.58E-02
	302.84	17.80	2.99E-01		4.12E-03	1.43E-01
	356.01	60.00	8.01E-02		1.05E-04	3.80E-02
I-133	529.87	86.30	7.30E+07	7.30E+07	-2.83E+07	3.44E+07
XE-133	81.00	38.00	4.75E+00	4.75E+00	-3.13E+01	2.32E+00
CS-134	563.23	8.38	7.40E-01	7.16E-02	-8.72E-02	3.49E-01
	569.32	15.43	4.13E-01		6.74E-02	1.95E-01
	604.70	97.60	7.16E-02		6.28E-03	3.39E-02
	795.84	85.40	1.01E-01		1.08E-01	4.77E-02
	801.93	8.73	7.07E-01		2.41E-02	3.27E-01
CS-135	268.24	16.00	3.65E-01	3.65E-01	3.30E-01	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	2.64E+00	2.59E-01	8.83E-01	1.28E+00
	163.89	4.61	4.17E+00		1.93E+00	2.02E+00
	176.55	13.56	1.47E+00		3.75E-01	7.15E-01
	273.65	12.66	1.64E+00		-6.00E-01	7.87E-01
	340.57	48.50	5.73E-01		9.48E-01	2.77E-01
	818.50	99.70	2.59E-01		6.35E-02	1.20E-01
	1048.07	79.60	3.56E-01		-3.62E-02	1.64E-01
	1235.34	19.70	2.19E+00		6.94E-01	1.03E+00
CS-137	661.65	85.12	7.95E-02	7.95E-02	-2.42E-02	3.75E-02
LA-138	788.74	34.00	1.95E-01	9.10E-02	6.49E-02	9.11E-02
	1435.80	66.00	9.10E-02		3.37E-02	4.02E-02
CE-139	165.85	80.35	6.91E-02	6.91E-02	2.84E-02	3.35E-02
BA-140	162.64	6.70	2.93E+00	9.35E-01	-1.17E+00	1.42E+00
	304.84	4.50	4.42E+00		9.47E-01	2.11E+00
	423.70	3.20	7.82E+00		3.54E+00	3.73E+00
	437.55	2.00	1.24E+01		3.65E+00	5.91E+00
	537.32	25.00	9.35E-01		-5.03E-01	4.40E-01
LA-140	328.77	20.50	1.11E+00	3.14E-01	6.45E-01	5.34E-01
	487.03	45.50	5.51E-01		1.87E-01	2.62E-01
	815.85	23.50	1.13E+00		5.14E-02	5.26E-01
	1596.49	95.49	3.14E-01		1.29E-01	1.41E-01
CE-141	145.44	48.40	1.81E-01	1.81E-01	2.09E-03	8.80E-02
CE-143	57.36	11.80	2.90E+05	1.01E+05	1.67E+05	1.42E+05
	293.26	42.00	1.01E+05		2.99E+05	4.92E+04
	664.55	5.20	6.67E+05		3.56E+04	3.15E+05
CE-144	133.54	10.80	4.83E-01	4.83E-01	-1.52E-01	2.35E-01
PM-144	476.78	42.00	1.59E-01	6.61E-02	-6.60E-03	7.57E-02
	618.01	98.60	6.61E-02		5.21E-03	3.11E-02
	696.49	99.49	7.50E-02		-1.22E-02	3.54E-02
PM-145	36.85	21.70	5.66E-01	3.11E-01	-5.57E-01	2.75E-01
	37.36	39.70	3.11E-01		7.94E-02	1.51E-01
	42.30	15.10	5.79E-01		-8.65E-01	2.81E-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	3.27E+00	3.11E-01	-3.23E+00	1.60E+00
PM-146	453.90	39.94	1.59E-01	1.59E-01	2.85E-02	7.58E-02
	735.90	14.01	4.95E-01		2.40E-01	2.33E-01
	747.13	13.10	4.39E-01		-1.12E-01	2.03E-01
ND-147	91.11	28.90	1.19E+00	1.19E+00	-2.34E+00	5.86E-01
	531.02	13.10	2.28E+00		4.16E-01	1.07E+00
PM-149	285.90	3.10	5.72E+03	5.72E+03	-6.60E+02	2.74E+03
EU-152	121.78	20.50	2.29E-01	2.29E-01	4.71E-02	1.12E-01
	244.69	5.40	1.10E+00		2.16E-01	5.30E-01
	344.27	19.13	2.35E-01		-3.68E-02	1.11E-01
	778.89	9.20	7.94E-01		1.24E-01	3.73E-01
	964.01	10.40	7.99E-01		2.57E-01	3.74E-01
	1085.78	7.22	1.13E+00		3.26E-02	5.25E-01
	1112.02	9.60	8.02E-01		-4.23E-02	3.71E-01
	1407.95	14.94	4.58E-01		8.19E-02	2.05E-01
GD-153	97.43	31.30	1.74E-01	1.74E-01	3.41E-02	8.50E-02
	103.18	22.20	2.41E-01		2.25E-01	1.17E-01
EU-154	123.07	40.50	1.17E-01	1.17E-01	1.20E-02	5.66E-02
	723.30	19.70	3.77E-01		-3.22E-02	1.78E-01
	873.19	11.50	5.69E-01		1.92E-01	2.63E-01
	996.32	10.30	7.65E-01		1.44E-01	3.56E-01
	1004.76	17.90	4.36E-01		-3.48E-03	2.03E-01
	1274.45	35.50	2.32E-01		1.78E-02	1.07E-01
EU-155	86.50	30.90	2.19E-01	2.19E-01	2.40E-02	1.08E-01
	105.30	20.70	2.41E-01		2.35E-02	1.17E-01
EU-156	811.77	10.40	1.94E+00	1.94E+00	-2.85E-01	8.97E-01
	1153.47	7.20	4.54E+00		3.02E+00	2.13E+00
	1230.71	8.90	3.61E+00		4.26E-01	1.69E+00
HO-166M	184.41	72.60	9.08E-02	9.08E-02	1.67E-01	4.43E-02
	280.45	29.60	1.64E-01		-1.00E-01	7.85E-02
	410.94	11.10	5.86E-01		2.92E-01	2.81E-01
	711.69	54.10	1.19E-01		-3.21E-03	5.59E-02
TM-171	66.72	0.14	4.85E+01	4.85E+01	1.27E+01	2.38E+01
HF-172	81.75	4.52	1.30E+00	4.22E-01	-2.21E+00	6.34E-01
	125.81	11.30	4.22E-01		-2.29E-01	2.05E-01
LU-172	181.53	20.60	3.53E+00	1.97E+00	-2.08E-01	1.71E+00
	810.06	16.63	5.46E+00		-6.14E-01	2.53E+00
	912.12	15.25	1.42E+01		3.97E+01	6.85E+00
	1093.66	62.50	1.97E+00		3.03E-01	9.16E-01
LU-173	100.72	5.24	9.69E-01	2.90E-01	-1.36E-01	4.72E-01
	272.11	21.20	2.90E-01		2.57E-01	1.40E-01
HF-175	343.40	84.00	7.12E-02	7.12E-02	-1.08E-02	3.38E-02
LU-176	88.34	13.30	5.16E-01	4.94E-02	1.11E+00	2.53E-01
	201.83	86.00	6.32E-02		3.71E-02	3.07E-02
	306.78	94.00	4.94E-02		-5.84E-03	2.35E-02
TA-182	67.75	41.20	1.86E-01	1.86E-01	5.99E-02	9.09E-02
	1121.30	34.90	4.29E-01		7.47E-01	2.05E-01
	1189.05	16.23	6.20E-01		4.93E-02	2.88E-01
	1221.41	26.98	3.90E-01		-5.76E-02	1.81E-01
	1231.02	11.44	1.00E+00		1.18E-01	4.68E-01
IR-192	308.46	29.68	1.97E-01	1.61E-01	-1.10E-01	9.37E-02
	468.07	48.10	1.61E-01		5.91E-02	7.65E-02
HG-203	279.19	77.30	9.93E-02	9.93E-02	1.78E-02	4.77E-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	6.62E-02	6.62E-02	4.77E-02	3.13E-02
	1063.62	74.90	1.07E-01		1.41E-02	4.97E-02
+ TL-208	583.14 *	30.22	3.69E-01	8.99E-02	1.35E+00	1.79E-01
	860.37 *	4.48	2.14E+00		1.77E+00	1.02E+00
	2614.66 *	35.85	8.99E-02		1.18E+00	3.19E-02
BI-210M	262.00	45.00	1.06E-01	1.06E-01	-1.30E-02	5.07E-02
	300.00	23.00	2.47E-01		-6.04E-01	1.19E-01
PB-210	46.50	4.25	2.07E+00	2.07E+00	2.22E+00	1.01E+00
PB-211	404.84	2.90	1.62E+00	1.62E+00	-5.12E-01	7.62E-01
	831.96	2.90	2.47E+00		1.21E+00	1.16E+00
+ BI-212	727.17 *	11.80	6.13E-01	6.13E-01	1.27E+00	2.89E-01
	1620.62 *	2.75	1.75E+00		2.34E+00	7.34E-01
+ PB-212	238.63 *	44.60	2.36E-01	2.36E-01	1.53E+00	1.16E-01
	300.09	3.41	1.67E+00		-4.08E+00	8.03E-01
+ BI-214	609.31 *	46.30	1.90E-01	1.90E-01	1.40E+00	9.09E-02
	1120.29 *	15.10	1.07E+00		1.36E+00	5.17E-01
	1764.49 *	15.80	3.43E-01		1.62E+00	1.46E-01
	2204.22 *	4.98	1.08E+00		1.84E+00	4.49E-01
+ PB-214	295.21 *	19.19	4.07E-01	2.13E-01	1.36E+00	1.98E-01
	351.92 *	37.19	2.13E-01		1.49E+00	1.03E-01
RN-219	401.80	6.50	7.35E-01	7.35E-01	-5.46E-02	3.47E-01
RA-223	323.87	3.88	1.15E+00	1.15E+00	-2.43E-02	5.47E-01
RA-224	240.98	3.95	3.03E+00	3.03E+00	1.84E+01	1.49E+00
RA-225	40.00	31.00	1.10E+00	1.10E+00	-3.91E-01	5.36E-01
+ RA-226	186.21 *	3.28	2.11E+00	2.11E+00	3.70E+00	1.03E+00
TH-227	50.10	8.40	8.50E-01	5.70E-01	-1.91E+00	4.14E-01
	236.00	11.50	5.70E-01		-4.82E+00	2.77E-01
	256.20	6.30	7.60E-01		-4.88E-01	3.65E-01
+ AC-228	338.32 *	11.40	6.57E-01	3.75E-01	1.92E+00	3.18E-01
	911.07 *	27.70	3.75E-01		1.40E+00	1.79E-01
	969.11 *	16.60	9.42E-01		1.39E+00	4.55E-01
TH-230	48.44	16.90	4.96E-01	4.96E-01	5.81E-01	2.42E-01
	62.85	4.60	1.66E+00		3.11E+00	8.13E-01
	67.67	0.37	1.77E+01		5.70E+00	8.65E+00
PA-231	283.67	1.60	3.15E+00	2.30E+00	4.53E-01	1.51E+00
	302.67	2.30	2.30E+00		3.18E-02	1.10E+00
TH-231	25.64	14.70	3.87E+00	9.84E-01	8.95E-01	1.88E+00
	84.21	6.40	9.84E-01		-1.49E+00	4.82E-01
PA-233	311.98	38.60	2.46E-01	2.46E-01	6.94E-02	1.17E-01
PA-234	131.20	20.40	2.48E-01	2.48E-01	-7.10E-03	1.20E-01
	733.99	8.80	7.38E-01		-4.56E-01	3.45E-01
	946.00	12.00	5.78E-01		-4.53E-02	2.68E-01
PA-234M	1001.03	0.92	8.98E+00	8.98E+00	3.11E+00	4.20E+00
+ TH-234	63.29 *	3.80	2.46E+00	2.46E+00	1.65E+00	1.21E+00
U-235	143.76	10.50	4.90E-01	4.90E-01	1.66E-01	2.39E-01
	163.35	4.70	1.04E+00		4.78E-01	5.02E-01
	205.31	4.70	1.10E+00		-1.47E+00	5.30E-01
NP-237	86.50	12.60	5.32E-01	5.32E-01	5.83E-02	2.61E-01
NP-239	106.10	22.70	4.66E+02	4.66E+02	4.54E+01	2.27E+02
	228.18	10.70	1.04E+03		-1.60E+02	5.04E+02
	277.60	14.10	7.90E+02		5.18E+01	3.80E+02
AM-241	59.54	35.90	1.93E-01	1.93E-01	4.22E-02	9.45E-02
AM-243	74.67	66.00	1.36E-01	1.36E-01	-1.23E-01	6.72E-02

Analysis Report for 1510084-10
 CP0604S21-22

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	1.78E+00	3.72E-01	2.53E+00	8.67E-01
	228.14	10.60	4.93E-01		-7.56E-02	2.38E-01
	277.60	14.00	3.72E-01		2.44E-02	1.79E-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: CP0604S21-22

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	68	101	108	111	86	93	94	78	60	58	65	58	55	71	58	70	67	72	80	65	68	100	76	67	83	71	69	101	198	106	78	97	104	84	103	108	86	95	124	122	143	117	162	142	187	277	65	150	139	156	152	155	145	143	161	73	179	169	418	346	469	536	165	137	81	126	115	128	155	180	133	221	275	89	127	204	157	133	310	215	130	104	97	105	93	115	113	82	90	92	104	105	106	109	79	94	99	83	86	75	113	105	95	88	94	83	82	79	80	121	80	79	78	95	78	80	74	68	129	96	113	81	100	85	76	89	71	137	96	69	94	71	85	88	83	82	82	145	101	84	78	68	82	87	61	90	153	72	74	84	66	77	86	72	79	161	60	61	66	82	65	70	61	60	169	57	59	58	65	66	60	67	58	63	177	75	64	79	67	56	67	58	63	185	90	178	170	74	52	61	59	64	193	67	65	59	58	73	54	73	68	201	67	76	61	66	47	85	44	54	209	94	99	74	55	52	69	54	50	217	59	49	54	49	45	52	39	55	225	54	55	50	57	51	52	58	54	233	45	41	53	75	66	171	674	263	241	88	171	156	51	32	42	30	37	249	38	41	31	48	39	41	39	39	257	35	36	52	45	27	32	38	40	265	43	25	43	37	46	59	84	61	273	28	41	43	37	46	56	32	31	281	36	40	33	40	32	38	33	38	289	46	31	39	38	43	30	153	236	297	48	31	40	45	69	33	36	25	305	22	39	30	23	24	30	26	37	313	32	23	24	32	29	26	27	35	321	25	24	26	26	22	20	28	52	329	45	29	28	36	31	20	26	32	337	21	88	147	56	30	28	22	20	345	27	19	20	29	30	28	56	366	353	218	35	22	18	20	23	23	21	361	19	19	32	29	25	25	27	18

369: 28 26 29 28 22 22 22 27

Sample Title: CP0604S21-22

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	27	27	35	20	21	25	14	22
385:	27	23	20	28	21	28	20	28
393:	31	20	26	31	26	21	19	21
401:	24	22	20	11	23	18	21	21
409:	18	39	34	23	22	24	18	27
417:	10	28	20	10	23	32	20	20
425:	12	20	24	19	20	11	20	18
433:	16	27	24	17	19	24	20	18
441:	19	14	16	22	19	19	20	18
449:	19	24	20	20	25	12	27	26
457:	15	15	20	18	17	25	35	46
465:	24	15	10	19	19	22	19	15
473:	17	24	18	21	25	15	17	17
481:	24	21	15	20	15	16	22	17
489:	16	16	10	15	17	14	14	14
497:	22	20	14	20	25	21	12	17
505:	9	12	17	15	20	44	99	66
513:	27	18	22	18	22	15	11	12
521:	9	14	22	14	13	17	15	12
529:	18	11	8	10	15	20	11	7
537:	15	8	18	17	14	16	15	22
545:	13	21	25	16	14	17	21	11
553:	21	12	12	17	15	12	18	14
561:	18	13	17	14	12	7	12	16
569:	16	13	18	17	15	11	10	15
577:	7	16	19	13	31	30	121	160
585:	33	13	18	19	12	15	15	21
593:	7	14	8	19	19	9	12	12
601:	13	14	13	14	13	11	12	32
609:	147	263	78	12	16	7	7	11
617:	17	12	13	12	14	12	12	16
625:	10	10	14	14	11	13	12	21
633:	14	8	14	14	9	10	10	13
641:	13	11	7	16	6	12	9	11
649:	8	14	10	11	14	12	10	14
657:	14	13	8	14	20	12	13	14
665:	11	17	16	11	13	7	13	8
673:	14	6	17	9	11	11	17	11
681:	10	14	16	13	12	12	13	10
689:	9	12	12	18	15	8	16	16
697:	10	21	10	13	12	14	18	14
705:	9	15	17	12	16	11	8	11
713:	13	9	6	11	6	10	12	9
721:	16	16	10	13	18	14	34	52
729:	25	7	8	7	9	14	13	10
737:	10	13	11	11	7	11	9	11
745:	6	10	5	9	7	4	7	9
753:	8	13	7	15	6	8	9	9
761:	7	12	16	11	15	6	20	27
769:	35	13	8	23	13	10	13	9
777:	12	11	10	12	14	14	13	9
785:	14	18	13	7	9	4	9	6
793:	6	15	33	24	16	8	5	5

801: 10 7 10 6 9 9 8 7

Sample Title: CP0604S21-22

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	8	4	10	8	8	7	8	7
817:	11	9	9	6	9	9	8	6
825:	10	14	5	12	13	9	14	11
833:	3	8	13	25	9	16	19	6
841:	15	7	6	9	5	4	2	10
849:	7	10	10	13	11	10	8	12
857:	3	7	13	15	33	20	11	10
865:	10	9	7	6	5	10	11	6
873:	4	8	9	5	6	6	11	7
881:	10	7	10	12	8	9	9	9
889:	5	10	10	8	6	6	7	8
897:	4	9	11	9	8	10	7	10
905:	9	11	5	9	7	27	72	107
913:	32	14	12	4	10	5	4	9
921:	8	6	5	12	5	5	5	10
929:	8	8	2	15	4	13	17	6
937:	3	9	6	7	4	2	8	15
945:	6	4	6	7	7	11	11	8
953:	8	5	8	5	7	4	6	7
961:	7	7	9	14	18	13	7	17
969:	73	69	13	7	12	11	16	6
977:	8	9	8	7	4	3	2	5
985:	7	5	14	5	6	5	6	4
993:	10	14	6	4	9	12	8	8
1001:	12	10	12	8	8	10	8	5
1009:	7	9	4	1	10	9	7	7
1017:	9	4	4	11	6	7	15	6
1025:	6	5	11	5	1	5	6	9
1033:	11	7	4	7	7	7	3	5
1041:	8	10	9	4	8	3	7	6
1049:	9	7	8	15	11	6	8	6
1057:	4	7	10	8	8	17	7	7
1065:	10	6	4	9	5	8	5	5
1073:	9	7	8	6	12	5	12	12
1081:	6	10	6	6	14	2	15	6
1089:	10	9	8	7	13	6	6	8
1097:	13	8	5	10	6	7	18	7
1105:	6	5	11	11	9	7	8	6
1113:	8	6	6	5	11	9	16	33
1121:	51	22	8	7	4	6	5	13
1129:	6	8	3	9	9	13	11	6
1137:	8	3	5	11	8	8	9	6
1145:	13	6	8	9	7	7	9	17
1153:	18	9	10	12	7	7	5	9
1161:	10	4	12	7	7	9	8	13
1169:	10	6	7	4	6	9	9	3
1177:	8	5	12	2	8	12	13	7
1185:	9	6	8	12	9	6	9	7
1193:	8	7	8	10	9	7	7	13
1201:	6	4	10	5	9	5	7	13
1209:	6	9	10	6	6	4	7	6
1217:	8	6	7	8	7	16	7	9
1225:	8	15	8	15	8	10	8	9

1233: 12 9 13 11 12 24 19 6

Sample Title: CP0604S21-22

Channel	1	2	3	4	5	6	7	8
1241:	8	8	12	15	6	5	11	9
1249:	10	6	2	7	4	5	11	3
1257:	6	9	8	18	8	6	4	12
1265:	7	10	9	7	6	14	7	2
1273:	9	5	8	10	5	4	2	8
1281:	8	6	5	7	5	6	7	4
1289:	4	7	10	11	1	4	8	8
1297:	2	5	5	3	4	5	7	8
1305:	6	1	4	4	7	7	2	6
1313:	1	6	3	5	5	2	7	6
1321:	7	4	5	7	6	3	7	6
1329:	6	5	1	2	3	4	7	7
1337:	4	5	3	3	5	1	2	1
1345:	4	7	2	3	5	5	1	1
1353:	3	3	4	4	4	7	4	2
1361:	7	1	2	7	4	1	2	1
1369:	1	5	5	1	3	4	4	3
1377:	7	12	11	8	4	2	4	10
1385:	2	4	4	3	4	2	3	2
1393:	2	3	0	5	2	6	4	2
1401:	9	4	4	1	3	3	4	3
1409:	5	4	4	2	5	5	3	4
1417:	1	1	1	2	3	4	2	2
1425:	2	2	3	3	3	2	2	1
1433:	1	3	1	1	2	7	4	1
1441:	2	4	4	5	3	4	5	4
1449:	3	4	4	3	5	2	7	2
1457:	3	6	17	137	381	264	61	7
1465:	5	2	0	1	0	2	5	3
1473:	1	2	2	2	1	2	5	3
1481:	3	2	1	3	4	2	1	4
1489:	5	1	2	1	1	1	1	5
1497:	6	3	1	0	4	4	1	2
1505:	0	6	4	6	4	6	2	0
1513:	2	3	1	2	0	3	1	3
1521:	4	1	1	5	0	2	2	4
1529:	0	4	1	1	1	4	1	2
1537:	2	2	1	3	2	1	3	2
1545:	2	4	3	6	4	1	1	1
1553:	2	1	1	1	1	1	2	1
1561:	1	2	3	2	1	1	1	1
1569:	2	1	1	2	2	1	1	0
1577:	1	2	3	0	0	2	0	5
1585:	3	3	6	7	7	1	1	7
1593:	7	7	6	3	1	0	1	1
1601:	2	3	1	1	0	2	2	1
1609:	2	2	1	3	3	1	4	1
1617:	0	0	2	4	10	4	2	1
1625:	2	2	3	1	3	6	4	7
1633:	3	0	1	1	1	0	3	2
1641:	2	1	4	2	2	1	1	1
1649:	0	3	1	1	0	0	1	2
1657:	0	1	2	1	1	4	1	2

1665: 1 4 2 1 0 1 1 2

Sample Title: CP0604S21-22

Channel	1	2	3	4	5	6	7	8
1673:	3	2	1	1	1	0	3	0
1681:	0	1	0	2	1	1	0	1
1689:	2	1	1	1	3	2	1	1
1697:	1	3	2	2	0	5	3	0
1705:	3	1	2	2	1	0	3	1
1713:	1	3	2	1	0	1	3	0
1721:	1	0	2	0	0	1	1	6
1729:	2	6	6	2	2	4	1	0
1737:	3	0	0	0	1	1	0	0
1745:	2	0	2	0	3	0	2	1
1753:	2	0	2	0	0	2	0	0
1761:	4	2	2	15	36	22	4	3
1769:	1	1	0	2	3	1	2	0
1777:	2	1	1	0	2	0	2	1
1785:	0	1	2	2	1	1	1	0
1793:	0	2	3	3	2	1	0	1
1801:	0	0	1	0	2	1	1	1
1809:	5	2	1	1	1	4	0	1
1817:	3	0	0	1	0	0	4	0
1825:	2	0	0	1	1	0	1	1
1833:	0	1	0	2	1	2	2	1
1841:	0	2	2	2	1	2	5	7
1849:	5	1	0	1	0	0	3	3
1857:	1	0	2	1	2	1	4	0
1865:	1	2	0	1	2	1	2	1
1873:	2	0	3	0	2	5	2	0
1881:	3	2	1	1	0	2	0	2
1889:	1	0	0	0	1	1	0	2
1897:	1	1	1	0	1	0	1	0
1905:	1	1	2	1	1	2	1	1
1913:	0	0	0	1	0	0	0	2
1921:	1	0	0	1	1	1	1	1
1929:	1	1	3	2	1	1	3	2
1937:	1	1	1	0	1	4	2	0
1945:	2	0	0	1	0	2	0	0
1953:	1	0	2	3	1	1	3	0
1961:	2	0	2	1	0	1	0	3
1969:	1	1	3	1	0	1	1	0
1977:	2	4	0	1	3	0	0	0
1985:	3	0	1	1	1	0	0	1
1993:	2	1	1	2	2	0	1	1
2001:	2	1	0	1	1	1	1	2
2009:	1	1	4	1	1	0	0	2
2017:	1	3	1	1	0	1	0	3
2025:	1	0	0	1	0	2	0	1
2033:	0	1	1	1	1	2	0	0
2041:	1	0	2	1	3	1	1	1
2049:	1	3	1	1	0	1	0	0
2057:	2	2	0	0	1	1	2	1
2065:	2	0	1	2	0	0	1	2
2073:	0	2	1	1	1	0	1	1
2081:	0	0	1	1	1	0	0	0
2089:	0	2	1	0	0	0	3	0

2097: 1 1 0 0 3 1 3 3

Sample Title: CP0604S21-22

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

2529: 0 0 0 0 0 0 0 0 1

Sample Title: CP0604S21-22

Channel								
2537:	0	0	0	0	1	1	0	0
2545:	1	0	0	0	2	1	0	0
2553:	0	0	1	0	0	0	1	2
2561:	0	1	0	0	0	2	0	0
2569:	0	2	0	0	0	2	1	0
2577:	0	1	1	2	0	0	1	0
2585:	0	1	0	0	0	0	0	0
2593:	0	0	0	0	0	0	0	0
2601:	0	0	1	1	1	0	1	1
2609:	0	0	1	3	14	31	45	25
2617:	5	1	1	0	0	1	0	0
2625:	0	1	0	1	0	0	0	0
2633:	0	0	0	0	0	0	0	1
2641:	0	0	0	1	1	1	0	2
2649:	0	0	0	0	1	0	0	0
2657:	1	2	1	0	0	0	0	0
2665:	0	1	0	0	0	1	0	0
2673:	0	0	0	0	0	0	1	3
2681:	0	0	0	0	1	1	2	0
2689:	0	0	0	0	0	0	0	0
2697:	1	0	1	0	1	0	0	1
2705:	1	0	1	3	0	0	0	1
2713:	0	0	0	0	0	0	0	0
2721:	1	1	1	0	0	0	0	1
2729:	2	0	1	0	0	2	0	0
2737:	1	0	0	0	1	1	1	1
2745:	0	0	0	0	0	1	0	1
2753:	0	1	0	0	0	0	0	1
2761:	1	0	1	0	0	1	0	0
2769:	0	0	0	1	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0
2793:	1	1	0	0	0	0	0	0
2801:	0	0	1	0	0	0	0	0
2809:	0	0	0	0	0	1	0	0
2817:	0	0	0	1	1	0	1	0
2825:	0	0	0	1	0	0	1	0
2833:	0	0	1	0	1	0	0	0
2841:	1	0	0	0	0	0	0	0
2849:	0	0	0	1	0	0	2	1
2857:	0	1	0	0	1	1	0	0
2865:	0	0	0	0	0	0	0	0
2873:	1	0	0	1	0	1	0	1
2881:	0	0	0	0	0	0	0	0
2889:	0	0	1	0	0	0	0	0
2897:	2	0	0	0	0	0	0	0
2905:	1	1	0	0	1	0	1	0
2913:	0	0	0	0	0	0	0	0
2921:	0	1	0	0	1	1	1	2
2929:	0	0	0	0	0	1	0	0
2937:	0	0	0	0	0	0	0	2
2945:	0	1	0	0	0	1	1	0
2953:	0	2	0	0	0	0	0	0

2961: 0 1 0 0 0 1 1 0

Sample Title: CP0604S21-22

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

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP0604S21-22

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	0	0
3409:	1	0	0	0	0	0	1	0
3417:	0	1	0	2	0	0	1	0
3425:	0	0	0	2	0	0	0	0
3433:	0	1	1	0	0	0	0	0
3441:	0	0	0	1	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	1	0
3473:	0	0	0	1	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	1	0	0
3497:	0	0	1	0	1	0	0	0
3505:	0	1	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	0	0	1	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	1	0	0	1	1	0	0
3553:	0	0	1	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	1	0	0	0	0	0	0	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	1	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	1
3617:	0	0	0	0	0	0	0	0
3625:	1	0	0	0	0	1	0	1
3633:	0	1	0	0	0	0	1	0
3641:	0	1	0	0	0	1	1	0
3649:	0	0	0	0	0	1	1	0
3657:	0	0	0	0	1	0	0	0
3665:	0	0	0	0	1	0	1	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	1	0	0	0
3689:	0	0	1	0	0	0	0	0
3697:	0	0	0	1	0	0	0	1
3705:	0	0	0	0	0	0	0	0
3713:	0	1	0	0	0	0	1	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	1	1	0	0	0	0
3737:	0	0	0	1	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	1	0	1	1	0	0	0	0
3769:	1	0	0	0	0	0	0	0
3777:	1	1	0	0	0	0	0	0
3785:	0	1	0	0	1	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	1	0	0	0	1	0	0	0
3817:	0	0	0	0	0	0	0	0

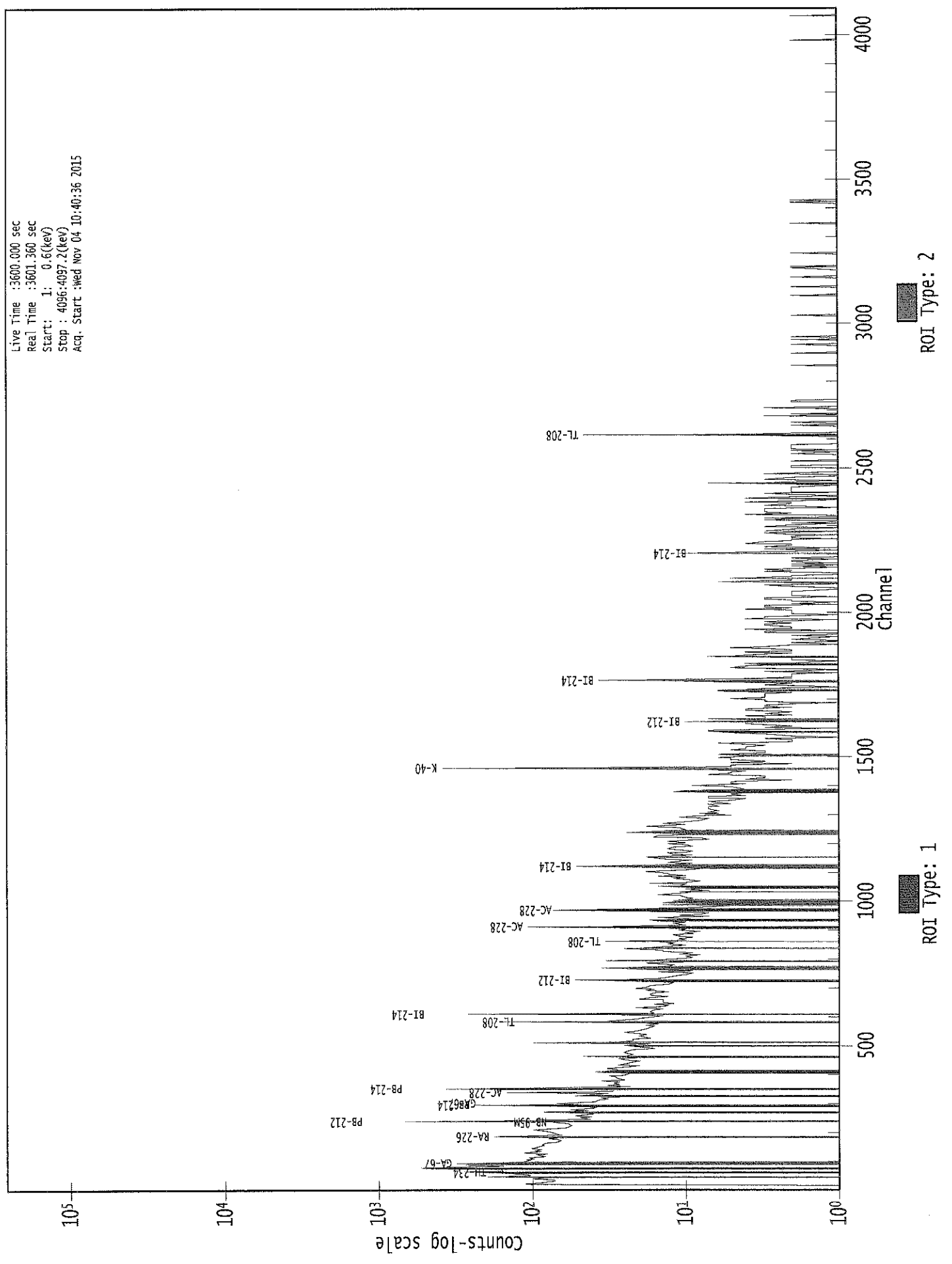
3825: 0 0 0 1 0 0 0 0

Sample Title: CP0604S21-22

Channel	1	2	3	4	5	6	7	8	9
3833:	0	1	0	0	1	0	1	0	
3841:	0	0	0	0	0	0	0	1	
3849:	0	0	0	0	0	1	0	0	
3857:	0	0	0	0	0	0	0	0	
3865:	0	0	1	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	0	0	0	0	0	1	0	
3897:	0	0	0	0	0	0	0	1	
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	1	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	0	1	0	0	0	
3977:	0	0	0	0	2	0	1	0	
3985:	0	0	0	0	0	0	0	0	
3993:	0	0	0	0	0	0	0	0	
4001:	0	0	0	0	0	0	0	0	
4009:	0	1	0	0	0	0	0	0	
4017:	0	0	0	0	0	0	1	0	
4025:	0	0	0	0	0	0	0	1	
4033:	1	0	0	0	0	0	0	0	
4041:	0	0	0	0	0	0	0	0	
4049:	0	1	0	0	0	0	0	0	
4057:	0	0	0	0	0	0	0	1	
4065:	2	0	1	0	0	0	0	0	
4073:	0	0	0	0	1	0	0	0	
4081:	0	0	0	0	0	0	0	0	
4089:	1	0	0	0	0	0	0	0	

0000029105.CNF

Live Time :3600.000 sec
Real Time :3601.360 sec
Start: 1: 0.6(keV)
Stop : 4096.4097.2(keV)
Acq. Start :Wed Nov 04 10:40:36 2015



Analysis Report for 1510084-11
CP0604S24-25

✓
1114

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-11
Sample Description : CP0604S24-25
Sample Type : SOIL

Sample Size : 5.834E+02 grams
Facility : Countroom

Sample Taken On : 10/9/2015 9:49:19AM
Acquisition Started : 11/4/2015 10:40:49AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
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) : 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 : 29106

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-11
CP0604S24-25

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 11:41:01AM
 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	76.36	76.45	0.0000	0.00
2	93.28	93.36	0.0000	0.00
3	98.97	99.04	0.0000	0.00
4	105.10	105.17	0.0000	0.00
5	114.01	114.07	0.0000	0.00
6	129.67	129.73	0.0000	0.00
7	144.67	144.72	0.0000	0.00
8	183.09	183.12	0.0000	0.00
9	185.96	185.98	0.0000	0.00
10	210.02	210.03	0.0000	0.00
11	238.90	238.89	0.0000	0.00
12	242.05	242.04	0.0000	0.00
13	270.37	270.34	0.0000	0.00
14	277.61	277.58	0.0000	0.00
15	295.36	295.33	0.0000	0.00
16	300.07	300.03	0.0000	0.00
17	303.22	303.18	0.0000	0.00
18	319.42	319.37	0.0000	0.00
19	327.62	327.57	0.0000	0.00
20	338.84	338.78	0.0000	0.00
21	352.03	351.97	0.0000	0.00
22	462.38	462.26	0.0000	0.00
23	510.69	510.55	0.0000	0.00
24	580.55	580.37	0.0000	0.00
25	583.35	583.17	0.0000	0.00
26	609.48	609.29	0.0000	0.00
27	694.49	694.26	0.0000	0.00
28	727.50	727.25	0.0000	0.00
29	767.32	767.05	0.0000	0.00
30	785.51	785.24	0.0000	0.00
31	794.72	794.44	0.0000	0.00
32	806.72	806.43	0.0000	0.00
33	860.17	859.86	0.0000	0.00
34	911.56	911.24	0.0000	0.00
35	965.41	965.06	0.0000	0.00
36	969.15	968.80	0.0000	0.00
37	972.55	972.20	0.0000	0.00
38	1120.62	1120.21	0.0000	0.00
39	1123.62	1123.21	0.0000	0.00
40	1237.39	1236.94	0.0000	0.00
41	1305.95	1305.47	0.0000	0.00
42	1373.70	1373.21	0.0000	0.00

Analysis Report for 1510084-11

CP0604S24-25

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1377.21	1376.72	0.0000	0.00
44	1405.61	1405.10	0.0000	0.00
45	1460.92	1460.40	0.0000	0.00
46	1590.86	1590.30	0.0000	0.00
47	1620.50	1619.94	0.0000	0.00
48	1630.93	1630.36	0.0000	0.00
49	1659.50	1658.92	0.0000	0.00
50	1686.85	1686.26	0.0000	0.00
51	1729.11	1728.51	0.0000	0.00
52	1764.52	1763.91	0.0000	0.00
53	1805.04	1804.42	0.0000	0.00
54	1847.21	1846.58	0.0000	0.00
55	2052.77	2052.11	0.0000	0.00
56	2063.34	2062.67	0.0000	0.00
57	2103.18	2102.50	0.0000	0.00
58	2204.21	2203.52	0.0000	0.00
59	2213.98	2213.29	0.0000	0.00
60	2220.42	2219.73	0.0000	0.00
61	2355.28	2354.56	0.0000	0.00
62	2447.15	2446.43	0.0000	0.00
63	2614.49	2613.74	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1510084-11

CP0604S24-25

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 11:41:01AM

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	76.36	72 -	83	76.45	1.17E+03	169.01	2.94E+03	3.71
2	93.28	91 -	95	93.36	2.02E+02	77.93	1.11E+03	1.51
3	98.97	97 -	101	99.04	6.53E+01	59.73	7.25E+02	2.81
4	105.10	102 -	108	105.17	1.07E+02	76.86	1.00E+03	2.37
5	114.01	111 -	118	114.07	9.85E+01	82.22	1.05E+03	4.86
6	129.67	126 -	133	129.73	7.93E+01	87.89	1.22E+03	1.17
7	144.67	143 -	147	144.72	7.07E+01	56.47	6.41E+02	1.15
M 8	183.09	181 -	188	183.12	4.10E+01	44.00	4.29E+02	1.32
m 9	185.96	181 -	188	185.98	1.43E+02	49.88	4.66E+02	1.32
10	210.02	205 -	214	210.03	1.66E+02	85.45	9.44E+02	2.13
M 11	238.90	235 -	251	238.89	8.08E+02	71.02	3.52E+02	1.41
m 12	242.05	235 -	251	242.04	1.54E+02	49.07	3.25E+02	1.42
13	270.37	266 -	274	270.34	1.07E+02	65.49	5.94E+02	1.74
14	277.61	275 -	281	277.58	5.29E+01	52.85	4.70E+02	1.81
M 15	295.36	290 -	307	295.33	3.76E+02	50.56	2.50E+02	1.55
m 16	300.07	290 -	307	300.03	1.08E+02	47.92	3.05E+02	2.20
m 17	303.22	290 -	307	303.18	4.78E+01	48.08	2.89E+02	2.21
18	319.42	318 -	322	319.37	2.88E+01	34.26	2.32E+02	1.13
19	327.62	324 -	331	327.57	5.03E+01	50.12	3.87E+02	1.27
20	338.84	334 -	344	338.78	2.21E+02	69.51	5.23E+02	1.90
21	352.03	348 -	356	351.97	5.64E+02	72.20	4.56E+02	1.43
22	462.38	458 -	466	462.26	4.56E+01	46.05	3.01E+02	2.47
23	510.69	505 -	516	510.55	2.16E+02	59.23	3.31E+02	2.12
M 24	580.55	579 -	590	580.37	1.27E+01	11.09	2.63E+01	1.99
m 25	583.35	579 -	590	583.17	3.61E+02	43.85	9.15E+01	1.86
26	609.48	605 -	613	609.29	4.37E+02	56.11	2.14E+02	1.70
27	694.49	690 -	698	694.26	3.27E+01	33.89	1.55E+02	3.50
28	727.50	723 -	731	727.25	7.68E+01	36.51	1.58E+02	1.58
29	767.32	762 -	771	767.05	6.04E+01	38.30	1.75E+02	3.69
30	785.51	781 -	789	785.24	4.60E+01	31.16	1.20E+02	2.20
31	794.72	790 -	800	794.44	5.68E+01	36.67	1.50E+02	2.25
32	806.72	804 -	809	806.43	1.72E+01	21.79	8.15E+01	2.43
33	860.17	856 -	862	859.86	4.34E+01	26.66	9.73E+01	2.46
34	911.56	907 -	916	911.24	1.94E+02	46.56	1.96E+02	1.96
M 35	965.41	962 -	976	965.06	4.68E+01	22.65	6.92E+01	2.02
m 36	969.15	962 -	976	968.80	1.27E+02	27.92	5.20E+01	1.80
m 37	972.55	962 -	976	972.20	1.93E+01	27.66	6.53E+01	2.19
M 38	1120.62	1113 -	1125	1120.21	1.14E+02	27.73	6.66E+01	2.31
m 39	1123.62	1113 -	1125	1123.21	1.39E+01	23.92	4.73E+01	2.05
40	1237.39	1231 -	1242	1236.94	8.01E+01	40.05	1.56E+02	4.14

: 00714

Analysis Report for 1510084-11

CP0604S24-25

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1305.95	1303 -	1308	1305.47	1.80E+01	13.86	2.40E+01	1.80
M	42	1373.70	1372 -	1398	1373.21	1.02E+01	6.08	3.21E+00	3.01
m	43	1377.21	1372 -	1398	1376.72	3.38E+01	15.78	1.00E+01	2.33
	44	1405.61	1399 -	1412	1405.10	4.20E+01	23.37	4.20E+01	10.24
	45	1460.92	1453 -	1465	1460.40	7.87E+02	60.85	6.66E+01	2.41
	46	1590.86	1585 -	1595	1590.30	3.40E+01	19.43	2.99E+01	6.75
	47	1620.50	1614 -	1623	1619.94	9.80E+00	13.42	2.04E+01	3.28
	48	1630.93	1626 -	1634	1630.36	1.04E+01	11.35	1.31E+01	1.57
	49	1659.50	1655 -	1663	1658.92	1.10E+01	12.69	1.80E+01	3.17
	50	1686.85	1683 -	1689	1686.26	6.64E+00	8.99	8.73E+00	2.81
	51	1729.11	1724 -	1732	1728.51	2.18E+01	10.78	4.42E+00	2.30
	52	1764.52	1760 -	1767	1763.91	7.61E+01	19.39	1.19E+01	2.24
	53	1805.04	1801 -	1807	1804.42	9.08E+00	8.51	5.83E+00	3.73
	54	1847.21	1842 -	1850	1846.58	2.35E+01	12.35	9.00E+00	2.64
	55	2052.77	2049 -	2054	2052.11	5.57E+00	6.08	2.86E+00	2.67
	56	2063.34	2059 -	2066	2062.67	7.00E+00	8.72	8.00E+00	1.14
	57	2103.18	2099 -	2105	2102.50	2.00E+01	8.94	0.00E+00	1.80
	58	2204.21	2199 -	2208	2203.52	3.30E+01	11.49	0.00E+00	3.39
	59	2213.98	2210 -	2216	2213.29	7.00E+00	5.29	0.00E+00	1.92
	60	2220.42	2217 -	2222	2219.73	4.42E+00	5.74	3.17E+00	1.88
	61	2355.28	2350 -	2359	2354.56	1.00E+01	10.30	8.00E+00	2.21
	62	2447.15	2442 -	2450	2446.43	1.29E+01	8.96	4.20E+00	1.05
	63	2614.49	2609 -	2619	2613.74	1.12E+02	22.05	4.71E+00	2.73

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 : 11/4/2015 11:41:01AM

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	76.36	72 -	83	1.17E+03	169.01	2.94E+03	1.27E+02
2	93.28	91 -	95	2.02E+02	77.93	1.11E+03	5.97E+01
3	98.97	97 -	101	6.53E+01	59.73	7.25E+02	4.73E+01
4	105.10	102 -	108	1.07E+02	76.86	1.00E+03	6.09E+01
5	114.01	111 -	118	9.85E+01	82.22	1.05E+03	6.56E+01

Analysis Report for 1510084-11

CP0604S24-25

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	6	129.67	126 -	133	7.93E+01	87.89	1.22E+03	7.07E+01
	7	144.67	143 -	147	7.07E+01	56.47	6.41E+02	4.43E+01
M	8	183.09	181 -	188	4.10E+01	44.00	4.29E+02	3.41E+01
m	9	185.96	181 -	188	1.43E+02	49.88	4.66E+02	3.55E+01
	10	210.02	205 -	214	1.66E+02	85.45	9.44E+02	6.70E+01
M	11	238.90	235 -	251	8.08E+02	71.02	3.52E+02	3.09E+01
m	12	242.05	235 -	251	1.54E+02	49.07	3.25E+02	2.96E+01
	13	270.37	266 -	274	1.07E+02	65.49	5.94E+02	5.11E+01
	14	277.61	275 -	281	5.29E+01	52.85	4.70E+02	4.18E+01
M	15	295.36	290 -	307	3.76E+02	50.56	2.50E+02	2.60E+01
m	16	300.07	290 -	307	1.08E+02	47.92	3.05E+02	2.87E+01
m	17	303.22	290 -	307	4.78E+01	48.08	2.89E+02	2.79E+01
	18	319.42	318 -	322	2.88E+01	34.26	2.32E+02	2.67E+01
	19	327.62	324 -	331	5.03E+01	50.12	3.87E+02	3.95E+01
	20	338.84	334 -	344	2.21E+02	69.51	5.23E+02	5.17E+01
	21	352.03	348 -	356	5.64E+02	72.20	4.56E+02	4.47E+01
	22	462.38	458 -	466	4.56E+01	46.05	3.01E+02	3.62E+01
	23	510.69	505 -	516	2.16E+02	59.23	3.31E+02	4.23E+01
M	24	580.55	579 -	590	1.27E+01	11.09	2.63E+01	8.43E+00
m	25	583.35	579 -	590	3.61E+02	43.85	9.15E+01	1.57E+01
	26	609.48	605 -	613	4.37E+02	56.11	2.14E+02	3.08E+01
	27	694.49	690 -	698	3.27E+01	33.89	1.55E+02	2.62E+01
	28	727.50	723 -	731	7.68E+01	36.51	1.58E+02	2.63E+01
	29	767.32	762 -	771	6.04E+01	38.30	1.75E+02	2.88E+01
	30	785.51	781 -	789	4.60E+01	31.16	1.20E+02	2.31E+01
	31	794.72	790 -	800	5.68E+01	36.67	1.50E+02	2.75E+01
	32	806.72	804 -	809	1.72E+01	21.79	8.15E+01	1.66E+01
	33	860.17	856 -	862	4.34E+01	26.66	9.73E+01	1.91E+01
	34	911.56	907 -	916	1.94E+02	46.56	1.96E+02	3.07E+01
M	35	965.41	962 -	976	4.68E+01	22.65	6.92E+01	1.37E+01
m	36	969.15	962 -	976	1.27E+02	27.92	5.20E+01	1.19E+01
m	37	972.55	962 -	976	1.93E+01	27.66	6.53E+01	1.33E+01
M	38	1120.62	1113 -	1125	1.14E+02	27.73	6.66E+01	1.34E+01
m	39	1123.62	1113 -	1125	1.39E+01	23.92	4.73E+01	1.13E+01
	40	1237.39	1231 -	1242	8.01E+01	40.05	1.56E+02	2.95E+01
	41	1305.95	1303 -	1308	1.80E+01	13.86	2.40E+01	9.00E+00
M	42	1373.70	1372 -	1398	1.02E+01	6.08	3.21E+00	2.95E+00
m	43	1377.21	1372 -	1398	3.38E+01	15.78	1.00E+01	5.20E+00
	44	1405.61	1399 -	1412	4.20E+01	23.37	4.20E+01	1.60E+01
	45	1460.92	1453 -	1465	7.87E+02	60.85	6.66E+01	1.94E+01
	46	1590.86	1585 -	1595	3.40E+01	19.43	2.99E+01	1.28E+01
	47	1620.50	1614 -	1623	9.80E+00	13.42	2.04E+01	9.75E+00
	48	1630.93	1626 -	1634	1.04E+01	11.35	1.31E+01	7.67E+00
	49	1659.50	1655 -	1663	1.10E+01	12.69	1.80E+01	8.89E+00
	50	1686.85	1683 -	1689	6.64E+00	8.99	8.73E+00	6.05E+00
	51	1729.11	1724 -	1732	2.18E+01	10.78	4.42E+00	4.43E+00
	52	1764.52	1760 -	1767	7.61E+01	19.39	1.19E+01	6.96E+00
	53	1805.04	1801 -	1807	9.08E+00	8.51	5.83E+00	4.94E+00
	54	1847.21	1842 -	1850	2.35E+01	12.35	9.00E+00	6.29E+00
	55	2052.77	2049 -	2054	5.57E+00	6.08	2.86E+00	3.15E+00
	56	2063.34	2059 -	2066	7.00E+00	8.72	8.00E+00	5.70E+00

Analysis Report for 1510084-11

CP0604S24-25

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
57	2103.18	2099 -	2105	2.00E+01	8.94	0.00E+00	0.00E+00
58	2204.21	2199 -	2208	3.30E+01	11.49	0.00E+00	0.00E+00
59	2213.98	2210 -	2216	7.00E+00	5.29	0.00E+00	0.00E+00
60	2220.42	2217 -	2222	4.42E+00	5.74	3.17E+00	3.22E+00
61	2355.28	2350 -	2359	1.00E+01	10.30	8.00E+00	6.68E+00
62	2447.15	2442 -	2450	1.29E+01	8.96	4.20E+00	4.40E+00
63	2614.49	2609 -	2619	1.12E+02	22.05	4.71E+00	5.18E+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 : 11/4/2015 11:41:01AM

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	76.36	72 -	83	76.45	1.17E+03	169.01	2.94E+03	.....
2	93.28	91 -	95	93.36	2.02E+02	77.93	1.11E+03	GA-67
3	98.97	97 -	101	99.04	6.53E+01	59.73	7.25E+02	.....
4	105.10	102 -	108	105.17	1.07E+02	76.86	1.00E+03	EU-155
5	114.01	111 -	118	114.07	9.85E+01	82.22	1.05E+03	.....
6	129.67	126 -	133	129.73	7.93E+01	87.89	1.22E+03	.....
7	144.67	143 -	147	144.72	7.07E+01	56.47	6.41E+02	CE-141 U-235
M	183.09	181 -	188	183.12	4.10E+01	44.00	4.29E+02	.....
m	185.96	181 -	188	185.98	1.43E+02	49.88	4.66E+02	RA-226
	210.02	205 -	214	210.03	1.66E+02	85.45	9.44E+02	CM-243
M	238.90	235 -	251	238.89	8.08E+02	71.02	3.52E+02	PB-212
m	242.05	235 -	251	242.04	1.54E+02	49.07	3.25E+02	.....
	270.37	266 -	274	270.34	1.07E+02	65.49	5.94E+02	.....
	277.61	275 -	281	277.58	5.29E+01	52.85	4.70E+02	CM-243 NP-239
M	295.36	290 -	307	295.33	3.76E+02	50.56	2.50E+02	PB-214
m	300.07	290 -	307	300.03	1.08E+02	47.92	3.05E+02	PB-212 BI-210M

Analysis Report for 1510084-11

CP0604S24-25

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									GA-67
m	17	303.22	290 -	307	303.18	4.78E+01	48.08	2.89E+02	BA-133
									PA-231
	18	319.42	318 -	322	319.37	2.88E+01	34.26	2.32E+02	CR-51
	19	327.62	324 -	331	327.57	5.03E+01	50.12	3.87E+02	.....
	20	338.84	334 -	344	338.78	2.21E+02	69.51	5.23E+02	AC-228
	21	352.03	348 -	356	351.97	5.64E+02	72.20	4.56E+02	PB-214
	22	462.38	458 -	466	462.26	4.56E+01	46.05	3.01E+02	.....
	23	510.69	505 -	516	510.55	2.16E+02	59.23	3.31E+02	.....
M	24	580.55	579 -	590	580.37	1.27E+01	11.09	2.63E+01	.....
m	25	583.35	579 -	590	583.17	3.61E+02	43.85	9.15E+01	TL-208
	26	609.48	605 -	613	609.29	4.37E+02	56.11	2.14E+02	BI-214
	27	694.49	690 -	698	694.26	3.27E+01	33.89	1.55E+02	SB-126
	28	727.50	723 -	731	727.25	7.68E+01	36.51	1.58E+02	BI-212
	29	767.32	762 -	771	767.05	6.04E+01	38.30	1.75E+02	.....
	30	785.51	781 -	789	785.24	4.60E+01	31.16	1.20E+02	.....
	31	794.72	790 -	800	794.44	5.68E+01	36.67	1.50E+02	.....
	32	806.72	804 -	809	806.43	1.72E+01	21.79	8.15E+01	.....
	33	860.17	856 -	862	859.86	4.34E+01	26.66	9.73E+01	TL-208
	34	911.56	907 -	916	911.24	1.94E+02	46.56	1.96E+02	AC-228
									LU-172
M	35	965.41	962 -	976	965.06	4.68E+01	22.65	6.92E+01	.....
m	36	969.15	962 -	976	968.80	1.27E+02	27.92	5.20E+01	AC-228
m	37	972.55	962 -	976	972.20	1.93E+01	27.66	6.53E+01	.....
M	38	1120.62	1113 -	1125	1120.21	1.14E+02	27.73	6.66E+01	SC-46
									BI-214
									TA-182
m	39	1123.62	1113 -	1125	1123.21	1.39E+01	23.92	4.73E+01	.....
	40	1237.39	1231 -	1242	1236.94	8.01E+01	40.05	1.56E+02	CO-56
	41	1305.95	1303 -	1308	1305.47	1.80E+01	13.86	2.40E+01	.....
M	42	1373.70	1372 -	1398	1373.21	1.02E+01	6.08	3.21E+00	.....
m	43	1377.21	1372 -	1398	1376.72	3.38E+01	15.78	1.00E+01	.....
	44	1405.61	1399 -	1412	1405.10	4.20E+01	23.37	4.20E+01	.....
	45	1460.92	1453 -	1465	1460.40	7.87E+02	60.85	6.66E+01	K-40
	46	1590.86	1585 -	1595	1590.30	3.40E+01	19.43	2.99E+01	.....
	47	1620.50	1614 -	1623	1619.94	9.80E+00	13.42	2.04E+01	BI-212
	48	1630.93	1626 -	1634	1630.36	1.04E+01	11.35	1.31E+01	.....
	49	1659.50	1655 -	1663	1658.92	1.10E+01	12.69	1.80E+01	.....
	50	1686.85	1683 -	1689	1686.26	6.64E+00	8.99	8.73E+00	.....
	51	1729.11	1724 -	1732	1728.51	2.18E+01	10.78	4.42E+00	.....
	52	1764.52	1760 -	1767	1763.91	7.61E+01	19.39	1.19E+01	BI-214
	53	1805.04	1801 -	1807	1804.42	9.08E+00	8.51	5.83E+00	.....
	54	1847.21	1842 -	1850	1846.58	2.35E+01	12.35	9.00E+00	.....
	55	2052.77	2049 -	2054	2052.11	5.57E+00	6.08	2.86E+00	.....
	56	2063.34	2059 -	2066	2062.67	7.00E+00	8.72	8.00E+00	.....
	57	2103.18	2099 -	2105	2102.50	2.00E+01	8.94	0.00E+00	.....
	58	2204.21	2199 -	2208	2203.52	3.30E+01	11.49	0.00E+00	BI-214
	59	2213.98	2210 -	2216	2213.29	7.00E+00	5.29	0.00E+00	.....
	60	2220.42	2217 -	2222	2219.73	4.42E+00	5.74	3.17E+00	.....
	61	2355.28	2350 -	2359	2354.56	1.00E+01	10.30	8.00E+00	.....
	62	2447.15	2442 -	2450	2446.43	1.29E+01	8.96	4.20E+00	.....
	63	2614.49	2609 -	2619	2613.74	1.12E+02	22.05	4.71E+00	TL-208

Analysis Report for 1510084-11

CP0604S24-25

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 : 11/4/2015 11:41:01AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.36	1.17E+03	169.01	2.74E-02	3.35E-03
	2	93.28	2.02E+02	77.93	2.85E-02	4.27E-03
	3	98.97	6.53E+01	59.73	2.83E-02	4.02E-03
	4	105.10	1.07E+02	76.86	2.80E-02	3.74E-03
	5	114.01	9.85E+01	82.22	2.74E-02	3.35E-03
	6	129.67	7.93E+01	87.89	2.60E-02	2.76E-03
	7	144.67	7.07E+01	56.47	2.45E-02	2.31E-03
M	8	183.09	4.10E+01	44.00	2.13E-02	1.66E-03
m	9	185.96	1.43E+02	49.88	2.11E-02	1.65E-03
	10	210.02	1.66E+02	85.45	1.95E-02	1.63E-03
M	11	238.90	8.08E+02	71.02	1.79E-02	1.60E-03
m	12	242.05	1.54E+02	49.07	1.77E-02	1.60E-03
	13	270.37	1.07E+02	65.49	1.64E-02	1.57E-03
	14	277.61	5.29E+01	52.85	1.61E-02	1.56E-03
M	15	295.36	3.76E+02	50.56	1.55E-02	1.48E-03
m	16	300.07	1.08E+02	47.92	1.53E-02	1.46E-03
m	17	303.22	4.78E+01	48.08	1.52E-02	1.44E-03
	18	319.42	2.88E+01	34.26	1.47E-02	1.36E-03
	19	327.62	5.03E+01	50.12	1.44E-02	1.33E-03
	20	338.84	2.21E+02	69.51	1.41E-02	1.27E-03
	21	352.03	5.64E+02	72.20	1.37E-02	1.21E-03
	22	462.38	4.56E+01	46.05	1.13E-02	9.48E-04
	23	510.69	2.16E+02	59.23	1.06E-02	8.99E-04
M	24	580.55	1.27E+01	11.09	9.61E-03	8.28E-04
m	25	583.35	3.61E+02	43.85	9.58E-03	8.25E-04
	26	609.48	4.37E+02	56.11	9.27E-03	7.98E-04
	27	694.49	3.27E+01	33.89	8.38E-03	7.24E-04
	28	727.50	7.68E+01	36.51	8.08E-03	7.03E-04
	29	767.32	6.04E+01	38.30	7.75E-03	6.77E-04
	30	785.51	4.60E+01	31.16	7.61E-03	6.66E-04
	31	794.72	5.68E+01	36.67	7.54E-03	6.60E-04
	32	806.72	1.72E+01	21.79	7.45E-03	6.52E-04
	33	860.17	4.34E+01	26.66	7.07E-03	6.18E-04
	34	911.56	1.94E+02	46.56	6.74E-03	5.86E-04

: 00719

Analysis Report for 1510084-11

CP0604S24-25

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	35	965.41	4.68E+01	22.65	6.43E-03	5.59E-04
m	36	969.15	1.27E+02	27.92	6.41E-03	5.57E-04
m	37	972.55	1.93E+01	27.66	6.40E-03	5.55E-04
M	38	1120.62	1.14E+02	27.73	5.70E-03	4.80E-04
m	39	1123.62	1.39E+01	23.92	5.69E-03	4.78E-04
	40	1237.39	8.01E+01	40.05	5.27E-03	4.82E-04
	41	1305.95	1.80E+01	13.86	5.06E-03	5.14E-04
M	42	1373.70	1.02E+01	6.08	4.88E-03	5.09E-04
m	43	1377.21	3.38E+01	15.78	4.87E-03	5.08E-04
	44	1405.61	4.20E+01	23.37	4.80E-03	4.96E-04
	45	1460.92	7.87E+02	60.85	4.67E-03	4.73E-04
	46	1590.86	3.40E+01	19.43	4.43E-03	4.19E-04
	47	1620.50	9.80E+00	13.42	4.38E-03	4.07E-04
	48	1630.93	1.04E+01	11.35	4.36E-03	4.03E-04
	49	1659.50	1.10E+01	12.69	4.32E-03	3.91E-04
	50	1686.85	6.64E+00	8.99	4.28E-03	3.80E-04
	51	1729.11	2.18E+01	10.78	4.23E-03	3.62E-04
	52	1764.52	7.61E+01	19.39	4.19E-03	3.47E-04
	53	1805.04	9.08E+00	8.51	4.14E-03	3.31E-04
	54	1847.21	2.35E+01	12.35	4.10E-03	3.18E-04
	55	2052.77	5.57E+00	6.08	3.97E-03	3.18E-04
	56	2063.34	7.00E+00	8.72	3.96E-03	3.18E-04
	57	2103.18	2.00E+01	8.94	3.95E-03	3.18E-04
	58	2204.21	3.30E+01	11.49	3.93E-03	3.18E-04
	59	2213.98	7.00E+00	5.29	3.93E-03	3.18E-04
	60	2220.42	4.42E+00	5.74	3.93E-03	3.18E-04
	61	2355.28	1.00E+01	10.30	3.94E-03	3.18E-04
	62	2447.15	1.29E+01	8.96	3.96E-03	3.18E-04
	63	2614.49	1.12E+02	22.05	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 : 11/4/2015 11:41:01AM

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	76.36	1.17E+03	169.01			1.17E+03	1.69E+02

: 00720

Analysis Report for 1510084-11

CP0604S24-25

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
2	93.28	2.02E+02	77.93	5.70E+01	9.03E+00	1.45E+02	7.85E+01
3	98.97	6.53E+01	59.73			6.53E+01	5.97E+01
4	105.10	1.07E+02	76.86			1.07E+02	7.69E+01
5	114.01	9.85E+01	82.22			9.85E+01	8.22E+01
6	129.67	7.93E+01	87.89			7.93E+01	8.79E+01
7	144.67	7.07E+01	56.47	8.10E+00	1.90E+01	6.26E+01	5.96E+01
M	8	183.09	4.10E+01	44.00		4.10E+01	4.40E+01
m	9	185.96	1.43E+02	49.88	4.72E+01	7.97E+00	9.59E+01
10	210.02	1.66E+02	85.45			1.66E+02	8.55E+01
M	11	238.90	8.08E+02	71.02	2.36E+01	1.35E+01	7.85E+02
m	12	242.05	1.54E+02	49.07	6.38E+00	3.91E+00	1.48E+02
13	270.37	1.07E+02	65.49			1.07E+02	6.55E+01
14	277.61	5.29E+01	52.85			5.29E+01	5.29E+01
M	15	295.36	3.76E+02	50.56	8.57E+00	6.10E+00	3.67E+02
m	16	300.07	1.08E+02	47.92		1.08E+02	4.79E+01
m	17	303.22	4.78E+01	48.08		4.78E+01	4.81E+01
18	319.42	2.88E+01	34.26			2.88E+01	3.43E+01
19	327.62	5.03E+01	50.12	0.00E+00	0.00E+00	5.03E+01	5.01E+01
20	338.84	2.21E+02	69.51			2.21E+02	6.95E+01
21	352.03	5.64E+02	72.20	1.40E+01	5.55E+00	5.50E+02	7.24E+01
22	462.38	4.56E+01	46.05			4.56E+01	4.60E+01
23	510.69	2.16E+02	59.23	8.41E+01	5.50E+00	1.32E+02	5.95E+01
M	24	580.55	1.27E+01	11.09		1.27E+01	1.11E+01
m	25	583.35	3.61E+02	43.85	7.32E+00	4.08E+00	3.54E+02
26	609.48	4.37E+02	56.11	1.30E+01	3.89E+00	4.24E+02	5.62E+01
27	694.49	3.27E+01	33.89			3.27E+01	3.39E+01
28	727.50	7.68E+01	36.51			7.68E+01	3.65E+01
29	767.32	6.04E+01	38.30			6.04E+01	3.83E+01
30	785.51	4.60E+01	31.16			4.60E+01	3.12E+01
31	794.72	5.68E+01	36.67			5.68E+01	3.67E+01
32	806.72	1.72E+01	21.79			1.72E+01	2.18E+01
33	860.17	4.34E+01	26.66			4.34E+01	2.67E+01
34	911.56	1.94E+02	46.56	5.60E+00	3.32E+00	1.89E+02	4.67E+01
M	35	965.41	4.68E+01	22.65		4.68E+01	2.26E+01
m	36	969.15	1.27E+02	27.92		1.27E+02	2.79E+01
m	37	972.55	1.93E+01	27.66		1.93E+01	2.77E+01
M	38	1120.62	1.14E+02	27.73	3.93E+00	2.96E+00	1.10E+02
m	39	1123.62	1.39E+01	23.92		1.39E+01	2.39E+01
40	1237.39	8.01E+01	40.05			8.01E+01	4.00E+01
41	1305.95	1.80E+01	13.86			1.80E+01	1.39E+01
M	42	1373.70	1.02E+01	6.08		1.02E+01	6.08E+00
m	43	1377.21	3.38E+01	15.78		3.38E+01	1.58E+01
44	1405.61	4.20E+01	23.37			4.20E+01	2.34E+01
45	1460.92	7.87E+02	60.85	1.12E+01	2.55E+00	7.75E+02	6.09E+01
46	1590.86	3.40E+01	19.43			3.40E+01	1.94E+01
47	1620.50	9.80E+00	13.42			9.80E+00	1.34E+01
48	1630.93	1.04E+01	11.35			1.04E+01	1.13E+01
49	1659.50	1.10E+01	12.69			1.10E+01	1.27E+01
50	1686.85	6.64E+00	8.99			6.64E+00	8.99E+00
51	1729.11	2.18E+01	10.78			2.18E+01	1.08E+01
52	1764.52	7.61E+01	19.39	4.23E+00	2.21E+00	7.18E+01	1.95E+01
53	1805.04	9.08E+00	8.51			9.08E+00	8.51E+00
54	1847.21	2.35E+01	12.35			2.35E+01	1.23E+01
55	2052.77	5.57E+00	6.08			5.57E+00	6.08E+00

: 00721

Analysis Report for 1510084-11

CP0604S24-25

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
56	2063.34	7.00E+00	8.72			7.00E+00	8.72E+00
57	2103.18	2.00E+01	8.94			2.00E+01	8.94E+00
58	2204.21	3.30E+01	11.49	5.94E-01	1.16E+00	3.24E+01	1.15E+01
59	2213.98	7.00E+00	5.29			7.00E+00	5.29E+00
60	2220.42	4.42E+00	5.74			4.42E+00	5.74E+00
61	2355.28	1.00E+01	10.30			1.00E+01	1.03E+01
62	2447.15	1.29E+01	8.96			1.29E+01	8.96E+00
63	2614.49	1.12E+02	22.05	7.38E+00	1.57E+00	1.04E+02	2.21E+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 : 11/4/2015 11:41:01AM
 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	76.36	1.17E+03	169.01			1.17E+03	1.69E+02
2	93.28	2.02E+02	77.93	5.70E+01	9.03E+00	1.45E+02	7.85E+01
3	98.97	6.53E+01	59.73			6.53E+01	5.97E+01
4	105.10	1.07E+02	76.86			1.07E+02	7.69E+01
5	114.01	9.85E+01	82.22			9.85E+01	8.22E+01
6	129.67	7.93E+01	87.89			7.93E+01	8.79E+01
7	144.67	7.07E+01	56.47	8.10E+00	1.90E+01	6.26E+01	5.96E+01
M 8	183.09	4.10E+01	44.00			4.10E+01	4.40E+01
m 9	185.96	1.43E+02	49.88	4.72E+01	7.97E+00	9.59E+01	5.05E+01
10	210.02	1.66E+02	85.45			1.66E+02	8.55E+01
M 11	238.90	8.08E+02	71.02	2.36E+01	1.35E+01	7.85E+02	7.23E+01
m 12	242.05	1.54E+02	49.07	6.38E+00	3.91E+00	1.48E+02	4.92E+01
13	270.37	1.07E+02	65.49			1.07E+02	6.55E+01
14	277.61	5.29E+01	52.85			5.29E+01	5.29E+01
M 15	295.36	3.76E+02	50.56	8.57E+00	6.10E+00	3.67E+02	5.09E+01
m 16	300.07	1.08E+02	47.92			1.08E+02	4.79E+01
m 17	303.22	4.78E+01	48.08			4.78E+01	4.81E+01
18	319.42	2.88E+01	34.26			2.88E+01	3.43E+01
19	327.62	5.03E+01	50.12	0.00E+00	0.00E+00	5.03E+01	5.01E+01
20	338.84	2.21E+02	69.51			2.21E+02	6.95E+01

Analysis Report for 1510084-11

CP0604S24-25

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	21	352.03	5.64E+02	72.20	1.40E+01	5.55E+00	5.50E+02	7.24E+01
	22	462.38	4.56E+01	46.05			4.56E+01	4.60E+01
	23	510.69	2.16E+02	59.23	8.41E+01	5.50E+00	1.32E+02	5.95E+01
M	24	580.55	1.27E+01	11.09			1.27E+01	1.11E+01
m	25	583.35	3.61E+02	43.85	7.32E+00	4.08E+00	3.54E+02	4.40E+01
	26	609.48	4.37E+02	56.11	1.30E+01	3.89E+00	4.24E+02	5.62E+01
	27	694.49	3.27E+01	33.89			3.27E+01	3.39E+01
	28	727.50	7.68E+01	36.51			7.68E+01	3.65E+01
	29	767.32	6.04E+01	38.30			6.04E+01	3.83E+01
	30	785.51	4.60E+01	31.16			4.60E+01	3.12E+01
	31	794.72	5.68E+01	36.67			5.68E+01	3.67E+01
	32	806.72	1.72E+01	21.79			1.72E+01	2.18E+01
	33	860.17	4.34E+01	26.66			4.34E+01	2.67E+01
	34	911.56	1.94E+02	46.56	5.60E+00	3.32E+00	1.89E+02	4.67E+01
M	35	965.41	4.68E+01	22.65			4.68E+01	2.26E+01
m	36	969.15	1.27E+02	27.92			1.27E+02	2.79E+01
m	37	972.55	1.93E+01	27.66			1.93E+01	2.77E+01
M	38	1120.62	1.14E+02	27.73	3.93E+00	2.96E+00	1.10E+02	2.79E+01
m	39	1123.62	1.39E+01	23.92			1.39E+01	2.39E+01
	40	1237.39	8.01E+01	40.05			8.01E+01	4.00E+01
	41	1305.95	1.80E+01	13.86			1.80E+01	1.39E+01
M	42	1373.70	1.02E+01	6.08			1.02E+01	6.08E+00
m	43	1377.21	3.38E+01	15.78			3.38E+01	1.58E+01
	44	1405.61	4.20E+01	23.37			4.20E+01	2.34E+01
	45	1460.92	7.87E+02	60.85	1.12E+01	2.55E+00	7.75E+02	6.09E+01
	46	1590.86	3.40E+01	19.43			3.40E+01	1.94E+01
	47	1620.50	9.80E+00	13.42			9.80E+00	1.34E+01
	48	1630.93	1.04E+01	11.35			1.04E+01	1.13E+01
	49	1659.50	1.10E+01	12.69			1.10E+01	1.27E+01
	50	1686.85	6.64E+00	8.99			6.64E+00	8.99E+00
	51	1729.11	2.18E+01	10.78			2.18E+01	1.08E+01
	52	1764.52	7.61E+01	19.39	4.23E+00	2.21E+00	7.18E+01	1.95E+01
	53	1805.04	9.08E+00	8.51			9.08E+00	8.51E+00
	54	1847.21	2.35E+01	12.35			2.35E+01	1.23E+01
	55	2052.77	5.57E+00	6.08			5.57E+00	6.08E+00
	56	2063.34	7.00E+00	8.72			7.00E+00	8.72E+00
	57	2103.18	2.00E+01	8.94			2.00E+01	8.94E+00
	58	2204.21	3.30E+01	11.49	5.94E-01	1.16E+00	3.24E+01	1.15E+01
	59	2213.98	7.00E+00	5.29			7.00E+00	5.29E+00
	60	2220.42	4.42E+00	5.74			4.42E+00	5.74E+00
	61	2355.28	1.00E+01	10.30			1.00E+01	1.03E+01
	62	2447.15	1.29E+01	8.96			1.29E+01	8.96E+00
	63	2614.49	1.12E+02	22.05	7.38E+00	1.57E+00	1.04E+02	2.21E+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 1510084-11

CP0604S24-25

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	0.998	1460.81 *	10.67	2.00E+01	2.60E+00
CR-51	0.929	320.08 *	9.83	4.93E-01	5.89E-01
GA-67	0.682	93.31 *	35.70	4.66E+01	1.69E+02
		208.95	2.24		
		300.22 *	16.00	1.44E+02	5.20E+02
		145.44 *	48.40	1.18E-01	1.16E-01
CE-141	0.907	583.14 *	30.22	1.57E+00	2.38E-01
TL-208	0.994	860.37 *	4.48	1.76E+00	1.09E+00
		2614.66 *	35.85	9.24E-01	2.09E-01
		727.17 *	11.80	1.04E+00	5.01E-01
BI-212	0.986	1620.62 *	2.75	1.05E+00	1.44E+00
		238.63 *	44.60	1.27E+00	1.63E-01
PB-212	0.989	300.09 *	3.41	2.66E+00	1.21E+00
		609.31 *	46.30	1.27E+00	2.01E-01
BI-214	0.994	1120.29 *	15.10	1.65E+00	4.39E-01
		1764.49 *	15.80	1.40E+00	3.97E-01
		2204.22 *	4.98	2.13E+00	7.78E-01
		295.21 *	19.19	1.59E+00	2.68E-01
PB-214	0.997	351.92 *	37.19	1.39E+00	2.20E-01
		186.21 *	3.28	1.78E+00	3.40E+00
RA-226	0.990	338.32 *	11.40	1.77E+00	5.80E-01
AC-228	0.972	911.07 *	27.70	1.30E+00	3.41E-01
		969.11 *	16.60	1.53E+00	3.63E-01
		283.67 *	1.60		
PA-231	0.307	302.67 *	2.30	1.76E+00	1.78E+00
CM-243	0.372	209.75 *	3.29	3.35E+00	1.74E+00
		228.14	10.60		
		277.60 *	14.00	3.02E-01	3.03E-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 1510084-11
CP0604S24-25

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 11:41:01AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	76.36	3.25156E-01	7.22		
3	98.97	1.81448E-02	45.72	D-Esc	
4	105.10	2.96348E-02	36.02	Tol.	EU-155
5	114.01	2.73517E-02	41.75		
6	129.67	2.20353E-02	55.39		
M	8	183.09	1.13822E-02	53.69	
m	12	242.05	4.11273E-02	16.62	
13	270.37	2.97222E-02	30.60		
19	327.62	1.39617E-02	49.86		
22	462.38	1.26715E-02	50.47		
23	510.69	3.67287E-02	22.49	Sum	
M	24	580.55	3.53742E-03	Sum	
27	694.49	9.07828E-03	51.85	Tol.	SB-126
29	767.32	1.67652E-02	31.73		
30	785.51	1.27738E-02	33.88		
31	794.72	1.57765E-02	32.28	Sum	
32	806.72	4.78927E-03	63.20		
M	35	965.41	1.29957E-02	Sum	
m	37	972.55	5.37246E-03	71.51	
m	39	1123.62	3.85349E-03	86.20	
40	1237.39	2.22433E-02	25.01	Tol.	CO-56
41	1305.95	5.00000E-03	38.49	Sum	
M	42	1373.70	2.82589E-03	29.90	
m	43	1377.21	9.37658E-03	23.37	
44	1405.61	1.16667E-02	27.82		
46	1590.86	9.45295E-03	28.55		
48	1630.93	2.90033E-03	54.34		
49	1659.50	3.05556E-03	57.68		
50	1686.85	1.84343E-03	67.70		
51	1729.11	6.05324E-03	24.74	Sum	
53	1805.04	2.52315E-03	46.87		
54	1847.21	6.52778E-03	26.27	Sum	
55	2052.77	1.54762E-03	54.59		
56	2063.34	1.94444E-03	62.27		
57	2103.18	5.55556E-03	22.36	S-Esc	
59	2213.98	1.94444E-03	37.80		
60	2220.42	1.22685E-03	65.03		
61	2355.28	2.77778E-03	51.48		
62	2447.15	3.58333E-03	34.72		

Analysis Report for 1510084-11

CP0604S24-25

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	2.00E+01	2.60E+00
CR-51	0.92	320.08 *	9.83	4.93E-01	5.89E-01
GA-67	0.68	93.31 *	35.70	4.66E+01	1.69E+02
		208.95	2.24		
		300.22 *	16.00	1.44E+02	5.20E+02
CE-141	0.90	145.44 *	48.40	1.18E-01	1.16E-01
TL-208	0.99	583.14 *	30.22	1.57E+00	2.38E-01
		860.37 *	4.48	1.76E+00	1.09E+00
		2614.66 *	35.85	9.24E-01	2.09E-01
BI-212	0.98	727.17 *	11.80	1.04E+00	5.01E-01
		1620.62 *	2.75	1.05E+00	1.44E+00
PB-212	0.98	238.63 *	44.60	1.27E+00	1.63E-01
		300.09 *	3.41	2.66E+00	1.21E+00
BI-214	0.99	609.31 *	46.30	1.27E+00	2.01E-01
		1120.29 *	15.10	1.65E+00	4.39E-01
		1764.49 *	15.80	1.40E+00	3.97E-01
		2204.22 *	4.98	2.13E+00	7.78E-01
PB-214	0.99	295.21 *	19.19	1.59E+00	2.68E-01
		351.92 *	37.19	1.39E+00	2.20E-01
RA-226	0.99	186.21 *	3.28	1.78E+00	3.40E+00
AC-228	0.97	338.32 *	11.40	1.77E+00	5.80E-01
		911.07 *	27.70	1.30E+00	3.41E-01
		969.11 *	16.60	1.53E+00	3.63E-01
PA-231	0.30	283.67	1.60		
		302.67 *	2.30	1.76E+00	1.78E+00
CM-243	0.37	209.75 *	3.29	3.35E+00	1.74E+00
		228.14	10.60		
		277.60 *	14.00	3.02E-01	3.03E-01

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* = 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	0.998	2.00E+01	2.60E+00	
CR-51	0.929	4.93E-01	5.89E-01	
GA-67	0.682	5.05E+01	1.73E+02	
CE-141	0.907	1.18E-01	1.16E-01	
TL-208	0.994	1.22E+00	1.55E-01	
BI-212	0.986	1.04E+00	4.73E-01	
PB-212	0.989	1.28E+00	1.62E-01	
BI-214	0.994	1.38E+00	1.62E-01	
PB-214	0.997	1.47E+00	1.70E-01	
RA-226	0.990	1.78E+00	3.40E+00	
AC-228	0.972	1.46E+00	2.28E-01	
PA-231	0.307	1.76E+00	1.78E+00	
CM-243	0.372	3.91E-01	2.99E-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

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 11:41:01AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	76.36	3.25156E-01	7.22		
3	98.97	1.81448E-02	45.72	D-Esc	
4	105.10	2.96348E-02	36.02	Tol.	EU-155
5	114.01	2.73517E-02	41.75		
6	129.67	2.20353E-02	55.39		
M m 8	183.09	1.13822E-02	53.69		
12	242.05	4.11273E-02	16.62		
13	270.37	2.97222E-02	30.60		
19	327.62	1.39617E-02	49.86		
22	462.38	1.26715E-02	50.47		
23	510.69	3.67287E-02	22.49	Sum	
M 24	580.55	3.53742E-03	43.54	Sum	
27	694.49	9.07828E-03	51.85	Tol.	SB-126
29	767.32	1.67652E-02	31.73		
30	785.51	1.27738E-02	33.88		
31	794.72	1.57765E-02	32.28	Sum	
32	806.72	4.78927E-03	63.20		
M 35	965.41	1.29957E-02	24.21	Sum	
m 37	972.55	5.37246E-03	71.51		
m 39	1123.62	3.85349E-03	86.20		
40	1237.39	2.22433E-02	25.01	Tol.	CO-56
41	1305.95	5.00000E-03	38.49	Sum	
M 42	1373.70	2.82589E-03	29.90		
m 43	1377.21	9.37658E-03	23.37		
44	1405.61	1.16667E-02	27.82		
46	1590.86	9.45295E-03	28.55		
48	1630.93	2.90033E-03	54.34		
49	1659.50	3.05556E-03	57.68		
50	1686.85	1.84343E-03	67.70		
51	1729.11	6.05324E-03	24.74	Sum	
53	1805.04	2.52315E-03	46.87		
54	1847.21	6.52778E-03	26.27	Sum	
55	2052.77	1.54762E-03	54.59		
56	2063.34	1.94444E-03	62.27		
57	2103.18	5.55556E-03	22.36	S-Esc	

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
59	2213.98	1.94444E-03	37.80		
60	2220.42	1.22685E-03	65.03		
61	2355.28	2.77778E-03	51.48		
62	2447.15	3.58333E-03	34.72		

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	1.04E-01	7.28E-01	7.28E-01
+	NA-22	1274.54	99.94	1.61E-03	8.63E-02	8.63E-02
+	NA-24	1368.53	99.99	1.74E+10	8.08E+10	2.10E+11
		2754.09	99.86	-1.46E+10		8.08E+10
+	AL-26	1808.65	99.76	-8.31E-03	5.65E-02	5.65E-02
+	K-40	1460.81	* 10.67	2.00E+01	1.12E+00	1.12E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.83E-03	5.03E-02	5.03E-02
		78.34	96.00	3.19E-01		7.48E-02
+	SC-46	889.25	99.98	-3.89E-02	8.41E-02	8.41E-02
		1120.51	99.99	2.83E-01		1.57E-01
+	V-48	983.52	99.98	7.87E-04	2.20E-01	2.20E-01
		1312.10	97.50	-7.16E-02		2.39E-01
+	CR-51	320.08	* 9.83	4.93E-01	9.63E-01	9.63E-01
+	MN-54	834.83	99.97	-9.28E-03	8.30E-02	8.30E-02
+	CO-56	846.75	99.96	-7.93E-03	9.29E-02	9.29E-02
		1037.75	14.03	-1.28E-01		6.38E-01
		1238.25	67.00	2.59E-01		2.35E-01
		1771.40	15.51	-1.40E-02		5.47E-01
		2598.48	16.90	-1.11E-01		1.74E-01
+	CO-57	122.06	85.51	-6.35E-03	5.65E-02	5.65E-02
		136.48	10.60	-2.46E-02		4.59E-01
+	CO-58	810.76	99.40	2.48E-02	9.00E-02	9.00E-02
+	FE-59	1099.22	56.50	1.13E-01	2.23E-01	2.23E-01
		1291.56	43.20	1.18E-01		3.11E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-60	1173.22	100.00	1.09E-04	7.67E-02	9.50E-02
		1332.49	100.00	2.18E-02		7.67E-02
+	ZN-65	1115.52	50.75	-5.74E-01	1.65E-01	1.65E-01
+	GA-67	93.31	* 35.70	4.66E+01	4.04E+01	4.04E+01
		208.95	2.24	6.94E+02		6.88E+02
		300.22	* 16.00	1.44E+02		2.05E+02
+	SE-75	121.11	16.70	2.18E-01	8.97E-02	3.12E-01
		136.00	59.20	5.42E-03		8.97E-02
		264.65	59.80	1.31E-04		9.08E-02
		279.53	25.20	-4.53E-02		2.55E-01
		400.65	11.40	-6.00E-01		5.34E-01
+	RB-82	776.52	13.00	4.24E-01	1.11E+00	1.11E+00
+	RB-83	520.41	46.00	-6.95E-03	1.42E-01	1.42E-01
		529.64	30.30	-2.54E-02		2.09E-01
		552.65	16.40	1.60E-02		4.30E-01
+	KR-85	513.99	0.43	-2.52E+01	1.41E+01	1.41E+01
+	SR-85	513.99	99.27	-1.45E-01	8.09E-02	8.09E-02
+	Y-88	898.02	93.40	1.99E-02	6.50E-02	9.19E-02
		1836.01	99.38	-2.36E-03		6.50E-02
+	NB-93M	16.57	9.43	-4.12E+03	5.22E+03	5.22E+03
+	NB-94	702.63	100.00	-1.37E-02	6.49E-02	6.49E-02
		871.10	100.00	-6.13E-04		7.29E-02
+	NB-95	765.79	99.81	2.02E-01	1.53E-01	1.53E-01
+	NB-95M	235.69	25.00	-3.58E+02	4.64E+01	4.64E+01
+	ZR-95	724.18	43.70	1.43E-02	1.68E-01	2.54E-01
		756.72	55.30	2.69E-02		1.68E-01
+	MO-99	181.06	6.20	-1.10E+02	4.17E+02	5.73E+02
		739.58	12.80	2.29E+02		4.17E+02
		778.00	4.50	-5.51E+01		1.07E+03
+	RU-103	497.08	89.00	1.89E-03	8.96E-02	8.96E-02
+	RU-106	621.84	9.80	-3.83E-02	6.81E-01	6.81E-01
+	AG-108M	433.93	89.90	2.91E-02	6.11E-02	6.11E-02
		614.37	90.40	-9.23E-03		6.93E-02
		722.95	90.50	2.08E-02		7.85E-02
+	CD-109	88.03	3.72	2.42E+00	1.77E+00	1.77E+00
+	AG-110M	657.75	93.14	-3.29E-03	6.83E-02	6.83E-02
		677.61	10.53	1.76E-01		7.28E-01
		706.67	16.46	1.41E-01		4.29E-01
		763.93	21.98	-2.87E-01		3.79E-01
		884.67	71.63	3.96E-02		1.13E-01
		1384.27	23.94	1.73E-01		3.36E-01
+	CD-113M	263.70	0.02	-2.69E+01	2.02E+02	2.02E+02
+	SN-113	255.12	1.93	2.73E-01	8.92E-02	3.03E+00
		391.69	64.90	-9.93E-04		8.92E-02
+	TE123M	159.00	84.10	3.84E-02	6.92E-02	6.92E-02
+	SB-124	602.71	97.87	2.29E-02	9.21E-02	9.21E-02
		645.85	7.26	-8.32E-02		1.26E+00
		722.78	11.10	2.29E-01		8.64E-01

Analysis Report for 1510084-11
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-124	1691.02	49.00	-8.29E-03	9.21E-02	1.50E-01
+	I-125	35.49	6.49	-1.22E+00	5.03E+00	5.03E+00
+	SB-125	176.33	6.89	3.10E-01	1.89E-01	7.71E-01
		427.89	29.33	1.05E-01		1.89E-01
		463.38	10.35	3.98E-01		6.27E-01
		600.56	17.80	4.41E-02		3.81E-01
		635.90	11.32	1.42E-01		5.85E-01
+	SB-126	414.70	83.30	5.86E-02	2.76E-01	2.76E-01
		666.33	99.60	-2.84E-02		2.95E-01
		695.00	99.60	-6.38E-03		3.00E-01
		720.50	53.80	1.23E-01		5.38E-01
+	SN-126	87.57	37.00	2.34E-01	1.71E-01	1.71E-01
+	SB-127	473.00	25.00	2.56E+00	1.99E+01	2.33E+01
		685.20	35.70	3.74E+00		1.99E+01
		783.80	14.70	4.85E+01		5.96E+01
+	I-129	29.78	57.00	5.04E-02	1.15E+00	1.15E+00
		33.60	13.20	1.34E+00		2.49E+00
		39.58	7.52	8.73E-02		2.09E+00
+	I-131	284.30	6.05	-3.41E+00	5.98E-01	7.94E+00
		364.48	81.20	-1.73E-01		5.98E-01
		636.97	7.26	-4.41E+00		8.09E+00
		722.89	1.80	9.89E+00		3.73E+01
+	TE-132	49.72	13.10	-2.22E+01	1.48E+01	1.41E+02
		228.16	88.00	-9.33E+00		1.48E+01
+	BA-133	81.00	33.00	-1.40E-02	8.92E-02	1.21E-01
		302.84	17.80	-2.03E-01		3.12E-01
		356.01	60.00	1.34E-02		8.92E-02
+	I-133	529.87	86.30	-8.50E+05	6.74E+07	6.74E+07
+	XE-133	81.00	38.00	-3.79E-01	3.27E+00	3.27E+00
+	CS-134	563.23	8.38	1.67E-01	8.08E-02	6.88E-01
		569.32	15.43	5.60E-02		3.81E-01
		604.70	97.60	1.45E-03		8.08E-02
		795.84	85.40	7.20E-02		1.00E-01
		801.93	8.73	-1.26E-02		7.57E-01
+	CS-135	268.24	16.00	-3.47E-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	1.44E+00	2.72E-01	2.70E+00
		163.89	4.61	1.54E+00		4.45E+00
		176.55	13.56	1.18E+00		1.51E+00
		273.65	12.66	-2.65E+00		1.59E+00
		340.57	48.50	-2.69E-01		5.37E-01
		818.50	99.70	2.81E-02		2.72E-01
		1048.07	79.60	1.35E-01		3.88E-01
		1235.34	19.70	1.45E+00		2.51E+00
+	CS-137	661.65	85.12	-4.28E-02	7.24E-02	7.24E-02
+	LA-138	788.74	34.00	1.02E-01	7.48E-02	2.30E-01
		1435.80	66.00	-6.19E-03		7.48E-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CE-139	165.85	80.35	-1.03E-02	7.39E-02	7.39E-02
+	BA-140	162.64	6.70	-3.76E-01	9.87E-01	3.17E+00
		304.84	4.50	3.80E+00		4.67E+00
		423.70	3.20	-9.05E-01		6.80E+00
		437.55	2.00	-1.15E+01		9.98E+00
		537.32	25.00	5.84E-01		9.87E-01
+	LA-140	328.77	20.50	5.93E-01	3.37E-01	1.13E+00
		487.03	45.50	1.05E-01		5.00E-01
		815.85	23.50	-5.60E-01		1.14E+00
		1596.49	95.49	1.08E-02		3.37E-01
+	CE-141	145.44	* 48.40	1.18E-01	1.84E-01	1.84E-01
+	CE-143	57.36	11.80	-3.77E+04	9.23E+04	2.26E+05
		293.26	42.00	-1.51E+04		9.23E+04
		664.55	5.20	1.92E+05		6.66E+05
+	CE-144	133.54	10.80	3.93E-02	4.56E-01	4.56E-01
+	PM-144	476.78	42.00	1.93E-02	6.31E-02	1.35E-01
		618.01	98.60	-1.70E-02		6.31E-02
		696.49	99.49	-2.79E-03		7.37E-02
+	PM-145	36.85	21.70	-1.26E-01	4.83E-01	9.41E-01
		37.36	39.70	-6.49E-02		4.83E-01
		42.30	15.10	-9.56E-02		8.25E-01
		72.40	2.31	-2.00E+00		2.06E+00
+	PM-146	453.90	39.94	1.01E-01	1.40E-01	1.40E-01
		735.90	14.01	-3.28E-02		4.88E-01
		747.13	13.10	-1.05E-01		5.21E-01
+	ND-147	91.11	28.90	-2.37E-01	1.10E+00	1.10E+00
		531.02	13.10	-8.18E-01		2.05E+00
+	PM-149	285.90	3.10	-6.77E+02	5.77E+03	5.77E+03
+	EU-152	121.78	20.50	-2.48E-02	2.21E-01	2.21E-01
		244.69	5.40	-1.84E+00		1.04E+00
		344.27	19.13	-1.83E-02		2.66E-01
		778.89	9.20	3.67E-02		7.37E-01
		964.01	10.40	-2.68E+00		8.98E-01
		1085.78	7.22	-3.12E-02		1.10E+00
		1112.02	9.60	1.52E-02		8.43E-01
		1407.95	14.94	2.77E-01		5.59E-01
+	GD-153	97.43	31.30	1.86E-01	1.58E-01	1.58E-01
		103.18	22.20	-2.97E-01		2.11E-01
+	EU-154	123.07	40.50	3.27E-02	1.16E-01	1.16E-01
		723.30	19.70	9.62E-02		3.63E-01
		873.19	11.50	2.36E-01		6.75E-01
		996.32	10.30	-4.79E-01		7.20E-01
		1004.76	17.90	7.72E-02		4.21E-01
		1274.45	35.50	4.48E-03		2.40E-01
+	EU-155	86.50	30.90	-3.61E-02	2.00E-01	2.00E-01
		105.30	20.70	1.89E-01		2.29E-01
+	EU-156	811.77	10.40	-9.79E-02	2.08E+00	2.08E+00
		1153.47	7.20	-1.99E-01		4.05E+00
		1230.71	8.90	1.28E-01		3.76E+00

Analysis Report for 1510084-11

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HO-166M	184.41	72.60	8.28E-02	8.50E-02	8.50E-02
		280.45	29.60	-3.33E-02		1.87E-01
		410.94	11.10	1.09E-01		5.05E-01
		711.69	54.10	-3.42E-02		1.24E-01
+	TM-171	66.72	0.14	2.67E+01	3.64E+01	3.64E+01
		81.75	4.52	-7.34E-01	4.29E-01	8.76E-01
+	LU-172	125.81	11.30	-2.84E-02		4.29E-01
		181.53	20.60	-2.78E+00	1.83E+00	3.62E+00
		810.06	16.63	1.70E+00		6.17E+00
		912.12	15.25	3.83E+01		1.46E+01
+	LU-173	1093.66	62.50	-5.24E-01		1.83E+00
		100.72	5.24	-5.78E-01	3.00E-01	8.59E-01
		272.11	21.20	2.34E-01		3.00E-01
+	HF-175	343.40	84.00	3.21E-03	8.04E-02	8.04E-02
+	LU-176	88.34	13.30	6.51E-01	4.89E-02	4.76E-01
		201.83	86.00	9.58E-03		6.06E-02
		306.78	94.00	-9.91E-03		4.89E-02
+	TA-182	67.75	41.20	-4.91E-03	1.35E-01	1.35E-01
		1121.30	34.90	7.03E-01		4.18E-01
		1189.05	16.23	5.44E-02		5.96E-01
		1221.41	26.98	1.57E-01		4.54E-01
		1231.02	11.44	1.31E-01		1.09E+00
+	IR-192	308.46	29.68	-9.79E-03	1.45E-01	1.99E-01
		468.07	48.10	4.46E-02		1.45E-01
+	HG-203	279.19	77.30	5.40E-02	1.09E-01	1.09E-01
+	BI-207	569.67	97.72	8.64E-03	5.89E-02	5.89E-02
+	TL-208	1063.62	74.90	-1.67E-02		1.06E-01
		583.14	* 30.22	1.57E+00	1.47E-01	2.80E-01
		860.37	* 4.48	1.76E+00		1.66E+00
+	BI-210M	2614.66	* 35.85	9.24E-01		1.47E-01
		262.00	45.00	-6.72E-02	1.05E-01	1.05E-01
+	PB-210	300.00	23.00	9.24E-02		2.56E-01
		46.50	4.25	3.02E+00	2.38E+00	2.38E+00
+	PB-211	404.84	2.90	5.85E-01	1.96E+00	1.96E+00
		831.96	2.90	-8.71E-01		2.46E+00
		727.17	* 11.80	1.04E+00	7.47E-01	7.47E-01
+	PB-212	1620.62	* 2.75	1.05E+00		2.38E+00
		238.63	* 44.60	1.27E+00	3.12E-01	3.12E-01
		300.09	* 3.41	2.66E+00		3.78E+00
+	BI-214	609.31	* 46.30	1.27E+00	1.97E-01	1.97E-01
		1120.29	* 15.10	1.65E+00		1.54E+00
		1764.49	* 15.80	1.40E+00		3.62E-01
		2204.22	* 4.98	2.13E+00		3.87E-01
+	PB-214	295.21	* 19.19	1.59E+00	2.36E-01	6.63E-01
		351.92	* 37.19	1.39E+00		2.36E-01
+	RN-219	401.80	6.50	1.26E-01	8.65E-01	8.65E-01
+	RA-223	323.87	3.88	-4.72E-01	1.23E+00	1.23E+00
+	RA-224	240.98	3.95	1.02E+01	2.81E+00	2.81E+00

Analysis Report for 1510084-11

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-225	40.00		31.00	6.89E-02	1.65E+00	1.65E+00
+	RA-226	186.21	*	3.28	1.78E+00	2.17E+00	2.17E+00
+	TH-227	50.10		8.40	-1.33E-01	6.77E-01	8.43E-01
		236.00		11.50	-5.23E+00		6.77E-01
		256.20		6.30	-6.43E-01		7.83E-01
+	AC-228	338.32	*	11.40	1.77E+00	4.46E-01	8.50E-01
		911.07	*	27.70	1.30E+00		4.46E-01
		969.11	*	16.60	1.53E+00		7.45E-01
+	TH-230	48.44		16.90	-3.73E-01	4.62E-01	4.62E-01
		62.85		4.60	1.13E+00		1.24E+00
		67.67		0.37	-4.67E-01		1.29E+01
+	PA-231	283.67		1.60	-1.36E+00	3.17E+00	3.17E+00
		302.67	*	2.30	1.76E+00		5.64E+00
+	TH-231	25.64		14.70	5.71E+00	6.46E-01	1.41E+01
		84.21		6.40	2.84E-01		6.46E-01
+	PA-233	311.98		38.60	-1.03E-01	2.49E-01	2.49E-01
+	PA-234	131.20		20.40	1.23E-01	2.45E-01	2.45E-01
		733.99		8.80	-4.22E-01		7.22E-01
		946.00		12.00	-9.65E-02		5.73E-01
+	PA-234M	1001.03		0.92	1.36E+00	8.40E+00	8.40E+00
+	TH-234	63.29		3.80	1.36E+00	1.49E+00	1.49E+00
+	U-235	143.76		10.50	2.23E-01	4.76E-01	4.76E-01
		163.35		4.70	-1.31E-01		1.10E+00
		205.31		4.70	-1.64E-01		1.05E+00
+	NP-237	86.50		12.60	-8.78E-02	4.86E-01	4.86E-01
+	NP-239	106.10		22.70	3.65E+02	4.44E+02	4.44E+02
		228.18		10.70	-6.43E+02		1.02E+03
		277.60		14.10	6.82E+02		8.71E+02
+	AM-241	59.54		35.90	1.46E-02	1.49E-01	1.49E-01
+	AM-243	74.67		66.00	-2.17E-01	1.01E-01	1.01E-01
+	CM-243	209.75	*	3.29	3.35E+00	4.83E-01	2.75E+00
		228.14		10.60	-3.04E-01		4.83E-01
		277.60	*	14.00	3.02E-01		4.93E-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

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

Analysis Report for 1510084-11

CP0604S24-25

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	7.28E-01	7.28E-01	1.04E-01	3.43E-01
NA-22	1274.54	99.94	8.63E-02	8.63E-02	1.61E-03	3.97E-02
NA-24	1368.53	99.99	2.10E+11	8.08E+10	1.74E+10	9.22E+10
	2754.09	99.86	8.08E+10		-1.46E+10	2.55E+10
AL-26	1808.65	99.76	5.65E-02	5.65E-02	-8.31E-03	2.40E-02
+ K-40	1460.81	*	10.67	1.12E+00	2.00E+01	5.23E-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	5.03E-02	5.03E-02	-1.83E-03	2.44E-02
	78.34	96.00	7.48E-02		3.19E-01	3.68E-02
SC-46	889.25	99.98	8.41E-02	8.41E-02	-3.89E-02	3.89E-02
	1120.51	99.99	1.57E-01		2.83E-01	7.45E-02
V-48	983.52	99.98	2.20E-01	2.20E-01	7.87E-04	1.01E-01
	1312.10	97.50	2.39E-01		-7.16E-02	1.08E-01
+ CR-51	320.08	*	9.83	9.63E-01	4.93E-01	4.59E-01
MN-54	834.83	99.97	8.30E-02	8.30E-02	-9.28E-03	3.89E-02
CO-56	846.75	99.96	9.29E-02	9.29E-02	-7.93E-03	4.34E-02
	1037.75	14.03	6.38E-01		-1.28E-01	2.93E-01
	1238.25	67.00	2.35E-01		2.59E-01	1.11E-01
	1771.40	15.51	5.47E-01		-1.40E-02	2.40E-01
	2598.48	16.90	1.74E-01		-1.11E-01	5.51E-02
CO-57	122.06	85.51	5.65E-02	5.65E-02	-6.35E-03	2.74E-02
	136.48	10.60	4.59E-01		-2.46E-02	2.22E-01
CO-58	810.76	99.40	9.00E-02	9.00E-02	2.48E-02	4.19E-02
FE-59	1099.22	56.50	2.23E-01	2.23E-01	1.13E-01	1.04E-01
	1291.56	43.20	3.11E-01		1.18E-01	1.44E-01
CO-60	1173.22	100.00	9.50E-02	7.67E-02	1.09E-04	4.43E-02
	1332.49	100.00	7.67E-02		2.18E-02	3.48E-02
ZN-65	1115.52	50.75	1.65E-01	1.65E-01	-5.74E-01	7.61E-02
+ GA-67	93.31	*	35.70	4.04E+01	4.66E+01	1.98E+01
	208.95	2.24	6.88E+02		6.94E+02	3.34E+02
	300.22	*	16.00	2.05E+02	1.44E+02	1.01E+02
SE-75	121.11	16.70	3.12E-01	8.97E-02	2.18E-01	1.51E-01
	136.00	59.20	8.97E-02		5.42E-03	4.35E-02
	264.65	59.80	9.08E-02		1.31E-04	4.34E-02
	279.53	25.20	2.55E-01		-4.53E-02	1.22E-01
	400.65	11.40	5.34E-01		-6.00E-01	2.53E-01
RB-82	776.52	13.00	1.11E+00	1.11E+00	4.24E-01	5.20E-01
RB-83	520.41	46.00	1.42E-01	1.42E-01	-6.95E-03	6.67E-02
	529.64	30.30	2.09E-01		-2.54E-02	9.76E-02
	552.65	16.40	4.30E-01		1.60E-02	2.02E-01
KR-85	513.99	0.43	1.41E+01	1.41E+01	-2.52E+01	6.66E+00
SR-85	513.99	99.27	8.09E-02	8.09E-02	-1.45E-01	3.83E-02
Y-88	898.02	93.40	9.19E-02	6.50E-02	1.99E-02	4.27E-02
	1836.01	99.38	6.50E-02		-2.36E-03	2.74E-02
NB-93M	16.57	9.43	5.22E+03	5.22E+03	-4.12E+03	2.54E+03

Analysis Report for 1510084-11

CP0604S24-25

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94	702.63	100.00	6.49E-02	6.49E-02	-1.37E-02	3.04E-02
	871.10	100.00	7.29E-02		-6.13E-04	3.40E-02
NB-95	765.79	99.81	1.53E-01	1.53E-01	2.02E-01	7.29E-02
NB-95M	235.69	25.00	4.64E+01	4.64E+01	-3.58E+02	2.26E+01
ZR-95	724.18	43.70	2.54E-01	1.68E-01	1.43E-02	1.21E-01
	756.72	55.30	1.68E-01		2.69E-02	7.88E-02
MO-99	181.06	6.20	5.73E+02	4.17E+02	-1.10E+02	2.77E+02
	739.58	12.80	4.17E+02		2.29E+02	1.96E+02
	778.00	4.50	1.07E+03		-5.51E+01	4.97E+02
RU-103	497.08	89.00	8.96E-02	8.96E-02	1.89E-03	4.19E-02
RU-106	621.84	9.80	6.81E-01	6.81E-01	-3.83E-02	3.20E-01
AG-108M	433.93	89.90	6.11E-02	6.11E-02	2.91E-02	2.89E-02
	614.37	90.40	6.93E-02		-9.23E-03	3.26E-02
	722.95	90.50	7.85E-02		2.08E-02	3.69E-02
CD-109	88.03	3.72	1.77E+00	1.77E+00	2.42E+00	8.67E-01
AG-110M	657.75	93.14	6.83E-02	6.83E-02	-3.29E-03	3.19E-02
	677.61	10.53	7.28E-01		1.76E-01	3.43E-01
	706.67	16.46	4.29E-01		1.41E-01	2.01E-01
	763.93	21.98	3.79E-01		-2.87E-01	1.79E-01
	884.67	71.63	1.13E-01		3.96E-02	5.28E-02
CD-113M	1384.27	23.94	3.36E-01		1.73E-01	1.52E-01
SN-113	263.70	0.02	2.02E+02	2.02E+02	-2.69E+01	9.64E+01
TE123M	255.12	1.93	3.03E+00	8.92E-02	2.73E-01	1.45E+00
	391.69	64.90	8.92E-02		-9.93E-04	4.21E-02
SB-124	159.00	84.10	6.92E-02	6.92E-02	3.84E-02	3.35E-02
	602.71	97.87	9.21E-02	9.21E-02	2.29E-02	4.35E-02
	645.85	7.26	1.26E+00		-8.32E-02	5.92E-01
	722.78	11.10	8.64E-01		2.29E-01	4.06E-01
I-125	1691.02	49.00	1.50E-01		-8.29E-03	6.40E-02
SB-125	35.49	6.49	5.03E+00	5.03E+00	-1.22E+00	2.44E+00
	176.33	6.89	7.71E-01	1.89E-01	3.10E-01	3.74E-01
	427.89	29.33	1.89E-01		1.05E-01	8.93E-02
	463.38	10.35	6.27E-01		3.98E-01	2.99E-01
	600.56	17.80	3.81E-01		4.41E-02	1.80E-01
SB-126	635.90	11.32	5.85E-01		1.42E-01	2.75E-01
	414.70	83.30	2.76E-01	2.76E-01	5.86E-02	1.31E-01
	666.33	99.60	2.95E-01		-2.84E-02	1.39E-01
	695.00	99.60	3.00E-01		-6.38E-03	1.41E-01
SN-126	720.50	53.80	5.38E-01		1.23E-01	2.52E-01
SB-127	87.57	37.00	1.71E-01	1.71E-01	2.34E-01	8.39E-02
I-129	473.00	25.00	2.33E+01	1.99E+01	2.56E+00	1.10E+01
	685.20	35.70	1.99E+01		3.74E+00	9.34E+00
	783.80	14.70	5.96E+01		4.85E+01	2.81E+01
I-131	29.78	57.00	1.15E+00	1.15E+00	5.04E-02	5.55E-01
	33.60	13.20	2.49E+00		1.34E+00	1.21E+00
	39.58	7.52	2.09E+00		8.73E-02	1.02E+00
TE-132	284.30	6.05	7.94E+00	5.98E-01	-3.41E+00	3.80E+00
	364.48	81.20	5.98E-01		-1.73E-01	2.84E-01
	636.97	7.26	8.09E+00		-4.41E+00	3.79E+00
	722.89	1.80	3.73E+01		9.89E+00	1.75E+01
BA-133	49.72	13.10	1.41E+02	1.48E+01	-2.22E+01	6.81E+01
	228.16	88.00	1.48E+01		-9.33E+00	7.14E+00

Analysis Report for 1510084-11

CP0604S24-25

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-133	302.84	17.80	3.12E-01	8.92E-02	-2.03E-01	1.50E-01
	356.01	60.00	8.92E-02		1.34E-02	4.25E-02
I-133	529.87	86.30	6.74E+07	6.74E+07	-8.50E+05	3.15E+07
XE-133	81.00	38.00	3.27E+00	3.27E+00	-3.79E-01	1.58E+00
CS-134	563.23	8.38	6.88E-01	8.08E-02	1.67E-01	3.22E-01
	569.32	15.43	3.81E-01		5.60E-02	1.79E-01
	604.70	97.60	8.08E-02		1.45E-03	3.84E-02
	795.84	85.40	1.00E-01		7.20E-02	4.72E-02
	801.93	8.73	7.57E-01		-1.26E-02	3.51E-01
CS-135	268.24	16.00	3.61E-01	3.61E-01	-3.47E-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	2.70E+00	2.72E-01	1.44E+00	1.31E+00
	163.89	4.61	4.45E+00		1.54E+00	2.16E+00
	176.55	13.56	1.51E+00		1.18E+00	7.30E-01
	273.65	12.66	1.59E+00		-2.65E+00	7.60E-01
	340.57	48.50	5.37E-01		-2.69E-01	2.59E-01
	818.50	99.70	2.72E-01		2.81E-02	1.27E-01
	1048.07	79.60	3.88E-01		1.35E-01	1.79E-01
	1235.34	19.70	2.51E+00		1.45E+00	1.19E+00
CS-137	661.65	85.12	7.24E-02	7.24E-02	-4.28E-02	3.39E-02
LA-138	788.74	34.00	2.30E-01	7.48E-02	1.02E-01	1.08E-01
	1435.80	66.00	7.48E-02		-6.19E-03	3.18E-02
CE-139	165.85	80.35	7.39E-02	7.39E-02	-1.03E-02	3.59E-02
BA-140	162.64	6.70	3.17E+00	9.87E-01	-3.76E-01	1.54E+00
	304.84	4.50	4.67E+00		3.80E+00	2.23E+00
	423.70	3.20	6.80E+00		-9.05E-01	3.21E+00
	437.55	2.00	9.98E+00		-1.15E+01	4.69E+00
	537.32	25.00	9.87E-01		5.84E-01	4.66E-01
LA-140	328.77	20.50	1.13E+00	3.37E-01	5.93E-01	5.40E-01
	487.03	45.50	5.00E-01		1.05E-01	2.36E-01
	815.85	23.50	1.14E+00		-5.60E-01	5.30E-01
	1596.49	95.49	3.37E-01		1.08E-02	1.51E-01
+ CE-141	145.44	* 48.40	1.84E-01	1.84E-01	1.18E-01	8.92E-02
CE-143	57.36	11.80	2.26E+05	9.23E+04	-3.77E+04	1.09E+05
	293.26	42.00	9.23E+04		-1.51E+04	4.48E+04
	664.55	5.20	6.66E+05		1.92E+05	3.13E+05
CE-144	133.54	10.80	4.56E-01	4.56E-01	3.93E-02	2.21E-01
PM-144	476.78	42.00	1.35E-01	6.31E-02	1.93E-02	6.37E-02
	618.01	98.60	6.31E-02		-1.70E-02	2.95E-02
	696.49	99.49	7.37E-02		-2.79E-03	3.46E-02
PM-145	36.85	21.70	9.41E-01	4.83E-01	-1.26E-01	4.56E-01
	37.36	39.70	4.83E-01		-6.49E-02	2.34E-01
	42.30	15.10	8.25E-01		-9.56E-02	4.01E-01
	72.40	2.31	2.06E+00		-2.00E+00	1.00E+00
PM-146	453.90	39.94	1.40E-01	1.40E-01	1.01E-01	6.61E-02
	735.90	14.01	4.88E-01		-3.28E-02	2.28E-01
	747.13	13.10	5.21E-01		-1.05E-01	2.44E-01
ND-147	91.11	28.90	1.10E+00	1.10E+00	-2.37E-01	5.40E-01
	531.02	13.10	2.05E+00		-8.18E-01	9.58E-01
PM-149	285.90	3.10	5.77E+03	5.77E+03	-6.77E+02	2.76E+03
EU-152	121.78	20.50	2.21E-01	2.21E-01	-2.48E-02	1.07E-01

Analysis Report for 1510084-11

CP0604S24-25

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	244.69	5.40	1.04E+00	2.21E-01	-1.84E+00	5.03E-01
	344.27	19.13	2.66E-01		-1.83E-02	1.27E-01
	778.89	9.20	7.37E-01		3.67E-02	3.44E-01
	964.01	10.40	8.98E-01		-2.68E+00	4.23E-01
	1085.78	7.22	1.10E+00		-3.12E-02	5.08E-01
	1112.02	9.60	8.43E-01		1.52E-02	3.90E-01
	1407.95	14.94	5.59E-01		2.77E-01	2.55E-01
GD-153	97.43	31.30	1.58E-01	1.58E-01	1.86E-01	7.71E-02
	103.18	22.20	2.11E-01		-2.97E-01	1.03E-01
EU-154	123.07	40.50	1.16E-01	1.16E-01	3.27E-02	5.61E-02
	723.30	19.70	3.63E-01		9.62E-02	1.70E-01
	873.19	11.50	6.75E-01		2.36E-01	3.16E-01
	996.32	10.30	7.20E-01		-4.79E-01	3.33E-01
	1004.76	17.90	4.21E-01		7.72E-02	1.95E-01
	1274.45	35.50	2.40E-01		4.48E-03	1.10E-01
EU-155	86.50	30.90	2.00E-01	2.00E-01	-3.61E-02	9.81E-02
	105.30	20.70	2.29E-01		1.89E-01	1.12E-01
EU-156	811.77	10.40	2.08E+00	2.08E+00	-9.79E-02	9.63E-01
	1153.47	7.20	4.05E+00		-1.99E-01	1.88E+00
	1230.71	8.90	3.76E+00		1.28E-01	1.76E+00
HO-166M	184.41	72.60	8.50E-02	8.50E-02	8.28E-02	4.14E-02
	280.45	29.60	1.87E-01		-3.33E-02	8.97E-02
	410.94	11.10	5.05E-01		1.09E-01	2.40E-01
	711.69	54.10	1.24E-01		-3.42E-02	5.79E-02
TM-171	66.72	0.14	3.64E+01	3.64E+01	2.67E+01	1.77E+01
HF-172	81.75	4.52	8.76E-01	4.29E-01	-7.34E-01	4.24E-01
	125.81	11.30	4.29E-01		-2.84E-02	2.08E-01
	181.53	20.60	3.62E+00		1.70E+00	2.88E+00
LU-172	810.06	16.63	6.17E+00	1.83E+00	3.83E+01	7.02E+00
	912.12	15.25	1.46E+01		-5.24E-01	8.46E-01
	1093.66	62.50	1.83E+00		5.78E-01	4.18E-01
	100.72	5.24	8.59E-01		2.34E-01	1.45E-01
HF-175	343.40	84.00	8.04E-02	8.04E-02	3.21E-03	3.83E-02
LU-176	88.34	13.30	4.76E-01	4.89E-02	6.51E-01	2.33E-01
	201.83	86.00	6.06E-02		9.58E-03	2.93E-02
	306.78	94.00	4.89E-02		-9.91E-03	2.32E-02
TA-182	67.75	41.20	1.35E-01	1.35E-01	-4.91E-03	6.56E-02
	1121.30	34.90	4.18E-01		7.03E-01	1.99E-01
	1189.05	16.23	5.96E-01		5.44E-02	2.75E-01
	1221.41	26.98	4.54E-01		1.57E-01	2.13E-01
	1231.02	11.44	1.09E+00		1.31E-01	5.11E-01
IR-192	308.46	29.68	1.99E-01	1.45E-01	-9.79E-03	9.47E-02
	468.07	48.10	1.45E-01		4.46E-02	6.85E-02
HG-203	279.19	77.30	1.09E-01	1.09E-01	5.40E-02	5.23E-02
BI-207	569.67	97.72	5.89E-02	5.89E-02	8.64E-03	2.76E-02
	1063.62	74.90	1.06E-01		-1.67E-02	4.90E-02
+ TL-208	583.14	* 30.22	2.80E-01	1.47E-01	1.57E+00	1.34E-01
	860.37	* 4.48	1.66E+00		1.76E+00	7.75E-01
	2614.66	* 35.85	1.47E-01		9.24E-01	6.17E-02
BI-210M	262.00	45.00	1.05E-01	1.05E-01	-6.72E-02	5.03E-02
	300.00	23.00	2.56E-01		9.24E-02	1.23E-01
PB-210	46.50	4.25	2.38E+00	2.38E+00	3.02E+00	1.16E+00

Analysis Report for 1510084-11

CP0604S24-25

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PB-211	404.84		2.90	1.96E+00	1.96E+00	5.85E-01	9.30E-01
	831.96		2.90	2.46E+00		-8.71E-01	1.15E+00
+ BI-212	727.17	*	11.80	7.47E-01	7.47E-01	1.04E+00	3.55E-01
	1620.62	*	2.75	2.38E+00		1.05E+00	1.04E+00
+ PB-212	238.63	*	44.60	3.12E-01	3.12E-01	1.27E+00	1.54E-01
	300.09	*	3.41	3.78E+00		2.66E+00	1.86E+00
+ BI-214	609.31	*	46.30	1.97E-01	1.97E-01	1.27E+00	9.45E-02
	1120.29	*	15.10	1.54E+00		1.65E+00	7.51E-01
	1764.49	*	15.80	3.62E-01		1.40E+00	1.55E-01
	2204.22	*	4.98	3.87E-01		2.13E+00	1.04E-01
+ PB-214	295.21	*	19.19	6.63E-01	2.36E-01	1.59E+00	3.26E-01
	351.92	*	37.19	2.36E-01		1.39E+00	1.14E-01
RN-219	401.80		6.50	8.65E-01	8.65E-01	1.26E-01	4.11E-01
RA-223	323.87		3.88	1.23E+00	1.23E+00	-4.72E+00	5.82E-01
RA-224	240.98		3.95	2.81E+00	2.81E+00	1.02E+01	1.38E+00
RA-225	40.00		31.00	1.65E+00	1.65E+00	6.89E-02	8.01E-01
+ RA-226	186.21	*	3.28	2.17E+00	2.17E+00	1.78E+00	1.06E+00
TH-227	50.10		8.40	8.43E-01	6.77E-01	-1.33E-01	4.09E-01
	236.00		11.50	6.77E-01		-5.23E+00	3.30E-01
	256.20		6.30	7.83E-01		-6.43E-01	3.75E-01
+ AC-228	338.32	*	11.40	8.50E-01	4.46E-01	1.77E+00	4.14E-01
	911.07	*	27.70	4.46E-01		1.30E+00	2.14E-01
	969.11	*	16.60	7.45E-01		1.53E+00	3.56E-01
TH-230	48.44		16.90	4.62E-01	4.62E-01	-3.73E-01	2.24E-01
	62.85		4.60	1.24E+00		1.13E+00	6.05E-01
	67.67		0.37	1.29E+01		-4.67E-01	6.24E+00
+ PA-231	283.67		1.60	3.17E+00	3.17E+00	-1.36E+00	1.52E+00
	302.67	*	2.30	5.64E+00		1.76E+00	2.77E+00
TH-231	25.64		14.70	1.41E+01	6.46E-01	5.71E+00	6.83E+00
	84.21		6.40	6.46E-01		2.84E-01	3.13E-01
PA-233	311.98		38.60	2.49E-01	2.49E-01	-1.03E-01	1.18E-01
PA-234	131.20		20.40	2.45E-01	2.45E-01	1.23E-01	1.19E-01
	733.99		8.80	7.22E-01		-4.22E-01	3.36E-01
	946.00		12.00	5.73E-01		-9.65E-02	2.64E-01
PA-234M	1001.03		0.92	8.40E+00	8.40E+00	1.36E+00	3.90E+00
TH-234	63.29		3.80	1.49E+00	1.49E+00	1.36E+00	7.26E-01
U-235	143.76		10.50	4.76E-01	4.76E-01	2.23E-01	2.31E-01
	163.35		4.70	1.10E+00		-1.31E-01	5.36E-01
	205.31		4.70	1.05E+00		-1.64E-01	5.09E-01
NP-237	86.50		12.60	4.86E-01	4.86E-01	-8.78E-02	2.38E-01
NP-239	106.10		22.70	4.44E+02	4.44E+02	3.65E+02	2.16E+02
	228.18		10.70	1.02E+03		-6.43E+02	4.92E+02
	277.60		14.10	8.71E+02		6.82E+02	4.19E+02
AM-241	59.54		35.90	1.49E-01	1.49E-01	1.46E-02	7.22E-02
AM-243	74.67		66.00	1.01E-01	1.01E-01	-2.17E-01	4.96E-02
+ CM-243	209.75	*	3.29	2.75E+00	4.83E-01	3.35E+00	1.35E+00
	228.14		10.60	4.83E-01		-3.04E-01	2.32E-01
	277.60	*	14.00	4.93E-01		3.02E-01	2.39E-01

Analysis Report for 1510084-11
CP0604S24-25

- + = 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: CP0604S24-25

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	1	210
9:	569	1192	1042	424	658	1607	253	149
17:	132	137	123	133	112	111	128	103
25:	105	119	117	101	116	111	114	118
33:	132	118	128	105	127	132	124	144
41:	132	132	143	137	131	155	204	124
49:	110	120	112	116	111	123	89	104
57:	98	112	120	125	118	121	165	193
65:	134	125	131	151	100	130	134	141
73:	146	194	448	236	526	387	150	107
81:	108	107	91	134	133	121	194	243
89:	119	191	137	117	258	173	74	84
97:	79	101	89	98	61	73	76	87
105:	98	112	85	76	74	87	62	98
113:	82	93	80	90	62	55	63	68
121:	79	81	86	68	89	80	88	82
129:	117	84	91	84	65	76	69	74
137:	73	60	72	67	82	71	67	107
145:	74	80	63	59	64	87	74	83
153:	67	78	86	54	66	58	77	85
161:	69	66	83	77	75	70	67	77
169:	71	56	63	61	65	64	70	62
177:	70	74	58	46	56	54	87	61
185:	86	164	85	56	68	57	70	65
193:	61	61	64	38	71	54	59	58
201:	61	66	47	51	51	51	49	65
209:	105	94	55	58	63	47	41	51
217:	52	62	51	52	52	50	54	42
225:	55	52	42	48	39	48	55	62
233:	54	43	53	51	61	314	616	98
241:	102	152	78	42	45	44	43	38
249:	33	37	38	38	41	35	37	30
257:	44	35	51	43	32	28	32	26
265:	34	32	30	31	50	92	64	34
273:	41	30	36	35	52	61	37	36
281:	31	37	38	37	22	32	43	31
289:	32	25	34	37	24	50	227	161
297:	27	27	28	74	50	30	44	30
305:	27	29	23	16	26	28	25	22
313:	36	25	36	35	25	26	46	27
321:	27	19	25	19	32	25	29	61
329:	35	19	24	28	29	23	29	22
337:	36	124	105	27	34	29	27	26
345:	18	26	23	26	20	24	140	385
353:	125	28	23	21	31	30	28	26
361:	28	20	19	24	24	32	26	21

369: 30 36 28 20 25 21 28 24

Sample Title: CP0604S24-25

Channel	1	2	3	4	5	6	7	8
377:	34	19	19	23	30	14	16	28
385:	26	28	25	26	23	24	13	24
393:	24	14	18	27	28	29	19	20
401:	25	20	24	36	27	18	21	23
409:	27	31	17	20	25	24	19	18
417:	22	19	21	22	25	18	24	17
425:	22	21	24	17	25	19	10	16
433:	27	34	13	16	18	17	17	23
441:	24	24	20	21	14	24	21	19
449:	13	15	15	30	22	15	15	19
457:	11	13	19	14	21	29	37	29
465:	16	18	24	20	15	17	20	9
473:	20	20	19	15	19	14	22	16
481:	12	14	18	20	21	16	19	20
489:	15	13	16	23	16	21	13	17
497:	15	15	12	10	13	13	18	15
505:	11	14	20	17	29	87	102	37
513:	23	16	15	11	18	14	20	12
521:	15	14	14	18	18	13	13	14
529:	12	18	11	14	14	15	24	14
537:	20	13	22	10	14	19	13	12
545:	18	10	11	17	10	14	20	19
553:	14	13	16	18	10	12	16	13
561:	18	18	14	9	16	10	14	11
569:	14	22	16	18	12	14	15	11
577:	9	9	4	19	14	59	206	98
585:	15	13	12	13	12	7	11	12
593:	12	11	13	12	13	9	16	15
601:	17	14	13	14	13	11	15	50
609:	259	153	23	9	11	10	10	8
617:	11	10	14	11	8	18	8	9
625:	15	19	8	13	9	12	8	15
633:	14	8	8	11	14	15	14	6
641:	13	15	12	12	16	11	12	9
649:	17	9	16	13	13	5	8	12
657:	8	9	8	8	12	13	7	13
665:	19	14	9	13	12	13	14	15
673:	15	14	15	13	11	12	15	12
681:	6	12	8	11	10	12	10	12
689:	8	12	14	8	9	21	13	12
697:	14	7	8	15	11	9	14	6
705:	8	9	15	10	10	7	7	10
713:	18	12	14	11	12	11	8	16
721:	11	9	7	8	11	20	50	27
729:	12	8	13	6	6	5	8	10
737:	15	15	13	8	16	12	11	11
745:	12	10	9	15	8	5	11	11
753:	8	9	15	12	8	12	10	7
761:	10	7	14	13	9	23	14	28
769:	26	8	6	12	16	7	11	9
777:	8	12	10	8	7	11	11	8
785:	24	18	14	6	7	5	13	10
793:	9	22	25	14	8	11	9	6

801: 9 9 6 7 10 13 13 6

Sample Title: CP0604S24-25

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	9	5	14	11	6	6	5	14
817:	8	10	7	9	9	11	9	13
825:	3	6	5	14	5	9	10	9
833:	10	10	12	21	5	12	11	17
841:	9	12	9	10	12	9	7	10
849:	11	12	8	9	10	5	8	8
857:	12	7	16	20	23	6	6	10
865:	9	5	9	4	9	16	11	12
873:	5	6	12	9	5	13	5	6
881:	14	8	8	17	8	4	7	11
889:	6	8	6	10	8	7	6	9
897:	4	11	9	10	10	4	10	8
905:	7	15	8	8	11	52	106	61
913:	15	13	7	11	6	6	8	3
921:	8	4	6	9	10	5	10	8
929:	7	11	7	11	14	15	6	8
937:	6	3	9	6	9	9	7	6
945:	5	4	7	9	10	8	5	5
953:	11	9	7	13	11	4	8	10
961:	8	4	6	16	30	14	11	48
969:	67	22	4	14	6	6	8	4
977:	5	7	5	5	6	11	6	7
985:	4	9	9	6	8	7	10	12
993:	10	2	11	10	7	4	7	12
1001:	9	9	6	9	6	6	7	6
1009:	3	3	3	6	7	11	4	9
1017:	13	2	9	6	9	4	9	10
1025:	11	6	6	5	1	5	14	6
1033:	6	7	10	4	9	4	5	5
1041:	9	7	5	6	6	7	3	8
1049:	8	11	10	9	3	6	8	3
1057:	9	7	7	5	9	9	7	6
1065:	10	7	12	7	9	3	8	7
1073:	8	8	6	5	11	13	8	7
1081:	11	13	5	8	7	6	5	7
1089:	9	4	8	10	6	8	4	8
1097:	11	6	9	9	7	7	3	7
1105:	9	10	7	7	7	12	6	5
1113:	8	7	6	7	8	6	24	47
1121:	28	7	11	4	1	6	7	9
1129:	7	9	11	13	10	14	3	11
1137:	7	7	8	10	4	6	6	6
1145:	7	8	8	8	12	7	3	11
1153:	7	13	8	10	8	7	5	7
1161:	4	13	3	6	9	10	14	7
1169:	11	7	10	10	11	8	8	11
1177:	8	11	5	10	7	4	3	12
1185:	4	7	4	5	8	9	7	8
1193:	7	3	16	10	6	10	6	7
1201:	12	15	8	8	15	6	7	4
1209:	9	9	6	6	8	8	5	13
1217:	5	12	10	8	10	13	12	11
1225:	8	9	6	11	14	8	10	10

1233: 12 13 12 21 19 23 17 11

Sample Title: CP0604S24-25

Channel	1	2	3	4	5	6	7	8	9
1241:	6	4	5	6	10	10	2	9	
1249:	5	8	6	10	4	8	5	4	
1257:	2	9	6	6	8	7	7	4	
1265:	6	6	3	5	2	9	9	3	
1273:	5	9	5	5	9	6	8	6	
1281:	5	7	3	10	5	6	5	7	
1289:	7	9	5	5	12	5	5	5	
1297:	4	3	5	3	5	1	3	5	
1305:	6	10	5	1	3	1	8	9	
1313:	2	6	4	5	12	3	3	7	
1321:	7	8	4	3	3	6	6	2	
1329:	3	0	5	7	7	5	6	1	
1337:	5	2	3	2	5	4	3	3	
1345:	4	7	5	6	1	4	6	4	
1353:	2	4	3	3	4	3	1	2	
1361:	6	4	3	1	3	4	1	3	
1369:	2	4	1	0	5	2	3	11	
1377:	12	13	4	4	5	4	4	6	
1385:	4	3	4	1	1	1	3	3	
1393:	3	3	1	6	6	2	1	5	
1401:	7	7	3	5	2	6	7	8	
1409:	3	6	1	2	1	1	5	5	
1417:	2	4	3	2	2	3	4	1	
1425:	2	0	1	6	4	3	4	2	
1433:	1	0	2	4	2	0	0	1	
1441:	2	2	4	0	3	3	2	3	
1449:	4	4	2	3	3	4	2	2	
1457:	3	27	113	298	254	99	10	4	
1465:	1	3	1	3	2	2	3	0	
1473:	2	1	3	3	3	2	1	1	
1481:	2	0	1	3	3	5	4	1	
1489:	1	0	3	4	4	1	0	3	
1497:	2	0	4	4	1	0	2	1	
1505:	4	2	0	5	9	3	2	1	
1513:	2	0	3	3	5	4	4	1	
1521:	2	3	2	4	3	3	5	3	
1529:	1	1	1	1	2	2	2	0	
1537:	1	1	2	0	1	3	3	3	
1545:	3	0	1	1	3	1	2	0	
1553:	2	2	1	2	2	3	3	1	
1561:	0	2	2	2	1	2	3	2	
1569:	1	2	3	1	1	4	4	1	
1577:	1	0	3	7	2	3	4	3	
1585:	2	3	7	6	6	4	5	8	
1593:	5	3	0	1	4	0	2	4	
1601:	2	3	3	3	5	0	3	2	
1609:	3	2	2	1	1	2	1	0	
1617:	0	3	3	5	2	4	0	1	
1625:	2	0	1	3	2	3	5	1	
1633:	2	0	1	3	4	2	2	1	
1641:	2	1	0	0	2	0	1	2	
1649:	0	2	1	2	3	2	0	3	
1657:	2	2	5	1	5	1	1	1	

1665: 1 4 1 0 1 0 1 2

Sample Title: CP0604S24-25

Channel	1	2	3	4	5	6	7	8
1673:	3	0	3	0	2	1	1	1
1681:	0	3	0	2	2	4	1	2
1689:	0	0	0	3	0	1	2	0
1697:	2	0	1	3	0	1	0	1
1705:	1	0	0	1	1	0	2	2
1713:	4	0	1	3	1	1	4	2
1721:	1	2	0	0	2	1	0	6
1729:	9	5	1	0	1	3	1	1
1737:	2	2	0	2	2	0	0	1
1745:	0	0	1	2	1	1	3	1
1753:	1	1	1	0	1	1	2	0
1761:	2	5	22	32	15	6	0	1
1769:	2	5	0	1	3	3	2	2
1777:	1	1	2	1	0	1	0	0
1785:	0	1	4	1	1	1	1	1
1793:	3	1	1	3	3	1	2	1
1801:	1	1	3	2	3	2	0	0
1809:	2	0	0	2	1	1	1	1
1817:	1	1	1	2	3	0	4	1
1825:	1	1	1	2	2	0	1	1
1833:	1	1	0	1	1	0	4	2
1841:	0	1	2	3	3	2	7	6
1849:	4	0	1	0	0	1	1	2
1857:	0	0	2	2	0	1	3	3
1865:	1	0	1	1	2	2	1	2
1873:	1	1	2	2	2	0	1	0
1881:	1	1	0	2	2	2	1	1
1889:	2	2	1	0	0	2	1	1
1897:	2	1	0	2	3	0	0	2
1905:	2	0	1	0	1	1	1	0
1913:	0	1	3	1	1	1	1	3
1921:	0	1	1	1	2	0	0	0
1929:	0	0	2	2	1	0	1	3
1937:	0	1	1	1	1	2	1	3
1945:	1	2	0	1	1	2	1	1
1953:	2	1	3	0	0	2	1	2
1961:	1	0	1	0	1	2	1	0
1969:	1	1	1	1	0	2	0	0
1977:	1	2	0	1	2	3	1	2
1985:	0	1	2	4	0	1	2	1
1993:	1	0	1	2	1	4	0	0
2001:	1	0	1	1	0	0	2	1
2009:	0	0	1	2	1	0	0	1
2017:	2	0	1	0	1	2	3	0
2025:	1	0	0	1	0	1	0	1
2033:	1	1	1	0	0	1	1	2
2041:	2	0	0	1	0	0	2	0
2049:	0	0	2	2	3	0	1	2
2057:	0	1	0	0	0	6	2	2
2065:	1	0	1	2	1	0	0	0
2073:	1	1	0	0	1	2	2	2
2081:	1	0	3	0	2	0	2	0
2089:	1	0	2	0	0	0	4	1

2097: 1 0 0 1 4 3 8 4

Sample Title: CP0604S24-25

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

2529: 0 1 0 0 1 0 1 0

Sample Title: CP0604S24-25

Channel	1	2	3	4	5	6	7	8
2537:	0	0	0	2	1	0	0	0
2545:	0	0	0	1	0	1	2	0
2553:	3	0	0	0	0	0	0	0
2561:	0	0	0	0	0	0	0	0
2569:	1	0	0	0	0	0	0	1
2577:	0	1	0	1	0	1	0	0
2585:	1	2	1	1	0	0	2	1
2593:	0	0	0	0	0	1	0	0
2601:	0	0	1	0	0	0	0	1
2609:	0	3	2	17	27	36	16	10
2617:	2	1	0	0	0	0	0	0
2625:	0	1	0	0	0	1	0	1
2633:	0	0	1	0	0	1	0	0
2641:	0	0	0	0	1	0	0	2
2649:	0	0	1	0	0	0	0	0
2657:	0	0	0	0	0	1	0	2
2665:	1	1	3	0	0	0	0	1
2673:	0	1	0	0	0	0	0	1
2681:	0	0	0	0	0	0	0	0
2689:	0	0	2	0	1	1	0	0
2697:	0	0	0	0	1	2	0	0
2705:	1	0	0	0	0	1	0	0
2713:	0	0	1	0	1	1	0	0
2721:	1	0	0	0	0	2	0	0
2729:	0	0	0	0	1	0	0	0
2737:	0	1	0	0	0	0	0	1
2745:	0	0	0	0	0	0	1	0
2753:	0	0	0	0	0	1	0	0
2761:	1	0	1	0	0	0	1	0
2769:	1	0	0	0	0	1	0	0
2777:	0	0	0	1	0	1	0	0
2785:	0	0	0	0	0	1	0	1
2793:	0	0	1	0	0	0	0	0
2801:	0	0	1	1	0	1	0	1
2809:	0	0	0	0	0	0	0	1
2817:	0	0	2	0	1	0	0	1
2825:	1	0	0	0	0	0	0	0
2833:	1	0	0	0	0	0	0	0
2841:	2	0	2	0	0	0	1	0
2849:	1	0	1	0	2	0	1	0
2857:	0	0	0	0	0	0	0	0
2865:	0	0	0	0	0	0	0	1
2873:	1	1	0	1	0	1	0	0
2881:	0	0	1	0	0	1	0	0
2889:	2	0	0	0	0	0	0	0
2897:	2	1	0	1	0	2	0	1
2905:	2	0	0	0	1	0	0	0
2913:	1	0	1	0	0	0	0	1
2921:	1	0	0	0	0	0	1	0
2929:	0	1	0	0	0	0	1	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	2	1	0
2953:	0	0	0	0	2	0	0	0

2961: 1 0 1 1 0 0 0 1

Sample Title: CP0604S24-25

Channel	1	2	3	4	5	6	7	8
2969:	0	1	0	0	1	0	0	0
2977:	0	0	1	0	0	0	0	1
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	0	0
3017:	0	0	0	0	0	1	0	0
3025:	0	0	0	0	0	0	1	0
3033:	0	0	0	0	0	0	0	0
3041:	1	0	0	0	1	0	0	1
3049:	0	0	0	1	0	2	0	0
3057:	0	0	0	1	0	1	0	1
3065:	0	0	0	0	0	1	0	0
3073:	0	0	1	0	0	0	0	0
3081:	0	1	0	0	1	0	0	0
3089:	0	0	0	0	0	0	0	1
3097:	0	0	0	0	0	0	0	0
3105:	0	0	1	0	0	0	0	0
3113:	0	0	0	1	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	1	0	1	0	0	0
3145:	0	0	0	0	0	1	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	1	0	0	0	0	0	1
3169:	2	0	0	0	0	1	0	1
3177:	1	0	0	0	2	0	1	0
3185:	0	0	1	0	0	0	0	0
3193:	0	1	0	0	0	1	0	0
3201:	1	0	0	0	0	1	0	0
3209:	0	0	0	0	0	0	1	1
3217:	1	0	1	0	0	1	0	1
3225:	0	0	1	0	0	0	0	0
3233:	0	0	1	0	0	0	0	0
3241:	0	0	0	0	0	0	1	0
3249:	0	0	0	0	0	0	1	0
3257:	0	0	0	0	2	0	0	0
3265:	0	0	0	1	0	2	0	0
3273:	0	0	0	0	1	0	0	0
3281:	0	0	0	0	0	1	0	0
3289:	1	0	0	0	0	0	0	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	1	0	0
3321:	1	0	0	1	0	0	0	0
3329:	0	0	0	0	1	0	0	0
3337:	0	0	0	1	0	0	0	0
3345:	0	0	0	0	0	1	1	0
3353:	0	0	1	0	0	0	0	0
3361:	1	0	0	0	0	0	0	3
3369:	0	1	0	0	0	0	0	2
3377:	1	1	0	0	0	0	0	1
3385:	0	0	0	0	0	0	0	1

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP0604S24-25

Channel	1	0	0	0	0	0	0	0
3401:	1	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	1	1	0
3425:	0	0	0	0	1	0	0	0
3433:	1	3	0	0	0	0	0	0
3441:	0	0	1	0	0	0	1	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	2	0	1	0
3465:	0	0	0	0	0	0	0	1
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	1
3489:	0	0	0	0	0	1	0	0
3497:	0	1	0	0	0	0	0	0
3505:	0	0	0	0	1	0	0	0
3513:	0	0	1	0	0	0	2	0
3521:	0	0	0	0	0	0	0	0
3529:	1	0	0	0	2	1	0	0
3537:	0	0	0	0	1	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	1	0	0	0	1	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	1	1	1	0	0	0
3577:	0	1	0	0	0	2	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	1	0	0	1	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	1	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	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	0	0	1
3665:	0	0	0	0	0	0	0	0
3673:	0	0	1	0	0	0	1	0
3681:	0	0	0	1	0	0	0	0
3689:	0	0	0	1	0	0	0	0
3697:	0	1	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	0	1	0	1	0	0	0
3729:	1	0	0	1	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	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	1	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	1	1	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	1
3817:	0	0	0	0	1	0	0	0

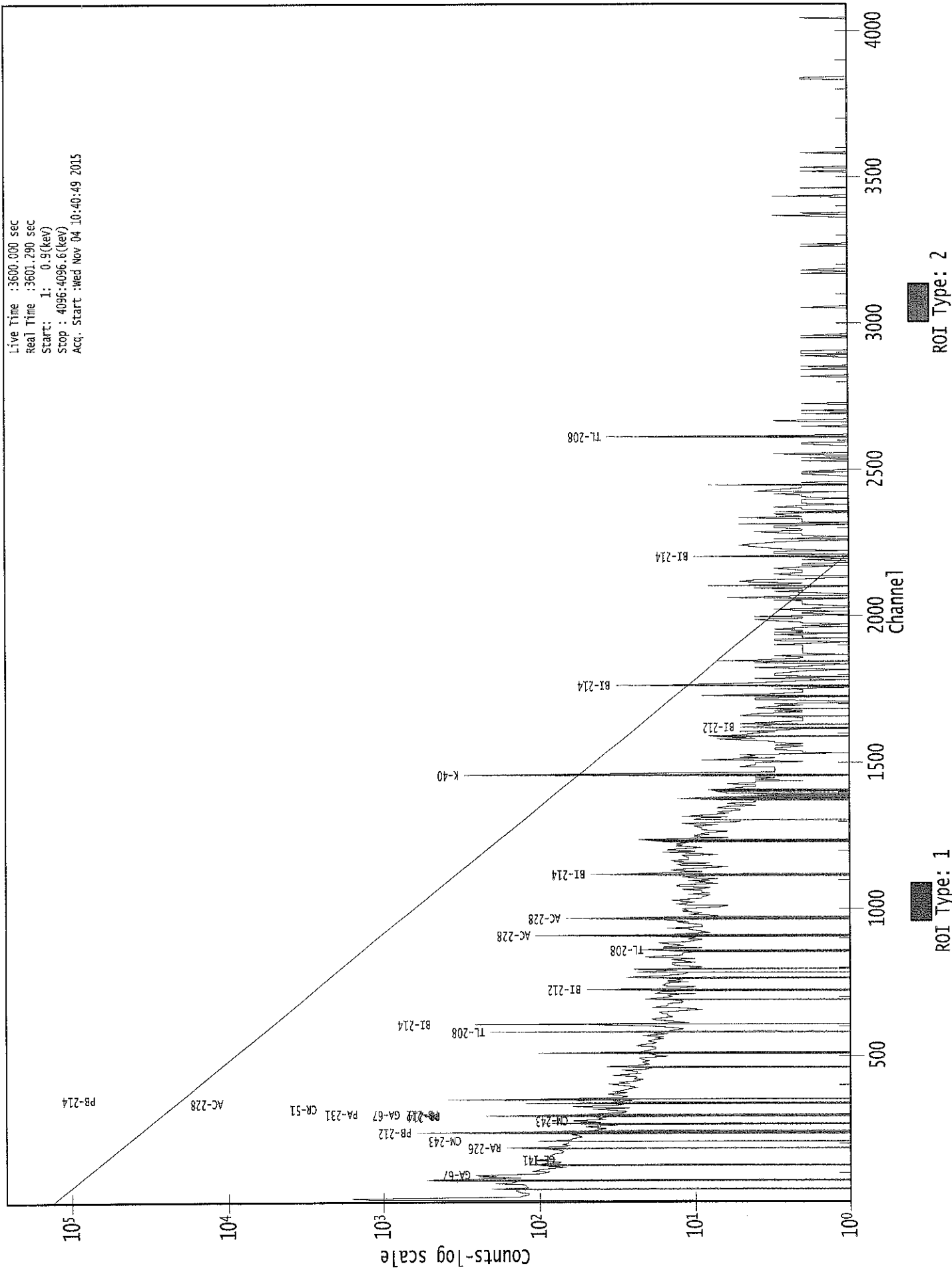
3825: 1 0 0 0 0 0 0 0

Sample Title: CP0604S24-25

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

0000029106.CNF

Live Time :3600.000 sec
Real Time :3601.290 sec
Start: 1: 0.9(keV)
Stop : 4096.4096.6(keV)
Acq. Start :Wed Nov 04 10:40:49 2015



KCS
11/4/15Analysis Report for 1510084-12
CP0604S26-27

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-12
Sample Description : CP0604S26-27
Sample Type : SOIL

Sample Size : 5.458E+02 grams
Facility : Countroom

Sample Taken On : 10/9/2015 9:49:49AM
Acquisition Started : 11/4/2015 11:42:02AM

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 : 29111

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-12
CP0604S26-27

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 12:42:06PM
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	46.08	46.43	0.0000	0.00
2	60.78	61.13	0.0000	0.00
3	74.79	75.13	0.0000	0.00
4	77.53	77.87	0.0000	0.00
5	88.22	88.56	0.0000	0.00
6	93.22	93.56	0.0000	0.00
7	129.26	129.59	0.0000	0.00
8	144.62	144.94	0.0000	0.00
9	186.10	186.40	0.0000	0.00
10	238.76	239.05	0.0000	0.00
11	241.94	242.22	0.0000	0.00
12	269.95	270.22	0.0000	0.00
13	277.41	277.68	0.0000	0.00
14	295.29	295.56	0.0000	0.00
15	338.67	338.92	0.0000	0.00
16	352.11	352.36	0.0000	0.00
17	409.96	410.19	0.0000	0.00
18	463.12	463.33	0.0000	0.00
19	500.16	500.36	0.0000	0.00
20	510.72	510.92	0.0000	0.00
21	513.82	514.02	0.0000	0.00
22	518.84	519.04	0.0000	0.00
23	566.98	567.16	0.0000	0.00
24	579.83	580.00	0.0000	0.00
25	583.53	583.70	0.0000	0.00
26	605.84	606.00	0.0000	0.00
27	609.63	609.79	0.0000	0.00
28	727.51	727.63	0.0000	0.00
29	795.32	795.41	0.0000	0.00
30	826.13	826.22	0.0000	0.00
31	861.13	861.21	0.0000	0.00
32	911.80	911.86	0.0000	0.00
33	965.15	965.19	0.0000	0.00
34	969.52	969.56	0.0000	0.00
35	990.23	990.26	0.0000	0.00
36	1064.96	1064.96	0.0000	0.00
37	1112.54	1112.52	0.0000	0.00
38	1121.00	1120.98	0.0000	0.00
39	1236.63	1236.57	0.0000	0.00
40	1385.36	1385.24	0.0000	0.00
41	1461.48	1461.34	0.0000	0.00
42	1516.60	1516.43	0.0000	0.00

Analysis Report for 1510084-12
CP0604S26-27

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1588.37	1588.18	0.0000	0.00
44	1708.55	1708.32	0.0000	0.00
45	1730.40	1730.16	0.0000	0.00
46	1765.40	1765.14	0.0000	0.00
47	1787.68	1787.42	0.0000	0.00
48	1856.05	1855.76	0.0000	0.00
49	2048.31	2047.95	0.0000	0.00
50	2103.80	2103.42	0.0000	0.00
51	2126.33	2125.93	0.0000	0.00
52	2193.78	2193.36	0.0000	0.00
53	2204.84	2204.42	0.0000	0.00
54	2261.95	2261.50	0.0000	0.00
55	2295.65	2295.20	0.0000	0.00
56	2299.28	2298.82	0.0000	0.00
57	2430.13	2429.62	0.0000	0.00
58	2448.48	2447.96	0.0000	0.00
59	2615.32	2614.73	0.0000	0.00
60	3890.31	3889.20	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510084-12

CP0604S26-27

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 12:42:06PM

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	46.08	43 - 49	46.43	1.68E+02	80.52	1.06E+03	1.31
M	2	60.78	60 - 67	61.13	5.49E+01	39.23	4.63E+02	1.43
M	3	74.79	72 - 83	75.13	4.13E+02	78.33	1.07E+03	1.46
m	4	77.53	72 - 83	77.87	6.41E+02	86.19	1.00E+03	1.46
	5	88.22	86 - 91	88.56	1.48E+02	98.63	1.83E+03	1.03
	6	93.22	91 - 97	93.56	3.12E+02	105.42	1.67E+03	1.85
	7	129.26	127 - 132	129.59	5.85E+01	66.78	8.35E+02	2.96
	8	144.62	141 - 148	144.94	8.92E+01	82.56	1.07E+03	1.57
	9	186.10	183 - 190	186.40	2.15E+02	80.02	9.25E+02	1.84
M	10	238.76	233 - 246	239.05	1.00E+03	77.22	4.13E+02	1.63
m	11	241.94	233 - 246	242.22	2.71E+02	93.27	5.79E+02	2.71
	12	269.95	267 - 274	270.22	7.83E+01	59.70	5.45E+02	2.21
	13	277.41	275 - 280	277.68	4.61E+01	47.03	4.02E+02	1.68
	14	295.29	293 - 299	295.56	2.75E+02	62.67	5.31E+02	1.72
	15	338.67	335 - 343	338.92	2.30E+02	59.42	3.93E+02	1.87
	16	352.11	348 - 355	352.36	5.51E+02	68.73	4.21E+02	1.83
	17	409.96	408 - 413	410.19	3.25E+01	34.21	2.05E+02	1.29
	18	463.12	459 - 467	463.33	8.64E+01	44.52	2.51E+02	2.45
M	19	500.16	498 - 516	500.36	2.19E+01	20.59	9.57E+01	2.09
m	20	510.72	498 - 516	510.92	1.86E+02	36.74	1.05E+02	2.10
m	21	513.82	498 - 516	514.02	3.82E+01	34.79	8.52E+01	2.10
	22	518.84	517 - 521	519.04	2.48E+01	22.87	9.65E+01	2.67
	23	566.98	560 - 574	567.16	7.45E+01	54.82	2.85E+02	9.72
M	24	579.83	578 - 590	580.00	1.56E+01	16.04	7.70E+01	1.78
m	25	583.53	578 - 590	583.70	3.21E+02	42.16	1.14E+02	1.71
M	26	605.84	605 - 616	606.00	1.53E+01	6.84	2.20E+01	1.80
m	27	609.63	605 - 616	609.79	3.89E+02	45.22	1.08E+02	1.64
	28	727.51	724 - 732	727.63	8.88E+01	35.15	1.36E+02	2.23
	29	795.32	792 - 798	795.41	4.05E+01	28.50	1.17E+02	2.15
	30	826.13	823 - 829	826.22	1.97E+01	23.54	8.45E+01	3.35
	31	861.13	857 - 866	861.21	5.70E+01	34.76	1.40E+02	1.92
	32	911.80	907 - 916	911.86	2.07E+02	41.59	1.27E+02	1.78
M	33	965.15	962 - 980	965.19	4.66E+01	18.28	4.84E+01	2.49
m	34	969.52	962 - 980	969.56	1.16E+02	27.00	4.95E+01	2.00
	35	990.23	987 - 994	990.26	1.55E+01	20.00	5.70E+01	2.74
	36	1064.96	1062 - 1068	1064.96	2.37E+01	17.97	4.06E+01	3.24
	37	1112.54	1108 - 1116	1112.52	2.90E+01	25.94	8.60E+01	3.92
	38	1121.00	1117 - 1126	1120.98	1.11E+02	39.23	1.61E+02	2.12
	39	1236.63	1231 - 1242	1236.57	5.63E+01	41.76	1.83E+02	9.69
	40	1385.36	1373 - 1398	1385.24	7.26E+01	35.45	6.08E+01	18.50

Analysis Report for 1510084-12

CP0604S26-27

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1461.48	1456 - 1467		1461.34	7.75E+02	58.62	4.27E+01	2.22
42	1516.60	1513 - 1520		1516.43	1.62E+01	12.33	1.16E+01	3.30
43	1588.37	1584 - 1591		1588.18	2.39E+01	15.36	2.23E+01	2.17
44	1708.55	1705 - 1711		1708.32	8.50E+00	8.51	7.00E+00	4.39
45	1730.40	1727 - 1733		1730.16	1.45E+01	13.17	2.10E+01	1.47
46	1765.40	1760 - 1770		1765.14	6.65E+01	20.71	2.09E+01	2.78
47	1787.68	1784 - 1790		1787.42	8.40E+00	7.23	3.20E+00	1.99
48	1856.05	1852 - 1858		1855.76	6.70E+00	8.03	6.60E+00	1.32
49	2048.31	2045 - 2050		2047.95	6.50E+00	6.40	3.00E+00	1.88
50	2103.80	2100 - 2108		2103.42	8.31E+00	11.17	1.54E+01	3.69
51	2126.33	2123 - 2128		2125.93	4.50E+00	5.74	3.00E+00	2.70
52	2193.78	2188 - 2197		2193.36	1.10E+01	6.63	0.00E+00	2.99
53	2204.84	2199 - 2208		2204.42	2.27E+01	11.18	4.52E+00	3.81
54	2261.95	2257 - 2264		2261.50	9.27E+00	7.75	3.45E+00	1.83
M	55	2295.65	2294 - 2301	2295.20	7.43E+00	3.46	0.00E+00	3.30
m	56	2299.28	2294 - 2301	2298.82	1.26E+01	6.32	0.00E+00	3.30
	57	2430.13	2427 - 2432	2429.62	5.36E+00	6.08	3.29E+00	1.24
	58	2448.48	2445 - 2452	2447.96	6.45E+00	8.72	9.09E+00	1.85
	59	2615.32	2610 - 2618	2614.73	1.14E+02	23.34	1.37E+01	2.85
	60	3890.31	3885 - 3891	3889.20	5.00E+00	4.47	0.00E+00	2.75

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 : 11/4/2015 12:42:06PM

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	46.08	43 - 49	1.68E+02	80.52	1.06E+03	6.27E+01
M	2	60.78	60 - 67	5.49E+01	39.23	4.63E+02	3.54E+01
M	3	74.79	72 - 83	4.13E+02	78.33	1.07E+03	5.38E+01
m	4	77.53	72 - 83	6.41E+02	86.19	1.00E+03	5.21E+01
	5	88.22	86 - 91	1.48E+02	98.63	1.83E+03	7.86E+01
	6	93.22	91 - 97	3.12E+02	105.42	1.67E+03	8.16E+01
	7	129.26	127 - 132	5.85E+01	66.78	8.35E+02	5.34E+01
	8	144.62	141 - 148	8.92E+01	82.56	1.07E+03	6.61E+01

Analysis Report for 1510084-12

CP0604S26-27

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	9	186.10	183 -	190	2.15E+02	80.02	9.25E+02	6.12E+01
M	10	238.76	233 -	246	1.00E+03	77.22	4.13E+02	3.34E+01
m	11	241.94	233 -	246	2.71E+02	93.27	5.79E+02	3.96E+01
	12	269.95	267 -	274	7.83E+01	59.70	5.45E+02	4.69E+01
	13	277.41	275 -	280	4.61E+01	47.03	4.02E+02	3.70E+01
	14	295.29	293 -	299	2.75E+02	62.67	5.31E+02	4.37E+01
	15	338.67	335 -	343	2.30E+02	59.42	3.93E+02	4.20E+01
	16	352.11	348 -	355	5.51E+02	68.73	4.21E+02	4.13E+01
	17	409.96	408 -	413	3.25E+01	34.21	2.05E+02	2.65E+01
	18	463.12	459 -	467	8.64E+01	44.52	2.51E+02	3.33E+01
M	19	500.16	498 -	516	2.19E+01	20.59	9.57E+01	1.61E+01
m	20	510.72	498 -	516	1.86E+02	36.74	1.05E+02	1.69E+01
m	21	513.82	498 -	516	3.82E+01	34.79	8.52E+01	1.52E+01
	22	518.84	517 -	521	2.48E+01	22.87	9.65E+01	1.69E+01
	23	566.98	560 -	574	7.45E+01	54.82	2.85E+02	1.76E+01
M	24	579.83	578 -	590	1.56E+01	16.04	7.70E+01	1.44E+01
m	25	583.53	578 -	590	3.21E+02	42.16	1.14E+02	1.75E+01
M	26	605.84	605 -	616	1.53E+01	6.84	2.20E+01	7.71E+00
m	27	609.63	605 -	616	3.89E+02	45.22	1.08E+02	1.71E+01
	28	727.51	724 -	732	8.88E+01	35.15	1.36E+02	2.44E+01
	29	795.32	792 -	798	4.05E+01	28.50	1.17E+02	2.10E+01
	30	826.13	823 -	829	1.97E+01	23.54	8.45E+01	1.79E+01
	31	861.13	857 -	866	5.70E+01	34.76	1.40E+02	2.57E+01
	32	911.80	907 -	916	2.07E+02	41.59	1.27E+02	2.47E+01
M	33	965.15	962 -	980	4.66E+01	18.28	4.84E+01	1.14E+01
m	34	969.52	962 -	980	1.16E+02	27.00	4.95E+01	1.16E+01
	35	990.23	987 -	994	1.55E+01	20.00	5.70E+01	1.51E+01
	36	1064.96	1062 -	1068	2.37E+01	17.97	4.06E+01	1.24E+01
	37	1112.54	1108 -	1116	2.90E+01	25.94	8.60E+01	1.94E+01
	38	1121.00	1117 -	1126	1.11E+02	39.23	1.61E+02	2.72E+01
	39	1236.63	1231 -	1242	5.63E+01	41.76	1.83E+02	3.20E+01
	40	1385.36	1373 -	1398	7.26E+01	35.45	6.08E+01	2.56E+01
	41	1461.48	1456 -	1467	7.75E+02	58.62	4.27E+01	1.51E+01
	42	1516.60	1513 -	1520	1.62E+01	12.33	1.16E+01	7.68E+00
	43	1588.37	1584 -	1591	2.39E+01	15.36	2.23E+01	9.75E+00
	44	1708.55	1705 -	1711	8.50E+00	8.51	7.00E+00	5.10E+00
	45	1730.40	1727 -	1733	1.45E+01	13.17	2.10E+01	8.83E+00
	46	1765.40	1760 -	1770	6.65E+01	20.71	2.09E+01	1.05E+01
	47	1787.68	1784 -	1790	8.40E+00	7.23	3.20E+00	3.55E+00
	48	1856.05	1852 -	1858	6.70E+00	8.03	6.60E+00	5.05E+00
	49	2048.31	2045 -	2050	6.50E+00	6.40	3.00E+00	3.18E+00
	50	2103.80	2100 -	2108	8.31E+00	11.17	1.54E+01	7.86E+00
	51	2126.33	2123 -	2128	4.50E+00	5.74	3.00E+00	3.18E+00
	52	2193.78	2188 -	2197	1.10E+01	6.63	0.00E+00	0.00E+00
	53	2204.84	2199 -	2208	2.27E+01	11.18	4.52E+00	4.80E+00
	54	2261.95	2257 -	2264	9.27E+00	7.75	3.45E+00	3.93E+00
M	55	2295.65	2294 -	2301	7.43E+00	3.46	0.00E+00	0.00E+00
m	56	2299.28	2294 -	2301	1.26E+01	6.32	0.00E+00	0.00E+00
	57	2430.13	2427 -	2432	5.36E+00	6.08	3.29E+00	3.24E+00
	58	2448.48	2445 -	2452	6.45E+00	8.72	9.09E+00	5.82E+00
	59	2615.32	2610 -	2618	1.14E+02	23.34	1.37E+01	7.72E+00

: 00757

Analysis Report for 1510084-12

CP0604S26-27

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
60	3890.31	3885 -	3891	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 : 11/4/2015 12:42:06PM

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	43 -	49	46.43	1.68E+02	80.52	1.06E+03	PB-210
M	2	60 -	67	61.13	5.49E+01	39.23	4.63E+02	.....
M	3	72 -	83	75.13	4.13E+02	78.33	1.07E+03	AM-243
m	4	72 -	83	77.87	6.41E+02	86.19	1.00E+03	TI-44
	5	86 -	91	88.56	1.48E+02	98.63	1.83E+03	LU-176 CD-109 SN-126
	6	91 -	97	93.56	3.12E+02	105.42	1.67E+03	GA-67
	7	127 -	132	129.59	5.85E+01	66.78	8.35E+02	.....
	8	141 -	148	144.94	8.92E+01	82.56	1.07E+03	CE-141 U-235
	9	183 -	190	186.40	2.15E+02	80.02	9.25E+02	RA-226
M	10	233 -	246	239.05	1.00E+03	77.22	4.13E+02	PB-212
m	11	233 -	246	242.22	2.71E+02	93.27	5.79E+02	RA-224
	12	267 -	274	270.22	7.83E+01	59.70	5.45E+02	.....
	13	275 -	280	277.68	4.61E+01	47.03	4.02E+02	CM-243 NP-239
	14	293 -	299	295.56	2.75E+02	62.67	5.31E+02	PB-214
	15	335 -	343	338.92	2.30E+02	59.42	3.93E+02	AC-228
	16	348 -	355	352.36	5.51E+02	68.73	4.21E+02	PB-214
	17	408 -	413	410.19	3.25E+01	34.21	2.05E+02	HO-166M
	18	459 -	467	463.33	8.64E+01	44.52	2.51E+02	SB-125
M	19	498 -	516	500.36	2.19E+01	20.59	9.57E+01	.....
m	20	498 -	516	510.92	1.86E+02	36.74	1.05E+02	.....
m	21	498 -	516	514.02	3.82E+01	34.79	8.52E+01	KR-85

: 00758

Analysis Report for 1510084-12

CP0604S26-27

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									SR-85
	22	518.84	517 -	521	519.04	2.48E+01	22.87	9.65E+01	.....
	23	566.98	560 -	574	567.16	7.45E+01	54.82	2.85E+02	.....
M	24	579.83	578 -	590	580.00	1.56E+01	16.04	7.70E+01	.....
m	25	583.53	578 -	590	583.70	3.21E+02	42.16	1.14E+02	TL-208
M	26	605.84	605 -	616	606.00	1.53E+01	6.84	2.20E+01	.....
m	27	609.63	605 -	616	609.79	3.89E+02	45.22	1.08E+02	BI-214
	28	727.51	724 -	732	727.63	8.88E+01	35.15	1.36E+02	BI-212
	29	795.32	792 -	798	795.41	4.05E+01	28.50	1.17E+02	CS-134
	30	826.13	823 -	829	826.22	1.97E+01	23.54	8.45E+01	.....
	31	861.13	857 -	866	861.21	5.70E+01	34.76	1.40E+02	TL-208
	32	911.80	907 -	916	911.86	2.07E+02	41.59	1.27E+02	LU-172
									AC-228
M	33	965.15	962 -	980	965.19	4.66E+01	18.28	4.84E+01	.....
m	34	969.52	962 -	980	969.56	1.16E+02	27.00	4.95E+01	AC-228
	35	990.23	987 -	994	990.26	1.55E+01	20.00	5.70E+01	.....
	36	1064.96	1062 -	1068	1064.96	2.37E+01	17.97	4.06E+01	.....
	37	1112.54	1108 -	1116	1112.52	2.90E+01	25.94	8.60E+01	EU-152
	38	1121.00	1117 -	1126	1120.98	1.11E+02	39.23	1.61E+02	TA-182
									SC-46
									BI-214
	39	1236.63	1231 -	1242	1236.57	5.63E+01	41.76	1.83E+02	.....
	40	1385.36	1373 -	1398	1385.24	7.26E+01	35.45	6.08E+01	.....
	41	1461.48	1456 -	1467	1461.34	7.75E+02	58.62	4.27E+01	K-40
	42	1516.60	1513 -	1520	1516.43	1.62E+01	12.33	1.16E+01	.....
	43	1588.37	1584 -	1591	1588.18	2.39E+01	15.36	2.23E+01	.....
	44	1708.55	1705 -	1711	1708.32	8.50E+00	8.51	7.00E+00	.....
	45	1730.40	1727 -	1733	1730.16	1.45E+01	13.17	2.10E+01	.....
	46	1765.40	1760 -	1770	1765.14	6.65E+01	20.71	2.09E+01	BI-214
	47	1787.68	1784 -	1790	1787.42	8.40E+00	7.23	3.20E+00	.....
	48	1856.05	1852 -	1858	1855.76	6.70E+00	8.03	6.60E+00	.....
	49	2048.31	2045 -	2050	2047.95	6.50E+00	6.40	3.00E+00	.....
	50	2103.80	2100 -	2108	2103.42	8.31E+00	11.17	1.54E+01	.....
	51	2126.33	2123 -	2128	2125.93	4.50E+00	5.74	3.00E+00	.....
	52	2193.78	2188 -	2197	2193.36	1.10E+01	6.63	0.00E+00	.....
	53	2204.84	2199 -	2208	2204.42	2.27E+01	11.18	4.52E+00	BI-214
	54	2261.95	2257 -	2264	2261.50	9.27E+00	7.75	3.45E+00	.....
M	55	2295.65	2294 -	2301	2295.20	7.43E+00	3.46	0.00E+00	.....
m	56	2299.28	2294 -	2301	2298.82	1.26E+01	6.32	0.00E+00	.....
	57	2430.13	2427 -	2432	2429.62	5.36E+00	6.08	3.29E+00	.....
	58	2448.48	2445 -	2452	2447.96	6.45E+00	8.72	9.09E+00	.....
	59	2615.32	2610 -	2618	2614.73	1.14E+02	23.34	1.37E+01	TL-208
	60	3890.31	3885 -	3891	3889.20	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

Analysis Report for 1510084-12

CP0604S26-27

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/4/2015 12:42:06PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.08	1.68E+02	80.52	1.65E-02	1.78E-03
M	2	60.78	5.49E+01	39.23	2.41E-02	1.82E-03
M	3	74.79	4.13E+02	78.33	2.75E-02	2.30E-03
m	4	77.53	6.41E+02	86.19	2.78E-02	2.39E-03
	5	88.22	1.48E+02	98.63	2.85E-02	2.74E-03
	6	93.22	3.12E+02	105.42	2.86E-02	2.64E-03
	7	129.26	5.85E+01	66.78	2.67E-02	2.09E-03
	8	144.62	8.92E+01	82.56	2.55E-02	2.12E-03
	9	186.10	2.15E+02	80.02	2.24E-02	2.03E-03
M	10	238.76	1.00E+03	77.22	1.92E-02	1.64E-03
m	11	241.94	2.71E+02	93.27	1.91E-02	1.61E-03
	12	269.95	7.83E+01	59.70	1.77E-02	1.41E-03
	13	277.41	4.61E+01	47.03	1.74E-02	1.35E-03
	14	295.29	2.75E+02	62.67	1.67E-02	1.31E-03
	15	338.67	2.30E+02	59.42	1.52E-02	1.22E-03
	16	352.11	5.51E+02	68.73	1.48E-02	1.19E-03
	17	409.96	3.25E+01	34.21	1.32E-02	1.09E-03
	18	463.12	8.64E+01	44.52	1.21E-02	1.04E-03
M	19	500.16	2.19E+01	20.59	1.14E-02	1.00E-03
m	20	510.72	1.86E+02	36.74	1.12E-02	9.91E-04
m	21	513.82	3.82E+01	34.79	1.12E-02	9.87E-04
	22	518.84	2.48E+01	22.87	1.11E-02	9.82E-04
	23	566.98	7.45E+01	54.82	1.04E-02	9.32E-04
M	24	579.83	1.56E+01	16.04	1.02E-02	9.19E-04
m	25	583.53	3.21E+02	42.16	1.02E-02	9.15E-04
M	26	605.84	1.53E+01	6.84	9.87E-03	8.92E-04
m	27	609.63	3.89E+02	45.22	9.82E-03	8.88E-04
	28	727.51	8.88E+01	35.15	8.55E-03	7.75E-04
	29	795.32	4.05E+01	28.50	7.97E-03	7.14E-04
	30	826.13	1.97E+01	23.54	7.73E-03	6.87E-04
	31	861.13	5.70E+01	34.76	7.48E-03	6.55E-04
	32	911.80	2.07E+02	41.59	7.14E-03	6.15E-04
M	33	965.15	4.66E+01	18.28	6.83E-03	5.87E-04
m	34	969.52	1.16E+02	27.00	6.80E-03	5.85E-04
	35	990.23	1.55E+01	20.00	6.69E-03	5.74E-04
	36	1064.96	2.37E+01	17.97	6.31E-03	5.35E-04
	37	1112.54	2.90E+01	25.94	6.10E-03	5.11E-04
	38	1121.00	1.11E+02	39.23	6.06E-03	5.06E-04
	39	1236.63	5.63E+01	41.76	5.62E-03	4.68E-04
	40	1385.36	7.26E+01	35.45	5.16E-03	4.38E-04
	41	1461.48	7.75E+02	58.62	4.97E-03	4.19E-04
	42	1516.60	1.62E+01	12.33	4.84E-03	4.05E-04
	43	1588.37	2.39E+01	15.36	4.69E-03	3.87E-04
	44	1708.55	8.50E+00	8.51	4.48E-03	3.58E-04
	45	1730.40	1.45E+01	13.17	4.45E-03	3.52E-04

Analysis Report for 1510084-12

CP0604S26-27

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	46	1765.40	6.65E+01	20.71	4.39E-03	3.43E-04
	47	1787.68	8.40E+00	7.23	4.36E-03	3.38E-04
	48	1856.05	6.70E+00	8.03	4.27E-03	3.26E-04
	49	2048.31	6.50E+00	6.40	4.07E-03	3.26E-04
	50	2103.80	8.31E+00	11.17	4.02E-03	3.26E-04
	51	2126.33	4.50E+00	5.74	4.00E-03	3.26E-04
	52	2193.78	1.10E+01	6.63	3.96E-03	3.26E-04
	53	2204.84	2.27E+01	11.18	3.95E-03	3.26E-04
	54	2261.95	9.27E+00	7.75	3.91E-03	3.26E-04
M	55	2295.65	7.43E+00	3.46	3.90E-03	3.26E-04
m	56	2299.28	1.26E+01	6.32	3.89E-03	3.26E-04
	57	2430.13	5.36E+00	6.08	3.84E-03	3.26E-04
	58	2448.48	6.45E+00	8.72	3.83E-03	3.26E-04
	59	2615.32	1.14E+02	23.34	3.79E-03	3.26E-04
	60	3890.31	5.00E+00	4.47	4.37E-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 : 11/4/2015 12:42:06PM

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	46.08	1.68E+02	80.52	4.50E+01	8.46E+00	1.23E+02	8.10E+01
M	2	60.78	5.49E+01	39.23			5.49E+01	3.92E+01
M	3	74.79	4.13E+02	78.33	5.09E+00	4.37E+00	4.08E+02	7.85E+01
m	4	77.53	6.41E+02	86.19	9.75E+00	8.28E+00	6.31E+02	8.66E+01
	5	88.22	1.48E+02	98.63			1.48E+02	9.86E+01
	6	93.22	3.12E+02	105.42	1.34E+02	9.83E+00	1.78E+02	1.06E+02
	7	129.26	5.85E+01	66.78			5.85E+01	6.68E+01
	8	144.62	8.92E+01	82.56	7.18E+00	7.25E+00	8.20E+01	8.29E+01
	9	186.10	2.15E+02	80.02	6.41E+01	7.38E+00	1.51E+02	8.04E+01
M	10	238.76	1.00E+03	77.22	2.34E+01	6.34E+00	9.76E+02	7.75E+01
m	11	241.94	2.71E+02	93.27			2.71E+02	9.33E+01
	12	269.95	7.83E+01	59.70			7.83E+01	5.97E+01
	13	277.41	4.61E+01	47.03			4.61E+01	4.70E+01
	14	295.29	2.75E+02	62.67	4.17E+00	5.50E+00	2.71E+02	6.29E+01
	15	338.67	2.30E+02	59.42	2.22E-01	4.54E+00	2.30E+02	5.96E+01

: 00761

Analysis Report for 1510084-12

CP0604S26-27

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	16	352.11	5.51E+02	68.73	8.83E+00	4.91E+00	5.42E+02	6.89E+01
	17	409.96	3.25E+01	34.21			3.25E+01	3.42E+01
	18	463.12	8.64E+01	44.52			8.64E+01	4.45E+01
M	19	500.16	2.19E+01	20.59			2.19E+01	2.06E+01
m	20	510.72	1.86E+02	36.74	8.12E+01	5.49E+00	1.05E+02	3.72E+01
m	21	513.82	3.82E+01	34.79			3.82E+01	3.48E+01
	22	518.84	2.48E+01	22.87			2.48E+01	2.29E+01
	23	566.98	7.45E+01	54.82			7.45E+01	5.48E+01
M	24	579.83	1.56E+01	16.04			1.56E+01	1.60E+01
m	25	583.53	3.21E+02	42.16	6.34E+00	3.74E+00	3.15E+02	4.23E+01
M	26	605.84	1.53E+01	6.84			1.53E+01	6.84E+00
m	27	609.63	3.89E+02	45.22	5.20E+00	3.69E+00	3.84E+02	4.54E+01
	28	727.51	8.88E+01	35.15			8.88E+01	3.51E+01
	29	795.32	4.05E+01	28.50			4.05E+01	2.85E+01
	30	826.13	1.97E+01	23.54			1.97E+01	2.35E+01
	31	861.13	5.70E+01	34.76			5.70E+01	3.48E+01
	32	911.80	2.07E+02	41.59	3.28E+00	2.53E+00	2.03E+02	4.17E+01
M	33	965.15	4.66E+01	18.28			4.66E+01	1.83E+01
m	34	969.52	1.16E+02	27.00			1.16E+02	2.70E+01
	35	990.23	1.55E+01	20.00			1.55E+01	2.00E+01
	36	1064.96	2.37E+01	17.97			2.37E+01	1.80E+01
	37	1112.54	2.90E+01	25.94			2.90E+01	2.59E+01
	38	1121.00	1.11E+02	39.23	2.28E+00	2.55E+00	1.08E+02	3.93E+01
	39	1236.63	5.63E+01	41.76			5.63E+01	4.18E+01
	40	1385.36	7.26E+01	35.45			7.26E+01	3.55E+01
	41	1461.48	7.75E+02	58.62	6.46E+00	2.33E+00	7.68E+02	5.87E+01
	42	1516.60	1.62E+01	12.33			1.62E+01	1.23E+01
	43	1588.37	2.39E+01	15.36			2.39E+01	1.54E+01
	44	1708.55	8.50E+00	8.51			8.50E+00	8.51E+00
	45	1730.40	1.45E+01	13.17			1.45E+01	1.32E+01
	46	1765.40	6.65E+01	20.71			6.65E+01	2.07E+01
	47	1787.68	8.40E+00	7.23			8.40E+00	7.23E+00
	48	1856.05	6.70E+00	8.03			6.70E+00	8.03E+00
	49	2048.31	6.50E+00	6.40			6.50E+00	6.40E+00
	50	2103.80	8.31E+00	11.17			8.31E+00	1.12E+01
	51	2126.33	4.50E+00	5.74			4.50E+00	5.74E+00
	52	2193.78	1.10E+01	6.63			1.10E+01	6.63E+00
	53	2204.84	2.27E+01	11.18			2.27E+01	1.12E+01
	54	2261.95	9.27E+00	7.75			9.27E+00	7.75E+00
M	55	2295.65	7.43E+00	3.46			7.43E+00	3.46E+00
m	56	2299.28	1.26E+01	6.32			1.26E+01	6.32E+00
	57	2430.13	5.36E+00	6.08			5.36E+00	6.08E+00
	58	2448.48	6.45E+00	8.72			6.45E+00	8.72E+00
	59	2615.32	1.14E+02	23.34	3.47E+00	1.48E+00	1.11E+02	2.34E+01
	60	3890.31	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 1510084-12

CP0604S26-27

AREA CORRECTION REPORT

REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/4/2015 12:42:06PM
 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	46.08	1.68E+02	80.52	4.50E+01	8.46E+00	1.23E+02	8.10E+01
M	2	60.78	5.49E+01	39.23			5.49E+01	3.92E+01
M	3	74.79	4.13E+02	78.33	5.09E+00	4.37E+00	4.08E+02	7.85E+01
m	4	77.53	6.41E+02	86.19	9.75E+00	8.28E+00	6.31E+02	8.66E+01
	5	88.22	1.48E+02	98.63			1.48E+02	9.86E+01
	6	93.22	3.12E+02	105.42	1.34E+02	9.83E+00	1.78E+02	1.06E+02
	7	129.26	5.85E+01	66.78			5.85E+01	6.68E+01
	8	144.62	8.92E+01	82.56	7.18E+00	7.25E+00	8.20E+01	8.29E+01
	9	186.10	2.15E+02	80.02	6.41E+01	7.38E+00	1.51E+02	8.04E+01
M	10	238.76	1.00E+03	77.22	2.34E+01	6.34E+00	9.76E+02	7.75E+01
m	11	241.94	2.71E+02	93.27			2.71E+02	9.33E+01
	12	269.95	7.83E+01	59.70			7.83E+01	5.97E+01
	13	277.41	4.61E+01	47.03			4.61E+01	4.70E+01
	14	295.29	2.75E+02	62.67	4.17E+00	5.50E+00	2.71E+02	6.29E+01
	15	338.67	2.30E+02	59.42	2.22E-01	4.54E+00	2.30E+02	5.96E+01
	16	352.11	5.51E+02	68.73	8.83E+00	4.91E+00	5.42E+02	6.89E+01
	17	409.96	3.25E+01	34.21			3.25E+01	3.42E+01
	18	463.12	8.64E+01	44.52			8.64E+01	4.45E+01
M	19	500.16	2.19E+01	20.59			2.19E+01	2.06E+01
m	20	510.72	1.86E+02	36.74	8.12E+01	5.49E+00	1.05E+02	3.72E+01
m	21	513.82	3.82E+01	34.79			3.82E+01	3.48E+01
	22	518.84	2.48E+01	22.87			2.48E+01	2.29E+01
	23	566.98	7.45E+01	54.82			7.45E+01	5.48E+01
M	24	579.83	1.56E+01	16.04			1.56E+01	1.60E+01
m	25	583.53	3.21E+02	42.16	6.34E+00	3.74E+00	3.15E+02	4.23E+01
M	26	605.84	1.53E+01	6.84			1.53E+01	6.84E+00
m	27	609.63	3.89E+02	45.22	5.20E+00	3.69E+00	3.84E+02	4.54E+01
	28	727.51	8.88E+01	35.15			8.88E+01	3.51E+01
	29	795.32	4.05E+01	28.50			4.05E+01	2.85E+01
	30	826.13	1.97E+01	23.54			1.97E+01	2.35E+01
	31	861.13	5.70E+01	34.76			5.70E+01	3.48E+01
	32	911.80	2.07E+02	41.59	3.28E+00	2.53E+00	2.03E+02	4.17E+01
M	33	965.15	4.66E+01	18.28			4.66E+01	1.83E+01
m	34	969.52	1.16E+02	27.00			1.16E+02	2.70E+01
	35	990.23	1.55E+01	20.00			1.55E+01	2.00E+01
	36	1064.96	2.37E+01	17.97			2.37E+01	1.80E+01
	37	1112.54	2.90E+01	25.94			2.90E+01	2.59E+01
	38	1121.00	1.11E+02	39.23	2.28E+00	2.55E+00	1.08E+02	3.93E+01
	39	1236.63	5.63E+01	41.76			5.63E+01	4.18E+01

: 00763

Analysis Report for 1510084-12

CP0604S26-27

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
40	1385.36	7.26E+01	35.45			7.26E+01	3.55E+01
41	1461.48	7.75E+02	58.62	6.46E+00	2.33E+00	7.68E+02	5.87E+01
42	1516.60	1.62E+01	12.33			1.62E+01	1.23E+01
43	1588.37	2.39E+01	15.36			2.39E+01	1.54E+01
44	1708.55	8.50E+00	8.51			8.50E+00	8.51E+00
45	1730.40	1.45E+01	13.17			1.45E+01	1.32E+01
46	1765.40	6.65E+01	20.71			6.65E+01	2.07E+01
47	1787.68	8.40E+00	7.23			8.40E+00	7.23E+00
48	1856.05	6.70E+00	8.03			6.70E+00	8.03E+00
49	2048.31	6.50E+00	6.40			6.50E+00	6.40E+00
50	2103.80	8.31E+00	11.17			8.31E+00	1.12E+01
51	2126.33	4.50E+00	5.74			4.50E+00	5.74E+00
52	2193.78	1.10E+01	6.63			1.10E+01	6.63E+00
53	2204.84	2.27E+01	11.18			2.27E+01	1.12E+01
54	2261.95	9.27E+00	7.75			9.27E+00	7.75E+00
M 55	2295.65	7.43E+00	3.46			7.43E+00	3.46E+00
m 56	2299.28	1.26E+01	6.32			1.26E+01	6.32E+00
57	2430.13	5.36E+00	6.08			5.36E+00	6.08E+00
58	2448.48	6.45E+00	8.72			6.45E+00	8.72E+00
59	2615.32	1.14E+02	23.34	3.47E+00	1.48E+00	1.11E+02	2.34E+01
60	3890.31	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	0.930	1460.81 *	10.67	1.99E+01	2.30E+00
GA-67	0.397	93.31 *	35.70	6.16E+01	2.23E+02
		208.95	2.24		
		300.22	16.00		
KR-85	0.996	513.99 *	0.43	1.09E+01	9.94E+00
SR-85	0.995	513.99 *	99.27	6.25E-02	5.72E-02
CD-109	0.994	88.03 *	3.72	1.99E+00	1.35E+00
SN-126	0.934	87.57 *	37.00	1.93E-01	1.30E-01
CE-141	0.895	145.44 *	48.40	1.59E-01	1.65E-01
TL-208	0.950	583.14 *	30.22	1.41E+00	2.28E-01

Analysis Report for 1510084-12
CP0604S26-27

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TL-208	0.950	860.37 *	4.48	2.34E+00	1.44E+00
		2614.66 *	35.85	1.12E+00	2.55E-01
PB-210	0.972	46.50 *	4.25	2.43E+00	1.61E+00
BI-212	0.751	727.17 *	11.80	1.21E+00	4.91E-01
		1620.62	2.75		
PB-212	0.892	238.63 *	44.60	1.57E+00	1.82E-01
		300.09	3.41		
BI-214	0.948	609.31 *	46.30	1.16E+00	1.73E-01
		1120.29 *	15.10	1.63E+00	6.06E-01
		1764.49 *	15.80	1.32E+00	4.23E-01
		2204.22 *	4.98	1.59E+00	7.93E-01
PB-214	0.996	295.21 *	19.19	1.17E+00	2.85E-01
		351.92 *	37.19	1.36E+00	2.05E-01
RA-224	0.864	240.98 *	3.95	4.94E+00	1.76E+00
RA-226	0.998	186.21 *	3.28	2.82E+00	5.39E+00
AC-228	0.947	338.32 *	11.40	1.83E+00	4.96E-01
		911.07 *	27.70	1.41E+00	3.14E-01
AM-243	0.998	969.11 *	16.60	1.41E+00	3.51E-01
		74.67 *	66.00	3.10E-01	6.49E-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 : 11/4/2015 12:42:06PM
 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	1.52391E-02	35.75		
m 4	77.53	1.75388E-01	6.86	Tol.	TI-44
		1.62611E-02	57.04		
12	129.26	2.17470E-02	38.13		
13	277.41	1.28160E-02	50.97	Tol.	NP-239
					CM-243
17	409.96	9.01646E-03	52.69	Tol.	HO-166M
18	463.12	2.40094E-02	25.75		
M 19	500.16	6.08692E-03	46.98		
m 20	510.72	2.92368E-02	17.65		

Analysis Report for 1510084-12

CP0604S26-27

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
22	518.84	6.87595E-03	46.21		
23	566.98	2.06944E-02	36.79		
M 24	579.83	4.34026E-03	51.33	Sum	
M 26	605.84	4.24307E-03	22.38		
29	795.32	1.12388E-02	35.23	Sum	
30	826.13	5.48387E-03	59.63	Sum	
M 33	965.15	1.29487E-02	19.61		
35	990.23	4.31187E-03	64.42		
36	1064.96	6.58460E-03	37.91		
37	1112.54	8.05556E-03	44.72	Tol.	EU-152
39	1236.63	1.56363E-02	37.09		
40	1385.36	2.01659E-02	24.42		
42	1516.60	4.49495E-03	38.09		
43	1588.37	6.62698E-03	32.20	Sum	
44	1708.55	2.36111E-03	50.09		
45	1730.40	4.02778E-03	45.42	Sum	
47	1787.68	2.33333E-03	43.03		
48	1856.05	1.86111E-03	59.93		
49	2048.31	1.80556E-03	49.25		
50	2103.80	2.30903E-03	67.18	S-Esc	
51	2126.33	1.25000E-03	63.83		
52	2193.78	3.05556E-03	30.15		
54	2261.95	2.57576E-03	41.77		
M 55	2295.65	2.06483E-03	23.30		
m 56	2299.28	3.50829E-03	25.04		
57	2430.13	1.48810E-03	56.77	Sum	
58	2448.48	1.79293E-03	67.53		
60	3890.31	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
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Analysis Report for 1510084-12

CP0604S26-27

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.93	1460.81 *	10.67	1.99E+01	2.30E+00
GA-67	0.39	93.31 *	35.70	6.16E+01	2.23E+02
		208.95	2.24		
		300.22	16.00		
KR-85	0.99	513.99 *	0.43	1.09E+01	9.94E+00
SR-85	0.99	513.99 *	99.27	6.25E-02	5.72E-02
CD-109	0.99	88.03 *	3.72	1.99E+00	1.35E+00
SN-126	0.93	87.57 *	37.00	1.93E-01	1.30E-01
CE-141	0.89	145.44 *	48.40	1.59E-01	1.65E-01
TL-208	0.95	583.14 *	30.22	1.41E+00	2.28E-01
		860.37 *	4.48	2.34E+00	1.44E+00
		2614.66 *	35.85	1.12E+00	2.55E-01
PB-210	0.97	46.50 *	4.25	2.43E+00	1.61E+00
BI-212	0.75	727.17 *	11.80	1.21E+00	4.91E-01
		1620.62	2.75		
PB-212	0.89	238.63 *	44.60	1.57E+00	1.82E-01
		300.09	3.41		
BI-214	0.94	609.31 *	46.30	1.16E+00	1.73E-01
		1120.29 *	15.10	1.63E+00	6.06E-01
		1764.49 *	15.80	1.32E+00	4.23E-01
		2204.22 *	4.98	1.59E+00	7.93E-01
PB-214	0.99	295.21 *	19.19	1.17E+00	2.85E-01
		351.92 *	37.19	1.36E+00	2.05E-01
RA-224	0.86	240.98 *	3.95	4.94E+00	1.76E+00
RA-226	0.99	186.21 *	3.28	2.82E+00	5.39E+00
AC-228	0.94	338.32 *	11.40	1.83E+00	4.96E-01
		911.07 *	27.70	1.41E+00	3.14E-01
		969.11 *	16.60	1.41E+00	3.51E-01
AM-243	0.99	74.67 *	66.00	3.10E-01	6.49E-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

Analysis Report for 1510084-12

CP0604S26-27

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.930	1.99E+01	2.30E+00	
GA-67	0.397	6.16E+01	2.23E+02	
? KR-85	0.996	1.09E+01	9.94E+00	
? SR-85	0.995	6.25E-02	5.72E-02	
? CD-109	0.994	1.99E+00	1.35E+00	
? SN-126	0.934	1.93E-01	1.30E-01	
CE-141	0.895	1.59E-01	1.65E-01	
TL-208	0.950	1.30E+00	1.69E-01	
PB-210	0.972	2.43E+00	1.61E+00	
BI-212	0.751	1.21E+00	4.91E-01	
PB-212	0.892	1.57E+00	1.82E-01	
BI-214	0.948	1.23E+00	1.52E-01	
PB-214	0.996	1.29E+00	1.66E-01	
RA-224	0.864	4.94E+00	1.76E+00	
RA-226	0.998	2.82E+00	5.39E+00	
AC-228	0.947	1.49E+00	2.12E-01	
AM-243	0.998	3.10E-01	6.49E-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 1510084-12
 CP0604S26-27

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 12:42:06PM
 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	1.52391E-02		
m	4	77.53	1.75388E-01		
	7	129.26	1.62611E-02		
	12	269.95	2.17470E-02		
	13	277.41	1.28160E-02	Tol.	NP-239 CM-243
	17	409.96	9.01646E-03	Tol.	HO-166M
	18	463.12	2.40094E-02		
M	19	500.16	6.08692E-03		
m	20	510.72	2.92368E-02		
	22	518.84	6.87595E-03		
	23	566.98	2.06944E-02		
M	24	579.83	4.34026E-03	Sum	
M	26	605.84	4.24307E-03		
	29	795.32	1.12388E-02	Sum	
	30	826.13	5.48387E-03	Sum	
M	33	965.15	1.29487E-02		
	35	990.23	4.31187E-03		
	36	1064.96	6.58460E-03		
	37	1112.54	8.05556E-03	Tol.	EU-152
	39	1236.63	1.56363E-02		
	40	1385.36	2.01659E-02		
	42	1516.60	4.49495E-03		
	43	1588.37	6.62698E-03	Sum	
	44	1708.55	2.36111E-03		
	45	1730.40	4.02778E-03	Sum	
	47	1787.68	2.33333E-03		
	48	1856.05	1.86111E-03		
	49	2048.31	1.80556E-03		
	50	2103.80	2.30903E-03	S-Esc	
	51	2126.33	1.25000E-03		
	52	2193.78	3.05556E-03		
	54	2261.95	2.57576E-03		
M	55	2295.65	2.06483E-03		
m	56	2299.28	3.50829E-03		

Analysis Report for 1510084-12
CP0604S26-27

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
57	2430.13	1.48810E-03	56.77	Sum	
58	2448.48	1.79293E-03	67.53		
60	3890.31	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	-1.71E-01	8.13E-01	8.13E-01
+	NA-22	1274.54	99.94	-6.28E-03	7.92E-02	7.92E-02
+	NA-24	1368.53	99.99	8.84E+10	1.63E+11	2.77E+11
		2754.09	99.86	6.77E+09		1.63E+11
+	AL-26	1808.65	99.76	-1.01E-02	4.49E-02	4.49E-02
+	K-40	1460.81	* 10.67	1.99E+01	8.90E-01	8.90E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.12E-02	6.78E-02	6.78E-02
		78.34	96.00	2.73E-01		8.73E-02
+	SC-46	889.25	99.98	-1.97E-02	8.49E-02	8.49E-02
		1120.51	99.99	3.09E-01		1.73E-01
+	V-48	983.52	99.98	1.06E-01	1.87E-01	1.87E-01
		1312.10	97.50	-6.58E-02		2.37E-01
+	CR-51	320.08	9.83	3.08E-01	1.01E+00	1.01E+00
+	MN-54	834.83	99.97	-1.80E-02	7.92E-02	7.92E-02
+	CO-56	846.75	99.96	-5.40E-02	8.28E-02	8.28E-02
		1037.75	14.03	1.46E-01		7.06E-01
		1238.25	67.00	1.38E-01		2.12E-01
		1771.40	15.51	5.09E-02		4.24E-01
		2598.48	16.90	2.70E-02		3.54E-01
+	CO-57	122.06	85.51	-6.70E-03	5.78E-02	5.78E-02
		136.48	10.60	-8.51E-02		4.80E-01
+	CO-58	810.76	99.40	2.86E-02	9.09E-02	9.09E-02
+	FE-59	1099.22	56.50	-2.30E-02	2.09E-01	2.09E-01
		1291.56	43.20	1.15E-01		2.79E-01
+	CO-60	1173.22	100.00	2.61E-02	8.10E-02	8.68E-02

Analysis Report for 1510084-12
CP0604S26-27

<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>	
	CO-60	1332.49	100.00	7.10E-03	8.10E-02	8.10E-02
+	ZN-65	1115.52	50.75	-8.70E-01	1.84E-01	1.84E-01
+	GA-67	93.31	* 35.70	6.16E+01	5.93E+01	5.93E+01
		208.95	2.24	3.94E+02		6.57E+02
		300.22	16.00	7.50E+01		9.48E+01
+	SE-75	121.11	16.70	-1.16E-01	9.11E-02	3.15E-01
		136.00	59.20	6.14E-02		9.50E-02
		264.65	59.80	-1.22E-02		9.11E-02
		279.53	25.20	1.12E-01		2.60E-01
		400.65	11.40	2.03E-01		5.79E-01
+	RB-82	776.52	13.00	-3.84E-01	9.67E-01	9.67E-01
+	RB-83	520.41	46.00	6.54E-03	1.71E-01	1.71E-01
		529.64	30.30	-4.15E-02		2.58E-01
		552.65	16.40	1.19E-01		4.67E-01
+	KR-85	513.99	* 0.43	1.09E+01	2.88E+01	2.88E+01
+	SR-85	513.99	* 99.27	6.25E-02	1.66E-01	1.66E-01
+	Y-88	898.02	93.40	-1.14E-02	6.92E-02	9.56E-02
		1836.01	99.38	2.95E-02		6.92E-02
+	NB-93M	16.57	9.43	-8.65E+01	6.70E+01	6.70E+01
+	NB-94	702.63	100.00	5.27E-03	6.49E-02	7.44E-02
		871.10	100.00	-1.61E-02		6.49E-02
+	NB-95	765.79	99.81	6.96E-02	1.52E-01	1.52E-01
+	NB-95M	235.69	25.00	-3.30E+02	3.96E+01	3.96E+01
+	ZR-95	724.18	43.70	1.97E-02	1.72E-01	2.37E-01
		756.72	55.30	7.70E-03		1.72E-01
+	MO-99	181.06	6.20	1.42E+02	3.93E+02	5.79E+02
		739.58	12.80	1.48E+02		3.93E+02
		778.00	4.50	-2.58E+02		9.90E+02
+	RU-103	497.08	89.00	3.54E-02	1.17E-01	1.17E-01
+	RU-106	621.84	9.80	1.60E-01	7.14E-01	7.14E-01
+	AG-108M	433.93	89.90	1.60E-02	6.57E-02	6.57E-02
		614.37	90.40	7.14E-03		6.62E-02
		722.95	90.50	2.71E-02		7.84E-02
+	CD-109	88.03	* 3.72	1.99E+00	2.16E+00	2.16E+00
+	AG-110M	657.75	93.14	1.46E-02	7.69E-02	7.69E-02
		677.61	10.53	1.76E-01		6.63E-01
		706.67	16.46	2.42E-01		4.73E-01
		763.93	21.98	-3.99E-01		3.83E-01
		884.67	71.63	2.84E-02		1.00E-01
		1384.27	23.94	-1.75E-01		3.21E-01
+	CD-113M	263.70	0.02	2.92E-01	2.12E+02	2.12E+02
+	SN-113	255.12	1.93	-2.68E-01	9.14E-02	2.95E+00
		391.69	64.90	-1.57E-02		9.14E-02
+	TE123M	159.00	84.10	-2.09E-03	6.27E-02	6.27E-02
+	SB-124	602.71	97.87	1.34E-02	9.78E-02	9.78E-02
		645.85	7.26	-1.65E-01		1.24E+00
		722.78	11.10	2.98E-01		8.63E-01
		1691.02	49.00	-8.41E-03		1.10E-01

Analysis Report for 1510084-12
 CP0604S26-27

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-125	35.49	6.49	1.03E+00	2.89E+00	2.89E+00
+	SB-125	176.33	6.89	3.92E-01	1.91E-01	7.64E-01
		427.89	29.33	-6.94E-02		1.91E-01
		463.38	10.35	9.88E-01		7.38E-01
		600.56	17.80	1.51E-01		4.09E-01
		635.90	11.32	9.29E-02		6.03E-01
+	SB-126	414.70	83.30	-2.72E-02	2.72E-01	2.93E-01
		666.33	99.60	-4.35E-02		2.72E-01
		695.00	99.60	-7.27E-02		3.12E-01
		720.50	53.80	1.41E-01		5.06E-01
+	SN-126	87.57	* 37.00	1.93E-01	2.09E-01	2.09E-01
+	SB-127	473.00	25.00	5.07E-01	2.19E+01	2.67E+01
		685.20	35.70	-2.65E+00		2.19E+01
		783.80	14.70	5.82E+00		5.27E+01
+	I-129	29.78	57.00	2.58E-02	4.75E-01	4.75E-01
		33.60	13.20	3.78E-01		1.28E+00
		39.58	7.52	-3.40E-01		1.39E+00
+	I-131	284.30	6.05	-8.27E+00	5.39E-01	7.52E+00
		364.48	81.20	-1.79E-01		5.39E-01
		636.97	7.26	-3.88E+00		8.39E+00
		722.89	1.80	1.29E+01		3.74E+01
+	TE-132	49.72	13.10	3.94E+01	1.55E+01	1.40E+02
		228.16	88.00	1.13E+00		1.55E+01
+	BA-133	81.00	33.00	-1.27E+00	8.67E-02	1.70E-01
		302.84	17.80	-5.45E-02		2.92E-01
		356.01	60.00	-2.14E-02		8.67E-02
+	I-133	529.87	86.30	-1.37E+07	8.53E+07	8.53E+07
+	XE-133	81.00	38.00	-3.47E+01	4.62E+00	4.62E+00
+	CS-134	563.23	8.38	3.49E-01	7.52E-02	8.08E-01
		569.32	15.43	1.84E-01		4.52E-01
		604.70	97.60	1.46E-02		7.52E-02
		795.84	85.40	4.71E-02		1.02E-01
		801.93	8.73	-3.36E-02		8.32E-01
+	CS-135	268.24	16.00	3.38E-01	3.65E-01	3.65E-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	4.34E-01	2.67E-01	2.64E+00
		163.89	4.61	-2.70E+00		4.19E+00
		176.55	13.56	7.74E-01		1.51E+00
		273.65	12.66	-2.63E+00		1.61E+00
		340.57	48.50	7.92E-01		5.65E-01
		818.50	99.70	4.93E-02		2.67E-01
		1048.07	79.60	-8.85E-02		3.51E-01
		1235.34	19.70	7.36E-02		2.26E+00
+	CS-137	661.65	85.12	-1.40E-02	7.21E-02	7.21E-02
+	LA-138	788.74	34.00	7.15E-02	8.83E-02	2.25E-01
		1435.80	66.00	-2.07E-03		8.83E-02
+	CE-139	165.85	80.35	4.15E-02	7.22E-02	7.22E-02

Analysis Report for 1510084-12
CP0604S26-27

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BA-140	162.64	6.70	-7.40E-02	1.07E+00	2.94E+00
		304.84	4.50	-5.28E-01		4.43E+00
		423.70	3.20	1.45E+00		7.52E+00
		437.55	2.00	-6.78E+00		1.20E+01
		537.32	25.00	3.59E-01		1.07E+00
+	LA-140	328.77	20.50	6.48E-01	2.70E-01	1.14E+00
		487.03	45.50	2.64E-02		5.66E-01
		815.85	23.50	-4.95E-01		1.11E+00
		1596.49	95.49	-6.61E-02		2.70E-01
+	CE-141	145.44	* 48.40	1.59E-01	2.64E-01	2.64E-01
+	CE-143	57.36	11.80	9.40E+04	1.03E+05	2.98E+05
		293.26	42.00	2.62E+05		1.03E+05
		664.55	5.20	-1.76E+05		6.16E+05
+	CE-144	133.54	10.80	2.19E-03	4.55E-01	4.55E-01
+	PM-144	476.78	42.00	-9.27E-02	6.73E-02	1.49E-01
		618.01	98.60	1.04E-02		6.73E-02
		696.49	99.49	4.86E-02		8.08E-02
+	PM-145	36.85	21.70	-5.27E-01	2.99E-01	5.53E-01
		37.36	39.70	-6.75E-02		2.99E-01
		42.30	15.10	-8.60E-02		6.33E-01
		72.40	2.31	-4.29E-01		3.32E+00
+	PM-146	453.90	39.94	4.48E-02	1.53E-01	1.53E-01
		735.90	14.01	-1.36E-01		4.77E-01
		747.13	13.10	-2.06E-01		5.09E-01
+	ND-147	91.11	28.90	-3.08E+00	1.23E+00	1.23E+00
		531.02	13.10	-4.43E-01		2.47E+00
+	PM-149	285.90	3.10	-2.91E+03	5.80E+03	5.80E+03
+	EU-152	121.78	20.50	-2.62E-02	2.26E-01	2.26E-01
		244.69	5.40	-4.87E-01		1.08E+00
		344.27	19.13	-5.36E-02		2.54E-01
		778.89	9.20	-1.30E-01		6.72E-01
		964.01	10.40	-1.07E+00		8.14E-01
		1085.78	7.22	1.69E-01		1.11E+00
		1112.02	9.60	7.67E-01		9.55E-01
		1407.95	14.94	2.87E-01		5.26E-01
		97.43	31.30	5.18E-02	1.72E-01	1.72E-01
+	GD-153	103.18	22.20	6.39E-02		2.33E-01
		123.07	40.50	-4.45E-02	1.17E-01	1.17E-01
+	EU-154	723.30	19.70	1.25E-01		3.62E-01
		873.19	11.50	6.06E-02		5.95E-01
		996.32	10.30	-2.47E-01		6.84E-01
		1004.76	17.90	-2.59E-01		4.24E-01
		1274.45	35.50	-1.74E-02		2.20E-01
+	EU-155	86.50	30.90	6.31E-02	2.20E-01	2.20E-01
		105.30	20.70	-6.65E-02		2.29E-01
+	EU-156	811.77	10.40	-2.97E-02	2.12E+00	2.12E+00
		1153.47	7.20	-5.30E-02		4.29E+00
		1230.71	8.90	-8.07E-01		4.16E+00
+	HO-166M	184.41	72.60	1.58E-01	9.00E-02	9.00E-02

Analysis Report for 1510084-12

CP0604S26-27

<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>	
	HO-166M	280.45	29.60	7.87E-02	9.00E-02	1.77E-01
		410.94	11.10	9.02E-02		5.62E-01
		711.69	54.10	1.38E-02		1.17E-01
+	TM-171	66.72	0.14	-2.13E+00	4.74E+01	4.74E+01
+	HF-172	81.75	4.52	-2.00E+00	4.44E-01	1.27E+00
		125.81	11.30	1.63E-01		4.44E-01
+	LU-172	181.53	20.60	4.81E-01	1.83E+00	3.57E+00
		810.06	16.63	1.17E+00		6.17E+00
		912.12	15.25	3.94E+01		1.44E+01
		1093.66	62.50	9.47E-02		1.83E+00
+	LU-173	100.72	5.24	8.40E-01	2.85E-01	9.78E-01
		272.11	21.20	1.48E-01		2.85E-01
+	HF-175	343.40	84.00	-3.37E-02	7.30E-02	7.30E-02
+	LU-176	88.34	13.30	3.20E-01	5.06E-02	5.25E-01
		201.83	86.00	4.62E-03		6.01E-02
		306.78	94.00	-3.98E-03		5.06E-02
+	TA-182	67.75	41.20	-3.00E-02	1.82E-01	1.82E-01
		1121.30	34.90	8.14E-01		4.73E-01
		1189.05	16.23	8.52E-02		6.21E-01
		1221.41	26.98	-1.42E-01		4.11E-01
		1231.02	11.44	-2.24E-01		1.15E+00
+	IR-192	308.46	29.68	-4.25E-02	1.56E-01	2.01E-01
		468.07	48.10	4.64E-03		1.56E-01
+	HG-203	279.19	77.30	2.42E-02	1.06E-01	1.06E-01
+	BI-207	569.67	97.72	3.02E-02	6.80E-02	6.80E-02
		1063.62	74.90	3.63E-02		1.01E-01
+	TL-208	583.14	* 30.22	1.41E+00	1.97E-01	3.55E-01
		860.37	* 4.48	2.34E+00		2.23E+00
		2614.66	* 35.85	1.12E+00		1.97E-01
+	BI-210M	262.00	45.00	-4.76E-03	1.09E-01	1.09E-01
		300.00	23.00	2.03E-01		2.57E-01
+	PB-210	46.50	* 4.25	2.43E+00	2.57E+00	2.57E+00
+	PB-211	404.84	2.90	1.45E-01	1.85E+00	1.85E+00
		831.96	2.90	2.71E-01		2.30E+00
+	BI-212	727.17	* 11.80	1.21E+00	7.02E-01	7.02E-01
		1620.62	2.75	7.25E-01		2.17E+00
+	PB-212	238.63	* 44.60	1.57E+00	2.55E-01	2.55E-01
		300.09	3.41	1.37E+00		1.73E+00
+	BI-214	609.31	* 46.30	1.16E+00	2.19E-01	2.19E-01
		1120.29	* 15.10	1.63E+00		8.65E-01
		1764.49	* 15.80	1.32E+00		4.70E-01
		2204.22	* 4.98	1.59E+00		8.61E-01
+	PB-214	295.21	* 19.19	1.17E+00	2.16E-01	3.90E-01
		351.92	* 37.19	1.36E+00		2.16E-01
+	RN-219	401.80	6.50	6.70E-02	8.42E-01	8.42E-01
+	RA-223	323.87	3.88	-1.04E+00	1.28E+00	1.28E+00
+	RA-224	240.98	* 3.95	4.94E+00	2.94E+00	2.94E+00
+	RA-225	40.00	31.00	-2.72E-01	1.12E+00	1.12E+00

Analysis Report for 1510084-12
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-226	186.21	*	3.28	2.82E+00	2.41E+00	2.41E+00
+	TH-227	50.10		8.40	2.35E-01	5.74E-01	8.35E-01
		236.00		11.50	-4.79E+00		5.74E-01
		256.20		6.30	1.54E-01		7.83E-01
+	AC-228	338.32	*	11.40	1.83E+00	3.66E-01	6.92E-01
		911.07	*	27.70	1.41E+00		3.66E-01
		969.11	*	16.60	1.41E+00		8.43E-01
+	TH-230	48.44		16.90	5.39E-02	4.84E-01	4.84E-01
		62.85		4.60	2.77E+00		1.65E+00
		67.67		0.37	-2.86E+00		1.73E+01
+	PA-231	283.67		1.60	-4.41E-01	2.25E+00	3.16E+00
		302.67		2.30	-4.20E-01		2.25E+00
+	TH-231	25.64		14.70	9.31E-01	9.58E-01	3.88E+00
		84.21		6.40	4.61E-01		9.58E-01
+	PA-233	311.98		38.60	-5.05E-02	2.46E-01	2.46E-01
+	PA-234	131.20		20.40	2.44E-02	2.33E-01	2.33E-01
		733.99		8.80	4.18E-02		7.40E-01
		946.00		12.00	9.44E-02		5.99E-01
+	PA-234M	1001.03		0.92	2.88E+00	8.80E+00	8.80E+00
+	TH-234	63.29		3.80	1.50E+00	1.96E+00	1.96E+00
+	U-235	143.76		10.50	3.28E-01	4.99E-01	4.99E-01
		163.35		4.70	-6.68E-01		1.04E+00
		205.31		4.70	-1.59E+00		1.09E+00
+	NP-237	86.50		12.60	1.53E-01	5.35E-01	5.35E-01
+	NP-239	106.10		22.70	-1.30E+02	4.49E+02	4.49E+02
		228.18		10.70	7.79E+01		1.07E+03
		277.60		14.10	-3.82E+01		8.49E+02
+	AM-241	59.54		35.90	9.76E-03	1.94E-01	1.94E-01
+	AM-243	74.67	*	66.00	3.10E-01	1.82E-01	1.82E-01
+	CM-243	209.75		3.29	2.82E-01	3.95E-01	1.73E+00
		228.14		10.60	3.63E-02		5.01E-01
		277.60		14.00	-1.78E-02		3.95E-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 1510084-12

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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	8.13E-01	8.13E-01	-1.71E-01	3.86E-01
NA-22	1274.54	99.94	7.92E-02	7.92E-02	-6.28E-03	3.61E-02
NA-24	1368.53	99.99	2.77E+11	1.63E+11	8.84E+10	1.25E+11
	2754.09	99.86	1.63E+11		6.77E+09	6.30E+10
AL-26	1808.65	99.76	4.49E-02	4.49E-02	-1.01E-02	1.81E-02
+ K-40	1460.81	*	8.90E-01	8.90E-01	1.99E+01	4.10E-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	6.78E-02	6.78E-02	-1.12E-02	3.32E-02
	78.34	96.00	8.73E-02		2.73E-01	4.30E-02
SC-46	889.25	99.98	8.49E-02	8.49E-02	-1.97E-02	3.93E-02
	1120.51	99.99	1.73E-01		3.09E-01	8.28E-02
V-48	983.52	99.98	1.87E-01	1.87E-01	1.06E-01	8.49E-02
	1312.10	97.50	2.37E-01		-6.58E-02	1.07E-01
CR-51	320.08	9.83	1.01E+00	1.01E+00	3.08E-01	4.82E-01
MN-54	834.83	99.97	7.92E-02	7.92E-02	-1.80E-02	3.70E-02
CO-56	846.75	99.96	8.28E-02	8.28E-02	-5.40E-02	3.83E-02
	1037.75	14.03	7.06E-01		1.46E-01	3.27E-01
	1238.25	67.00	2.12E-01		1.38E-01	9.98E-02
	1771.40	15.51	4.24E-01		5.09E-02	1.78E-01
	2598.48	16.90	3.54E-01		2.70E-02	1.40E-01
CO-57	122.06	85.51	5.78E-02	5.78E-02	-6.70E-03	2.81E-02
	136.48	10.60	4.80E-01		-8.51E-02	2.33E-01
CO-58	810.76	99.40	9.09E-02	9.09E-02	2.86E-02	4.24E-02
FE-59	1099.22	56.50	2.09E-01	2.09E-01	-2.30E-02	9.66E-02
	1291.56	43.20	2.79E-01		1.15E-01	1.28E-01
CO-60	1173.22	100.00	8.68E-02	8.10E-02	2.61E-02	4.02E-02
	1332.49	100.00	8.10E-02		7.10E-03	3.70E-02
ZN-65	1115.52	50.75	1.84E-01	1.84E-01	-8.70E-01	8.57E-02
+ GA-67	93.31	*	5.93E+01	5.93E+01	6.16E+01	2.92E+01
	208.95	2.24	6.57E+02		3.94E+02	3.18E+02
	300.22	16.00	9.48E+01		7.50E+01	4.56E+01
SE-75	121.11	16.70	3.15E-01	9.11E-02	-1.16E-01	1.53E-01
	136.00	59.20	9.50E-02		6.14E-02	4.61E-02
	264.65	59.80	9.11E-02		-1.22E-02	4.36E-02
	279.53	25.20	2.60E-01		1.12E-01	1.25E-01
	400.65	11.40	5.79E-01		2.03E-01	2.76E-01
RB-82	776.52	13.00	9.67E-01	9.67E-01	-3.84E-01	4.48E-01
RB-83	520.41	46.00	1.71E-01	1.71E-01	6.54E-03	8.12E-02
	529.64	30.30	2.58E-01		-4.15E-02	1.22E-01
	552.65	16.40	4.67E-01		1.19E-01	2.20E-01
+ KR-85	513.99	*	2.88E+01	2.88E+01	1.09E+01	1.40E+01
+ SR-85	513.99	*	1.66E-01	1.66E-01	6.25E-02	8.07E-02
Y-88	898.02	93.40	9.56E-02	6.92E-02	-1.14E-02	4.46E-02
	1836.01	99.38	6.92E-02		2.95E-02	2.94E-02
NB-93M	16.57	9.43	6.70E+01	6.70E+01	-8.65E+01	3.11E+01

: 00776

Analysis Report for 1510084-12

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94	702.63	100.00	7.44E-02	6.49E-02	5.27E-03	3.51E-02
	871.10	100.00	6.49E-02		-1.61E-02	2.99E-02
NB-95	765.79	99.81	1.52E-01	1.52E-01	6.96E-02	7.19E-02
NB-95M	235.69	25.00	3.96E+01	3.96E+01	-3.30E+02	1.92E+01
ZR-95	724.18	43.70	2.37E-01	1.72E-01	1.97E-02	1.12E-01
	756.72	55.30	1.72E-01		7.70E-03	8.07E-02
MO-99	181.06	6.20	5.79E+02	3.93E+02	1.42E+02	2.80E+02
	739.58	12.80	3.93E+02		1.48E+02	1.84E+02
	778.00	4.50	9.90E+02		-2.58E+02	4.58E+02
RU-103	497.08	89.00	1.17E-01	1.17E-01	3.54E-02	5.57E-02
RU-106	621.84	9.80	7.14E-01	7.14E-01	1.60E-01	3.36E-01
AG-108M	433.93	89.90	6.57E-02	6.57E-02	1.60E-02	3.12E-02
	614.37	90.40	6.62E-02		7.14E-03	3.10E-02
	722.95	90.50	7.84E-02		2.71E-02	3.68E-02
+ CD-109	88.03	*	3.72	2.16E+00	1.99E+00	1.06E+00
AG-110M	657.75	93.14	7.69E-02	7.69E-02	1.46E-02	3.61E-02
	677.61	10.53	6.63E-01		1.76E-01	3.11E-01
	706.67	16.46	4.73E-01		2.42E-01	2.23E-01
	763.93	21.98	3.83E-01		-3.99E-01	1.80E-01
	884.67	71.63	1.00E-01		2.84E-02	4.64E-02
	1384.27	23.94	3.21E-01		-1.75E-01	1.45E-01
CD-113M	263.70	0.02	2.12E+02	2.12E+02	2.92E-01	1.01E+02
SN-113	255.12	1.93	2.95E+00	9.14E-02	-2.68E-01	1.41E+00
	391.69	64.90	9.14E-02		-1.57E-02	4.32E-02
TE123M	159.00	84.10	6.27E-02	6.27E-02	-2.09E-03	3.03E-02
SB-124	602.71	97.87	9.78E-02	9.78E-02	1.34E-02	4.63E-02
	645.85	7.26	1.24E+00		-1.65E-01	5.81E-01
	722.78	11.10	8.63E-01		2.98E-01	4.05E-01
	1691.02	49.00	1.10E-01		-8.41E-03	4.37E-02
I-125	35.49	6.49	2.89E+00	2.89E+00	1.03E+00	1.40E+00
SB-125	176.33	6.89	7.64E-01	1.91E-01	3.92E-01	3.70E-01
	427.89	29.33	1.91E-01		-6.94E-02	9.04E-02
	463.38	10.35	7.38E-01		9.88E-01	3.54E-01
	600.56	17.80	4.09E-01		1.51E-01	1.94E-01
	635.90	11.32	6.03E-01		9.29E-02	2.84E-01
SB-126	414.70	83.30	2.93E-01	2.72E-01	-2.72E-02	1.39E-01
	666.33	99.60	2.72E-01		-4.35E-02	1.27E-01
	695.00	99.60	3.12E-01		-7.27E-02	1.47E-01
	720.50	53.80	5.06E-01		1.41E-01	2.36E-01
+ SN-126	87.57	*	37.00	2.09E-01	1.93E-01	1.03E-01
SB-127	473.00	25.00	2.67E+01	2.19E+01	5.07E-01	1.27E+01
	685.20	35.70	2.19E+01		-2.65E+00	1.03E+01
	783.80	14.70	5.27E+01		5.82E+00	2.46E+01
I-129	29.78	57.00	4.75E-01	4.75E-01	2.58E-02	2.30E-01
	33.60	13.20	1.28E+00		3.78E-01	6.20E-01
	39.58	7.52	1.39E+00		-3.40E-01	6.76E-01
I-131	284.30	6.05	7.52E+00	5.39E-01	-8.27E+00	3.59E+00
	364.48	81.20	5.39E-01		-1.79E-01	2.54E-01
	636.97	7.26	8.39E+00		-3.88E+00	3.94E+00
	722.89	1.80	3.74E+01		1.29E+01	1.76E+01
TE-132	49.72	13.10	1.40E+02	1.55E+01	3.94E+01	6.79E+01
	228.16	88.00	1.55E+01		1.13E+00	7.49E+00
BA-133	81.00	33.00	1.70E-01	8.67E-02	-1.27E+00	8.28E-02

: 00777

Analysis Report for 1510084-12

CP0604S26-27

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-133	302.84	17.80	2.92E-01	8.67E-02	-5.45E-02	1.40E-01
	356.01	60.00	8.67E-02		-2.14E-02	4.12E-02
I-133	529.87	86.30	8.53E+07	8.53E+07	-1.37E+07	4.04E+07
XE-133	81.00	38.00	4.62E+00	4.62E+00	-3.47E+01	2.26E+00
CS-134	563.23	8.38	8.08E-01	7.52E-02	3.49E-01	3.82E-01
	569.32	15.43	4.52E-01		1.84E-01	2.14E-01
	604.70	97.60	7.52E-02		1.46E-02	3.56E-02
	795.84	85.40	1.02E-01		4.71E-02	4.82E-02
	801.93	8.73	8.32E-01		-3.36E-02	3.88E-01
CS-135	268.24	16.00	3.65E-01	3.65E-01	3.38E-01	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	2.64E+00	2.67E-01	4.34E-01	1.28E+00
	163.89	4.61	4.19E+00		-2.70E+00	2.03E+00
	176.55	13.56	1.51E+00		7.74E-01	7.31E-01
	273.65	12.66	1.61E+00		-2.63E+00	7.72E-01
	340.57	48.50	5.65E-01		7.92E-01	2.72E-01
	818.50	99.70	2.67E-01		4.93E-02	1.24E-01
	1048.07	79.60	3.51E-01		-8.85E-02	1.61E-01
	1235.34	19.70	2.26E+00		7.36E-02	1.07E+00
	CS-137	661.65	85.12		7.21E-02	7.21E-02	-1.40E-02	3.37E-02
LA-138	788.74	34.00	2.25E-01	8.83E-02	7.15E-02	1.06E-01
	1435.80	66.00	8.83E-02		-2.07E-03	3.85E-02
CE-139	165.85	80.35	7.22E-02	7.22E-02	4.15E-02	3.50E-02
BA-140	162.64	6.70	2.94E+00	1.07E+00	-7.40E-02	1.42E+00
	304.84	4.50	4.43E+00		-5.28E-01	2.11E+00
	423.70	3.20	7.52E+00		1.45E+00	3.57E+00
	437.55	2.00	1.20E+01		-6.78E+00	5.69E+00
	537.32	25.00	1.07E+00		3.59E-01	5.08E-01
LA-140	328.77	20.50	1.14E+00	2.70E-01	6.48E-01	5.45E-01
	487.03	45.50	5.66E-01		2.64E-02	2.69E-01
	815.85	23.50	1.11E+00		-4.95E-01	5.12E-01
	1596.49	95.49	2.70E-01		-6.61E-02	1.18E-01
+ CE-141	145.44	*	2.64E-01	2.64E-01	1.59E-01	1.29E-01
CE-143	57.36	11.80	2.98E+05	1.03E+05	9.40E+04	1.45E+05
	293.26	42.00	1.03E+05		2.62E+05	5.01E+04
	664.55	5.20	6.16E+05		-1.76E+05	2.88E+05
CE-144	133.54	10.80	4.55E-01	4.55E-01	2.19E-03	2.21E-01
PM-144	476.78	42.00	1.49E-01	6.73E-02	-9.27E-02	7.06E-02
	618.01	98.60	6.73E-02		1.04E-02	3.16E-02
	696.49	99.49	8.08E-02		4.86E-02	3.82E-02
PM-145	36.85	21.70	5.53E-01	2.99E-01	-5.27E-01	2.67E-01
	37.36	39.70	2.99E-01		-6.75E-02	1.45E-01
	42.30	15.10	6.33E-01		-8.60E-02	3.08E-01
	72.40	2.31	3.32E+00		-4.29E-01	1.63E+00
PM-146	453.90	39.94	1.53E-01	1.53E-01	4.48E-02	7.27E-02
	735.90	14.01	4.77E-01		-1.36E-01	2.23E-01
	747.13	13.10	5.09E-01		-2.06E-01	2.37E-01
ND-147	91.11	28.90	1.23E+00	1.23E+00	-3.08E+00	6.06E-01
	531.02	13.10	2.47E+00		-4.43E-01	1.17E+00
PM-149	285.90	3.10	5.80E+03	5.80E+03	-2.91E+03	2.77E+03
EU-152	121.78	20.50	2.26E-01	2.26E-01	-2.62E-02	1.10E-01

Analysis Report for 1510084-12
CP0604S26-27

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	244.69	5.40	1.08E+00	2.26E-01	-4.87E-01	5.21E-01
	344.27	19.13	2.54E-01		-5.36E-02	1.21E-01
	778.89	9.20	6.72E-01		-1.30E-01	3.11E-01
	964.01	10.40	8.14E-01		-1.07E+00	3.81E-01
	1085.78	7.22	1.11E+00		1.69E-01	5.11E-01
	1112.02	9.60	9.55E-01		7.67E-01	4.45E-01
	1407.95	14.94	5.26E-01		2.87E-01	2.38E-01
GD-153	97.43	31.30	1.72E-01	1.72E-01	5.18E-02	8.37E-02
	103.18	22.20	2.33E-01		6.39E-02	1.13E-01
EU-154	123.07	40.50	1.17E-01	1.17E-01	-4.45E-02	5.66E-02
	723.30	19.70	3.62E-01		1.25E-01	1.70E-01
	873.19	11.50	5.95E-01		6.06E-02	2.75E-01
	996.32	10.30	6.84E-01		-2.47E-01	3.15E-01
	1004.76	17.90	4.24E-01		-2.59E-01	1.96E-01
	1274.45	35.50	2.20E-01		-1.74E-02	1.00E-01
EU-155	86.50	30.90	2.20E-01	2.20E-01	6.31E-02	1.08E-01
	105.30	20.70	2.29E-01		-6.65E-02	1.11E-01
EU-156	811.77	10.40	2.12E+00	2.12E+00	-2.97E-02	9.83E-01
	1153.47	7.20	4.29E+00		-5.30E-02	2.00E+00
	1230.71	8.90	4.16E+00		-8.07E-01	1.96E+00
HO-166M	184.41	72.60	9.00E-02	9.00E-02	1.58E-01	4.39E-02
	280.45	29.60	1.77E-01		7.87E-02	8.49E-02
	410.94	11.10	5.62E-01		9.02E-02	2.68E-01
	711.69	54.10	1.17E-01		1.38E-02	5.44E-02
TM-171	66.72	0.14	4.74E+01	4.74E+01	-2.13E+00	2.32E+01
HF-172	81.75	4.52	1.27E+00	4.44E-01	-2.00E+00	6.20E-01
	125.81	11.30	4.44E-01		1.63E-01	2.16E-01
LU-172	181.53	20.60	3.57E+00	1.83E+00	4.81E-01	1.72E+00
	810.06	16.63	6.17E+00		1.17E+00	2.87E+00
	912.12	15.25	1.44E+01		3.94E+01	6.93E+00
	1093.66	62.50	1.83E+00		9.47E-02	8.45E-01
LU-173	100.72	5.24	9.78E-01	2.85E-01	8.40E-01	4.76E-01
	272.11	21.20	2.85E-01		1.48E-01	1.37E-01
HF-175	343.40	84.00	7.30E-02	7.30E-02	-3.37E-02	3.46E-02
LU-176	88.34	13.30	5.25E-01	5.06E-02	3.20E-01	2.58E-01
	201.83	86.00	6.01E-02		4.62E-03	2.90E-02
	306.78	94.00	5.06E-02		-3.98E-03	2.41E-02
TA-182	67.75	41.20	1.82E-01	1.82E-01	-3.00E-02	8.90E-02
	1121.30	34.90	4.73E-01		8.14E-01	2.26E-01
	1189.05	16.23	6.21E-01		8.52E-02	2.88E-01
	1221.41	26.98	4.11E-01		-1.42E-01	1.91E-01
	1231.02	11.44	1.15E+00		-2.24E-01	5.42E-01
IR-192	308.46	29.68	2.01E-01	1.56E-01	-4.25E-02	9.54E-02
	468.07	48.10	1.56E-01		4.64E-03	7.39E-02
HG-203	279.19	77.30	1.06E-01	1.06E-01	2.42E-02	5.12E-02
BI-207	569.67	97.72	6.80E-02	6.80E-02	3.02E-02	3.22E-02
	1063.62	74.90	1.01E-01		3.63E-02	4.64E-02
+ TL-208	583.14	*	30.22	1.97E-01	1.41E+00	1.72E-01
	860.37	*	4.48		2.34E+00	1.06E+00
	2614.66	*	35.85		1.12E+00	8.49E-02
BI-210M	262.00	45.00	1.09E-01	1.09E-01	-4.76E-03	5.20E-02
	300.00	23.00	2.57E-01		2.03E-01	1.24E-01
+ PB-210	46.50	*	4.25	2.57E+00	2.43E+00	1.26E+00

Analysis Report for 1510084-12

CP0604S26-27

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PB-211	404.84	2.90	1.85E+00	1.85E+00	1.45E-01	8.78E-01
	831.96	2.90	2.30E+00		2.71E-01	1.06E+00
+ BI-212	727.17 *	11.80	7.02E-01	7.02E-01	1.21E+00	3.33E-01
	1620.62	2.75	2.17E+00		7.25E-01	9.40E-01
+ PB-212	238.63 *	44.60	2.55E-01	2.55E-01	1.57E+00	1.26E-01
	300.09	3.41	1.73E+00		1.37E+00	8.34E-01
+ BI-214	609.31 *	46.30	2.19E-01	2.19E-01	1.16E+00	1.05E-01
	1120.29 *	15.10	8.65E-01		1.63E+00	4.12E-01
	1764.49 *	15.80	4.70E-01		1.32E+00	2.08E-01
	2204.22 *	4.98	8.61E-01		1.59E+00	3.36E-01
+ PB-214	295.21 *	19.19	3.90E-01	2.16E-01	1.17E+00	1.89E-01
	351.92 *	37.19	2.16E-01		1.36E+00	1.05E-01
RN-219	401.80	6.50	8.42E-01	8.42E-01	6.70E-02	4.00E-01
RA-223	323.87	3.88	1.28E+00	1.28E+00	-1.04E+00	6.08E-01
+ RA-224	240.98 *	3.95	2.94E+00	2.94E+00	4.94E+00	1.45E+00
RA-225	40.00	31.00	1.12E+00	1.12E+00	-2.72E-01	5.42E-01
+ RA-226	186.21 *	3.28	2.41E+00	2.41E+00	2.82E+00	1.18E+00
TH-227	50.10	8.40	8.35E-01	5.74E-01	2.35E-01	4.06E-01
	236.00	11.50	5.74E-01		-4.79E+00	2.79E-01
	256.20	6.30	7.83E-01		1.54E-01	3.75E-01
+ AC-228	338.32 *	11.40	6.92E-01	3.66E-01	1.83E+00	3.35E-01
	911.07 *	27.70	3.66E-01		1.41E+00	1.74E-01
	969.11 *	16.60	8.43E-01		1.41E+00	4.05E-01
TH-230	48.44	16.90	4.84E-01	4.84E-01	5.39E-02	2.36E-01
	62.85	4.60	1.65E+00		2.77E+00	8.08E-01
	67.67	0.37	1.73E+01		-2.86E+00	8.47E+00
PA-231	283.67	1.60	3.16E+00	2.25E+00	-4.41E-01	1.51E+00
	302.67	2.30	2.25E+00		-4.20E-01	1.08E+00
TH-231	25.64	14.70	3.88E+00	9.58E-01	9.31E-01	1.88E+00
	84.21	6.40	9.58E-01		4.61E-01	4.69E-01
PA-233	311.98	38.60	2.46E-01	2.46E-01	-5.05E-02	1.17E-01
PA-234	131.20	20.40	2.33E-01	2.33E-01	2.44E-02	1.13E-01
	733.99	8.80	7.40E-01		4.18E-02	3.45E-01
	946.00	12.00	5.99E-01		9.44E-02	2.77E-01
PA-234M	1001.03	0.92	8.80E+00	8.80E+00	2.88E+00	4.10E+00
TH-234	63.29	3.80	1.96E+00	1.96E+00	1.50E+00	9.58E-01
U-235	143.76	10.50	4.99E-01	4.99E-01	3.28E-01	2.43E-01
	163.35	4.70	1.04E+00		-6.68E-01	5.02E-01
	205.31	4.70	1.09E+00		-1.59E+00	5.25E-01
NP-237	86.50	12.60	5.35E-01	5.35E-01	1.53E-01	2.62E-01
NP-239	106.10	22.70	4.49E+02	4.49E+02	-1.30E+02	2.18E+02
	228.18	10.70	1.07E+03		7.79E+01	5.18E+02
	277.60	14.10	8.49E+02		-3.82E+01	4.08E+02
AM-241	59.54	35.90	1.94E-01	1.94E-01	9.76E-03	9.46E-02
+ AM-243	74.67 *	66.00	1.82E-01	1.82E-01	3.10E-01	8.99E-02
CM-243	209.75	3.29	1.73E+00	3.95E-01	2.82E-01	8.40E-01
	228.14	10.60	5.01E-01		3.63E-02	2.42E-01
	277.60	14.00	3.95E-01		-1.78E-02	1.90E-01

Analysis Report for 1510084-12
CP0604S26-27

-
- + = 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: CP0604S26-27

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	55	103	65	84	72	67
25:	79	63	58	85	62	61	57	73
33:	72	74	59	58	65	72	51	79
41:	76	72	81	86	86	115	184	81
49:	63	86	92	90	89	98	88	102
57:	113	116	113	111	150	138	166	242
65:	132	126	134	137	124	133	140	138
73:	147	184	404	284	385	538	135	132
81:	101	108	96	141	163	131	175	266
89:	127	181	184	130	282	240	129	102
97:	82	85	101	99	86	86	85	67
105:	86	104	76	73	88	69	82	86
113:	66	83	90	76	64	79	60	76
121:	76	69	69	75	85	86	71	83
129:	94	87	80	61	66	73	66	74
137:	75	81	59	75	70	81	71	83
145:	103	76	70	70	55	73	78	71
153:	68	80	67	64	60	53	54	56
161:	55	51	63	79	56	65	87	51
169:	54	58	61	52	59	64	57	67
177:	73	64	65	51	64	64	51	57
185:	70	177	146	61	61	54	62	45
193:	49	50	50	60	55	49	53	48
201:	48	65	65	51	55	53	63	43
209:	83	94	46	57	61	37	60	54
217:	45	44	68	54	46	54	57	40
225:	50	54	44	51	49	52	48	55
233:	47	47	46	47	59	177	664	226
241:	107	129	115	49	48	38	25	41
249:	44	38	39	33	36	28	44	36
257:	36	40	36	32	40	38	34	31
265:	31	37	25	41	45	63	71	43
273:	29	34	39	39	45	60	43	21
281:	42	49	29	30	29	31	31	44
289:	39	40	33	26	25	34	153	215
297:	41	44	29	64	49	29	26	26
305:	31	31	25	25	20	24	32	24
313:	26	29	37	31	28	27	27	34
321:	28	32	20	27	25	29	32	46
329:	46	27	22	27	28	29	25	21
337:	37	95	131	42	28	29	19	17
345:	20	26	34	30	29	36	60	319
353:	230	37	20	21	22	27	37	18
361:	21	15	21	16	18	18	23	24

369: 27 21 24 13 22 22 17 21

Sample Title: CP0604S26-27

Channel	1	2	3	4	5	6	7	8
377:	27	23	25	18	14	22	18	23
385:	28	25	22	22	30	22	15	24
393:	26	18	19	22	21	24	28	21
401:	29	22	29	18	25	17	24	15
409:	24	40	21	20	15	16	15	25
417:	16	15	16	22	12	13	26	22
425:	21	17	15	12	17	13	14	18
433:	11	21	24	22	14	15	18	11
441:	15	27	22	24	18	17	19	16
449:	13	19	17	15	20	13	20	16
457:	21	15	14	13	21	29	44	43
465:	17	21	10	17	11	20	13	19
473:	10	16	22	15	16	20	14	6
481:	19	28	13	15	15	18	14	20
489:	16	19	10	16	14	20	18	22
497:	14	11	17	24	16	14	7	13
505:	10	17	14	11	25	50	100	50
513:	16	26	19	6	7	16	20	20
521:	10	14	15	15	14	13	16	17
529:	15	15	17	9	16	12	24	9
537:	17	14	14	12	19	9	16	14
545:	13	16	20	12	15	20	10	11
553:	16	16	10	11	7	14	9	10
561:	9	11	27	19	11	17	9	15
569:	15	15	18	20	11	10	9	15
577:	17	9	9	21	13	23	122	177
585:	39	14	14	18	15	8	11	20
593:	14	7	17	12	12	13	18	17
601:	11	21	18	13	9	19	11	19
609:	128	224	62	8	9	11	14	5
617:	16	10	10	12	14	13	11	17
625:	13	8	12	10	7	17	14	12
633:	13	12	18	8	11	13	13	5
641:	16	15	22	7	5	9	16	14
649:	11	10	12	8	12	9	13	12
657:	13	16	10	8	10	10	11	7
665:	12	9	7	13	12	15	9	12
673:	12	7	8	12	10	9	13	11
681:	11	9	8	13	14	20	9	15
689:	10	21	10	7	8	13	14	14
697:	15	18	13	13	9	15	11	13
705:	16	16	8	13	10	11	6	7
713:	13	10	7	5	9	7	5	15
721:	10	12	9	5	12	17	33	43
729:	20	10	11	6	10	15	8	6
737:	9	15	4	11	15	10	11	4
745:	15	10	10	5	10	11	13	12
753:	8	6	18	15	6	8	13	10
761:	9	13	11	21	11	12	13	25
769:	28	17	16	15	8	12	6	9
777:	7	7	3	9	12	5	11	5
785:	8	17	11	12	12	10	10	9
793:	14	9	25	23	14	5	10	10

801: 14 8 13 5 7 11 9 9

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	14	5	13	5	7	11	3	8
817:	8	7	7	13	7	8	7	8
825:	11	12	11	8	5	5	8	7
833:	14	9	7	8	9	16	11	20
841:	13	9	9	6	10	12	3	8
849:	8	5	12	12	8	6	11	7
857:	7	8	12	15	30	20	11	11
865:	6	7	7	3	10	8	7	5
873:	5	10	9	9	11	4	9	6
881:	6	5	12	8	5	7	7	6
889:	6	5	13	8	10	11	9	10
897:	4	12	5	14	9	9	9	10
905:	9	8	9	7	9	13	70	112
913:	28	8	11	3	6	6	9	8
921:	12	8	10	7	3	9	9	5
929:	7	5	9	9	12	9	12	7
937:	11	5	10	6	5	7	12	5
945:	9	4	11	4	7	8	6	10
953:	5	4	8	1	5	5	5	7
961:	5	5	2	8	29	13	9	14
969:	50	50	17	4	5	8	3	7
977:	3	9	7	2	5	9	4	8
985:	3	3	1	2	10	7	9	4
993:	7	4	6	8	4	8	8	8
1001:	16	10	5	6	5	10	9	7
1009:	11	8	6	10	11	8	7	4
1017:	6	4	5	12	7	8	7	8
1025:	7	12	9	4	6	8	4	7
1033:	11	0	12	5	8	4	5	8
1041:	12	9	6	9	10	5	9	5
1049:	2	4	7	6	8	7	7	7
1057:	10	10	8	7	4	3	6	14
1065:	3	11	6	1	4	9	6	7
1073:	8	3	9	7	6	6	11	8
1081:	10	3	9	5	9	12	4	6
1089:	6	4	9	5	7	3	11	7
1097:	5	10	5	5	9	8	6	10
1105:	7	2	5	3	4	6	12	11
1113:	14	11	8	3	8	7	8	39
1121:	56	29	13	11	7	13	7	8
1129:	7	12	8	6	6	9	8	5
1137:	9	10	7	8	6	4	8	9
1145:	6	4	13	7	12	11	10	10
1153:	8	4	12	11	14	5	10	6
1161:	8	5	10	9	10	10	5	7
1169:	5	8	3	11	9	6	7	9
1177:	6	6	12	7	6	9	4	6
1185:	8	7	6	8	10	7	5	9
1193:	7	6	10	2	9	4	8	12
1201:	7	9	7	6	5	9	6	8
1209:	9	8	5	10	17	9	10	11
1217:	8	9	4	15	10	6	7	10
1225:	12	11	5	18	10	5	16	15

1233: 15 8 12 9 10 18 17 10

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Channel	1	2	3	4	5	6	7	8	9
1241:	11	7	4	9	9	13	8	9	
1249:	8	2	5	5	4	6	6	12	
1257:	3	2	8	6	5	9	9	4	
1265:	12	8	4	6	9	4	7	6	
1273:	3	3	8	3	7	7	3	4	
1281:	5	7	2	8	3	6	4	7	
1289:	0	4	7	8	8	5	0	5	
1297:	1	5	5	5	3	9	6	4	
1305:	6	4	7	5	6	1	5	4	
1313:	7	4	5	7	4	5	4	6	
1321:	3	5	5	2	2	3	4	4	
1329:	7	4	5	8	4	4	5	5	
1337:	6	5	4	4	3	5	4	2	
1345:	4	4	5	3	1	5	7	5	
1353:	3	1	4	5	0	2	1	4	
1361:	1	4	3	6	3	3	7	5	
1369:	9	2	1	3	1	4	1	3	
1377:	7	9	9	6	4	1	5	1	
1385:	8	3	5	4	5	2	1	5	
1393:	3	5	5	2	4	0	1	3	
1401:	3	6	3	4	4	3	6	9	
1409:	5	2	3	2	1	2	1	5	
1417:	5	2	3	1	2	3	3	4	
1425:	1	5	3	5	2	1	3	6	
1433:	3	4	4	1	3	1	0	2	
1441:	1	4	1	3	2	4	1	6	
1449:	3	2	5	6	1	2	1	2	
1457:	2	3	18	110	319	263	63	11	
1465:	3	1	1	3	1	3	0	3	
1473:	1	0	2	0	2	2	1	3	
1481:	3	2	0	2	4	2	2	1	
1489:	2	3	3	3	3	1	3	4	
1497:	2	2	5	1	2	5	1	1	
1505:	0	3	2	0	3	4	3	2	
1513:	2	3	4	5	4	2	2	0	
1521:	0	1	1	1	1	1	1	2	
1529:	2	2	3	1	2	1	2	4	
1537:	2	2	1	2	1	3	1	9	
1545:	0	3	1	1	2	1	1	2	
1553:	0	1	3	3	2	2	0	1	
1561:	0	2	1	1	2	2	2	1	
1569:	3	1	2	2	2	2	1	4	
1577:	0	1	2	3	6	4	1	4	
1585:	3	3	2	9	10	4	0	1	
1593:	2	3	4	1	0	1	5	7	
1601:	3	4	2	0	3	0	1	2	
1609:	1	0	2	3	1	0	0	1	
1617:	2	2	1	2	2	3	2	1	
1625:	2	1	2	1	3	3	4	2	
1633:	2	1	2	1	1	4	3	6	
1641:	4	1	0	3	1	0	2	1	
1649:	1	2	1	1	1	2	2	2	
1657:	2	1	1	1	3	5	1	1	

1665: 1 0 2 2 1 3 0 2

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Channel	1	2	3	4	5	6	7	8
1673:	0	0	2	2	0	4	2	0
1681:	2	0	1	2	1	0	0	1
1689:	0	2	0	0	1	1	2	1
1697:	1	0	0	1	3	1	1	1
1705:	0	2	2	2	3	3	0	1
1713:	0	1	0	1	1	0	0	0
1721:	1	1	0	2	3	2	1	1
1729:	4	11	5	1	2	1	1	2
1737:	3	0	0	2	3	0	1	2
1745:	2	0	0	0	0	4	2	0
1753:	1	1	4	4	1	2	1	2
1761:	2	0	5	16	22	23	4	1
1769:	2	0	1	1	1	3	1	1
1777:	0	0	1	0	0	1	0	1
1785:	0	1	3	4	1	0	0	0
1793:	2	1	1	1	1	2	1	2
1801:	0	2	2	0	1	1	2	0
1809:	0	1	1	2	1	1	0	1
1817:	3	0	2	1	1	1	2	3
1825:	0	0	2	1	1	1	0	0
1833:	1	1	1	1	2	3	2	1
1841:	1	0	0	1	4	2	3	1
1849:	2	1	0	2	0	1	1	2
1857:	4	0	0	0	0	1	0	0
1865:	1	1	2	1	2	0	3	0
1873:	2	3	3	2	1	1	2	2
1881:	0	0	2	1	0	1	5	0
1889:	0	1	2	2	0	0	3	2
1897:	0	2	1	2	3	0	0	1
1905:	1	2	1	0	2	3	2	1
1913:	1	1	0	4	0	2	0	0
1921:	0	4	0	0	0	1	4	1
1929:	2	2	2	0	0	1	1	1
1937:	0	2	1	0	0	1	0	1
1945:	3	0	0	1	2	1	2	1
1953:	0	1	2	1	2	1	1	1
1961:	1	0	1	5	1	0	2	1
1969:	2	0	3	1	2	0	0	1
1977:	2	1	0	0	1	1	2	1
1985:	0	1	0	0	2	0	0	0
1993:	0	2	2	1	0	1	3	3
2001:	0	2	2	1	2	2	1	0
2009:	0	1	0	0	2	0	0	2
2017:	0	2	1	1	1	2	2	1
2025:	0	1	0	0	2	2	0	4
2033:	1	0	2	1	1	1	2	1
2041:	3	0	0	0	0	0	2	4
2049:	2	0	1	1	3	1	1	0
2057:	1	0	0	0	0	0	0	0
2065:	1	0	2	2	2	0	2	0
2073:	2	1	1	0	1	0	0	2
2081:	0	1	2	1	0	1	0	1
2089:	0	1	0	0	1	0	0	1

2097: 1 1 0 0 2 3 1 2

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

2529: 0 0 0 0 0 0 0 0

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Channel	1	2	3	4	5	6	7	8
2537:	1	0	0	0	0	0	0	0
2545:	1	0	0	1	1	1	0	0
2553:	0	0	1	0	1	1	0	0
2561:	0	2	1	0	0	0	0	1
2569:	0	0	0	0	0	1	2	1
2577:	0	0	0	0	0	0	0	0
2585:	0	1	0	0	0	0	1	1
2593:	0	1	0	0	1	3	0	0
2601:	0	0	1	0	0	0	2	1
2609:	1	1	0	3	16	31	40	23
2617:	7	0	1	0	1	0	1	0
2625:	1	0	1	0	0	0	0	2
2633:	0	0	0	0	1	1	0	0
2641:	0	0	0	0	0	0	1	1
2649:	0	0	0	0	0	0	1	0
2657:	0	0	0	0	0	0	0	1
2665:	0	0	1	0	1	0	0	0
2673:	0	1	0	1	0	0	0	0
2681:	0	0	0	0	1	1	0	1
2689:	0	0	1	0	0	1	0	1
2697:	0	0	1	1	2	0	0	0
2705:	0	0	0	1	0	0	0	0
2713:	0	0	0	1	1	1	1	1
2721:	0	0	0	0	1	0	2	0
2729:	0	0	0	0	1	1	0	1
2737:	0	0	0	0	1	0	2	0
2745:	0	1	1	1	1	0	0	1
2753:	1	0	0	1	0	0	0	0
2761:	1	0	0	0	0	0	0	0
2769:	1	2	1	0	1	0	2	0
2777:	0	0	1	0	0	1	1	0
2785:	1	1	0	1	0	0	1	0
2793:	1	0	0	0	0	1	0	0
2801:	0	0	0	0	0	0	1	0
2809:	0	0	0	0	0	0	0	0
2817:	0	1	0	0	1	0	2	0
2825:	0	0	0	1	0	1	1	0
2833:	0	1	0	0	0	0	0	0
2841:	0	0	1	0	0	0	0	0
2849:	0	1	0	0	0	1	0	0
2857:	0	1	0	0	0	0	1	0
2865:	0	0	1	0	0	0	0	0
2873:	1	0	0	0	0	0	0	1
2881:	0	0	0	1	0	1	0	0
2889:	0	0	2	1	0	0	0	0
2897:	0	1	0	0	0	0	0	1
2905:	0	1	0	2	0	0	0	0
2913:	1	2	1	1	0	1	0	0
2921:	0	0	0	0	0	1	1	0
2929:	0	0	0	0	2	0	0	0
2937:	0	0	0	1	2	0	1	0
2945:	1	1	0	3	0	0	1	0
2953:	0	0	1	0	1	1	0	0

2961: 0 0 0 0 0 0 0 0 0

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Channel								
2969:	0	0	0	0	1	0	0	0
2977:	0	0	0	1	0	0	0	0
2985:	0	0	0	0	0	1	0	0
2993:	1	0	1	1	0	1	0	0
3001:	0	0	0	1	1	0	0	0
3009:	0	0	0	0	0	0	0	1
3017:	0	1	0	0	0	0	0	0
3025:	0	1	0	1	2	0	0	0
3033:	0	0	0	1	0	0	0	0
3041:	0	0	0	0	0	0	1	0
3049:	0	0	1	1	0	3	0	0
3057:	0	0	0	0	0	0	0	1
3065:	1	0	0	0	0	1	0	0
3073:	1	0	1	0	0	0	0	0
3081:	1	0	0	0	0	0	0	0
3089:	0	0	1	0	0	0	1	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	0	0	0	0	0	0
3113:	0	1	0	0	0	2	0	0
3121:	0	0	0	0	0	0	1	0
3129:	0	1	0	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	1	1	2	0	0	1	0	0
3153:	0	0	0	0	0	0	0	0
3161:	1	1	0	0	2	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	1	0	0
3193:	0	0	1	0	1	1	1	0
3201:	0	0	0	0	0	0	1	0
3209:	0	0	1	0	0	0	0	0
3217:	0	0	1	0	0	0	0	0
3225:	0	0	0	0	1	0	0	0
3233:	0	2	0	0	0	0	0	0
3241:	0	0	0	1	0	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	0	0	1	0	0	0	1	1
3265:	0	1	1	0	0	0	0	0
3273:	0	1	0	0	0	0	0	1
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	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	2	0	1	0	0	0	1
3345:	0	0	0	0	0	0	0	1
3353:	1	1	0	0	0	0	1	0
3361:	0	0	0	1	0	1	0	0
3369:	0	0	0	0	1	1	0	0
3377:	1	0	0	0	0	0	0	1
3385:	0	0	1	0	0	0	0	0

3393: 0 0 0 0 0 0 0 1

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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	0	0	0	0	0	1
3433:	0	0	0	1	0	0	0	0
3441:	0	0	0	0	0	2	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	1	0	0	0	0	0	0
3465:	1	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	0	1	0	0	1
3497:	0	0	0	0	0	1	0	1
3505:	0	0	0	0	0	0	1	1
3513:	0	1	0	0	1	0	0	0
3521:	0	0	0	1	0	0	0	0
3529:	0	0	0	1	0	0	0	0
3537:	0	0	0	0	0	0	1	0
3545:	0	0	0	0	1	0	0	0
3553:	0	0	0	0	1	0	0	1
3561:	0	0	1	0	1	0	0	0
3569:	0	0	2	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	1	0	0	0	0	0	0	0
3601:	0	0	0	1	2	1	0	1
3609:	1	0	1	0	0	0	0	1
3617:	0	0	0	0	0	0	0	0
3625:	1	1	0	0	0	0	1	1
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:	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:	1	0	0	0	0	0	0	1
3689:	0	0	0	0	0	0	0	0
3697:	1	0	0	0	0	0	0	1
3705:	0	0	0	1	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	1	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	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	1
3761:	1	0	1	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	1	0	0	0	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	1	1	0	1	0

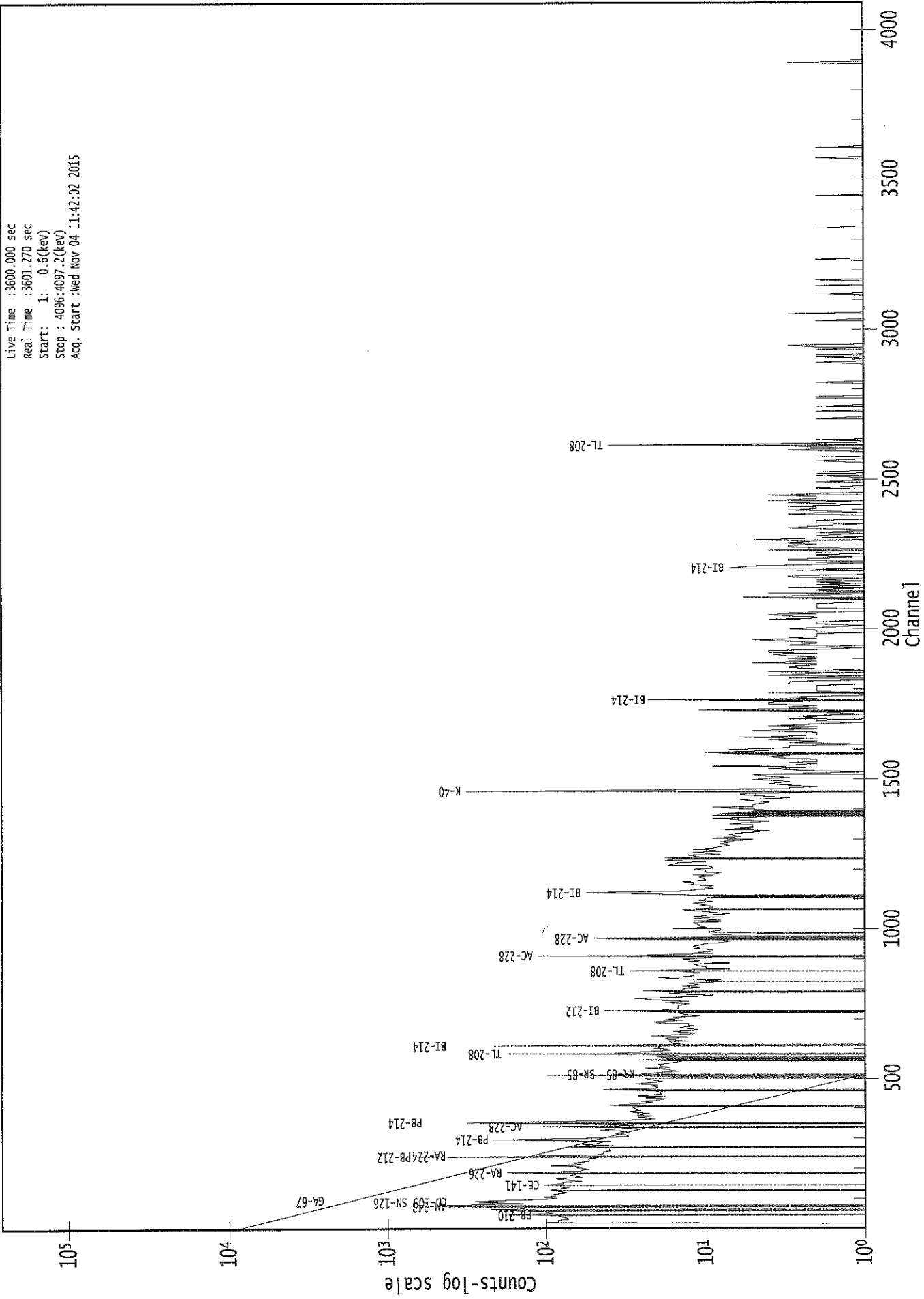
3825: 0 0 0 0 0 1 0 0

Sample Title: CP0604S26-27

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	1	0	0	0	0	0	0
3857:	0	0	1	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	1	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	2
3889:	0	3	0	0	0	0	0	0
3897:	0	0	0	0	0	1	1	0
3905:	1	0	0	0	0	0	1	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	1	0	0
3929:	0	0	0	0	1	0	0	0
3937:	0	0	0	0	0	1	0	0
3945:	1	0	0	0	0	0	1	0
3953:	0	0	0	0	0	0	0	0
3961:	0	1	0	0	1	0	0	0
3969:	0	0	0	0	1	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	1
3993:	0	1	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	1	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	1	0
4033:	0	0	1	0	0	0	0	0
4041:	0	0	1	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	0	0	0	0
4073:	0	1	0	0	0	0	0	0
4081:	0	1	0	0	0	0	0	0
4089:	0	0	1	0	0	0	0	0

0000029111.CNF

Live Time : 3600.000 sec
 Real Time : 3601.270 sec
 Start : 1: 0.6(keV)
 Stop : 4096:4097.2(keV)
 Acq. Start : Wed Nov 04 11:42:02 2015



ROI Type: 1

ROI Type: 2

KB
11/2/15

Analysis Report for 1510084-13
CP0604S28-29

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-13
Sample Description : CP0604S28-29
Sample Type : SOIL

Sample Size : 5.464E+02 grams
Facility : Countroom

Sample Taken On : 10/9/2015 9:50:18AM
Acquisition Started : 11/4/2015 11:42:09AM

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) : 5 - 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 : 29112

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-13
CP0604S28-29

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 12:42:25PM
 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	43.99	44.10	0.0000	0.00
2	63.69	63.79	0.0000	0.00
3	76.27	76.36	0.0000	0.00
4	87.32	87.41	0.0000	0.00
5	144.88	144.93	0.0000	0.00
6	186.00	186.02	0.0000	0.00
7	209.41	209.43	0.0000	0.00
8	238.72	238.72	0.0000	0.00
9	241.76	241.76	0.0000	0.00
10	270.48	270.46	0.0000	0.00
11	277.65	277.63	0.0000	0.00
12	295.12	295.09	0.0000	0.00
13	300.00	299.97	0.0000	0.00
14	338.51	338.45	0.0000	0.00
15	352.02	351.95	0.0000	0.00
16	376.53	376.46	0.0000	0.00
17	404.53	404.44	0.0000	0.00
18	463.79	463.67	0.0000	0.00
19	511.30	511.16	0.0000	0.00
20	564.05	563.88	0.0000	0.00
21	570.82	570.65	0.0000	0.00
22	583.18	583.00	0.0000	0.00
23	599.18	598.99	0.0000	0.00
24	609.18	608.99	0.0000	0.00
25	727.40	727.15	0.0000	0.00
26	769.92	769.66	0.0000	0.00
27	795.17	794.90	0.0000	0.00
28	840.83	840.53	0.0000	0.00
29	911.22	910.89	0.0000	0.00
30	936.54	936.20	0.0000	0.00
31	969.15	968.80	0.0000	0.00
32	972.55	972.20	0.0000	0.00
33	993.58	993.22	0.0000	0.00
34	1001.71	1001.35	0.0000	0.00
35	1120.44	1120.03	0.0000	0.00
36	1136.69	1136.28	0.0000	0.00
37	1155.19	1154.77	0.0000	0.00
38	1181.05	1180.62	0.0000	0.00
39	1238.44	1237.99	0.0000	0.00
40	1353.86	1353.37	0.0000	0.00
41	1378.39	1377.89	0.0000	0.00
42	1408.19	1407.69	0.0000	0.00

Analysis Report for 1510084-13
CP0604S28-29

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1460.96	1460.44	0.0000	0.00
44	1590.18	1589.62	0.0000	0.00
45	1629.42	1628.85	0.0000	0.00
46	1643.58	1643.01	0.0000	0.00
47	1654.66	1654.08	0.0000	0.00
48	1764.72	1764.11	0.0000	0.00
49	1882.10	1881.47	0.0000	0.00
50	2103.02	2102.35	0.0000	0.00
51	2111.11	2110.43	0.0000	0.00
52	2119.55	2118.87	0.0000	0.00
53	2217.55	2216.86	0.0000	0.00
54	2243.68	2242.98	0.0000	0.00
55	2300.66	2299.95	0.0000	0.00
56	2436.47	2435.75	0.0000	0.00
57	2447.73	2447.00	0.0000	0.00
58	2507.23	2506.50	0.0000	0.00
59	2613.90	2613.16	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510084-13

CP0604S28-29

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 12:42:25PM

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	43.99	43 -	50	44.10	3.64E+01	22.99	2.09E+02	1.10
	2	63.69	60 -	67	63.79	1.54E+02	102.33	1.65E+03	2.05
	3	76.27	72 -	79	76.36	1.02E+03	119.00	1.68E+03	3.67
	4	87.32	86 -	89	87.41	8.28E+01	65.08	9.90E+02	1.51
	5	144.88	143 -	148	144.93	6.68E+01	58.23	6.30E+02	1.15
	6	186.00	183 -	189	186.02	1.97E+02	69.69	7.36E+02	1.62
	7	209.41	207 -	212	209.43	7.29E+01	55.22	5.46E+02	1.27
M	8	238.72	234 -	246	238.72	8.53E+02	70.55	3.66E+02	1.56
m	9	241.76	234 -	246	241.76	2.08E+02	82.19	4.73E+02	2.28
	10	270.48	267 -	274	270.46	9.82E+01	58.96	5.10E+02	1.84
	11	277.65	276 -	281	277.63	3.92E+01	43.63	3.52E+02	1.29
M	12	295.12	292 -	303	295.09	2.31E+02	42.76	1.90E+02	1.50
m	13	300.00	292 -	303	299.97	4.86E+01	36.63	2.89E+02	1.50
	14	338.51	334 -	342	338.45	1.61E+02	56.84	3.91E+02	1.88
	15	352.02	348 -	354	351.95	3.70E+02	58.21	3.48E+02	1.33
	16	376.53	373 -	380	376.46	4.69E+01	42.85	2.72E+02	5.02
	17	404.53	398 -	410	404.44	8.45E+01	62.26	4.17E+02	8.20
	18	463.79	459 -	469	463.67	6.89E+01	48.88	2.70E+02	1.39
	19	511.30	506 -	516	511.16	1.94E+02	53.90	2.78E+02	2.01
	20	564.05	560 -	567	563.88	5.36E+01	31.50	1.25E+02	3.82
	21	570.82	568 -	574	570.65	3.32E+01	26.06	1.02E+02	3.79
	22	583.18	578 -	587	583.00	2.49E+02	50.69	2.24E+02	1.62
	23	599.18	597 -	602	598.99	2.15E+01	25.08	1.05E+02	2.99
	24	609.18	604 -	611	608.99	3.26E+02	48.54	1.73E+02	1.59
	25	727.40	723 -	731	727.15	7.41E+01	38.13	1.74E+02	1.53
	26	769.92	766 -	776	769.66	4.48E+01	35.25	1.38E+02	2.63
	27	795.17	793 -	799	794.90	3.46E+01	25.19	8.88E+01	1.78
	28	840.83	839 -	843	840.53	2.30E+01	19.25	5.79E+01	3.98
	29	911.22	907 -	915	910.89	1.75E+02	34.94	7.83E+01	1.64
	30	936.54	930 -	941	936.20	3.18E+01	34.35	1.30E+02	4.98
M	31	969.15	965 -	976	968.80	9.26E+01	31.58	1.38E+02	2.13
m	32	972.55	965 -	976	972.20	2.09E+01	32.18	1.02E+02	2.19
	33	993.58	991 -	997	993.22	1.63E+01	20.80	6.73E+01	2.09
	34	1001.71	997 -	1004	1001.35	2.51E+01	25.53	9.18E+01	1.32
	35	1120.44	1115 -	1124	1120.03	8.93E+01	34.04	1.13E+02	2.24
	36	1136.69	1127 -	1145	1136.28	5.66E+01	43.19	1.43E+02	14.56
	37	1155.19	1151 -	1159	1154.77	3.28E+01	24.98	7.44E+01	3.34
	38	1181.05	1178 -	1183	1180.62	2.03E+01	19.60	6.14E+01	3.58
	39	1238.44	1234 -	1241	1237.99	3.53E+01	29.33	1.19E+02	1.36
	40	1353.86	1349 -	1357	1353.37	1.37E+01	15.15	2.66E+01	1.90

Analysis Report for 1510084-13

CP0604S28-29

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1378.39	1373 - 1382		1377.89	3.42E+01	18.38	2.57E+01	2.22
42	1408.19	1406 - 1411		1407.69	6.18E+00	8.94	9.64E+00	1.70
43	1460.96	1454 - 1466		1460.44	7.23E+02	58.71	6.51E+01	2.39
44	1590.18	1585 - 1594		1589.62	1.66E+01	16.55	2.88E+01	5.79
45	1629.42	1626 - 1631		1628.85	1.07E+01	9.33	8.67E+00	2.03
46	1643.58	1639 - 1646		1643.01	1.00E+01	10.58	1.20E+01	2.54
47	1654.66	1650 - 1657		1654.08	1.04E+01	9.38	7.29E+00	1.22
48	1764.72	1760 - 1769		1764.11	5.33E+01	19.42	1.94E+01	2.66
49	1882.10	1877 - 1885		1881.47	9.93E+00	9.82	8.14E+00	3.22
50	2103.02	2097 - 2107		2102.35	2.60E+01	10.20	0.00E+00	3.59
51	2111.11	2108 - 2113		2110.43	7.00E+00	5.29	0.00E+00	2.22
52	2119.55	2114 - 2125		2118.87	1.56E+01	10.58	6.79E+00	5.42
53	2217.55	2214 - 2219		2216.86	7.00E+00	5.29	0.00E+00	2.99
54	2243.68	2239 - 2246		2242.98	7.06E+00	7.21	3.89E+00	3.20
55	2300.66	2296 - 2304		2299.95	1.01E+01	8.26	3.83E+00	6.83
56	2436.47	2433 - 2438		2435.75	6.69E+00	6.40	2.63E+00	1.54
57	2447.73	2443 - 2450		2447.00	6.00E+00	8.49	8.00E+00	3.63
58	2507.23	2501 - 2509		2506.50	6.00E+00	4.90	0.00E+00	1.24
59	2613.90	2609 - 2619		2613.16	1.08E+02	22.81	1.34E+01	3.70

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 : 11/4/2015 12:42:25PM

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	43 - 50		3.64E+01	22.99	2.09E+02	2.38E+01
	2	60 - 67		1.54E+02	102.33	1.65E+03	8.16E+01
	3	72 - 79		1.02E+03	119.00	1.68E+03	8.25E+01
	4	86 - 89		8.28E+01	65.08	9.90E+02	5.14E+01
	5	143 - 148		6.68E+01	58.23	6.30E+02	4.59E+01
	6	183 - 189		1.97E+02	69.69	7.36E+02	5.24E+01
	7	207 - 212		7.29E+01	55.22	5.46E+02	4.32E+01
M	8	234 - 246		8.53E+02	70.55	3.66E+02	3.15E+01
m	9	234 - 246		2.08E+02	82.19	4.73E+02	3.58E+01

: 00797

Analysis Report for 1510084-13

CP0604S28-29

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level	
10	270.48	267 -	274	9.82E+01	58.96	5.10E+02	4.56E+01	
11	277.65	276 -	281	3.92E+01	43.63	3.52E+02	3.44E+01	
M	12	295.12	292 -	303	2.31E+02	42.76	1.90E+02	2.27E+01
m	13	300.00	292 -	303	4.86E+01	36.63	2.89E+02	2.79E+01
14	338.51	334 -	342	1.61E+02	56.84	3.91E+02	4.18E+01	
15	352.02	348 -	354	3.70E+02	58.21	3.48E+02	3.59E+01	
16	376.53	373 -	380	4.69E+01	42.85	2.72E+02	3.34E+01	
17	404.53	398 -	410	8.45E+01	62.26	4.17E+02	4.89E+01	
18	463.79	459 -	469	6.89E+01	48.88	2.70E+02	1.94E+01	
19	511.30	506 -	516	1.94E+02	53.90	2.78E+02	3.79E+01	
20	564.05	560 -	567	5.36E+01	31.50	1.25E+02	2.29E+01	
21	570.82	568 -	574	3.32E+01	26.06	1.02E+02	1.92E+01	
22	583.18	578 -	587	2.49E+02	50.69	2.24E+02	3.26E+01	
23	599.18	597 -	602	2.15E+01	25.08	1.05E+02	1.92E+01	
24	609.18	604 -	611	3.26E+02	48.54	1.73E+02	2.66E+01	
25	727.40	723 -	731	7.41E+01	38.13	1.74E+02	2.80E+01	
26	769.92	766 -	776	4.48E+01	35.25	1.38E+02	2.68E+01	
27	795.17	793 -	799	3.46E+01	25.19	8.88E+01	1.83E+01	
28	840.83	839 -	843	2.30E+01	19.25	5.79E+01	1.37E+01	
29	911.22	907 -	915	1.75E+02	34.94	7.83E+01	1.88E+01	
30	936.54	930 -	941	3.18E+01	34.35	1.30E+02	2.67E+01	
M	31	969.15	965 -	976	9.26E+01	31.58	1.38E+02	1.93E+01
m	32	972.55	965 -	976	2.09E+01	32.18	1.02E+02	1.66E+01
33	993.58	991 -	997	1.63E+01	20.80	6.73E+01	1.58E+01	
34	1001.71	997 -	1004	2.51E+01	25.53	9.18E+01	1.93E+01	
35	1120.44	1115 -	1124	8.93E+01	34.04	1.13E+02	2.33E+01	
36	1136.69	1127 -	1145	5.66E+01	43.19	1.43E+02	3.33E+01	
37	1155.19	1151 -	1159	3.28E+01	24.98	7.44E+01	1.83E+01	
38	1181.05	1178 -	1183	2.03E+01	19.60	6.14E+01	1.43E+01	
39	1238.44	1234 -	1241	3.53E+01	29.33	1.19E+02	2.20E+01	
40	1353.86	1349 -	1357	1.37E+01	15.15	2.66E+01	1.09E+01	
41	1378.39	1373 -	1382	3.42E+01	18.38	2.57E+01	1.17E+01	
42	1408.19	1406 -	1411	6.18E+00	8.94	9.64E+00	6.11E+00	
43	1460.96	1454 -	1466	7.23E+02	58.71	6.51E+01	1.93E+01	
44	1590.18	1585 -	1594	1.66E+01	16.55	2.88E+01	1.18E+01	
45	1629.42	1626 -	1631	1.07E+01	9.33	8.67E+00	5.47E+00	
46	1643.58	1639 -	1646	1.00E+01	10.58	1.20E+01	6.97E+00	
47	1654.66	1650 -	1657	1.04E+01	9.38	7.29E+00	5.61E+00	
48	1764.72	1760 -	1769	5.33E+01	19.42	1.94E+01	1.05E+01	
49	1882.10	1877 -	1885	9.93E+00	9.82	8.14E+00	6.19E+00	
50	2103.02	2097 -	2107	2.60E+01	10.20	0.00E+00	0.00E+00	
51	2111.11	2108 -	2113	7.00E+00	5.29	0.00E+00	0.00E+00	
52	2119.55	2114 -	2125	1.56E+01	10.58	6.79E+00	5.79E+00	
53	2217.55	2214 -	2219	7.00E+00	5.29	0.00E+00	0.00E+00	
54	2243.68	2239 -	2246	7.06E+00	7.21	3.89E+00	4.01E+00	
55	2300.66	2296 -	2304	1.01E+01	8.26	3.83E+00	4.34E+00	
56	2436.47	2433 -	2438	6.69E+00	6.40	2.63E+00	3.10E+00	
57	2447.73	2443 -	2450	6.00E+00	8.49	8.00E+00	5.70E+00	
58	2507.23	2501 -	2509	6.00E+00	4.90	0.00E+00	0.00E+00	
59	2613.90	2609 -	2619	1.08E+02	22.81	1.34E+01	7.68E+00	

Analysis Report for 1510084-13
CP0604S28-29

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 : 11/4/2015 12:42:25PM

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	43.99	43 -	50	44.10	3.64E+01	22.99	2.09E+02	.....
	2	63.69	60 -	67	63.79	1.54E+02	102.33	1.65E+03	TH-234 TH-230
	3	76.27	72 -	79	76.36	1.02E+03	119.00	1.68E+03	.....
	4	87.32	86 -	89	87.41	8.28E+01	65.08	9.90E+02	SN-126 CD-109 NP-237 EU-155
	5	144.88	143 -	148	144.93	6.68E+01	58.23	6.30E+02	CE-141
	6	186.00	183 -	189	186.02	1.97E+02	69.69	7.36E+02	RA-226
	7	209.41	207 -	212	209.43	7.29E+01	55.22	5.46E+02	CM-243 GA-67
M	8	238.72	234 -	246	238.72	8.53E+02	70.55	3.66E+02	PB-212
m	9	241.76	234 -	246	241.76	2.08E+02	82.19	4.73E+02	RA-224
	10	270.48	267 -	274	270.46	9.82E+01	58.96	5.10E+02	.....
	11	277.65	276 -	281	277.63	3.92E+01	43.63	3.52E+02	CM-243 NP-239
M	12	295.12	292 -	303	295.09	2.31E+02	42.76	1.90E+02	PB-214
m	13	300.00	292 -	303	299.97	4.86E+01	36.63	2.89E+02	BI-210M PB-212 GA-67
	14	338.51	334 -	342	338.45	1.61E+02	56.84	3.91E+02	AC-228
	15	352.02	348 -	354	351.95	3.70E+02	58.21	3.48E+02	PB-214
	16	376.53	373 -	380	376.46	4.69E+01	42.85	2.72E+02	.....
	17	404.53	398 -	410	404.44	8.45E+01	62.26	4.17E+02	PB-211
	18	463.79	459 -	469	463.67	6.89E+01	48.88	2.70E+02	SB-125
	19	511.30	506 -	516	511.16	1.94E+02	53.90	2.78E+02	.....
	20	564.05	560 -	567	563.88	5.36E+01	31.50	1.25E+02	CS-134
	21	570.82	568 -	574	570.65	3.32E+01	26.06	1.02E+02	.....
	22	583.18	578 -	587	583.00	2.49E+02	50.69	2.24E+02	TL-208

Analysis Report for 1510084-13

CP0604S28-29

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide	
23	599.18	597 -	602	598.99	2.15E+01	25.08	1.05E+02	.....
24	609.18	604 -	611	608.99	3.26E+02	48.54	1.73E+02	BI-214	
25	727.40	723 -	731	727.15	7.41E+01	38.13	1.74E+02	BI-212	
26	769.92	766 -	776	769.66	4.48E+01	35.25	1.38E+02	.....
27	795.17	793 -	799	794.90	3.46E+01	25.19	8.88E+01	CS-134	
28	840.83	839 -	843	840.53	2.30E+01	19.25	5.79E+01	.....
29	911.22	907 -	915	910.89	1.75E+02	34.94	7.83E+01	AC-228 LU-172	
M	30	936.54	930 -	941	936.20	3.18E+01	34.35	1.30E+02	.....
m	31	969.15	965 -	976	968.80	9.26E+01	31.58	1.38E+02	AC-228
	32	972.55	965 -	976	972.20	2.09E+01	32.18	1.02E+02	.....
	33	993.58	991 -	997	993.22	1.63E+01	20.80	6.73E+01	.....
	34	1001.71	997 -	1004	1001.35	2.51E+01	25.53	9.18E+01	PA-234M
	35	1120.44	1115 -	1124	1120.03	8.93E+01	34.04	1.13E+02	SC-46 BI-214 TA-182
	36	1136.69	1127 -	1145	1136.28	5.66E+01	43.19	1.43E+02	.....
	37	1155.19	1151 -	1159	1154.77	3.28E+01	24.98	7.44E+01	.....
	38	1181.05	1178 -	1183	1180.62	2.03E+01	19.60	6.14E+01	.....
	39	1238.44	1234 -	1241	1237.99	3.53E+01	29.33	1.19E+02	CO-56
	40	1353.86	1349 -	1357	1353.37	1.37E+01	15.15	2.66E+01	.....
	41	1378.39	1373 -	1382	1377.89	3.42E+01	18.38	2.57E+01	.....
	42	1408.19	1406 -	1411	1407.69	6.18E+00	8.94	9.64E+00	EU-152
	43	1460.96	1454 -	1466	1460.44	7.23E+02	58.71	6.51E+01	K-40
	44	1590.18	1585 -	1594	1589.62	1.66E+01	16.55	2.88E+01	.....
	45	1629.42	1626 -	1631	1628.85	1.07E+01	9.33	8.67E+00	.....
	46	1643.58	1639 -	1646	1643.01	1.00E+01	10.58	1.20E+01	.....
	47	1654.66	1650 -	1657	1654.08	1.04E+01	9.38	7.29E+00	.....
	48	1764.72	1760 -	1769	1764.11	5.33E+01	19.42	1.94E+01	BI-214
	49	1882.10	1877 -	1885	1881.47	9.93E+00	9.82	8.14E+00	.....
	50	2103.02	2097 -	2107	2102.35	2.60E+01	10.20	0.00E+00	.....
	51	2111.11	2108 -	2113	2110.43	7.00E+00	5.29	0.00E+00	.....
	52	2119.55	2114 -	2125	2118.87	1.56E+01	10.58	6.79E+00	.....
	53	2217.55	2214 -	2219	2216.86	7.00E+00	5.29	0.00E+00	.....
	54	2243.68	2239 -	2246	2242.98	7.06E+00	7.21	3.89E+00	.....
	55	2300.66	2296 -	2304	2299.95	1.01E+01	8.26	3.83E+00	.....
	56	2436.47	2433 -	2438	2435.75	6.69E+00	6.40	2.63E+00	.....
	57	2447.73	2443 -	2450	2447.00	6.00E+00	8.49	8.00E+00	.....
	58	2507.23	2501 -	2509	2506.50	6.00E+00	4.90	0.00E+00	.....
	59	2613.90	2609 -	2619	2613.16	1.08E+02	22.81	1.34E+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

Analysis Report for 1510084-13

CP0604S28-29

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/4/2015 12:42:25PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	1	43.99	3.64E+01	22.99	1.14E-02	1.68E-03
	2	63.69	1.54E+02	102.33	2.39E-02	2.09E-03
	3	76.27	1.02E+03	119.00	2.74E-02	3.34E-03
	4	87.32	8.28E+01	65.08	2.84E-02	4.43E-03
	5	144.88	6.68E+01	58.23	2.45E-02	2.30E-03
	6	186.00	1.97E+02	69.69	2.11E-02	1.65E-03
	7	209.41	7.29E+01	55.22	1.95E-02	1.63E-03
M	8	238.72	8.53E+02	70.55	1.79E-02	1.60E-03
m	9	241.76	2.08E+02	82.19	1.77E-02	1.60E-03
	10	270.48	9.82E+01	58.96	1.64E-02	1.57E-03
	11	277.65	3.92E+01	43.63	1.61E-02	1.56E-03
M	12	295.12	2.31E+02	42.76	1.55E-02	1.48E-03
m	13	300.00	4.86E+01	36.63	1.53E-02	1.46E-03
	14	338.51	1.61E+02	56.84	1.41E-02	1.27E-03
	15	352.02	3.70E+02	58.21	1.37E-02	1.21E-03
	16	376.53	4.69E+01	42.85	1.31E-02	1.09E-03
	17	404.53	8.45E+01	62.26	1.25E-02	1.01E-03
	18	463.79	6.89E+01	48.88	1.13E-02	9.46E-04
	19	511.30	1.94E+02	53.90	1.06E-02	8.98E-04
	20	564.05	5.36E+01	31.50	9.82E-03	8.44E-04
	21	570.82	3.32E+01	26.06	9.74E-03	8.37E-04
	22	583.18	2.49E+02	50.69	9.58E-03	8.25E-04
	23	599.18	2.15E+01	25.08	9.39E-03	8.09E-04
	24	609.18	3.26E+02	48.54	9.27E-03	7.98E-04
	25	727.40	7.41E+01	38.13	8.09E-03	7.03E-04
	26	769.92	4.48E+01	35.25	7.73E-03	6.76E-04
	27	795.17	3.46E+01	25.19	7.53E-03	6.59E-04
	28	840.83	2.30E+01	19.25	7.20E-03	6.30E-04
	29	911.22	1.75E+02	34.94	6.75E-03	5.87E-04
	30	936.54	3.18E+01	34.35	6.60E-03	5.74E-04
M	31	969.15	9.26E+01	31.58	6.41E-03	5.57E-04
m	32	972.55	2.09E+01	32.18	6.40E-03	5.55E-04
	33	993.58	1.63E+01	20.80	6.29E-03	5.45E-04
	34	1001.71	2.51E+01	25.53	6.24E-03	5.40E-04
	35	1120.44	8.93E+01	34.04	5.70E-03	4.80E-04
	36	1136.69	5.66E+01	43.19	5.64E-03	4.71E-04
	37	1155.19	3.28E+01	24.98	5.57E-03	4.62E-04
	38	1181.05	2.03E+01	19.60	5.47E-03	4.56E-04
	39	1238.44	3.53E+01	29.33	5.27E-03	4.83E-04
	40	1353.86	1.37E+01	15.15	4.93E-03	5.18E-04
	41	1378.39	3.42E+01	18.38	4.87E-03	5.07E-04
	42	1408.19	6.18E+00	8.94	4.79E-03	4.95E-04
	43	1460.96	7.23E+02	58.71	4.67E-03	4.73E-04
	44	1590.18	1.66E+01	16.55	4.43E-03	4.20E-04
	45	1629.42	1.07E+01	9.33	4.36E-03	4.03E-04

Analysis Report for 1510084-13
CP0604S28-29

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
46	1643.58	1.00E+01	10.58	4.34E-03	3.98E-04
47	1654.66	1.04E+01	9.38	4.33E-03	3.93E-04
48	1764.72	5.33E+01	19.42	4.18E-03	3.47E-04
49	1882.10	9.93E+00	9.82	4.07E-03	3.18E-04
50	2103.02	2.60E+01	10.20	3.95E-03	3.18E-04
51	2111.11	7.00E+00	5.29	3.95E-03	3.18E-04
52	2119.55	1.56E+01	10.58	3.95E-03	3.18E-04
53	2217.55	7.00E+00	5.29	3.93E-03	3.18E-04
54	2243.68	7.06E+00	7.21	3.93E-03	3.18E-04
55	2300.66	1.01E+01	8.26	3.93E-03	3.18E-04
56	2436.47	6.69E+00	6.40	3.96E-03	3.18E-04
57	2447.73	6.00E+00	8.49	3.96E-03	3.18E-04
58	2507.23	6.00E+00	4.90	3.99E-03	3.18E-04
59	2613.90	1.08E+02	22.81	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 : 11/4/2015 12:42:25PM

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.
M	1	43.99	3.64E+01	22.99		3.64E+01	2.30E+01
	2	63.69	1.54E+02	102.33	4.34E+01	1.11E+02	1.03E+02
	3	76.27	1.02E+03	119.00		1.02E+03	1.19E+02
	4	87.32	8.28E+01	65.08	1.46E+00	8.14E+01	6.56E+01
	5	144.88	6.68E+01	58.23	8.10E+00	5.87E+01	6.13E+01
	6	186.00	1.97E+02	69.69	4.72E+01	1.50E+02	7.01E+01
	7	209.41	7.29E+01	55.22		7.29E+01	5.52E+01
M	8	238.72	8.53E+02	70.55	2.36E+01	8.30E+02	7.18E+01
m	9	241.76	2.08E+02	82.19	6.38E+00	2.02E+02	8.23E+01
	10	270.48	9.82E+01	58.96		9.82E+01	5.90E+01
	11	277.65	3.92E+01	43.63		3.92E+01	4.36E+01
M	12	295.12	2.31E+02	42.76	8.57E+00	2.22E+02	4.32E+01
m	13	300.00	4.86E+01	36.63		4.86E+01	3.66E+01
	14	338.51	1.61E+02	56.84		1.61E+02	5.68E+01
	15	352.02	3.70E+02	58.21	1.40E+01	3.56E+02	5.85E+01
	16	376.53	4.69E+01	42.85		4.69E+01	4.28E+01

: 00802

Analysis Report for 1510084-13

CP0604S28-29

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
17	404.53	8.45E+01	62.26			8.45E+01	6.23E+01
18	463.79	6.89E+01	48.88			6.89E+01	4.89E+01
19	511.30	1.94E+02	53.90	8.41E+01	5.50E+00	1.10E+02	5.42E+01
20	564.05	5.36E+01	31.50			5.36E+01	3.15E+01
21	570.82	3.32E+01	26.06	3.98E+00	3.55E+00	2.92E+01	2.63E+01
22	583.18	2.49E+02	50.69	7.32E+00	4.08E+00	2.41E+02	5.08E+01
23	599.18	2.15E+01	25.08			2.15E+01	2.51E+01
24	609.18	3.26E+02	48.54	1.30E+01	3.89E+00	3.13E+02	4.87E+01
25	727.40	7.41E+01	38.13			7.41E+01	3.81E+01
26	769.92	4.48E+01	35.25			4.48E+01	3.52E+01
27	795.17	3.46E+01	25.19			3.46E+01	2.52E+01
28	840.83	2.30E+01	19.25			2.30E+01	1.92E+01
29	911.22	1.75E+02	34.94	5.60E+00	3.32E+00	1.69E+02	3.51E+01
30	936.54	3.18E+01	34.35			3.18E+01	3.44E+01
M 31	969.15	9.26E+01	31.58			9.26E+01	3.16E+01
m 32	972.55	2.09E+01	32.18			2.09E+01	3.22E+01
33	993.58	1.63E+01	20.80			1.63E+01	2.08E+01
34	1001.71	2.51E+01	25.53			2.51E+01	2.55E+01
35	1120.44	8.93E+01	34.04	3.93E+00	2.96E+00	8.54E+01	3.42E+01
36	1136.69	5.66E+01	43.19			5.66E+01	4.32E+01
37	1155.19	3.28E+01	24.98			3.28E+01	2.50E+01
38	1181.05	2.03E+01	19.60			2.03E+01	1.96E+01
39	1238.44	3.53E+01	29.33			3.53E+01	2.93E+01
40	1353.86	1.37E+01	15.15			1.37E+01	1.51E+01
41	1378.39	3.42E+01	18.38			3.42E+01	1.84E+01
42	1408.19	6.18E+00	8.94			6.18E+00	8.94E+00
43	1460.96	7.23E+02	58.71	1.12E+01	2.55E+00	7.12E+02	5.88E+01
44	1590.18	1.66E+01	16.55			1.66E+01	1.66E+01
45	1629.42	1.07E+01	9.33			1.07E+01	9.33E+00
46	1643.58	1.00E+01	10.58			1.00E+01	1.06E+01
47	1654.66	1.04E+01	9.38			1.04E+01	9.38E+00
48	1764.72	5.33E+01	19.42	4.23E+00	2.21E+00	4.90E+01	1.95E+01
49	1882.10	9.93E+00	9.82			9.93E+00	9.82E+00
50	2103.02	2.60E+01	10.20			2.60E+01	1.02E+01
51	2111.11	7.00E+00	5.29			7.00E+00	5.29E+00
52	2119.55	1.56E+01	10.58			1.56E+01	1.06E+01
53	2217.55	7.00E+00	5.29			7.00E+00	5.29E+00
54	2243.68	7.06E+00	7.21			7.06E+00	7.21E+00
55	2300.66	1.01E+01	8.26			1.01E+01	8.26E+00
56	2436.47	6.69E+00	6.40			6.69E+00	6.40E+00
57	2447.73	6.00E+00	8.49			6.00E+00	8.49E+00
58	2507.23	6.00E+00	4.90			6.00E+00	4.90E+00
59	2613.90	1.08E+02	22.81	7.38E+00	1.57E+00	1.01E+02	2.29E+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 1510084-13

CP0604S28-29

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/4/2015 12:42:25PM
 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.
M	1	43.99	3.64E+01	22.99			3.64E+01	2.30E+01
	2	63.69	1.54E+02	102.33	4.34E+01	1.15E+01	1.11E+02	1.03E+02
	3	76.27	1.02E+03	119.00			1.02E+03	1.19E+02
	4	87.32	8.28E+01	65.08	1.46E+00	7.88E+00	8.14E+01	6.56E+01
	5	144.88	6.68E+01	58.23	8.10E+00	1.90E+01	5.87E+01	6.13E+01
	6	186.00	1.97E+02	69.69	4.72E+01	7.97E+00	1.50E+02	7.01E+01
	7	209.41	7.29E+01	55.22			7.29E+01	5.52E+01
M	8	238.72	8.53E+02	70.55	2.36E+01	1.35E+01	8.30E+02	7.18E+01
m	9	241.76	2.08E+02	82.19	6.38E+00	3.91E+00	2.02E+02	8.23E+01
	10	270.48	9.82E+01	58.96			9.82E+01	5.90E+01
	11	277.65	3.92E+01	43.63			3.92E+01	4.36E+01
M	12	295.12	2.31E+02	42.76	8.57E+00	6.10E+00	2.22E+02	4.32E+01
m	13	300.00	4.86E+01	36.63			4.86E+01	3.66E+01
	14	338.51	1.61E+02	56.84			1.61E+02	5.68E+01
	15	352.02	3.70E+02	58.21	1.40E+01	5.55E+00	3.56E+02	5.85E+01
	16	376.53	4.69E+01	42.85			4.69E+01	4.28E+01
	17	404.53	8.45E+01	62.26			8.45E+01	6.23E+01
	18	463.79	6.89E+01	48.88			6.89E+01	4.89E+01
	19	511.30	1.94E+02	53.90	8.41E+01	5.50E+00	1.10E+02	5.42E+01
	20	564.05	5.36E+01	31.50			5.36E+01	3.15E+01
	21	570.82	3.32E+01	26.06	3.98E+00	3.55E+00	2.92E+01	2.63E+01
	22	583.18	2.49E+02	50.69	7.32E+00	4.08E+00	2.41E+02	5.08E+01
	23	599.18	2.15E+01	25.08			2.15E+01	2.51E+01
	24	609.18	3.26E+02	48.54	1.30E+01	3.89E+00	3.13E+02	4.87E+01
	25	727.40	7.41E+01	38.13			7.41E+01	3.81E+01
	26	769.92	4.48E+01	35.25			4.48E+01	3.52E+01
	27	795.17	3.46E+01	25.19			3.46E+01	2.52E+01
	28	840.83	2.30E+01	19.25			2.30E+01	1.92E+01
	29	911.22	1.75E+02	34.94	5.60E+00	3.32E+00	1.69E+02	3.51E+01
	30	936.54	3.18E+01	34.35			3.18E+01	3.44E+01
M	31	969.15	9.26E+01	31.58			9.26E+01	3.16E+01
m	32	972.55	2.09E+01	32.18			2.09E+01	3.22E+01
	33	993.58	1.63E+01	20.80			1.63E+01	2.08E+01
	34	1001.71	2.51E+01	25.53			2.51E+01	2.55E+01
	35	1120.44	8.93E+01	34.04	3.93E+00	2.96E+00	8.54E+01	3.42E+01
	36	1136.69	5.66E+01	43.19			5.66E+01	4.32E+01
	37	1155.19	3.28E+01	24.98			3.28E+01	2.50E+01
	38	1181.05	2.03E+01	19.60			2.03E+01	1.96E+01
	39	1238.44	3.53E+01	29.33			3.53E+01	2.93E+01
	40	1353.86	1.37E+01	15.15			1.37E+01	1.51E+01
	41	1378.39	3.42E+01	18.38			3.42E+01	1.84E+01

Analysis Report for 1510084-13

CP0604S28-29

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1408.19	6.18E+00	8.94			6.18E+00	8.94E+00
43	1460.96	7.23E+02	58.71	1.12E+01	2.55E+00	7.12E+02	5.88E+01
44	1590.18	1.66E+01	16.55			1.66E+01	1.66E+01
45	1629.42	1.07E+01	9.33			1.07E+01	9.33E+00
46	1643.58	1.00E+01	10.58			1.00E+01	1.06E+01
47	1654.66	1.04E+01	9.38			1.04E+01	9.38E+00
48	1764.72	5.33E+01	19.42	4.23E+00	2.21E+00	4.90E+01	1.95E+01
49	1882.10	9.93E+00	9.82			9.93E+00	9.82E+00
50	2103.02	2.60E+01	10.20			2.60E+01	1.02E+01
51	2111.11	7.00E+00	5.29			7.00E+00	5.29E+00
52	2119.55	1.56E+01	10.58			1.56E+01	1.06E+01
53	2217.55	7.00E+00	5.29			7.00E+00	5.29E+00
54	2243.68	7.06E+00	7.21			7.06E+00	7.21E+00
55	2300.66	1.01E+01	8.26			1.01E+01	8.26E+00
56	2436.47	6.69E+00	6.40			6.69E+00	6.40E+00
57	2447.73	6.00E+00	8.49			6.00E+00	8.49E+00
58	2507.23	6.00E+00	4.90			6.00E+00	4.90E+00
59	2613.90	1.08E+02	22.81	7.38E+00	1.57E+00	1.01E+02	2.29E+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	0.996	1460.81 *	10.67	1.96E+01	2.60E+00
CD-109	0.923	88.03 *	3.72	1.10E+00	9.05E-01
SN-126	0.990	87.57 *	37.00	1.06E-01	8.73E-02
CE-141	0.948	145.44 *	48.40	1.19E-01	1.27E-01
TL-208	0.846	583.14 *	30.22	1.15E+00	2.61E-01
		860.37	4.48		
		2614.66 *	35.85	9.55E-01	2.29E-01
BI-212	0.759	727.17 *	11.80	1.07E+00	5.57E-01
		1620.62	2.75		
PB-212	0.999	238.63 *	44.60	1.43E+00	1.78E-01
		300.09 *	3.41	1.28E+00	9.72E-01
BI-214	0.924	609.31 *	46.30	1.00E+00	1.78E-01
		1120.29 *	15.10	1.36E+00	5.57E-01

Analysis Report for 1510084-13
 CP0604S28-29

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.924	1764.49 *	15.80	1.02E+00	4.15E-01
		2204.22	4.98		
PB-214	0.999	295.21 *	19.19	1.03E+00	2.23E-01
		351.92 *	37.19	9.59E-01	1.79E-01
RA-224	0.906	240.98 *	3.95	3.96E+00	1.65E+00
RA-226	0.993	186.21 *	3.28	2.98E+00	5.63E+00
AC-228	0.997	338.32 *	11.40	1.38E+00	5.02E-01
		911.07 *	27.70	1.24E+00	2.80E-01
		969.11 *	16.60	1.19E+00	4.20E-01
PA-234M	0.928	1001.03 *	0.92	6.00E+00	6.13E+00
TH-234	0.975	63.29 *	3.80	1.68E+00	1.56E+00
NP-237	0.898	86.50 *	12.60	3.12E-01	2.56E-01
CM-243	0.371	209.75 *	3.29	1.56E+00	1.19E+00
		228.14	10.60		
		277.60 *	14.00	2.39E-01	2.67E-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 : 11/4/2015 12:42:25PM
 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	43.99	1.01127E-02	31.58		
3	76.27	2.83574E-01	5.83		
10	270.48	2.72805E-02	30.02		
16	376.53	1.30366E-02	45.65		
17	404.53	2.34604E-02	36.86	Tol.	PB-211
18	463.79	1.91449E-02	35.46	Sum	
19	511.30	3.05338E-02	24.64		
20	564.05	1.49006E-02	29.36	Tol.	CS-134
21	570.82	8.11440E-03	45.01		
23	599.18	5.96659E-03	58.38	Sum	
26	769.92	1.24488E-02	39.33	Sum	
27	795.17	9.60970E-03	36.41	Sum	
28	840.83	6.39957E-03	41.77		
30	936.54	8.84021E-03	53.97	Sum	

Analysis Report for 1510084-13

CP0604S28-29

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 32	972.55	5.81431E-03	76.86		
33	993.58	4.53611E-03	63.69		
36	1136.69	1.57129E-02	38.18		
37	1155.19	9.11706E-03	38.06	Sum	
38	1181.05	5.63725E-03	48.28		
39	1238.44	9.80994E-03	41.52		
40	1353.86	3.80144E-03	55.35	Sum	
41	1378.39	9.49173E-03	26.90		
42	1408.19	1.71717E-03	72.34	Tol.	EU-152
44	1590.18	4.60574E-03	49.92		
45	1629.42	2.96296E-03	43.72		
46	1643.58	2.77778E-03	52.92		
47	1654.66	2.87698E-03	45.29		
49	1882.10	2.75794E-03	49.47		
50	2103.02	7.22222E-03	19.61	S-Esc	
51	2111.11	1.94444E-03	37.80		
52	2119.55	4.33480E-03	33.91		
53	2217.55	1.94444E-03	37.80		
54	2243.68	1.95988E-03	51.10		
55	2300.66	2.80093E-03	40.97		
56	2436.47	1.85764E-03	47.87		
57	2447.73	1.66667E-03	70.71		
58	2507.23	1.66667E-03	40.82		

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	1.96E+01	2.60E+00
CD-109	0.92	88.03 *	3.72	1.10E+00	9.05E-01
SN-126	0.99	87.57 *	37.00	1.06E-01	8.73E-02
CE-141	0.94	145.44 *	48.40	1.19E-01	1.27E-01
TL-208	0.84	583.14 *	30.22	1.15E+00	2.61E-01

: 00807

Analysis Report for 1510084-13
CP0604S28-29

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TL-208	0.84	860.37	4.48		
		2614.66 *	35.85	9.55E-01	2.29E-01
BI-212	0.75	727.17 *	11.80	1.07E+00	5.57E-01
		1620.62	2.75		
PB-212	0.99	238.63 *	44.60	1.43E+00	1.78E-01
		300.09 *	3.41	1.28E+00	9.72E-01
BI-214	0.92	609.31 *	46.30	1.00E+00	1.78E-01
		1120.29 *	15.10	1.36E+00	5.57E-01
		1764.49 *	15.80	1.02E+00	4.15E-01
		2204.22	4.98		
PB-214	0.99	295.21 *	19.19	1.03E+00	2.23E-01
		351.92 *	37.19	9.59E-01	1.79E-01
RA-224	0.90	240.98 *	3.95	3.96E+00	1.65E+00
RA-226	0.99	186.21 *	3.28	2.98E+00	5.63E+00
AC-228	0.99	338.32 *	11.40	1.38E+00	5.02E-01
		911.07 *	27.70	1.24E+00	2.80E-01
		969.11 *	16.60	1.19E+00	4.20E-01
PA-234M	0.92	1001.03 *	0.92	6.00E+00	6.13E+00
TH-234	0.97	63.29 *	3.80	1.68E+00	1.56E+00
NP-237	0.89	86.50 *	12.60	3.12E-01	2.56E-01
CM-243	0.37	209.75 *	3.29	1.56E+00	1.19E+00
		228.14	10.60		
		277.60 *	14.00	2.39E-01	2.67E-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	0.996	1.96E+01	2.60E+00
?	CD-109	0.923	1.10E+00	9.05E-01
?	SN-126	0.990	1.06E-01	8.73E-02
	CE-141	0.948	1.19E-01	1.27E-01

Analysis Report for 1510084-13

CP0604S28-29

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
TL-208	0.846	1.04E+00	1.72E-01	
BI-212	0.759	1.07E+00	5.57E-01	
PB-212	0.999	1.43E+00	1.75E-01	
BI-214	0.924	1.03E+00	1.57E-01	
PB-214	0.999	9.86E-01	1.39E-01	
RA-224	0.906	3.96E+00	1.65E+00	
RA-226	0.993	2.98E+00	5.63E+00	
AC-228	0.997	1.26E+00	2.11E-01	
PA-234M	0.928	6.00E+00	6.13E+00	
TH-234	0.975	1.68E+00	1.56E+00	
? NP-237	0.898	3.12E-01	2.56E-01	
CM-243	0.371	3.02E-01	2.61E-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 1510084-13
CP0604S28-29

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 12:42:25PM
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	43.99	1.01127E-02	31.58		
3	76.27	2.83574E-01	5.83		
10	270.48	2.72805E-02	30.02		
16	376.53	1.30366E-02	45.65		
17	404.53	2.34604E-02	36.86	Tol.	PB-211
18	463.79	1.91449E-02	35.46	Sum	
19	511.30	3.05338E-02	24.64		
20	564.05	1.49006E-02	29.36	Tol.	CS-134
21	570.82	8.11440E-03	45.01		
23	599.18	5.96659E-03	58.38	Sum	
26	769.92	1.24488E-02	39.33	Sum	
27	795.17	9.60970E-03	36.41	Sum	
28	840.83	6.39957E-03	41.77		
30	936.54	8.84021E-03	53.97	Sum	
m 32	972.55	5.81431E-03	76.86		
33	993.58	4.53611E-03	63.69		
36	1136.69	1.57129E-02	38.18		
37	1155.19	9.11706E-03	38.06	Sum	
38	1181.05	5.63725E-03	48.28		
39	1238.44	9.80994E-03	41.52		
40	1353.86	3.80144E-03	55.35	Sum	
41	1378.39	9.49173E-03	26.90		
42	1408.19	1.71717E-03	72.34	Tol.	EU-152
44	1590.18	4.60574E-03	49.92		
45	1629.42	2.96296E-03	43.72		
46	1643.58	2.77778E-03	52.92		
47	1654.66	2.87698E-03	45.29		
49	1882.10	2.75794E-03	49.47		
50	2103.02	7.22222E-03	19.61	S-Esc	
51	2111.11	1.94444E-03	37.80		
52	2119.55	4.33480E-03	33.91		
53	2217.55	1.94444E-03	37.80		
54	2243.68	1.95988E-03	51.10		
55	2300.66	2.80093E-03	40.97		
56	2436.47	1.85764E-03	47.87		

Analysis Report for 1510084-13
CP0604S28-29

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
57	2447.73	1.66667E-03	70.71		
58	2507.23	1.66667E-03	40.82		

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	-4.48E-01	6.61E-01	6.61E-01
+	NA-22	1274.54	99.94	-1.36E-03	8.53E-02	8.53E-02
+	NA-24	1368.53	99.99	4.18E+10	1.32E+11	2.71E+11
		2754.09	99.86	0.00E+00		1.32E+11
+	AL-26	1808.65	99.76	-1.54E-02	5.28E-02	5.28E-02
+	K-40	1460.81	* 10.67	1.96E+01	1.19E+00	1.19E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	1.81E-02	4.93E-02	4.93E-02
		78.34	96.00	2.41E-01		7.18E-02
+	SC-46	889.25	99.98	-1.40E-02	9.30E-02	9.30E-02
		1120.51	99.99	3.05E-01		1.70E-01
+	V-48	983.52	99.98	-1.63E-01	2.31E-01	2.31E-01
		1312.10	97.50	-6.56E-02		2.41E-01
+	CR-51	320.08	9.83	1.30E-01	9.77E-01	9.77E-01
+	MN-54	834.83	99.97	-1.37E-02	8.37E-02	8.37E-02
+	CO-56	846.75	99.96	2.14E-02	9.21E-02	9.21E-02
		1037.75	14.03	-2.23E-01		6.38E-01
		1238.25	67.00	1.57E-01		2.27E-01
		1771.40	15.51	-2.29E-02		4.65E-01
		2598.48	16.90	-2.19E-02		3.32E-01
+	CO-57	122.06	85.51	2.07E-02	5.84E-02	5.84E-02
		136.48	10.60	-1.05E-01		4.79E-01
+	CO-58	810.76	99.40	-2.50E-02	8.33E-02	8.33E-02
+	FE-59	1099.22	56.50	3.05E-02	2.28E-01	2.28E-01
		1291.56	43.20	-7.94E-02		2.90E-01
+	CO-60	1173.22	100.00	3.17E-02	6.82E-02	8.56E-02
		1332.49	100.00	-1.47E-02		6.82E-02

Analysis Report for 1510084-13

CP0604S28-29

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZN-65	1115.52	50.75	3.19E-02	1.91E-01	1.91E-01
+	GA-67	93.31	35.70	2.77E+01	4.22E+01	4.22E+01
		208.95	2.24	2.33E+02		6.69E+02
		300.22	16.00	5.76E+01		9.28E+01
+	SE-75	121.11	16.70	5.47E-02	9.41E-02	3.27E-01
		136.00	59.20	3.68E-03		9.41E-02
		264.65	59.80	-2.10E-02		1.06E-01
		279.53	25.20	-2.50E-01		2.47E-01
		400.65	11.40	3.92E-01		5.90E-01
+	RB-82	776.52	13.00	-1.96E-01	1.01E+00	1.01E+00
+	RB-83	520.41	46.00	2.30E-02	1.30E-01	1.30E-01
		529.64	30.30	-1.88E-02		2.23E-01
		552.65	16.40	6.58E-02		4.20E-01
+	KR-85	513.99	0.43	-9.13E+00	1.56E+01	1.56E+01
+	SR-85	513.99	99.27	-5.25E-02	8.96E-02	8.96E-02
+	Y-88	898.02	93.40	-1.75E-02	6.94E-02	8.66E-02
		1836.01	99.38	1.41E-02		6.94E-02
+	NB-93M	16.57	9.43	-8.11E+03	5.37E+03	5.37E+03
+	NB-94	702.63	100.00	-1.30E-02	6.01E-02	7.50E-02
		871.10	100.00	-5.65E-02		6.01E-02
+	NB-95	765.79	99.81	0.00E+00	1.36E-01	1.36E-01
+	NB-95M	235.69	25.00	-2.93E+02	4.75E+01	4.75E+01
+	ZR-95	724.18	43.70	2.80E-03	1.73E-01	2.90E-01
		756.72	55.30	3.41E-02		1.73E-01
+	MO-99	181.06	6.20	2.51E+02	4.31E+02	6.07E+02
		739.58	12.80	8.65E+01		4.31E+02
		778.00	4.50	-3.40E+02		1.06E+03
+	RU-103	497.08	89.00	2.40E-02	9.06E-02	9.06E-02
+	RU-106	621.84	9.80	-1.74E-01	6.98E-01	6.98E-01
+	AG-108M	433.93	89.90	-3.45E-02	4.95E-02	4.95E-02
		614.37	90.40	-1.72E-01		8.05E-02
		722.95	90.50	-8.95E-03		8.71E-02
+	CD-109	88.03	* 3.72	1.10E+00	1.44E+00	1.44E+00
+	AG-110M	657.75	93.14	-1.15E-05	7.99E-02	7.99E-02
		677.61	10.53	-4.35E-01		6.31E-01
		706.67	16.46	-1.03E-01		4.81E-01
		763.93	21.98	6.33E-03		3.40E-01
		884.67	71.63	-3.34E-03		1.11E-01
		1384.27	23.94	7.00E-02		2.71E-01
+	CD-113M	263.70	0.02	-7.46E+01	2.31E+02	2.31E+02
+	SN-113	255.12	1.93	-3.80E-01	9.66E-02	3.06E+00
		391.69	64.90	-5.25E-02		9.66E-02
+	TE123M	159.00	84.10	1.97E-02	6.79E-02	6.79E-02
+	SB-124	602.71	97.87	-1.16E-01	9.45E-02	9.45E-02
		645.85	7.26	-5.96E-03		1.24E+00
		722.78	11.10	-9.85E-02		9.59E-01
		1691.02	49.00	6.42E-02		1.67E-01
+	I-125	35.49	6.49	8.30E-01	5.40E+00	5.40E+00

Analysis Report for 1510084-13
CP0604S28-29

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-125	176.33	6.89	9.86E-02	1.83E-01	7.35E-01
		427.89	29.33	7.61E-02		1.83E-01
		463.38	10.35	6.06E-01		6.55E-01
		600.56	17.80	-1.31E-01		3.78E-01
		635.90	11.32	1.47E-01		6.10E-01
+	SB-126	414.70	83.30	-1.13E-01	2.64E-01	2.64E-01
		666.33	99.60	1.05E-01		3.11E-01
		695.00	99.60	7.46E-02		3.30E-01
		720.50	53.80	-1.08E-01		5.50E-01
+	SN-126	87.57	* 37.00	1.06E-01	1.39E-01	1.39E-01
+	SB-127	473.00	25.00	9.82E+00	2.05E+01	2.31E+01
		685.20	35.70	1.12E+00		2.05E+01
		783.80	14.70	3.03E+01		5.97E+01
+	I-129	29.78	57.00	-6.50E-01	1.19E+00	1.19E+00
		33.60	13.20	-2.56E-01		2.55E+00
		39.58	7.52	3.90E-01		2.06E+00
+	I-131	284.30	6.05	1.36E+00	6.01E-01	8.41E+00
		364.48	81.20	-2.97E-01		6.01E-01
		636.97	7.26	-6.50E-02		8.56E+00
		722.89	1.80	-4.27E+00		4.15E+01
+	TE-132	49.72	13.10	1.95E+01	1.57E+01	1.47E+02
		228.16	88.00	-4.74E+00		1.57E+01
+	BA-133	81.00	33.00	3.18E-02	8.89E-02	1.30E-01
		302.84	17.80	7.10E-02		2.98E-01
		356.01	60.00	-3.52E-02		8.89E-02
+	I-133	529.87	86.30	5.94E+06	7.44E+07	7.44E+07
+	XE-133	81.00	38.00	8.66E-01	3.53E+00	3.53E+00
+	CS-134	563.23	8.38	6.76E-01	8.13E-02	8.00E-01
		569.32	15.43	-2.30E-01		3.42E-01
		604.70	97.60	-6.04E-01		8.13E-02
		795.84	85.40	6.02E-02		9.65E-02
		801.93	8.73	-4.66E-02		7.38E-01
+	CS-135	268.24	16.00	-1.28E-01	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	1.48E+00	2.56E-01	2.74E+00
		163.89	4.61	1.16E+00		4.28E+00
		176.55	13.56	-1.06E+00		1.44E+00
		273.65	12.66	-3.40E+00		1.62E+00
		340.57	48.50	-4.72E-01		4.96E-01
		818.50	99.70	1.62E-02		2.56E-01
		1048.07	79.60	6.66E-02		3.92E-01
		1235.34	19.70	-1.78E-01		2.30E+00
+	CS-137	661.65	85.12	-5.62E-02	8.04E-02	8.04E-02
+	LA-138	788.74	34.00	1.24E-01	1.01E-01	2.31E-01
		1435.80	66.00	4.98E-03		1.01E-01
+	CE-139	165.85	80.35	3.17E-02	7.19E-02	7.19E-02
+	BA-140	162.64	6.70	-1.41E-02	9.06E-01	3.04E+00

Analysis Report for 1510084-13
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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>
BA-140	304.84	4.50	6.18E-02	9.06E-01	4.63E+00
	423.70	3.20	1.92E-01		6.71E+00
	437.55	2.00	2.99E+00		1.09E+01
	537.32	25.00	-3.27E-02		9.06E-01
+ LA-140	328.77	20.50	1.71E-01	3.29E-01	1.16E+00
	487.03	45.50	-1.17E-02		4.73E-01
	815.85	23.50	2.87E-01		1.13E+00
+ CE-141	1596.49	95.49	5.67E-02		3.29E-01
	145.44	* 48.40	1.19E-01	2.03E-01	2.03E-01
+ CE-143	57.36	11.80	6.53E+04	8.95E+04	2.42E+05
	293.26	42.00	-1.31E+04		8.95E+04
	664.55	5.20	3.28E+05		7.38E+05
+ CE-144	133.54	10.80	3.65E-02	4.79E-01	4.79E-01
+ PM-144	476.78	42.00	-8.33E-02	7.56E-02	1.23E-01
	618.01	98.60	9.70E-03		7.56E-02
	696.49	99.49	-2.04E-02		8.00E-02
+ PM-145	36.85	21.70	2.74E-01	5.18E-01	1.01E+00
	37.36	39.70	1.41E-01		5.18E-01
	42.30	15.10	1.14E-01		7.96E-01
	72.40	2.31	-3.88E-01		2.02E+00
+ PM-146	453.90	39.94	-9.23E-02	1.19E-01	1.19E-01
	735.90	14.01	2.14E-01		5.44E-01
	747.13	13.10	-1.74E-01		5.10E-01
+ ND-147	91.11	28.90	1.16E+00	1.10E+00	1.10E+00
	531.02	13.10	1.04E+00		2.27E+00
+ PM-149	285.90	3.10	-2.98E+03	6.12E+03	6.12E+03
+ EU-152	121.78	20.50	8.10E-02	2.28E-01	2.28E-01
	244.69	5.40	-1.80E+00		9.81E-01
	344.27	19.13	-5.91E-02		2.61E-01
	778.89	9.20	8.62E-03		7.29E-01
	964.01	10.40	4.17E-02		9.02E-01
	1085.78	7.22	-5.08E-03		1.11E+00
	1112.02	9.60	5.26E-01		9.24E-01
	1407.95	14.94	-5.78E-02		3.87E-01
	97.43	31.30	4.18E-02	1.56E-01	1.56E-01
+ GD-153	103.18	22.20	-1.21E-01		2.21E-01
	123.07	40.50	1.36E-02	1.14E-01	1.14E-01
+ EU-154	723.30	19.70	-4.13E-02		4.02E-01
	873.19	11.50	-2.35E-01		5.78E-01
	996.32	10.30	-3.79E-01		7.40E-01
	1004.76	17.90	-6.20E-02		4.84E-01
	1274.45	35.50	-3.77E-03		2.37E-01
+ EU-155	86.50	30.90	-1.82E-01	1.99E-01	1.99E-01
	105.30	20.70	1.01E-01		2.30E-01
+ EU-156	811.77	10.40	-6.75E-01	2.05E+00	2.05E+00
	1153.47	7.20	1.15E+00		4.33E+00
	1230.71	8.90	-4.80E-01		3.22E+00
+ HO-166M	184.41	72.60	4.35E-02	8.83E-02	8.83E-02
	280.45	29.60	-1.84E-01		1.82E-01

Analysis Report for 1510084-13

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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>	
	HO-166M	410.94	11.10	1.37E-01	8.83E-02	5.13E-01
		711.69	54.10	4.81E-03		1.35E-01
+	TM-171	66.72	0.14	4.94E+00	3.58E+01	3.58E+01
+	HF-172	81.75	4.52	-7.19E-01	4.04E-01	9.67E-01
		125.81	11.30	-6.98E-01		4.04E-01
+	LU-172	181.53	20.60	7.90E-01	2.08E+00	3.71E+00
		810.06	16.63	-1.72E+00		5.73E+00
		912.12	15.25	3.00E+01		1.36E+01
		1093.66	62.50	-3.45E-01		2.08E+00
+	LU-173	100.72	5.24	7.02E-01	3.10E-01	9.04E-01
		272.11	21.20	3.49E-01		3.10E-01
+	HF-175	343.40	84.00	7.12E-04	7.58E-02	7.58E-02
+	LU-176	88.34	13.30	7.01E-01	5.02E-02	4.74E-01
		201.83	86.00	-2.67E-02		6.10E-02
		306.78	94.00	-3.42E-02		5.02E-02
+	TA-182	67.75	41.20	4.85E-02	1.33E-01	1.33E-01
		1121.30	34.90	6.87E-01		4.49E-01
		1189.05	16.23	2.57E-01		6.84E-01
		1221.41	26.98	3.54E-02		4.17E-01
		1231.02	11.44	8.55E-02		9.10E-01
+	IR-192	308.46	29.68	-7.09E-02	1.28E-01	2.04E-01
		468.07	48.10	-5.27E-02		1.28E-01
+	HG-203	279.19	77.30	7.93E-02	1.09E-01	1.09E-01
+	BI-207	569.67	97.72	-3.56E-02	5.28E-02	5.28E-02
		1063.62	74.90	4.36E-02		1.08E-01
+	TL-208	583.14	* 30.22	1.15E+00	1.96E-01	3.27E-01
		860.37	4.48	3.36E-01		1.87E+00
		2614.66	* 35.85	9.55E-01		1.96E-01
+	BI-210M	262.00	45.00	4.02E-02	1.22E-01	1.22E-01
		300.00	23.00	1.56E-01		2.52E-01
+	PB-210	46.50	4.25	2.95E+00	2.48E+00	2.48E+00
+	PB-211	404.84	2.90	-1.00E+00	1.97E+00	1.97E+00
		831.96	2.90	-9.97E-01		2.59E+00
+	BI-212	727.17	* 11.80	1.07E+00	8.45E-01	8.45E-01
		1620.62	2.75	1.02E+00		2.91E+00
+	PB-212	238.63	* 44.60	1.43E+00	2.43E-01	2.43E-01
		300.09	* 3.41	1.28E+00		2.90E+00
+	BI-214	609.31	* 46.30	1.00E+00	1.85E-01	1.85E-01
		1120.29	* 15.10	1.36E+00		7.98E-01
		1764.49	* 15.80	1.02E+00		5.22E-01
		2204.22	4.98	6.32E-01		1.69E+00
+	PB-214	295.21	* 19.19	1.03E+00	2.05E-01	5.01E-01
		351.92	* 37.19	9.59E-01		2.05E-01
+	RN-219	401.80	6.50	2.14E-01	8.84E-01	8.84E-01
+	RA-223	323.87	3.88	7.02E-01	1.40E+00	1.40E+00
+	RA-224	240.98	* 3.95	3.96E+00	2.76E+00	2.76E+00
+	RA-225	40.00	31.00	3.08E-01	1.63E+00	1.63E+00
+	RA-226	186.21	* 3.28	2.98E+00	2.20E+00	2.20E+00

Analysis Report for 1510084-13
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-227	50.10		8.40	1.16E-01	6.88E-01	8.76E-01
		236.00		11.50	-4.24E+00		6.88E-01
		256.20		6.30	-9.20E-02		8.09E-01
+	AC-228	338.32	*	11.40	1.38E+00	3.05E-01	7.38E-01
		911.07	*	27.70	1.24E+00		3.05E-01
		969.11	*	16.60	1.19E+00		9.59E-01
+	TH-230	48.44		16.90	-3.78E-01	4.79E-01	4.79E-01
		62.85		4.60	1.31E+00		1.26E+00
		67.67		0.37	4.62E+00		1.26E+01
+	PA-231	283.67		1.60	5.41E-01	2.29E+00	3.35E+00
		302.67		2.30	5.47E-01		2.29E+00
+	TH-231	25.64		14.70	-8.54E+00	7.01E-01	1.46E+01
		84.21		6.40	5.72E-01		7.01E-01
+	PA-233	311.98		38.60	9.22E-02	2.73E-01	2.73E-01
+	PA-234	131.20		20.40	1.64E-01	2.48E-01	2.48E-01
		733.99		8.80	-2.04E-01		7.99E-01
		946.00		12.00	8.95E-02		6.35E-01
+	PA-234M	1001.03	*	0.92	6.00E+00	9.89E+00	9.89E+00
+	TH-234	63.29	*	3.80	1.68E+00	2.55E+00	2.55E+00
+	U-235	143.76		10.50	-3.11E-01	4.51E-01	4.51E-01
		163.35		4.70	-4.90E-03		1.06E+00
		205.31		4.70	6.55E-01		1.15E+00
+	NP-237	86.50	*	12.60	3.12E-01	4.08E-01	4.08E-01
+	NP-239	106.10		22.70	-9.65E+00	4.48E+02	4.48E+02
		228.18		10.70	-3.28E+02		1.09E+03
		277.60		14.10	4.06E+02		8.62E+02
+	AM-241	59.54		35.90	-3.98E-02	1.44E-01	1.44E-01
+	AM-243	74.67		66.00	-1.62E-01	1.01E-01	1.01E-01
+	CM-243	209.75	*	3.29	1.56E+00	4.36E-01	1.91E+00
		228.14		10.60	-1.53E-01		5.08E-01
		277.60	*	14.00	2.39E-01		4.36E-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

Analysis Report for 1510084-13
CP0604S28-29

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	6.61E-01	6.61E-01	-4.48E-01	3.08E-01
NA-22	1274.54	99.94	8.53E-02	8.53E-02	-1.36E-03	3.90E-02
NA-24	1368.53	99.99	2.71E+11	1.32E+11	4.18E+10	1.21E+11
	2754.09	99.86	1.32E+11		0.00E+00	4.95E+10
AL-26	1808.65	99.76	5.28E-02	5.28E-02	-1.54E-02	2.19E-02
+ K-40	1460.81	* 10.67	1.19E+00	1.19E+00	1.96E+01	5.57E-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	4.93E-02	4.93E-02	1.81E-02	2.39E-02
	78.34	96.00	7.18E-02		2.41E-01	3.52E-02
SC-46	889.25	99.98	9.30E-02	9.30E-02	-1.40E-02	4.31E-02
	1120.51	99.99	1.70E-01		3.05E-01	8.08E-02
V-48	983.52	99.98	2.31E-01	2.31E-01	-1.63E-01	1.06E-01
	1312.10	97.50	2.41E-01		-6.56E-02	1.09E-01
CR-51	320.08	9.83	9.77E-01	9.77E-01	1.30E-01	4.64E-01
MN-54	834.83	99.97	8.37E-02	8.37E-02	-1.37E-02	3.91E-02
CO-56	846.75	99.96	9.21E-02	9.21E-02	2.14E-02	4.28E-02
	1037.75	14.03	6.38E-01		-2.23E-01	2.91E-01
	1238.25	67.00	2.27E-01		1.57E-01	1.07E-01
	1771.40	15.51	4.65E-01		-2.29E-02	1.96E-01
	2598.48	16.90	3.32E-01		-2.19E-02	1.32E-01
CO-57	122.06	85.51	5.84E-02	5.84E-02	2.07E-02	2.83E-02
	136.48	10.60	4.79E-01		-1.05E-01	2.32E-01
CO-58	810.76	99.40	8.33E-02	8.33E-02	-2.50E-02	3.84E-02
FE-59	1099.22	56.50	2.28E-01	2.28E-01	3.05E-02	1.06E-01
	1291.56	43.20	2.90E-01		-7.94E-02	1.32E-01
CO-60	1173.22	100.00	8.56E-02	6.82E-02	3.17E-02	3.94E-02
	1332.49	100.00	6.82E-02		-1.47E-02	3.03E-02
ZN-65	1115.52	50.75	1.91E-01	1.91E-01	3.19E-02	8.87E-02
GA-67	93.31	35.70	4.22E+01	4.22E+01	2.77E+01	2.06E+01
	208.95	2.24	6.69E+02		2.33E+02	3.24E+02
	300.22	16.00	9.28E+01		5.76E+01	4.45E+01
SE-75	121.11	16.70	3.27E-01	9.41E-02	5.47E-02	1.59E-01
	136.00	59.20	9.41E-02		3.68E-03	4.56E-02
	264.65	59.80	1.06E-01		-2.10E-02	5.07E-02
	279.53	25.20	2.47E-01		-2.50E-01	1.18E-01
	400.65	11.40	5.90E-01		3.92E-01	2.80E-01
RB-82	776.52	13.00	1.01E+00	1.01E+00	-1.96E-01	4.69E-01
RB-83	520.41	46.00	1.30E-01	1.30E-01	2.30E-02	6.04E-02
	529.64	30.30	2.23E-01		-1.88E-02	1.04E-01
	552.65	16.40	4.20E-01		6.58E-02	1.96E-01
KR-85	513.99	0.43	1.56E+01	1.56E+01	-9.13E+00	7.38E+00
SR-85	513.99	99.27	8.96E-02	8.96E-02	-5.25E-02	4.24E-02
Y-88	898.02	93.40	8.66E-02	6.94E-02	-1.75E-02	3.99E-02
	1836.01	99.38	6.94E-02		1.41E-02	2.93E-02
NB-93M	16.57	9.43	5.37E+03	5.37E+03	-8.11E+03	2.61E+03

Analysis Report for 1510084-13

CP0604S28-29

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94	702.63	100.00	7.50E-02	6.01E-02	-1.30E-02	3.53E-02
	871.10	100.00	6.01E-02		-5.65E-02	2.74E-02
NB-95	765.79	99.81	1.36E-01	1.36E-01	0.00E+00	6.37E-02
NB-95M	235.69	25.00	4.75E+01	4.75E+01	-2.93E+02	2.31E+01
ZR-95	724.18	43.70	2.90E-01	1.73E-01	2.80E-03	1.38E-01
	756.72	55.30	1.73E-01		3.41E-02	8.07E-02
MO-99	181.06	6.20	6.07E+02	4.31E+02	2.51E+02	2.93E+02
	739.58	12.80	4.31E+02		8.65E+01	2.02E+02
	778.00	4.50	1.06E+03		-3.40E+02	4.93E+02
RU-103	497.08	89.00	9.06E-02	9.06E-02	2.40E-02	4.22E-02
RU-106	621.84	9.80	6.98E-01	6.98E-01	-1.74E-01	3.27E-01
AG-108M	433.93	89.90	4.95E-02	4.95E-02	-3.45E-02	2.30E-02
	614.37	90.40	8.05E-02		-1.72E-01	3.80E-02
	722.95	90.50	8.71E-02		-8.95E-03	4.10E-02
+ CD-109	88.03	* 3.72	1.44E+00	1.44E+00	1.10E+00	7.01E-01
AG-110M	657.75	93.14	7.99E-02	7.99E-02	-1.15E-05	3.75E-02
	677.61	10.53	6.31E-01		-4.35E-01	2.93E-01
	706.67	16.46	4.81E-01		-1.03E-01	2.26E-01
	763.93	21.98	3.40E-01		6.33E-03	1.58E-01
	884.67	71.63	1.11E-01		-3.34E-03	5.15E-02
	1384.27	23.94	2.71E-01		7.00E-02	1.18E-01
CD-113M	263.70	0.02	2.31E+02	2.31E+02	-7.46E+01	1.11E+02
SN-113	255.12	1.93	3.06E+00	9.66E-02	-3.80E-01	1.46E+00
	391.69	64.90	9.66E-02		-5.25E-02	4.57E-02
TE123M	159.00	84.10	6.79E-02	6.79E-02	1.97E-02	3.28E-02
SB-124	602.71	97.87	9.45E-02	9.45E-02	-1.16E-01	4.45E-02
	645.85	7.26	1.24E+00		-5.96E-03	5.81E-01
	722.78	11.10	9.59E-01		-9.85E-02	4.52E-01
	1691.02	49.00	1.67E-01		6.42E-02	7.14E-02
	I-125	35.49	6.49	5.40E+00	5.40E+00	8.30E-01	2.62E+00
SB-125	176.33	6.89	7.35E-01	1.83E-01	9.86E-02	3.55E-01
	427.89	29.33	1.83E-01		7.61E-02	8.64E-02
	463.38	10.35	6.55E-01		6.06E-01	3.12E-01
	600.56	17.80	3.78E-01		-1.31E-01	1.78E-01
	635.90	11.32	6.10E-01		1.47E-01	2.86E-01
SB-126	414.70	83.30	2.64E-01	2.64E-01	-1.13E-01	1.24E-01
	666.33	99.60	3.11E-01		1.05E-01	1.46E-01
	695.00	99.60	3.30E-01		7.46E-02	1.55E-01
	720.50	53.80	5.50E-01		-1.08E-01	2.57E-01
+ SN-126	87.57	* 37.00	1.39E-01	1.39E-01	1.06E-01	6.78E-02
SB-127	473.00	25.00	2.31E+01	2.05E+01	9.82E+00	1.08E+01
	685.20	35.70	2.05E+01		1.12E+00	9.57E+00
	783.80	14.70	5.97E+01		3.03E+01	2.80E+01
I-129	29.78	57.00	1.19E+00	1.19E+00	-6.50E-01	5.75E-01
	33.60	13.20	2.55E+00		-2.56E-01	1.24E+00
	39.58	7.52	2.06E+00		3.90E-01	1.00E+00
I-131	284.30	6.05	8.41E+00	6.01E-01	1.36E+00	4.02E+00
	364.48	81.20	6.01E-01		-2.97E-01	2.84E-01
	636.97	7.26	8.56E+00		-6.50E-02	4.01E+00
	722.89	1.80	4.15E+01		-4.27E+00	1.96E+01
TE-132	49.72	13.10	1.47E+02	1.57E+01	1.95E+01	7.13E+01
	228.16	88.00	1.57E+01		-4.74E+00	7.57E+00
BA-133	81.00	33.00	1.30E-01	8.89E-02	3.18E-02	6.28E-02

Analysis Report for 1510084-13
CP0604S28-29

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-133	302.84	17.80	2.98E-01	8.89E-02	7.10E-02	1.42E-01
	356.01	60.00	8.89E-02		-3.52E-02	4.22E-02
I-133	529.87	86.30	7.44E+07	7.44E+07	5.94E+06	3.48E+07
XE-133	81.00	38.00	3.53E+00	3.53E+00	8.66E-01	1.71E+00
CS-134	563.23	8.38	8.00E-01	8.13E-02	6.76E-01	3.77E-01
	569.32	15.43	3.42E-01		-2.30E-01	1.58E-01
	604.70	97.60	8.13E-02		-6.04E-01	3.86E-02
	795.84	85.40	9.65E-02		6.02E-02	4.53E-02
	801.93	8.73	7.38E-01		-4.66E-02	3.40E-01
CS-135	268.24	16.00	3.67E-01	3.67E-01	-1.28E-01	1.77E-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	2.74E+00	2.56E-01	1.48E+00	1.33E+00
	163.89	4.61	4.28E+00		1.16E+00	2.07E+00
	176.55	13.56	1.44E+00		-1.06E+00	6.96E-01
	273.65	12.66	1.62E+00		-3.40E+00	7.73E-01
	340.57	48.50	4.96E-01		-4.72E-01	2.37E-01
	818.50	99.70	2.56E-01		1.62E-02	1.18E-01
	1048.07	79.60	3.92E-01		6.66E-02	1.81E-01
	1235.34	19.70	2.30E+00		-1.78E-01	1.08E+00
CS-137	661.65	85.12	8.04E-02	8.04E-02	-5.62E-02	3.77E-02
LA-138	788.74	34.00	2.31E-01	1.01E-01	1.24E-01	1.08E-01
	1435.80	66.00	1.01E-01		4.98E-03	4.46E-02
CE-139	165.85	80.35	7.19E-02	7.19E-02	3.17E-02	3.48E-02
BA-140	162.64	6.70	3.04E+00	9.06E-01	-1.41E-02	1.47E+00
	304.84	4.50	4.63E+00		6.18E-02	2.20E+00
	423.70	3.20	6.71E+00		1.92E-01	3.16E+00
	437.55	2.00	1.09E+01		2.99E+00	5.14E+00
	537.32	25.00	9.06E-01		-3.27E-02	4.23E-01
LA-140	328.77	20.50	1.16E+00	3.29E-01	1.71E-01	5.56E-01
	487.03	45.50	4.73E-01		-1.17E-02	2.21E-01
	815.85	23.50	1.13E+00		2.87E-01	5.20E-01
	1596.49	95.49	3.29E-01		5.67E-02	1.46E-01
+ CE-141	145.44	* 48.40	2.03E-01	2.03E-01	1.19E-01	9.85E-02
CE-143	57.36	11.80	2.42E+05	8.95E+04	6.53E+04	1.17E+05
	293.26	42.00	8.95E+04		-1.31E+04	4.33E+04
	664.55	5.20	7.38E+05		3.28E+05	3.48E+05
CE-144	133.54	10.80	4.79E-01	4.79E-01	3.65E-02	2.32E-01
PM-144	476.78	42.00	1.23E-01	7.56E-02	-8.33E-02	5.72E-02
	618.01	98.60	7.56E-02		9.70E-03	3.56E-02
	696.49	99.49	8.00E-02		-2.04E-02	3.77E-02
PM-145	36.85	21.70	1.01E+00	5.18E-01	2.74E-01	4.89E-01
	37.36	39.70	5.18E-01		1.41E-01	2.51E-01
	42.30	15.10	7.96E-01		1.14E-01	3.86E-01
	72.40	2.31	2.02E+00		-3.88E-01	9.82E-01
PM-146	453.90	39.94	1.19E-01	1.19E-01	-9.23E-02	5.53E-02
	735.90	14.01	5.44E-01		2.14E-01	2.55E-01
	747.13	13.10	5.10E-01		-1.74E-01	2.37E-01
ND-147	91.11	28.90	1.10E+00	1.10E+00	1.16E+00	5.37E-01
	531.02	13.10	2.27E+00		1.04E+00	1.06E+00
PM-149	285.90	3.10	6.12E+03	6.12E+03	-2.98E+03	2.92E+03
EU-152	121.78	20.50	2.28E-01	2.28E-01	8.10E-02	1.11E-01

Analysis Report for 1510084-13

CP0604S28-29

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	244.69	5.40	9.81E-01	2.28E-01	-1.80E+00	4.71E-01
	344.27	19.13	2.61E-01		-5.91E-02	1.23E-01
	778.89	9.20	7.29E-01		8.62E-03	3.38E-01
	964.01	10.40	9.02E-01		4.17E-02	4.23E-01
	1085.78	7.22	1.11E+00		-5.08E-03	5.10E-01
	1112.02	9.60	9.24E-01		5.26E-01	4.28E-01
	1407.95	14.94	3.87E-01		-5.78E-02	1.68E-01
GD-153	97.43	31.30	1.56E-01	1.56E-01	4.18E-02	7.57E-02
	103.18	22.20	2.21E-01		-1.21E-01	1.07E-01
EU-154	123.07	40.50	1.14E-01	1.14E-01	1.36E-02	5.54E-02
	723.30	19.70	4.02E-01		-4.13E-02	1.90E-01
	873.19	11.50	5.78E-01		-2.35E-01	2.66E-01
	996.32	10.30	7.40E-01		-3.79E-01	3.41E-01
	1004.76	17.90	4.84E-01		-6.20E-02	2.25E-01
EU-155	1274.45	35.50	2.37E-01	1.99E-01	-3.77E-03	1.08E-01
	86.50	30.90	1.99E-01		-1.82E-01	9.73E-02
EU-156	105.30	20.70	2.30E-01	2.05E+00	1.01E-01	1.12E-01
	811.77	10.40	2.05E+00		-6.75E-01	9.46E-01
HO-166M	1153.47	7.20	4.33E+00	8.83E-02	1.15E+00	2.01E+00
	1230.71	8.90	3.22E+00		-4.80E-01	1.48E+00
	184.41	72.60	8.83E-02		4.35E-02	4.29E-02
	280.45	29.60	1.82E-01		-1.84E-01	8.69E-02
TM-171	410.94	11.10	5.13E-01	3.58E+01	1.37E-01	2.43E-01
	711.69	54.10	1.35E-01		4.81E-03	6.34E-02
	66.72	0.14	3.58E+01		4.94E+00	1.73E+01
HF-172	81.75	4.52	9.67E-01	4.04E-01	-7.19E-01	4.69E-01
	125.81	11.30	4.04E-01		-6.98E-01	1.96E-01
LU-172	181.53	20.60	3.71E+00	2.08E+00	7.90E-01	1.79E+00
	810.06	16.63	5.73E+00		-1.72E+00	2.64E+00
	912.12	15.25	1.36E+01		3.00E+01	6.54E+00
	1093.66	62.50	2.08E+00		-3.45E-01	9.62E-01
LU-173	100.72	5.24	9.04E-01	3.10E-01	7.02E-01	4.39E-01
	272.11	21.20	3.10E-01		3.49E-01	1.49E-01
HF-175	343.40	84.00	7.58E-02	7.58E-02	7.12E-04	3.58E-02
LU-176	88.34	13.30	4.74E-01	5.02E-02	7.01E-01	2.32E-01
	201.83	86.00	6.10E-02		-2.67E-02	2.94E-02
	306.78	94.00	5.02E-02		-3.42E-02	2.38E-02
TA-182	67.75	41.20	1.33E-01	1.33E-01	4.85E-02	6.42E-02
	1121.30	34.90	4.49E-01		6.87E-01	2.14E-01
	1189.05	16.23	6.84E-01		2.57E-01	3.17E-01
	1221.41	26.98	4.17E-01		3.54E-02	1.93E-01
	1231.02	11.44	9.10E-01		8.55E-02	4.19E-01
IR-192	308.46	29.68	2.04E-01	1.28E-01	-7.09E-02	9.69E-02
	468.07	48.10	1.28E-01		-5.27E-02	5.94E-02
HG-203	279.19	77.30	1.09E-01	1.09E-01	7.93E-02	5.23E-02
BI-207	569.67	97.72	5.28E-02	5.28E-02	-3.56E-02	2.45E-02
	1063.62	74.90	1.08E-01		4.36E-02	4.98E-02
+ TL-208	583.14	* 30.22	3.27E-01	1.96E-01	1.15E+00	1.57E-01
	860.37	4.48	1.87E+00		3.36E-01	8.74E-01
	2614.66	* 35.85	1.96E-01		9.55E-01	8.50E-02
BI-210M	262.00	45.00	1.22E-01	1.22E-01	4.02E-02	5.85E-02
	300.00	23.00	2.52E-01		1.56E-01	1.20E-01
PB-210	46.50	4.25	2.48E+00	2.48E+00	2.95E+00	1.21E+00

Analysis Report for 1510084-13
CP0604S28-29

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PB-211	404.84		2.90	1.97E+00	1.97E+00	-1.00E+00	9.32E-01
	831.96		2.90	2.59E+00		-9.97E-01	1.20E+00
+ BI-212	727.17	*	11.80	8.45E-01	8.45E-01	1.07E+00	4.03E-01
	1620.62		2.75	2.91E+00		1.02E+00	1.30E+00
+ PB-212	238.63	*	44.60	2.43E-01	2.43E-01	1.43E+00	1.19E-01
	300.09	*	3.41	2.90E+00		1.28E+00	1.41E+00
+ BI-214	609.31	*	46.30	1.85E-01	1.85E-01	1.00E+00	8.80E-02
	1120.29	*	15.10	7.98E-01		1.36E+00	3.77E-01
	1764.49	*	15.80	5.22E-01		1.02E+00	2.33E-01
	2204.22		4.98	1.69E+00		6.32E-01	7.48E-01
+ PB-214	295.21	*	19.19	5.01E-01	2.05E-01	1.03E+00	2.44E-01
	351.92	*	37.19	2.05E-01		9.59E-01	9.89E-02
RN-219	401.80		6.50	8.84E-01	8.84E-01	2.14E-01	4.19E-01
RA-223	323.87		3.88	1.40E+00	1.40E+00	7.02E-01	6.69E-01
+ RA-224	240.98	*	3.95	2.76E+00	2.76E+00	3.96E+00	1.35E+00
RA-225	40.00		31.00	1.63E+00	1.63E+00	3.08E-01	7.91E-01
+ RA-226	186.21	*	3.28	2.20E+00	2.20E+00	2.98E+00	1.07E+00
TH-227	50.10		8.40	8.76E-01	6.88E-01	1.16E-01	4.24E-01
	236.00		11.50	6.88E-01		-4.24E+00	3.35E-01
	256.20		6.30	8.09E-01		-9.20E-02	3.87E-01
+ AC-228	338.32	*	11.40	7.38E-01	3.05E-01	1.38E+00	3.58E-01
	911.07	*	27.70	3.05E-01		1.24E+00	1.42E-01
	969.11	*	16.60	9.59E-01		1.19E+00	4.62E-01
TH-230	48.44		16.90	4.79E-01	4.79E-01	-3.78E-01	2.32E-01
	62.85		4.60	1.26E+00		1.31E+00	6.12E-01
	67.67		0.37	1.26E+01		4.62E+00	6.11E+00
PA-231	283.67		1.60	3.35E+00	2.29E+00	5.41E-01	1.60E+00
	302.67		2.30	2.29E+00		5.47E-01	1.09E+00
TH-231	25.64		14.70	1.46E+01	7.01E-01	-8.54E+00	7.05E+00
	84.21		6.40	7.01E-01		5.72E-01	3.40E-01
PA-233	311.98		38.60	2.73E-01	2.73E-01	9.22E-02	1.30E-01
PA-234	131.20		20.40	2.48E-01	2.48E-01	1.64E-01	1.20E-01
	733.99		8.80	7.99E-01		-2.04E-01	3.73E-01
	946.00		12.00	6.35E-01		8.95E-02	2.94E-01
+ PA-234M	1001.03	*	0.92	9.89E+00	9.89E+00	6.00E+00	4.62E+00
+ TH-234	63.29	*	3.80	2.55E+00	2.55E+00	1.68E+00	1.25E+00
U-235	143.76		10.50	4.51E-01	4.51E-01	-3.11E-01	2.18E-01
	163.35		4.70	1.06E+00		-4.90E-03	5.11E-01
	205.31		4.70	1.15E+00		6.55E-01	5.54E-01
+ NP-237	86.50	*	12.60	4.08E-01	4.08E-01	3.12E-01	1.99E-01
NP-239	106.10		22.70	4.48E+02	4.48E+02	-9.65E+00	2.18E+02
	228.18		10.70	1.09E+03		-3.28E+02	5.24E+02
	277.60		14.10	8.62E+02		4.06E+02	4.13E+02
AM-241	59.54		35.90	1.44E-01	1.44E-01	-3.98E-02	6.97E-02
AM-243	74.67		66.00	1.01E-01	1.01E-01	-1.62E-01	4.95E-02
+ CM-243	209.75	*	3.29	1.91E+00	4.36E-01	1.56E+00	9.26E-01
	228.14		10.60	5.08E-01		-1.53E-01	2.44E-01
	277.60	*	14.00	4.36E-01		2.39E-01	2.10E-01

Analysis Report for 1510084-13
CP0604S28-29

-
- + = 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: CP0604S28-29

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	6	16	30	47	183	
9:	589	1116	1054	445	620	1635	270	134	
17:	132	121	132	127	96	122	121	117	
25:	114	101	104	126	102	109	110	121	
33:	116	116	114	117	133	117	114	105	
41:	121	103	106	133	112	146	202	112	
49:	113	109	101	100	129	97	97	80	
57:	120	104	92	105	100	108	160	163	
65:	115	130	97	116	108	96	118	105	
73:	132	139	393	235	442	321	93	104	
81:	111	111	106	144	121	92	206	188	
89:	92	176	106	114	222	141	70	76	
97:	78	63	77	87	72	68	81	62	
105:	95	85	80	75	79	73	90	62	
113:	70	76	69	83	52	78	71	74	
121:	64	76	79	64	61	62	66	61	
129:	101	76	72	69	75	69	62	80	
137:	68	60	62	71	81	50	45	92	
145:	64	61	69	51	61	66	69	73	
153:	67	72	67	56	62	57	60	69	
161:	50	54	64	76	51	52	58	65	
169:	46	61	36	42	46	59	65	48	
177:	53	44	55	68	54	58	54	43	
185:	98	174	100	50	46	54	57	64	
193:	56	57	49	57	49	44	47	48	
201:	56	51	45	50	63	62	39	54	
209:	98	60	47	48	36	32	50	43	
217:	54	43	52	49	48	53	36	52	
225:	47	39	46	42	43	52	50	37	
233:	41	38	42	41	43	307	529	101	
241:	94	123	65	32	33	31	33	34	
249:	35	32	32	39	29	36	35	43	
257:	23	32	39	38	35	33	40	45	
265:	30	28	42	31	36	76	64	34	
273:	41	29	30	25	54	40	32	33	
281:	31	30	41	29	25	37	30	37	
289:	35	35	20	21	33	45	173	104	
297:	26	23	34	63	33	23	28	33	
305:	26	21	22	24	18	27	26	27	
313:	27	37	30	15	26	29	31	15	
321:	18	25	20	33	36	25	25	43	
329:	30	23	34	32	31	24	25	17	
337:	35	109	87	21	21	18	16	26	
345:	22	23	29	26	23	23	97	279	
353:	76	20	24	30	16	25	34	16	
361:	27	22	18	25	29	10	25	23	

369: 22 21 14 25 13 25 28 33

Sample Title: CP0604S28-29

Channel	1	2	3	4	5	6	7	8
377:	26	15	29	14	17	18	20	22
385:	15	19	14	19	24	19	21	24
393:	17	21	27	16	15	15	19	19
401:	32	28	18	17	21	24	31	27
409:	24	18	16	30	20	17	14	11
417:	23	18	21	19	16	14	15	19
425:	17	21	17	16	21	12	16	6
433:	15	14	13	11	17	22	22	17
441:	12	18	12	19	14	17	12	15
449:	23	19	20	14	15	14	13	6
457:	15	21	13	14	17	26	49	20
465:	14	20	12	12	7	11	17	13
473:	15	18	11	17	8	12	15	25
481:	13	14	10	16	10	18	16	15
489:	11	14	16	13	11	11	11	19
497:	16	6	12	10	11	13	11	9
505:	20	13	12	16	28	61	93	43
513:	28	12	18	9	10	12	9	10
521:	15	8	10	9	14	14	14	9
529:	17	14	14	15	14	11	10	15
537:	16	16	10	16	13	18	12	10
545:	12	14	9	12	13	9	17	12
553:	11	17	6	17	9	12	15	8
561:	14	15	23	17	21	13	5	5
569:	14	14	15	19	9	8	10	8
577:	13	11	15	17	13	59	141	63
585:	16	15	11	10	9	13	10	7
593:	11	14	14	11	11	19	13	16
601:	9	6	9	11	19	19	11	40
609:	197	106	10	14	16	14	13	15
617:	16	16	10	13	9	8	13	8
625:	15	12	7	15	14	6	14	7
633:	13	14	9	17	8	6	13	7
641:	12	10	6	12	9	10	8	16
649:	14	7	14	9	11	11	13	11
657:	10	11	8	16	10	12	11	8
665:	19	18	12	8	8	9	9	10
673:	12	10	8	11	7	10	6	7
681:	13	13	10	10	11	5	10	9
689:	10	8	11	15	11	10	13	15
697:	12	13	13	12	18	12	12	10
705:	7	16	11	11	13	10	12	10
713:	8	14	9	9	9	9	10	6
721:	8	14	11	13	10	27	50	20
729:	11	8	11	4	8	12	8	10
737:	15	12	14	5	15	10	12	9
745:	10	6	6	9	9	9	11	8
753:	8	10	19	13	6	7	5	9
761:	7	9	10	7	10	5	14	20
769:	19	10	7	7	10	6	11	5
777:	6	8	6	7	12	11	13	4
785:	20	10	10	12	7	7	10	8
793:	6	20	25	8	10	4	6	6

801: 7 6 7 9 5 12 5 11

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Channel	1	2	3	4	5	6	7	8
809:	7	10	3	3	8	6	10	7
817:	4	8	4	7	7	5	7	6
825:	6	8	6	6	10	6	12	11
833:	7	6	11	18	12	5	12	13
841:	14	9	4	5	6	9	11	14
849:	9	10	7	8	9	8	7	8
857:	13	8	10	18	12	5	9	12
865:	10	12	9	5	4	13	3	2
873:	6	3	8	9	6	16	5	10
881:	7	4	7	10	7	10	10	10
889:	7	4	6	9	7	11	4	8
897:	8	5	3	5	12	5	7	10
905:	6	6	5	9	11	42	96	38
913:	6	4	3	4	10	1	7	6
921:	6	2	3	11	7	9	1	10
929:	10	3	7	5	7	12	14	12
937:	9	12	7	7	2	7	6	9
945:	6	6	7	11	7	6	11	6
953:	7	12	6	5	4	11	9	10
961:	7	5	10	20	14	7	15	42
969:	55	23	6	17	6	8	6	5
977:	6	8	8	5	7	8	9	5
985:	6	6	14	9	9	5	4	12
993:	10	8	6	7	3	7	6	10
1001:	10	19	8	8	5	6	5	6
1009:	7	6	6	3	4	5	8	8
1017:	3	13	8	7	2	6	3	4
1025:	6	5	4	7	5	11	11	5
1033:	9	2	10	4	7	5	5	5
1041:	9	5	5	5	10	7	6	3
1049:	6	5	10	10	3	5	5	3
1057:	5	7	4	14	9	3	6	4
1065:	6	6	3	6	13	4	11	9
1073:	10	6	5	6	5	6	10	2
1081:	5	4	8	6	5	8	5	9
1089:	7	11	5	8	6	8	12	4
1097:	8	10	7	8	5	10	5	3
1105:	5	4	7	3	4	11	9	7
1113:	9	11	3	7	7	12	26	46
1121:	33	4	7	1	8	4	3	6
1129:	5	9	10	10	8	4	8	5
1137:	7	3	4	7	9	9	11	8
1145:	2	6	7	4	12	6	4	8
1153:	10	14	8	9	6	6	5	2
1161:	9	4	7	6	8	3	5	5
1169:	6	7	5	8	9	3	5	8
1177:	5	3	10	11	9	14	4	8
1185:	7	9	14	7	2	8	7	9
1193:	5	5	8	5	9	5	6	6
1201:	10	8	11	13	9	9	10	14
1209:	9	3	5	15	14	9	7	7
1217:	9	10	11	4	8	6	7	9
1225:	10	4	5	8	5	6	9	2

1233: 9 7 7 8 16 30 10 10

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Channel	1	2	3	4	5	6	7	8
1241:	7	7	9	7	6	8	6	6
1249:	6	10	4	3	5	11	9	4
1257:	3	7	6	3	5	6	3	9
1265:	8	5	6	5	3	8	4	7
1273:	4	8	2	4	9	7	4	6
1281:	8	4	3	7	6	5	8	4
1289:	4	7	7	4	6	5	7	6
1297:	4	3	8	5	2	8	1	4
1305:	3	2	5	6	5	3	4	2
1313:	5	6	4	6	4	2	3	6
1321:	0	4	5	6	3	3	3	6
1329:	2	5	0	6	7	2	0	4
1337:	3	1	4	5	4	1	0	6
1345:	2	2	1	0	1	1	3	3
1353:	2	7	6	3	1	4	1	4
1361:	5	3	4	2	2	7	4	1
1369:	6	3	2	3	3	1	5	6
1377:	9	12	4	4	3	0	0	4
1385:	3	3	3	2	1	1	1	5
1393:	2	2	1	2	1	1	4	2
1401:	3	3	4	0	3	0	5	4
1409:	1	1	0	1	2	2	2	4
1417:	2	3	2	1	2	1	4	1
1425:	4	0	6	2	2	2	7	2
1433:	2	5	3	1	2	4	1	1
1441:	4	2	3	1	0	7	1	5
1449:	2	3	1	2	2	2	1	1
1457:	8	16	94	275	246	97	9	1
1465:	2	4	2	2	1	2	3	1
1473:	2	3	1	2	1	3	2	1
1481:	2	2	4	0	1	1	1	1
1489:	1	4	2	3	2	4	3	2
1497:	0	2	2	1	4	4	1	2
1505:	1	2	2	3	4	3	2	1
1513:	1	1	3	0	4	1	0	3
1521:	2	3	2	0	1	2	3	0
1529:	0	2	4	0	6	3	1	2
1537:	1	0	5	2	1	2	2	1
1545:	1	3	1	1	3	1	0	0
1553:	3	0	3	2	2	1	1	1
1561:	2	0	2	0	0	4	3	0
1569:	3	1	0	0	0	0	0	1
1577:	0	3	0	5	2	3	4	4
1585:	0	3	9	2	2	1	5	5
1593:	4	0	2	1	3	2	2	3
1601:	1	1	2	3	1	1	1	2
1609:	2	1	0	2	3	4	1	1
1617:	5	1	2	3	6	3	0	3
1625:	0	2	0	3	6	4	0	1
1633:	1	2	1	1	1	1	0	2
1641:	2	0	6	2	4	0	2	1
1649:	1	1	0	2	1	7	2	1
1657:	0	0	2	4	0	3	1	1

1665: 2 1 1 1 2 1 0 1

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Channel	1	2	3	4	5	6	7	8
1673:	2	2	0	0	0	1	1	1
1681:	3	1	2	0	0	2	1	0
1689:	1	2	2	1	1	2	1	1
1697:	0	1	3	2	1	2	3	1
1705:	0	1	2	3	1	0	2	3
1713:	0	1	1	2	1	1	0	0
1721:	1	2	0	3	1	0	2	5
1729:	5	2	1	0	2	0	1	3
1737:	3	2	3	0	1	2	2	2
1745:	1	2	2	2	0	1	2	0
1753:	1	3	1	0	2	2	3	2
1761:	0	3	21	19	13	2	1	2
1769:	0	0	2	2	2	1	0	2
1777:	1	1	4	0	1	0	0	1
1785:	3	1	0	1	0	0	0	1
1793:	1	0	0	1	0	1	2	1
1801:	0	2	0	2	1	0	3	1
1809:	1	0	0	0	3	0	2	1
1817:	1	2	2	1	0	0	0	2
1825:	1	1	1	0	0	1	1	0
1833:	3	1	1	1	1	2	0	0
1841:	1	2	1	1	2	3	5	1
1849:	1	2	1	2	0	0	3	0
1857:	0	2	1	1	1	1	0	2
1865:	0	1	2	2	0	1	1	1
1873:	1	2	0	0	0	1	0	2
1881:	4	1	3	1	2	0	4	1
1889:	2	2	2	2	0	2	1	3
1897:	2	1	4	0	0	0	2	0
1905:	3	0	0	1	2	1	1	2
1913:	0	1	2	0	1	1	0	0
1921:	0	1	1	2	0	0	2	3
1929:	0	0	0	0	1	3	2	0
1937:	2	1	0	1	2	0	1	0
1945:	0	2	0	0	1	0	1	2
1953:	1	3	2	0	1	0	0	3
1961:	1	1	0	1	0	0	1	2
1969:	1	1	1	1	0	2	1	1
1977:	0	1	0	0	0	1	0	0
1985:	2	2	0	1	1	0	3	3
1993:	0	1	1	2	1	0	1	0
2001:	0	0	0	2	0	0	0	1
2009:	0	1	0	2	0	0	1	0
2017:	0	0	0	1	1	0	0	1
2025:	2	1	0	2	1	1	1	0
2033:	1	1	1	1	0	4	2	0
2041:	0	2	2	0	1	0	2	0
2049:	0	1	1	1	1	0	0	1
2057:	0	1	1	0	1	1	0	0
2065:	3	1	1	2	2	2	0	0
2073:	0	2	3	0	0	0	1	0
2081:	0	0	1	3	0	0	0	2
2089:	2	0	1	2	0	0	2	0

2097: 0 2 3 1 3 5 0 7

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

2529: 0 0 2 0 0 1 1 0

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2537:	0	1	0	0	1	0	1	1
2545:	0	0	0	0	1	0	0	1
2553:	1	0	1	0	0	1	0	0
2561:	0	1	0	0	0	0	1	0
2569:	0	0	0	0	0	0	0	1
2577:	0	0	0	0	0	0	0	0
2585:	0	0	1	0	0	0	0	0
2593:	0	1	0	0	0	0	2	1
2601:	1	0	2	2	0	0	0	0
2609:	0	2	7	27	31	24	18	3
2617:	1	1	1	1	0	1	0	0
2625:	0	0	0	0	0	1	0	1
2633:	0	0	1	0	0	0	0	2
2641:	0	0	0	0	0	2	0	1
2649:	0	0	0	1	0	1	0	0
2657:	0	0	0	0	1	0	0	0
2665:	0	0	0	1	2	0	0	1
2673:	0	0	0	0	1	0	1	0
2681:	0	0	0	0	0	1	2	0
2689:	0	1	0	0	1	0	0	1
2697:	1	1	1	0	0	1	0	0
2705:	0	1	0	0	0	0	0	1
2713:	0	0	0	0	1	0	0	0
2721:	0	0	0	0	0	0	0	1
2729:	0	1	1	0	0	0	1	2
2737:	0	1	0	1	0	0	0	0
2745:	0	0	1	0	1	0	0	0
2753:	0	0	2	0	0	1	0	0
2761:	2	0	0	0	0	0	0	0
2769:	2	0	0	0	0	0	0	0
2777:	0	0	2	0	0	0	0	0
2785:	0	1	0	0	0	0	0	0
2793:	0	0	1	0	0	0	0	0
2801:	0	1	1	0	0	0	1	1
2809:	0	1	0	1	0	1	0	1
2817:	0	0	0	0	0	0	0	0
2825:	0	0	0	0	1	0	0	0
2833:	0	1	0	0	1	0	1	1
2841:	0	0	1	0	0	1	0	0
2849:	0	2	0	1	2	0	1	0
2857:	1	0	1	1	0	0	0	0
2865:	0	1	0	0	0	0	0	0
2873:	0	0	0	1	0	0	0	0
2881:	0	0	0	0	2	0	1	0
2889:	0	0	0	0	0	1	0	0
2897:	0	0	0	0	0	0	0	1
2905:	0	0	0	0	0	1	0	0
2913:	0	0	2	0	0	0	0	0
2921:	0	0	0	1	1	0	0	0
2929:	1	1	1	0	0	0	0	0
2937:	0	0	0	0	0	1	0	0
2945:	0	0	1	0	1	0	0	2
2953:	2	0	1	0	0	0	0	1

2961: 0 0 0 0 0 0 0 0 1

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2969:	0	0	0	0	0	1	0	0
2977:	0	0	0	0	0	0	1	1
2985:	0	0	0	0	0	0	0	0
2993:	1	0	0	0	0	0	0	0
3001:	0	0	0	0	0	0	0	0
3009:	2	0	0	0	0	1	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	1	0	0	0	0
3033:	0	1	0	0	0	0	0	1
3041:	0	0	0	0	0	0	0	0
3049:	1	0	1	1	1	0	1	0
3057:	1	0	0	0	0	0	0	0
3065:	0	2	0	0	0	0	0	0
3073:	0	0	0	1	0	0	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:	1	0	0	0	0	0	1	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	0	0	0	0	0	3
3129:	0	0	0	0	0	0	0	1
3137:	0	0	0	0	0	0	0	0
3145:	0	1	0	0	0	0	0	0
3153:	0	1	0	0	1	0	0	0
3161:	0	0	1	1	0	0	1	0
3169:	0	1	1	0	0	0	0	0
3177:	1	0	0	0	0	0	0	0
3185:	0	0	0	0	1	1	0	0
3193:	1	0	0	1	1	1	0	0
3201:	1	0	1	0	0	0	0	0
3209:	0	0	0	0	0	1	0	0
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	0
3241:	0	0	0	0	0	0	0	0
3249:	1	0	0	0	0	0	0	0
3257:	1	0	0	0	0	0	0	0
3265:	1	0	0	0	2	0	0	0
3273:	0	1	0	0	0	0	0	0
3281:	0	1	0	0	1	0	0	0
3289:	0	0	1	0	0	1	1	0
3297:	0	0	0	0	0	0	0	0
3305:	1	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0
3321:	0	1	0	0	0	0	0	0
3329:	0	0	1	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	1	0	0	0	1
3353:	0	0	0	0	0	0	1	0
3361:	0	0	0	0	0	0	1	0
3369:	0	1	0	0	0	0	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	1	0	0	0

3393: 0 1 0 1 0 0 0 0

Sample Title: CP0604S28-29

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	1	0	0	0	1	0	0
3409:	0	0	1	0	0	0	0	0	0
3417:	0	0	0	0	0	1	0	0	0
3425:	0	0	1	1	0	0	0	0	0
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	1
3457:	0	0	0	0	0	1	0	0	0
3465:	0	1	0	1	0	0	1	0	0
3473:	0	0	1	0	1	0	1	0	0
3481:	0	0	0	1	0	0	0	0	0
3489:	0	0	0	0	0	0	1	0	0
3497:	0	0	0	0	0	0	0	0	0
3505:	0	0	0	0	1	0	0	0	0
3513:	0	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	1	0	0	0
3537:	0	0	1	1	1	0	0	0	0
3545:	0	0	1	0	0	0	0	0	0
3553:	1	0	0	0	0	0	0	0	0
3561:	0	0	0	1	0	1	0	0	0
3569:	0	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0	0
3585:	0	0	0	0	1	1	0	0	0
3593:	0	0	0	0	0	0	0	0	0
3601:	0	0	1	0	0	1	0	0	0
3609:	0	1	0	0	0	0	0	0	0
3617:	0	0	0	1	0	0	0	0	0
3625:	0	1	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0	0
3649:	0	0	1	0	0	0	0	0	1
3657:	0	0	0	0	1	0	0	0	0
3665:	0	0	0	0	0	0	0	0	0
3673:	0	1	0	1	0	2	0	0	0
3681:	0	0	0	0	0	0	0	0	0
3689:	0	0	1	0	0	0	0	0	0
3697:	0	0	0	1	0	0	0	0	1
3705:	0	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	1	0	1
3721:	0	0	0	1	1	0	0	0	0
3729:	0	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0	0
3753:	0	0	0	1	0	0	0	0	1
3761:	0	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	1	1	0	0
3777:	0	0	0	0	0	0	0	0	1
3785:	0	0	0	0	0	0	1	0	0
3793:	0	0	0	0	0	1	0	0	0
3801:	0	0	0	0	0	0	0	0	0
3809:	1	0	0	0	0	0	0	0	0
3817:	1	1	0	0	0	0	0	0	0

3825: 0 0 0 0 0 0 0 0

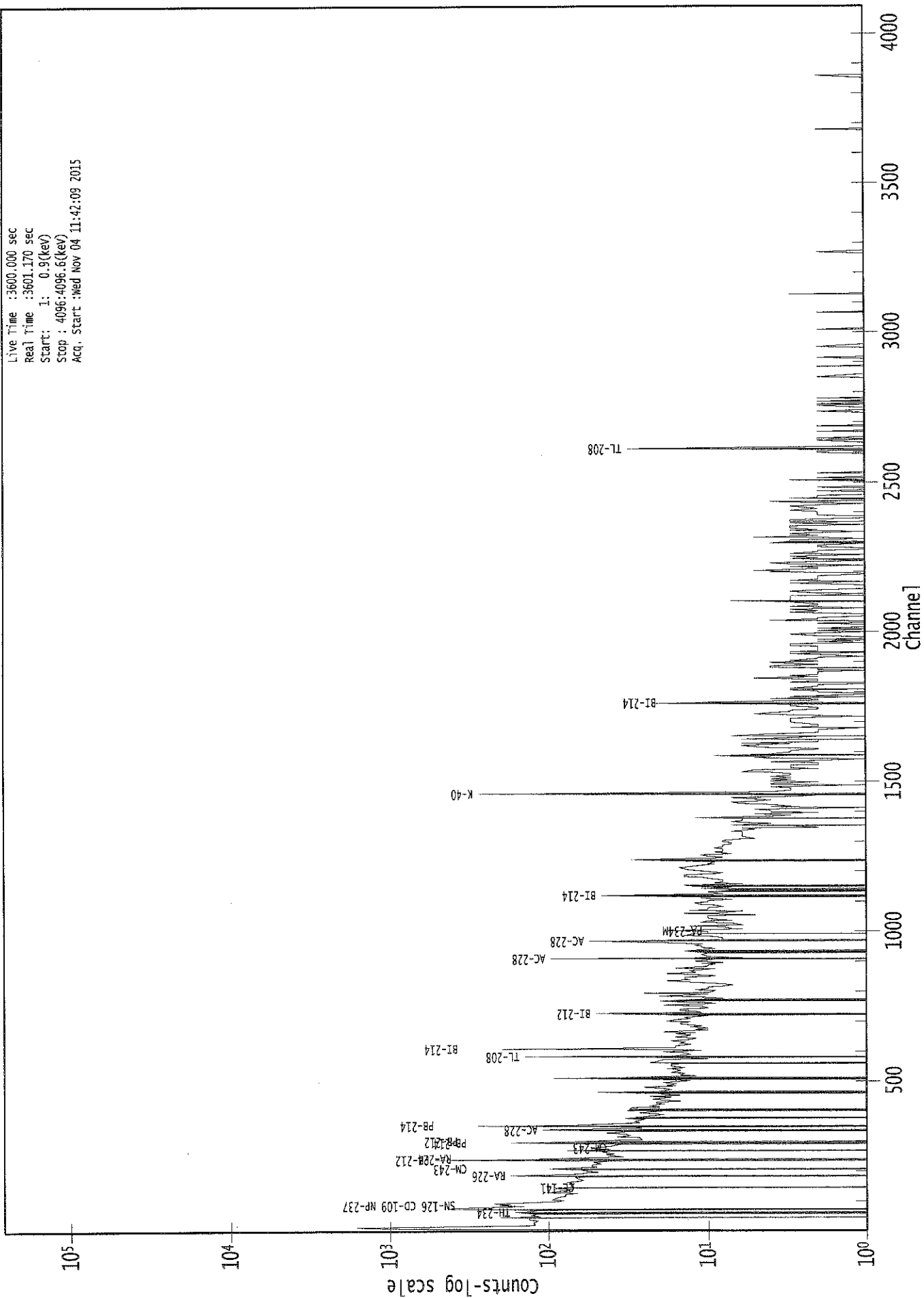
Sample Title: CP0604S28-29

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	1	0	0	0	0
3849:	0	0	1	0	1	0	0	0
3857:	0	0	0	2	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	1
3881:	0	1	0	0	0	0	0	0
3889:	1	0	0	0	0	0	0	0
3897:	0	0	0	1	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	1	1	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	1	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	1	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	1	0	0	0	1
4001:	0	0	0	0	0	1	0	0
4009:	0	0	0	0	0	0	0	1
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	1	0
4033:	0	0	0	0	0	1	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	0	0	0	0
4073:	0	0	0	0	0	0	0	1
4081:	0	0	0	0	0	0	0	0
4089:	0	0	1	0	0	0	0	0

0831A

0000029112.CNF

Live Time : 3600.000 sec
Real Time : 3601.170 sec
Start : 1: 0.9(keV)
Stop : 4096.4096.6(keV)
Acq. Start : Wed Nov 04 11:42:09 2015



*KCS
11/11/15*

Analysis Report for 1510084-14
CP1803S03-04

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-14
Sample Description : CP1803S03-04
Sample Type : SOIL

Sample Size : 5.942E+02 grams
Facility : Countroom

Sample Taken On : 10/10/2015 9:50:51AM
Acquisition Started : 11/4/2015 11:46:03AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3626.0 seconds

Dead Time : 0.72 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 9 - 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 : 29113

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

*AG
11/5/15*

Analysis Report for 1510084-14
 CP1803S03-04

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 12:46:30PM
 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	36.96	37.20	0.0000	0.00
2	46.63	46.86	0.0000	0.00
3	63.56	63.79	0.0000	0.00
4	76.08	76.29	0.0000	0.00
5	87.78	87.99	0.0000	0.00
6	93.23	93.44	0.0000	0.00
7	129.41	129.60	0.0000	0.00
8	186.21	186.37	0.0000	0.00
9	200.86	201.00	0.0000	0.00
10	209.20	209.35	0.0000	0.00
11	238.90	239.03	0.0000	0.00
12	241.88	242.01	0.0000	0.00
13	270.68	270.79	0.0000	0.00
14	295.57	295.67	0.0000	0.00
15	300.95	301.05	0.0000	0.00
16	338.78	338.85	0.0000	0.00
17	352.30	352.37	0.0000	0.00
18	410.31	410.35	0.0000	0.00
19	438.47	438.49	0.0000	0.00
20	462.94	462.96	0.0000	0.00
21	511.17	511.16	0.0000	0.00
22	583.71	583.66	0.0000	0.00
23	609.74	609.68	0.0000	0.00
24	727.32	727.21	0.0000	0.00
25	768.66	768.53	0.0000	0.00
26	795.47	795.33	0.0000	0.00
27	805.27	805.12	0.0000	0.00
28	912.02	911.82	0.0000	0.00
29	969.70	969.48	0.0000	0.00
30	1121.40	1121.12	0.0000	0.00
31	1156.32	1156.02	0.0000	0.00
32	1197.94	1197.62	0.0000	0.00
33	1234.37	1234.04	0.0000	0.00
34	1288.38	1288.03	0.0000	0.00
35	1298.67	1298.31	0.0000	0.00
36	1378.41	1378.02	0.0000	0.00
37	1401.45	1401.05	0.0000	0.00
38	1409.21	1408.81	0.0000	0.00
39	1461.70	1461.28	0.0000	0.00
40	1573.81	1573.35	0.0000	0.00
41	1595.51	1595.04	0.0000	0.00
42	1666.61	1666.12	0.0000	0.00

Analysis Report for 1510084-14
CP1803S03-04

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1677.50	1677.00	0.0000	0.00
44	1702.06	1701.55	0.0000	0.00
45	1718.92	1718.40	0.0000	0.00
46	1729.71	1729.19	0.0000	0.00
47	1765.43	1764.90	0.0000	0.00
48	1847.86	1847.30	0.0000	0.00
49	1863.26	1862.69	0.0000	0.00
50	2014.01	2013.40	0.0000	0.00
51	2103.95	2103.31	0.0000	0.00
52	2198.02	2197.35	0.0000	0.00
53	2206.06	2205.39	0.0000	0.00
54	2616.19	2615.41	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510084-14

CP1803S03-04

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 12:46:30PM

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	36.96	35 -	39	37.20	5.50E+01	61.27	7.86E+02	2.45
2	46.63	43 -	50	46.86	1.83E+02	98.26	1.49E+03	1.36
3	63.56	60 -	66	63.79	1.52E+02	107.77	2.01E+03	1.65
4	76.08	71 -	80	76.29	1.33E+03	156.13	2.71E+03	3.93
5	87.78	86 -	91	87.99	1.81E+02	99.08	1.83E+03	1.58
6	93.23	91 -	97	93.44	2.61E+02	104.64	1.70E+03	1.81
7	129.41	126 -	132	129.60	8.27E+01	78.28	1.05E+03	2.12
8	186.21	182 -	190	186.37	2.12E+02	87.79	1.05E+03	2.04
9	200.86	197 -	204	201.00	6.31E+01	72.88	8.42E+02	2.86
10	209.20	206 -	212	209.35	6.80E+01	66.56	7.56E+02	1.53
M 11	238.90	235 -	246	239.03	8.99E+02	73.41	4.49E+02	1.80
m 12	241.88	235 -	246	242.01	2.17E+02	83.74	5.83E+02	2.29
13	270.68	268 -	274	270.79	1.06E+02	50.19	3.81E+02	1.49
14	295.57	292 -	298	295.67	2.72E+02	58.36	4.19E+02	1.83
15	300.95	299 -	305	301.05	6.98E+01	47.64	3.64E+02	1.94
16	338.78	335 -	342	338.85	1.46E+02	56.43	4.35E+02	1.44
17	352.30	350 -	357	352.37	4.47E+02	62.96	3.60E+02	1.98
18	410.31	405 -	415	410.35	4.55E+01	54.32	3.71E+02	1.88
19	438.47	435 -	442	438.49	4.25E+01	37.68	2.09E+02	2.50
20	462.94	457 -	468	462.96	1.15E+02	51.15	2.69E+02	2.29
21	511.17	507 -	518	511.16	1.23E+02	57.03	3.54E+02	2.20
22	583.71	578 -	588	583.66	2.41E+02	56.48	2.97E+02	1.85
23	609.74	604 -	614	609.68	3.51E+02	58.17	2.64E+02	1.81
24	727.32	723 -	729	727.21	6.74E+01	30.87	1.21E+02	1.69
25	768.66	766 -	771	768.53	2.53E+01	25.73	1.09E+02	1.42
26	795.47	792 -	800	795.33	3.56E+01	30.64	1.25E+02	1.22
27	805.27	802 -	809	805.12	2.92E+01	27.50	1.04E+02	3.75
28	912.02	907 -	916	911.82	1.43E+02	37.96	1.23E+02	2.05
29	969.70	966 -	972	969.48	5.79E+01	31.34	1.30E+02	1.76
30	1121.40	1116 -	1126	1121.12	7.96E+01	34.95	1.19E+02	1.85
31	1156.32	1151 -	1161	1156.02	3.56E+01	33.04	1.27E+02	3.02
32	1197.94	1193 -	1201	1197.62	3.19E+01	24.90	7.42E+01	6.55
33	1234.37	1222 -	1243	1234.04	1.37E+02	49.08	1.43E+02	14.20
34	1288.38	1284 -	1292	1288.03	2.97E+01	22.16	5.45E+01	6.30
35	1298.67	1293 -	1306	1298.31	2.40E+01	25.79	6.41E+01	9.86
36	1378.41	1373 -	1382	1378.02	3.73E+01	16.97	1.94E+01	4.37
M 37	1401.45	1397 -	1414	1401.05	1.99E+01	16.67	3.07E+01	3.50
m 38	1409.21	1397 -	1414	1408.81	1.89E+01	20.83	4.85E+01	3.51
39	1461.70	1457 -	1467	1461.28	4.86E+02	49.69	6.54E+01	2.30
40	1573.81	1569 -	1576	1573.35	1.12E+01	8.25	3.62E+00	1.23

: 00836

Analysis Report for 1510084-14

CP1803S03-04

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1595.51	1591 - 1600		1595.04	2.37E+01	17.03	2.26E+01	7.24
42	1666.61	1658 - 1673		1666.12	1.83E+01	17.55	2.13E+01	9.69
43	1677.50	1675 - 1679		1677.00	5.00E+00	4.47	0.00E+00	1.50
44	1702.06	1696 - 1706		1701.55	2.00E+01	8.94	0.00E+00	6.65
45	1718.92	1716 - 1721		1718.40	7.70E+00	7.62	4.60E+00	3.64
46	1729.71	1724 - 1738		1729.19	1.64E+01	14.58	1.73E+01	4.42
47	1765.43	1760 - 1768		1764.90	6.46E+01	16.98	4.85E+00	2.52
48	1847.86	1844 - 1850		1847.30	8.00E+00	10.44	1.40E+01	2.00
49	1863.26	1859 - 1865		1862.69	6.38E+00	6.65	3.25E+00	2.65
50	2014.01	2010 - 2017		2013.40	1.00E+01	6.32	0.00E+00	1.12
51	2103.95	2099 - 2107		2103.31	1.60E+01	8.00	0.00E+00	3.61
52	2198.02	2194 - 2200		2197.35	5.43E+00	6.34	3.14E+00	1.89
53	2206.06	2201 - 2211		2205.39	1.10E+01	11.34	1.20E+01	2.60
54	2616.19	2610 - 2619		2615.41	8.30E+01	18.22	0.00E+00	2.47

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 : 11/4/2015 12:46:30PM

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	36.96	35 -	39	5.50E+01	61.27	7.86E+02	4.89E+01
2	46.63	43 -	50	1.83E+02	98.26	1.49E+03	7.77E+01
3	63.56	60 -	66	1.52E+02	107.77	2.01E+03	8.62E+01
4	76.08	71 -	80	1.33E+03	156.13	2.71E+03	1.13E+02
5	87.78	86 -	91	1.81E+02	99.08	1.83E+03	7.84E+01
6	93.23	91 -	97	2.61E+02	104.64	1.70E+03	8.18E+01
7	129.41	126 -	132	8.27E+01	78.28	1.05E+03	6.26E+01
8	186.21	182 -	190	2.12E+02	87.79	1.05E+03	6.81E+01
9	200.86	197 -	204	6.31E+01	72.88	8.42E+02	5.85E+01
10	209.20	206 -	212	6.80E+01	66.56	7.56E+02	5.30E+01
M 11	238.90	235 -	246	8.99E+02	73.41	4.49E+02	3.48E+01
m 12	241.88	235 -	246	2.17E+02	83.74	5.83E+02	3.97E+01
13	270.68	268 -	274	1.06E+02	50.19	3.81E+02	3.76E+01
14	295.57	292 -	298	2.72E+02	58.36	4.19E+02	3.96E+01

Analysis Report for 1510084-14

CP1803S03-04

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level	
15	300.95	299 -	305	6.98E+01	47.64	3.64E+02	3.67E+01	
16	338.78	335 -	342	1.46E+02	56.43	4.35E+02	4.19E+01	
17	352.30	350 -	357	4.47E+02	62.96	3.60E+02	3.83E+01	
18	410.31	405 -	415	4.55E+01	54.32	3.71E+02	4.33E+01	
19	438.47	435 -	442	4.25E+01	37.68	2.09E+02	2.91E+01	
20	462.94	457 -	468	1.15E+02	51.15	2.69E+02	3.82E+01	
21	511.17	507 -	518	1.23E+02	57.03	3.54E+02	4.32E+01	
22	583.71	578 -	588	2.41E+02	56.48	2.97E+02	3.88E+01	
23	609.74	604 -	614	3.51E+02	58.17	2.64E+02	3.66E+01	
24	727.32	723 -	729	6.74E+01	30.87	1.21E+02	2.15E+01	
25	768.66	766 -	771	2.53E+01	25.73	1.09E+02	1.95E+01	
26	795.47	792 -	800	3.56E+01	30.64	1.25E+02	2.32E+01	
27	805.27	802 -	809	2.92E+01	27.50	1.04E+02	2.08E+01	
28	912.02	907 -	916	1.43E+02	37.96	1.23E+02	2.43E+01	
29	969.70	966 -	972	5.79E+01	31.34	1.30E+02	2.25E+01	
30	1121.40	1116 -	1126	7.96E+01	34.95	1.19E+02	2.47E+01	
31	1156.32	1151 -	1161	3.56E+01	33.04	1.27E+02	2.53E+01	
32	1197.94	1193 -	1201	3.19E+01	24.90	7.42E+01	1.82E+01	
33	1234.37	1222 -	1243	1.37E+02	49.08	1.43E+02	3.54E+01	
34	1288.38	1284 -	1292	2.97E+01	22.16	5.45E+01	1.59E+01	
35	1298.67	1293 -	1306	2.40E+01	25.79	6.41E+01	1.96E+01	
36	1378.41	1373 -	1382	3.73E+01	16.97	1.94E+01	9.68E+00	
M	37	1401.45	1397 -	1414	1.99E+01	16.67	3.07E+01	9.11E+00
m	38	1409.21	1397 -	1414	1.89E+01	20.83	4.85E+01	1.14E+01
	39	1461.70	1457 -	1467	4.86E+02	49.69	6.54E+01	1.88E+01
	40	1573.81	1569 -	1576	1.12E+01	8.25	3.62E+00	3.96E+00
	41	1595.51	1591 -	1600	2.37E+01	17.03	2.26E+01	1.15E+01
	42	1666.61	1658 -	1673	1.83E+01	17.55	2.13E+01	1.26E+01
	43	1677.50	1675 -	1679	5.00E+00	4.47	0.00E+00	0.00E+00
	44	1702.06	1696 -	1706	2.00E+01	8.94	0.00E+00	0.00E+00
	45	1718.92	1716 -	1721	7.70E+00	7.62	4.60E+00	4.29E+00
	46	1729.71	1724 -	1738	1.64E+01	14.58	1.73E+01	9.97E+00
	47	1765.43	1760 -	1768	6.46E+01	16.98	4.85E+00	4.50E+00
	48	1847.86	1844 -	1850	8.00E+00	10.44	1.40E+01	7.21E+00
	49	1863.26	1859 -	1865	6.38E+00	6.65	3.25E+00	3.56E+00
	50	2014.01	2010 -	2017	1.00E+01	6.32	0.00E+00	0.00E+00
	51	2103.95	2099 -	2107	1.60E+01	8.00	0.00E+00	0.00E+00
	52	2198.02	2194 -	2200	5.43E+00	6.34	3.14E+00	3.54E+00
	53	2206.06	2201 -	2211	1.10E+01	11.34	1.20E+01	7.56E+00
	54	2616.19	2610 -	2619	8.30E+01	18.22	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 1510084-14

CP1803S03-04

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/4/2015 12:46:30PM

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	36.96	35 -	39	37.20	5.50E+01	61.27	7.86E+02	PM-145 PM-145
2	46.63	43 -	50	46.86	1.83E+02	98.26	1.49E+03	PB-210
3	63.56	60 -	66	63.79	1.52E+02	107.77	2.01E+03	TH-234 TH-230
4	76.08	71 -	80	76.29	1.33E+03	156.13	2.71E+03	.....
5	87.78	86 -	91	87.99	1.81E+02	99.08	1.83E+03	SN-126 CD-109 LU-176
6	93.23	91 -	97	93.44	2.61E+02	104.64	1.70E+03	GA-67
7	129.41	126 -	132	129.60	8.27E+01	78.28	1.05E+03	.....
8	186.21	182 -	190	186.37	2.12E+02	87.79	1.05E+03	RA-226
9	200.86	197 -	204	201.00	6.31E+01	72.88	8.42E+02	LU-176
10	209.20	206 -	212	209.35	6.80E+01	66.56	7.56E+02	GA-67 CM-243
M	238.90	235 -	246	239.03	8.99E+02	73.41	4.49E+02	PB-212
m	241.88	235 -	246	242.01	2.17E+02	83.74	5.83E+02	RA-224
	270.68	268 -	274	270.79	1.06E+02	50.19	3.81E+02	.....
	295.57	292 -	298	295.67	2.72E+02	58.36	4.19E+02	PB-214
	300.95	299 -	305	301.05	6.98E+01	47.64	3.64E+02	GA-67 PB-212 BI-210M
16	338.78	335 -	342	338.85	1.46E+02	56.43	4.35E+02	AC-228
17	352.30	350 -	357	352.37	4.47E+02	62.96	3.60E+02	PB-214
18	410.31	405 -	415	410.35	4.55E+01	54.32	3.71E+02	HO-166M
19	438.47	435 -	442	438.49	4.25E+01	37.68	2.09E+02	BA-140
20	462.94	457 -	468	462.96	1.15E+02	51.15	2.69E+02	SB-125
21	511.17	507 -	518	511.16	1.23E+02	57.03	3.54E+02	.....
22	583.71	578 -	588	583.66	2.41E+02	56.48	2.97E+02	TL-208
23	609.74	604 -	614	609.68	3.51E+02	58.17	2.64E+02	BI-214
24	727.32	723 -	729	727.21	6.74E+01	30.87	1.21E+02	BI-212
25	768.66	766 -	771	768.53	2.53E+01	25.73	1.09E+02	.....
26	795.47	792 -	800	795.33	3.56E+01	30.64	1.25E+02	CS-134
27	805.27	802 -	809	805.12	2.92E+01	27.50	1.04E+02	.....
28	912.02	907 -	916	911.82	1.43E+02	37.96	1.23E+02	LU-172 AC-228
29	969.70	966 -	972	969.48	5.79E+01	31.34	1.30E+02	AC-228
30	1121.40	1116 -	1126	1121.12	7.96E+01	34.95	1.19E+02	TA-182 SC-46
31	1156.32	1151 -	1161	1156.02	3.56E+01	33.04	1.27E+02	.....
32	1197.94	1193 -	1201	1197.62	3.19E+01	24.90	7.42E+01	.....

Analysis Report for 1510084-14

CP1803S03-04

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
33	1234.37	1222 -	1243	1234.04	1.37E+02	49.08	1.43E+02	CS-136
34	1288.38	1284 -	1292	1288.03	2.97E+01	22.16	5.45E+01	.....
35	1298.67	1293 -	1306	1298.31	2.40E+01	25.79	6.41E+01	.....
36	1378.41	1373 -	1382	1378.02	3.73E+01	16.97	1.94E+01	.....
M 37	1401.45	1397 -	1414	1401.05	1.99E+01	16.67	3.07E+01	.....
m 38	1409.21	1397 -	1414	1408.81	1.89E+01	20.83	4.85E+01	.....
39	1461.70	1457 -	1467	1461.28	4.86E+02	49.69	6.54E+01	K-40
40	1573.81	1569 -	1576	1573.35	1.12E+01	8.25	3.62E+00	.....
41	1595.51	1591 -	1600	1595.04	2.37E+01	17.03	2.26E+01	LA-140
42	1666.61	1658 -	1673	1666.12	1.83E+01	17.55	2.13E+01	.....
43	1677.50	1675 -	1679	1677.00	5.00E+00	4.47	0.00E+00	I-135
44	1702.06	1696 -	1706	1701.55	2.00E+01	8.94	0.00E+00	.....
45	1718.92	1716 -	1721	1718.40	7.70E+00	7.62	4.60E+00	.....
46	1729.71	1724 -	1738	1729.19	1.64E+01	14.58	1.73E+01	.....
47	1765.43	1760 -	1768	1764.90	6.46E+01	16.98	4.85E+00	BI-214
48	1847.86	1844 -	1850	1847.30	8.00E+00	10.44	1.40E+01	.....
49	1863.26	1859 -	1865	1862.69	6.38E+00	6.65	3.25E+00	.....
50	2014.01	2010 -	2017	2013.40	1.00E+01	6.32	0.00E+00	.....
51	2103.95	2099 -	2107	2103.31	1.60E+01	8.00	0.00E+00	.....
52	2198.02	2194 -	2200	2197.35	5.43E+00	6.34	3.14E+00	.....
53	2206.06	2201 -	2211	2205.39	1.10E+01	11.34	1.20E+01	.....
54	2616.19	2610 -	2619	2615.41	8.30E+01	18.22	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 : 11/4/2015 12:46:30PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	36.96	5.50E+01	61.27	9.24E-03	1.58E-03
2	46.63	1.83E+02	98.26	1.51E-02	1.58E-03
3	63.56	1.52E+02	107.77	2.16E-02	1.72E-03
4	76.08	1.33E+03	156.13	2.38E-02	2.13E-03
5	87.78	1.81E+02	99.08	2.44E-02	2.52E-03
6	93.23	2.61E+02	104.64	2.44E-02	2.40E-03
7	129.41	8.27E+01	78.28	2.25E-02	1.70E-03
8	186.21	2.12E+02	87.79	1.83E-02	1.42E-03

Analysis Report for 1510084-14
CP1803S03-04

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	9	200.86	6.31E+01	72.88	1.73E-02	1.35E-03
	10	209.20	6.80E+01	66.56	1.68E-02	1.31E-03
M	11	238.90	8.99E+02	73.41	1.52E-02	1.18E-03
m	12	241.88	2.17E+02	83.74	1.51E-02	1.17E-03
	13	270.68	1.06E+02	50.19	1.38E-02	1.04E-03
	14	295.57	2.72E+02	58.36	1.28E-02	9.74E-04
	15	300.95	6.98E+01	47.64	1.26E-02	9.66E-04
	16	338.78	1.46E+02	56.43	1.14E-02	9.12E-04
	17	352.30	4.47E+02	62.96	1.11E-02	8.93E-04
	18	410.31	4.55E+01	54.32	9.69E-03	8.19E-04
	19	438.47	4.25E+01	37.68	9.15E-03	7.91E-04
	20	462.94	1.15E+02	51.15	8.73E-03	7.66E-04
	21	511.17	1.23E+02	57.03	8.01E-03	7.18E-04
	22	583.71	2.41E+02	56.48	7.13E-03	6.46E-04
	23	609.74	3.51E+02	58.17	6.87E-03	6.20E-04
	24	727.32	6.74E+01	30.87	5.89E-03	5.14E-04
	25	768.66	2.53E+01	25.73	5.62E-03	4.80E-04
	26	795.47	3.56E+01	30.64	5.45E-03	4.58E-04
	27	805.27	2.92E+01	27.50	5.39E-03	4.50E-04
	28	912.02	1.43E+02	37.96	4.85E-03	3.72E-04
	29	969.70	5.79E+01	31.34	4.60E-03	3.61E-04
	30	1121.40	7.96E+01	34.95	4.07E-03	3.33E-04
	31	1156.32	3.56E+01	33.04	3.97E-03	3.27E-04
	32	1197.94	3.19E+01	24.90	3.86E-03	3.18E-04
	33	1234.37	1.37E+02	49.08	3.76E-03	3.10E-04
	34	1288.38	2.97E+01	22.16	3.64E-03	2.98E-04
	35	1298.67	2.40E+01	25.79	3.61E-03	2.96E-04
	36	1378.41	3.73E+01	16.97	3.45E-03	2.82E-04
M	37	1401.45	1.99E+01	16.67	3.40E-03	2.78E-04
m	38	1409.21	1.89E+01	20.83	3.39E-03	2.77E-04
	39	1461.70	4.86E+02	49.69	3.29E-03	2.69E-04
	40	1573.81	1.12E+01	8.25	3.11E-03	2.52E-04
	41	1595.51	2.37E+01	17.03	3.08E-03	2.49E-04
	42	1666.61	1.83E+01	17.55	2.98E-03	2.39E-04
	43	1677.50	5.00E+00	4.47	2.96E-03	2.37E-04
	44	1702.06	2.00E+01	8.94	2.93E-03	2.33E-04
	45	1718.92	7.70E+00	7.62	2.91E-03	2.31E-04
	46	1729.71	1.64E+01	14.58	2.90E-03	2.29E-04
	47	1765.43	6.46E+01	16.98	2.86E-03	2.24E-04
	48	1847.86	8.00E+00	10.44	2.77E-03	2.13E-04
	49	1863.26	6.38E+00	6.65	2.75E-03	2.13E-04
	50	2014.01	1.00E+01	6.32	2.61E-03	2.13E-04
	51	2103.95	1.60E+01	8.00	2.54E-03	2.13E-04
	52	2198.02	5.43E+00	6.34	2.47E-03	2.13E-04
	53	2206.06	1.10E+01	11.34	2.46E-03	2.13E-04
	54	2616.19	8.30E+01	18.22	2.24E-03	2.13E-04

Analysis Report for 1510084-14

CP1803S03-04

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 : 11/4/2015 12:46:30PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028943.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	36.96	5.50E+01	61.27			5.50E+01	6.13E+01	
2	46.63	1.83E+02	98.26	5.28E+01	1.09E+01	1.30E+02	9.89E+01	
3	63.56	1.52E+02	107.77	5.52E+01	2.05E+01	9.67E+01	1.10E+02	
4	76.08	1.33E+03	156.13			1.33E+03	1.56E+02	
5	87.78	1.81E+02	99.08	1.52E+01	5.37E+00	1.66E+02	9.92E+01	
6	93.23	2.61E+02	104.64	9.04E+01	2.62E+01	1.70E+02	1.08E+02	
7	129.41	8.27E+01	78.28			8.27E+01	7.83E+01	
8	186.21	2.12E+02	87.79	3.93E+01	6.56E+00	1.72E+02	8.80E+01	
9	200.86	6.31E+01	72.88			6.31E+01	7.29E+01	
10	209.20	6.80E+01	66.56			6.80E+01	6.66E+01	
M	11	238.90	8.99E+02	73.41	1.34E+01	2.14E+00	8.86E+02	7.34E+01
m	12	241.88	2.17E+02	83.74	2.69E+00	1.46E+00	2.14E+02	8.37E+01
13	270.68	1.06E+02	50.19			1.06E+02	5.02E+01	
14	295.57	2.72E+02	58.36			2.72E+02	5.84E+01	
15	300.95	6.98E+01	47.64			6.98E+01	4.76E+01	
16	338.78	1.46E+02	56.43			1.46E+02	5.64E+01	
17	352.30	4.47E+02	62.96	3.99E+00	4.73E+00	4.43E+02	6.31E+01	
18	410.31	4.55E+01	54.32			4.55E+01	5.43E+01	
19	438.47	4.25E+01	37.68			4.25E+01	3.77E+01	
20	462.94	1.15E+02	51.15			1.15E+02	5.11E+01	
21	511.17	1.23E+02	57.03	5.78E+01	4.60E+00	6.55E+01	5.72E+01	
22	583.71	2.41E+02	56.48	5.96E+00	3.46E+00	2.35E+02	5.66E+01	
23	609.74	3.51E+02	58.17	6.71E+00	3.44E+00	3.44E+02	5.83E+01	
24	727.32	6.74E+01	30.87			6.74E+01	3.09E+01	
25	768.66	2.53E+01	25.73			2.53E+01	2.57E+01	
26	795.47	3.56E+01	30.64			3.56E+01	3.06E+01	
27	805.27	2.92E+01	27.50			2.92E+01	2.75E+01	
28	912.02	1.43E+02	37.96			1.43E+02	3.80E+01	
29	969.70	5.79E+01	31.34			5.79E+01	3.13E+01	
30	1121.40	7.96E+01	34.95			7.96E+01	3.49E+01	
31	1156.32	3.56E+01	33.04			3.56E+01	3.30E+01	
32	1197.94	3.19E+01	24.90			3.19E+01	2.49E+01	
33	1234.37	1.37E+02	49.08			1.37E+02	4.91E+01	
34	1288.38	2.97E+01	22.16			2.97E+01	2.22E+01	
35	1298.67	2.40E+01	25.79			2.40E+01	2.58E+01	

: 00842

Analysis Report for 1510084-14

CP1803S03-04

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	36	1378.41	3.73E+01	16.97		3.73E+01	1.70E+01
M	37	1401.45	1.99E+01	16.67		1.99E+01	1.67E+01
m	38	1409.21	1.89E+01	20.83		1.89E+01	2.08E+01
	39	1461.70	4.86E+02	49.69		4.86E+02	4.97E+01
	40	1573.81	1.12E+01	8.25		1.12E+01	8.25E+00
	41	1595.51	2.37E+01	17.03		2.37E+01	1.70E+01
	42	1666.61	1.83E+01	17.55		1.83E+01	1.75E+01
	43	1677.50	5.00E+00	4.47		5.00E+00	4.47E+00
	44	1702.06	2.00E+01	8.94		2.00E+01	8.94E+00
	45	1718.92	7.70E+00	7.62		7.70E+00	7.62E+00
	46	1729.71	1.64E+01	14.58		1.64E+01	1.46E+01
	47	1765.43	6.46E+01	16.98	1.45E+00 1.16E+00	6.31E+01	1.70E+01
	48	1847.86	8.00E+00	10.44		8.00E+00	1.04E+01
	49	1863.26	6.38E+00	6.65		6.38E+00	6.65E+00
	50	2014.01	1.00E+01	6.32		1.00E+01	6.32E+00
	51	2103.95	1.60E+01	8.00		1.60E+01	8.00E+00
	52	2198.02	5.43E+00	6.34		5.43E+00	6.34E+00
	53	2206.06	1.10E+01	11.34		1.10E+01	1.13E+01
	54	2616.19	8.30E+01	18.22		8.30E+01	1.82E+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 : 11/4/2015 12:46:30PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028943.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	36.96	5.50E+01	61.27			5.50E+01	6.13E+01
2	46.63	1.83E+02	98.26	5.28E+01	1.09E+01	1.30E+02	9.89E+01
3	63.56	1.52E+02	107.77	5.52E+01	2.05E+01	9.67E+01	1.10E+02
4	76.08	1.33E+03	156.13			1.33E+03	1.56E+02
5	87.78	1.81E+02	99.08	1.52E+01	5.37E+00	1.66E+02	9.92E+01
6	93.23	2.61E+02	104.64	9.04E+01	2.62E+01	1.70E+02	1.08E+02
7	129.41	8.27E+01	78.28			8.27E+01	7.83E+01
8	186.21	2.12E+02	87.79	3.93E+01	6.56E+00	1.72E+02	8.80E+01
9	200.86	6.31E+01	72.88			6.31E+01	7.29E+01

Analysis Report for 1510084-14

CP1803S03-04

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	10	209.20	6.80E+01	66.56			6.80E+01	6.66E+01
M	11	238.90	8.99E+02	73.41	1.34E+01	2.14E+00	8.86E+02	7.34E+01
m	12	241.88	2.17E+02	83.74	2.69E+00	1.46E+00	2.14E+02	8.37E+01
	13	270.68	1.06E+02	50.19			1.06E+02	5.02E+01
	14	295.57	2.72E+02	58.36			2.72E+02	5.84E+01
	15	300.95	6.98E+01	47.64			6.98E+01	4.76E+01
	16	338.78	1.46E+02	56.43			1.46E+02	5.64E+01
	17	352.30	4.47E+02	62.96	3.99E+00	4.73E+00	4.43E+02	6.31E+01
	18	410.31	4.55E+01	54.32			4.55E+01	5.43E+01
	19	438.47	4.25E+01	37.68			4.25E+01	3.77E+01
	20	462.94	1.15E+02	51.15			1.15E+02	5.11E+01
	21	511.17	1.23E+02	57.03	5.78E+01	4.60E+00	6.55E+01	5.72E+01
	22	583.71	2.41E+02	56.48	5.96E+00	3.46E+00	2.35E+02	5.66E+01
	23	609.74	3.51E+02	58.17	6.71E+00	3.44E+00	3.44E+02	5.83E+01
	24	727.32	6.74E+01	30.87			6.74E+01	3.09E+01
	25	768.66	2.53E+01	25.73			2.53E+01	2.57E+01
	26	795.47	3.56E+01	30.64			3.56E+01	3.06E+01
	27	805.27	2.92E+01	27.50			2.92E+01	2.75E+01
	28	912.02	1.43E+02	37.96			1.43E+02	3.80E+01
	29	969.70	5.79E+01	31.34			5.79E+01	3.13E+01
	30	1121.40	7.96E+01	34.95			7.96E+01	3.49E+01
	31	1156.32	3.56E+01	33.04			3.56E+01	3.30E+01
	32	1197.94	3.19E+01	24.90			3.19E+01	2.49E+01
	33	1234.37	1.37E+02	49.08			1.37E+02	4.91E+01
	34	1288.38	2.97E+01	22.16			2.97E+01	2.22E+01
	35	1298.67	2.40E+01	25.79			2.40E+01	2.58E+01
	36	1378.41	3.73E+01	16.97			3.73E+01	1.70E+01
M	37	1401.45	1.99E+01	16.67			1.99E+01	1.67E+01
m	38	1409.21	1.89E+01	20.83			1.89E+01	2.08E+01
	39	1461.70	4.86E+02	49.69			4.86E+02	4.97E+01
	40	1573.81	1.12E+01	8.25			1.12E+01	8.25E+00
	41	1595.51	2.37E+01	17.03			2.37E+01	1.70E+01
	42	1666.61	1.83E+01	17.55			1.83E+01	1.75E+01
	43	1677.50	5.00E+00	4.47			5.00E+00	4.47E+00
	44	1702.06	2.00E+01	8.94			2.00E+01	8.94E+00
	45	1718.92	7.70E+00	7.62			7.70E+00	7.62E+00
	46	1729.71	1.64E+01	14.58			1.64E+01	1.46E+01
	47	1765.43	6.46E+01	16.98	1.45E+00	1.16E+00	6.31E+01	1.70E+01
	48	1847.86	8.00E+00	10.44			8.00E+00	1.04E+01
	49	1863.26	6.38E+00	6.65			6.38E+00	6.65E+00
	50	2014.01	1.00E+01	6.32			1.00E+01	6.32E+00
	51	2103.95	1.60E+01	8.00			1.60E+01	8.00E+00
	52	2198.02	5.43E+00	6.34			5.43E+00	6.34E+00
	53	2206.06	1.10E+01	11.34			1.10E+01	1.13E+01
	54	2616.19	8.30E+01	18.22			8.30E+01	1.82E+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 1510084-14

CP1803S03-04

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	0.881	1460.81 *	10.67	1.75E+01	2.32E+00
GA-67	0.725	93.31 *	35.70	5.13E+01	1.80E+02
		208.95 *	2.24	4.73E+02	1.62E+03
		300.22 *	16.00	9.07E+01	3.20E+02
		88.03 *	3.72	2.40E+00	1.46E+00
CD-109	0.990	87.57 *	37.00	2.32E-01	1.41E-01
SN-126	0.993	46.50 *	4.25	2.57E+00	1.97E+00
PB-210	0.997	727.17 *	11.80	1.22E+00	5.71E-01
BI-212	0.768	1620.62	2.75		
		238.63 *	44.60	1.65E+00	1.87E-01
		300.09 *	3.41	2.05E+00	1.41E+00
BI-214	0.629	609.31 *	46.30	1.37E+00	2.62E-01
		1120.29	15.10		
		1764.49 *	15.80	1.77E+00	4.96E-01
		2204.22	4.98		
PB-214	0.978	295.21 *	19.19	1.40E+00	3.18E-01
		351.92 *	37.19	1.36E+00	2.23E-01
RA-224	0.878	240.98 *	3.95	4.55E+00	1.81E+00
RA-226	1.000	186.21 *	3.28	3.63E+00	6.90E+00
AC-228	0.909	338.32 *	11.40	1.42E+00	5.59E-01
		911.07 *	27.70	1.34E+00	3.72E-01
		969.11 *	16.60	9.58E-01	5.24E-01
		63.29 *	3.80	1.49E+00	1.69E+00
TH-234	0.988				

* = 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 : 11/4/2015 12:46:30PM

Peak Locate From Channel : 1

Peak Locate To Channel : 4096

: 00845

Analysis Report for 1510084-14
CP1803S03-04

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	36.96	1.52803E-02	55.69	Tol.	PM-145 PM-145
4	76.08	3.69834E-01	5.86		
7	129.41	2.29649E-02	47.34		
9	200.86	1.75278E-02	57.75	Tol.	LU-176
13	270.68	2.93215E-02	23.77		
18	410.31	1.26479E-02	59.65	Tol.	HO-166M
19	438.47	1.18141E-02	44.30	Tol.	BA-140
20	462.94	3.18206E-02	22.32	Tol.	SB-125
21	511.17	1.81818E-02	43.70		
22	583.71	6.51511E-02	12.06	Tol.	TL-208
25	768.66	7.02778E-03	50.85		
26	795.47	9.89371E-03	43.01	Sum	
27	805.27	8.10014E-03	47.15		
30	1121.40	2.21193E-02	21.95	Sum	
31	1156.32	9.87654E-03	46.46	Sum	
32	1197.94	8.85870E-03	39.05		
33	1234.37	3.81812E-02	17.85	Tol.	CS-136
34	1288.38	8.26267E-03	37.26		
35	1298.67	6.65675E-03	53.80		
36	1378.41	1.03605E-02	22.75		
M	1401.45	5.53544E-03	41.83		
m	1409.21	5.24525E-03	55.16		
40	1573.81	3.10897E-03	36.84		
41	1595.51	6.57936E-03	35.95	Tol.	LA-140
42	1666.61	5.09579E-03	47.83		
43	1677.50	1.38889E-03	44.72	Tol.	I-135
44	1702.06	5.55556E-03	22.36		
45	1718.92	2.13889E-03	49.45		
46	1729.71	4.54444E-03	44.55		
48	1847.86	2.22222E-03	65.25		
49	1863.26	1.77083E-03	52.17		
50	2014.01	2.77778E-03	31.62		
51	2103.95	4.44444E-03	25.00	Sum	
52	2198.02	1.50794E-03	58.43		
53	2206.06	3.05556E-03	51.53		
54	2616.19	2.30556E-02	10.98		

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 1510084-14
CP1803S03-04

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	0.88	1460.81	*	10.67	1.75E+01	2.32E+00
GA-67	0.72	93.31	*	35.70	5.13E+01	1.80E+02
		208.95	*	2.24	4.73E+02	1.62E+03
		300.22	*	16.00	9.07E+01	3.20E+02
CD-109	0.99	88.03	*	3.72	2.40E+00	1.46E+00
SN-126	0.99	87.57	*	37.00	2.32E-01	1.41E-01
PB-210	0.99	46.50	*	4.25	2.57E+00	1.97E+00
BI-212	0.76	727.17	*	11.80	1.22E+00	5.71E-01
		1620.62		2.75		
PB-212	0.98	238.63	*	44.60	1.65E+00	1.87E-01
		300.09	*	3.41	2.05E+00	1.41E+00
BI-214	0.62	609.31	*	46.30	1.37E+00	2.62E-01
		1120.29		15.10		
		1764.49	*	15.80	1.77E+00	4.96E-01
PB-214	0.97	2204.22		4.98		
		295.21	*	19.19	1.40E+00	3.18E-01
		351.92	*	37.19	1.36E+00	2.23E-01
RA-224	0.87	240.98	*	3.95	4.55E+00	1.81E+00
RA-226	1.00	186.21	*	3.28	3.63E+00	6.90E+00
AC-228	0.90	338.32	*	11.40	1.42E+00	5.59E-01
		911.07	*	27.70	1.34E+00	3.72E-01
		969.11	*	16.60	9.58E-01	5.24E-01
TH-234	0.98	63.29	*	3.80	1.49E+00	1.69E+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

Analysis Report for 1510084-14
CP1803S03-04

<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>
K-40	0.881	1.75E+01	2.32E+00	
GA-67	0.725	4.57E+01	1.52E+02	
? CD-109	0.990	2.40E+00	1.46E+00	
? SN-126	0.993	2.32E-01	1.41E-01	
PB-210	0.997	2.57E+00	1.97E+00	
BI-212	0.768	1.22E+00	5.71E-01	
PB-212	0.981	1.64E+00	1.86E-01	
BI-214	0.629	1.46E+00	2.32E-01	
PB-214	0.978	1.37E+00	1.83E-01	
RA-224	0.878	4.55E+00	1.81E+00	
RA-226	1.000	3.63E+00	6.90E+00	
AC-228	0.909	1.26E+00	2.66E-01	
TH-234	0.988	1.49E+00	1.69E+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 1510084-14
CP1803S03-04

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 12:46:30PM
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	36.96	1.52803E-02	55.69	Tol.	PM-145 PM-145
4	76.08	3.69834E-01	5.86		
7	129.41	2.29649E-02	47.34		
9	200.86	1.75278E-02	57.75	Tol.	LU-176
13	270.68	2.93215E-02	23.77		
18	410.31	1.26479E-02	59.65	Tol.	HO-166M
19	438.47	1.18141E-02	44.30	Tol.	BA-140
20	462.94	3.18206E-02	22.32	Tol.	SB-125
21	511.17	1.81818E-02	43.70		
22	583.71	6.51511E-02	12.06	Tol.	TL-208
25	768.66	7.02778E-03	50.85		
26	795.47	9.89371E-03	43.01	Sum	
27	805.27	8.10014E-03	47.15		
30	1121.40	2.21193E-02	21.95	Sum	
31	1156.32	9.87654E-03	46.46	Sum	
32	1197.94	8.85870E-03	39.05		
33	1234.37	3.81812E-02	17.85	Tol.	CS-136
34	1288.38	8.26267E-03	37.26		
35	1298.67	6.65675E-03	53.80		
36	1378.41	1.03605E-02	22.75		
M 37	1401.45	5.53544E-03	41.83		
m 38	1409.21	5.24525E-03	55.16		
40	1573.81	3.10897E-03	36.84		
41	1595.51	6.57936E-03	35.95	Tol.	LA-140
42	1666.61	5.09579E-03	47.83		
43	1677.50	1.38889E-03	44.72	Tol.	I-135
44	1702.06	5.55556E-03	22.36		
45	1718.92	2.13889E-03	49.45		
46	1729.71	4.54444E-03	44.55		
48	1847.86	2.22222E-03	65.25		
49	1863.26	1.77083E-03	52.17		
50	2014.01	2.77778E-03	31.62		
51	2103.95	4.44444E-03	25.00	Sum	

Analysis Report for 1510084-14
CP1803S03-04

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
52	2198.02	1.50794E-03	58.43		
53	2206.06	3.05556E-03	51.53		
54	2616.19	2.30556E-02	10.98		

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	2.17E-01	1.05E+00	1.05E+00
+	NA-22	1274.54	99.94	-2.43E-02	1.19E-01	1.19E-01
+	NA-24	1368.53	99.99	-2.47E+10	6.61E+10	1.08E+11
		2754.09	99.86	1.42E+10		6.61E+10
+	AL-26	1808.65	99.76	3.61E-02	9.07E-02	9.07E-02
+	K-40	1460.81	* 10.67	1.75E+01	1.45E+00	1.45E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	3.17E-03	7.75E-02	7.75E-02
		78.34	96.00	2.14E-01		9.51E-02
+	SC-46	889.25	99.98	-3.52E-02	1.03E-01	1.03E-01
		1120.51	99.99	2.19E-01		1.96E-01
+	V-48	983.52	99.98	-1.17E-01	2.50E-01	2.50E-01
		1312.10	97.50	-3.30E-02		2.94E-01
+	CR-51	320.08	9.83	-2.66E-01	1.35E+00	1.35E+00
+	MN-54	834.83	99.97	-9.42E-03	1.02E-01	1.02E-01
+	CO-56	846.75	99.96	1.26E-02	1.14E-01	1.14E-01
		1037.75	14.03	-2.71E-01		7.81E-01
		1238.25	67.00	1.90E-01		2.86E-01
		1771.40	15.51	-7.20E-01		5.94E-01
		2598.48	16.90	-2.77E-02		3.85E-01
+	CO-57	122.06	85.51	-3.90E-05	6.51E-02	6.51E-02
		136.48	10.60	-7.11E-02		5.37E-01
+	CO-58	810.76	99.40	2.09E-02	1.06E-01	1.06E-01
+	FE-59	1099.22	56.50	3.06E-02	2.62E-01	2.62E-01
		1291.56	43.20	-1.24E-01		4.24E-01
+	CO-60	1173.22	100.00	3.61E-02	1.14E-01	1.27E-01

Analysis Report for 1510084-14
CP1803S03-04

Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CO-60	1332.49	100.00	3.05E-02	1.14E-01	1.14E-01
+	ZN-65	1115.52	50.75	1.47E-02	2.15E-01	2.15E-01
+	GA-67	93.31	* 35.70	5.13E+01	5.26E+01	5.26E+01
		208.95	* 2.24	4.73E+02		7.57E+02
		300.22	* 16.00	9.07E+01		9.88E+01
+	SE-75	121.11	16.70	-7.93E-02	1.04E-01	3.55E-01
		136.00	59.20	2.07E-02		1.04E-01
		264.65	59.80	9.75E-03		1.33E-01
		279.53	25.20	1.66E-01		3.37E-01
		400.65	11.40	8.23E-02		7.40E-01
+	RB-82	776.52	13.00	-6.96E-02	1.36E+00	1.36E+00
+	RB-83	520.41	46.00	2.69E-02	2.10E-01	2.10E-01
		529.64	30.30	1.20E-01		3.09E-01
		552.65	16.40	1.31E-01		5.81E-01
+	KR-85	513.99	0.43	2.59E+01	2.56E+01	2.56E+01
+	SR-85	513.99	99.27	1.47E-01	1.45E-01	1.45E-01
+	Y-88	898.02	93.40	-8.53E-03	1.05E-01	1.11E-01
		1836.01	99.38	-4.42E-03		1.05E-01
+	NB-93M	16.57	9.43	4.33E+01	8.25E+01	8.25E+01
+	NB-94	702.63	100.00	1.63E-02	9.17E-02	9.17E-02
		871.10	100.00	-5.69E-04		9.32E-02
+	NB-95	765.79	99.81	2.09E-02	1.82E-01	1.82E-01
+	NB-95M	235.69	25.00	-6.71E+00	6.00E+01	6.00E+01
+	ZR-95	724.18	43.70	-3.04E-03	2.01E-01	2.96E-01
		756.72	55.30	-1.53E-02		2.01E-01
+	MO-99	181.06	6.20	-3.27E+01	3.71E+02	5.14E+02
		739.58	12.80	-1.61E+02		3.71E+02
		778.00	4.50	2.63E+02		1.13E+03
+	RU-103	497.08	89.00	-2.03E-02	1.31E-01	1.31E-01
+	RU-106	621.84	9.80	-9.35E-02	9.13E-01	9.13E-01
+	AG-108M	433.93	89.90	-4.78E-03	7.67E-02	7.67E-02
		614.37	90.40	-2.81E-02		1.10E-01
		722.95	90.50	-1.45E-03		9.69E-02
+	CD-109	88.03	* 3.72	2.40E+00	2.32E+00	2.32E+00
+	AG-110M	657.75	93.14	-3.09E-02	8.63E-02	8.63E-02
		677.61	10.53	1.27E-01		8.43E-01
		706.67	16.46	1.73E-02		5.93E-01
		763.93	21.98	7.00E-02		4.75E-01
		884.67	71.63	6.05E-03		1.26E-01
		1384.27	23.94	2.25E-03		4.04E-01
+	CD-113M	263.70	0.02	-1.05E+02	3.01E+02	3.01E+02
+	SN-113	255.12	1.93	-1.97E+00	1.41E-01	3.97E+00
		391.69	64.90	4.07E-02		1.41E-01
+	TE123M	159.00	84.10	2.85E-02	8.14E-02	8.14E-02
+	SB-124	602.71	97.87	1.14E-02	1.22E-01	1.22E-01
		645.85	7.26	2.55E-01		1.55E+00
		722.78	11.10	-1.57E-02		1.05E+00
		1691.02	49.00	6.66E-02		2.03E-01

Analysis Report for 1510084-14
CP1803S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-125	35.49	6.49	1.66E+00	3.19E+00	3.19E+00
+	SB-125	176.33	6.89	3.03E-01	2.64E-01	8.38E-01
		427.89	29.33	1.28E-02		2.64E-01
		463.38	10.35	9.19E-01		9.07E-01
		600.56	17.80	5.75E-02		4.91E-01
		635.90	11.32	-1.66E-01		7.00E-01
+	SB-126	414.70	83.30	6.64E-02	3.62E-01	3.76E-01
		666.33	99.60	9.32E-02		3.94E-01
		695.00	99.60	7.43E-02		3.62E-01
		720.50	53.80	2.41E-01		6.87E-01
+	SN-126	87.57	* 37.00	2.32E-01	2.24E-01	2.24E-01
+	SB-127	473.00	25.00	2.43E+01	2.25E+01	3.01E+01
		685.20	35.70	-2.37E+00		2.25E+01
		783.80	14.70	3.19E+01		6.33E+01
+	I-129	29.78	57.00	-1.41E-01	4.59E-01	4.59E-01
		33.60	13.20	2.68E-01		1.34E+00
		39.58	7.52	-9.32E-02		1.52E+00
+	I-131	284.30	6.05	7.00E-01	7.56E-01	1.00E+01
		364.48	81.20	2.51E-04		7.56E-01
		636.97	7.26	-2.41E+00		9.41E+00
		722.89	1.80	-6.32E-01		4.24E+01
+	TE-132	49.72	13.10	-4.10E+01	1.67E+01	1.33E+02
		228.16	88.00	7.53E+00		1.67E+01
+	BA-133	81.00	33.00	-1.51E-01	1.71E-01	1.94E-01
		302.84	17.80	4.27E-01		4.32E-01
		356.01	60.00	5.62E-03		1.71E-01
+	I-133	529.87	86.30	1.80E+07	4.65E+07	4.65E+07
+	XE-133	81.00	38.00	-3.61E+00	4.62E+00	4.62E+00
+	CS-134	563.23	8.38	2.50E-01	9.78E-02	1.06E+00
		569.32	15.43	2.99E-01		5.60E-01
		604.70	97.60	1.03E-02		9.78E-02
		795.84	85.40	1.01E-01		1.27E-01
		801.93	8.73	-3.53E-01		1.14E+00
+	CS-135	268.24	16.00	6.17E-02	4.83E-01	4.83E-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	5.91E-01	3.27E-01	2.86E+00
		163.89	4.61	-8.01E-01		4.46E+00
		176.55	13.56	-6.77E-01		1.51E+00
		273.65	12.66	-2.15E-01		2.21E+00
		340.57	48.50	5.82E-02		7.76E-01
		818.50	99.70	2.14E-02		3.27E-01
		1048.07	79.60	1.29E-02		4.64E-01
		1235.34	19.70	4.33E-01		2.93E+00
+	CS-137	661.65	85.12	-1.98E-02	1.07E-01	1.07E-01
+	LA-138	788.74	34.00	1.70E-02	1.32E-01	2.72E-01
		1435.80	66.00	-2.01E-02		1.32E-01
+	CE-139	165.85	80.35	-1.34E-02	7.64E-02	7.64E-02

Analysis Report for 1510084-14

CP1803S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BA-140	162.64	6.70	-6.75E-01	1.15E+00	3.17E+00
		304.84	4.50	-1.93E+00		5.84E+00
		423.70	3.20	-7.98E-01		9.27E+00
		437.55	2.00	1.26E+01		1.52E+01
		537.32	25.00	-2.63E-01		1.15E+00
+	LA-140	328.77	20.50	8.20E-01	5.07E-01	1.55E+00
		487.03	45.50	-7.06E-02		6.07E-01
		815.85	23.50	-2.14E-01		1.41E+00
		1596.49	95.49	3.95E-01		5.07E-01
+	CE-141	145.44	48.40	1.78E-01	2.10E-01	2.10E-01
+	CE-143	57.36	11.80	-3.56E+04	7.60E+04	2.01E+05
		293.26	42.00	3.43E+03		7.60E+04
		664.55	5.20	4.33E+05		5.90E+05
+	CE-144	133.54	10.80	3.03E-02	5.20E-01	5.20E-01
+	PM-144	476.78	42.00	-2.95E-02	9.07E-02	1.90E-01
		618.01	98.60	2.27E-02		9.38E-02
		696.49	99.49	-2.42E-02		9.07E-02
+	PM-145	36.85	21.70	2.68E-01	3.42E-01	6.45E-01
		37.36	39.70	2.16E-01		3.42E-01
		42.30	15.10	-9.27E-02		6.73E-01
		72.40	2.31	-4.48E+00		3.81E+00
+	PM-146	453.90	39.94	-1.65E-03	1.89E-01	1.89E-01
		735.90	14.01	1.02E-01		6.09E-01
		747.13	13.10	-2.88E-01		6.29E-01
+	ND-147	91.11	28.90	-8.29E-01	1.26E+00	1.26E+00
		531.02	13.10	2.00E+00		2.93E+00
+	PM-149	285.90	3.10	-2.70E+03	5.61E+03	5.61E+03
+	EU-152	121.78	20.50	-1.53E-04	2.55E-01	2.55E-01
		244.69	5.40	8.34E-02		1.56E+00
		344.27	19.13	9.18E-02		4.13E-01
		778.89	9.20	-2.52E-02		9.91E-01
		964.01	10.40	9.33E-02		1.13E+00
		1085.78	7.22	-3.57E-01		1.35E+00
		1112.02	9.60	-4.99E-01		1.02E+00
		1407.95	14.94	1.22E-01		8.32E-01
+	GD-153	97.43	31.30	1.28E-01	1.88E-01	1.88E-01
		103.18	22.20	-2.70E-01		2.41E-01
+	EU-154	123.07	40.50	2.12E-02	1.30E-01	1.30E-01
		723.30	19.70	-6.68E-03		4.47E-01
		873.19	11.50	3.41E-02		8.31E-01
		996.32	10.30	-1.57E-02		9.01E-01
		1004.76	17.90	2.06E-01		5.66E-01
	1274.45	35.50	-6.76E-02		3.31E-01	
+	EU-155	86.50	30.90	1.44E-01	2.43E-01	2.43E-01
		105.30	20.70	4.25E-02		2.55E-01
+	EU-156	811.77	10.40	-8.32E-02	2.42E+00	2.42E+00
		1153.47	7.20	-1.81E-01		5.41E+00
		1230.71	8.90	-8.70E-04		4.86E+00
+	HO-166M	184.41	72.60	1.77E-01	1.01E-01	1.01E-01

Analysis Report for 1510084-14
CP1803S03-04

<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>	
	HO-166M	280.45	29.60	7.70E-02	1.01E-01	2.44E-01
		410.94	11.10	4.19E-01		7.32E-01
		711.69	54.10	-2.78E-02		1.61E-01
+	TM-171	66.72	0.14	1.70E+01	5.49E+01	5.49E+01
+	HF-172	81.75	4.52	1.20E-01	4.82E-01	1.47E+00
		125.81	11.30	5.18E-02		4.82E-01
+	LU-172	181.53	20.60	-4.32E-02	2.21E+00	3.76E+00
		810.06	16.63	2.28E+00		6.89E+00
		912.12	15.25	3.28E+01		1.51E+01
		1093.66	62.50	-1.63E-01		2.21E+00
+	LU-173	100.72	5.24	2.04E-01	3.72E-01	1.04E+00
		272.11	21.20	2.58E-01		3.72E-01
+	HF-175	343.40	84.00	6.33E-03	1.24E-01	1.24E-01
+	LU-176	88.34	13.30	8.15E-01	7.36E-02	5.76E-01
		201.83	86.00	3.12E-02		8.37E-02
		306.78	94.00	-8.03E-03		7.36E-02
+	TA-182	67.75	41.20	8.46E-03	2.07E-01	2.07E-01
		1121.30	34.90	7.30E-01		5.42E-01
		1189.05	16.23	-7.00E-02		8.00E-01
		1221.41	26.98	0.00E+00		4.34E-01
		1231.02	11.44	-3.76E-01		1.39E+00
+	IR-192	308.46	29.68	-3.85E-02	2.01E-01	2.97E-01
		468.07	48.10	1.85E-02		2.01E-01
+	HG-203	279.19	77.30	1.29E-01	1.40E-01	1.40E-01
+	BI-207	569.67	97.72	3.53E-02	8.45E-02	8.45E-02
		1063.62	74.90	3.38E-02		1.35E-01
+	TL-208	583.14	30.22	1.50E+00	5.19E-01	5.19E-01
		860.37	4.48	1.36E+00		2.33E+00
		2614.66	35.85	1.31E+00		7.10E-01
+	BI-210M	262.00	45.00	3.41E-02	1.59E-01	1.59E-01
		300.00	23.00	-1.30E+00		3.41E-01
+	PB-210	46.50	*	4.25	3.18E+00	3.18E+00
+	PB-211	404.84	2.90	3.87E-01	2.41E+00	2.41E+00
		831.96	2.90	-1.53E+00		3.24E+00
+	BI-212	727.17	*	11.80	1.22E+00	8.31E-01
		1620.62	2.75	-4.62E-01		3.31E+00
+	PB-212	238.63	*	44.60	1.65E+00	2.66E-01
		300.09	*	3.41	2.05E+00	2.23E+00
+	BI-214	609.31	*	46.30	1.37E+00	3.04E-01
		1120.29	15.10	1.18E+00		1.06E+00
		1764.49	*	15.80	1.77E+00	3.56E-01
		2204.22	4.98	-2.35E-01		2.01E+00
+	PB-214	295.21	*	19.19	1.40E+00	2.46E-01
		351.92	*	37.19	1.36E+00	2.46E-01
+	RN-219	401.80	6.50	1.35E-01	1.11E+00	1.11E+00
+	RA-223	323.87	3.88	-7.20E-01	1.94E+00	1.94E+00
+	RA-224	240.98	*	3.95	4.55E+00	3.08E+00
+	RA-225	40.00	31.00	-7.15E-02	1.17E+00	1.17E+00

Analysis Report for 1510084-14
CP1803S03-04

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-226	186.21	*	3.28	3.63E+00	2.97E+00	2.97E+00
+	TH-227	50.10		8.40	-3.03E-01	9.83E-01	9.83E-01
		236.00		11.50	-1.18E-01		1.05E+00
		256.20		6.30	4.53E-01		1.09E+00
+	AC-228	338.32	*	11.40	1.42E+00	4.82E-01	8.40E-01
		911.07	*	27.70	1.34E+00		4.82E-01
		969.11	*	16.60	9.58E-01		7.90E-01
+	TH-230	48.44		16.90	-1.44E-02	5.45E-01	5.45E-01
		62.85		4.60	2.17E+00		1.79E+00
		67.67		0.37	8.10E-01		1.98E+01
+	PA-231	283.67		1.60	3.04E-01	3.33E+00	4.34E+00
		302.67		2.30	3.29E+00		3.33E+00
+	TH-231	25.64		14.70	1.38E+00	1.04E+00	3.52E+00
		84.21		6.40	-1.10E-02		1.04E+00
+	PA-233	311.98		38.60	2.32E-01	3.55E-01	3.55E-01
+	PA-234	131.20		20.40	1.34E-01	2.78E-01	2.78E-01
		733.99		8.80	-1.52E-01		9.59E-01
		946.00		12.00	5.88E-02		7.90E-01
+	PA-234M	1001.03		0.92	1.32E+00	1.04E+01	1.04E+01
+	TH-234	63.29	*	3.80	1.49E+00	2.77E+00	2.77E+00
+	U-235	143.76		10.50	4.98E-02	5.55E-01	5.55E-01
		163.35		4.70	-2.09E-01		1.16E+00
		205.31		4.70	-3.44E+00		1.48E+00
+	NP-237	86.50		12.60	3.51E-01	5.90E-01	5.90E-01
+	NP-239	106.10		22.70	1.02E+02	3.78E+02	3.78E+02
		228.18		10.70	4.80E+02		1.07E+03
		277.60		14.10	3.69E+02		8.39E+02
+	AM-241	59.54		35.90	7.18E-03	2.14E-01	2.14E-01
+	AM-243	74.67		66.00	3.91E-01	1.55E-01	1.55E-01
+	CM-243	209.75		3.29	1.65E+00	5.24E-01	2.31E+00
		228.14		10.60	3.00E-01		6.68E-01
		277.60		14.00	2.30E-01		5.24E-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 1510084-14

CP1803S03-04

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	1.05E+00	1.05E+00	2.17E-01	4.97E-01
NA-22	1274.54	99.94	1.19E-01	1.19E-01	-2.43E-02	5.48E-02
NA-24	1368.53	99.99	1.08E+11	6.61E+10	-2.47E+10	4.78E+10
	2754.09	99.86	6.61E+10		1.42E+10	2.34E+10
AL-26	1808.65	99.76	9.07E-02	9.07E-02	3.61E-02	3.93E-02
+ K-40	1460.81	*	10.67	1.45E+00	1.75E+01	6.78E-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	7.75E-02	7.75E-02	3.17E-03	3.79E-02
	78.34	96.00	9.51E-02		2.14E-01	4.68E-02
SC-46	889.25	99.98	1.03E-01	1.03E-01	-3.52E-02	4.73E-02
	1120.51	99.99	1.96E-01		2.19E-01	9.31E-02
V-48	983.52	99.98	2.50E-01	2.50E-01	-1.17E-01	1.14E-01
	1312.10	97.50	2.94E-01		-3.30E-02	1.32E-01
CR-51	320.08	9.83	1.35E+00	1.35E+00	-2.66E-01	6.46E-01
MN-54	834.83	99.97	1.02E-01	1.02E-01	-9.42E-03	4.75E-02
CO-56	846.75	99.96	1.14E-01	1.14E-01	1.26E-02	5.26E-02
	1037.75	14.03	7.81E-01		-2.71E-01	3.56E-01
	1238.25	67.00	2.86E-01		1.90E-01	1.34E-01
	1771.40	15.51	5.94E-01		-7.20E-01	2.49E-01
	2598.48	16.90	3.85E-01		-2.77E-02	1.37E-01
CO-57	122.06	85.51	6.51E-02	6.51E-02	-3.90E-05	3.16E-02
	136.48	10.60	5.37E-01		-7.11E-02	2.61E-01
CO-58	810.76	99.40	1.06E-01	1.06E-01	2.09E-02	4.88E-02
FE-59	1099.22	56.50	2.62E-01	2.62E-01	3.06E-02	1.20E-01
	1291.56	43.20	4.24E-01		-1.24E-01	1.96E-01
CO-60	1173.22	100.00	1.27E-01	1.14E-01	3.61E-02	5.90E-02
	1332.49	100.00	1.14E-01		3.05E-02	5.23E-02
ZN-65	1115.52	50.75	2.15E-01	2.15E-01	1.47E-02	9.85E-02
+ GA-67	93.31	*	35.70	5.26E+01	5.13E+01	2.59E+01
	208.95	*	2.24	7.57E+02	4.73E+02	3.69E+02
	300.22	*	16.00	9.88E+01	9.07E+01	4.77E+01
SE-75	121.11	16.70	3.55E-01	1.04E-01	-7.93E-02	1.73E-01
	136.00	59.20	1.04E-01		2.07E-02	5.05E-02
	264.65	59.80	1.33E-01		9.75E-03	6.42E-02
	279.53	25.20	3.37E-01		1.66E-01	1.62E-01
	400.65	11.40	7.40E-01		8.23E-02	3.53E-01
RB-82	776.52	13.00	1.36E+00	1.36E+00	-6.96E-02	6.32E-01
RB-83	520.41	46.00	2.10E-01	2.10E-01	2.69E-02	9.92E-02
	529.64	30.30	3.09E-01		1.20E-01	1.46E-01
	552.65	16.40	5.81E-01		1.31E-01	2.73E-01
KR-85	513.99	0.43	2.56E+01	2.56E+01	2.59E+01	1.23E+01
SR-85	513.99	99.27	1.45E-01	1.45E-01	1.47E-01	6.99E-02
Y-88	898.02	93.40	1.11E-01	1.05E-01	-8.53E-03	5.11E-02
	1836.01	99.38	1.05E-01		-4.42E-03	4.52E-02
NB-93M	16.57	9.43	8.25E+01	8.25E+01	4.33E+01	4.02E+01

Analysis Report for 1510084-14
CP1803S03-04

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94	702.63	100.00	9.17E-02	9.17E-02	1.63E-02	4.30E-02
	871.10	100.00	9.32E-02		-5.69E-04	4.32E-02
NB-95	765.79	99.81	1.82E-01	1.82E-01	2.09E-02	8.59E-02
NB-95M	235.69	25.00	6.00E+01	6.00E+01	-6.71E+00	2.94E+01
ZR-95	724.18	43.70	2.96E-01	2.01E-01	-3.04E-03	1.39E-01
	756.72	55.30	2.01E-01		-1.53E-02	9.33E-02
MO-99	181.06	6.20	5.14E+02	3.71E+02	-3.27E+01	2.49E+02
	739.58	12.80	3.71E+02		-1.61E+02	1.72E+02
	778.00	4.50	1.13E+03		2.63E+02	5.29E+02
RU-103	497.08	89.00	1.31E-01	1.31E-01	-2.03E-02	6.20E-02
RU-106	621.84	9.80	9.13E-01	9.13E-01	-9.35E-02	4.29E-01
AG-108M	433.93	89.90	7.67E-02	7.67E-02	-4.78E-03	3.63E-02
	614.37	90.40	1.10E-01		-2.81E-02	5.20E-02
	722.95	90.50	9.69E-02		-1.45E-03	4.52E-02
	88.03	3.72	2.32E+00	2.32E+00	2.40E+00	1.14E+00
AG-110M	657.75	93.14	8.63E-02	8.63E-02	-3.09E-02	4.01E-02
	677.61	10.53	8.43E-01		1.27E-01	3.94E-01
	706.67	16.46	5.93E-01		1.73E-02	2.78E-01
	763.93	21.98	4.75E-01		7.00E-02	2.23E-01
	884.67	71.63	1.26E-01		6.05E-03	5.80E-02
	1384.27	23.94	4.04E-01		2.25E-03	1.80E-01
CD-113M	263.70	0.02	3.01E+02	3.01E+02	-1.05E+02	1.45E+02
SN-113	255.12	1.93	3.97E+00	1.41E-01	-1.97E+00	1.91E+00
	391.69	64.90	1.41E-01		4.07E-02	6.75E-02
TE123M	159.00	84.10	8.14E-02	8.14E-02	2.85E-02	3.95E-02
SB-124	602.71	97.87	1.22E-01	1.22E-01	1.14E-02	5.78E-02
	645.85	7.26	1.55E+00		2.55E-01	7.26E-01
	722.78	11.10	1.05E+00		-1.57E-02	4.92E-01
	1691.02	49.00	2.03E-01		6.66E-02	8.59E-02
I-125	35.49	6.49	3.19E+00	3.19E+00	1.66E+00	1.55E+00
SB-125	176.33	6.89	8.38E-01	2.64E-01	3.03E-01	4.06E-01
	427.89	29.33	2.64E-01		1.28E-02	1.26E-01
	463.38	10.35	9.07E-01		9.19E-01	4.34E-01
	600.56	17.80	4.91E-01		5.75E-02	2.32E-01
	635.90	11.32	7.00E-01		-1.66E-01	3.27E-01
	414.70	83.30	3.76E-01	3.62E-01	6.64E-02	1.79E-01
SB-126	666.33	99.60	3.94E-01		9.32E-02	1.86E-01
	695.00	99.60	3.62E-01		7.43E-02	1.70E-01
	720.50	53.80	6.87E-01		2.41E-01	3.22E-01
	87.57	37.00	2.24E-01	2.24E-01	2.32E-01	1.10E-01
SB-127	473.00	25.00	3.01E+01	2.25E+01	2.43E+01	1.43E+01
	685.20	35.70	2.25E+01		-2.37E+00	1.05E+01
	783.80	14.70	6.33E+01		3.19E+01	2.97E+01
I-129	29.78	57.00	4.59E-01	4.59E-01	-1.41E-01	2.23E-01
	33.60	13.20	1.34E+00		2.68E-01	6.51E-01
	39.58	7.52	1.52E+00		-9.32E-02	7.39E-01
I-131	284.30	6.05	1.00E+01	7.56E-01	7.00E-01	4.82E+00
	364.48	81.20	7.56E-01		2.51E-04	3.61E-01
	636.97	7.26	9.41E+00		-2.41E+00	4.40E+00
	722.89	1.80	4.24E+01		-6.32E-01	1.98E+01
TE-132	49.72	13.10	1.33E+02	1.67E+01	-4.10E+01	6.48E+01
	228.16	88.00	1.67E+01		7.53E+00	8.11E+00
BA-133	81.00	33.00	1.94E-01	1.71E-01	-1.51E-01	9.47E-02

Analysis Report for 1510084-14
CP1803S03-04

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-133	302.84	17.80	4.32E-01	1.71E-01	4.27E-01	2.09E-01
	356.01	60.00	1.71E-01		5.62E-03	8.30E-02
I-133	529.87	86.30	4.65E+07	4.65E+07	1.80E+07	2.19E+07
XE-133	81.00	38.00	4.62E+00	4.62E+00	-3.61E+00	2.26E+00
CS-134	563.23	8.38	1.06E+00	9.78E-02	2.50E-01	5.00E-01
	569.32	15.43	5.60E-01		2.99E-01	2.65E-01
	604.70	97.60	9.78E-02		1.03E-02	4.63E-02
	795.84	85.40	1.27E-01		1.01E-01	5.96E-02
	801.93	8.73	1.14E+00		-3.53E-01	5.32E-01
CS-135	268.24	16.00	4.83E-01	4.83E-01	6.17E-02	2.34E-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	2.86E+00	3.27E-01	5.91E-01	1.39E+00
	163.89	4.61	4.46E+00		-8.01E-01	2.16E+00
	176.55	13.56	1.51E+00		-6.77E-01	7.29E-01
	273.65	12.66	2.21E+00		-2.15E-01	1.07E+00
	340.57	48.50	7.76E-01		5.82E-02	3.77E-01
	818.50	99.70	3.27E-01		2.14E-02	1.51E-01
	1048.07	79.60	4.64E-01		1.29E-02	2.13E-01
	1235.34	19.70	2.93E+00		4.33E-01	1.38E+00
CS-137	661.65	85.12	1.07E-01	1.07E-01	-1.98E-02	5.02E-02
LA-138	788.74	34.00	2.72E-01	1.32E-01	1.70E-02	1.27E-01
	1435.80	66.00	1.32E-01		-2.01E-02	5.82E-02
CE-139	165.85	80.35	7.64E-02	7.64E-02	-1.34E-02	3.70E-02
BA-140	162.64	6.70	3.17E+00	1.15E+00	-6.75E-01	1.53E+00
	304.84	4.50	5.84E+00		-1.93E+00	2.80E+00
	423.70	3.20	9.27E+00		-7.98E-01	4.41E+00
	437.55	2.00	1.52E+01		1.26E+01	7.26E+00
	537.32	25.00	1.15E+00		-2.63E-01	5.41E-01
LA-140	328.77	20.50	1.55E+00	5.07E-01	8.20E-01	7.48E-01
	487.03	45.50	6.07E-01		-7.06E-02	2.86E-01
	815.85	23.50	1.41E+00		-2.14E-01	6.53E-01
	1596.49	95.49	5.07E-01		3.95E-01	2.31E-01
CE-141	145.44	48.40	2.10E-01	2.10E-01	1.78E-01	1.02E-01
CE-143	57.36	11.80	2.01E+05	7.60E+04	-3.56E+04	9.82E+04
	293.26	42.00	7.60E+04		3.43E+03	3.70E+04
	664.55	5.20	5.90E+05		4.33E+05	2.79E+05
CE-144	133.54	10.80	5.20E-01	5.20E-01	3.03E-02	2.53E-01
PM-144	476.78	42.00	1.90E-01	9.07E-02	-2.95E-02	9.01E-02
	618.01	98.60	9.38E-02		2.27E-02	4.42E-02
	696.49	99.49	9.07E-02		-2.42E-02	4.24E-02
PM-145	36.85	21.70	6.45E-01	3.42E-01	2.68E-01	3.14E-01
	37.36	39.70	3.42E-01		2.16E-01	1.66E-01
	42.30	15.10	6.73E-01		-9.27E-02	3.27E-01
	72.40	2.31	3.81E+00		-4.48E+00	1.87E+00
PM-146	453.90	39.94	1.89E-01	1.89E-01	-1.65E-03	8.96E-02
	735.90	14.01	6.09E-01		1.02E-01	2.83E-01
	747.13	13.10	6.29E-01		-2.88E-01	2.92E-01
ND-147	91.11	28.90	1.26E+00	1.26E+00	-8.29E-01	6.17E-01
	531.02	13.10	2.93E+00		2.00E+00	1.38E+00
PM-149	285.90	3.10	5.61E+03	5.61E+03	-2.70E+03	2.70E+03
EU-152	121.78	20.50	2.55E-01	2.55E-01	-1.53E-04	1.24E-01

Analysis Report for 1510084-14

CP1803S03-04

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	244.69	5.40	1.56E+00	2.55E-01	8.34E-02	7.60E-01
	344.27	19.13	4.13E-01		9.18E-02	1.99E-01
	778.89	9.20	9.91E-01		-2.52E-02	4.62E-01
	964.01	10.40	1.13E+00		9.33E-02	5.28E-01
	1085.78	7.22	1.35E+00		-3.57E-01	6.17E-01
	1112.02	9.60	1.02E+00		-4.99E-01	4.68E-01
	1407.95	14.94	8.32E-01		1.22E-01	3.82E-01
GD-153	97.43	31.30	1.88E-01	1.88E-01	1.28E-01	9.17E-02
	103.18	22.20	2.41E-01		-2.70E-01	1.17E-01
EU-154	123.07	40.50	1.30E-01	1.30E-01	2.12E-02	6.34E-02
	723.30	19.70	4.47E-01		-6.68E-03	2.09E-01
	873.19	11.50	8.31E-01		3.41E-02	3.86E-01
	996.32	10.30	9.01E-01		-1.57E-02	4.13E-01
	1004.76	17.90	5.66E-01		2.06E-01	2.61E-01
	1274.45	35.50	3.31E-01		-6.76E-02	1.52E-01
EU-155	86.50	30.90	2.43E-01	2.43E-01	1.44E-01	1.19E-01
	105.30	20.70	2.55E-01		4.25E-02	1.24E-01
EU-156	811.77	10.40	2.42E+00	2.42E+00	-8.32E-02	1.11E+00
	1153.47	7.20	5.41E+00		-1.81E-01	2.52E+00
	1230.71	8.90	4.86E+00		-8.70E-04	2.27E+00
HO-166M	184.41	72.60	1.01E-01	1.01E-01	1.77E-01	4.94E-02
	280.45	29.60	2.44E-01		7.70E-02	1.18E-01
	410.94	11.10	7.32E-01		4.19E-01	3.50E-01
	711.69	54.10	1.61E-01		-2.78E-02	7.52E-02
TM-171	66.72	0.14	5.49E+01	5.49E+01	1.70E+01	2.69E+01
HF-172	81.75	4.52	1.47E+00	4.82E-01	1.20E-01	7.21E-01
	125.81	11.30	4.82E-01		5.18E-02	2.34E-01
	181.53	20.60	3.76E+00		2.21E+00	-4.32E-02	1.82E+00
LU-172	810.06	16.63	6.89E+00	2.21E+00	2.28E+00	3.19E+00
	912.12	15.25	1.51E+01		3.28E+01	7.26E+00
	1093.66	62.50	2.21E+00		-1.63E-01	1.02E+00
	100.72	5.24	1.04E+00		3.72E-01	2.04E-01	5.07E-01
LU-173	272.11	21.20	3.72E-01	3.72E-01	2.58E-01	1.80E-01
	343.40	84.00	1.24E-01		1.24E-01	6.33E-03	5.95E-02
LU-176	88.34	13.30	5.76E-01	7.36E-02	8.15E-01	2.83E-01
	201.83	86.00	8.37E-02		3.12E-02	4.07E-02
	306.78	94.00	7.36E-02		-8.03E-03	3.53E-02
TA-182	67.75	41.20	2.07E-01	2.07E-01	8.46E-03	1.01E-01
	1121.30	34.90	5.42E-01		7.30E-01	2.57E-01
	1189.05	16.23	8.00E-01		-7.00E-02	3.68E-01
	1221.41	26.98	4.34E-01		0.00E+00	1.98E-01
	1231.02	11.44	1.39E+00		-3.76E-01	6.49E-01
	308.46	29.68	2.97E-01		2.01E-01	-3.85E-02	1.43E-01
IR-192	468.07	48.10	2.01E-01	2.01E-01	1.85E-02	9.54E-02
	279.19	77.30	1.40E-01		1.40E-01	1.29E-01	6.76E-02
BI-207	569.67	97.72	8.45E-02	8.45E-02	3.53E-02	3.99E-02
	1063.62	74.90	1.35E-01		3.38E-02	6.19E-02
	583.14	30.22	5.19E-01		5.19E-01	1.50E+00	2.52E-01
TL-208	860.37	4.48	2.33E+00	5.19E-01	1.36E+00	1.09E+00
	2614.66	35.85	7.10E-01		1.31E+00	3.34E-01
	262.00	45.00	1.59E-01		1.59E-01	3.41E-02	7.66E-02
BI-210M	300.00	23.00	3.41E-01	1.59E-01	-1.30E+00	1.64E-01
	46.50	4.25	3.18E+00		3.18E+00	2.57E+00

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Analysis Report for 1510084-14

CP1803S03-04

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PB-211	404.84	2.90	2.41E+00	2.41E+00	3.87E-01	1.15E+00
	831.96	2.90	3.24E+00		-1.53E+00	1.51E+00
+ BI-212	727.17 *	11.80	8.31E-01	8.31E-01	1.22E+00	3.91E-01
	1620.62	2.75	3.31E+00		-4.62E-01	1.45E+00
+ PB-212	238.63 *	44.60	2.66E-01	2.66E-01	1.65E+00	1.31E-01
	300.09 *	3.41	2.23E+00		2.05E+00	1.08E+00
+ BI-214	609.31 *	46.30	3.04E-01	3.04E-01	1.37E+00	1.47E-01
	1120.29	15.10	1.06E+00		1.18E+00	5.01E-01
	1764.49 *	15.80	3.56E-01		1.77E+00	1.40E-01
	2204.22	4.98	2.01E+00		-2.35E-01	8.64E-01
+ PB-214	295.21 *	19.19	4.21E-01	2.46E-01	1.40E+00	2.04E-01
	351.92 *	37.19	2.46E-01		1.36E+00	1.19E-01
RN-219	401.80	6.50	1.11E+00	1.11E+00	1.35E-01	5.28E-01
RA-223	323.87	3.88	1.94E+00	1.94E+00	-7.20E-01	9.34E-01
+ RA-224	240.98 *	3.95	3.08E+00	3.08E+00	4.55E+00	1.51E+00
RA-225	40.00	31.00	1.17E+00	1.17E+00	-7.15E-02	5.67E-01
+ RA-226	186.21 *	3.28	2.97E+00	2.97E+00	3.63E+00	1.46E+00
TH-227	50.10	8.40	9.83E-01	9.83E-01	-3.03E-01	4.80E-01
	236.00	11.50	1.05E+00		-1.18E-01	5.17E-01
	256.20	6.30	1.09E+00		4.53E-01	5.28E-01
+ AC-228	338.32 *	11.40	8.40E-01	4.82E-01	1.42E+00	4.07E-01
	911.07 *	27.70	4.82E-01		1.34E+00	2.28E-01
	969.11 *	16.60	7.90E-01		9.58E-01	3.73E-01
TH-230	48.44	16.90	5.45E-01	5.45E-01	-1.44E-02	2.66E-01
	62.85	4.60	1.79E+00		2.17E+00	8.80E-01
	67.67	0.37	1.98E+01		8.10E-01	9.69E+00
PA-231	283.67	1.60	4.34E+00	3.33E+00	3.04E-01	2.09E+00
	302.67	2.30	3.33E+00		3.29E+00	1.61E+00
TH-231	25.64	14.70	3.52E+00	1.04E+00	1.38E+00	1.71E+00
	84.21	6.40	1.04E+00		-1.10E-02	5.09E-01
PA-233	311.98	38.60	3.55E-01	3.55E-01	2.32E-01	1.71E-01
PA-234	131.20	20.40	2.78E-01	2.78E-01	1.34E-01	1.35E-01
	733.99	8.80	9.59E-01		-1.52E-01	4.46E-01
	946.00	12.00	7.90E-01		5.88E-02	3.65E-01
PA-234M	1001.03	0.92	1.04E+01	1.04E+01	1.32E+00	4.78E+00
+ TH-234	63.29 *	3.80	2.77E+00	2.77E+00	1.49E+00	1.36E+00
U-235	143.76	10.50	5.55E-01	5.55E-01	4.98E-02	2.70E-01
	163.35	4.70	1.16E+00		-2.09E-01	5.64E-01
	205.31	4.70	1.48E+00		-3.44E+00	7.18E-01
NP-237	86.50	12.60	5.90E-01	5.90E-01	3.51E-01	2.89E-01
NP-239	106.10	22.70	3.78E+02	3.78E+02	1.02E+02	1.84E+02
	228.18	10.70	1.07E+03		4.80E+02	5.17E+02
	277.60	14.10	8.39E+02		3.69E+02	4.05E+02
AM-241	59.54	35.90	2.14E-01	2.14E-01	7.18E-03	1.05E-01
AM-243	74.67	66.00	1.55E-01	1.55E-01	3.91E-01	7.65E-02
CM-243	209.75	3.29	2.31E+00	5.24E-01	1.65E+00	1.13E+00
	228.14	10.60	6.68E-01		3.00E-01	3.24E-01
	277.60	14.00	5.24E-01		2.30E-01	2.53E-01

Analysis Report for 1510084-14
CP1803S03-04

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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
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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: CP1803S03-04

Elapsed Live time: 3600
Elapsed Real Time: 3626

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																																																																																																																																																																																																																																																																																																																																																							
9:	14	181	179	141	120	116	121	92	78	98	90	66	82	77	99	106	88	88	87	78	86	74	88	87	77	83	88	105	94	127	187	107	108	114	86	118	121	116	109	117	105	126	137	138	142	145	186	232	169	143	153	172	145	143	157	176	179	198	460	306	502	444	149	117	128	131	128	180	169	118	228	266	134	195	154	163	279	215	121	88	91	91	116	104	75	74	80	82	83	84	100	87	93	86	91	82	83	90	78	94	74	73	86	69	81	113:	90	77	80	84	76	79	81	121:	84	73	77	80	84	76	79	81	129:	114	96	90	71	71	76	80	77	137:	73	69	76	67	93	76	83	90	145:	89	87	78	93	60	69	73	68	153:	71	81	85	60	94	80	71	81	161:	65	61	81	63	50	67	58	70	169:	59	61	72	52	60	78	77	51	177:	43	65	52	62	63	61	68	59	185:	76	157	143	72	57	44	67	56	193:	57	52	49	57	51	57	54	72	201:	73	68	53	56	47	61	51	47	209:	84	106	50	47	61	48	58	43	217:	39	51	48	49	48	49	48	52	225:	49	43	46	40	51	62	46	44	233:	29	52	42	59	43	178	561	233	241:	105	143	82	47	46	36	45	32	249:	33	36	30	29	29	40	29	37	257:	39	40	51	41	32	44	32	31	265:	44	45	25	30	41	51	76	31	273:	43	24	30	36	40	42	39	40	281:	36	37	27	31	31	27	38	21	289:	31	25	40	32	32	41	130	175	297:	48	23	26	48	62	38	20	27	305:	31	23	28	22	36	30	30	29	313:	27	33	23	23	21	33	29	29	321:	22	22	35	36	32	29	38	38	329:	40	32	38	31	27	25	23	27	337:	23	65	123	45	33	25	35	29	345:	29	28	32	27	26	21	68	241	353:	198	36	26	21	16	28	16	20	361:	22	26	22	14	18	24	26	21

369: 24 20 22 25 19 27 18 19

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	25	22	8	31	35	25	15	21
385:	21	20	15	24	24	31	20	27
393:	18	24	23	23	22	21	23	17
401:	18	20	26	12	17	15	20	13
409:	21	36	30	18	20	26	15	23
417:	16	26	14	20	24	15	20	24
425:	22	14	16	18	26	21	16	21
433:	11	12	13	11	21	28	29	16
441:	17	12	15	19	19	16	20	12
449:	19	17	19	19	19	15	19	9
457:	15	17	17	16	16	25	40	41
465:	13	21	14	14	7	24	21	16
473:	18	14	20	16	17	9	20	13
481:	22	11	18	8	17	15	14	13
489:	12	11	16	10	16	15	9	11
497:	13	13	14	23	18	16	15	16
505:	11	13	10	12	16	40	75	55
513:	25	16	14	12	10	15	19	13
521:	14	14	15	14	15	8	10	14
529:	13	16	10	11	17	15	4	14
537:	11	12	11	15	13	12	12	11
545:	11	11	16	12	11	15	10	11
553:	5	19	12	15	7	14	16	8
561:	20	14	23	14	11	15	13	11
569:	16	12	12	19	10	7	10	14
577:	15	12	10	13	13	27	97	143
585:	38	10	14	12	15	9	8	20
593:	10	14	9	14	15	19	9	9
601:	17	11	19	8	16	20	11	23
609:	127	194	45	12	18	9	12	13
617:	10	18	17	10	12	11	9	18
625:	8	8	16	6	11	8	6	11
633:	12	11	10	9	8	11	6	13
641:	12	10	6	14	6	11	11	14
649:	15	10	8	16	12	7	3	6
657:	9	11	6	13	10	12	10	18
665:	17	20	14	10	8	14	12	12
673:	8	12	15	8	5	8	12	13
681:	7	7	9	12	11	17	9	10
689:	17	8	12	10	10	11	5	15
697:	13	11	5	13	11	17	10	11
705:	10	7	11	12	11	15	10	7
713:	10	10	6	12	9	15	14	12
721:	12	7	5	13	8	11	31	47
729:	13	11	7	8	6	10	10	11
737:	9	3	12	6	10	10	13	11
745:	7	6	7	10	11	3	11	8
753:	10	7	9	11	11	6	8	6
761:	11	6	13	9	15	8	15	16
769:	24	10	7	8	8	10	5	9
777:	11	9	10	7	14	4	10	11
785:	11	17	13	9	7	8	4	7
793:	10	8	26	12	9	8	12	6

801: 10 6 14 15 7 19 10 7

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	3	8	7	8	9	6	4	10
817:	7	6	9	10	7	8	6	9
825:	7	5	8	10	8	14	7	6
833:	8	9	9	19	7	6	5	13
841:	8	4	10	6	8	8	6	9
849:	8	10	10	5	9	8	8	5
857:	11	9	9	7	16	12	8	6
865:	8	9	2	6	11	9	9	6
873:	9	5	14	5	5	10	3	10
881:	6	6	7	7	6	6	5	7
889:	4	6	7	7	8	9	11	5
897:	5	10	4	5	6	7	5	10
905:	7	8	7	8	9	12	49	71
913:	30	6	8	4	6	4	8	12
921:	7	9	8	8	8	9	9	9
929:	5	7	6	9	5	14	11	6
937:	4	6	6	7	9	2	9	6
945:	6	7	4	7	10	8	7	5
953:	7	6	3	7	6	5	5	12
961:	7	7	3	17	18	11	11	13
969:	44	30	10	4	7	6	8	5
977:	10	8	9	3	4	4	2	7
985:	12	3	2	9	8	7	4	5
993:	6	7	10	5	5	8	1	9
1001:	5	7	8	7	9	4	4	11
1009:	4	4	10	4	3	7	3	9
1017:	5	7	5	4	10	6	1	4
1025:	6	5	4	7	11	2	8	8
1033:	7	6	6	6	3	6	5	7
1041:	2	8	5	6	8	10	7	5
1049:	6	4	4	6	7	5	3	11
1057:	7	8	3	10	4	8	3	3
1065:	10	7	4	6	10	8	2	4
1073:	5	5	6	7	6	8	7	3
1081:	6	10	3	6	4	10	4	8
1089:	5	9	3	5	7	10	5	6
1097:	4	10	6	4	8	4	4	4
1105:	10	3	12	7	8	3	4	8
1113:	5	4	7	6	7	5	10	30
1121:	40	9	9	11	6	6	3	10
1129:	2	10	7	10	4	5	7	6
1137:	9	5	7	4	6	10	3	4
1145:	3	7	4	5	8	7	4	9
1153:	5	9	13	14	16	7	10	7
1161:	5	7	6	5	7	5	6	6
1169:	7	14	8	7	13	7	2	10
1177:	7	8	2	4	8	11	4	8
1185:	6	7	8	3	8	10	4	6
1193:	5	9	6	8	9	10	9	10
1201:	3	3	3	3	3	8	8	8
1209:	6	10	6	6	10	3	14	6
1217:	5	2	2	9	6	3	5	8
1225:	7	13	12	9	7	14	4	8

1233: 14 11 8 12 14 19 16 11

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Channel	1	2	3	4	5	6	7	8
1241:	5	8	1	3	8	5	4	6
1249:	4	8	6	4	7	5	5	4
1257:	4	6	2	9	5	2	7	6
1265:	4	8	2	8	3	4	6	4
1273:	3	7	4	8	5	4	6	6
1281:	4	7	6	3	9	7	7	9
1289:	11	2	8	1	3	3	6	7
1297:	5	3	7	2	3	4	3	6
1305:	3	1	4	5	4	5	2	2
1313:	3	2	3	2	4	4	3	3
1321:	1	3	3	7	3	5	3	5
1329:	1	9	3	8	5	5	1	2
1337:	2	4	3	3	1	5	2	5
1345:	4	4	6	6	2	4	1	1
1353:	3	2	4	2	2	1	3	4
1361:	2	3	4	3	2	2	3	2
1369:	0	4	3	2	1	4	3	4
1377:	8	9	7	8	3	0	1	2
1385:	4	2	1	1	1	3	0	6
1393:	2	2	2	0	3	0	0	5
1401:	5	10	2	3	1	4	6	6
1409:	10	4	5	4	4	1	4	5
1417:	0	1	2	3	3	1	3	5
1425:	4	5	5	4	2	3	0	3
1433:	5	3	1	3	2	0	2	4
1441:	1	1	6	2	2	4	2	4
1449:	6	3	3	3	3	2	5	6
1457:	3	2	9	94	208	151	43	4
1465:	2	2	1	3	2	1	2	3
1473:	1	0	3	1	0	3	4	2
1481:	2	3	3	3	1	2	3	2
1489:	3	3	1	2	0	1	2	3
1497:	2	3	2	2	1	2	2	1
1505:	0	0	0	2	1	6	2	1
1513:	6	3	0	4	2	3	0	1
1521:	2	2	0	1	5	0	1	2
1529:	1	0	2	2	1	1	3	1
1537:	1	1	3	4	2	4	4	3
1545:	3	6	0	2	5	3	2	3
1553:	1	2	2	1	2	1	2	0
1561:	0	1	0	0	2	1	0	0
1569:	0	1	1	2	2	2	5	0
1577:	1	1	0	5	2	2	4	2
1585:	2	1	2	1	9	6	0	6
1593:	9	4	5	2	2	2	5	0
1601:	0	1	4	3	0	1	0	3
1609:	1	0	2	3	1	1	3	0
1617:	0	2	2	3	3	4	2	1
1625:	3	2	0	1	1	3	3	3
1633:	1	3	1	1	0	2	2	1
1641:	1	0	2	2	3	0	2	1
1649:	1	3	3	0	2	2	1	1
1657:	1	2	1	0	5	4	1	1

1665: 1 1 2 2 3 3 1 2

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Channel	1	2	3	4	5	6	7	8
1673:	0	0	0	1	3	1	0	0
1681:	0	2	1	0	2	0	2	1
1689:	0	1	1	1	2	2	0	0
1697:	1	0	5	2	2	1	4	2
1705:	3	0	0	4	0	0	2	0
1713:	1	0	2	0	3	3	2	2
1721:	0	0	0	0	2	0	4	1
1729:	5	2	3	1	1	3	1	1
1737:	1	0	2	0	1	1	1	0
1745:	0	1	2	1	3	0	1	1
1753:	2	0	1	1	1	0	0	1
1761:	0	0	5	16	26	17	2	0
1769:	0	2	1	0	1	1	2	0
1777:	0	4	1	2	1	1	1	2
1785:	1	1	2	0	0	2	0	1
1793:	1	2	1	3	0	0	3	0
1801:	2	0	0	1	2	1	1	2
1809:	2	0	2	3	0	0	2	1
1817:	2	0	1	0	1	1	1	2
1825:	2	0	3	1	3	1	0	0
1833:	2	1	0	3	2	3	2	0
1841:	4	0	0	2	2	0	3	5
1849:	3	0	2	1	2	1	0	1
1857:	1	0	0	1	0	2	2	3
1865:	0	1	1	1	2	0	0	0
1873:	0	0	1	0	2	1	0	1
1881:	0	2	1	2	2	0	1	1
1889:	4	1	2	1	1	0	1	2
1897:	1	0	1	1	1	1	2	3
1905:	2	2	1	4	1	0	1	0
1913:	1	1	0	0	3	0	1	0
1921:	0	0	2	1	1	0	1	1
1929:	0	3	0	1	1	1	2	1
1937:	0	0	1	1	0	0	0	0
1945:	0	1	0	1	1	0	3	3
1953:	1	1	0	3	1	1	1	1
1961:	2	0	0	2	3	1	0	0
1969:	0	0	1	0	0	0	0	3
1977:	1	0	1	1	0	2	2	2
1985:	1	1	1	1	2	0	1	2
1993:	0	0	1	1	1	0	1	0
2001:	0	1	0	0	1	1	0	3
2009:	0	0	1	1	5	0	2	1
2017:	0	0	2	1	1	0	0	1
2025:	2	0	0	0	1	0	0	3
2033:	1	1	2	0	1	2	2	1
2041:	1	2	0	1	0	0	0	0
2049:	3	0	2	2	1	1	1	1
2057:	1	0	1	0	0	0	0	1
2065:	1	1	1	0	0	0	1	1
2073:	0	1	1	1	0	1	1	0
2081:	0	1	1	0	0	0	2	0
2089:	0	1	1	0	1	1	1	1

2097: 0 0 0 2 1 3 0 5

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

2529: 1 0 0 2 0 1 0 0

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2537:	0	0	0	0	0	0	1	0
2545:	0	0	1	1	1	0	0	2
2553:	1	0	0	0	0	1	0	0
2561:	1	0	0	1	0	1	0	0
2569:	0	0	1	1	0	0	0	0
2577:	0	0	1	0	0	0	0	0
2585:	1	2	0	0	0	0	0	0
2593:	0	0	0	1	0	0	0	0
2601:	0	1	1	1	0	0	0	0
2609:	0	0	1	1	2	11	30	23
2617:	12	3	0	0	0	0	0	0
2625:	0	0	0	0	0	0	0	0
2633:	0	0	1	0	0	1	0	0
2641:	0	0	0	1	0	0	0	0
2649:	0	0	0	1	0	0	1	2
2657:	0	1	0	0	0	0	0	0
2665:	0	0	0	0	0	0	1	0
2673:	0	0	0	1	0	0	0	0
2681:	0	0	1	0	0	0	1	0
2689:	2	1	0	0	0	0	0	1
2697:	1	0	1	0	0	0	0	0
2705:	0	0	0	0	0	1	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	1	0	0	0	0	0
2729:	0	1	0	0	0	0	0	1
2737:	0	0	0	0	1	0	0	0
2745:	0	0	0	0	1	0	0	0
2753:	0	0	0	1	0	0	0	0
2761:	0	0	0	0	0	0	0	0
2769:	0	0	0	1	0	0	0	0
2777:	1	1	0	1	0	0	0	0
2785:	0	1	0	0	2	0	0	0
2793:	0	0	0	0	0	0	1	0
2801:	0	0	0	0	0	0	1	0
2809:	3	1	1	0	0	0	0	0
2817:	0	0	0	1	0	0	0	0
2825:	0	0	0	1	0	0	0	0
2833:	0	1	0	0	0	0	1	1
2841:	0	0	0	0	0	0	0	0
2849:	0	0	0	1	1	1	1	0
2857:	0	0	1	0	0	0	0	0
2865:	0	1	0	1	0	0	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	1	0	0	0	0	0
2889:	0	1	0	0	1	0	0	0
2897:	0	0	0	0	0	0	0	1
2905:	0	0	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	0
2937:	0	1	1	0	1	0	0	0
2945:	0	0	0	1	0	0	0	0
2953:	0	0	0	1	0	0	1	1

2961: 0 0 0 1 0 1 0 0

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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:	0	0	0	0	0	2	0	0
2993:	0	0	1	0	0	0	1	0
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	1	0
3025:	0	0	0	0	0	0	0	1
3033:	0	1	0	0	0	0	0	0
3041:	0	1	0	0	0	1	0	0
3049:	1	0	0	0	0	0	1	0
3057:	0	0	1	0	1	0	0	0
3065:	0	0	0	0	0	0	1	0
3073:	0	1	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:	0	0	1	0	0	0	0	0
3105:	1	0	1	0	0	0	0	0
3113:	0	0	0	0	1	1	0	0
3121:	1	0	1	1	0	1	0	0
3129:	1	0	0	0	1	1	1	0
3137:	0	0	0	0	0	0	0	1
3145:	0	0	0	1	0	0	0	0
3153:	0	0	0	0	0	0	0	1
3161:	0	0	1	0	0	0	0	0
3169:	0	0	0	0	0	1	0	0
3177:	0	0	0	0	0	0	0	2
3185:	0	0	0	0	0	0	0	0
3193:	0	0	2	0	0	1	0	0
3201:	0	1	0	0	0	1	0	1
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	0	0	1	0	0	1
3233:	0	1	0	0	0	0	0	1
3241:	0	0	0	0	0	0	0	1
3249:	0	0	0	0	0	1	0	0
3257:	0	0	0	0	1	1	2	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	0	1
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	1	0	0	0	0	0	1
3329:	1	0	0	0	0	0	0	0
3337:	0	0	1	0	0	0	0	0
3345:	0	0	0	1	0	0	0	0
3353:	1	0	0	0	0	1	0	0
3361:	0	0	0	0	1	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	2	0	0	0	0	1

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP1803S03-04

Channel	1	2	3	4	5	6	7	8
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	1	0	3
3417:	0	0	1	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	1	0
3441:	0	0	0	1	1	0	0	0
3449:	0	0	1	0	0	0	0	0
3457:	0	0	0	0	1	0	0	0
3465:	1	0	0	0	0	0	0	0
3473:	1	0	1	1	0	0	0	0
3481:	0	0	0	1	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	1	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	1	0	0	0
3521:	0	0	0	0	0	0	1	1
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	1	0	2
3545:	1	0	0	0	0	0	0	0
3553:	0	0	0	0	1	0	0	0
3561:	0	0	0	1	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	1	1	0	0	0
3593:	0	0	0	1	0	0	0	0
3601:	0	1	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	1	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	0	0	0	0	0	0
3665:	0	0	0	0	0	1	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	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	0	1	0	0	1	0	0
3737:	0	0	0	0	0	2	1	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	1	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	1	0
3785:	1	1	0	0	0	0	0	0
3793:	0	0	0	0	0	1	0	0
3801:	0	0	0	1	0	0	0	0
3809:	0	0	0	0	0	0	0	1
3817:	0	0	0	0	0	0	0	0

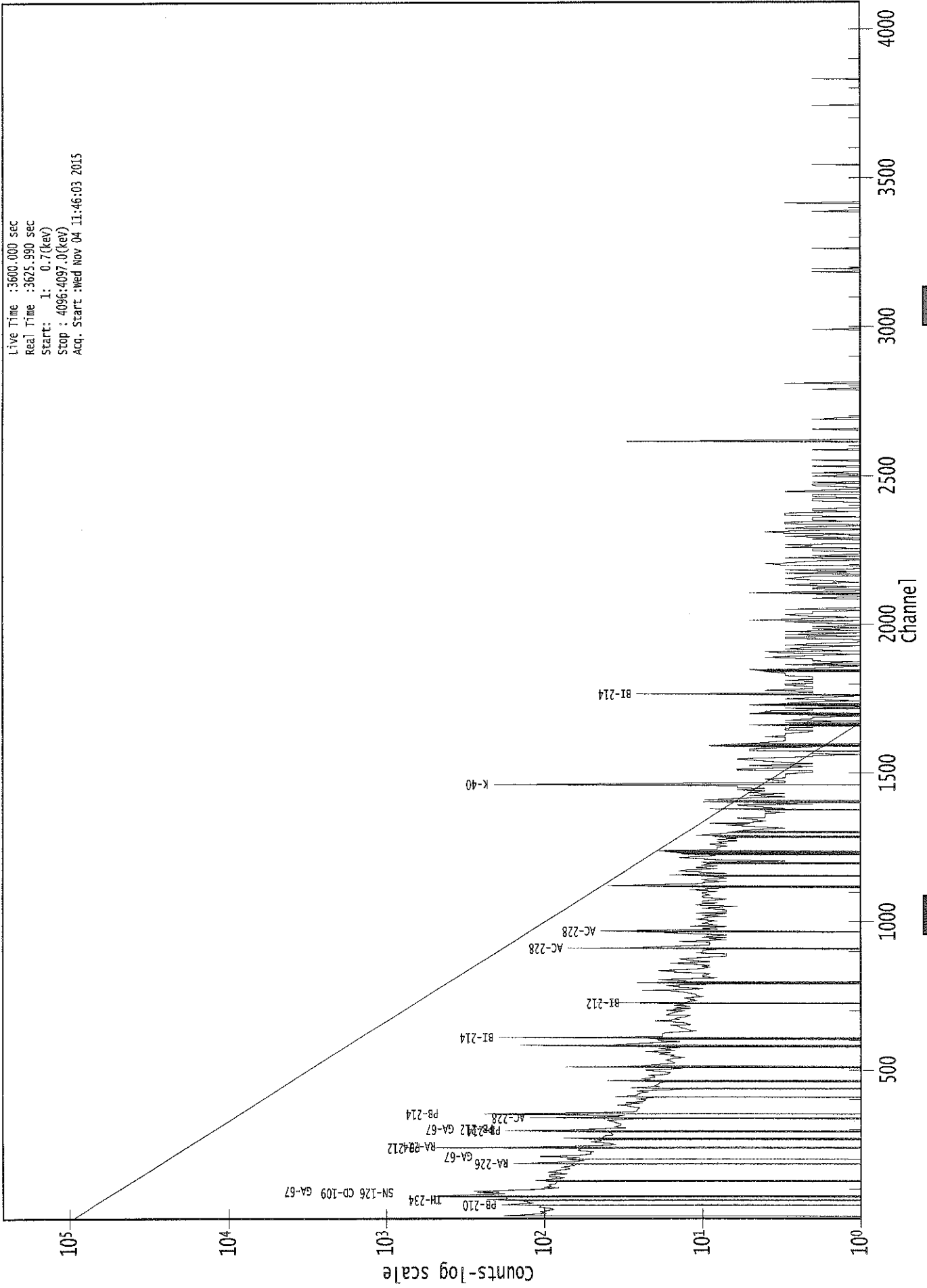
3825: 0 0 0 0 1 0 2 0

Sample Title: CP1803S03-04

Channel	1	2	3	4	5	6	7	8
3833:	0	0	0	0	0	0	0	0
3841:	0	1	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	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	1	0	0	0	0	0	1	0
3913:	0	0	0	0	1	0	0	0
3921:	0	0	1	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	1	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	1	0
3969:	1	0	0	0	1	0	0	0
3977:	0	0	0	0	0	0	1	0
3985:	0	0	1	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	1	0	1	0
4017:	0	0	0	0	1	0	0	0
4025:	0	0	1	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	1	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	1	0	0	0	0	0
4073:	0	1	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000029113.CNF

Live Time : 3600.000 sec
Real Time : 3625.990 sec
Start : 1: 0.7(keV)
Stop : 4096:4097.0(keV)
Acq. Start : Wed Nov 04 11:46:03 2015



: 00872

*REP
11/4/15*Analysis Report for 1510084-15
CP1803S06-07

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-15
Sample Description : CP1803S06-07
Sample Type : SOIL

Sample Size : 5.400E+02 grams
Facility : Countroom

Sample Taken On : 10/10/2015 9:51:29AM
Acquisition Started : 11/4/2015 1:52:01PM

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 : 29138

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

*AG
11/5/15*

Analysis Report for 1510084-15
CP1803S06-07

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 2:52:05PM
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	63.43	63.77	0.0000	0.00
2	74.94	75.28	0.0000	0.00
3	77.49	77.83	0.0000	0.00
4	87.76	88.10	0.0000	0.00
5	130.05	130.38	0.0000	0.00
6	186.24	186.54	0.0000	0.00
7	209.49	209.79	0.0000	0.00
8	238.73	239.02	0.0000	0.00
9	241.87	242.15	0.0000	0.00
10	271.12	271.40	0.0000	0.00
11	295.42	295.69	0.0000	0.00
12	299.96	300.23	0.0000	0.00
13	338.50	338.75	0.0000	0.00
14	352.10	352.35	0.0000	0.00
15	463.14	463.35	0.0000	0.00
16	511.00	511.20	0.0000	0.00
17	583.36	583.53	0.0000	0.00
18	609.60	609.76	0.0000	0.00
19	636.45	636.60	0.0000	0.00
20	639.47	639.62	0.0000	0.00
21	664.38	664.52	0.0000	0.00
22	705.37	705.50	0.0000	0.00
23	714.72	714.84	0.0000	0.00
24	727.65	727.77	0.0000	0.00
25	756.54	756.65	0.0000	0.00
26	769.45	769.55	0.0000	0.00
27	795.12	795.22	0.0000	0.00
28	850.72	850.79	0.0000	0.00
29	861.39	861.47	0.0000	0.00
30	867.34	867.41	0.0000	0.00
31	871.72	871.79	0.0000	0.00
32	911.58	911.63	0.0000	0.00
33	954.98	955.02	0.0000	0.00
34	969.57	969.60	0.0000	0.00
35	1004.89	1004.92	0.0000	0.00
36	1110.48	1110.46	0.0000	0.00
37	1121.19	1121.18	0.0000	0.00
38	1124.45	1124.43	0.0000	0.00
39	1224.98	1224.92	0.0000	0.00
40	1229.64	1229.59	0.0000	0.00
41	1238.58	1238.52	0.0000	0.00
42	1378.30	1378.19	0.0000	0.00

Analysis Report for 1510084-15
CP1803S06-07

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1413.44	1413.31	0.0000	0.00
44	1421.97	1421.84	0.0000	0.00
45	1461.52	1461.38	0.0000	0.00
46	1496.93	1496.77	0.0000	0.00
47	1541.97	1541.80	0.0000	0.00
48	1588.28	1588.09	0.0000	0.00
49	1592.99	1592.79	0.0000	0.00
50	1639.01	1638.80	0.0000	0.00
51	1703.13	1702.90	0.0000	0.00
52	1765.38	1765.13	0.0000	0.00
53	1847.68	1847.39	0.0000	0.00
54	1946.32	1946.00	0.0000	0.00
55	2043.41	2043.04	0.0000	0.00
56	2103.65	2103.26	0.0000	0.00
57	2127.39	2127.00	0.0000	0.00
58	2201.20	2200.78	0.0000	0.00
59	2205.14	2204.72	0.0000	0.00
60	2340.97	2340.49	0.0000	0.00
61	2413.50	2413.00	0.0000	0.00
62	2491.80	2491.27	0.0000	0.00
63	2615.48	2614.90	0.0000	0.00
64	2669.81	2669.20	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510084-15

CP1803S06-07

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 2:52:05PM

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	59 -	68	63.77	3.38E+02	135.94	2.45E+03	1.54
M	2	72 -	83	75.28	4.26E+02	99.19	1.56E+03	1.60
m	3	72 -	83	77.83	7.65E+02	106.82	1.49E+03	1.61
	4	86 -	91	88.10	2.27E+02	98.24	1.74E+03	1.51
	5	127 -	133	130.38	8.35E+01	80.27	1.11E+03	1.33
	6	183 -	191	186.54	2.97E+02	90.06	1.06E+03	2.06
	7	207 -	213	209.79	1.17E+02	68.19	7.56E+02	1.83
M	8	233 -	249	239.02	1.23E+03	83.20	4.06E+02	1.68
m	9	233 -	249	242.15	2.04E+02	63.23	3.73E+02	1.68
	10	267 -	275	271.40	1.15E+02	66.56	6.08E+02	1.97
M	11	292 -	305	295.69	3.71E+02	52.38	2.89E+02	1.77
m	12	292 -	305	300.23	6.41E+01	45.86	3.75E+02	1.91
	13	335 -	341	338.75	2.40E+02	54.94	3.74E+02	1.46
	14	347 -	356	352.35	6.08E+02	74.24	4.41E+02	1.86
	15	460 -	468	463.35	9.41E+01	42.95	2.28E+02	2.13
	16	507 -	516	511.20	2.15E+02	54.26	2.91E+02	1.98
	17	578 -	588	583.53	3.55E+02	57.25	2.48E+02	1.90
	18	606 -	614	609.76	4.29E+02	59.70	2.87E+02	1.66
M	19	635 -	643	636.60	1.38E+01	14.06	4.56E+01	2.41
m	20	635 -	643	639.62	1.91E+01	27.12	1.09E+02	2.20
	21	661 -	669	664.52	3.05E+01	35.18	1.73E+02	5.51
	22	699 -	711	705.50	5.67E+01	52.26	2.81E+02	6.21
	23	712 -	718	714.84	2.36E+01	23.96	8.69E+01	2.61
	24	723 -	730	727.77	8.95E+01	34.99	1.45E+02	1.61
	25	751 -	761	756.65	4.00E+01	37.30	1.62E+02	2.46
	26	762 -	779	769.55	1.09E+02	55.81	2.45E+02	5.04
	27	792 -	799	795.22	4.97E+01	30.98	1.25E+02	1.46
	28	846 -	856	850.79	3.23E+01	35.87	1.55E+02	6.52
	29	858 -	866	861.47	3.32E+01	33.11	1.48E+02	2.75
M	30	866 -	875	867.41	1.49E+01	12.64	3.36E+01	2.34
m	31	866 -	875	871.79	1.84E+01	23.10	8.14E+01	2.35
	32	906 -	916	911.63	2.64E+02	47.47	1.59E+02	2.04
	33	949 -	960	955.02	3.79E+01	31.11	1.02E+02	8.17
	34	966 -	973	969.60	8.02E+01	43.31	2.34E+02	1.87
	35	997 -	1015	1004.92	6.80E+01	39.79	1.14E+02	13.18
	36	1108 -	1113	1110.46	1.65E+01	18.03	5.30E+01	2.97
M	37	1114 -	1139	1121.18	7.82E+01	25.62	6.55E+01	2.49
m	38	1114 -	1139	1124.43	2.12E+01	24.66	5.59E+01	2.49
M	39	1223 -	1232	1224.92	1.11E+01	13.02	3.82E+01	2.98
m	40	1223 -	1232	1229.59	1.99E+01	21.85	6.69E+01	2.93

Analysis Report for 1510084-15

CP1803S06-07

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1238.58	1233 - 1249		1238.52	3.93E+01	49.05	2.21E+02	3.79
42	1378.30	1374 - 1383		1378.19	2.59E+01	18.52	3.22E+01	2.17
43	1413.44	1411 - 1417		1413.31	1.33E+01	10.43	9.39E+00	1.59
44	1421.97	1419 - 1424		1421.84	1.25E+01	8.83	5.07E+00	2.64
45	1461.52	1455 - 1467		1461.38	7.72E+02	57.99	3.24E+01	2.22
46	1496.93	1491 - 1501		1496.77	1.55E+01	17.59	3.30E+01	3.53
47	1541.97	1539 - 1545		1541.80	1.15E+01	8.97	5.00E+00	3.01
M	48	1588.28	1585 - 1596	1588.09	1.50E+01	11.53	1.65E+01	3.25
m	49	1592.99	1585 - 1596	1592.79	1.36E+01	15.79	2.06E+01	3.62
50	1639.01	1635 - 1642		1638.80	1.00E+01	11.66	1.60E+01	2.32
51	1703.13	1700 - 1705		1702.90	7.05E+00	8.43	7.91E+00	3.02
52	1765.38	1761 - 1770		1765.13	7.99E+01	19.65	8.12E+00	2.17
53	1847.68	1844 - 1851		1847.39	1.24E+01	8.49	3.21E+00	1.89
54	1946.32	1942 - 1950		1946.00	7.50E+00	9.41	9.00E+00	2.83
55	2043.41	2039 - 2047		2043.04	8.64E+00	8.02	4.73E+00	1.90
56	2103.65	2099 - 2107		2103.26	1.70E+01	13.60	1.80E+01	3.37
57	2127.39	2123 - 2130		2127.00	7.00E+00	8.72	8.00E+00	1.45
M	58	2201.20	2199 - 2207	2200.78	7.57E+00	5.34	5.52E-01	2.48
m	59	2205.14	2199 - 2207	2204.72	1.90E+01	11.51	8.48E+00	2.35
60	2340.97	2338 - 2342		2340.49	4.75E+00	5.50	2.50E+00	1.08
61	2413.50	2410 - 2415		2413.00	8.00E+00	5.66	0.00E+00	1.16
62	2491.80	2487 - 2494		2491.27	6.19E+00	6.93	3.63E+00	2.51
63	2615.48	2611 - 2621		2614.90	1.30E+02	23.63	3.88E+00	2.51
64	2669.81	2666 - 2671		2669.20	5.00E+00	4.47	0.00E+00	2.31

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 : 11/4/2015 2:52:05PM

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	63.43	59 -	68	3.38E+02	135.94	2.45E+03	1.08E+02
M	2	74.94	72 -	83	4.26E+02	99.19	6.50E+01
m	3	77.49	72 -	83	7.65E+02	106.82	6.34E+01
4	87.76	86 -	91	2.27E+02	98.24	1.74E+03	7.69E+01

: 00877

Analysis Report for 1510084-15

CP1803S06-07

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
5	130.05	127 -	133	8.35E+01	80.27	1.11E+03	6.43E+01
6	186.24	183 -	191	2.97E+02	90.06	1.06E+03	6.84E+01
7	209.49	207 -	213	1.17E+02	68.19	7.56E+02	5.32E+01
M 8	238.73	233 -	249	1.23E+03	83.20	4.06E+02	3.31E+01
m 9	241.87	233 -	249	2.04E+02	63.23	3.73E+02	3.18E+01
10	271.12	267 -	275	1.15E+02	66.56	6.08E+02	5.18E+01
M 11	295.42	292 -	305	3.71E+02	52.38	2.89E+02	2.80E+01
m 12	299.96	292 -	305	6.41E+01	45.86	3.75E+02	3.18E+01
13	338.50	335 -	341	2.40E+02	54.94	3.74E+02	3.73E+01
14	352.10	347 -	356	6.08E+02	74.24	4.41E+02	4.56E+01
15	463.14	460 -	468	9.41E+01	42.95	2.28E+02	3.15E+01
16	511.00	507 -	516	2.15E+02	54.26	2.91E+02	3.75E+01
17	583.36	578 -	588	3.55E+02	57.25	2.48E+02	3.54E+01
18	609.60	606 -	614	4.29E+02	59.70	2.87E+02	3.53E+01
M 19	636.45	635 -	643	1.38E+01	14.06	4.56E+01	1.11E+01
m 20	639.47	635 -	643	1.91E+01	27.12	1.09E+02	1.72E+01
21	664.38	661 -	669	3.05E+01	35.18	1.73E+02	2.75E+01
22	705.37	699 -	711	5.67E+01	52.26	2.81E+02	4.11E+01
23	714.72	712 -	718	2.36E+01	23.96	8.69E+01	1.80E+01
24	727.65	723 -	730	8.95E+01	34.99	1.45E+02	2.42E+01
25	756.54	751 -	761	4.00E+01	37.30	1.62E+02	2.88E+01
26	769.45	762 -	779	1.09E+02	55.81	2.45E+02	4.25E+01
27	795.12	792 -	799	4.97E+01	30.98	1.25E+02	2.27E+01
28	850.72	846 -	856	3.23E+01	35.87	1.55E+02	2.80E+01
29	861.39	858 -	866	3.32E+01	33.11	1.48E+02	2.55E+01
M 30	867.34	866 -	875	1.49E+01	12.64	3.36E+01	9.52E+00
m 31	871.72	866 -	875	1.84E+01	23.10	8.14E+01	1.48E+01
32	911.58	906 -	916	2.64E+02	47.47	1.59E+02	2.84E+01
33	954.98	949 -	960	3.79E+01	31.11	1.02E+02	2.35E+01
34	969.57	966 -	973	8.02E+01	43.31	2.34E+02	3.24E+01
35	1004.89	997 -	1015	6.80E+01	39.79	1.14E+02	2.98E+01
36	1110.48	1108 -	1113	1.65E+01	18.03	5.30E+01	1.32E+01
M 37	1121.19	1114 -	1139	7.82E+01	25.62	6.55E+01	1.33E+01
m 38	1124.45	1114 -	1139	2.12E+01	24.66	5.59E+01	1.23E+01
M 39	1224.98	1223 -	1232	1.11E+01	13.02	3.82E+01	1.02E+01
m 40	1229.64	1223 -	1232	1.99E+01	21.85	6.69E+01	1.34E+01
41	1238.58	1233 -	1249	3.93E+01	49.05	2.21E+02	3.90E+01
42	1378.30	1374 -	1383	2.59E+01	18.52	3.22E+01	1.90E+01
43	1413.44	1411 -	1417	1.33E+01	10.43	9.39E+00	6.13E+00
44	1421.97	1419 -	1424	1.25E+01	8.83	5.07E+00	4.36E+00
45	1461.52	1455 -	1467	7.72E+02	57.99	3.24E+01	1.37E+01
46	1496.93	1491 -	1501	1.55E+01	17.59	3.30E+01	1.29E+01
47	1541.97	1539 -	1545	1.15E+01	8.97	5.00E+00	4.83E+00
M 48	1588.28	1585 -	1596	1.50E+01	11.53	1.65E+01	6.68E+00
m 49	1592.99	1585 -	1596	1.36E+01	15.79	2.06E+01	7.45E+00
50	1639.01	1635 -	1642	1.00E+01	11.66	1.60E+01	8.05E+00
51	1703.13	1700 -	1705	7.05E+00	8.43	7.91E+00	5.38E+00
52	1765.38	1761 -	1770	7.99E+01	19.65	8.12E+00	6.69E+00
53	1847.68	1844 -	1851	1.24E+01	8.49	3.21E+00	3.89E+00
54	1946.32	1942 -	1950	7.50E+00	9.41	9.00E+00	6.29E+00
55	2043.41	2039 -	2047	8.64E+00	8.02	4.73E+00	4.48E+00

Analysis Report for 1510084-15
CP1803S06-07

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	56	2103.65	2099 - 2107	1.70E+01	13.60	1.80E+01	8.89E+00
	57	2127.39	2123 - 2130	7.00E+00	8.72	8.00E+00	5.70E+00
M	58	2201.20	2199 - 2207	7.57E+00	5.34	5.52E-01	1.22E+00
m	59	2205.14	2199 - 2207	1.90E+01	11.51	8.48E+00	4.79E+00
	60	2340.97	2338 - 2342	4.75E+00	5.50	2.50E+00	2.76E+00
	61	2413.50	2410 - 2415	8.00E+00	5.66	0.00E+00	0.00E+00
	62	2491.80	2487 - 2494	6.19E+00	6.93	3.63E+00	3.96E+00
	63	2615.48	2611 - 2621	1.30E+02	23.63	3.88E+00	5.07E+00
	64	2669.81	2666 - 2671	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 : 11/4/2015 2:52:05PM

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	63.43	59 - 68	63.77	3.38E+02	135.94	2.45E+03	TH-234 TH-230
M	2	74.94	72 - 83	75.28	4.26E+02	99.19	1.56E+03	AM-243
m	3	77.49	72 - 83	77.83	7.65E+02	106.82	1.49E+03	TI-44
	4	87.76	86 - 91	88.10	2.27E+02	98.24	1.74E+03	SN-126 CD-109 LU-176
	5	130.05	127 - 133	130.38	8.35E+01	80.27	1.11E+03	.....
	6	186.24	183 - 191	186.54	2.97E+02	90.06	1.06E+03	RA-226
	7	209.49	207 - 213	209.79	1.17E+02	68.19	7.56E+02	CM-243 GA-67
M	8	238.73	233 - 249	239.02	1.23E+03	83.20	4.06E+02	PB-212
m	9	241.87	233 - 249	242.15	2.04E+02	63.23	3.73E+02	RA-224
	10	271.12	267 - 275	271.40	1.15E+02	66.56	6.08E+02	LU-173
M	11	295.42	292 - 305	295.69	3.71E+02	52.38	2.89E+02	PB-214
m	12	299.96	292 - 305	300.23	6.41E+01	45.86	3.75E+02	BI-210M PB-212

Analysis Report for 1510084-15

CP1803S06-07

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
								GA-67
13	338.50	335 -	341	338.75	2.40E+02	54.94	3.74E+02	AC-228
14	352.10	347 -	356	352.35	6.08E+02	74.24	4.41E+02	PB-214
15	463.14	460 -	468	463.35	9.41E+01	42.95	2.28E+02	SB-125
16	511.00	507 -	516	511.20	2.15E+02	54.26	2.91E+02	.....
17	583.36	578 -	588	583.53	3.55E+02	57.25	2.48E+02	TL-208
18	609.60	606 -	614	609.76	4.29E+02	59.70	2.87E+02	BI-214
M 19	636.45	635 -	643	636.60	1.38E+01	14.06	4.56E+01	I-131
								SB-125
m 20	639.47	635 -	643	639.62	1.91E+01	27.12	1.09E+02	.....
21	664.38	661 -	669	664.52	3.05E+01	35.18	1.73E+02	CE-143
22	705.37	699 -	711	705.50	5.67E+01	52.26	2.81E+02	.....
23	714.72	712 -	718	714.84	2.36E+01	23.96	8.69E+01	.....
24	727.65	723 -	730	727.77	8.95E+01	34.99	1.45E+02	BI-212
25	756.54	751 -	761	756.65	4.00E+01	37.30	1.62E+02	ZR-95
26	769.45	762 -	779	769.55	1.09E+02	55.81	2.45E+02	.....
27	795.12	792 -	799	795.22	4.97E+01	30.98	1.25E+02	CS-134
28	850.72	846 -	856	850.79	3.23E+01	35.87	1.55E+02	.....
29	861.39	858 -	866	861.47	3.32E+01	33.11	1.48E+02	.....
M 30	867.34	866 -	875	867.41	1.49E+01	12.64	3.36E+01	.....
m 31	871.72	866 -	875	871.79	1.84E+01	23.10	8.14E+01	NB-94
32	911.58	906 -	916	911.63	2.64E+02	47.47	1.59E+02	AC-228
								LU-172
33	954.98	949 -	960	955.02	3.79E+01	31.11	1.02E+02	.....
34	969.57	966 -	973	969.60	8.02E+01	43.31	2.34E+02	AC-228
35	1004.89	997 -	1015	1004.92	6.80E+01	39.79	1.14E+02	EU-154
36	1110.48	1108 -	1113	1110.46	1.65E+01	18.03	5.30E+01	.....
M 37	1121.19	1114 -	1139	1121.18	7.82E+01	25.62	6.55E+01	TA-182
								SC-46
								BI-214
m 38	1124.45	1114 -	1139	1124.43	2.12E+01	24.66	5.59E+01	.....
M 39	1224.98	1223 -	1232	1224.92	1.11E+01	13.02	3.82E+01	.....
m 40	1229.64	1223 -	1232	1229.59	1.99E+01	21.85	6.69E+01	.....
41	1238.58	1233 -	1249	1238.52	3.93E+01	49.05	2.21E+02	CO-56
42	1378.30	1374 -	1383	1378.19	2.59E+01	18.52	3.22E+01	.....
43	1413.44	1411 -	1417	1413.31	1.33E+01	10.43	9.39E+00	.....
44	1421.97	1419 -	1424	1421.84	1.25E+01	8.83	5.07E+00	.....
45	1461.52	1455 -	1467	1461.38	7.72E+02	57.99	3.24E+01	K-40
46	1496.93	1491 -	1501	1496.77	1.55E+01	17.59	3.30E+01	.....
47	1541.97	1539 -	1545	1541.80	1.15E+01	8.97	5.00E+00	.....
M 48	1588.28	1585 -	1596	1588.09	1.50E+01	11.53	1.65E+01	.....
m 49	1592.99	1585 -	1596	1592.79	1.36E+01	15.79	2.06E+01	.....
50	1639.01	1635 -	1642	1638.80	1.00E+01	11.66	1.60E+01	.....
51	1703.13	1700 -	1705	1702.90	7.05E+00	8.43	7.91E+00	.....
52	1765.38	1761 -	1770	1765.13	7.99E+01	19.65	8.12E+00	BI-214
53	1847.68	1844 -	1851	1847.39	1.24E+01	8.49	3.21E+00	.....
54	1946.32	1942 -	1950	1946.00	7.50E+00	9.41	9.00E+00	.....
55	2043.41	2039 -	2047	2043.04	8.64E+00	8.02	4.73E+00	.....
56	2103.65	2099 -	2107	2103.26	1.70E+01	13.60	1.80E+01	.....
57	2127.39	2123 -	2130	2127.00	7.00E+00	8.72	8.00E+00	.....
M 58	2201.20	2199 -	2207	2200.78	7.57E+00	5.34	5.52E-01	.....
m 59	2205.14	2199 -	2207	2204.72	1.90E+01	11.51	8.48E+00	BI-214
60	2340.97	2338 -	2342	2340.49	4.75E+00	5.50	2.50E+00	.....
61	2413.50	2410 -	2415	2413.00	8.00E+00	5.66	0.00E+00	.....

Analysis Report for 1510084-15

CP1803S06-07

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
62	2491.80	2487 -	2494	2491.27	6.19E+00	6.93	3.63E+00	.....
63	2615.48	2611 -	2621	2614.90	1.30E+02	23.63	3.88E+00	TL-208
64	2669.81	2666 -	2671	2669.20	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 : 11/4/2015 2:52:05PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	63.43	3.38E+02	135.94	2.50E-02	1.91E-03
M	2	74.94	4.26E+02	99.19	2.75E-02	2.30E-03
m	3	77.49	7.65E+02	106.82	2.78E-02	2.39E-03
	4	87.76	2.27E+02	98.24	2.85E-02	2.73E-03
	5	130.05	8.35E+01	80.27	2.66E-02	2.09E-03
	6	186.24	2.97E+02	90.06	2.24E-02	2.03E-03
	7	209.49	1.17E+02	68.19	2.09E-02	1.85E-03
M	8	238.73	1.23E+03	83.20	1.92E-02	1.64E-03
m	9	241.87	2.04E+02	63.23	1.91E-02	1.61E-03
	10	271.12	1.15E+02	66.56	1.77E-02	1.40E-03
M	11	295.42	3.71E+02	52.38	1.67E-02	1.31E-03
m	12	299.96	6.41E+01	45.86	1.65E-02	1.30E-03
	13	338.50	2.40E+02	54.94	1.52E-02	1.22E-03
	14	352.10	6.08E+02	74.24	1.48E-02	1.19E-03
	15	463.14	9.41E+01	42.95	1.21E-02	1.04E-03
	16	511.00	2.15E+02	54.26	1.12E-02	9.90E-04
	17	583.36	3.55E+02	57.25	1.02E-02	9.15E-04
	18	609.60	4.29E+02	59.70	9.82E-03	8.88E-04
M	19	636.45	1.38E+01	14.06	9.50E-03	8.60E-04
m	20	639.47	1.91E+01	27.12	9.46E-03	8.57E-04
	21	664.38	3.05E+01	35.18	9.19E-03	8.32E-04
	22	705.37	5.67E+01	52.26	8.76E-03	7.95E-04
	23	714.72	2.36E+01	23.96	8.67E-03	7.87E-04
	24	727.65	8.95E+01	34.99	8.55E-03	7.75E-04
	25	756.54	4.00E+01	37.30	8.29E-03	7.49E-04
	26	769.45	1.09E+02	55.81	8.18E-03	7.38E-04
	27	795.12	4.97E+01	30.98	7.97E-03	7.15E-04

Analysis Report for 1510084-15

CP1803S06-07

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	28	850.72	3.23E+01	35.87	7.55E-03	6.65E-04
	29	861.39	3.32E+01	33.11	7.48E-03	6.55E-04
M	30	867.34	1.49E+01	12.64	7.44E-03	6.50E-04
m	31	871.72	1.84E+01	23.10	7.41E-03	6.46E-04
	32	911.58	2.64E+02	47.47	7.15E-03	6.15E-04
	33	954.98	3.79E+01	31.11	6.88E-03	5.93E-04
	34	969.57	8.02E+01	43.31	6.80E-03	5.85E-04
	35	1004.89	6.80E+01	39.79	6.61E-03	5.67E-04
	36	1110.48	1.65E+01	18.03	6.11E-03	5.12E-04
M	37	1121.19	7.82E+01	25.62	6.06E-03	5.06E-04
m	38	1124.45	2.12E+01	24.66	6.05E-03	5.05E-04
M	39	1224.98	1.11E+01	13.02	5.66E-03	4.70E-04
m	40	1229.64	1.99E+01	21.85	5.64E-03	4.69E-04
	41	1238.58	3.93E+01	49.05	5.61E-03	4.68E-04
	42	1378.30	2.59E+01	18.52	5.18E-03	4.40E-04
	43	1413.44	1.33E+01	10.43	5.09E-03	4.31E-04
	44	1421.97	1.25E+01	8.83	5.07E-03	4.29E-04
	45	1461.52	7.72E+02	57.99	4.97E-03	4.19E-04
	46	1496.93	1.55E+01	17.59	4.89E-03	4.10E-04
	47	1541.97	1.15E+01	8.97	4.79E-03	3.99E-04
M	48	1588.28	1.50E+01	11.53	4.69E-03	3.87E-04
m	49	1592.99	1.36E+01	15.79	4.69E-03	3.86E-04
	50	1639.01	1.00E+01	11.66	4.60E-03	3.75E-04
	51	1703.13	7.05E+00	8.43	4.49E-03	3.59E-04
	52	1765.38	7.99E+01	19.65	4.39E-03	3.43E-04
	53	1847.68	1.24E+01	8.49	4.28E-03	3.26E-04
	54	1946.32	7.50E+00	9.41	4.17E-03	3.26E-04
	55	2043.41	8.64E+00	8.02	4.07E-03	3.26E-04
	56	2103.65	1.70E+01	13.60	4.02E-03	3.26E-04
	57	2127.39	7.00E+00	8.72	4.00E-03	3.26E-04
M	58	2201.20	7.57E+00	5.34	3.95E-03	3.26E-04
m	59	2205.14	1.90E+01	11.51	3.95E-03	3.26E-04
	60	2340.97	4.75E+00	5.50	3.87E-03	3.26E-04
	61	2413.50	8.00E+00	5.66	3.84E-03	3.26E-04
	62	2491.80	6.19E+00	6.93	3.82E-03	3.26E-04
	63	2615.48	1.30E+02	23.63	3.79E-03	3.26E-04
	64	2669.81	5.00E+00	4.47	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 : 11/4/2015 2:52:05PM

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

: 00882

Analysis Report for 1510084-15

CP1803S06-07

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	63.43	3.38E+02	135.94	7.80E+01	1.33E+01	2.60E+02	1.37E+02
M	2	74.94	4.26E+02	99.19	5.09E+00	4.37E+00	4.21E+02	9.93E+01
m	3	77.49	7.65E+02	106.82	9.75E+00	8.28E+00	7.55E+02	1.07E+02
	4	87.76	2.27E+02	98.24			2.27E+02	9.82E+01
	5	130.05	8.35E+01	80.27			8.35E+01	8.03E+01
	6	186.24	2.97E+02	90.06	6.41E+01	7.38E+00	2.33E+02	9.04E+01
	7	209.49	1.17E+02	68.19			1.17E+02	6.82E+01
M	8	238.73	1.23E+03	83.20	2.34E+01	6.34E+00	1.21E+03	8.34E+01
m	9	241.87	2.04E+02	63.23			2.04E+02	6.32E+01
	10	271.12	1.15E+02	66.56			1.15E+02	6.66E+01
M	11	295.42	3.71E+02	52.38	4.17E+00	5.50E+00	3.67E+02	5.27E+01
m	12	299.96	6.41E+01	45.86			6.41E+01	4.59E+01
	13	338.50	2.40E+02	54.94	2.22E-01	4.54E+00	2.40E+02	5.51E+01
	14	352.10	6.08E+02	74.24	8.83E+00	4.91E+00	5.99E+02	7.44E+01
	15	463.14	9.41E+01	42.95			9.41E+01	4.29E+01
	16	511.00	2.15E+02	54.26	8.12E+01	5.49E+00	1.34E+02	5.45E+01
	17	583.36	3.55E+02	57.25	6.34E+00	3.74E+00	3.49E+02	5.74E+01
	18	609.60	4.29E+02	59.70	5.20E+00	3.69E+00	4.23E+02	5.98E+01
M	19	636.45	1.38E+01	14.06			1.38E+01	1.41E+01
m	20	639.47	1.91E+01	27.12			1.91E+01	2.71E+01
	21	664.38	3.05E+01	35.18			3.05E+01	3.52E+01
	22	705.37	5.67E+01	52.26			5.67E+01	5.23E+01
	23	714.72	2.36E+01	23.96			2.36E+01	2.40E+01
	24	727.65	8.95E+01	34.99			8.95E+01	3.50E+01
	25	756.54	4.00E+01	37.30			4.00E+01	3.73E+01
	26	769.45	1.09E+02	55.81			1.09E+02	5.58E+01
	27	795.12	4.97E+01	30.98			4.97E+01	3.10E+01
	28	850.72	3.23E+01	35.87			3.23E+01	3.59E+01
	29	861.39	3.32E+01	33.11			3.32E+01	3.31E+01
M	30	867.34	1.49E+01	12.64			1.49E+01	1.26E+01
m	31	871.72	1.84E+01	23.10			1.84E+01	2.31E+01
	32	911.58	2.64E+02	47.47	3.28E+00	2.53E+00	2.61E+02	4.75E+01
	33	954.98	3.79E+01	31.11			3.79E+01	3.11E+01
	34	969.57	8.02E+01	43.31			8.02E+01	4.33E+01
	35	1004.89	6.80E+01	39.79			6.80E+01	3.98E+01
	36	1110.48	1.65E+01	18.03			1.65E+01	1.80E+01
M	37	1121.19	7.82E+01	25.62	2.28E+00	2.55E+00	7.60E+01	2.57E+01
m	38	1124.45	2.12E+01	24.66			2.12E+01	2.47E+01
M	39	1224.98	1.11E+01	13.02			1.11E+01	1.30E+01
m	40	1229.64	1.99E+01	21.85			1.99E+01	2.19E+01
	41	1238.58	3.93E+01	49.05			3.93E+01	4.91E+01
	42	1378.30	2.59E+01	18.52			2.59E+01	1.85E+01
	43	1413.44	1.33E+01	10.43			1.33E+01	1.04E+01
	44	1421.97	1.25E+01	8.83			1.25E+01	8.83E+00
	45	1461.52	7.72E+02	57.99	6.46E+00	2.33E+00	7.65E+02	5.80E+01
	46	1496.93	1.55E+01	17.59			1.55E+01	1.76E+01
	47	1541.97	1.15E+01	8.97			1.15E+01	8.97E+00
M	48	1588.28	1.50E+01	11.53			1.50E+01	1.15E+01
m	49	1592.99	1.36E+01	15.79			1.36E+01	1.58E+01
	50	1639.01	1.00E+01	11.66			1.00E+01	1.17E+01
	51	1703.13	7.05E+00	8.43			7.05E+00	8.43E+00

Analysis Report for 1510084-15

CP1803S06-07

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
52	1765.38	7.99E+01	19.65			7.99E+01	1.96E+01
53	1847.68	1.24E+01	8.49			1.24E+01	8.49E+00
54	1946.32	7.50E+00	9.41			7.50E+00	9.41E+00
55	2043.41	8.64E+00	8.02			8.64E+00	8.02E+00
56	2103.65	1.70E+01	13.60			1.70E+01	1.36E+01
57	2127.39	7.00E+00	8.72			7.00E+00	8.72E+00
M 58	2201.20	7.57E+00	5.34			7.57E+00	5.34E+00
m 59	2205.14	1.90E+01	11.51			1.90E+01	1.15E+01
60	2340.97	4.75E+00	5.50			4.75E+00	5.50E+00
61	2413.50	8.00E+00	5.66			8.00E+00	5.66E+00
62	2491.80	6.19E+00	6.93			6.19E+00	6.93E+00
63	2615.48	1.30E+02	23.63	3.47E+00	1.48E+00	1.27E+02	2.37E+01
64	2669.81	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 : 11/4/2015 2:52:05PM
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	63.43	3.38E+02	135.94	7.80E+01	1.33E+01	2.60E+02	1.37E+02
M 2	74.94	4.26E+02	99.19	5.09E+00	4.37E+00	4.21E+02	9.93E+01
m 3	77.49	7.65E+02	106.82	9.75E+00	8.28E+00	7.55E+02	1.07E+02
4	87.76	2.27E+02	98.24			2.27E+02	9.82E+01
5	130.05	8.35E+01	80.27			8.35E+01	8.03E+01
6	186.24	2.97E+02	90.06	6.41E+01	7.38E+00	2.33E+02	9.04E+01
7	209.49	1.17E+02	68.19			1.17E+02	6.82E+01
M 8	238.73	1.23E+03	83.20	2.34E+01	6.34E+00	1.21E+03	8.34E+01
m 9	241.87	2.04E+02	63.23			2.04E+02	6.32E+01
10	271.12	1.15E+02	66.56			1.15E+02	6.66E+01
M 11	295.42	3.71E+02	52.38	4.17E+00	5.50E+00	3.67E+02	5.27E+01
m 12	299.96	6.41E+01	45.86			6.41E+01	4.59E+01
13	338.50	2.40E+02	54.94	2.22E-01	4.54E+00	2.40E+02	5.51E+01
14	352.10	6.08E+02	74.24	8.83E+00	4.91E+00	5.99E+02	7.44E+01
15	463.14	9.41E+01	42.95			9.41E+01	4.29E+01

: 00884

Analysis Report for 1510084-15

CP1803S06-07

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	16	511.00	2.15E+02	54.26	8.12E+01	5.49E+00	1.34E+02	5.45E+01
	17	583.36	3.55E+02	57.25	6.34E+00	3.74E+00	3.49E+02	5.74E+01
	18	609.60	4.29E+02	59.70	5.20E+00	3.69E+00	4.23E+02	5.98E+01
M	19	636.45	1.38E+01	14.06			1.38E+01	1.41E+01
m	20	639.47	1.91E+01	27.12			1.91E+01	2.71E+01
	21	664.38	3.05E+01	35.18			3.05E+01	3.52E+01
	22	705.37	5.67E+01	52.26			5.67E+01	5.23E+01
	23	714.72	2.36E+01	23.96			2.36E+01	2.40E+01
	24	727.65	8.95E+01	34.99			8.95E+01	3.50E+01
	25	756.54	4.00E+01	37.30			4.00E+01	3.73E+01
	26	769.45	1.09E+02	55.81			1.09E+02	5.58E+01
	27	795.12	4.97E+01	30.98			4.97E+01	3.10E+01
	28	850.72	3.23E+01	35.87			3.23E+01	3.59E+01
	29	861.39	3.32E+01	33.11			3.32E+01	3.31E+01
M	30	867.34	1.49E+01	12.64			1.49E+01	1.26E+01
m	31	871.72	1.84E+01	23.10			1.84E+01	2.31E+01
	32	911.58	2.64E+02	47.47	3.28E+00	2.53E+00	2.61E+02	4.75E+01
	33	954.98	3.79E+01	31.11			3.79E+01	3.11E+01
	34	969.57	8.02E+01	43.31			8.02E+01	4.33E+01
	35	1004.89	6.80E+01	39.79			6.80E+01	3.98E+01
	36	1110.48	1.65E+01	18.03			1.65E+01	1.80E+01
M	37	1121.19	7.82E+01	25.62	2.28E+00	2.55E+00	7.60E+01	2.57E+01
m	38	1124.45	2.12E+01	24.66			2.12E+01	2.47E+01
M	39	1224.98	1.11E+01	13.02			1.11E+01	1.30E+01
m	40	1229.64	1.99E+01	21.85			1.99E+01	2.19E+01
	41	1238.58	3.93E+01	49.05			3.93E+01	4.91E+01
	42	1378.30	2.59E+01	18.52			2.59E+01	1.85E+01
	43	1413.44	1.33E+01	10.43			1.33E+01	1.04E+01
	44	1421.97	1.25E+01	8.83			1.25E+01	8.83E+00
	45	1461.52	7.72E+02	57.99	6.46E+00	2.33E+00	7.65E+02	5.80E+01
	46	1496.93	1.55E+01	17.59			1.55E+01	1.76E+01
	47	1541.97	1.15E+01	8.97			1.15E+01	8.97E+00
M	48	1588.28	1.50E+01	11.53			1.50E+01	1.15E+01
m	49	1592.99	1.36E+01	15.79			1.36E+01	1.58E+01
	50	1639.01	1.00E+01	11.66			1.00E+01	1.17E+01
	51	1703.13	7.05E+00	8.43			7.05E+00	8.43E+00
	52	1765.38	7.99E+01	19.65			7.99E+01	1.96E+01
	53	1847.68	1.24E+01	8.49			1.24E+01	8.49E+00
	54	1946.32	7.50E+00	9.41			7.50E+00	9.41E+00
	55	2043.41	8.64E+00	8.02			8.64E+00	8.02E+00
	56	2103.65	1.70E+01	13.60			1.70E+01	1.36E+01
	57	2127.39	7.00E+00	8.72			7.00E+00	8.72E+00
M	58	2201.20	7.57E+00	5.34			7.57E+00	5.34E+00
m	59	2205.14	1.90E+01	11.51			1.90E+01	1.15E+01
	60	2340.97	4.75E+00	5.50			4.75E+00	5.50E+00
	61	2413.50	8.00E+00	5.66			8.00E+00	5.66E+00
	62	2491.80	6.19E+00	6.93			6.19E+00	6.93E+00
	63	2615.48	1.30E+02	23.63	3.47E+00	1.48E+00	1.27E+02	2.37E+01
	64	2669.81	5.00E+00	4.47			5.00E+00	4.47E+00

Analysis Report for 1510084-15
CP1803S06-07

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	0.922	1460.81 *	10.67	2.01E+01	2.31E+00
CD-109	0.988	88.03 *	3.72	3.09E+00	1.38E+00
SN-126	0.994	87.57 *	37.00	2.99E-01	1.33E-01
LU-173	0.500	100.72	5.24		
		272.11 *	21.20	4.41E-01	2.58E-01
TL-208	0.834	583.14 *	30.22	1.58E+00	2.96E-01
		860.37	4.48		
		2614.66 *	35.85	1.29E+00	2.66E-01
BI-212	0.736	727.17 *	11.80	1.23E+00	4.95E-01
		1620.62	2.75		
PB-212	0.998	238.63 *	44.60	1.96E+00	2.15E-01
		300.09 *	3.41	1.58E+00	1.14E+00
BI-214	0.938	609.31 *	46.30	1.29E+00	2.17E-01
		1120.29 *	15.10	1.15E+00	4.03E-01
		1764.49 *	15.80	1.60E+00	4.13E-01
		2204.22 *	4.98	1.34E+00	8.22E-01
PB-214	0.994	295.21 *	19.19	1.59E+00	2.61E-01
		351.92 *	37.19	1.52E+00	2.25E-01
RA-224	0.882	240.98 *	3.95	3.78E+00	1.21E+00
RA-226	1.000	186.21 *	3.28	4.42E+00	8.27E+00
AC-228	0.969	338.32 *	11.40	1.93E+00	4.69E-01
		911.07 *	27.70	1.83E+00	3.69E-01
		969.11 *	16.60	9.87E-01	5.40E-01
TH-234	0.997	63.29 *	3.80	3.81E+00	2.02E+00
AM-243	0.989	74.67 *	66.00	3.23E-01	8.08E-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 1510084-15
CP1803S06-07

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 2:52:05PM
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	77.49	2.09852E-01	7.09	Tol.	TI-44
	5	130.05	2.31960E-02	48.06		
	7	209.49	3.24857E-02	29.16	Tol.	CM-243
	15	463.14	2.61512E-02	22.81	Tol.	SB-125
	16	511.00	3.72634E-02	20.33		
M	19	636.45	3.82893E-03	51.01	Tol.	SB-125 I-131
m	20	639.47	5.29783E-03	71.11		
	21	664.38	8.47697E-03	57.64	Tol.	CE-143
	22	705.37	1.57396E-02	46.12		
	23	714.72	6.54436E-03	50.86		
	25	756.54	1.11111E-02	46.63	Tol.	ZR-95
	26	769.45	3.03532E-02	25.54	Sum	
	27	795.12	1.38145E-02	31.15	Sum	
	28	850.72	8.96465E-03	55.58	Sum	
	29	861.39	9.23546E-03	49.79		
M	30	867.34	4.13912E-03	42.41		
m	31	871.72	5.09878E-03	62.93	Tol.	NB-94
	33	954.98	1.05368E-02	41.01		
	35	1004.89	1.88889E-02	29.26	Tol.	EU-154
	36	1110.48	4.58656E-03	54.59		
m	38	1124.45	5.90049E-03	58.05		
M	39	1224.98	3.08314E-03	58.65		
m	40	1229.64	5.51406E-03	55.04		
	41	1238.58	1.09194E-02	62.39		
	42	1378.30	7.20018E-03	35.72		
	43	1413.44	3.69599E-03	39.19		
	44	1421.97	3.46296E-03	35.42	Sum	
	46	1496.93	4.30556E-03	56.75		
	47	1541.97	3.19444E-03	39.01		
M	48	1588.28	4.17345E-03	38.38		
m	49	1592.99	3.76485E-03	58.24	D-Esc	
	50	1639.01	2.77778E-03	58.31	Sum	
	51	1703.13	1.95707E-03	59.80	Sum	
	53	1847.68	3.44246E-03	34.23		
	54	1946.32	2.08333E-03	62.72		
	55	2043.41	2.39899E-03	46.41		
	56	2103.65	4.72222E-03	40.00	S-Esc	
	57	2127.39	1.94444E-03	62.27		
M	58	2201.20	2.10144E-03	35.28		
	60	2340.97	1.31944E-03	57.89		

Analysis Report for 1510084-15

CP1803S06-07

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
61	2413.50	2.22222E-03	35.36		
62	2491.80	1.71875E-03	55.99		
64	2669.81	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	0.92	1460.81	*	10.67	2.01E+01	2.31E+00
CD-109	0.98	88.03	*	3.72	3.09E+00	1.38E+00
SN-126	0.99	87.57	*	37.00	2.99E-01	1.33E-01
LU-173	0.50	100.72		5.24		
		272.11	*	21.20	4.41E-01	2.58E-01
TL-208	0.83	583.14	*	30.22	1.58E+00	2.96E-01
		860.37		4.48		
		2614.66	*	35.85	1.29E+00	2.66E-01
BI-212	0.73	727.17	*	11.80	1.23E+00	4.95E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.96E+00	2.15E-01
		300.09	*	3.41	1.58E+00	1.14E+00
BI-214	0.93	609.31	*	46.30	1.29E+00	2.17E-01
		1120.29	*	15.10	1.15E+00	4.03E-01
		1764.49	*	15.80	1.60E+00	4.13E-01
		2204.22	*	4.98	1.34E+00	8.22E-01
PB-214	0.99	295.21	*	19.19	1.59E+00	2.61E-01
		351.92	*	37.19	1.52E+00	2.25E-01
RA-224	0.88	240.98	*	3.95	3.78E+00	1.21E+00
RA-226	1.00	186.21	*	3.28	4.42E+00	8.27E+00
AC-228	0.96	338.32	*	11.40	1.93E+00	4.69E-01
		911.07	*	27.70	1.83E+00	3.69E-01
		969.11	*	16.60	9.87E-01	5.40E-01
TH-234	0.99	63.29	*	3.80	3.81E+00	2.02E+00
AM-243	0.98	74.67	*	66.00	3.23E-01	8.08E-02

: 00888

Analysis Report for 1510084-15

CP1803S06-07

* = 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
	0.922	2.01E+01	2.31E+00	
? K-40	0.988	3.09E+00	1.38E+00	
? CD-109	0.994	2.99E-01	1.33E-01	
? SN-126	0.500	4.41E-01	2.58E-01	
LU-173	0.834	1.42E+00	1.98E-01	
TL-208	0.736	1.23E+00	4.95E-01	
BI-212	0.998	1.95E+00	2.11E-01	
PB-212	0.938	1.32E+00	1.70E-01	
BI-214	0.994	1.55E+00	1.70E-01	
PB-214	0.882	3.78E+00	1.21E+00	
RA-224	1.000	4.42E+00	8.27E+00	
RA-226	0.969	1.67E+00	2.56E-01	
AC-228	0.997	3.81E+00	2.02E+00	
TH-234	0.989	3.23E-01	8.08E-02	
AM-243				

? = 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 1510084-15
CP1803S06-07

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 2:52:05PM
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	77.49	2.09852E-01	7.09	Tol.	TI-44
	5	130.05	2.31960E-02	48.06		
	7	209.49	3.24857E-02	29.16	Tol.	CM-243
	15	463.14	2.61512E-02	22.81	Tol.	SB-125
	16	511.00	3.72634E-02	20.33		
M	19	636.45	3.82893E-03	51.01	Tol.	SB-125 I-131
m	20	639.47	5.29783E-03	71.11		
	21	664.38	8.47697E-03	57.64	Tol.	CE-143
	22	705.37	1.57396E-02	46.12		
	23	714.72	6.54436E-03	50.86		
	25	756.54	1.11111E-02	46.63	Tol.	ZR-95
	26	769.45	3.03532E-02	25.54	Sum	
	27	795.12	1.38145E-02	31.15	Sum	
	28	850.72	8.96465E-03	55.58	Sum	
	29	861.39	9.23546E-03	49.79		
M	30	867.34	4.13912E-03	42.41		
m	31	871.72	5.09878E-03	62.93	Tol.	NB-94
	33	954.98	1.05368E-02	41.01		
	35	1004.89	1.88889E-02	29.26	Tol.	EU-154
	36	1110.48	4.58656E-03	54.59		
m	38	1124.45	5.90049E-03	58.05		
M	39	1224.98	3.08314E-03	58.65		
m	40	1229.64	5.51406E-03	55.04		
	41	1238.58	1.09194E-02	62.39		
	42	1378.30	7.20018E-03	35.72		
	43	1413.44	3.69599E-03	39.19		
	44	1421.97	3.46296E-03	35.42	Sum	
	46	1496.93	4.30556E-03	56.75		
	47	1541.97	3.19444E-03	39.01		
M	48	1588.28	4.17345E-03	38.38		
m	49	1592.99	3.76485E-03	58.24	D-Esc	
	50	1639.01	2.77778E-03	58.31	Sum	
	51	1703.13	1.95707E-03	59.80	Sum	

Analysis Report for 1510084-15
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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
53	1847.68	3.44246E-03	34.23		
54	1946.32	2.08333E-03	62.72		
55	2043.41	2.39899E-03	46.41		
56	2103.65	4.72222E-03	40.00	S-Esc	
57	2127.39	1.94444E-03	62.27		
M 58	2201.20	2.10144E-03	35.28		
60	2340.97	1.31944E-03	57.89		
61	2413.50	2.22222E-03	35.36		
62	2491.80	1.71875E-03	55.99		
64	2669.81	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	3.13E-01	8.09E-01	8.09E-01
+	NA-22	1274.54	99.94	-1.84E-02	8.29E-02	8.29E-02
+	NA-24	1368.53	99.99	9.84E+09	4.63E+10	8.11E+10
		2754.09	99.86	-1.74E+10		4.63E+10
+	AL-26	1808.65	99.76	0.00E+00	4.83E-02	4.83E-02
+	K-40	1460.81	* 10.67	2.01E+01	8.27E-01	8.27E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-2.92E-02	6.95E-02	6.95E-02
		78.34	96.00	2.38E-01		9.27E-02
+	SC-46	889.25	99.98	-4.01E-02	8.67E-02	8.67E-02
		1120.51	99.99	1.23E-01		1.47E-01
+	V-48	983.52	99.98	-7.68E-02	2.01E-01	2.01E-01
		1312.10	97.50	1.01E-02		2.36E-01
+	CR-51	320.08	9.83	6.36E-01	1.03E+00	1.03E+00
+	MN-54	834.83	99.97	5.27E-02	8.99E-02	8.99E-02
+	CO-56	846.75	99.96	5.04E-03	9.28E-02	9.28E-02
		1037.75	14.03	3.46E-02		6.58E-01
		1238.25	67.00	1.26E-01		2.07E-01

Analysis Report for 1510084-15
CP1803S06-07

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CO-56	1771.40	15.51	1.28E-02	9.28E-02	2.75E-01
		2598.48	16.90	3.61E-02		3.81E-01
+	CO-57	122.06	85.51	2.11E-02	6.16E-02	6.16E-02
		136.48	10.60	2.30E-01		5.22E-01
+	CO-58	810.76	99.40	1.42E-02	9.93E-02	9.93E-02
+	FE-59	1099.22	56.50	-3.93E-02	2.08E-01	2.08E-01
		1291.56	43.20	1.21E-02		2.71E-01
+	CO-60	1173.22	100.00	-5.94E-03	6.61E-02	8.30E-02
		1332.49	100.00	1.38E-03		6.61E-02
+	ZN-65	1115.52	50.75	-5.49E-01	1.69E-01	1.69E-01
+	GA-67	93.31	35.70	9.31E+01	4.02E+01	4.02E+01
		208.95	2.24	5.75E+02		5.90E+02
		300.22	16.00	-1.78E+02		7.83E+01
+	SE-75	121.11	16.70	-5.07E-02	9.91E-02	3.38E-01
		136.00	59.20	1.05E-02		1.00E-01
		264.65	59.80	1.68E-02		9.91E-02
		279.53	25.20	1.16E-02		2.42E-01
+	RB-82	400.65	11.40	-3.12E-01		5.47E-01
		776.52	13.00	-7.47E-01	1.04E+00	1.04E+00
+	RB-83	520.41	46.00	7.91E-02	1.78E-01	1.78E-01
		529.64	30.30	2.86E-02		2.56E-01
		552.65	16.40	-8.69E-02		4.62E-01
+	KR-85	513.99	0.43	3.64E+01	2.26E+01	2.26E+01
+	SR-85	513.99	99.27	2.07E-01	1.29E-01	1.29E-01
+	Y-88	898.02	93.40	-5.93E-02	5.76E-02	8.14E-02
		1836.01	99.38	9.31E-03		5.76E-02
+	NB-93M	16.57	9.43	-6.92E+01	7.11E+01	7.11E+01
+	NB-94	702.63	100.00	2.46E-02	7.44E-02	8.59E-02
		871.10	100.00	2.83E-02		7.44E-02
+	NB-95	765.79	99.81	1.09E-01	1.44E-01	1.44E-01
+	NB-95M	235.69	25.00	-3.52E+02	3.49E+01	3.49E+01
+	ZR-95	724.18	43.70	-3.41E-02	1.86E-01	2.27E-01
		756.72	55.30	1.54E-01		1.86E-01
+	MO-99	181.06	6.20	1.28E+02	3.06E+02	4.73E+02
		739.58	12.80	-7.92E+01		3.06E+02
		778.00	4.50	-4.35E+01		8.93E+02
+	RU-103	497.08	89.00	2.89E-02	1.12E-01	1.12E-01
+	RU-106	621.84	9.80	3.10E-01	6.78E-01	6.78E-01
+	AG-108M	433.93	89.90	3.92E-04	6.41E-02	6.41E-02
		614.37	90.40	-1.08E-02		7.46E-02
		722.95	90.50	-5.36E-03		7.19E-02
+	CD-109	88.03	* 3.72	3.09E+00	2.13E+00	2.13E+00
+	AG-110M	657.75	93.14	-4.08E-02	7.53E-02	7.53E-02
		677.61	10.53	0.00E+00		6.81E-01
		706.67	16.46	3.27E-01		5.31E-01
		763.93	21.98	-3.72E-01		3.50E-01
		884.67	71.63	3.56E-02		1.12E-01
		1384.27	23.94	9.28E-02		2.77E-01

Analysis Report for 1510084-15
CP1803S06-07

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CD-113M	263.70	0.02	4.12E+01	2.27E+02	2.27E+02
+	SN-113	255.12	1.93	-8.20E-01	9.67E-02	3.02E+00
		391.69	64.90	-2.31E-02		9.67E-02
+	TE123M	159.00	84.10	-2.45E-03	7.16E-02	7.16E-02
+	SB-124	602.71	97.87	1.80E-02	9.48E-02	9.48E-02
		645.85	7.26	2.32E-01		1.13E+00
		722.78	11.10	-5.84E-02		7.83E-01
		1691.02	49.00	2.80E-02		1.40E-01
+	I-125	35.49	6.49	2.08E-01	2.98E+00	2.98E+00
+	SB-125	176.33	6.89	2.89E-01	2.13E-01	7.62E-01
		427.89	29.33	-5.77E-02		2.13E-01
		463.38	10.35	1.04E+00		7.38E-01
		600.56	17.80	-2.66E-02		3.96E-01
		635.90	11.32	2.91E-02		5.96E-01
+	SB-126	414.70	83.30	-1.40E-01	2.85E-01	3.35E-01
		666.33	99.60	-3.39E-02		2.85E-01
		695.00	99.60	5.89E-02		3.21E-01
		720.50	53.80	-4.51E-02		4.86E-01
+	SN-126	87.57	* 37.00	2.99E-01	2.06E-01	2.06E-01
+	SB-127	473.00	25.00	3.96E-01	1.70E+01	2.20E+01
		685.20	35.70	-9.86E+00		1.70E+01
		783.80	14.70	2.68E+01		4.88E+01
+	I-129	29.78	57.00	-9.09E-02	4.77E-01	4.77E-01
		33.60	13.20	-1.82E-01		1.28E+00
		39.58	7.52	1.03E+00		1.52E+00
+	I-131	284.30	6.05	-4.77E-01	5.18E-01	7.38E+00
		364.48	81.20	-1.32E-01		5.18E-01
		636.97	7.26	2.38E+00		8.16E+00
		722.89	1.80	-2.36E+00		3.17E+01
+	TE-132	49.72	13.10	-2.84E+02	1.23E+01	1.21E+02
		228.16	88.00	-5.80E+00		1.23E+01
+	BA-133	81.00	33.00	-1.37E+00	8.53E-02	1.88E-01
		302.84	17.80	-1.38E-01		3.02E-01
		356.01	60.00	-3.70E-03		8.53E-02
+	I-133	529.87	86.30	4.60E+06	4.12E+07	4.12E+07
+	XE-133	81.00	38.00	-3.31E+01	4.54E+00	4.54E+00
+	CS-134	563.23	8.38	-3.50E-01	7.53E-02	8.16E-01
		569.32	15.43	-7.30E-02		4.59E-01
		604.70	97.60	-4.53E-03		7.53E-02
		795.84	85.40	7.13E-02		1.05E-01
		801.93	8.73	4.47E-02		8.10E-01
+	CS-135	268.24	16.00	9.85E-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	4.92E-01	2.51E-01	2.69E+00
		163.89	4.61	2.31E+00		4.36E+00
		176.55	13.56	5.45E-01		1.44E+00
		273.65	12.66	-1.58E+00		1.64E+00

Analysis Report for 1510084-15
CP1803S06-07

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
CS-136	340.57	48.50	4.64E-02	2.51E-01	5.99E-01
	818.50	99.70	-7.23E-02		2.51E-01
	1048.07	79.60	9.11E-03		4.02E-01
	1235.34	19.70	-1.22E+00		1.77E+00
+ CS-137	661.65	85.12	-1.74E-02	7.91E-02	7.91E-02
+ LA-138	788.74	34.00	3.06E-03	1.05E-01	2.09E-01
	1435.80	66.00	3.51E-02		1.05E-01
+ CE-139	165.85	80.35	1.74E-02	7.40E-02	7.40E-02
+ BA-140	162.64	6.70	6.80E-01	1.06E+00	3.11E+00
	304.84	4.50	8.79E-01		4.49E+00
	423.70	3.20	1.77E+00		8.08E+00
	437.55	2.00	3.55E-01		1.13E+01
	537.32	25.00	7.11E-02		1.06E+00
+ LA-140	328.77	20.50	6.17E-01	2.67E-01	1.15E+00
	487.03	45.50	2.07E-01		5.36E-01
	815.85	23.50	1.81E-01		1.15E+00
	1596.49	95.49	1.52E-02		2.67E-01
+ CE-141	145.44	48.40	4.47E-02	1.84E-01	1.84E-01
+ CE-143	57.36	11.80	2.22E+04	6.77E+04	1.95E+05
	293.26	42.00	2.02E+05		6.77E+04
	664.55	5.20	2.71E+05		4.60E+05
+ CE-144	133.54	10.80	2.65E-02	5.10E-01	5.10E-01
+ PM-144	476.78	42.00	7.44E-02	6.87E-02	1.50E-01
	618.01	98.60	-1.95E-02		6.87E-02
+ PM-145	696.49	99.49	8.09E-03		8.08E-02
	36.85	21.70	-2.10E-01	3.20E-01	6.00E-01
	37.36	39.70	-1.71E-01		3.20E-01
	42.30	15.10	-4.06E-01		6.49E-01
+ PM-146	72.40	2.31	-2.59E+00		3.50E+00
	453.90	39.94	-4.43E-02	1.50E-01	1.50E-01
	735.90	14.01	-3.29E-01		4.50E-01
+ ND-147	747.13	13.10	2.22E-01		5.53E-01
	91.11	28.90	-1.69E-02	1.16E+00	1.16E+00
+ PM-149	531.02	13.10	-4.02E-01		2.37E+00
	285.90	3.10	-1.19E+03	4.38E+03	4.38E+03
+ EU-152	121.78	20.50	8.28E-02	2.41E-01	2.41E-01
	244.69	5.40	-4.60E-01		1.17E+00
	344.27	19.13	3.77E-02		2.68E-01
	778.89	9.20	2.93E-03		7.80E-01
	964.01	10.40	-1.12E-01		9.39E-01
	1085.78	7.22	5.74E-02		1.06E+00
	1112.02	9.60	4.33E-01		8.79E-01
	1407.95	14.94	9.87E-02		4.58E-01
	97.43	31.30	-2.46E-02	1.71E-01	1.71E-01
	103.18	22.20	1.69E-01		2.43E-01
+ EU-154	123.07	40.50	-5.97E-02	1.21E-01	1.21E-01
	723.30	19.70	-2.48E-02		3.32E-01
	873.19	11.50	2.65E-01		6.32E-01
	996.32	10.30	1.40E-01		6.92E-01

Analysis Report for 1510084-15
CP1803S06-07

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	1004.76	17.90	-6.29E-02	1.21E-01	4.17E-01
		1274.45	35.50	-5.13E-02		2.30E-01
+	EU-155	86.50	30.90	1.73E-01	2.32E-01	2.32E-01
		105.30	20.70	9.36E-02		2.47E-01
+	EU-156	811.77	10.40	4.58E-01	2.31E+00	2.31E+00
		1153.47	7.20	4.29E-01		3.69E+00
		1230.71	8.90	1.27E+00		3.17E+00
+	HO-166M	184.41	72.60	1.75E-01	9.64E-02	9.64E-02
		280.45	29.60	-6.79E-02		1.71E-01
		410.94	11.10	1.06E-01		6.48E-01
		711.69	54.10	-6.10E-03		1.29E-01
+	TM-171	66.72	0.14	-1.19E+02	4.93E+01	4.93E+01
+	HF-172	81.75	4.52	-1.67E+00	4.45E-01	1.39E+00
		125.81	11.30	1.03E-01		4.45E-01
+	LU-172	181.53	20.60	-1.27E+00	1.95E+00	3.31E+00
		810.06	16.63	1.44E+00		6.28E+00
		912.12	15.25	4.47E+01		1.47E+01
		1093.66	62.50	9.99E-01		1.95E+00
+	LU-173	100.72	5.24	3.52E-01	4.09E-01	9.72E-01
		272.11	*	21.20	4.41E-01	4.09E-01
+	HF-175	343.40	84.00	-2.49E-03	8.03E-02	8.03E-02
+	LU-176	88.34	13.30	1.23E+00	5.62E-02	5.42E-01
		201.83	86.00	-3.63E-02		6.42E-02
		306.78	94.00	3.61E-02		5.62E-02
+	TA-182	67.75	41.20	-7.80E-02	1.86E-01	1.86E-01
		1121.30	34.90	5.39E-01		4.14E-01
		1189.05	16.23	-1.88E-02		6.13E-01
		1221.41	26.98	1.38E-02		3.94E-01
		1231.02	11.44	3.65E-01		9.10E-01
+	IR-192	308.46	29.68	8.42E-03	1.57E-01	2.17E-01
		468.07	48.10	3.87E-02		1.57E-01
+	HG-203	279.19	77.30	3.79E-02	1.01E-01	1.01E-01
+	BI-207	569.67	97.72	4.28E-02	7.42E-02	7.42E-02
		1063.62	74.90	-1.12E-02		9.77E-02
+	TL-208	583.14	*	30.22	1.58E+00	1.51E-01
		860.37	4.48	2.00E+00		2.05E+00
		2614.66	*	35.85	1.29E+00	1.51E-01
+	BI-210M	262.00	45.00	1.77E-02	1.18E-01	1.18E-01
		300.00	23.00	-5.85E-01		2.57E-01
+	PB-210	46.50	4.25	9.57E-01	2.14E+00	2.14E+00
+	PB-211	404.84	2.90	7.40E-01	2.07E+00	2.07E+00
		831.96	2.90	-1.11E+00		2.67E+00
+	BI-212	727.17	*	11.80	1.23E+00	7.04E-01
		1620.62	2.75	8.73E-01		2.26E+00
+	PB-212	238.63	*	44.60	1.96E+00	3.04E-01
		300.09	*	3.41	1.58E+00	3.36E+00
+	BI-214	609.31	*	46.30	1.29E+00	2.27E-01
		1120.29	*	15.10	1.15E+00	1.41E+00

Analysis Report for 1510084-15
CP1803S06-07

Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	1764.49	*	15.80	1.60E+00	2.27E-01
		2204.22	*	4.98	1.34E+00	1.07E+00
+	PB-214	295.21	*	19.19	1.59E+00	2.40E-01
		351.92	*	37.19	1.52E+00	2.40E-01
+	RN-219	401.80		6.50	-4.38E-01	8.24E-01
+	RA-223	323.87		3.88	-1.30E+00	1.27E+00
+	RA-224	240.98	*	3.95	3.78E+00	3.43E+00
+	RA-225	40.00		31.00	7.89E-01	1.17E+00
+	RA-226	186.21	*	3.28	4.42E+00	2.70E+00
+	TH-227	50.10		8.40	-2.06E+00	6.02E-01
		236.00		11.50	-6.07E+00	6.02E-01
		256.20		6.30	-1.34E-01	8.06E-01
+	AC-228	338.32	*	11.40	1.93E+00	4.22E-01
		911.07	*	27.70	1.83E+00	4.22E-01
		969.11	*	16.60	9.87E-01	8.32E-01
+	TH-230	48.44		16.90	4.46E-01	5.05E-01
		62.85		4.60	3.15E+00	1.75E+00
		67.67		0.37	-7.46E+00	1.78E+01
+	PA-231	283.67		1.60	7.36E-01	2.32E+00
		302.67		2.30	-1.06E+00	2.32E+00
+	TH-231	25.64		14.70	-7.36E-01	1.03E+00
		84.21		6.40	5.37E-01	1.03E+00
+	PA-233	311.98		38.60	-1.08E-02	2.46E-01
+	PA-234	131.20		20.40	1.37E-02	2.65E-01
		733.99		8.80	-1.64E-01	7.43E-01
		946.00		12.00	-5.01E-02	5.18E-01
+	PA-234M	1001.03		0.92	5.10E+00	8.69E+00
+	TH-234	63.29	*	3.80	3.81E+00	3.24E+00
+	U-235	143.76		10.50	-3.89E-03	4.87E-01
		163.35		4.70	6.01E-01	1.13E+00
		205.31		4.70	4.48E-01	1.18E+00
+	NP-237	86.50		12.60	4.21E-01	5.63E-01
+	NP-239	106.10		22.70	1.40E+02	3.70E+02
		228.18		10.70	-3.72E+02	7.88E+02
		277.60		14.10	2.99E+02	6.33E+02
+	AM-241	59.54		35.90	-2.53E-01	1.97E-01
+	AM-243	74.67	*	66.00	3.23E-01	2.01E-01
+	CM-243	209.75		3.29	2.32E+00	3.85E-01
		228.14		10.60	-2.27E-01	4.80E-01
		277.60		14.00	1.82E-01	3.85E-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

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

Analysis Report for 1510084-15
CP1803S06-07

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	8.09E-01	8.09E-01	3.13E-01	3.83E-01
NA-22	1274.54	99.94	8.29E-02	8.29E-02	-1.84E-02	3.80E-02
NA-24	1368.53	99.99	8.11E+10	4.63E+10	9.84E+09	3.57E+10
	2754.09	99.86	4.63E+10		-1.74E+10	1.64E+10
AL-26	1808.65	99.76	4.83E-02	4.83E-02	0.00E+00	1.98E-02
+ K-40	1460.81	*	8.27E-01	8.27E-01	2.01E+01	3.78E-01
@ AR-41	1293.64		1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	6.95E-02	6.95E-02	-2.92E-02	3.40E-02
	78.34	96.00	9.27E-02		2.38E-01	4.57E-02
SC-46	889.25	99.98	8.67E-02	8.67E-02	-4.01E-02	4.02E-02
	1120.51	99.99	1.47E-01		1.23E-01	6.95E-02
V-48	983.52	99.98	2.01E-01	2.01E-01	-7.68E-02	9.19E-02
	1312.10	97.50	2.36E-01		1.01E-02	1.07E-01
CR-51	320.08	9.83	1.03E+00	1.03E+00	6.36E-01	4.92E-01
MN-54	834.83	99.97	8.99E-02	8.99E-02	5.27E-02	4.23E-02
CO-56	846.75	99.96	9.28E-02	9.28E-02	5.04E-03	4.33E-02
	1037.75	14.03	6.58E-01		3.46E-02	3.03E-01
	1238.25	67.00	2.07E-01		1.26E-01	9.72E-02
	1771.40	15.51	2.75E-01		1.28E-02	1.03E-01
	2598.48	16.90	3.81E-01		3.61E-02	1.54E-01
CO-57	122.06	85.51	6.16E-02	6.16E-02	2.11E-02	2.99E-02
	136.48	10.60	5.22E-01		2.30E-01	2.54E-01
CO-58	810.76	99.40	9.93E-02	9.93E-02	1.42E-02	4.66E-02
FE-59	1099.22	56.50	2.08E-01	2.08E-01	-3.93E-02	9.62E-02
	1291.56	43.20	2.71E-01		1.21E-02	1.24E-01
CO-60	1173.22	100.00	8.30E-02	6.61E-02	-5.94E-03	3.82E-02
	1332.49	100.00	6.61E-02		1.38E-03	2.95E-02
ZN-65	1115.52	50.75	1.69E-01	1.69E-01	-5.49E-01	7.79E-02
GA-67	93.31	35.70	4.02E+01	4.02E+01	9.31E+01	1.97E+01
	208.95	2.24	5.90E+02		5.75E+02	2.86E+02
	300.22	16.00	7.83E+01		-1.78E+02	3.76E+01
SE-75	121.11	16.70	3.38E-01	9.91E-02	-5.07E-02	1.64E-01
	136.00	59.20	1.00E-01		1.05E-02	4.88E-02
	264.65	59.80	9.91E-02		1.68E-02	4.75E-02
	279.53	25.20	2.42E-01		1.16E-02	1.16E-01
	400.65	11.40	5.47E-01		-3.12E-01	2.59E-01
RB-82	776.52	13.00	1.04E+00	1.04E+00	-7.47E-01	4.85E-01

Analysis Report for 1510084-15
CP1803S06-07

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	1.78E-01	1.78E-01	7.91E-02	8.47E-02		
	529.64	30.30	2.56E-01		2.86E-02	1.21E-01		
	552.65	16.40	4.62E-01		-8.69E-02	2.17E-01		
KR-85	513.99	0.43	2.26E+01	2.26E+01	3.64E+01	1.09E+01		
SR-85	513.99	99.27	1.29E-01	1.29E-01	2.07E-01	6.23E-02		
Y-88	898.02	93.40	8.14E-02	5.76E-02	-5.93E-02	3.74E-02		
	1836.01	99.38	5.76E-02		9.31E-03	2.36E-02		
NB-93M	16.57	9.43	7.11E+01	7.11E+01	-6.92E+01	3.31E+01		
NB-94	702.63	100.00	8.59E-02	7.44E-02	2.46E-02	4.08E-02		
	871.10	100.00	7.44E-02		2.83E-02	3.46E-02		
NB-95	765.79	99.81	1.44E-01	1.44E-01	1.09E-01	6.81E-02		
NB-95M	235.69	25.00	3.49E+01	3.49E+01	-3.52E+02	1.70E+01		
ZR-95	724.18	43.70	2.27E-01	1.86E-01	-3.41E-02	1.07E-01		
	756.72	55.30	1.86E-01		1.54E-01	8.74E-02		
MO-99	181.06	6.20	4.73E+02	3.06E+02	1.28E+02	2.29E+02		
	739.58	12.80	3.06E+02		-7.92E+01	1.43E+02		
	778.00	4.50	8.93E+02		-4.35E+01	4.17E+02		
RU-103	497.08	89.00	1.12E-01	1.12E-01	2.89E-02	5.31E-02		
RU-106	621.84	9.80	6.78E-01	6.78E-01	3.10E-01	3.18E-01		
AG-108M	433.93	89.90	6.41E-02	6.41E-02	3.92E-04	3.04E-02		
	614.37	90.40	7.46E-02		-1.08E-02	3.52E-02		
	722.95	90.50	7.19E-02		-5.36E-03	3.35E-02		
	88.03	3.72	2.13E+00		2.13E+00	3.09E+00	1.05E+00	
+ CD-109	657.75	93.14	7.53E-02	7.53E-02	-4.08E-02	3.53E-02		
	677.61	10.53	6.81E-01		0.00E+00	3.20E-01		
	706.67	16.46	5.31E-01		3.27E-01	2.51E-01		
	763.93	21.98	3.50E-01		-3.72E-01	1.64E-01		
	884.67	71.63	1.12E-01		3.56E-02	5.21E-02		
	1384.27	23.94	2.77E-01		9.28E-02	1.22E-01		
CD-113M	263.70	0.02	2.27E+02	2.27E+02	4.12E+01	1.09E+02		
SN-113	255.12	1.93	3.02E+00	9.67E-02	-8.20E-01	1.45E+00		
	391.69	64.90	9.67E-02		-2.31E-02	4.59E-02		
	TE123M	159.00	84.10		7.16E-02	7.16E-02	-2.45E-03	3.47E-02
SB-124	602.71	97.87	9.48E-02	9.48E-02	1.80E-02	4.48E-02		
	645.85	7.26	1.13E+00		2.32E-01	5.30E-01		
	722.78	11.10	7.83E-01		-5.84E-02	3.65E-01		
	1691.02	49.00	1.40E-01		2.80E-02	5.87E-02		
I-125	35.49	6.49	2.98E+00	2.98E+00	2.08E-01	1.44E+00		
SB-125	176.33	6.89	7.62E-01	2.13E-01	2.89E-01	3.69E-01		
	427.89	29.33	2.13E-01		-5.77E-02	1.02E-01		
	463.38	10.35	7.38E-01		1.04E+00	3.54E-01		
	600.56	17.80	3.96E-01		-2.66E-02	1.87E-01		
	635.90	11.32	5.96E-01		2.91E-02	2.80E-01		
SB-126	414.70	83.30	3.35E-01	2.85E-01	-1.40E-01	1.60E-01		
	666.33	99.60	2.85E-01		-3.39E-02	1.34E-01		
	695.00	99.60	3.21E-01		5.89E-02	1.52E-01		
	720.50	53.80	4.86E-01		-4.51E-02	2.26E-01		
+ SN-126	87.57	37.00	2.06E-01	2.06E-01	2.99E-01	1.01E-01		
	SB-127	473.00	25.00		2.20E+01	1.70E+01	3.96E-01	1.04E+01
	685.20	35.70	1.70E+01		-9.86E+00	7.94E+00		
I-129	783.80	14.70	4.88E+01	4.77E-01	2.68E+01	2.29E+01		
	29.78	57.00	4.77E-01		-9.09E-02	2.31E-01		
	33.60	13.20	1.28E+00		-1.82E-01	6.22E-01		

Analysis Report for 1510084-15

CP1803S06-07

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	1.52E+00	4.77E-01	1.03E+00	7.38E-01
I-131	284.30	6.05	7.38E+00	5.18E-01	-4.77E-01	3.53E+00
	364.48	81.20	5.18E-01		-1.32E-01	2.45E-01
	636.97	7.26	8.16E+00		2.38E+00	3.84E+00
	722.89	1.80	3.17E+01		-2.36E+00	1.48E+01
TE-132	49.72	13.10	1.21E+02	1.23E+01	-2.84E+02	5.88E+01
	228.16	88.00	1.23E+01		-5.80E+00	5.91E+00
BA-133	81.00	33.00	1.88E-01	8.53E-02	-1.37E+00	9.19E-02
	302.84	17.80	3.02E-01		-1.38E-01	1.44E-01
	356.01	60.00	8.53E-02		-3.70E-03	4.05E-02
I-133	529.87	86.30	4.12E+07	4.12E+07	4.60E+06	1.95E+07
XE-133	81.00	38.00	4.54E+00	4.54E+00	-3.31E+01	2.22E+00
CS-134	563.23	8.38	8.16E-01	7.53E-02	-3.50E-01	3.86E-01
	569.32	15.43	4.59E-01		-7.30E-02	2.17E-01
	604.70	97.60	7.53E-02		-4.53E-03	3.57E-02
	795.84	85.40	1.05E-01		7.13E-02	4.96E-02
	801.93	8.73	8.10E-01		4.47E-02	3.77E-01
CS-135	268.24	16.00	3.67E-01	3.67E-01	9.85E-02	1.77E-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	2.69E+00	2.51E-01	4.92E-01	1.31E+00
	163.89	4.61	4.36E+00		2.31E+00	2.12E+00
	176.55	13.56	1.44E+00		5.45E-01	6.95E-01
	273.65	12.66	1.64E+00		-1.58E+00	7.89E-01
	340.57	48.50	5.99E-01		4.64E-02	2.90E-01
	818.50	99.70	2.51E-01		-7.23E-02	1.16E-01
	1048.07	79.60	4.02E-01		9.11E-03	1.87E-01
	1235.34	19.70	1.77E+00		-1.22E+00	8.23E-01
CS-137	661.65	85.12	7.91E-02	7.91E-02	-1.74E-02	3.72E-02
LA-138	788.74	34.00	2.09E-01	1.05E-01	3.06E-03	9.78E-02
	1435.80	66.00	1.05E-01		3.51E-02	4.67E-02
CE-139	165.85	80.35	7.40E-02	7.40E-02	1.74E-02	3.59E-02
BA-140	162.64	6.70	3.11E+00	1.06E+00	6.80E-01	1.51E+00
	304.84	4.50	4.49E+00		8.79E-01	2.15E+00
	423.70	3.20	8.08E+00		1.77E+00	3.86E+00
	437.55	2.00	1.13E+01		3.55E-01	5.34E+00
	537.32	25.00	1.06E+00		7.11E-02	5.04E-01
LA-140	328.77	20.50	1.15E+00	2.67E-01	6.17E-01	5.53E-01
	487.03	45.50	5.36E-01		2.07E-01	2.54E-01
	815.85	23.50	1.15E+00		1.81E-01	5.35E-01
	1596.49	95.49	2.67E-01		1.52E-02	1.17E-01
CE-141	145.44	48.40	1.84E-01	1.84E-01	4.47E-02	8.96E-02
CE-143	57.36	11.80	1.95E+05	6.77E+04	2.22E+04	9.52E+04
	293.26	42.00	6.77E+04		2.02E+05	3.30E+04
	664.55	5.20	4.60E+05		2.71E+05	2.17E+05
CE-144	133.54	10.80	5.10E-01	5.10E-01	2.65E-02	2.48E-01
PM-144	476.78	42.00	1.50E-01	6.87E-02	7.44E-02	7.12E-02
	618.01	98.60	6.87E-02		-1.95E-02	3.23E-02
	696.49	99.49	8.08E-02		8.09E-03	3.82E-02
PM-145	36.85	21.70	6.00E-01	3.20E-01	-2.10E-01	2.91E-01
	37.36	39.70	3.20E-01		-1.71E-01	1.55E-01
	42.30	15.10	6.49E-01		-4.06E-01	3.16E-01

Analysis Report for 1510084-15
CP1803S06-07

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	3.50E+00	3.20E-01	-2.59E+00	1.72E+00
PM-146	453.90	39.94	1.50E-01	1.50E-01	-4.43E-02	7.10E-02
	735.90	14.01	4.50E-01		-3.29E-01	2.09E-01
	747.13	13.10	5.53E-01		2.22E-01	2.59E-01
ND-147	91.11	28.90	1.16E+00	1.16E+00	-1.69E-02	5.68E-01
	531.02	13.10	2.37E+00		-4.02E-01	1.12E+00
PM-149	285.90	3.10	4.38E+03	4.38E+03	-1.19E+03	2.09E+03
EU-152	121.78	20.50	2.41E-01	2.41E-01	8.28E-02	1.17E-01
	244.69	5.40	1.17E+00		-4.60E-01	5.65E-01
	344.27	19.13	2.68E-01		3.77E-02	1.28E-01
	778.89	9.20	7.80E-01		2.93E-03	3.64E-01
	964.01	10.40	9.39E-01		-1.12E-01	4.43E-01
	1085.78	7.22	1.06E+00		5.74E-02	4.90E-01
	1112.02	9.60	8.79E-01		4.33E-01	4.07E-01
	1407.95	14.94	4.58E-01		9.87E-02	2.04E-01
GD-153	97.43	31.30	1.71E-01	1.71E-01	-2.46E-02	8.35E-02
	103.18	22.20	2.43E-01		1.69E-01	1.18E-01
EU-154	123.07	40.50	1.21E-01	1.21E-01	-5.97E-02	5.86E-02
	723.30	19.70	3.32E-01		-2.48E-02	1.55E-01
	873.19	11.50	6.32E-01		2.65E-01	2.94E-01
	996.32	10.30	6.92E-01		1.40E-01	3.18E-01
	1004.76	17.90	4.17E-01		-6.29E-02	1.92E-01
	1274.45	35.50	2.30E-01		-5.13E-02	1.05E-01
EU-155	86.50	30.90	2.32E-01	2.32E-01	1.73E-01	1.14E-01
	105.30	20.70	2.47E-01		9.36E-02	1.20E-01
EU-156	811.77	10.40	2.31E+00	2.31E+00	4.58E-01	1.08E+00
	1153.47	7.20	3.69E+00		4.29E-01	1.71E+00
	1230.71	8.90	3.17E+00		1.27E+00	1.47E+00
HO-166M	184.41	72.60	9.64E-02	9.64E-02	1.75E-01	4.70E-02
	280.45	29.60	1.71E-01		-6.79E-02	8.17E-02
	410.94	11.10	6.48E-01		1.06E-01	3.11E-01
	711.69	54.10	1.29E-01		-6.10E-03	6.07E-02
TM-171	66.72	0.14	4.93E+01	4.93E+01	-1.19E+02	2.41E+01
HF-172	81.75	4.52	1.39E+00	4.45E-01	-1.67E+00	6.80E-01
	125.81	11.30	4.45E-01		1.03E-01	2.16E-01
LU-172	181.53	20.60	3.31E+00	1.95E+00	-1.27E+00	1.60E+00
	810.06	16.63	6.28E+00		1.44E+00	2.94E+00
	912.12	15.25	1.47E+01		4.47E+01	7.12E+00
	1093.66	62.50	1.95E+00		9.99E-01	9.07E-01
+ LU-173	100.72	5.24	9.72E-01	4.09E-01	3.52E-01	4.73E-01
	272.11	* 21.20	4.09E-01		4.41E-01	1.99E-01
HF-175	343.40	84.00	8.03E-02	8.03E-02	-2.49E-03	3.82E-02
LU-176	88.34	13.30	5.42E-01	5.62E-02	1.23E+00	2.66E-01
	201.83	86.00	6.42E-02		-3.63E-02	3.11E-02
	306.78	94.00	5.62E-02		3.61E-02	2.69E-02
TA-182	67.75	41.20	1.86E-01	1.86E-01	-7.80E-02	9.08E-02
	1121.30	34.90	4.14E-01		5.39E-01	1.97E-01
	1189.05	16.23	6.13E-01		-1.88E-02	2.83E-01
	1221.41	26.98	3.94E-01		1.38E-02	1.83E-01
	1231.02	11.44	9.10E-01		3.65E-01	4.21E-01
IR-192	308.46	29.68	2.17E-01	1.57E-01	8.42E-03	1.04E-01
	468.07	48.10	1.57E-01		3.87E-02	7.44E-02
HG-203	279.19	77.30	1.01E-01	1.01E-01	3.79E-02	4.83E-02

Analysis Report for 1510084-15

CP1803S06-07

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	7.42E-02	7.42E-02	4.28E-02	3.52E-02
	1063.62	74.90	9.77E-02		-1.12E-02	4.49E-02
+ TL-208	583.14 *	30.22	3.37E-01	1.51E-01	1.58E+00	1.62E-01
	860.37	4.48	2.05E+00		2.00E+00	9.70E-01
	2614.66 *	35.85	1.51E-01		1.29E+00	6.18E-02
BI-210M	262.00	45.00	1.18E-01	1.18E-01	1.77E-02	5.66E-02
	300.00	23.00	2.57E-01		-5.85E-01	1.24E-01
PB-210	46.50	4.25	2.14E+00	2.14E+00	9.57E-01	1.04E+00
PB-211	404.84	2.90	2.07E+00	2.07E+00	7.40E-01	9.88E-01
	831.96	2.90	2.67E+00		-1.11E+00	1.25E+00
+ BI-212	727.17 *	11.80	7.04E-01	7.04E-01	1.23E+00	3.34E-01
	1620.62	2.75	2.26E+00		8.73E-01	9.83E-01
+ PB-212	238.63 *	44.60	3.04E-01	3.04E-01	1.96E+00	1.50E-01
	300.09 *	3.41	3.36E+00		1.58E+00	1.65E+00
+ BI-214	609.31 *	46.30	2.27E-01	2.27E-01	1.29E+00	1.09E-01
	1120.29 *	15.10	1.41E+00		1.15E+00	6.86E-01
	1764.49 *	15.80	3.22E-01		1.60E+00	1.34E-01
	2204.22 *	4.98	1.07E+00		1.34E+00	4.41E-01
+ PB-214	295.21 *	19.19	5.86E-01	2.40E-01	1.59E+00	2.87E-01
	351.92 *	37.19	2.40E-01		1.52E+00	1.17E-01
RN-219	401.80	6.50	8.24E-01	8.24E-01	-4.38E-01	3.90E-01
RA-223	323.87	3.88	1.27E+00	1.27E+00	-1.30E+00	6.05E-01
+ RA-224	240.98 *	3.95	3.43E+00	3.43E+00	3.78E+00	1.69E+00
RA-225	40.00	31.00	1.17E+00	1.17E+00	7.89E-01	5.67E-01
+ RA-226	186.21 *	3.28	2.70E+00	2.70E+00	4.42E+00	1.33E+00
TH-227	50.10	8.40	8.76E-01	6.02E-01	-2.06E+00	4.26E-01
	236.00	11.50	6.02E-01		-6.07E+00	2.93E-01
	256.20	6.30	8.06E-01		-1.34E-01	3.87E-01
+ AC-228	338.32 *	11.40	6.25E-01	4.22E-01	1.93E+00	3.01E-01
	911.07 *	27.70	4.22E-01		1.83E+00	2.01E-01
	969.11 *	16.60	8.32E-01		9.87E-01	3.99E-01
TH-230	48.44	16.90	5.05E-01	5.05E-01	4.46E-01	2.47E-01
	62.85	4.60	1.75E+00		3.15E+00	8.60E-01
	67.67	0.37	1.78E+01		-7.46E+00	8.68E+00
PA-231	283.67	1.60	3.20E+00	2.32E+00	7.36E-01	1.53E+00
	302.67	2.30	2.32E+00		-1.06E+00	1.11E+00
TH-231	25.64	14.70	3.96E+00	1.03E+00	-7.36E-01	1.92E+00
	84.21	6.40	1.03E+00		5.37E-01	5.06E-01
PA-233	311.98	38.60	2.46E-01	2.46E-01	-1.08E-02	1.17E-01
PA-234	131.20	20.40	2.65E-01	2.65E-01	1.37E-02	1.29E-01
	733.99	8.80	7.43E-01		-1.64E-01	3.46E-01
	946.00	12.00	5.18E-01		-5.01E-02	2.36E-01
PA-234M	1001.03	0.92	8.69E+00	8.69E+00	5.10E+00	4.04E+00
+ TH-234	63.29 *	3.80	3.24E+00	3.24E+00	3.81E+00	1.60E+00
U-235	143.76	10.50	4.87E-01	4.87E-01	-3.89E-03	2.36E-01
	163.35	4.70	1.13E+00		6.01E-01	5.50E-01
	205.31	4.70	1.18E+00		4.48E-01	5.73E-01
NP-237	86.50	12.60	5.63E-01	5.63E-01	4.21E-01	2.76E-01
NP-239	106.10	22.70	3.70E+02	3.70E+02	1.40E+02	1.80E+02
	228.18	10.70	7.88E+02		-3.72E+02	3.79E+02
	277.60	14.10	6.33E+02		2.99E+02	3.04E+02
AM-241	59.54	35.90	1.97E-01	1.97E-01	-2.53E-01	9.61E-02
+ AM-243	74.67 *	66.00	2.01E-01	2.01E-01	3.23E-01	9.95E-02

Analysis Report for 1510084-15
 CP1803S06-07

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	1.91E+00	3.85E-01	2.32E+00	9.29E-01
	228.14	10.60	4.80E-01		-2.27E-01	2.31E-01
	277.60	14.00	3.85E-01		1.82E-01	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: CP1803S06-07

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	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	61	99	79	80	77	75	
25:	74	67	76	67	74	56	74	62	
33:	66	65	73	65	65	80	70	85	
41:	90	83	71	95	74	101	177	93	
49:	82	96	92	82	110	113	108	107	
57:	110	124	110	132	130	139	192	289	
65:	168	132	140	132	123	146	171	161	
73:	174	184	410	337	411	595	156	133	
81:	132	144	124	148	173	126	233	287	
89:	118	178	157	128	291	239	113	94	
97:	83	83	102	97	82	77	84	80	
105:	101	117	74	90	85	110	105	90	
113:	90	84	82	105	82	78	78	88	
121:	78	87	69	86	73	88	78	69	
129:	98	131	85	98	78	74	89	82	
137:	81	83	81	75	70	69	76	85	
145:	88	67	82	75	74	73	91	84	
153:	76	80	83	70	65	79	74	88	
161:	56	75	76	81	81	56	69	64	
169:	60	71	69	64	75	60	65	57	
177:	59	55	82	55	46	65	57	69	
185:	87	187	164	79	70	65	50	65	
193:	71	57	70	42	65	71	70	63	
201:	60	62	63	63	73	63	52	58	
209:	101	115	58	55	56	47	57	49	
217:	59	55	46	45	52	58	35	56	
225:	49	42	40	40	55	47	56	46	
233:	44	43	52	63	57	191	810	301	
241:	120	160	114	53	52	45	52	40	
249:	35	36	46	36	36	40	34	34	
257:	43	40	42	45	39	41	46	32	
265:	35	39	34	31	28	65	85	54	
273:	51	39	32	31	39	50	37	36	
281:	27	33	34	39	30	33	30	31	
289:	42	33	25	29	34	47	153	219	
297:	47	35	22	67	52	35	34	26	
305:	21	44	30	25	41	27	25	32	
313:	22	33	20	30	23	32	37	31	
321:	26	32	26	19	26	26	40	45	
329:	57	24	26	21	47	33	24	29	
337:	36	93	178	48	19	31	28	24	
345:	24	28	23	24	29	32	60	334	
353:	249	36	23	18	19	24	24	23	
361:	36	22	16	25	21	26	14	15	

369: 23 22 22 17 21 18 28 24

Sample Title: CP1803S06-07

Channel	1	2	3	4	5	6	7	8
377:	20	20	26	24	20	24	17	21
385:	25	22	28	27	29	20	23	26
393:	27	21	31	18	27	24	28	20
401:	17	25	23	26	35	23	33	19
409:	33	44	31	22	22	28	22	30
417:	21	31	19	25	30	19	28	22
425:	18	25	17	21	19	18	17	21
433:	17	17	17	12	14	20	10	21
441:	19	17	13	17	18	15	21	19
449:	18	19	13	24	13	19	14	13
457:	18	23	14	9	20	24	49	46
465:	14	14	14	18	9	21	20	14
473:	6	15	13	17	13	19	16	16
481:	17	10	20	18	18	14	15	13
489:	19	16	7	17	10	15	13	20
497:	21	13	16	18	15	16	19	18
505:	16	19	16	22	19	54	114	71
513:	26	17	14	8	17	17	15	14
521:	23	12	20	18	15	14	14	16
529:	20	9	18	9	17	13	14	20
537:	9	13	21	16	23	17	17	12
545:	11	19	10	17	8	13	14	13
553:	12	17	14	8	15	16	21	11
561:	15	13	20	21	17	7	19	16
569:	18	14	14	22	18	12	15	8
577:	13	8	16	13	16	22	142	185
585:	38	14	14	11	13	13	8	10
593:	11	15	15	15	16	13	16	15
601:	20	15	13	9	19	10	16	26
609:	144	264	68	13	17	14	20	10
617:	9	9	9	17	9	13	12	9
625:	10	4	12	10	8	15	5	10
633:	15	8	7	15	10	15	14	18
641:	9	8	6	10	11	8	13	8
649:	14	13	9	11	10	19	10	13
657:	10	14	13	7	10	21	5	9
665:	16	20	16	9	11	10	12	13
673:	15	7	8	9	8	10	13	16
681:	13	11	11	9	10	10	13	7
689:	10	16	13	13	17	7	19	18
697:	7	22	11	14	19	19	18	25
705:	15	13	13	16	16	11	7	6
713:	7	15	16	12	6	5	7	12
721:	3	12	11	13	5	9	36	63
729:	20	5	8	16	7	7	11	6
737:	9	5	13	12	13	8	10	19
745:	9	9	10	12	7	10	8	8
753:	10	12	12	19	14	12	10	10
761:	6	6	9	10	12	13	17	21
769:	28	19	11	18	13	8	9	7
777:	13	12	6	9	12	11	14	9
785:	12	11	12	9	8	10	10	8
793:	11	13	39	21	11	5	4	10

801: 11 10 6 15 6 16 9 10

Sample Title: CP1803S06-07

Channel	1	2	3	4	5	6	7	8	9
809:	11	18	10	9	10	9	8	9	
817:	10	8	6	6	7	9	6	14	
825:	5	7	11	9	6	11	8	8	
833:	19	10	12	16	16	9	6	11	
841:	13	10	10	9	6	6	5	13	
849:	12	15	10	10	9	12	11	7	
857:	9	8	9	15	23	22	15	4	
865:	8	3	13	11	5	8	10	15	
873:	9	5	4	8	6	4	10	8	
881:	5	11	10	6	9	6	7	13	
889:	11	4	5	8	9	15	3	6	
897:	9	9	5	6	6	8	8	11	
905:	7	8	8	10	5	18	105	131	
913:	40	8	6	5	9	7	6	7	
921:	6	9	6	7	10	8	4	5	
929:	3	9	5	11	5	19	6	9	
937:	11	5	8	6	13	10	6	6	
945:	7	8	3	4	3	3	8	11	
953:	10	6	9	7	6	7	15	4	
961:	6	7	6	11	29	25	10	21	
969:	57	60	13	6	5	9	8	8	
977:	10	4	3	10	8	5	3	6	
985:	5	9	5	5	12	8	7	7	
993:	8	9	7	4	2	7	8	8	
1001:	14	12	4	5	9	4	6	9	
1009:	3	8	1	7	10	5	3	3	
1017:	4	7	4	6	3	5	5	9	
1025:	3	11	8	14	6	6	5	5	
1033:	11	5	5	8	6	7	6	8	
1041:	6	3	7	7	6	10	6	6	
1049:	13	11	9	10	10	7	2	12	
1057:	9	7	9	6	2	9	8	6	
1065:	3	7	8	6	6	9	2	5	
1073:	4	10	8	8	9	7	15	6	
1081:	7	8	8	4	10	5	9	5	
1089:	5	4	7	11	8	11	12	6	
1097:	9	10	5	5	8	6	4	7	
1105:	6	4	3	3	9	6	13	8	
1113:	4	7	7	9	4	10	7	27	
1121:	41	19	4	14	9	7	6	5	
1129:	9	7	3	2	5	5	9	4	
1137:	11	9	2	4	8	7	10	2	
1145:	8	5	6	10	5	7	9	5	
1153:	3	9	8	10	6	6	6	6	
1161:	8	6	9	12	5	9	6	6	
1169:	7	4	8	8	4	14	4	5	
1177:	7	8	6	8	10	4	3	12	
1185:	2	8	9	9	4	6	6	8	
1193:	4	11	10	8	11	8	5	3	
1201:	9	12	11	5	14	5	9	15	
1209:	7	9	14	7	5	9	6	8	
1217:	11	10	7	8	10	6	8	6	
1225:	16	5	7	8	14	8	8	2	

1233: 6 6 5 5 14 18 15 19

Sample Title: CP1803S06-07

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	6	11	8	5	8	8	3	5
1249:	8	9	7	4	7	9	7	8
1257:	4	6	7	3	9	4	6	5
1265:	10	3	7	5	6	4	6	6
1273:	6	4	7	6	5	7	9	6
1281:	4	11	5	8	6	5	3	6
1289:	3	6	4	4	9	5	4	8
1297:	2	2	3	4	6	2	7	8
1305:	7	7	2	9	4	5	3	7
1313:	4	7	4	3	5	7	6	7
1321:	2	2	3	1	7	4	5	2
1329:	2	3	4	6	4	1	3	4
1337:	2	2	4	3	4	0	3	7
1345:	3	3	5	3	3	3	7	4
1353:	1	0	4	2	4	4	8	4
1361:	4	3	3	2	5	0	6	2
1369:	0	2	3	2	2	2	3	1
1377:	6	13	11	2	2	1	1	2
1385:	3	6	4	5	0	5	2	2
1393:	4	2	1	6	3	1	2	6
1401:	0	7	5	2	1	6	2	8
1409:	4	2	0	5	8	1	1	3
1417:	0	1	1	1	5	5	3	0
1425:	0	1	2	3	2	2	6	1
1433:	4	2	3	3	4	5	2	1
1441:	1	2	4	3	9	3	1	6
1449:	5	0	2	5	3	1	2	3
1457:	2	3	15	97	311	279	64	9
1465:	2	1	0	2	1	1	1	0
1473:	2	1	2	2	1	0	2	1
1481:	0	5	3	5	2	1	2	2
1489:	1	3	0	1	2	2	5	5
1497:	6	4	2	3	2	1	1	3
1505:	3	5	4	4	4	7	4	1
1513:	3	3	0	0	3	0	1	3
1521:	1	2	2	4	2	4	0	4
1529:	0	2	6	3	2	1	4	4
1537:	2	1	1	2	5	2	3	1
1545:	0	0	4	2	3	1	4	2
1553:	1	0	4	3	2	3	2	2
1561:	0	1	0	2	1	2	1	2
1569:	1	0	3	2	2	3	1	3
1577:	1	2	3	4	3	1	2	1
1585:	2	0	2	8	8	2	3	5
1593:	3	7	1	0	2	3	1	2
1601:	2	2	2	5	1	0	1	0
1609:	4	3	2	2	2	2	1	1
1617:	1	2	0	2	5	3	2	2
1625:	0	2	4	3	1	1	6	2
1633:	2	1	1	2	1	3	5	4
1641:	1	1	1	1	3	2	1	1
1649:	2	1	4	2	2	0	2	0
1657:	1	0	0	4	4	2	1	1

1665: 2 3 0 2 1 3 1 2

Sample Title: CP1803S06-07

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1673:	5	2	1	2	1	1	3	0
1681:	1	0	0	1	0	0	1	1
1689:	1	2	2	2	1	0	1	1
1697:	0	2	3	0	2	4	1	4
1705:	0	0	0	1	1	0	1	0
1713:	0	0	1	0	4	0	3	3
1721:	1	0	1	0	2	0	3	0
1729:	4	2	4	2	2	1	1	4
1737:	0	1	1	0	3	1	0	0
1745:	1	1	1	1	1	1	4	1
1753:	1	1	1	0	0	1	0	2
1761:	0	3	5	14	33	23	4	1
1769:	1	0	0	1	0	0	0	0
1777:	3	0	2	1	2	2	1	0
1785:	1	0	1	2	1	2	0	1
1793:	1	2	1	2	1	3	0	1
1801:	1	0	2	0	1	1	1	2
1809:	2	0	0	2	0	1	1	1
1817:	2	1	0	1	2	0	2	0
1825:	1	0	2	1	2	1	0	0
1833:	1	1	1	3	0	1	0	2
1841:	0	2	0	1	2	0	4	5
1849:	1	1	0	0	4	1	0	1
1857:	0	1	1	1	0	2	1	3
1865:	1	0	1	1	1	4	2	1
1873:	1	2	1	2	0	3	2	1
1881:	2	3	1	0	0	0	2	2
1889:	1	1	2	0	2	4	0	1
1897:	1	1	0	2	0	2	0	2
1905:	0	0	0	0	1	0	2	4
1913:	1	1	2	1	2	0	2	0
1921:	0	0	1	1	1	1	0	1
1929:	1	0	0	2	2	1	1	1
1937:	1	1	2	0	0	1	1	0
1945:	3	1	4	1	1	0	1	0
1953:	2	2	1	1	1	2	0	2
1961:	0	2	0	1	3	2	2	1
1969:	0	1	0	0	1	1	1	1
1977:	0	0	1	0	2	0	1	0
1985:	0	1	0	1	1	2	0	0
1993:	0	1	1	2	0	3	0	0
2001:	1	1	0	1	1	0	0	1
2009:	0	0	1	1	0	0	0	3
2017:	0	1	2	0	1	2	4	1
2025:	1	1	3	1	1	1	0	0
2033:	1	0	0	1	1	0	0	0
2041:	1	2	4	2	1	1	0	1
2049:	0	0	0	1	1	1	3	2
2057:	1	2	2	1	0	1	1	1
2065:	2	1	0	0	0	2	0	0
2073:	3	2	2	0	2	2	0	1
2081:	2	1	2	0	1	0	5	1
2089:	3	0	3	1	1	1	0	1

2097: 1 1 1 2 0 7 4 6

Sample Title: CP1803S06-07

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

2529: 0 0 0 1 0 0 0 1

Sample Title: CP1803S06-07

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	0	0	0	0	1	1
2545:	1	0	1	1	0	0	0	0
2553:	0	0	1	0	1	0	1	0
2561:	1	0	0	0	0	2	0	0
2569:	3	1	0	1	0	0	1	0
2577:	1	0	1	0	0	0	0	1
2585:	0	1	0	0	1	0	0	0
2593:	1	2	0	0	0	1	1	0
2601:	1	1	1	0	1	1	0	0
2609:	0	1	0	5	10	33	48	27
2617:	5	2	1	1	0	0	0	1
2625:	0	0	1	1	3	0	0	1
2633:	1	0	1	0	0	1	1	0
2641:	0	0	0	0	0	0	1	0
2649:	0	0	1	0	0	0	1	0
2657:	0	0	1	0	1	0	0	0
2665:	0	0	0	1	2	2	0	0
2673:	0	0	1	1	1	0	0	1
2681:	0	0	0	1	1	1	0	1
2689:	1	0	1	1	0	1	0	0
2697:	0	1	0	0	0	0	0	0
2705:	0	0	1	0	0	0	0	1
2713:	0	0	0	1	0	0	0	0
2721:	0	0	0	0	0	1	1	0
2729:	1	0	0	0	0	1	1	1
2737:	2	0	0	4	0	0	0	0
2745:	0	0	0	0	0	0	1	0
2753:	0	1	0	0	0	3	0	0
2761:	0	1	0	0	0	0	0	0
2769:	0	0	0	0	0	0	1	1
2777:	0	1	1	0	1	0	1	0
2785:	0	0	0	0	0	0	2	0
2793:	0	0	0	1	0	0	1	0
2801:	0	1	0	0	0	0	0	1
2809:	1	0	0	0	0	0	1	0
2817:	0	0	0	0	0	1	0	0
2825:	0	0	1	0	0	0	0	0
2833:	2	0	1	0	0	1	1	0
2841:	2	0	1	1	0	0	0	1
2849:	0	2	0	0	0	0	0	0
2857:	0	0	0	0	1	0	0	0
2865:	0	0	0	0	1	1	0	0
2873:	0	0	0	0	0	1	1	0
2881:	0	0	0	0	0	0	0	0
2889:	1	1	0	2	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	1	0	0	1	0	1
2913:	0	0	0	0	1	0	0	1
2921:	2	0	1	1	0	0	0	0
2929:	1	0	1	0	0	1	0	0
2937:	0	0	0	0	0	1	0	0
2945:	0	0	0	0	0	0	1	0
2953:	0	0	0	0	0	0	0	0

2961: 0 0 0 1 1 1 1 0

Sample Title: CP1803S06-07

Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	0	0	0	1	0
2977:	0	0	0	0	0	0	1	0
2985:	0	0	0	0	0	0	1	0
2993:	0	0	0	0	0	1	0	1
3001:	0	0	1	1	0	1	0	0
3009:	1	0	0	0	0	0	1	1
3017:	0	1	0	0	1	0	0	0
3025:	1	1	0	1	0	0	1	0
3033:	0	0	0	0	0	0	0	1
3041:	0	0	1	0	0	0	0	0
3049:	0	1	0	2	0	1	0	0
3057:	2	0	0	0	0	1	0	0
3065:	0	0	0	1	0	0	0	0
3073:	0	1	0	0	0	0	0	1
3081:	0	0	0	0	0	0	1	0
3089:	0	1	1	0	0	0	0	1
3097:	0	0	0	0	0	1	1	0
3105:	1	0	1	0	1	0	0	0
3113:	0	1	0	0	0	0	0	0
3121:	0	0	0	1	1	0	0	0
3129:	0	0	1	1	0	0	0	0
3137:	1	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	1
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	1	0	0	0
3185:	1	0	0	0	0	0	0	0
3193:	0	0	0	0	0	2	1	0
3201:	0	0	0	1	0	0	0	1
3209:	0	0	1	0	0	0	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	0	0	0	0	0
3249:	0	1	0	0	1	0	0	0
3257:	1	1	0	0	0	0	0	0
3265:	0	1	1	0	0	0	0	0
3273:	0	1	0	0	0	0	0	0
3281:	1	1	0	0	0	0	0	0
3289:	0	1	0	0	0	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	1	0	0	0
3313:	1	0	0	1	0	0	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	1	0	1	0	1	0	0
3353:	0	0	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	1	0	0	0	0	0	1
3385:	1	0	0	0	0	0	0	1

3393: 1 0 0 0 0 0 0 0

Sample Title: CP1803S06-07

3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	1	0	0	0	0
3417:	0	0	2	0	0	0	0	0
3425:	1	1	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	2	0	0	0
3449:	0	1	0	0	1	0	1	1
3457:	1	0	0	0	0	0	0	0
3465:	1	0	0	1	0	0	0	0
3473:	0	0	0	0	0	0	0	1
3481:	0	0	0	1	0	0	1	0
3489:	0	1	1	0	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	1	0	0
3521:	0	0	0	0	0	0	0	0
3529:	1	0	0	0	0	1	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	3	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	0	0	0
3577:	0	0	1	1	0	0	0	1
3585:	0	1	1	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	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	1	1	0	0	0	0
3641:	0	0	0	0	0	0	0	1
3649:	0	0	0	0	0	0	0	0
3657:	0	0	1	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	1	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	1	0	0	0	1	0
3697:	0	0	0	0	0	0	0	1
3705:	1	0	0	0	0	0	0	0
3713:	1	0	0	0	0	0	0	0
3721:	0	0	0	0	0	1	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	1	0	0	0	0	0
3745:	0	0	0	0	0	1	0	0
3753:	0	0	0	1	0	0	0	1
3761:	0	0	0	0	0	1	2	0
3769:	0	0	0	1	0	1	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	0	0
3809:	0	1	0	0	0	1	0	0
3817:	0	0	0	0	0	1	0	0

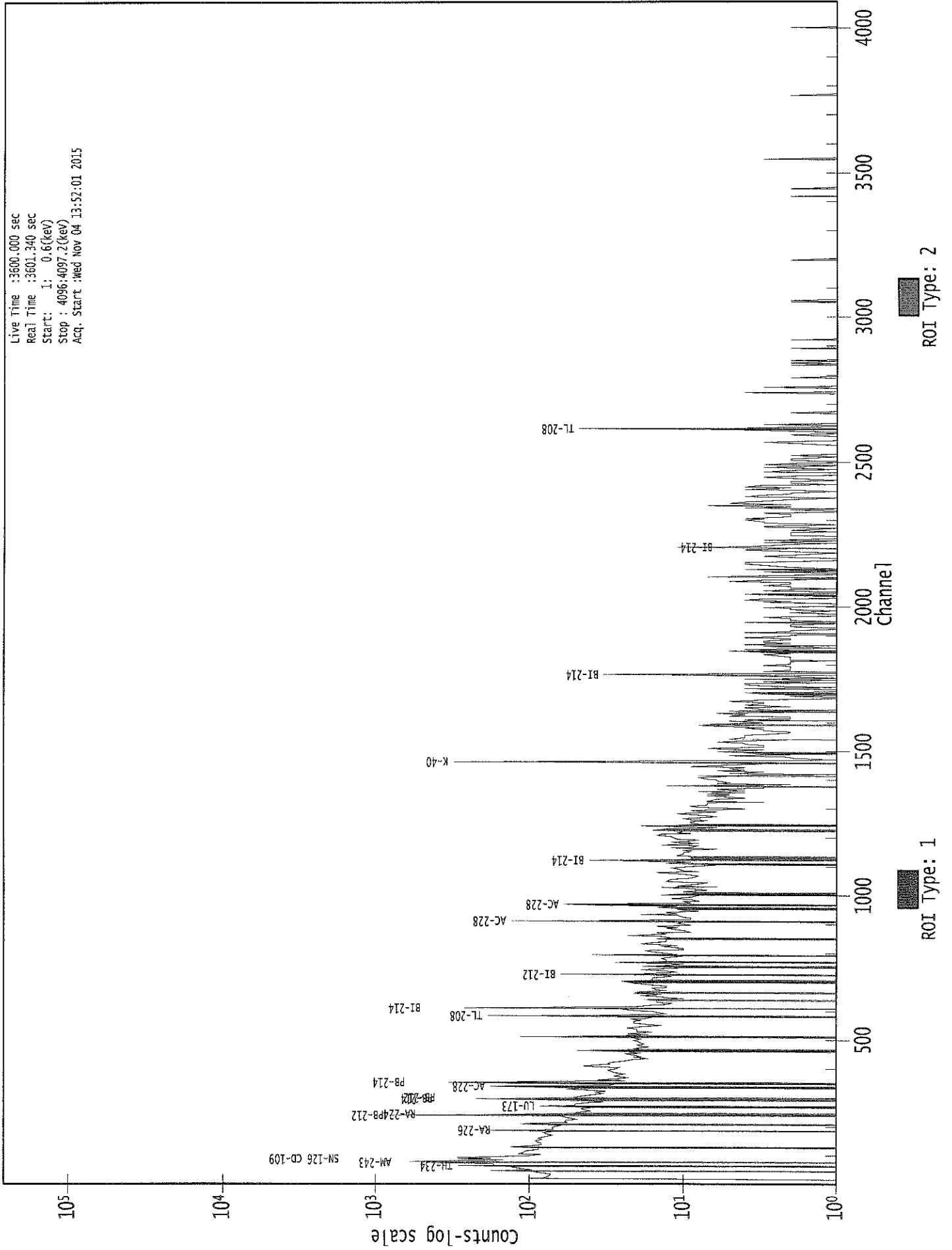
3825: 0 0 0 0 0 0 0 0

Sample Title: CP1803S06-07

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	1	0	0	0	1
3841:	1	0	0	0	0	0	0	0
3849:	0	0	0	0	0	1	0	0
3857:	0	0	0	0	0	0	0	1
3865:	1	0	0	0	0	1	0	0
3873:	0	0	0	0	0	1	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	1	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	1
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	1	0	0	0	0	0	0
3945:	0	1	1	0	0	0	0	1
3953:	0	0	0	0	0	0	0	1
3961:	0	0	0	1	0	0	0	0
3969:	1	0	0	0	0	0	0	0
3977:	0	0	0	0	1	0	0	0
3985:	0	0	0	0	0	0	1	0
3993:	0	1	0	0	0	0	0	0
4001:	1	2	0	0	0	0	0	0
4009:	0	0	0	1	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	1	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	1	0	0	0	0
4057:	0	1	0	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	1	0	1	0
4089:	0	0	0	0	0	0	1	0

0000029138.CNF

Live Time :3600.000 sec
Real Time :3601.340 sec
Start: 1: 0.6(keV)
Stop : 4096.4097.2(keV)
Acq. Start :Wed Nov 04 13:52:01 2015



KS
11/4/15Analysis Report for 1510084-16
CP1803S08-09

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-16
Sample Description : CP1803S08-09
Sample Type : SOIL

Sample Size : 6.410E+02 grams
Facility : Countroom

Sample Taken On : 10/10/2015 9:52:01AM
Acquisition Started : 11/4/2015 1:52:12PM

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 : 29139

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-16
CP1803S08-09

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 2:52:24PM
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	46.44	46.55	0.0000	0.00
2	63.63	63.72	0.0000	0.00
3	76.24	76.33	0.0000	0.00
4	88.02	88.10	0.0000	0.00
5	129.30	129.36	0.0000	0.00
6	186.42	186.45	0.0000	0.00
7	194.60	194.62	0.0000	0.00
8	209.64	209.65	0.0000	0.00
9	238.74	238.74	0.0000	0.00
10	241.93	241.92	0.0000	0.00
11	258.10	258.08	0.0000	0.00
12	270.82	270.80	0.0000	0.00
13	278.06	278.04	0.0000	0.00
14	295.29	295.26	0.0000	0.00
15	300.22	300.18	0.0000	0.00
16	328.21	328.16	0.0000	0.00
17	338.37	338.31	0.0000	0.00
18	352.02	351.96	0.0000	0.00
19	383.67	383.59	0.0000	0.00
20	463.04	462.92	0.0000	0.00
21	492.74	492.60	0.0000	0.00
22	499.17	499.04	0.0000	0.00
23	510.97	510.83	0.0000	0.00
24	536.22	536.06	0.0000	0.00
25	583.31	583.13	0.0000	0.00
26	609.41	609.22	0.0000	0.00
27	666.52	666.30	0.0000	0.00
28	697.35	697.11	0.0000	0.00
29	727.54	727.29	0.0000	0.00
30	768.23	767.96	0.0000	0.00
31	786.19	785.92	0.0000	0.00
32	793.74	793.46	0.0000	0.00
33	860.52	860.21	0.0000	0.00
34	911.45	911.13	0.0000	0.00
35	934.95	934.61	0.0000	0.00
36	965.22	964.87	0.0000	0.00
37	969.18	968.83	0.0000	0.00
38	999.30	998.94	0.0000	0.00
39	1120.74	1120.33	0.0000	0.00
40	1183.04	1182.61	0.0000	0.00
41	1238.48	1238.03	0.0000	0.00
42	1260.35	1259.89	0.0000	0.00

Analysis Report for 1510084-16
CP1803S08-09

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1377.51	1377.01	0.0000	0.00
44	1460.91	1460.39	0.0000	0.00
45	1657.05	1656.48	0.0000	0.00
46	1728.82	1728.23	0.0000	0.00
47	1764.71	1764.10	0.0000	0.00
48	1796.56	1795.94	0.0000	0.00
49	1806.62	1806.00	0.0000	0.00
50	1847.36	1846.73	0.0000	0.00
51	1888.82	1888.19	0.0000	0.00
52	1933.51	1932.87	0.0000	0.00
53	2103.57	2102.89	0.0000	0.00
54	2118.68	2118.00	0.0000	0.00
55	2182.64	2181.95	0.0000	0.00
56	2203.51	2202.82	0.0000	0.00
57	2217.73	2217.04	0.0000	0.00
58	2252.13	2251.43	0.0000	0.00
59	2394.36	2393.64	0.0000	0.00
60	2614.08	2613.34	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510084-16

CP1803S08-09

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 2:52:24PM

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	46.44	44 -	50	46.55	1.76E+02	102.63	1.78E+03	1.22
2	63.63	60 -	67	63.72	1.48E+02	118.34	2.25E+03	1.81
3	76.24	72 -	83	76.33	1.33E+03	181.43	3.44E+03	3.60
4	88.02	86 -	91	88.10	2.68E+02	98.19	1.72E+03	3.53
5	129.30	127 -	132	129.36	6.93E+01	71.89	9.69E+02	1.96
6	186.42	182 -	190	186.45	2.58E+02	90.07	1.08E+03	1.66
7	194.60	192 -	197	194.62	4.71E+01	58.58	6.50E+02	1.26
8	209.64	205 -	213	209.65	1.35E+02	87.99	1.10E+03	1.70
M 9	238.74	234 -	247	238.74	1.18E+03	82.92	5.12E+02	1.53
m 10	241.93	234 -	247	241.92	3.13E+02	88.78	6.37E+02	2.28
11	258.10	255 -	261	258.08	5.68E+01	54.48	4.94E+02	2.61
12	270.82	267 -	274	270.80	9.66E+01	66.12	6.65E+02	1.86
13	278.06	275 -	281	278.04	7.03E+01	53.00	4.43E+02	3.69
M 14	295.29	290 -	305	295.26	3.39E+02	52.00	3.02E+02	1.65
m 15	300.22	290 -	305	300.18	7.45E+01	40.59	2.85E+02	1.66
16	328.21	326 -	331	328.16	5.35E+01	41.47	3.03E+02	1.75
17	338.37	335 -	342	338.31	2.44E+02	54.81	3.42E+02	1.69
18	352.02	347 -	356	351.96	6.32E+02	77.85	5.03E+02	1.41
19	383.67	381 -	386	383.59	3.82E+01	36.88	2.44E+02	3.35
20	463.04	460 -	465	462.92	5.22E+01	34.12	1.90E+02	1.36
21	492.74	489 -	495	492.60	2.79E+01	31.23	1.56E+02	2.63
22	499.17	496 -	502	499.04	4.16E+01	30.23	1.35E+02	3.06
23	510.97	507 -	516	510.83	1.91E+02	57.84	3.66E+02	2.11
24	536.22	533 -	539	536.06	2.78E+01	34.38	1.92E+02	1.22
25	583.31	578 -	586	583.13	3.54E+02	55.04	2.49E+02	1.84
26	609.41	603 -	614	609.22	4.92E+02	65.36	2.88E+02	1.87
27	666.52	663 -	670	666.30	2.90E+01	32.06	1.52E+02	3.96
28	697.35	695 -	700	697.11	2.73E+01	26.21	1.13E+02	1.24
29	727.54	723 -	732	727.29	8.02E+01	42.74	2.16E+02	2.48
30	768.23	765 -	770	767.96	4.27E+01	27.78	1.21E+02	1.96
31	786.19	783 -	788	785.92	2.03E+01	22.65	8.54E+01	2.00
32	793.74	789 -	798	793.46	6.63E+01	34.80	1.35E+02	1.81
33	860.52	856 -	864	860.21	2.70E+01	30.45	1.26E+02	1.80
34	911.45	905 -	916	911.13	2.63E+02	47.96	1.56E+02	2.08
35	934.95	931 -	938	934.61	3.32E+01	26.15	9.15E+01	1.57
M 36	965.22	963 -	972	964.87	3.53E+01	17.89	4.29E+01	2.06
m 37	969.18	963 -	972	968.83	1.60E+02	30.79	5.84E+01	1.88
38	999.30	994 -	1005	998.94	3.51E+01	32.50	1.16E+02	7.39
39	1120.74	1116 -	1126	1120.33	1.08E+02	39.30	1.48E+02	2.51
40	1183.04	1179 -	1186	1182.61	1.95E+01	24.17	8.50E+01	1.08

Analysis Report for 1510084-16

CP1803S08-09

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1238.48	1233 - 1241		1238.03	3.76E+01	33.83	1.53E+02	1.66
42	1260.35	1257 - 1264		1259.89	1.68E+01	20.20	5.83E+01	1.79
43	1377.51	1372 - 1380		1377.01	2.51E+01	19.76	4.38E+01	2.09
44	1460.91	1454 - 1466		1460.39	7.18E+02	59.91	8.36E+01	2.31
45	1657.05	1653 - 1659		1656.48	7.28E+00	6.95	3.44E+00	2.41
46	1728.82	1722 - 1732		1728.23	3.65E+01	15.12	1.10E+01	3.50
47	1764.71	1759 - 1769		1764.10	8.43E+01	22.29	1.94E+01	2.65
48	1796.56	1790 - 1802		1795.94	1.80E+01	8.49	0.00E+00	3.67
49	1806.62	1803 - 1809		1806.00	8.00E+00	5.66	0.00E+00	1.33
50	1847.36	1841 - 1853		1846.73	2.95E+01	15.12	1.30E+01	1.24
51	1888.82	1884 - 1891		1888.19	9.00E+00	9.17	8.00E+00	2.22
52	1933.51	1929 - 1935		1932.87	7.82E+00	8.28	6.36E+00	2.99
53	2103.57	2098 - 2107		2102.89	1.96E+01	15.78	2.29E+01	2.56
54	2118.68	2114 - 2120		2118.00	7.50E+00	8.28	7.00E+00	2.82
55	2182.64	2176 - 2187		2181.95	1.41E+01	10.20	5.76E+00	5.29
56	2203.51	2198 - 2206		2202.82	2.35E+01	12.35	9.00E+00	3.46
57	2217.73	2213 - 2221		2217.04	1.03E+01	9.82	7.43E+00	4.12
58	2252.13	2247 - 2256		2251.43	1.40E+01	7.48	0.00E+00	5.13
59	2394.36	2388 - 2397		2393.64	8.36E+00	8.31	5.27E+00	6.56
60	2614.08	2609 - 2618		2613.34	1.44E+02	24.00	0.00E+00	2.94

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 : 11/4/2015 2:52:24PM

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	46.44	44 -	50	1.76E+02	102.63	1.78E+03	8.15E+01
2	63.63	60 -	67	1.48E+02	118.34	2.25E+03	9.52E+01
3	76.24	72 -	83	1.33E+03	181.43	3.44E+03	1.37E+02
4	88.02	86 -	91	2.68E+02	98.19	1.72E+03	7.61E+01
5	129.30	127 -	132	6.93E+01	71.89	9.69E+02	5.75E+01
6	186.42	182 -	190	2.58E+02	90.07	1.08E+03	6.92E+01
7	194.60	192 -	197	4.71E+01	58.58	6.50E+02	4.68E+01
8	209.64	205 -	213	1.35E+02	87.99	1.10E+03	6.98E+01

Analysis Report for 1510084-16

CP1803S08-09

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	9	238.74	234 -	247	1.18E+03	82.92	5.12E+02	3.72E+01
m	10	241.93	234 -	247	3.13E+02	88.78	6.37E+02	4.15E+01
	11	258.10	255 -	261	5.68E+01	54.48	4.94E+02	4.30E+01
	12	270.82	267 -	274	9.66E+01	66.12	6.65E+02	5.19E+01
	13	278.06	275 -	281	7.03E+01	53.00	4.43E+02	4.13E+01
M	14	295.29	290 -	305	3.39E+02	52.00	3.02E+02	2.85E+01
m	15	300.22	290 -	305	7.45E+01	40.59	2.85E+02	2.77E+01
	16	328.21	326 -	331	5.35E+01	41.47	3.03E+02	3.19E+01
	17	338.37	335 -	342	2.44E+02	54.81	3.42E+02	3.70E+01
	18	352.02	347 -	356	6.32E+02	77.85	5.03E+02	4.89E+01
	19	383.67	381 -	386	3.82E+01	36.88	2.44E+02	2.86E+01
	20	463.04	460 -	465	5.22E+01	34.12	1.90E+02	2.54E+01
	21	492.74	489 -	495	2.79E+01	31.23	1.56E+02	2.42E+01
	22	499.17	496 -	502	4.16E+01	30.23	1.35E+02	2.25E+01
	23	510.97	507 -	516	1.91E+02	57.84	3.66E+02	4.18E+01
	24	536.22	533 -	539	2.78E+01	34.38	1.92E+02	2.69E+01
	25	583.31	578 -	586	3.54E+02	55.04	2.49E+02	3.30E+01
	26	609.41	603 -	614	4.92E+02	65.36	2.88E+02	3.95E+01
	27	666.52	663 -	670	2.90E+01	32.06	1.52E+02	2.48E+01
	28	697.35	695 -	700	2.73E+01	26.21	1.13E+02	1.98E+01
	29	727.54	723 -	732	8.02E+01	42.74	2.16E+02	3.19E+01
	30	768.23	765 -	770	4.27E+01	27.78	1.21E+02	2.02E+01
	31	786.19	783 -	788	2.03E+01	22.65	8.54E+01	1.71E+01
	32	793.74	789 -	798	6.63E+01	34.80	1.35E+02	2.53E+01
	33	860.52	856 -	864	2.70E+01	30.45	1.26E+02	2.35E+01
	34	911.45	905 -	916	2.63E+02	47.96	1.56E+02	2.90E+01
	35	934.95	931 -	938	3.32E+01	26.15	9.15E+01	1.93E+01
M	36	965.22	963 -	972	3.53E+01	17.89	4.29E+01	1.08E+01
m	37	969.18	963 -	972	1.60E+02	30.79	5.84E+01	1.26E+01
	38	999.30	994 -	1005	3.51E+01	32.50	1.16E+02	2.49E+01
	39	1120.74	1116 -	1126	1.08E+02	39.30	1.48E+02	2.74E+01
	40	1183.04	1179 -	1186	1.95E+01	24.17	8.50E+01	1.85E+01
	41	1238.48	1233 -	1241	3.76E+01	33.83	1.53E+02	2.59E+01
	42	1260.35	1257 -	1264	1.68E+01	20.20	5.83E+01	1.52E+01
	43	1377.51	1372 -	1380	2.51E+01	19.76	4.38E+01	1.40E+01
	44	1460.91	1454 -	1466	7.18E+02	59.91	8.36E+01	2.20E+01
	45	1657.05	1653 -	1659	7.28E+00	6.95	3.44E+00	3.60E+00
	46	1728.82	1722 -	1732	3.65E+01	15.12	1.10E+01	7.47E+00
	47	1764.71	1759 -	1769	8.43E+01	22.29	1.94E+01	1.04E+01
	48	1796.56	1790 -	1802	1.80E+01	8.49	0.00E+00	0.00E+00
	49	1806.62	1803 -	1809	8.00E+00	5.66	0.00E+00	0.00E+00
	50	1847.36	1841 -	1853	2.95E+01	15.12	1.30E+01	8.64E+00
	51	1888.82	1884 -	1891	9.00E+00	9.17	8.00E+00	5.70E+00
	52	1933.51	1929 -	1935	7.82E+00	8.28	6.36E+00	5.02E+00
	53	2103.57	2098 -	2107	1.96E+01	15.78	2.29E+01	1.07E+01
	54	2118.68	2114 -	2120	7.50E+00	8.28	7.00E+00	5.10E+00
	55	2182.64	2176 -	2187	1.41E+01	10.20	5.76E+00	5.67E+00
	56	2203.51	2198 -	2206	2.35E+01	12.35	9.00E+00	6.29E+00
	57	2217.73	2213 -	2221	1.03E+01	9.82	7.43E+00	6.12E+00
	58	2252.13	2247 -	2256	1.40E+01	7.48	0.00E+00	0.00E+00
	59	2394.36	2388 -	2397	8.36E+00	8.31	5.27E+00	4.90E+00

Analysis Report for 1510084-16
 CP1803S08-09

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
60	2614.08	2609 -	2618	1.44E+02	24.00	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 : 11/4/2015 2:52:24PM

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	46.44	44 -	50	46.55	1.76E+02	102.63	1.78E+03	PB-210	
2	63.63	60 -	67	63.72	1.48E+02	118.34	2.25E+03	TH-234 TH-230	
3	76.24	72 -	83	76.33	1.33E+03	181.43	3.44E+03	.....
4	88.02	86 -	91	88.10	2.68E+02	98.19	1.72E+03	CD-109 LU-176 SN-126	
5	129.30	127 -	132	129.36	6.93E+01	71.89	9.69E+02	.....
6	186.42	182 -	190	186.45	2.58E+02	90.07	1.08E+03	RA-226	
7	194.60	192 -	197	194.62	4.71E+01	58.58	6.50E+02	.....
8	209.64	205 -	213	209.65	1.35E+02	87.99	1.10E+03	CM-243 GA-67	
M	9	238.74	234 -	247	238.74	1.18E+03	82.92	5.12E+02	PB-212
m	10	241.93	234 -	247	241.92	3.13E+02	88.78	6.37E+02	RA-224
	11	258.10	255 -	261	258.08	5.68E+01	54.48	4.94E+02	.....
	12	270.82	267 -	274	270.80	9.66E+01	66.12	6.65E+02	.....
	13	278.06	275 -	281	278.04	7.03E+01	53.00	4.43E+02	CM-243 NP-239
M	14	295.29	290 -	305	295.26	3.39E+02	52.00	3.02E+02	PB-214
m	15	300.22	290 -	305	300.18	7.45E+01	40.59	2.85E+02	GA-67 PB-212 BI-210M
	16	328.21	326 -	331	328.16	5.35E+01	41.47	3.03E+02	LA-140
	17	338.37	335 -	342	338.31	2.44E+02	54.81	3.42E+02	AC-228
	18	352.02	347 -	356	351.96	6.32E+02	77.85	5.03E+02	PB-214

Analysis Report for 1510084-16

CP1803S08-09

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
19	383.67	381 -	386	383.59	3.82E+01	36.88	2.44E+02	.....
20	463.04	460 -	465	462.92	5.22E+01	34.12	1.90E+02	SB-125
21	492.74	489 -	495	492.60	2.79E+01	31.23	1.56E+02	.....
22	499.17	496 -	502	499.04	4.16E+01	30.23	1.35E+02	.....
23	510.97	507 -	516	510.83	1.91E+02	57.84	3.66E+02	.....
24	536.22	533 -	539	536.06	2.78E+01	34.38	1.92E+02	.....
25	583.31	578 -	586	583.13	3.54E+02	55.04	2.49E+02	TL-208
26	609.41	603 -	614	609.22	4.92E+02	65.36	2.88E+02	BI-214
27	666.52	663 -	670	666.30	2.90E+01	32.06	1.52E+02	SB-126
28	697.35	695 -	700	697.11	2.73E+01	26.21	1.13E+02	PM-144
29	727.54	723 -	732	727.29	8.02E+01	42.74	2.16E+02	BI-212
30	768.23	765 -	770	767.96	4.27E+01	27.78	1.21E+02	.....
31	786.19	783 -	788	785.92	2.03E+01	22.65	8.54E+01	.....
32	793.74	789 -	798	793.46	6.63E+01	34.80	1.35E+02	.....
33	860.52	856 -	864	860.21	2.70E+01	30.45	1.26E+02	TL-208
34	911.45	905 -	916	911.13	2.63E+02	47.96	1.56E+02	AC-228 LU-172
35	934.95	931 -	938	934.61	3.32E+01	26.15	9.15E+01	.....
M 36	965.22	963 -	972	964.87	3.53E+01	17.89	4.29E+01	.....
m 37	969.18	963 -	972	968.83	1.60E+02	30.79	5.84E+01	AC-228
38	999.30	994 -	1005	998.94	3.51E+01	32.50	1.16E+02	.....
39	1120.74	1116 -	1126	1120.33	1.08E+02	39.30	1.48E+02	SC-46 BI-214 TA-182
40	1183.04	1179 -	1186	1182.61	1.95E+01	24.17	8.50E+01	.....
41	1238.48	1233 -	1241	1238.03	3.76E+01	33.83	1.53E+02	CO-56
42	1260.35	1257 -	1264	1259.89	1.68E+01	20.20	5.83E+01	I-135
43	1377.51	1372 -	1380	1377.01	2.51E+01	19.76	4.38E+01	.....
44	1460.91	1454 -	1466	1460.39	7.18E+02	59.91	8.36E+01	K-40
45	1657.05	1653 -	1659	1656.48	7.28E+00	6.95	3.44E+00	.....
46	1728.82	1722 -	1732	1728.23	3.65E+01	15.12	1.10E+01	.....
47	1764.71	1759 -	1769	1764.10	8.43E+01	22.29	1.94E+01	BI-214
48	1796.56	1790 -	1802	1795.94	1.80E+01	8.49	0.00E+00	.....
49	1806.62	1803 -	1809	1806.00	8.00E+00	5.66	0.00E+00	.....
50	1847.36	1841 -	1853	1846.73	2.95E+01	15.12	1.30E+01	.....
51	1888.82	1884 -	1891	1888.19	9.00E+00	9.17	8.00E+00	.....
52	1933.51	1929 -	1935	1932.87	7.82E+00	8.28	6.36E+00	.....
53	2103.57	2098 -	2107	2102.89	1.96E+01	15.78	2.29E+01	.....
54	2118.68	2114 -	2120	2118.00	7.50E+00	8.28	7.00E+00	.....
55	2182.64	2176 -	2187	2181.95	1.41E+01	10.20	5.76E+00	.....
56	2203.51	2198 -	2206	2202.82	2.35E+01	12.35	9.00E+00	BI-214
57	2217.73	2213 -	2221	2217.04	1.03E+01	9.82	7.43E+00	.....
58	2252.13	2247 -	2256	2251.43	1.40E+01	7.48	0.00E+00	.....
59	2394.36	2388 -	2397	2393.64	8.36E+00	8.31	5.27E+00	.....
60	2614.08	2609 -	2618	2613.34	1.44E+02	24.00	0.00E+00	TL-208

Analysis Report for 1510084-16

CP1803S08-09

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 : 11/4/2015 2:52:24PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.44	1.76E+02	102.63	1.33E-02	1.68E-03
	2	63.63	1.48E+02	118.34	2.39E-02	2.09E-03
	3	76.24	1.33E+03	181.43	2.74E-02	3.34E-03
	4	88.02	2.68E+02	98.19	2.84E-02	4.50E-03
	5	129.30	6.93E+01	71.89	2.60E-02	2.77E-03
	6	186.42	2.58E+02	90.07	2.11E-02	1.65E-03
	7	194.60	4.71E+01	58.58	2.05E-02	1.64E-03
	8	209.64	1.35E+02	87.99	1.95E-02	1.63E-03
M	9	238.74	1.18E+03	82.92	1.79E-02	1.60E-03
m	10	241.93	3.13E+02	88.78	1.77E-02	1.60E-03
	11	258.10	5.68E+01	54.48	1.69E-02	1.58E-03
	12	270.82	9.66E+01	66.12	1.64E-02	1.57E-03
	13	278.06	7.03E+01	53.00	1.61E-02	1.56E-03
M	14	295.29	3.39E+02	52.00	1.55E-02	1.48E-03
m	15	300.22	7.45E+01	40.59	1.53E-02	1.46E-03
	16	328.21	5.35E+01	41.47	1.44E-02	1.32E-03
	17	338.37	2.44E+02	54.81	1.41E-02	1.27E-03
	18	352.02	6.32E+02	77.85	1.37E-02	1.21E-03
	19	383.67	3.82E+01	36.88	1.29E-02	1.06E-03
	20	463.04	5.22E+01	34.12	1.13E-02	9.47E-04
	21	492.74	2.79E+01	31.23	1.08E-02	9.17E-04
	22	499.17	4.16E+01	30.23	1.07E-02	9.10E-04
	23	510.97	1.91E+02	57.84	1.06E-02	8.98E-04
	24	536.22	2.78E+01	34.38	1.02E-02	8.73E-04
	25	583.31	3.54E+02	55.04	9.58E-03	8.25E-04
	26	609.41	4.92E+02	65.36	9.27E-03	7.98E-04
	27	666.52	2.90E+01	32.06	8.66E-03	7.42E-04
	28	697.35	2.73E+01	26.21	8.36E-03	7.22E-04
	29	727.54	8.02E+01	42.74	8.08E-03	7.03E-04
	30	768.23	4.27E+01	27.78	7.74E-03	6.77E-04
	31	786.19	2.03E+01	22.65	7.60E-03	6.65E-04
	32	793.74	6.63E+01	34.80	7.54E-03	6.60E-04
	33	860.52	2.70E+01	30.45	7.07E-03	6.17E-04
	34	911.45	2.63E+02	47.96	6.74E-03	5.86E-04

Analysis Report for 1510084-16

CP1803S08-09

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	35	934.95	3.32E+01	26.15	6.61E-03	5.74E-04
M	36	965.22	3.53E+01	17.89	6.44E-03	5.59E-04
m	37	969.18	1.60E+02	30.79	6.41E-03	5.57E-04
	38	999.30	3.51E+01	32.50	6.26E-03	5.42E-04
	39	1120.74	1.08E+02	39.30	5.70E-03	4.80E-04
	40	1183.04	1.95E+01	24.17	5.46E-03	4.57E-04
	41	1238.48	3.76E+01	33.83	5.27E-03	4.83E-04
	42	1260.35	1.68E+01	20.20	5.20E-03	4.93E-04
	43	1377.51	2.51E+01	19.76	4.87E-03	5.08E-04
	44	1460.91	7.18E+02	59.91	4.67E-03	4.73E-04
	45	1657.05	7.28E+00	6.95	4.32E-03	3.92E-04
	46	1728.82	3.65E+01	15.12	4.23E-03	3.62E-04
	47	1764.71	8.43E+01	22.29	4.18E-03	3.47E-04
	48	1796.56	1.80E+01	8.49	4.15E-03	3.34E-04
	49	1806.62	8.00E+00	5.66	4.14E-03	3.30E-04
	50	1847.36	2.95E+01	15.12	4.10E-03	3.18E-04
	51	1888.82	9.00E+00	9.17	4.07E-03	3.18E-04
	52	1933.51	7.82E+00	8.28	4.03E-03	3.18E-04
	53	2103.57	1.96E+01	15.78	3.95E-03	3.18E-04
	54	2118.68	7.50E+00	8.28	3.95E-03	3.18E-04
	55	2182.64	1.41E+01	10.20	3.93E-03	3.18E-04
	56	2203.51	2.35E+01	12.35	3.93E-03	3.18E-04
	57	2217.73	1.03E+01	9.82	3.93E-03	3.18E-04
	58	2252.13	1.40E+01	7.48	3.93E-03	3.18E-04
	59	2394.36	8.36E+00	8.31	3.95E-03	3.18E-04
	60	2614.08	1.44E+02	24.00	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 : 11/4/2015 2:52:24PM

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	46.44	1.76E+02	102.63	6.46E+01	1.16E+01	1.12E+02	1.03E+02
2	63.63	1.48E+02	118.34	4.34E+01	1.15E+01	1.05E+02	1.19E+02
3	76.24	1.33E+03	181.43			1.33E+03	1.81E+02
4	88.02	2.68E+02	98.19	1.46E+00	7.88E+00	2.67E+02	9.85E+01

Analysis Report for 1510084-16

CP1803S08-09

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
5	129.30	6.93E+01	71.89			6.93E+01	7.19E+01
6	186.42	2.58E+02	90.07	4.72E+01	7.97E+00	2.11E+02	9.04E+01
7	194.60	4.71E+01	58.58			4.71E+01	5.86E+01
8	209.64	1.35E+02	87.99			1.35E+02	8.80E+01
M 9	238.74	1.18E+03	82.92	2.36E+01	1.35E+01	1.16E+03	8.40E+01
m 10	241.93	3.13E+02	88.78	6.38E+00	3.91E+00	3.07E+02	8.89E+01
11	258.10	5.68E+01	54.48			5.68E+01	5.45E+01
12	270.82	9.66E+01	66.12			9.66E+01	6.61E+01
13	278.06	7.03E+01	53.00			7.03E+01	5.30E+01
M 14	295.29	3.39E+02	52.00	8.57E+00	6.10E+00	3.31E+02	5.24E+01
m 15	300.22	7.45E+01	40.59			7.45E+01	4.06E+01
16	328.21	5.35E+01	41.47	0.00E+00	0.00E+00	5.35E+01	4.15E+01
17	338.37	2.44E+02	54.81			2.44E+02	5.48E+01
18	352.02	6.32E+02	77.85	1.40E+01	5.55E+00	6.18E+02	7.81E+01
19	383.67	3.82E+01	36.88			3.82E+01	3.69E+01
20	463.04	5.22E+01	34.12			5.22E+01	3.41E+01
21	492.74	2.79E+01	31.23			2.79E+01	3.12E+01
22	499.17	4.16E+01	30.23			4.16E+01	3.02E+01
23	510.97	1.91E+02	57.84	8.41E+01	5.50E+00	1.07E+02	5.81E+01
24	536.22	2.78E+01	34.38			2.78E+01	3.44E+01
25	583.31	3.54E+02	55.04	7.32E+00	4.08E+00	3.47E+02	5.52E+01
26	609.41	4.92E+02	65.36	1.30E+01	3.89E+00	4.79E+02	6.55E+01
27	666.52	2.90E+01	32.06			2.90E+01	3.21E+01
28	697.35	2.73E+01	26.21			2.73E+01	2.62E+01
29	727.54	8.02E+01	42.74			8.02E+01	4.27E+01
30	768.23	4.27E+01	27.78			4.27E+01	2.78E+01
31	786.19	2.03E+01	22.65			2.03E+01	2.26E+01
32	793.74	6.63E+01	34.80			6.63E+01	3.48E+01
33	860.52	2.70E+01	30.45			2.70E+01	3.04E+01
34	911.45	2.63E+02	47.96	5.60E+00	3.32E+00	2.57E+02	4.81E+01
35	934.95	3.32E+01	26.15			3.32E+01	2.62E+01
M 36	965.22	3.53E+01	17.89			3.53E+01	1.79E+01
m 37	969.18	1.60E+02	30.79			1.60E+02	3.08E+01
38	999.30	3.51E+01	32.50			3.51E+01	3.25E+01
39	1120.74	1.08E+02	39.30	3.93E+00	2.96E+00	1.04E+02	3.94E+01
40	1183.04	1.95E+01	24.17			1.95E+01	2.42E+01
41	1238.48	3.76E+01	33.83			3.76E+01	3.38E+01
42	1260.35	1.68E+01	20.20			1.68E+01	2.02E+01
43	1377.51	2.51E+01	19.76			2.51E+01	1.98E+01
44	1460.91	7.18E+02	59.91	1.12E+01	2.55E+00	7.07E+02	6.00E+01
45	1657.05	7.28E+00	6.95			7.28E+00	6.95E+00
46	1728.82	3.65E+01	15.12			3.65E+01	1.51E+01
47	1764.71	8.43E+01	22.29	4.23E+00	2.21E+00	8.01E+01	2.24E+01
48	1796.56	1.80E+01	8.49			1.80E+01	8.49E+00
49	1806.62	8.00E+00	5.66			8.00E+00	5.66E+00
50	1847.36	2.95E+01	15.12			2.95E+01	1.51E+01
51	1888.82	9.00E+00	9.17			9.00E+00	9.17E+00
52	1933.51	7.82E+00	8.28			7.82E+00	8.28E+00
53	2103.57	1.96E+01	15.78			1.96E+01	1.58E+01
54	2118.68	7.50E+00	8.28			7.50E+00	8.28E+00
55	2182.64	1.41E+01	10.20			1.41E+01	1.02E+01
56	2203.51	2.35E+01	12.35	5.94E-01	1.16E+00	2.29E+01	1.24E+01
57	2217.73	1.03E+01	9.82			1.03E+01	9.82E+00
58	2252.13	1.40E+01	7.48			1.40E+01	7.48E+00

Analysis Report for 1510084-16

CP1803S08-09

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
59	2394.36	8.36E+00	8.31			8.36E+00	8.31E+00
60	2614.08	1.44E+02	24.00	7.38E+00	1.57E+00	1.37E+02	2.41E+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 : 11/4/2015 2:52:24PM

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	46.44	1.76E+02	102.63	6.46E+01	1.16E+01	1.12E+02	1.03E+02	
2	63.63	1.48E+02	118.34	4.34E+01	1.15E+01	1.05E+02	1.19E+02	
3	76.24	1.33E+03	181.43			1.33E+03	1.81E+02	
4	88.02	2.68E+02	98.19	1.46E+00	7.88E+00	2.67E+02	9.85E+01	
5	129.30	6.93E+01	71.89			6.93E+01	7.19E+01	
6	186.42	2.58E+02	90.07	4.72E+01	7.97E+00	2.11E+02	9.04E+01	
7	194.60	4.71E+01	58.58			4.71E+01	5.86E+01	
8	209.64	1.35E+02	87.99			1.35E+02	8.80E+01	
M	9	238.74	1.18E+03	2.36E+01	1.35E+01	1.16E+03	8.40E+01	
m	10	241.93	3.13E+02	6.38E+00	3.91E+00	3.07E+02	8.89E+01	
	11	258.10	5.68E+01	54.48		5.68E+01	5.45E+01	
	12	270.82	9.66E+01	66.12		9.66E+01	6.61E+01	
	13	278.06	7.03E+01	53.00		7.03E+01	5.30E+01	
M	14	295.29	3.39E+02	52.00	8.57E+00	3.31E+02	5.24E+01	
m	15	300.22	7.45E+01	40.59		7.45E+01	4.06E+01	
	16	328.21	5.35E+01	41.47	0.00E+00	5.35E+01	4.15E+01	
	17	338.37	2.44E+02	54.81		2.44E+02	5.48E+01	
	18	352.02	6.32E+02	77.85	1.40E+01	5.55E+00	6.18E+02	7.81E+01
	19	383.67	3.82E+01	36.88		3.82E+01	3.69E+01	
	20	463.04	5.22E+01	34.12		5.22E+01	3.41E+01	
	21	492.74	2.79E+01	31.23		2.79E+01	3.12E+01	
	22	499.17	4.16E+01	30.23		4.16E+01	3.02E+01	
	23	510.97	1.91E+02	57.84	8.41E+01	5.50E+00	1.07E+02	5.81E+01
	24	536.22	2.78E+01	34.38		2.78E+01	3.44E+01	
	25	583.31	3.54E+02	55.04	7.32E+00	4.08E+00	3.47E+02	5.52E+01
	26	609.41	4.92E+02	65.36	1.30E+01	3.89E+00	4.79E+02	6.55E+01

Analysis Report for 1510084-16

CP1803S08-09

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
27	666.52	2.90E+01	32.06			2.90E+01	3.21E+01
28	697.35	2.73E+01	26.21			2.73E+01	2.62E+01
29	727.54	8.02E+01	42.74			8.02E+01	4.27E+01
30	768.23	4.27E+01	27.78			4.27E+01	2.78E+01
31	786.19	2.03E+01	22.65			2.03E+01	2.26E+01
32	793.74	6.63E+01	34.80			6.63E+01	3.48E+01
33	860.52	2.70E+01	30.45			2.70E+01	3.04E+01
34	911.45	2.63E+02	47.96	5.60E+00	3.32E+00	2.57E+02	4.81E+01
35	934.95	3.32E+01	26.15			3.32E+01	2.62E+01
M	36	965.22	3.53E+01			3.53E+01	1.79E+01
m	37	969.18	1.60E+02			1.60E+02	3.08E+01
38	999.30	3.51E+01	32.50			3.51E+01	3.25E+01
39	1120.74	1.08E+02	39.30	3.93E+00	2.96E+00	1.04E+02	3.94E+01
40	1183.04	1.95E+01	24.17			1.95E+01	2.42E+01
41	1238.48	3.76E+01	33.83			3.76E+01	3.38E+01
42	1260.35	1.68E+01	20.20			1.68E+01	2.02E+01
43	1377.51	2.51E+01	19.76			2.51E+01	1.98E+01
44	1460.91	7.18E+02	59.91	1.12E+01	2.55E+00	7.07E+02	6.00E+01
45	1657.05	7.28E+00	6.95			7.28E+00	6.95E+00
46	1728.82	3.65E+01	15.12			3.65E+01	1.51E+01
47	1764.71	8.43E+01	22.29	4.23E+00	2.21E+00	8.01E+01	2.24E+01
48	1796.56	1.80E+01	8.49			1.80E+01	8.49E+00
49	1806.62	8.00E+00	5.66			8.00E+00	5.66E+00
50	1847.36	2.95E+01	15.12			2.95E+01	1.51E+01
51	1888.82	9.00E+00	9.17			9.00E+00	9.17E+00
52	1933.51	7.82E+00	8.28			7.82E+00	8.28E+00
53	2103.57	1.96E+01	15.78			1.96E+01	1.58E+01
54	2118.68	7.50E+00	8.28			7.50E+00	8.28E+00
55	2182.64	1.41E+01	10.20			1.41E+01	1.02E+01
56	2203.51	2.35E+01	12.35	5.94E-01	1.16E+00	2.29E+01	1.24E+01
57	2217.73	1.03E+01	9.82			1.03E+01	9.82E+00
58	2252.13	1.40E+01	7.48			1.40E+01	7.48E+00
59	2394.36	8.36E+00	8.31			8.36E+00	8.31E+00
60	2614.08	1.44E+02	24.00	7.38E+00	1.57E+00	1.37E+02	2.41E+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 1510084-16
 CP1803S08-09

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.998	1460.81 *	10.67	1.66E+01	2.22E+00
CD-109	1.000	88.03 *	3.72	3.07E+00	1.25E+00
SN-126	0.968	87.57 *	37.00	2.97E-01	1.19E-01
TL-208	0.971	583.14 *	30.22	1.40E+00	2.54E-01
		860.37 *	4.48	9.99E-01	1.13E+00
		2614.66 *	35.85	1.10E+00	2.12E-01
PB-210	0.999	46.50 *	4.25	2.31E+00	2.16E+00
BI-212	0.748	727.17 *	11.80	9.85E-01	5.32E-01
		1620.62 *	2.75		
PB-212	0.998	238.63 *	44.60	1.71E+00	1.96E-01
		300.09 *	3.41	1.67E+00	9.25E-01
BI-214	0.987	609.31 *	46.30	1.31E+00	2.11E-01
		1120.29 *	15.10	1.42E+00	5.49E-01
		1764.49 *	15.80	1.42E+00	4.14E-01
		2204.22 *	4.98	1.37E+00	7.50E-01
PB-214	0.999	295.21 *	19.19	1.30E+00	2.41E-01
		351.92 *	37.19	1.42E+00	2.19E-01
RA-224	0.867	240.98 *	3.95	5.13E+00	1.56E+00
RA-226	0.993	186.21 *	3.28	3.58E+00	6.72E+00
AC-228	0.988	338.32 *	11.40	1.78E+00	4.31E-01
		911.07 *	27.70	1.61E+00	3.32E-01
		969.11 *	16.60	1.76E+00	3.71E-01
TH-234	0.982	63.29 *	3.80	1.35E+00	1.54E+00
CM-243	0.357	209.75 *	3.29	2.46E+00	1.62E+00
		228.14 *	10.60		
		277.60 *	14.00	3.66E-01	2.78E-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 : 11/4/2015 2:52:24PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
3	76.24	3.70591E-01	6.80		
5	129.30	1.92439E-02	51.88		
7	194.60	1.30824E-02	62.19		

Analysis Report for 1510084-16

CP1803S08-09

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
11	258.10	1.57749E-02	47.96		
12	270.82	2.68396E-02	34.22		
16	328.21	1.48672E-02	38.74	Tol.	LA-140
19	383.67	1.06111E-02	48.27	Sum	
20	463.04	1.44955E-02	32.69	Tol.	SB-125
21	492.74	7.74240E-03	56.02		
22	499.17	1.15469E-02	36.36		
23	510.97	2.96400E-02	27.23		
24	536.22	7.71281E-03	61.91	Sum	
27	666.52	8.05556E-03	55.28	Tol.	SB-126
28	697.35	7.58763E-03	47.98	Sum	
30	768.23	1.18743E-02	32.50		
31	786.19	5.63492E-03	55.83		
32	793.74	1.84049E-02	26.26	Sum	
35	934.95	9.23347E-03	39.34	Sum	
M 36	965.22	9.81317E-03	25.32		
38	999.30	9.75359E-03	46.27	Sum	
40	1183.04	5.42115E-03	61.91		
41	1238.48	1.04362E-02	45.02	Tol.	CO-56
42	1260.35	4.67391E-03	60.02	Tol.	I-135
43	1377.51	6.97695E-03	39.34		
45	1657.05	2.02160E-03	47.72		
46	1728.82	1.01389E-02	20.71		
48	1796.56	5.00000E-03	23.57		
49	1806.62	2.22222E-03	35.36		
50	1847.36	8.19444E-03	25.62	Sum	
51	1888.82	2.50000E-03	50.92		
52	1933.51	2.17172E-03	52.93		
53	2103.57	5.43459E-03	40.33	S-Esc	
54	2118.68	2.08333E-03	55.18		
55	2182.64	3.92157E-03	36.12		
57	2217.73	2.85714E-03	47.75		
58	2252.13	3.88889E-03	26.73		
59	2394.36	2.32323E-03	49.66		

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 1510084-16
CP1803S08-09

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	1.66E+01	2.22E+00
CD-109	1.00	88.03 *	3.72	3.07E+00	1.25E+00
SN-126	0.96	87.57 *	37.00	2.97E-01	1.19E-01
TL-208	0.97	583.14 *	30.22	1.40E+00	2.54E-01
		860.37 *	4.48	9.99E-01	1.13E+00
		2614.66 *	35.85	1.10E+00	2.12E-01
PB-210	0.99	46.50 *	4.25	2.31E+00	2.16E+00
BI-212	0.74	727.17 *	11.80	9.85E-01	5.32E-01
		1620.62	2.75		
PB-212	0.99	238.63 *	44.60	1.71E+00	1.96E-01
		300.09 *	3.41	1.67E+00	9.25E-01
BI-214	0.98	609.31 *	46.30	1.31E+00	2.11E-01
		1120.29 *	15.10	1.42E+00	5.49E-01
		1764.49 *	15.80	1.42E+00	4.14E-01
		2204.22 *	4.98	1.37E+00	7.50E-01
PB-214	0.99	295.21 *	19.19	1.30E+00	2.41E-01
		351.92 *	37.19	1.42E+00	2.19E-01
RA-224	0.86	240.98 *	3.95	5.13E+00	1.56E+00
RA-226	0.99	186.21 *	3.28	3.58E+00	6.72E+00
AC-228	0.98	338.32 *	11.40	1.78E+00	4.31E-01
		911.07 *	27.70	1.61E+00	3.32E-01
		969.11 *	16.60	1.76E+00	3.71E-01
TH-234	0.98	63.29 *	3.80	1.35E+00	1.54E+00
CM-243	0.35	209.75 *	3.29	2.46E+00	1.62E+00
		228.14	10.60		
		277.60 *	14.00	3.66E-01	2.78E-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

Analysis Report for 1510084-16

CP1803S08-09

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments	
	K-40	0.998	1.66E+01	2.22E+00	
?	CD-109	1.000	3.07E+00	1.25E+00	
?	SN-126	0.968	2.97E-01	1.19E-01	
	TL-208	0.971	1.22E+00	1.61E-01	
	PB-210	0.999	2.31E+00	2.16E+00	
	BI-212	0.748	9.85E-01	5.32E-01	
	PB-212	0.998	1.71E+00	1.92E-01	
	BI-214	0.987	1.34E+00	1.73E-01	
	PB-214	0.999	1.37E+00	1.62E-01	
	RA-224	0.867	5.13E+00	1.56E+00	
	RA-226	0.993	3.58E+00	6.72E+00	
	AC-228	0.988	1.70E+00	2.15E-01	
	TH-234	0.982	1.35E+00	1.54E+00	
	CM-243	0.357	4.25E-01	2.74E-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 1510084-16
 CP1803S08-09

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 2:52:24PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
3	76.24	3.70591E-01	6.80		
5	129.30	1.92439E-02	51.88		
7	194.60	1.30824E-02	62.19		
11	258.10	1.57749E-02	47.96		
12	270.82	2.68396E-02	34.22		
16	328.21	1.48672E-02	38.74	Tol.	LA-140
19	383.67	1.06111E-02	48.27	Sum	
20	463.04	1.44955E-02	32.69	Tol.	SB-125
21	492.74	7.74240E-03	56.02		
22	499.17	1.15469E-02	36.36		
23	510.97	2.96400E-02	27.23		
24	536.22	7.71281E-03	61.91	Sum	
27	666.52	8.05556E-03	55.28	Tol.	SB-126
28	697.35	7.58763E-03	47.98	Sum	
30	768.23	1.18743E-02	32.50		
31	786.19	5.63492E-03	55.83		
32	793.74	1.84049E-02	26.26	Sum	
35	934.95	9.23347E-03	39.34	Sum	
M 36	965.22	9.81317E-03	25.32		
38	999.30	9.75359E-03	46.27	Sum	
40	1183.04	5.42115E-03	61.91		
41	1238.48	1.04362E-02	45.02	Tol.	CO-56
42	1260.35	4.67391E-03	60.02	Tol.	I-135
43	1377.51	6.97695E-03	39.34		
45	1657.05	2.02160E-03	47.72		
46	1728.82	1.01389E-02	20.71		
48	1796.56	5.00000E-03	23.57		
49	1806.62	2.22222E-03	35.36		
50	1847.36	8.19444E-03	25.62	Sum	
51	1888.82	2.50000E-03	50.92		
52	1933.51	2.17172E-03	52.93		
53	2103.57	5.43459E-03	40.33	S-Esc	
54	2118.68	2.08333E-03	55.18		
55	2182.64	3.92157E-03	36.12		
57	2217.73	2.85714E-03	47.75		

Analysis Report for 1510084-16
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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
58	2252.13	3.88889E-03	26.73		
59	2394.36	2.32323E-03	49.66		

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	1.13E-01	6.75E-01	6.75E-01
+	NA-22	1274.54	99.94	1.89E-02	7.77E-02	7.77E-02
+	NA-24	1368.53	99.99	-4.54E+10	4.10E+10	6.52E+10
		2754.09	99.86	0.00E+00		4.10E+10
+	AL-26	1808.65	99.76	-2.84E-03	4.94E-02	4.94E-02
+	K-40	1460.81	* 10.67	1.66E+01	1.13E+00	1.13E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.75E-02	4.89E-02	4.89E-02
		78.34	96.00	2.93E-01		7.19E-02
+	SC-46	889.25	99.98	1.33E-02	8.25E-02	8.25E-02
		1120.51	99.99	2.33E-01		1.51E-01
+	V-48	983.52	99.98	1.94E-02	1.95E-01	1.95E-01
		1312.10	97.50	2.71E-02		2.09E-01
+	CR-51	320.08	9.83	-5.20E-02	9.41E-01	9.41E-01
+	MN-54	834.83	99.97	-1.88E-02	7.40E-02	7.40E-02
+	CO-56	846.75	99.96	-2.46E-02	7.73E-02	7.73E-02
		1037.75	14.03	-8.59E-02		5.83E-01
		1238.25	67.00	2.22E-01		2.05E-01
		1771.40	15.51	2.26E-02		3.93E-01
		2598.48	16.90	-8.92E-03		2.57E-01
+	CO-57	122.06	85.51	-9.33E-03	5.57E-02	5.57E-02
		136.48	10.60	-2.05E-01		4.49E-01
+	CO-58	810.76	99.40	-1.17E-02	7.69E-02	7.69E-02
+	FE-59	1099.22	56.50	-8.78E-03	1.83E-01	1.83E-01
		1291.56	43.20	1.57E-02		2.21E-01
+	CO-60	1173.22	100.00	2.78E-02	5.93E-02	7.72E-02
		1332.49	100.00	5.10E-03		5.93E-02

Analysis Report for 1510084-16

CP1803S08-09

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZN-65	1115.52	50.75	1.43E-02	1.50E-01	1.50E-01
+	GA-67	93.31	35.70	8.59E+01	3.49E+01	3.49E+01
		208.95	2.24	3.45E+02		5.55E+02
		300.22	16.00	5.37E+01		7.35E+01
+	SE-75	121.11	16.70	6.05E-02	8.79E-02	3.08E-01
		136.00	59.20	5.32E-03		8.79E-02
		264.65	59.80	1.76E-02		9.40E-02
		279.53	25.20	-1.41E-01		2.17E-01
		400.65	11.40	1.49E-01		5.14E-01
+	RB-82	776.52	13.00	9.15E-02	1.01E+00	1.01E+00
+	RB-83	520.41	46.00	5.24E-02	1.38E-01	1.38E-01
		529.64	30.30	5.27E-02		2.11E-01
		552.65	16.40	2.24E-01		3.95E-01
+	KR-85	513.99	0.43	-1.65E+01	1.40E+01	1.40E+01
+	SR-85	513.99	99.27	-9.38E-02	7.98E-02	7.98E-02
+	Y-88	898.02	93.40	2.63E-02	5.63E-02	7.71E-02
		1836.01	99.38	-1.43E-02		5.63E-02
+	NB-93M	16.57	9.43	-8.28E+03	4.47E+03	4.47E+03
+	NB-94	702.63	100.00	1.97E-02	6.12E-02	6.64E-02
		871.10	100.00	-4.63E-03		6.12E-02
+	NB-95	765.79	99.81	5.95E-03	1.31E-01	1.31E-01
+	NB-95M	235.69	25.00	-3.14E+02	3.96E+01	3.96E+01
+	ZR-95	724.18	43.70	-1.86E-02	1.58E-01	2.36E-01
		756.72	55.30	1.21E-01		1.58E-01
+	MO-99	181.06	6.20	-7.56E+01	3.07E+02	4.38E+02
		739.58	12.80	8.13E+01		3.07E+02
		778.00	4.50	-9.39E+01		7.79E+02
+	RU-103	497.08	89.00	-1.43E-02	8.29E-02	8.29E-02
+	RU-106	621.84	9.80	3.49E-02	6.43E-01	6.43E-01
+	AG-108M	433.93	89.90	8.60E-03	5.46E-02	5.46E-02
		614.37	90.40	1.35E-02		7.12E-02
		722.95	90.50	4.83E-03		7.66E-02
+	CD-109	88.03	3.72	3.07E+00	1.79E+00	1.79E+00
+	AG-110M	657.75	93.14	9.19E-03	6.95E-02	6.95E-02
		677.61	10.53	-2.55E-01		5.73E-01
		706.67	16.46	2.61E-01		4.54E-01
		763.93	21.98	3.09E-02		3.22E-01
		884.67	71.63	9.98E-03		1.04E-01
		1384.27	23.94	1.05E-01		3.09E-01
+	CD-113M	263.70	0.02	-2.62E+01	2.05E+02	2.05E+02
+	SN-113	255.12	1.93	1.97E-01	9.39E-02	2.94E+00
		391.69	64.90	-2.94E-02		9.39E-02
+	TE123M	159.00	84.10	3.47E-02	6.39E-02	6.39E-02
+	SB-124	602.71	97.87	-5.16E-03	7.97E-02	7.97E-02
		645.85	7.26	3.00E-01		1.10E+00
		722.78	11.10	5.26E-02		8.34E-01
		1691.02	49.00	-6.16E-02		1.41E-01
+	I-125	35.49	6.49	-2.27E-01	4.85E+00	4.85E+00

Analysis Report for 1510084-16

CP1803S08-09

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-125	176.33	6.89	2.37E-01	1.80E-01	7.06E-01
		427.89	29.33	-3.13E-02		1.80E-01
		463.38	10.35	3.51E-01		5.73E-01
		600.56	17.80	-1.57E-01		3.15E-01
		635.90	11.32	4.73E-02		5.75E-01
+	SB-126	414.70	83.30	1.27E-01	2.56E-01	2.56E-01
		666.33	99.60	1.06E-01		2.67E-01
		695.00	99.60	-1.65E-02		2.82E-01
		720.50	53.80	1.89E-01		5.01E-01
+	SN-126	87.57	* 37.00	2.97E-01	1.73E-01	1.73E-01
+	SB-127	473.00	25.00	-1.89E+00	1.64E+01	1.79E+01
		685.20	35.70	4.54E+00		1.64E+01
		783.80	14.70	9.17E-01		4.24E+01
+	I-129	29.78	57.00	4.09E-02	1.04E+00	1.04E+00
		33.60	13.20	-7.57E-01		2.25E+00
		39.58	7.52	1.08E+00		1.94E+00
+	I-131	284.30	6.05	1.82E+00	5.25E-01	6.93E+00
		364.48	81.20	3.72E-01		5.25E-01
		636.97	7.26	1.81E+00		7.81E+00
		722.89	1.80	2.13E+00		3.38E+01
+	TE-132	49.72	13.10	8.41E+01	1.20E+01	1.12E+02
		228.16	88.00	-2.34E-01		1.20E+01
+	BA-133	81.00	33.00	1.48E-02	7.64E-02	1.21E-01
		302.84	17.80	-1.66E-01		2.89E-01
		356.01	60.00	4.95E-03		7.64E-02
+	I-133	529.87	86.30	0.00E+00	3.28E+07	3.28E+07
+	XE-133	81.00	38.00	3.57E-01	2.93E+00	2.93E+00
+	CS-134	563.23	8.38	-2.24E-02	8.18E-02	6.48E-01
		569.32	15.43	1.38E-01		3.59E-01
		604.70	97.60	-6.29E-01		8.18E-02
		795.84	85.40	6.53E-03		8.83E-02
		801.93	8.73	-3.33E-02		8.18E-01
+	CS-135	268.24	16.00	-3.42E-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	1.66E+00	2.06E-01	2.48E+00
		163.89	4.61	-1.89E-01		3.77E+00
		176.55	13.56	1.87E-01		1.31E+00
		273.65	12.66	-2.85E+00		1.53E+00
		340.57	48.50	-8.35E-01		4.51E-01
		818.50	99.70	-5.45E-02		2.06E-01
		1048.07	79.60	1.63E-01		3.09E-01
		1235.34	19.70	6.79E-02		1.99E+00
+	CS-137	661.65	85.12	2.60E-02	7.06E-02	7.06E-02
+	LA-138	788.74	34.00	7.08E-02	8.22E-02	2.05E-01
		1435.80	66.00	-3.62E-02		8.22E-02
+	CE-139	165.85	80.35	-1.79E-02	6.62E-02	6.62E-02
+	BA-140	162.64	6.70	1.08E+00	8.44E-01	2.72E+00

Analysis Report for 1510084-16
CP1803S08-09

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	304.84	4.50	-3.95E-01	8.44E-01	4.28E+00
		423.70	3.20	-1.52E+00		6.14E+00
		437.55	2.00	-1.41E+00		9.15E+00
		537.32	25.00	3.48E-01		8.44E-01
+	LA-140	328.77	20.50	1.06E+00	3.41E-01	1.03E+00
		487.03	45.50	2.19E-02		3.86E-01
		815.85	23.50	2.81E-03		9.15E-01
		1596.49	95.49	1.03E-01		3.41E-01
+	CE-141	145.44	48.40	1.60E-01	1.73E-01	1.73E-01
+	CE-143	57.36	11.80	-4.37E+04	5.41E+04	1.35E+05
		293.26	42.00	-3.28E+04		5.41E+04
		664.55	5.20	3.87E+04		4.08E+05
+	CE-144	133.54	10.80	1.43E-01	4.39E-01	4.39E-01
+	PM-144	476.78	42.00	2.11E-02	5.88E-02	1.27E-01
		618.01	98.60	-1.48E-02		5.88E-02
		696.49	99.49	-2.58E-03		7.44E-02
+	PM-145	36.85	21.70	3.02E-01	4.81E-01	9.36E-01
		37.36	39.70	1.55E-01		4.81E-01
		42.30	15.10	-1.80E-01		7.26E-01
		72.40	2.31	-1.79E+00		1.97E+00
+	PM-146	453.90	39.94	6.45E-02	1.28E-01	1.28E-01
		735.90	14.01	-9.46E-02		4.58E-01
		747.13	13.10	1.38E-01		4.99E-01
+	ND-147	91.11	28.90	6.77E-01	1.03E+00	1.03E+00
		531.02	13.10	1.95E-01		1.97E+00
+	PM-149	285.90	3.10	2.28E+03	4.40E+03	4.40E+03
+	EU-152	121.78	20.50	-3.66E-02	2.18E-01	2.18E-01
		244.69	5.40	-2.90E+00		9.52E-01
		344.27	19.13	1.19E-01		2.61E-01
		778.89	9.20	-6.32E-02		6.61E-01
		964.01	10.40	-1.05E-01		8.04E-01
		1085.78	7.22	4.18E-02		9.63E-01
		1112.02	9.60	-1.35E-01		6.93E-01
		1407.95	14.94	1.88E-01		5.21E-01
+	GD-153	97.43	31.30	-5.63E-02	1.48E-01	1.48E-01
		103.18	22.20	-1.01E-01		2.06E-01
+	EU-154	123.07	40.50	-1.35E-02	1.11E-01	1.11E-01
		723.30	19.70	2.23E-02		3.54E-01
		873.19	11.50	2.48E-01		5.68E-01
		996.32	10.30	-5.14E-01		6.25E-01
		1004.76	17.90	-4.22E-03		3.86E-01
		1274.45	35.50	5.26E-02		2.16E-01
+	EU-155	86.50	30.90	-1.16E-01	1.94E-01	1.94E-01
		105.30	20.70	-5.74E-02		2.07E-01
+	EU-156	811.77	10.40	-1.23E+00	1.71E+00	1.71E+00
		1153.47	7.20	3.11E-01		3.46E+00
		1230.71	8.90	1.57E+00		3.27E+00
+	HO-166M	184.41	72.60	3.28E-03	7.90E-02	7.90E-02
		280.45	29.60	-1.04E-01		1.60E-01

Analysis Report for 1510084-16

CP1803S08-09

<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>
	HO-166M 410.94	11.10	3.23E-01	7.90E-02	4.89E-01
	711.69	54.10	5.26E-02		1.28E-01
+	TM-171 66.72	0.14	2.61E+01	3.55E+01	3.55E+01
+	HF-172 81.75	4.52	-1.02E+00	4.12E-01	8.72E-01
	125.81	11.30	4.44E-02		4.12E-01
+	LU-172 181.53	20.60	-2.47E-01	1.55E+00	3.09E+00
	810.06	16.63	-7.42E-01		4.86E+00
	912.12	15.25	4.08E+01		1.30E+01
	1093.66	62.50	-3.29E-01		1.55E+00
+	LU-173 100.72	5.24	2.76E-01	2.96E-01	8.52E-01
	272.11	21.20	3.56E-01		2.96E-01
+	HF-175 343.40	84.00	1.87E-02	7.65E-02	7.65E-02
+	LU-176 88.34	13.30	7.20E-01	5.12E-02	4.60E-01
	201.83	86.00	4.24E-03		5.95E-02
	306.78	94.00	-4.43E-03		5.12E-02
+	TA-182 67.75	41.20	-4.67E-02	1.31E-01	1.31E-01
	1121.30	34.90	6.75E-01		4.12E-01
	1189.05	16.23	1.61E-01		6.12E-01
	1221.41	26.98	6.36E-02		3.35E-01
	1231.02	11.44	4.40E-01		8.99E-01
+	IR-192 308.46	29.68	1.16E-01	1.29E-01	2.17E-01
	468.07	48.10	1.28E-02		1.29E-01
+	HG-203 279.19	77.30	7.55E-02	9.64E-02	9.64E-02
+	BI-207 569.67	97.72	2.13E-02	5.55E-02	5.55E-02
	1063.62	74.90	1.56E-02		9.72E-02
+	TL-208 583.14	* 30.22	1.40E+00	9.69E-02	2.82E-01
	860.37	* 4.48	9.99E-01		1.84E+00
	2614.66	* 35.85	1.10E+00		9.69E-02
+	BI-210M 262.00	45.00	-4.40E-03	1.02E-01	1.02E-01
	300.00	23.00	1.77E-01		2.42E-01
+	PB-210 46.50	* 4.25	2.31E+00	3.50E+00	3.50E+00
+	PB-211 404.84	2.90	1.29E-01	1.73E+00	1.73E+00
	831.96	2.90	5.09E-01		2.41E+00
+	BI-212 727.17	* 11.80	9.85E-01	8.17E-01	8.17E-01
	1620.62	2.75	7.00E-01		2.43E+00
+	PB-212 238.63	* 44.60	1.71E+00	2.58E-01	2.58E-01
	300.09	* 3.41	1.67E+00		3.40E+00
+	BI-214 609.31	* 46.30	1.31E+00	2.26E-01	2.26E-01
	1120.29	* 15.10	1.42E+00		7.91E-01
	1764.49	* 15.80	1.42E+00		4.40E-01
	2204.22	* 4.98	1.37E+00		9.38E-01
+	PB-214 295.21	* 19.19	1.30E+00	2.33E-01	6.02E-01
	351.92	* 37.19	1.42E+00		2.33E-01
+	RN-219 401.80	6.50	2.98E-01	7.99E-01	7.99E-01
+	RA-223 323.87	3.88	8.97E-01	1.26E+00	1.26E+00
+	RA-224 240.98	* 3.95	5.13E+00	2.94E+00	2.94E+00
+	RA-225 40.00	31.00	8.21E-01	1.47E+00	1.47E+00
+	RA-226 186.21	* 3.28	3.58E+00	2.44E+00	2.44E+00

Analysis Report for 1510084-16

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-227	50.10		8.40	6.07E-01	6.84E-01	8.06E-01
		236.00		11.50	-5.43E+00		6.84E-01
		256.20		6.30	-3.70E-02		7.91E-01
+	AC-228	338.32	*	11.40	1.78E+00	3.86E-01	5.60E-01
		911.07	*	27.70	1.61E+00		3.86E-01
		969.11	*	16.60	1.76E+00		4.79E-01
+	TH-230	48.44		16.90	-5.84E-01	4.25E-01	4.25E-01
		62.85		4.60	1.78E+00		1.22E+00
		67.67		0.37	-4.47E+00		1.25E+01
+	PA-231	283.67		1.60	7.82E-01	2.23E+00	2.98E+00
		302.67		2.30	-1.28E+00		2.23E+00
+	TH-231	25.64		14.70	1.21E+01	6.51E-01	1.35E+01
		84.21		6.40	5.99E-01		6.51E-01
+	PA-233	311.98		38.60	1.58E-01	2.50E-01	2.50E-01
+	PA-234	131.20		20.40	-1.32E-02	2.26E-01	2.26E-01
		733.99		8.80	-7.52E-02		7.26E-01
		946.00		12.00	2.09E-01		5.78E-01
+	PA-234M	1001.03		0.92	4.00E+00	7.96E+00	7.96E+00
+	TH-234	63.29	*	3.80	1.35E+00	2.52E+00	2.52E+00
+	U-235	143.76		10.50	-1.48E-02	4.58E-01	4.58E-01
		163.35		4.70	3.94E-01		9.92E-01
		205.31		4.70	5.04E-02		1.10E+00
+	NP-237	86.50		12.60	-2.83E-01	4.71E-01	4.71E-01
+	NP-239	106.10		22.70	1.92E+02	3.15E+02	3.15E+02
		228.18		10.70	-1.50E+01		7.70E+02
		277.60		14.10	6.71E+02		6.23E+02
+	AM-241	59.54		35.90	-2.01E-02	1.37E-01	1.37E-01
+	AM-243	74.67		66.00	-2.13E-01	9.99E-02	9.99E-02
+	CM-243	209.75	*	3.29	2.46E+00	4.44E-01	2.60E+00
		228.14		10.60	-9.16E-03		4.70E-01
		277.60	*	14.00	3.66E-01		4.44E-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 1510084-16
CP1803S08-09

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	6.75E-01	6.75E-01	1.13E-01	3.19E-01
NA-22	1274.54	99.94	7.77E-02	7.77E-02	1.89E-02	3.57E-02
NA-24	1368.53	99.99	6.52E+10	4.10E+10	-4.54E+10	2.82E+10
	2754.09	99.86	4.10E+10		0.00E+00	1.54E+10
AL-26	1808.65	99.76	4.94E-02	4.94E-02	-2.84E-03	2.09E-02
+ K-40	1460.81	*	1.13E+00	1.13E+00	1.66E+01	5.35E-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	4.89E-02	4.89E-02	-1.75E-02	2.38E-02
	78.34	96.00	7.19E-02		2.93E-01	3.53E-02
SC-46	889.25	99.98	8.25E-02	8.25E-02	1.33E-02	3.84E-02
	1120.51	99.99	1.51E-01		2.33E-01	7.23E-02
V-48	983.52	99.98	1.95E-01	1.95E-01	1.94E-02	8.98E-02
	1312.10	97.50	2.09E-01		2.71E-02	9.50E-02
CR-51	320.08	9.83	9.41E-01	9.41E-01	-5.20E-02	4.50E-01
MN-54	834.83	99.97	7.40E-02	7.40E-02	-1.88E-02	3.47E-02
CO-56	846.75	99.96	7.73E-02	7.73E-02	-2.46E-02	3.59E-02
	1037.75	14.03	5.83E-01		-8.59E-02	2.68E-01
	1238.25	67.00	2.05E-01		2.22E-01	9.68E-02
	1771.40	15.51	3.93E-01		2.26E-02	1.66E-01
	2598.48	16.90	2.57E-01		-8.92E-03	9.96E-02
CO-57	122.06	85.51	5.57E-02	5.57E-02	-9.33E-03	2.71E-02
	136.48	10.60	4.49E-01		-2.05E-01	2.18E-01
CO-58	810.76	99.40	7.69E-02	7.69E-02	-1.17E-02	3.57E-02
FE-59	1099.22	56.50	1.83E-01	1.83E-01	-8.78E-03	8.44E-02
	1291.56	43.20	2.21E-01		1.57E-02	1.00E-01
CO-60	1173.22	100.00	7.72E-02	5.93E-02	2.78E-02	3.57E-02
	1332.49	100.00	5.93E-02		5.10E-03	2.64E-02
ZN-65	1115.52	50.75	1.50E-01	1.50E-01	1.43E-02	6.91E-02
GA-67	93.31	35.70	3.49E+01	3.49E+01	8.59E+01	1.71E+01
	208.95	2.24	5.55E+02		3.45E+02	2.70E+02
	300.22	16.00	7.35E+01		5.37E+01	3.54E+01
SE-75	121.11	16.70	3.08E-01	8.79E-02	6.05E-02	1.50E-01
	136.00	59.20	8.79E-02		5.32E-03	4.27E-02
	264.65	59.80	9.40E-02		1.76E-02	4.52E-02
	279.53	25.20	2.17E-01		-1.41E-01	1.04E-01
	400.65	11.40	5.14E-01		1.49E-01	2.44E-01
RB-82	776.52	13.00	1.01E+00	1.01E+00	9.15E-02	4.74E-01
RB-83	520.41	46.00	1.38E-01	1.38E-01	5.24E-02	6.49E-02
	529.64	30.30	2.11E-01		5.27E-02	9.92E-02
	552.65	16.40	3.95E-01		2.24E-01	1.86E-01
KR-85	513.99	0.43	1.40E+01	1.40E+01	-1.65E+01	6.65E+00
SR-85	513.99	99.27	7.98E-02	7.98E-02	-9.38E-02	3.79E-02
Y-88	898.02	93.40	7.71E-02	5.63E-02	2.63E-02	3.56E-02
	1836.01	99.38	5.63E-02		-1.43E-02	2.36E-02
NB-93M	16.57	9.43	4.47E+03	4.47E+03	-8.28E+03	2.17E+03

Analysis Report for 1510084-16
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94	702.63	100.00	6.64E-02	6.12E-02	1.97E-02	3.13E-02
	871.10	100.00	6.12E-02		-4.63E-03	2.83E-02
NB-95	765.79	99.81	1.31E-01	1.31E-01	5.95E-03	6.23E-02
NB-95M	235.69	25.00	3.96E+01	3.96E+01	-3.14E+02	1.94E+01
ZR-95	724.18	43.70	2.36E-01	1.58E-01	-1.86E-02	1.12E-01
	756.72	55.30	1.58E-01		1.21E-01	7.43E-02
MO-99	181.06	6.20	4.38E+02	3.07E+02	-7.56E+01	2.12E+02
	739.58	12.80	3.07E+02		8.13E+01	1.44E+02
	778.00	4.50	7.79E+02		-9.39E+01	3.63E+02
RU-103	497.08	89.00	8.29E-02	8.29E-02	-1.43E-02	3.89E-02
RU-106	621.84	9.80	6.43E-01	6.43E-01	3.49E-02	3.03E-01
AG-108M	433.93	89.90	5.46E-02	5.46E-02	8.60E-03	2.58E-02
	614.37	90.40	7.12E-02		1.35E-02	3.37E-02
	722.95	90.50	7.66E-02		4.83E-03	3.61E-02
+ CD-109	88.03	*	1.79E+00	1.79E+00	3.07E+00	8.79E-01
AG-110M	657.75	93.14	6.95E-02	6.95E-02	9.19E-03	3.27E-02
	677.61	10.53	5.73E-01		-2.55E-01	2.68E-01
	706.67	16.46	4.54E-01		2.61E-01	2.15E-01
	763.93	21.98	3.22E-01		3.09E-02	1.51E-01
	884.67	71.63	1.04E-01		9.98E-03	4.83E-02
	1384.27	23.94	3.09E-01		1.05E-01	1.40E-01
CD-113M	263.70	0.02	2.05E+02	2.05E+02	-2.62E+01	9.83E+01
SN-113	255.12	1.93	2.94E+00	9.39E-02	1.97E-01	1.41E+00
	391.69	64.90	9.39E-02		-2.94E-02	4.47E-02
TE123M	159.00	84.10	6.39E-02	6.39E-02	3.47E-02	3.10E-02
SB-124	602.71	97.87	7.97E-02	7.97E-02	-5.16E-03	3.75E-02
	645.85	7.26	1.10E+00		3.00E-01	5.15E-01
	722.78	11.10	8.34E-01		5.26E-02	3.93E-01
	1691.02	49.00	1.41E-01		-6.16E-02	6.02E-02
I-125	35.49	6.49	4.85E+00	4.85E+00	-2.27E-01	2.36E+00
SB-125	176.33	6.89	7.06E-01	1.80E-01	2.37E-01	3.42E-01
	427.89	29.33	1.80E-01		-3.13E-02	8.53E-02
	463.38	10.35	5.73E-01		3.51E-01	2.73E-01
	600.56	17.80	3.15E-01		-1.57E-01	1.48E-01
SB-126	635.90	11.32	5.75E-01		4.73E-02	2.71E-01
	414.70	83.30	2.56E-01	2.56E-01	1.27E-01	1.22E-01
	666.33	99.60	2.67E-01		1.06E-01	1.26E-01
	695.00	99.60	2.82E-01		-1.65E-02	1.33E-01
+ SN-126	720.50	53.80	5.01E-01		1.89E-01	2.36E-01
	87.57	*	1.73E-01	1.73E-01	2.97E-01	8.51E-02
	473.00	25.00	1.79E+01	1.64E+01	-1.89E+00	8.44E+00
SB-127	685.20	35.70	1.64E+01		4.54E+00	7.69E+00
	783.80	14.70	4.24E+01		9.17E-01	1.99E+01
	29.78	57.00	1.04E+00	1.04E+00	4.09E-02	5.04E-01
I-129	33.60	13.20	2.25E+00		-7.57E-01	1.09E+00
	39.58	7.52	1.94E+00		1.08E+00	9.42E-01
	284.30	6.05	6.93E+00	5.25E-01	1.82E+00	3.32E+00
I-131	364.48	81.20	5.25E-01		3.72E-01	2.50E-01
	636.97	7.26	7.81E+00		1.81E+00	3.69E+00
	722.89	1.80	3.38E+01		2.13E+00	1.59E+01
TE-132	49.72	13.10	1.12E+02	1.20E+01	8.41E+01	5.42E+01
	228.16	88.00	1.20E+01		-2.34E-01	5.79E+00
BA-133	81.00	33.00	1.21E-01	7.64E-02	1.48E-02	5.89E-02

Analysis Report for 1510084-16

CP1803S08-09

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-133	302.84	17.80	2.89E-01	7.64E-02	-1.66E-01	1.39E-01
	356.01	60.00	7.64E-02		4.95E-03	3.62E-02
I-133	529.87	86.30	3.28E+07	3.28E+07	0.00E+00	1.54E+07
XE-133	81.00	38.00	2.93E+00	2.93E+00	3.57E-01	1.42E+00
CS-134	563.23	8.38	6.48E-01	8.18E-02	-2.24E-02	3.05E-01
	569.32	15.43	3.59E-01		1.38E-01	1.69E-01
	604.70	97.60	8.18E-02		-6.29E-01	3.91E-02
	795.84	85.40	8.83E-02		6.53E-03	4.16E-02
	801.93	8.73	8.18E-01		-3.33E-02	3.84E-01
CS-135	268.24	16.00	3.34E-01	3.34E-01	-3.42E-01	1.61E-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	2.48E+00	2.06E-01	1.66E+00	1.20E+00
	163.89	4.61	3.77E+00		-1.89E-01	1.83E+00
	176.55	13.56	1.31E+00		1.87E-01	6.36E-01
	273.65	12.66	1.53E+00		-2.85E+00	7.37E-01
	340.57	48.50	4.51E-01		-8.35E-01	2.17E-01
	818.50	99.70	2.06E-01		-5.45E-02	9.49E-02
	1048.07	79.60	3.09E-01		1.63E-01	1.42E-01
	1235.34	19.70	1.99E+00		6.79E-02	9.36E-01
CS-137	661.65	85.12	7.06E-02	7.06E-02	2.60E-02	3.31E-02
LA-138	788.74	34.00	2.05E-01	8.22E-02	7.08E-02	9.63E-02
	1435.80	66.00	8.22E-02		-3.62E-02	3.60E-02
CE-139	165.85	80.35	6.62E-02	6.62E-02	-1.79E-02	3.21E-02
BA-140	162.64	6.70	2.72E+00	8.44E-01	1.08E+00	1.32E+00
	304.84	4.50	4.28E+00		-3.95E-01	2.05E+00
	423.70	3.20	6.14E+00		-1.52E+00	2.91E+00
	437.55	2.00	9.15E+00		-1.41E+00	4.31E+00
	537.32	25.00	8.44E-01		3.48E-01	3.98E-01
LA-140	328.77	20.50	1.03E+00	3.41E-01	1.06E+00	4.94E-01
	487.03	45.50	3.86E-01		2.19E-02	1.81E-01
	815.85	23.50	9.15E-01		2.81E-03	4.22E-01
	1596.49	95.49	3.41E-01		1.03E-01	1.56E-01
CE-141	145.44	48.40	1.73E-01	1.73E-01	1.60E-01	8.42E-02
CE-143	57.36	11.80	1.35E+05	5.41E+04	-4.37E+04	6.54E+04
	293.26	42.00	5.41E+04		-3.28E+04	2.63E+04
	664.55	5.20	4.08E+05		3.87E+04	1.92E+05
CE-144	133.54	10.80	4.39E-01	4.39E-01	1.43E-01	2.13E-01
PM-144	476.78	42.00	1.27E-01	5.88E-02	2.11E-02	5.98E-02
	618.01	98.60	5.88E-02		-1.48E-02	2.76E-02
	696.49	99.49	7.44E-02		-2.58E-03	3.52E-02
PM-145	36.85	21.70	9.36E-01	4.81E-01	3.02E-01	4.56E-01
	37.36	39.70	4.81E-01		1.55E-01	2.34E-01
	42.30	15.10	7.26E-01		-1.80E-01	3.53E-01
	72.40	2.31	1.97E+00		-1.79E+00	9.57E-01
PM-146	453.90	39.94	1.28E-01	1.28E-01	6.45E-02	6.04E-02
	735.90	14.01	4.58E-01		-9.46E-02	2.15E-01
	747.13	13.10	4.99E-01		1.38E-01	2.34E-01
ND-147	91.11	28.90	1.03E+00	1.03E+00	6.77E-01	5.04E-01
	531.02	13.10	1.97E+00		1.95E-01	9.26E-01
PM-149	285.90	3.10	4.40E+03	4.40E+03	2.28E+03	2.11E+03
EU-152	121.78	20.50	2.18E-01	2.18E-01	-3.66E-02	1.06E-01

Analysis Report for 1510084-16
CP1803S08-09

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	244.69	5.40	9.52E-01	2.18E-01	-2.90E+00	4.59E-01
	344.27	19.13	2.61E-01		1.19E-01	1.24E-01
	778.89	9.20	6.61E-01		-6.32E-02	3.08E-01
	964.01	10.40	8.04E-01		-1.05E-01	3.78E-01
	1085.78	7.22	9.63E-01		4.18E-02	4.44E-01
	1112.02	9.60	6.93E-01		-1.35E-01	3.18E-01
	1407.95	14.94	5.21E-01		1.88E-01	2.38E-01
GD-153	97.43	31.30	1.48E-01	1.48E-01	-5.63E-02	7.19E-02
	103.18	22.20	2.06E-01		-1.01E-01	1.00E-01
EU-154	123.07	40.50	1.11E-01	1.11E-01	-1.35E-02	5.42E-02
	723.30	19.70	3.54E-01		2.23E-02	1.67E-01
	873.19	11.50	5.68E-01		2.48E-01	2.64E-01
	996.32	10.30	6.25E-01		-5.14E-01	2.88E-01
	1004.76	17.90	3.86E-01		-4.22E-03	1.79E-01
	1274.45	35.50	2.16E-01		5.26E-02	9.93E-02
EU-155	86.50	30.90	1.94E-01	1.94E-01	-1.16E-01	9.50E-02
	105.30	20.70	2.07E-01		-5.74E-02	1.01E-01
EU-156	811.77	10.40	1.71E+00	1.71E+00	-1.23E+00	7.89E-01
	1153.47	7.20	3.46E+00		3.11E-01	1.60E+00
	1230.71	8.90	3.27E+00		1.57E+00	1.53E+00
HO-166M	184.41	72.60	7.90E-02	7.90E-02	3.28E-03	3.85E-02
	280.45	29.60	1.60E-01		-1.04E-01	7.67E-02
	410.94	11.10	4.89E-01		3.23E-01	2.33E-01
	711.69	54.10	1.28E-01		5.26E-02	6.03E-02
TM-171	66.72	0.14	3.55E+01	3.55E+01	2.61E+01	1.73E+01
HF-172	81.75	4.52	8.72E-01	4.12E-01	-1.02E+00	4.23E-01
	125.81	11.30	4.12E-01		4.44E-02	2.00E-01
LU-172	181.53	20.60	3.09E+00	1.55E+00	-2.47E-01	1.50E+00
	810.06	16.63	4.86E+00		-7.42E-01	2.26E+00
	912.12	15.25	1.30E+01		4.08E+01	6.31E+00
	1093.66	62.50	1.55E+00		-3.29E-01	7.18E-01
LU-173	100.72	5.24	8.52E-01	2.96E-01	2.76E-01	4.15E-01
	272.11	21.20	2.96E-01		3.56E-01	1.43E-01
	343.40	84.00	7.65E-02		7.65E-02	3.65E-02
LU-176	88.34	13.30	4.60E-01	5.12E-02	7.20E-01	2.26E-01
	201.83	86.00	5.95E-02		4.24E-03	2.88E-02
	306.78	94.00	5.12E-02		-4.43E-03	2.45E-02
TA-182	67.75	41.20	1.31E-01	1.31E-01	-4.67E-02	6.36E-02
	1121.30	34.90	4.12E-01		6.75E-01	1.97E-01
	1189.05	16.23	6.12E-01		1.61E-01	2.85E-01
	1221.41	26.98	3.35E-01		6.36E-02	1.55E-01
	1231.02	11.44	8.99E-01		4.40E-01	4.19E-01
	308.46	29.68	2.17E-01		1.29E-01	1.16E-01	1.04E-01
IR-192	468.07	48.10	1.29E-01	1.29E-01	1.28E-02	6.08E-02
	279.19	77.30	9.64E-02		9.64E-02	4.63E-02
BI-207	569.67	97.72	5.55E-02	5.55E-02	2.13E-02	2.61E-02
	1063.62	74.90	9.72E-02		1.56E-02	4.50E-02
+ TL-208	583.14	*	30.22	9.69E-02	1.40E+00	1.35E-01
	860.37	*	4.48		9.99E-01	8.71E-01
	2614.66	*	35.85		1.10E+00	3.75E-02
BI-210M	262.00		1.02E-01	1.02E-01	-4.40E-03	4.90E-02
	300.00		2.42E-01		1.77E-01	1.16E-01
+ PB-210	46.50	*	3.50E+00	3.50E+00	2.31E+00	1.72E+00

Analysis Report for 1510084-16

CP1803S08-09

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PB-211	404.84	2.90	1.73E+00	1.73E+00	1.29E-01	8.19E-01
	831.96	2.90	2.41E+00		5.09E-01	1.13E+00
+ BI-212	727.17 *	11.80	8.17E-01	8.17E-01	9.85E-01	3.92E-01
	1620.62	2.75	2.43E+00		7.00E-01	1.09E+00
+ PB-212	238.63 *	44.60	2.58E-01	2.58E-01	1.71E+00	1.27E-01
	300.09 *	3.41	3.40E+00		1.67E+00	1.67E+00
+ BI-214	609.31 *	46.30	2.26E-01	2.26E-01	1.31E+00	1.09E-01
	1120.29 *	15.10	7.91E-01		1.42E+00	3.77E-01
	1764.49 *	15.80	4.40E-01		1.42E+00	1.96E-01
	2204.22 *	4.98	9.38E-01		1.37E+00	3.88E-01
+ PB-214	295.21 *	19.19	6.02E-01	2.33E-01	1.30E+00	2.95E-01
	351.92 *	37.19	2.33E-01		1.42E+00	1.14E-01
RN-219	401.80	6.50	7.99E-01	7.99E-01	2.98E-01	3.80E-01
RA-223	323.87	3.88	1.26E+00	1.26E+00	8.97E-01	6.04E-01
+ RA-224	240.98 *	3.95	2.94E+00	2.94E+00	5.13E+00	1.45E+00
RA-225	40.00	31.00	1.47E+00	1.47E+00	8.21E-01	7.13E-01
+ RA-226	186.21 *	3.28	2.44E+00	2.44E+00	3.58E+00	1.19E+00
TH-227	50.10	8.40	8.06E-01	6.84E-01	6.07E-01	3.91E-01
	236.00	11.50	6.84E-01		-5.43E+00	3.34E-01
	256.20	6.30	7.91E-01		-3.70E-02	3.81E-01
+ AC-228	338.32 *	11.40	5.60E-01	3.86E-01	1.78E+00	2.70E-01
	911.07 *	27.70	3.86E-01		1.61E+00	1.85E-01
	969.11 *	16.60	4.79E-01		1.76E+00	2.25E-01
TH-230	48.44	16.90	4.25E-01	4.25E-01	-5.84E-01	2.06E-01
	62.85	4.60	1.22E+00		1.78E+00	5.97E-01
	67.67	0.37	1.25E+01		-4.47E+00	6.08E+00
PA-231	283.67	1.60	2.98E+00	2.23E+00	7.82E-01	1.43E+00
	302.67	2.30	2.23E+00		-1.28E+00	1.07E+00
TH-231	25.64	14.70	1.35E+01	6.51E-01	1.21E+01	6.57E+00
	84.21	6.40	6.51E-01		5.99E-01	3.17E-01
PA-233	311.98	38.60	2.50E-01	2.50E-01	1.58E-01	1.20E-01
PA-234	131.20	20.40	2.26E-01	2.26E-01	-1.32E-02	1.10E-01
	733.99	8.80	7.26E-01		-7.52E-02	3.41E-01
	946.00	12.00	5.78E-01		2.09E-01	2.69E-01
PA-234M	1001.03	0.92	7.96E+00	7.96E+00	4.00E+00	3.70E+00
+ TH-234	63.29 *	3.80	2.52E+00	2.52E+00	1.35E+00	1.24E+00
U-235	143.76	10.50	4.58E-01	4.58E-01	-1.48E-02	2.23E-01
	163.35	4.70	9.92E-01		3.94E-01	4.81E-01
	205.31	4.70	1.10E+00		5.04E-02	5.34E-01
NP-237	86.50	12.60	4.71E-01	4.71E-01	-2.83E-01	2.31E-01
NP-239	106.10	22.70	3.15E+02	3.15E+02	1.92E+02	1.53E+02
	228.18	10.70	7.70E+02		-1.50E+01	3.72E+02
	277.60	14.10	6.23E+02		6.71E+02	3.00E+02
AM-241	59.54	35.90	1.37E-01	1.37E-01	-2.01E-02	6.66E-02
AM-243	74.67	66.00	9.99E-02	9.99E-02	-2.13E-01	4.90E-02
+ CM-243	209.75 *	3.29	2.60E+00	4.44E-01	2.46E+00	1.28E+00
	228.14	10.60	4.70E-01		-9.16E-03	2.27E-01
	277.60 *	14.00	4.44E-01		3.66E-01	2.15E-01

Analysis Report for 1510084-16
CP1803S08-09

-
- + = 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: CP1803S08-09

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	203
9:	539	1229	1072	432	681	1659	243	118
17:	123	128	147	142	120	118	123	109
25:	118	135	128	94	115	103	121	121
33:	128	120	126	142	146	150	140	131
41:	144	105	131	136	156	172	238	108
49:	133	122	123	100	119	126	114	116
57:	99	111	120	127	126	138	206	219
65:	137	159	161	149	128	155	143	149
73:	172	203	533	300	615	418	153	142
81:	128	125	116	167	159	117	269	236
89:	137	225	144	150	308	199	113	84
97:	89	104	93	106	96	97	82	78
105:	106	99	86	95	79	93	69	97
113:	111	89	91	89	89	90	84	99
121:	87	94	88	84	100	89	87	95
129:	115	98	88	71	81	90	84	88
137:	82	70	82	90	84	83	95	103
145:	83	83	94	66	86	91	79	91
153:	85	98	79	61	68	69	91	75
161:	67	66	83	72	73	58	74	81
169:	72	80	55	79	61	73	67	76
177:	58	70	64	59	68	68	71	54
185:	94	185	120	76	78	52	55	51
193:	63	62	81	57	58	52	68	79
201:	59	63	58	72	63	72	67	63
209:	122	95	74	72	57	55	66	75
217:	45	56	64	56	72	50	62	45
225:	56	48	64	57	53	41	51	56
233:	56	56	51	62	73	403	757	113
241:	118	192	85	43	53	40	33	54
249:	37	40	45	48	44	40	37	38
257:	57	53	47	35	37	29	45	38
265:	39	40	42	34	43	85	87	40
273:	55	43	41	40	60	51	34	43
281:	23	27	36	40	38	37	39	47
289:	31	33	38	38	41	40	214	161
297:	34	25	46	71	50	34	35	45
305:	24	31	36	41	30	43	33	32
313:	35	32	25	34	31	26	28	34
321:	32	40	34	35	28	19	42	51
329:	29	37	27	26	35	25	11	24
337:	37	162	106	20	32	23	25	36
345:	34	29	25	31	37	25	131	419
353:	149	23	23	21	26	24	24	26
361:	15	20	28	31	23	27	20	38

369: 22 23 22 25 32 32 21 19

Sample Title: CP1803S08-09

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	25	19	17	19	17	31	25	38
385:	32	17	27	33	35	30	27	21
393:	32	26	28	19	27	22	15	29
401:	19	28	32	21	26	22	17	20
409:	46	28	20	21	22	23	18	34
417:	27	17	20	27	29	23	20	17
425:	30	21	18	27	32	19	20	33
433:	15	22	17	15	20	17	22	17
441:	24	13	17	11	17	26	18	25
449:	14	9	23	18	23	22	26	13
457:	11	19	21	14	20	25	51	25
465:	12	17	25	15	17	17	13	20
473:	17	19	17	22	16	26	14	21
481:	13	14	14	18	13	13	21	12
489:	12	14	12	20	21	17	10	11
497:	15	22	19	16	14	12	6	13
505:	22	18	21	18	26	83	103	47
513:	23	19	15	19	16	12	13	24
521:	19	19	9	13	19	9	20	10
529:	22	20	14	14	17	17	13	30
537:	19	16	12	13	12	15	11	11
545:	10	15	19	14	9	18	13	15
553:	15	22	8	15	15	8	16	21
561:	23	17	16	13	12	13	18	18
569:	17	19	11	15	12	11	13	9
577:	18	12	9	16	11	84	202	112
585:	23	10	15	11	14	19	13	21
593:	13	19	15	19	11	11	12	10
601:	9	17	9	19	13	12	13	80
609:	261	163	27	13	13	13	9	11
617:	20	6	10	10	10	12	12	19
625:	17	14	10	14	13	10	10	16
633:	13	14	11	17	19	13	12	15
641:	13	10	9	18	8	11	12	11
649:	14	11	7	24	12	14	16	7
657:	10	12	16	9	13	12	7	12
665:	18	15	18	15	10	10	9	13
673:	15	11	9	7	11	8	10	12
681:	9	13	14	13	9	11	15	9
689:	12	8	9	10	15	13	9	24
697:	15	14	15	7	10	15	18	11
705:	15	8	14	20	14	11	6	20
713:	14	12	11	11	11	15	15	17
721:	7	11	10	8	10	32	45	35
729:	11	13	15	9	13	7	9	13
737:	12	17	6	14	11	17	10	17
745:	11	14	11	3	13	9	6	8
753:	11	14	16	12	10	8	10	4
761:	9	9	17	6	13	8	16	31
769:	25	10	11	20	12	14	11	13
777:	5	9	13	6	8	9	7	8
785:	14	19	12	3	10	15	10	14
793:	8	20	28	11	11	7	7	15

801: 11 17 11 6 14 14 14 9

Sample Title: CP1803S08-09

809:	7	6	5	9	7	7	5	12
817:	7	4	5	0	13	11	6	8
825:	13	22	10	6	8	12	10	5
833:	12	12	17	16	6	8	14	13
841:	10	8	10	6	10	8	4	11
849:	8	12	9	6	10	7	7	7
857:	8	9	8	20	16	8	8	6
865:	8	10	7	4	4	12	7	11
873:	10	5	8	7	10	5	12	11
881:	15	10	7	11	9	6	9	5
889:	10	10	9	13	5	7	8	8
897:	9	6	4	7	8	4	6	6
905:	7	5	8	4	4	76	126	63
913:	24	11	5	8	5	6	10	6
921:	6	5	7	7	12	7	8	9
929:	4	7	5	5	9	23	14	12
937:	7	4	7	11	4	7	6	11
945:	4	10	7	14	8	7	8	8
953:	8	8	8	10	11	9	15	7
961:	8	8	3	19	30	8	10	53
969:	82	32	7	3	6	5	13	4
977:	11	8	8	7	12	6	4	5
985:	9	6	5	6	9	7	8	10
993:	3	5	10	9	4	8	7	12
1001:	12	9	6	7	4	7	8	14
1009:	3	5	8	8	13	3	10	11
1017:	6	5	5	13	2	10	5	9
1025:	7	9	10	7	6	3	2	9
1033:	9	7	10	8	2	8	4	6
1041:	7	5	4	4	6	1	6	6
1049:	6	10	9	5	2	4	5	5
1057:	6	5	5	6	5	11	8	4
1065:	11	9	11	6	3	7	8	7
1073:	6	8	9	6	8	11	4	4
1081:	9	5	7	7	7	7	3	11
1089:	6	7	10	4	8	5	5	11
1097:	8	8	6	2	7	5	10	6
1105:	7	7	7	6	7	2	6	4
1113:	6	8	8	6	8	7	32	50
1121:	40	9	5	9	10	6	7	5
1129:	3	5	8	5	13	7	8	9
1137:	9	6	8	8	7	9	7	9
1145:	10	3	6	11	8	7	10	7
1153:	6	8	12	6	8	4	4	5
1161:	8	6	7	7	10	7	11	9
1169:	4	4	7	8	7	10	7	8
1177:	5	4	5	5	6	17	6	8
1185:	9	6	6	8	11	8	11	13
1193:	6	10	9	10	8	4	5	10
1201:	12	9	12	10	6	7	12	9
1209:	9	3	6	9	9	9	6	7
1217:	4	4	6	10	9	5	6	9
1225:	9	4	8	9	8	12	12	10

1233: 11 2 7 6 18 36 20 7

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Channel	1	2	3	4	5	6	7	8
1241:	7	6	8	6	4	8	6	7
1249:	7	8	2	12	8	2	6	2
1257:	2	5	10	7	7	3	7	5
1265:	5	5	8	3	7	2	12	4
1273:	5	5	6	7	5	4	7	4
1281:	7	6	12	4	5	8	0	8
1289:	4	3	6	5	2	2	3	5
1297:	4	4	1	9	4	6	3	2
1305:	6	4	7	5	7	3	6	3
1313:	7	4	3	3	3	4	5	3
1321:	3	5	8	6	3	3	3	7
1329:	1	6	3	6	0	4	3	2
1337:	1	4	3	1	3	3	5	3
1345:	6	7	4	0	4	2	6	4
1353:	5	8	4	4	6	9	3	3
1361:	2	6	5	3	1	1	2	1
1369:	3	4	2	5	3	2	4	5
1377:	13	12	3	0	3	11	3	2
1385:	3	6	3	5	3	1	4	4
1393:	1	4	1	2	2	4	2	5
1401:	4	3	6	4	4	6	10	6
1409:	5	4	3	4	1	4	2	3
1417:	7	2	6	1	4	1	3	2
1425:	1	3	7	3	2	4	5	3
1433:	1	0	2	3	3	5	3	3
1441:	2	3	1	3	3	2	2	6
1449:	6	0	4	4	5	4	3	3
1457:	3	13	116	294	226	81	12	1
1465:	2	2	2	0	2	3	4	4
1473:	0	4	0	2	2	5	1	2
1481:	2	2	3	4	2	1	0	1
1489:	1	3	1	7	1	3	5	4
1497:	3	4	0	2	0	4	3	1
1505:	5	1	3	6	4	2	2	3
1513:	3	3	0	1	4	1	1	2
1521:	2	1	1	2	0	2	2	1
1529:	4	1	2	4	2	3	4	5
1537:	3	2	1	1	2	2	4	0
1545:	0	1	1	4	1	5	2	2
1553:	2	0	4	1	3	3	1	5
1561:	2	4	2	2	1	4	1	3
1569:	2	1	1	4	1	1	2	2
1577:	2	2	1	2	3	9	1	4
1585:	3	3	6	7	6	5	4	6
1593:	6	6	4	6	3	3	4	0
1601:	2	3	1	2	1	2	1	0
1609:	2	4	1	2	1	1	0	2
1617:	1	2	2	4	3	4	3	2
1625:	3	3	3	3	2	4	2	2
1633:	2	1	0	3	2	0	2	0
1641:	3	2	0	3	0	0	1	1
1649:	1	2	1	0	0	1	0	3
1657:	3	2	0	1	2	2	3	1

1665: 2 4 3 1 3 1 3 1

Sample Title: CP1803S08-09

Channel	1	2	3	4	5	6	7	8
1673:	0	3	1	2	2	0	2	0
1681:	4	2	2	2	5	1	1	0
1689:	0	1	3	1	3	2	0	1
1697:	0	1	3	1	1	2	4	2
1705:	0	4	1	0	1	2	2	0
1713:	4	0	2	1	1	1	3	2
1721:	1	0	1	3	2	1	6	7
1729:	11	9	2	0	1	1	1	0
1737:	1	0	0	1	1	0	1	1
1745:	3	2	1	0	1	1	1	0
1753:	1	1	1	2	2	2	2	1
1761:	3	4	24	32	21	4	1	2
1769:	0	0	1	0	1	2	3	1
1777:	1	0	0	1	0	1	2	0
1785:	1	3	1	1	0	0	0	2
1793:	3	1	4	1	1	2	1	1
1801:	2	0	0	1	1	4	1	1
1809:	0	0	1	1	2	2	0	1
1817:	1	1	1	2	2	0	2	0
1825:	1	1	2	1	1	2	2	0
1833:	1	0	0	0	0	2	4	1
1841:	0	4	3	2	1	2	11	3
1849:	4	2	1	2	1	0	1	1
1857:	1	4	2	2	4	1	1	1
1865:	0	1	3	1	0	1	0	2
1873:	4	2	2	2	2	3	1	3
1881:	0	1	1	0	1	2	0	4
1889:	4	2	0	1	1	1	1	1
1897:	1	0	0	2	2	1	3	1
1905:	0	0	0	0	1	1	2	3
1913:	4	0	3	1	1	6	1	2
1921:	1	0	3	0	2	1	2	1
1929:	1	1	1	4	0	4	0	0
1937:	1	0	0	1	2	1	0	1
1945:	1	0	1	1	2	0	0	3
1953:	1	1	0	1	3	0	1	3
1961:	0	3	2	4	0	1	2	2
1969:	0	0	2	0	1	1	0	0
1977:	0	0	0	1	0	0	1	3
1985:	1	0	0	1	0	3	0	1
1993:	0	1	0	0	2	1	0	0
2001:	0	2	1	0	1	0	1	1
2009:	0	1	1	0	2	5	1	1
2017:	2	0	3	2	1	0	0	1
2025:	1	2	1	0	1	1	0	1
2033:	0	0	1	1	2	1	1	0
2041:	0	1	2	2	1	2	2	1
2049:	2	0	1	1	2	1	0	1
2057:	0	0	1	3	0	0	1	0
2065:	2	2	1	0	1	3	1	1
2073:	0	0	2	0	1	1	1	2
2081:	2	1	1	1	1	3	1	0
2089:	0	1	1	0	1	1	2	1

2097: 2 2 1 3 3 6 8 5

Sample Title: CP1803S08-09

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

2529: 2 0 2 0 0 1 2 1

Sample Title: CP1803S08-09

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	1	0	0	0	0	0
2545:	0	0	2	0	0	0	0	1
2553:	1	0	0	0	0	1	1	1
2561:	0	1	1	1	1	1	0	0
2569:	0	0	1	0	0	1	0	0
2577:	0	1	0	1	1	0	0	0
2585:	0	0	0	1	0	0	2	0
2593:	0	1	0	0	0	1	0	1
2601:	1	0	0	0	1	2	0	0
2609:	0	3	12	23	37	43	19	4
2617:	3	0	0	0	0	0	0	0
2625:	0	0	1	0	0	0	0	0
2633:	0	0	0	0	1	0	0	0
2641:	0	1	0	0	0	1	1	1
2649:	0	0	0	0	1	0	0	0
2657:	3	0	0	2	1	0	1	0
2665:	0	0	0	0	1	1	0	0
2673:	1	0	1	0	1	0	0	0
2681:	0	0	0	1	0	1	0	0
2689:	0	0	1	0	0	0	0	0
2697:	0	0	0	1	0	0	0	0
2705:	1	1	0	0	1	0	1	0
2713:	0	0	1	0	1	1	0	1
2721:	1	0	0	0	0	1	2	0
2729:	0	0	0	0	1	0	0	0
2737:	0	0	0	0	0	1	0	0
2745:	0	1	0	0	0	0	0	0
2753:	0	1	0	1	1	0	0	1
2761:	1	1	0	0	0	0	1	0
2769:	1	0	1	0	0	0	0	1
2777:	0	0	0	2	0	1	0	1
2785:	0	0	0	2	0	0	0	0
2793:	0	0	0	1	0	0	0	0
2801:	0	0	0	0	1	0	0	0
2809:	0	0	0	1	0	0	0	0
2817:	1	0	0	0	0	0	0	1
2825:	2	0	0	0	0	1	0	0
2833:	0	0	1	0	0	0	1	0
2841:	0	0	0	1	0	1	1	1
2849:	0	0	0	1	0	1	0	0
2857:	0	1	0	0	0	0	2	1
2865:	0	0	0	0	1	0	0	1
2873:	0	0	0	1	0	0	1	0
2881:	0	2	1	2	0	0	0	0
2889:	0	0	0	0	0	0	0	0
2897:	1	0	0	0	0	0	1	1
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	0	0	0	2	0
2921:	0	0	0	2	0	0	0	1
2929:	0	0	1	0	0	0	0	0
2937:	0	0	2	1	1	0	0	0
2945:	0	1	0	0	0	0	0	0
2953:	0	0	0	0	1	0	0	0

2961: 0 0 0 0 1 0 1 0

Sample Title: CP1803S08-09

Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	0	0	0	0	0
2977:	0	0	1	0	0	1	0	1
2985:	0	0	0	0	0	0	0	0
2993:	1	0	0	0	0	1	0	0
3001:	0	0	0	1	0	0	0	0
3009:	0	1	0	1	0	0	0	0
3017:	1	0	0	0	1	0	0	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	1	0	0	0	1	2
3041:	0	0	0	1	0	1	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	1	1	0	0	1	0	0	0
3073:	0	0	0	0	0	0	0	2
3081:	0	0	0	1	0	1	0	0
3089:	0	0	0	0	0	0	0	0
3097:	0	0	0	0	1	0	0	0
3105:	2	0	0	0	0	0	0	1
3113:	0	0	0	0	0	1	1	0
3121:	0	0	1	0	1	0	0	1
3129:	0	0	0	0	0	0	0	0
3137:	0	1	0	0	0	1	1	0
3145:	0	1	0	0	1	0	0	0
3153:	0	0	0	0	1	0	0	0
3161:	0	0	0	0	0	0	0	0
3169:	0	0	0	0	0	1	0	0
3177:	1	1	0	0	0	0	0	0
3185:	0	0	0	0	0	1	0	0
3193:	0	1	1	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	1	1	0	0
3225:	0	0	0	0	0	0	1	0
3233:	0	0	1	1	0	0	0	0
3241:	0	1	0	1	0	1	0	0
3249:	0	0	0	0	0	0	1	0
3257:	0	1	0	0	0	0	0	0
3265:	0	0	0	0	0	0	1	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	0	0	0
3305:	0	1	0	0	0	0	0	1
3313:	0	1	0	0	0	0	1	0
3321:	0	0	1	0	0	0	0	0
3329:	0	0	0	0	1	0	0	0
3337:	0	0	0	1	1	0	1	1
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	1	0
3361:	0	0	0	2	0	0	0	0
3369:	0	0	0	1	0	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 1

Sample Title: CP1803S08-09

3401:	0	1	0	0	0	0	0	0
3409:	2	1	0	0	0	1	1	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	1	0	0
3433:	0	1	0	1	0	1	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	2	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:	1	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	1
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	0	0
3529:	0	0	0	0	0	0	0	1
3537:	0	0	0	0	0	0	0	0
3545:	1	1	0	1	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:	0	0	0	0	0	0	0	1
3585:	0	0	0	1	0	0	1	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	1	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	0	0	0	0	0	0	0
3641:	0	0	1	1	0	0	0	1
3649:	0	0	0	1	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	1	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:	1	0	0	0	0	1	0	0
3713:	0	0	0	0	0	0	0	1
3721:	0	0	0	0	0	0	0	1
3729:	0	0	0	2	1	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	1
3753:	0	1	0	0	0	0	0	0
3761:	0	0	0	1	1	0	0	0
3769:	1	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	1	0	0	0	0	0	0	0
3793:	0	0	0	0	1	1	0	0
3801:	0	0	1	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	1	0	0	0

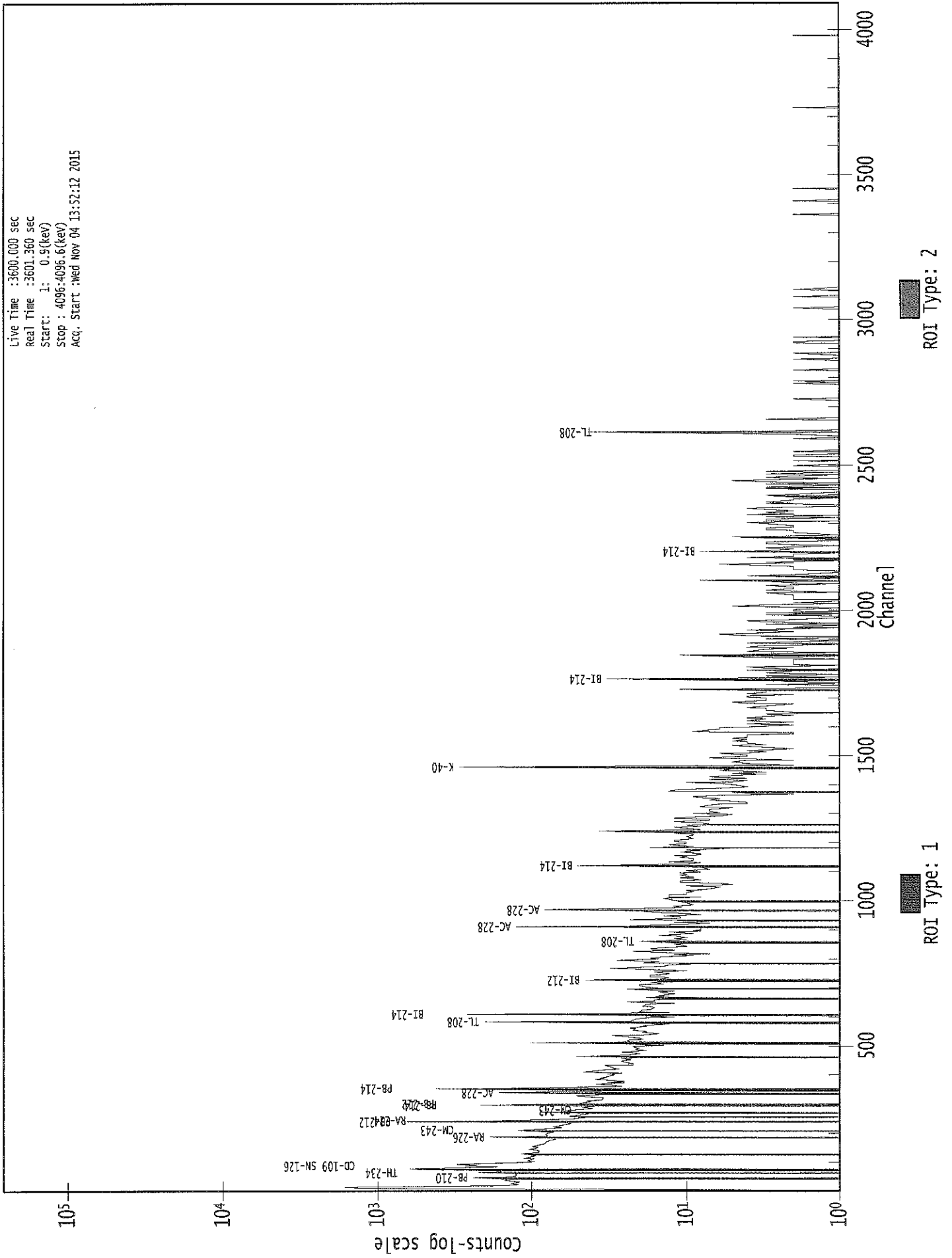
3825: 0 0 0 0 0 0 0 0

Sample Title: CP1803S08-09

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

0000029139.CNF

Live Time : 3600.000 sec
Real Time : 3601.360 sec
Start : 1: 0:5(keV)
Stop : 4096.4096.6(keV)
Acq. Start : Wed Nov 04 13:52:12 2015



XB
11/4/15Analysis Report for 1510084-17
CP1803S10-11

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-17
Sample Description : CP1803S10-11
Sample Type : SOIL

Sample Size : 6.373E+02 grams
Facility : Countroom

Sample Taken On : 10/10/2015 9:52:28AM
Acquisition Started : 11/4/2015 1:43:07PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3616.8 seconds

Dead Time : 0.47 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 9 - 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 : 29136

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-17
CP1803S10-11

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 2:43:26PM
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	62.96	63.18	0.0000	0.00
2	76.27	76.49	0.0000	0.00
3	87.29	87.50	0.0000	0.00
4	115.37	115.56	0.0000	0.00
5	186.45	186.61	0.0000	0.00
6	209.93	210.07	0.0000	0.00
7	238.92	239.04	0.0000	0.00
8	242.05	242.17	0.0000	0.00
9	244.85	244.98	0.0000	0.00
10	270.62	270.73	0.0000	0.00
11	295.56	295.66	0.0000	0.00
12	300.53	300.63	0.0000	0.00
13	338.41	338.49	0.0000	0.00
14	352.11	352.18	0.0000	0.00
15	409.28	409.32	0.0000	0.00
16	463.00	463.01	0.0000	0.00
17	511.16	511.15	0.0000	0.00
18	583.56	583.51	0.0000	0.00
19	609.59	609.54	0.0000	0.00
20	727.06	726.95	0.0000	0.00
21	742.53	742.41	0.0000	0.00
22	768.39	768.26	0.0000	0.00
23	795.45	795.30	0.0000	0.00
24	861.69	861.51	0.0000	0.00
25	911.59	911.39	0.0000	0.00
26	957.12	956.90	0.0000	0.00
27	965.28	965.06	0.0000	0.00
28	969.44	969.21	0.0000	0.00
29	990.81	990.58	0.0000	0.00
30	1001.75	1001.52	0.0000	0.00
31	1120.83	1120.55	0.0000	0.00
32	1124.81	1124.52	0.0000	0.00
33	1208.87	1208.55	0.0000	0.00
34	1215.40	1215.07	0.0000	0.00
35	1335.76	1335.38	0.0000	0.00
36	1341.23	1340.86	0.0000	0.00
37	1373.63	1373.25	0.0000	0.00
38	1378.81	1378.42	0.0000	0.00
39	1403.58	1403.18	0.0000	0.00
40	1461.46	1461.04	0.0000	0.00
41	1506.72	1506.29	0.0000	0.00
42	1510.44	1510.00	0.0000	0.00

Analysis Report for 1510084-17
CP1803S10-11

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1531.10	1530.65	0.0000	0.00
44	1593.94	1593.47	0.0000	0.00
45	1631.05	1630.56	0.0000	0.00
46	1692.13	1691.62	0.0000	0.00
47	1727.80	1727.28	0.0000	0.00
48	1750.40	1749.88	0.0000	0.00
49	1765.24	1764.71	0.0000	0.00
50	1839.91	1839.36	0.0000	0.00
51	2413.42	2412.69	0.0000	0.00
52	2615.70	2614.92	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510084-17

CP1803S10-11

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 2:43:26PM

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	62.96	60 -	65	63.18	1.78E+02	94.19	1.64E+03	1.64
2	76.27	71 -	81	76.49	1.23E+03	170.44	3.21E+03	3.71
3	87.29	82 -	91	87.50	3.01E+02	145.37	2.85E+03	1.81
4	115.37	112 -	119	115.56	1.00E+02	86.72	1.18E+03	4.48
5	186.45	183 -	190	186.61	1.97E+02	80.75	9.55E+02	1.72
6	209.93	206 -	213	210.07	1.06E+02	72.47	7.98E+02	1.63
M 7	238.92	235 -	247	239.04	8.62E+02	71.66	4.44E+02	1.76
m 8	242.05	235 -	247	242.17	2.13E+02	76.26	3.53E+02	1.89
m 9	244.85	235 -	247	244.98	4.91E+01	53.37	2.93E+02	1.84
10	270.62	267 -	274	270.73	9.62E+01	56.46	4.66E+02	3.36
M 11	295.56	291 -	303	295.66	2.97E+02	50.28	2.84E+02	1.74
m 12	300.53	291 -	303	300.63	5.82E+01	45.06	3.46E+02	2.15
13	338.41	334 -	342	338.49	1.36E+02	60.82	4.84E+02	1.82
14	352.11	348 -	355	352.18	5.44E+02	63.81	3.16E+02	1.88
15	409.28	406 -	412	409.32	5.10E+01	39.47	2.48E+02	1.06
16	463.00	460 -	466	463.01	5.01E+01	34.07	1.74E+02	1.59
17	511.16	507 -	518	511.15	1.84E+02	47.87	2.02E+02	2.73
18	583.56	580 -	587	583.51	2.14E+02	45.56	2.02E+02	1.99
19	609.59	606 -	613	609.54	3.43E+02	47.79	1.53E+02	2.09
20	727.06	722 -	731	726.95	5.17E+01	37.39	1.71E+02	1.70
21	742.53	740 -	745	742.41	2.10E+01	19.60	6.00E+01	1.87
22	768.39	764 -	771	768.26	3.68E+01	30.85	1.30E+02	1.94
23	795.45	790 -	802	795.30	4.93E+01	43.03	1.93E+02	2.68
24	861.69	858 -	866	861.51	3.75E+01	29.09	1.05E+02	1.63
25	911.59	905 -	914	911.39	1.39E+02	43.71	1.89E+02	2.04
26	957.12	952 -	960	956.90	2.85E+01	25.31	8.10E+01	2.40
M 27	965.28	962 -	973	965.06	3.39E+01	19.72	4.90E+01	2.66
m 28	969.44	962 -	973	969.21	9.98E+01	27.35	6.06E+01	2.39
29	990.81	986 -	998	990.58	2.84E+01	28.80	8.32E+01	8.66
30	1001.75	998 -	1006	1001.52	2.42E+01	23.23	6.96E+01	2.40
M 31	1120.83	1117 -	1132	1120.55	7.30E+01	24.33	5.58E+01	2.24
m 32	1124.81	1117 -	1132	1124.52	1.58E+01	25.92	5.57E+01	2.75
M 33	1208.87	1207 -	1220	1208.55	1.67E+01	11.16	2.91E+01	5.53
m 34	1215.40	1207 -	1220	1215.07	1.99E+01	28.92	9.75E+01	3.72
35	1335.76	1333 -	1338	1335.38	1.07E+01	13.15	2.45E+01	1.97
36	1341.23	1339 -	1344	1340.86	1.23E+01	13.11	2.54E+01	2.52
M 37	1373.63	1371 -	1381	1373.25	1.00E+01	10.86	1.69E+01	3.80
m 38	1378.81	1371 -	1381	1378.42	1.76E+01	17.20	3.44E+01	2.68
39	1403.58	1392 -	1411	1403.18	3.35E+01	31.18	6.90E+01	13.35
40	1461.46	1456 -	1467	1461.04	4.41E+02	46.35	4.80E+01	2.34

Analysis Report for 1510084-17

CP1803S10-11

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	1506.72	1505 - 1514		1506.29	7.15E+00	5.83	4.52E+00	2.73
m	42	1510.44	1505 - 1514		1510.00	1.62E+01	13.17	2.11E+01	2.44
	43	1531.10	1528 - 1536		1530.65	1.39E+01	13.30	2.02E+01	3.03
	44	1593.94	1592 - 1595		1593.47	1.14E+01	9.17	7.20E+00	1.85
	45	1631.05	1627 - 1635		1630.56	1.60E+01	8.00	0.00E+00	1.35
	46	1692.13	1688 - 1694		1691.62	8.67E+00	8.51	6.67E+00	1.34
	47	1727.80	1721 - 1732		1727.28	2.13E+01	13.42	1.15E+01	6.91
	48	1750.40	1745 - 1753		1749.88	8.00E+00	5.66	0.00E+00	2.88
	49	1765.24	1758 - 1771		1764.71	6.45E+01	19.54	1.30E+01	1.42
	50	1839.91	1837 - 1842		1839.36	8.85E+00	7.00	2.30E+00	2.37
	51	2413.42	2408 - 2416		2412.69	6.89E+00	7.50	4.22E+00	2.73
	52	2615.70	2610 - 2620		2614.92	6.90E+01	17.84	6.01E+00	2.77

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 : 11/4/2015 2:43:26PM

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	62.96	60 - 65		1.78E+02	94.19	1.64E+03	7.42E+01
	2	76.27	71 - 81		1.23E+03	170.44	3.21E+03	1.28E+02
	3	87.29	82 - 91		3.01E+02	145.37	2.85E+03	1.16E+02
	4	115.37	112 - 119		1.00E+02	86.72	1.18E+03	6.94E+01
	5	186.45	183 - 190		1.97E+02	80.75	9.55E+02	6.22E+01
	6	209.93	206 - 213		1.06E+02	72.47	7.98E+02	5.71E+01
M	7	238.92	235 - 247		8.62E+02	71.66	4.44E+02	3.46E+01
m	8	242.05	235 - 247		2.13E+02	76.26	3.53E+02	3.09E+01
m	9	244.85	235 - 247		4.91E+01	53.37	2.93E+02	2.81E+01
	10	270.62	267 - 274		9.62E+01	56.46	4.66E+02	4.35E+01
M	11	295.56	291 - 303		2.97E+02	50.28	2.84E+02	2.77E+01
m	12	300.53	291 - 303		5.82E+01	45.06	3.46E+02	3.06E+01
	13	338.41	334 - 342		1.36E+02	60.82	4.84E+02	4.62E+01
	14	352.11	348 - 355		5.44E+02	63.81	3.16E+02	3.58E+01
	15	409.28	406 - 412		5.10E+01	39.47	2.48E+02	3.02E+01
	16	463.00	460 - 466		5.01E+01	34.07	1.74E+02	2.55E+01

Analysis Report for 1510084-17

CP1803S10-11

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
17	511.16	507 -	518	1.84E+02	47.87	2.02E+02	3.24E+01
18	583.56	580 -	587	2.14E+02	45.56	2.02E+02	2.87E+01
19	609.59	606 -	613	3.43E+02	47.79	1.53E+02	2.49E+01
20	727.06	722 -	731	5.17E+01	37.39	1.71E+02	2.84E+01
21	742.53	740 -	745	2.10E+01	19.60	6.00E+01	1.42E+01
22	768.39	764 -	771	3.68E+01	30.85	1.30E+02	2.33E+01
23	795.45	790 -	802	4.93E+01	43.03	1.93E+02	3.34E+01
24	861.69	858 -	866	3.75E+01	29.09	1.05E+02	2.17E+01
25	911.59	905 -	914	1.39E+02	43.71	1.89E+02	3.02E+01
26	957.12	952 -	960	2.85E+01	25.31	8.10E+01	1.89E+01
M 27	965.28	962 -	973	3.39E+01	19.72	4.90E+01	1.15E+01
m 28	969.44	962 -	973	9.98E+01	27.35	6.06E+01	1.28E+01
29	990.81	986 -	998	2.84E+01	28.80	8.32E+01	2.20E+01
30	1001.75	998 -	1006	2.42E+01	23.23	6.96E+01	1.73E+01
M 31	1120.83	1117 -	1132	7.30E+01	24.33	5.58E+01	1.23E+01
m 32	1124.81	1117 -	1132	1.58E+01	25.92	5.57E+01	1.23E+01
M 33	1208.87	1207 -	1220	1.67E+01	11.16	2.91E+01	8.87E+00
m 34	1215.40	1207 -	1220	1.99E+01	28.92	9.75E+01	1.62E+01
35	1335.76	1333 -	1338	1.07E+01	13.15	2.45E+01	9.37E+00
36	1341.23	1339 -	1344	1.23E+01	13.11	2.54E+01	9.11E+00
M 37	1373.63	1371 -	1381	1.00E+01	10.86	1.69E+01	6.76E+00
m 38	1378.81	1371 -	1381	1.76E+01	17.20	3.44E+01	9.65E+00
39	1403.58	1392 -	1411	3.35E+01	31.18	6.90E+01	9.02E+00
40	1461.46	1456 -	1467	4.41E+02	46.35	4.80E+01	1.61E+01
M 41	1506.72	1505 -	1514	7.15E+00	5.83	4.52E+00	3.49E+00
m 42	1510.44	1505 -	1514	1.62E+01	13.17	2.11E+01	7.55E+00
43	1531.10	1528 -	1536	1.39E+01	13.30	2.02E+01	9.05E+00
44	1593.94	1592 -	1595	1.14E+01	9.17	7.20E+00	5.09E+00
45	1631.05	1627 -	1635	1.60E+01	8.00	0.00E+00	0.00E+00
46	1692.13	1688 -	1694	8.67E+00	8.51	6.67E+00	5.06E+00
47	1727.80	1721 -	1732	2.13E+01	13.42	1.15E+01	8.01E+00
48	1750.40	1745 -	1753	8.00E+00	5.66	0.00E+00	0.00E+00
49	1765.24	1758 -	1771	6.45E+01	19.54	1.30E+01	9.15E+00
50	1839.91	1837 -	1842	8.85E+00	7.00	2.30E+00	3.03E+00
51	2413.42	2408 -	2416	6.89E+00	7.50	4.22E+00	4.40E+00
52	2615.70	2610 -	2620	6.90E+01	17.84	6.01E+00	5.34E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.00sigma

Analysis Report for 1510084-17
CP1803S10-11

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/4/2015 2:43:26PM

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	62.96	60 -	65	63.18	1.78E+02	94.19	1.64E+03	TH-230 TH-234	
2	76.27	71 -	81	76.49	1.23E+03	170.44	3.21E+03	.....
3	87.29	82 -	91	87.50	3.01E+02	145.37	2.85E+03	SN-126 CD-109 NP-237 EU-155	
4	115.37	112 -	119	115.56	1.00E+02	86.72	1.18E+03	.....
5	186.45	183 -	190	186.61	1.97E+02	80.75	9.55E+02	RA-226	
6	209.93	206 -	213	210.07	1.06E+02	72.47	7.98E+02	CM-243 GA-67	
M	7	238.92	235 -	247	239.04	8.62E+02	71.66	4.44E+02	PB-212
m	8	242.05	235 -	247	242.17	2.13E+02	76.26	3.53E+02	.....
m	9	244.85	235 -	247	244.98	4.91E+01	53.37	2.93E+02	EU-152
	10	270.62	267 -	274	270.73	9.62E+01	56.46	4.66E+02	.....
M	11	295.56	291 -	303	295.66	2.97E+02	50.28	2.84E+02	PB-214
m	12	300.53	291 -	303	300.63	5.82E+01	45.06	3.46E+02	GA-67 PB-212 BI-210M
	13	338.41	334 -	342	338.49	1.36E+02	60.82	4.84E+02	AC-228
	14	352.11	348 -	355	352.18	5.44E+02	63.81	3.16E+02	PB-214
	15	409.28	406 -	412	409.32	5.10E+01	39.47	2.48E+02	.....
	16	463.00	460 -	466	463.01	5.01E+01	34.07	1.74E+02	SB-125
	17	511.16	507 -	518	511.15	1.84E+02	47.87	2.02E+02	.....
	18	583.56	580 -	587	583.51	2.14E+02	45.56	2.02E+02	TL-208
	19	609.59	606 -	613	609.54	3.43E+02	47.79	1.53E+02	BI-214
	20	727.06	722 -	731	726.95	5.17E+01	37.39	1.71E+02	BI-212
	21	742.53	740 -	745	742.41	2.10E+01	19.60	6.00E+01	.....
	22	768.39	764 -	771	768.26	3.68E+01	30.85	1.30E+02	.....
	23	795.45	790 -	802	795.30	4.93E+01	43.03	1.93E+02	CS-134
	24	861.69	858 -	866	861.51	3.75E+01	29.09	1.05E+02	.....
	25	911.59	905 -	914	911.39	1.39E+02	43.71	1.89E+02	AC-228 LU-172
	26	957.12	952 -	960	956.90	2.85E+01	25.31	8.10E+01	.....
M	27	965.28	962 -	973	965.06	3.39E+01	19.72	4.90E+01	.....
m	28	969.44	962 -	973	969.21	9.98E+01	27.35	6.06E+01	AC-228
	29	990.81	986 -	998	990.58	2.84E+01	28.80	8.32E+01	.....
	30	1001.75	998 -	1006	1001.52	2.42E+01	23.23	6.96E+01	PA-234M
M	31	1120.83	1117 -	1132	1120.55	7.30E+01	24.33	5.58E+01	SC-46 TA-182 BI-214

Analysis Report for 1510084-17

CP1803S10-11

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	32	1124.81	1117 -	1132	1124.52	1.58E+01	25.92	5.57E+01	.....
M	33	1208.87	1207 -	1220	1208.55	1.67E+01	11.16	2.91E+01	.....
m	34	1215.40	1207 -	1220	1215.07	1.99E+01	28.92	9.75E+01	.....
	35	1335.76	1333 -	1338	1335.38	1.07E+01	13.15	2.45E+01	.....
	36	1341.23	1339 -	1344	1340.86	1.23E+01	13.11	2.54E+01	.....
M	37	1373.63	1371 -	1381	1373.25	1.00E+01	10.86	1.69E+01	.....
m	38	1378.81	1371 -	1381	1378.42	1.76E+01	17.20	3.44E+01	.....
	39	1403.58	1392 -	1411	1403.18	3.35E+01	31.18	6.90E+01	.....
	40	1461.46	1456 -	1467	1461.04	4.41E+02	46.35	4.80E+01	K-40
M	41	1506.72	1505 -	1514	1506.29	7.15E+00	5.83	4.52E+00	.....
m	42	1510.44	1505 -	1514	1510.00	1.62E+01	13.17	2.11E+01	.....
	43	1531.10	1528 -	1536	1530.65	1.39E+01	13.30	2.02E+01	.....
	44	1593.94	1592 -	1595	1593.47	1.14E+01	9.17	7.20E+00	.....
	45	1631.05	1627 -	1635	1630.56	1.60E+01	8.00	0.00E+00	.....
	46	1692.13	1688 -	1694	1691.62	8.67E+00	8.51	6.67E+00	.....
	47	1727.80	1721 -	1732	1727.28	2.13E+01	13.42	1.15E+01	.....
	48	1750.40	1745 -	1753	1749.88	8.00E+00	5.66	0.00E+00	.....
	49	1765.24	1758 -	1771	1764.71	6.45E+01	19.54	1.30E+01	BI-214
	50	1839.91	1837 -	1842	1839.36	8.85E+00	7.00	2.30E+00	.....
	51	2413.42	2408 -	2416	2412.69	6.89E+00	7.50	4.22E+00	.....
	52	2615.70	2610 -	2620	2614.92	6.90E+01	17.84	6.01E+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 : 11/4/2015 2:43:26PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	62.96	1.78E+02	94.19	2.15E-02	1.70E-03
	2	76.27	1.23E+03	170.44	2.38E-02	2.14E-03
	3	87.29	3.01E+02	145.37	2.44E-02	2.50E-03
	4	115.37	1.00E+02	86.72	2.35E-02	1.89E-03
	5	186.45	1.97E+02	80.75	1.83E-02	1.42E-03
	6	209.93	1.06E+02	72.47	1.68E-02	1.31E-03
M	7	238.92	8.62E+02	71.66	1.52E-02	1.18E-03
m	8	242.05	2.13E+02	76.26	1.51E-02	1.17E-03
m	9	244.85	4.91E+01	53.37	1.49E-02	1.15E-03

Analysis Report for 1510084-17
CP1803S10-11

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	10	270.62	9.62E+01	56.46	1.38E-02	1.04E-03
M	11	295.56	2.97E+02	50.28	1.28E-02	9.74E-04
m	12	300.53	5.82E+01	45.06	1.26E-02	9.67E-04
	13	338.41	1.36E+02	60.82	1.14E-02	9.13E-04
	14	352.11	5.44E+02	63.81	1.11E-02	8.93E-04
	15	409.28	5.10E+01	39.47	9.72E-03	8.20E-04
	16	463.00	5.01E+01	34.07	8.73E-03	7.66E-04
	17	511.16	1.84E+02	47.87	8.01E-03	7.18E-04
	18	583.56	2.14E+02	45.56	7.13E-03	6.46E-04
	19	609.59	3.43E+02	47.79	6.87E-03	6.20E-04
	20	727.06	5.17E+01	37.39	5.89E-03	5.14E-04
	21	742.53	2.10E+01	19.60	5.79E-03	5.02E-04
	22	768.39	3.68E+01	30.85	5.62E-03	4.81E-04
	23	795.45	4.93E+01	43.03	5.45E-03	4.58E-04
	24	861.69	3.75E+01	29.09	5.09E-03	4.04E-04
	25	911.59	1.39E+02	43.71	4.85E-03	3.72E-04
	26	957.12	2.85E+01	25.31	4.65E-03	3.64E-04
M	27	965.28	3.39E+01	19.72	4.62E-03	3.62E-04
m	28	969.44	9.98E+01	27.35	4.60E-03	3.61E-04
	29	990.81	2.84E+01	28.80	4.52E-03	3.57E-04
	30	1001.75	2.42E+01	23.23	4.48E-03	3.55E-04
M	31	1120.83	7.30E+01	24.33	4.08E-03	3.33E-04
m	32	1124.81	1.58E+01	25.92	4.06E-03	3.32E-04
M	33	1208.87	1.67E+01	11.16	3.83E-03	3.16E-04
m	34	1215.40	1.99E+01	28.92	3.81E-03	3.14E-04
	35	1335.76	1.07E+01	13.15	3.53E-03	2.88E-04
	36	1341.23	1.23E+01	13.11	3.52E-03	2.87E-04
M	37	1373.63	1.00E+01	10.86	3.45E-03	2.82E-04
m	38	1378.81	1.76E+01	17.20	3.44E-03	2.82E-04
	39	1403.58	3.35E+01	31.18	3.40E-03	2.78E-04
	40	1461.46	4.41E+02	46.35	3.29E-03	2.69E-04
M	41	1506.72	7.15E+00	5.83	3.21E-03	2.62E-04
m	42	1510.44	1.62E+01	13.17	3.21E-03	2.62E-04
	43	1531.10	1.39E+01	13.30	3.17E-03	2.59E-04
	44	1593.94	1.14E+01	9.17	3.08E-03	2.49E-04
	45	1631.05	1.60E+01	8.00	3.03E-03	2.44E-04
	46	1692.13	8.67E+00	8.51	2.95E-03	2.35E-04
	47	1727.80	2.13E+01	13.42	2.90E-03	2.29E-04
	48	1750.40	8.00E+00	5.66	2.87E-03	2.26E-04
	49	1765.24	6.45E+01	19.54	2.86E-03	2.24E-04
	50	1839.91	8.85E+00	7.00	2.77E-03	2.13E-04
	51	2413.42	6.89E+00	7.50	2.34E-03	2.13E-04
	52	2615.70	6.90E+01	17.84	2.24E-03	2.13E-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 1510084-17

CP1803S10-11

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/4/2015 2:43:26PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028943.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	62.96	1.78E+02	94.19	5.52E+01	2.05E+01	1.23E+02	9.64E+01	
2	76.27	1.23E+03	170.44			1.23E+03	1.70E+02	
3	87.29	3.01E+02	145.37	1.52E+01	5.37E+00	2.86E+02	1.45E+02	
4	115.37	1.00E+02	86.72			1.00E+02	8.67E+01	
5	186.45	1.97E+02	80.75	3.93E+01	6.56E+00	1.57E+02	8.10E+01	
6	209.93	1.06E+02	72.47			1.06E+02	7.25E+01	
M	7	238.92	8.62E+02	71.66	1.34E+01	2.14E+00	8.49E+02	7.17E+01
m	8	242.05	2.13E+02	76.26	2.69E+00	1.46E+00	2.10E+02	7.63E+01
m	9	244.85	4.91E+01	53.37			4.91E+01	5.34E+01
	10	270.62	9.62E+01	56.46			9.62E+01	5.65E+01
M	11	295.56	2.97E+02	50.28			2.97E+02	5.03E+01
m	12	300.53	5.82E+01	45.06			5.82E+01	4.51E+01
	13	338.41	1.36E+02	60.82			1.36E+02	6.08E+01
	14	352.11	5.44E+02	63.81	3.99E+00	4.73E+00	5.40E+02	6.40E+01
	15	409.28	5.10E+01	39.47			5.10E+01	3.95E+01
	16	463.00	5.01E+01	34.07			5.01E+01	3.41E+01
	17	511.16	1.84E+02	47.87	5.78E+01	4.60E+00	1.26E+02	4.81E+01
	18	583.56	2.14E+02	45.56	5.96E+00	3.46E+00	2.08E+02	4.57E+01
	19	609.59	3.43E+02	47.79	6.71E+00	3.44E+00	3.36E+02	4.79E+01
	20	727.06	5.17E+01	37.39			5.17E+01	3.74E+01
	21	742.53	2.10E+01	19.60			2.10E+01	1.96E+01
	22	768.39	3.68E+01	30.85			3.68E+01	3.09E+01
	23	795.45	4.93E+01	43.03			4.93E+01	4.30E+01
	24	861.69	3.75E+01	29.09			3.75E+01	2.91E+01
	25	911.59	1.39E+02	43.71	2.32E+00	2.73E+00	1.37E+02	4.38E+01
	26	957.12	2.85E+01	25.31			2.85E+01	2.53E+01
M	27	965.28	3.39E+01	19.72			3.39E+01	1.97E+01
m	28	969.44	9.98E+01	27.35			9.98E+01	2.74E+01
	29	990.81	2.84E+01	28.80			2.84E+01	2.88E+01
	30	1001.75	2.42E+01	23.23	1.64E+00	2.27E+00	2.26E+01	2.33E+01
M	31	1120.83	7.30E+01	24.33	2.00E+00	2.20E+00	7.10E+01	2.44E+01
m	32	1124.81	1.58E+01	25.92			1.58E+01	2.59E+01
M	33	1208.87	1.67E+01	11.16			1.67E+01	1.12E+01
m	34	1215.40	1.99E+01	28.92			1.99E+01	2.89E+01
	35	1335.76	1.07E+01	13.15			1.07E+01	1.32E+01
	36	1341.23	1.23E+01	13.11			1.23E+01	1.31E+01
M	37	1373.63	1.00E+01	10.86			1.00E+01	1.09E+01
m	38	1378.81	1.76E+01	17.20			1.76E+01	1.72E+01
	39	1403.58	3.35E+01	31.18			3.35E+01	3.12E+01
	40	1461.46	4.41E+02	46.35			4.41E+02	4.63E+01
M	41	1506.72	7.15E+00	5.83			7.15E+00	5.83E+00
m	42	1510.44	1.62E+01	13.17			1.62E+01	1.32E+01
	43	1531.10	1.39E+01	13.30			1.39E+01	1.33E+01
	44	1593.94	1.14E+01	9.17			1.14E+01	9.17E+00

Analysis Report for 1510084-17

CP1803S10-11

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
45	1631.05	1.60E+01	8.00			1.60E+01	8.00E+00
46	1692.13	8.67E+00	8.51			8.67E+00	8.51E+00
47	1727.80	2.13E+01	13.42			2.13E+01	1.34E+01
48	1750.40	8.00E+00	5.66			8.00E+00	5.66E+00
49	1765.24	6.45E+01	19.54	1.45E+00	1.16E+00	6.30E+01	1.96E+01
50	1839.91	8.85E+00	7.00			8.85E+00	7.00E+00
51	2413.42	6.89E+00	7.50			6.89E+00	7.50E+00
52	2615.70	6.90E+01	17.84			6.90E+01	1.78E+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 : 11/4/2015 2:43:26PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028943.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	62.96	1.78E+02	94.19	5.52E+01	2.05E+01	1.23E+02	9.64E+01
2	76.27	1.23E+03	170.44			1.23E+03	1.70E+02
3	87.29	3.01E+02	145.37	1.52E+01	5.37E+00	2.86E+02	1.45E+02
4	115.37	1.00E+02	86.72			1.00E+02	8.67E+01
5	186.45	1.97E+02	80.75	3.93E+01	6.56E+00	1.57E+02	8.10E+01
6	209.93	1.06E+02	72.47			1.06E+02	7.25E+01
M 7	238.92	8.62E+02	71.66	1.34E+01	2.14E+00	8.49E+02	7.17E+01
m 8	242.05	2.13E+02	76.26	2.69E+00	1.46E+00	2.10E+02	7.63E+01
m 9	244.85	4.91E+01	53.37			4.91E+01	5.34E+01
10	270.62	9.62E+01	56.46			9.62E+01	5.65E+01
M 11	295.56	2.97E+02	50.28			2.97E+02	5.03E+01
m 12	300.53	5.82E+01	45.06			5.82E+01	4.51E+01
13	338.41	1.36E+02	60.82			1.36E+02	6.08E+01
14	352.11	5.44E+02	63.81	3.99E+00	4.73E+00	5.40E+02	6.40E+01
15	409.28	5.10E+01	39.47			5.10E+01	3.95E+01
16	463.00	5.01E+01	34.07			5.01E+01	3.41E+01
17	511.16	1.84E+02	47.87	5.78E+01	4.60E+00	1.26E+02	4.81E+01
18	583.56	2.14E+02	45.56	5.96E+00	3.46E+00	2.08E+02	4.57E+01
19	609.59	3.43E+02	47.79	6.71E+00	3.44E+00	3.36E+02	4.79E+01
20	727.06	5.17E+01	37.39			5.17E+01	3.74E+01

Analysis Report for 1510084-17

CP1803S10-11

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
21	742.53	2.10E+01	19.60			2.10E+01	1.96E+01
22	768.39	3.68E+01	30.85			3.68E+01	3.09E+01
23	795.45	4.93E+01	43.03			4.93E+01	4.30E+01
24	861.69	3.75E+01	29.09			3.75E+01	2.91E+01
25	911.59	1.39E+02	43.71	2.32E+00	2.73E+00	1.37E+02	4.38E+01
26	957.12	2.85E+01	25.31			2.85E+01	2.53E+01
M 27	965.28	3.39E+01	19.72			3.39E+01	1.97E+01
m 28	969.44	9.98E+01	27.35			9.98E+01	2.74E+01
29	990.81	2.84E+01	28.80			2.84E+01	2.88E+01
30	1001.75	2.42E+01	23.23	1.64E+00	2.27E+00	2.26E+01	2.33E+01
M 31	1120.83	7.30E+01	24.33	2.00E+00	2.20E+00	7.10E+01	2.44E+01
m 32	1124.81	1.58E+01	25.92			1.58E+01	2.59E+01
M 33	1208.87	1.67E+01	11.16			1.67E+01	1.12E+01
m 34	1215.40	1.99E+01	28.92			1.99E+01	2.89E+01
35	1335.76	1.07E+01	13.15			1.07E+01	1.32E+01
36	1341.23	1.23E+01	13.11			1.23E+01	1.31E+01
M 37	1373.63	1.00E+01	10.86			1.00E+01	1.09E+01
m 38	1378.81	1.76E+01	17.20			1.76E+01	1.72E+01
39	1403.58	3.35E+01	31.18			3.35E+01	3.12E+01
40	1461.46	4.41E+02	46.35			4.41E+02	4.63E+01
M 41	1506.72	7.15E+00	5.83			7.15E+00	5.83E+00
m 42	1510.44	1.62E+01	13.17			1.62E+01	1.32E+01
43	1531.10	1.39E+01	13.30			1.39E+01	1.33E+01
44	1593.94	1.14E+01	9.17			1.14E+01	9.17E+00
45	1631.05	1.60E+01	8.00			1.60E+01	8.00E+00
46	1692.13	8.67E+00	8.51			8.67E+00	8.51E+00
47	1727.80	2.13E+01	13.42			2.13E+01	1.34E+01
48	1750.40	8.00E+00	5.66			8.00E+00	5.66E+00
49	1765.24	6.45E+01	19.54	1.45E+00	1.16E+00	6.30E+01	1.96E+01
50	1839.91	8.85E+00	7.00			8.85E+00	7.00E+00
51	2413.42	6.89E+00	7.50			6.89E+00	7.50E+00
52	2615.70	6.90E+01	17.84			6.90E+01	1.78E+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 1510084-17
 CP1803S10-11

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.935	1460.81 *	10.67	1.48E+01	1.99E+00
CD-109	0.915	88.03 *	3.72	3.86E+00	2.01E+00
SN-126	0.987	87.57 *	37.00	3.73E-01	1.94E-01
EU-155	0.303	86.50 *	30.90	4.51E-01	2.34E-01
		105.30	20.70		
BI-212	0.769	727.17 *	11.80	8.76E-01	6.38E-01
		1620.62	2.75		
PB-212	0.986	238.63 *	44.60	1.47E+00	1.69E-01
		300.09 *	3.41	1.59E+00	1.24E+00
BI-214	0.900	609.31 *	46.30	1.24E+00	2.10E-01
		1120.29 *	15.10	1.36E+00	4.81E-01
		1764.49 *	15.80	1.65E+00	5.27E-01
		2204.22	4.98		
PB-214	0.990	295.21 *	19.19	1.42E+00	2.64E-01
		351.92 *	37.19	1.55E+00	2.22E-01
RA-226	0.991	186.21 *	3.28	3.10E+00	5.89E+00
AC-228	0.974	338.32 *	11.40	1.23E+00	5.58E-01
		911.07 *	27.70	1.20E+00	3.95E-01
		969.11 *	16.60	1.54E+00	4.39E-01
PA-234M	0.920	1001.03 *	0.92	6.45E+00	6.70E+00
TH-234	0.983	63.29 *	3.80	1.77E+00	1.40E+00
NP-237	0.906	86.50 *	12.60	1.10E+00	5.69E-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 : 11/4/2015 2:43:26PM
 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	76.27	3.41240E-01	6.94		
4	115.37	2.78870E-02	43.19		
6	209.93	2.95017E-02	34.12	Tol.	GA-67 CM-243
m 8	242.05	5.82870E-02	18.18		
m 9	244.85	1.36250E-02	54.40	Tol.	EU-152
10	270.62	2.67224E-02	29.35		

Analysis Report for 1510084-17

CP1803S10-11

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
15	409.28	1.41595E-02	38.71		
16	463.00	1.39092E-02	34.02	Tol.	SB-125
17	511.16	3.50401E-02	19.06		
18	583.56	5.77358E-02	10.99	Tol.	TL-208
21	742.53	5.83333E-03	46.66	D-Esc	
22	768.39	1.02342E-02	41.87		
23	795.45	1.37062E-02	43.60	Sum	
24	861.69	1.04136E-02	38.79		
26	957.12	7.91667E-03	44.40		
M 27	965.28	9.42957E-03	29.05	Sum	
29	990.81	7.88690E-03	50.71		
m 32	1124.81	4.39054E-03	82.00		
M 33	1208.87	4.64654E-03	33.35	Sum	
m 34	1215.40	5.53945E-03	72.52		
35	1335.76	2.98309E-03	61.24	Sum	
36	1341.23	3.41111E-03	53.40		
M 37	1373.63	2.78048E-03	54.26		
m 38	1378.81	4.89036E-03	48.86		
39	1403.58	9.30760E-03	46.52		
M 41	1506.72	1.98694E-03	40.76		
m 42	1510.44	4.50711E-03	40.59		
43	1531.10	3.86574E-03	47.80		
44	1593.94	3.16667E-03	40.20		
45	1631.05	4.44444E-03	25.00		
46	1692.13	2.40741E-03	49.12		
47	1727.80	5.90535E-03	31.55		
48	1750.40	2.22222E-03	35.36		
50	1839.91	2.45833E-03	39.55		
51	2413.42	1.91358E-03	54.44		
52	2615.70	1.91647E-02	12.93		

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 1510084-17

CP1803S10-11

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.93	1460.81 *	10.67	1.48E+01	1.99E+00
CD-109	0.91	88.03 *	3.72	3.86E+00	2.01E+00
SN-126	0.98	87.57 *	37.00	3.73E-01	1.94E-01
EU-155	0.30	86.50 *	30.90	4.51E-01	2.34E-01
		105.30	20.70		
BI-212	0.76	727.17 *	11.80	8.76E-01	6.38E-01
		1620.62	2.75		
PB-212	0.98	238.63 *	44.60	1.47E+00	1.69E-01
		300.09 *	3.41	1.59E+00	1.24E+00
BI-214	0.90	609.31 *	46.30	1.24E+00	2.10E-01
		1120.29 *	15.10	1.36E+00	4.81E-01
		1764.49 *	15.80	1.65E+00	5.27E-01
		2204.22	4.98		
PB-214	0.99	295.21 *	19.19	1.42E+00	2.64E-01
		351.92 *	37.19	1.55E+00	2.22E-01
RA-226	0.99	186.21 *	3.28	3.10E+00	5.89E+00
AC-228	0.97	338.32 *	11.40	1.23E+00	5.58E-01
		911.07 *	27.70	1.20E+00	3.95E-01
		969.11 *	16.60	1.54E+00	4.39E-01
PA-234M	0.92	1001.03 *	0.92	6.45E+00	6.70E+00
TH-234	0.98	63.29 *	3.80	1.77E+00	1.40E+00
NP-237	0.90	86.50 *	12.60	1.10E+00	5.69E-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	0.935	1.48E+01	1.99E+00	
? CD-109	0.915	3.86E+00	2.01E+00	
? SN-126	0.987	3.73E-01	1.94E-01	
? EU-155	0.303	4.51E-01	2.34E-01	
BI-212	0.769	8.76E-01	6.38E-01	

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Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
PB-212	0.986	1.48E+00	1.67E-01	
BI-214	0.900	1.31E+00	1.81E-01	
PB-214	0.990	1.50E+00	1.70E-01	
RA-226	0.991	3.10E+00	5.89E+00	
AC-228	0.974	1.33E+00	2.60E-01	
PA-234M	0.920	6.45E+00	6.70E+00	
TH-234	0.983	1.77E+00	1.40E+00	
? NP-237	0.906	1.10E+00	5.69E-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

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 2:43:26PM
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	76.27	3.41240E-01	6.94		
4	115.37	2.78870E-02	43.19		
6	209.93	2.95017E-02	34.12	Tol.	GA-67 CM-243
m 8	242.05	5.82870E-02	18.18		
m 9	244.85	1.36250E-02	54.40	Tol.	EU-152
10	270.62	2.67224E-02	29.35		
15	409.28	1.41595E-02	38.71		
16	463.00	1.39092E-02	34.02	Tol.	SB-125
17	511.16	3.50401E-02	19.06		
18	583.56	5.77358E-02	10.99	Tol.	TL-208
21	742.53	5.83333E-03	46.66	D-Esc	
22	768.39	1.02342E-02	41.87		
23	795.45	1.37062E-02	43.60	Sum	
24	861.69	1.04136E-02	38.79		
26	957.12	7.91667E-03	44.40		
M 27	965.28	9.42957E-03	29.05	Sum	
29	990.81	7.88690E-03	50.71		
m 32	1124.81	4.39054E-03	82.00		
M 33	1208.87	4.64654E-03	33.35	Sum	
m 34	1215.40	5.53945E-03	72.52		
35	1335.76	2.98309E-03	61.24	Sum	
36	1341.23	3.41111E-03	53.40		
M 37	1373.63	2.78048E-03	54.26		
m 38	1378.81	4.89036E-03	48.86		
39	1403.58	9.30760E-03	46.52		
M 41	1506.72	1.98694E-03	40.76		
m 42	1510.44	4.50711E-03	40.59		
43	1531.10	3.86574E-03	47.80		
44	1593.94	3.16667E-03	40.20		
45	1631.05	4.44444E-03	25.00		
46	1692.13	2.40741E-03	49.12		
47	1727.80	5.90535E-03	31.55		
48	1750.40	2.22222E-03	35.36		
50	1839.91	2.45833E-03	39.55		

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
51	2413.42	1.91358E-03	54.44		
52	2615.70	1.91647E-02	12.93		

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	2.15E-02	9.33E-01	9.33E-01
+	NA-22	1274.54	99.94	-2.31E-02	1.03E-01	1.03E-01
+	NA-24	1368.53	99.99	2.61E+10	1.96E+10	1.23E+11
		2754.09	99.86	0.00E+00		1.96E+10
+	AL-26	1808.65	99.76	-2.71E-02	7.33E-02	7.33E-02
+	K-40	1460.81	* 10.67	1.48E+01	1.17E+00	1.17E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	1.92E-02	7.35E-02	7.35E-02
		78.34	96.00	2.38E-01		9.07E-02
+	SC-46	889.25	99.98	-7.04E-02	8.97E-02	8.97E-02
		1120.51	99.99	1.57E-01		1.77E-01
+	V-48	983.52	99.98	4.97E-02	2.54E-01	2.54E-01
		1312.10	97.50	1.67E-02		2.88E-01
+	CR-51	320.08	9.83	-3.06E-01	1.23E+00	1.23E+00
+	MN-54	834.83	99.97	2.18E-02	9.51E-02	9.51E-02
+	CO-56	846.75	99.96	9.02E-03	1.05E-01	1.05E-01
		1037.75	14.03	-3.00E-01		7.92E-01
		1238.25	67.00	-2.74E-03		2.33E-01
		1771.40	15.51	-3.33E-02		5.00E-01
		2598.48	16.90	0.00E+00		1.05E-01
+	CO-57	122.06	85.51	-1.07E-02	6.03E-02	6.03E-02
		136.48	10.60	-9.50E-02		5.01E-01
+	CO-58	810.76	99.40	3.69E-04	9.69E-02	9.69E-02
+	FE-59	1099.22	56.50	3.95E-02	2.45E-01	2.45E-01
		1291.56	43.20	3.32E-02		3.69E-01
+	CO-60	1173.22	100.00	-7.17E-03	1.03E-01	1.03E-01
		1332.49	100.00	-1.75E-02		1.04E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZN-65	1115.52	50.75	4.72E-02	1.98E-01	1.98E-01
+	GA-67	93.31	35.70	4.69E+01	3.71E+01	3.71E+01
		208.95	2.24	6.27E+02		6.72E+02
		300.22	16.00	-3.28E+02		9.87E+01
+	SE-75	121.11	16.70	3.06E-02	9.71E-02	3.32E-01
		136.00	59.20	-2.27E-02		9.71E-02
		264.65	59.80	2.18E-02		1.27E-01
		279.53	25.20	-7.43E-03		3.03E-01
		400.65	11.40	4.50E-01		7.37E-01
+	RB-82	776.52	13.00	2.23E-01	1.23E+00	1.23E+00
+	RB-83	520.41	46.00	5.42E-02	1.62E-01	1.62E-01
		529.64	30.30	-2.55E-02		3.03E-01
		552.65	16.40	1.01E-03		5.42E-01
+	KR-85	513.99	0.43	2.85E+01	2.31E+01	2.31E+01
+	SR-85	513.99	99.27	1.62E-01	1.32E-01	1.32E-01
+	Y-88	898.02	93.40	-3.25E-02	9.94E-02	9.94E-02
		1836.01	99.38	-7.54E-03		1.01E-01
+	NB-93M	16.57	9.43	8.55E+00	7.78E+01	7.78E+01
+	NB-94	702.63	100.00	5.22E-02	8.62E-02	8.95E-02
		871.10	100.00	-1.13E-02		8.62E-02
+	NB-95	765.79	99.81	1.88E-01	1.71E-01	1.71E-01
+	NB-95M	235.69	25.00	1.12E+00	5.78E+01	5.78E+01
+	ZR-95	724.18	43.70	-7.24E-02	2.03E-01	2.89E-01
		756.72	55.30	5.59E-03		2.03E-01
+	MO-99	181.06	6.20	7.22E+01	3.33E+02	4.93E+02
		739.58	12.80	1.76E+01		3.33E+02
		778.00	4.50	-6.29E+02		9.64E+02
+	RU-103	497.08	89.00	-2.76E-02	1.21E-01	1.21E-01
+	RU-106	621.84	9.80	-2.26E-01	7.88E-01	7.88E-01
+	AG-108M	433.93	89.90	-1.98E-03	7.88E-02	7.88E-02
		614.37	90.40	4.03E-02		1.01E-01
		722.95	90.50	1.26E-02		9.22E-02
+	CD-109	88.03	* 3.72	3.86E+00	3.17E+00	3.17E+00
+	AG-110M	657.75	93.14	-3.73E-02	7.85E-02	7.85E-02
		677.61	10.53	-5.31E-01		7.25E-01
		706.67	16.46	-2.54E-01		5.25E-01
		763.93	21.98	-3.41E-02		4.21E-01
		884.67	71.63	-4.71E-02		1.21E-01
		1384.27	23.94	4.17E-02		3.99E-01
+	CD-113M	263.70	0.02	8.37E+01	2.82E+02	2.82E+02
+	SN-113	255.12	1.93	8.08E-01	1.23E-01	3.80E+00
		391.69	64.90	1.95E-04		1.23E-01
+	TE123M	159.00	84.10	9.16E-03	7.20E-02	7.20E-02
+	SB-124	602.71	97.87	1.00E-02	1.00E-01	1.00E-01
		645.85	7.26	-2.71E-01		1.38E+00
		722.78	11.10	1.37E-01		1.00E+00
		1691.02	49.00	4.10E-02		2.19E-01
+	I-125	35.49	6.49	-1.39E+00	2.91E+00	2.91E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-125	176.33	6.89	2.67E-01	2.35E-01	7.95E-01
		427.89	29.33	-2.94E-02		2.35E-01
		463.38	10.35	5.13E-01		7.59E-01
		600.56	17.80	1.32E-01		4.29E-01
		635.90	11.32	5.86E-02		6.83E-01
+	SB-126	414.70	83.30	-1.17E-01	3.13E-01	3.25E-01
		666.33	99.60	1.92E-01		3.51E-01
		695.00	99.60	-2.32E-01		3.13E-01
		720.50	53.80	2.06E-01		6.10E-01
+	SN-126	87.57	* 37.00	3.73E-01	3.07E-01	3.07E-01
+	SB-127	473.00	25.00	-3.58E+00	2.01E+01	2.44E+01
		685.20	35.70	-2.77E+00		2.01E+01
		783.80	14.70	3.28E+01		5.70E+01
+	I-129	29.78	57.00	-1.23E-01	4.27E-01	4.27E-01
		33.60	13.20	-3.27E-01		1.24E+00
		39.58	7.52	-1.11E-01		1.50E+00
+	I-131	284.30	6.05	-2.64E+00	6.70E-01	9.28E+00
		364.48	81.20	-2.51E-01		6.70E-01
		636.97	7.26	-1.90E+00		9.08E+00
		722.89	1.80	5.55E+00		4.06E+01
+	TE-132	49.72	13.10	-1.70E+02	1.66E+01	1.29E+02
		228.16	88.00	-9.13E-01		1.66E+01
+	BA-133	81.00	33.00	-1.20E+00	1.62E-01	1.84E-01
		302.84	17.80	3.10E-02		3.93E-01
		356.01	60.00	2.14E-02		1.62E-01
+	I-133	529.87	86.30	-4.07E+06	4.85E+07	4.85E+07
+	XE-133	81.00	38.00	-2.89E+01	4.44E+00	4.44E+00
+	CS-134	563.23	8.38	-1.26E-01	8.58E-02	9.16E-01
		569.32	15.43	8.83E-02		4.83E-01
		604.70	97.60	9.18E-03		8.58E-02
		795.84	85.40	7.81E-02		1.22E-01
		801.93	8.73	-1.32E-01		9.57E-01
+	CS-135	268.24	16.00	3.82E-03	4.38E-01	4.38E-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	8.89E-01	3.22E-01	2.69E+00
		163.89	4.61	1.31E+00		4.43E+00
		176.55	13.56	3.65E-01		1.50E+00
		273.65	12.66	-3.65E-01		2.06E+00
		340.57	48.50	-5.49E-02		6.77E-01
		818.50	99.70	1.29E-01		3.22E-01
		1048.07	79.60	0.00E+00		4.69E-01
		1235.34	19.70	-5.44E-01		2.43E+00
+	CS-137	661.65	85.12	-7.16E-02	8.65E-02	8.65E-02
+	LA-138	788.74	34.00	7.08E-02	1.34E-01	2.73E-01
		1435.80	66.00	1.67E-02		1.34E-01
+	CE-139	165.85	80.35	1.34E-02	7.68E-02	7.68E-02
+	BA-140	162.64	6.70	2.51E-01	1.24E+00	3.15E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	304.84	4.50	8.98E-01	1.24E+00	5.47E+00
		423.70	3.20	2.63E-01		8.01E+00
		437.55	2.00	3.14E+00		1.43E+01
		537.32	25.00	1.20E-01		1.24E+00
+	LA-140	328.77	20.50	2.84E-01	3.77E-01	1.34E+00
		487.03	45.50	-2.85E-01		5.80E-01
		815.85	23.50	-7.19E-01		1.27E+00
		1596.49	95.49	-5.23E-02		3.77E-01
+	CE-141	145.44	48.40	6.74E-02	1.84E-01	1.84E-01
+	CE-143	57.36	11.80	5.22E+04	7.42E+04	1.96E+05
		293.26	42.00	1.66E+05		7.42E+04
		664.55	5.20	1.57E+05		5.13E+05
+	CE-144	133.54	10.80	3.52E-02	4.99E-01	4.99E-01
+	PM-144	476.78	42.00	-5.60E-02	8.29E-02	1.69E-01
		618.01	98.60	4.48E-02		8.65E-02
		696.49	99.49	-3.22E-02		8.29E-02
+	PM-145	36.85	21.70	-2.47E-01	3.20E-01	5.95E-01
		37.36	39.70	1.02E-02		3.20E-01
		42.30	15.10	-8.85E-01		6.58E-01
		72.40	2.31	-7.19E+00		3.49E+00
+	PM-146	453.90	39.94	3.00E-02	1.77E-01	1.77E-01
		735.90	14.01	9.82E-02		5.37E-01
		747.13	13.10	-8.27E-02		5.71E-01
+	ND-147	91.11	28.90	6.06E-01	1.16E+00	1.16E+00
		531.02	13.10	-1.10E+00		2.80E+00
+	PM-149	285.90	3.10	1.03E+03	5.54E+03	5.54E+03
+	EU-152	121.78	20.50	-4.20E-02	2.37E-01	2.37E-01
		244.69	5.40	-1.05E+00		1.38E+00
		344.27	19.13	-1.65E-02		3.50E-01
		778.89	9.20	-3.18E-01		8.39E-01
		964.01	10.40	-1.97E+00		9.88E-01
		1085.78	7.22	3.26E-03		1.29E+00
		1112.02	9.60	2.85E-01		1.10E+00
		1407.95	14.94	-2.31E-01		6.38E-01
+	GD-153	97.43	31.30	-1.38E-01	1.68E-01	1.68E-01
		103.18	22.20	-5.18E-02		2.33E-01
+	EU-154	123.07	40.50	-9.00E-03	1.21E-01	1.21E-01
		723.30	19.70	5.82E-02		4.26E-01
		873.19	11.50	-2.22E-01		7.55E-01
		996.32	10.30	-7.69E-01		7.10E-01
		1004.76	17.90	-6.91E-02		4.76E-01
		1274.45	35.50	-6.41E-02		2.85E-01
+	EU-155	86.50	* 30.90	4.51E-01	2.38E-01	3.72E-01
		105.30	20.70	-1.15E-02		2.38E-01
+	EU-156	811.77	10.40	-1.19E+00	2.17E+00	2.17E+00
		1153.47	7.20	2.18E+00		5.03E+00
		1230.71	8.90	1.05E-01		4.35E+00
+	HO-166M	184.41	72.60	1.30E-01	9.18E-02	9.18E-02
		280.45	29.60	-2.37E-03		2.24E-01

Analysis Report for 1510084-17
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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>	
	HO-166M	410.94	11.10	1.07E-03	9.18E-02	7.01E-01
		711.69	54.10	8.04E-02		1.55E-01
+	TM-171	66.72	0.14	9.69E+00	5.06E+01	5.06E+01
+	HF-172	81.75	4.52	-3.78E+00	4.54E-01	1.41E+00
		125.81	11.30	-3.03E-01		4.54E-01
+	LU-172	181.53	20.60	5.81E-01	2.08E+00	3.47E+00
		810.06	16.63	3.67E+00		6.65E+00
		912.12	15.25	3.57E+01		1.51E+01
		1093.66	62.50	2.85E-01		2.08E+00
+	LU-173	100.72	5.24	-1.74E-01	3.42E-01	9.50E-01
		272.11	21.20	9.22E-02		3.42E-01
+	HF-175	343.40	84.00	1.77E-02	1.05E-01	1.05E-01
+	LU-176	88.34	13.30	3.31E-01	6.76E-02	5.39E-01
		201.83	86.00	8.33E-03		7.59E-02
		306.78	94.00	-2.11E-02		6.76E-02
+	TA-182	67.75	41.20	5.13E-02	1.96E-01	1.96E-01
		1121.30	34.90	6.18E-01		4.88E-01
		1189.05	16.23	1.01E-01		8.31E-01
		1221.41	26.98	5.73E-02		4.50E-01
		1231.02	11.44	3.79E-01		1.29E+00
+	IR-192	308.46	29.68	-6.01E-02	1.68E-01	2.78E-01
		468.07	48.10	1.98E-02		1.68E-01
+	HG-203	279.19	77.30	9.69E-02	1.29E-01	1.29E-01
+	BI-207	569.67	97.72	3.92E-02	7.64E-02	7.64E-02
		1063.62	74.90	3.58E-02		1.13E-01
+	TL-208	583.14	30.22	1.16E+00	4.60E-01	4.60E-01
		860.37	4.48	1.60E+00		2.29E+00
		2614.66	35.85	1.00E+00		6.15E-01
+	BI-210M	262.00	45.00	3.09E-02	1.43E-01	1.43E-01
		300.00	23.00	-1.08E+00		3.25E-01
+	PB-210	46.50	4.25	7.73E-01	2.15E+00	2.15E+00
+	PB-211	404.84	2.90	1.10E-01	2.44E+00	2.44E+00
		831.96	2.90	-9.57E-01		2.88E+00
+	BI-212	727.17	* 11.80	8.76E-01	1.01E+00	1.01E+00
		1620.62	2.75	1.27E+00		3.16E+00
+	PB-212	238.63	* 44.60	1.47E+00	2.53E-01	2.53E-01
		300.09	* 3.41	1.59E+00		3.41E+00
+	BI-214	609.31	* 46.30	1.24E+00	1.98E-01	1.98E-01
		1120.29	* 15.10	1.36E+00		1.09E+00
		1764.49	* 15.80	1.65E+00		5.62E-01
		2204.22	4.98	1.21E+00		2.26E+00
+	PB-214	295.21	* 19.19	1.42E+00	2.15E-01	5.91E-01
		351.92	* 37.19	1.55E+00		2.15E-01
+	RN-219	401.80	6.50	2.04E-01	1.09E+00	1.09E+00
+	RA-223	323.87	3.88	-1.32E+00	1.63E+00	1.63E+00
+	RA-224	240.98	3.95	1.93E+01	3.35E+00	3.35E+00
+	RA-225	40.00	31.00	-8.57E-02	1.16E+00	1.16E+00
+	RA-226	186.21	* 3.28	3.10E+00	2.55E+00	2.55E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-227	50.10		8.40	-1.24E+00	9.36E-01	9.36E-01
		236.00		11.50	1.93E-02		9.99E-01
		256.20		6.30	-1.51E-01		9.83E-01
+	AC-228	338.32	*	11.40	1.23E+00	5.58E-01	8.59E-01
		911.07	*	27.70	1.20E+00		5.58E-01
		969.11	*	16.60	1.54E+00		7.28E-01
+	TH-230	48.44		16.90	-1.66E-01	5.06E-01	5.06E-01
		62.85		4.60	2.34E+00		1.67E+00
		67.67		0.37	4.91E+00		1.88E+01
+	PA-231	283.67		1.60	-1.14E+00	3.03E+00	3.99E+00
		302.67		2.30	2.39E-01		3.03E+00
+	TH-231	25.64		14.70	-2.28E+00	9.82E-01	3.09E+00
		84.21		6.40	-1.86E+00		9.82E-01
+	PA-233	311.98		38.60	7.08E-02	3.40E-01	3.40E-01
+	PA-234	131.20		20.40	1.25E-01	2.61E-01	2.61E-01
		733.99		8.80	5.32E-01		9.08E-01
		946.00		12.00	1.36E-01		6.56E-01
+	PA-234M	1001.03	*	0.92	6.45E+00	1.08E+01	1.08E+01
+	TH-234	63.29	*	3.80	1.77E+00	2.26E+00	2.26E+00
+	U-235	143.76		10.50	2.20E-01	5.03E-01	5.03E-01
		163.35		4.70	3.40E-01		1.15E+00
		205.31		4.70	-1.30E-01		1.37E+00
+	NP-237	86.50	*	12.60	1.10E+00	9.02E-01	9.02E-01
+	NP-239	106.10		22.70	4.22E+01	3.62E+02	3.62E+02
		228.18		10.70	-5.86E+01		1.06E+03
		277.60		14.10	4.85E+02		8.00E+02
+	AM-241	59.54		35.90	1.94E-02	1.99E-01	1.99E-01
+	AM-243	74.67		66.00	3.87E-01	1.45E-01	1.45E-01
+	CM-243	209.75		3.29	2.15E+00	4.88E-01	2.17E+00
		228.14		10.60	-3.58E-02		6.50E-01
		277.60		14.00	2.96E-01		4.88E-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

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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	9.33E-01	9.33E-01	2.15E-02	4.42E-01
NA-22	1274.54	99.94	1.03E-01	1.03E-01	-2.31E-02	4.69E-02
NA-24	1368.53	99.99	1.23E+11	1.96E+10	2.61E+10	5.52E+10
	2754.09	99.86	1.96E+10		0.00E+00	0.00E+00
AL-26	1808.65	99.76	7.33E-02	7.33E-02	-2.71E-02	3.09E-02
+ K-40	1460.81	* 10.67	1.17E+00	1.17E+00	1.48E+01	5.41E-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	7.35E-02	7.35E-02	1.92E-02	3.60E-02
	78.34	96.00	9.07E-02		2.38E-01	4.47E-02
SC-46	889.25	99.98	8.97E-02	8.97E-02	-7.04E-02	4.09E-02
	1120.51	99.99	1.77E-01		1.57E-01	8.36E-02
V-48	983.52	99.98	2.54E-01	2.54E-01	4.97E-02	1.17E-01
	1312.10	97.50	2.88E-01		1.67E-02	1.30E-01
CR-51	320.08	9.83	1.23E+00	1.23E+00	-3.06E-01	5.88E-01
MN-54	834.83	99.97	9.51E-02	9.51E-02	2.18E-02	4.43E-02
CO-56	846.75	99.96	1.05E-01	1.05E-01	9.02E-03	4.87E-02
	1037.75	14.03	7.92E-01		-3.00E-01	3.64E-01
	1238.25	67.00	2.33E-01		-2.74E-03	1.09E-01
	1771.40	15.51	5.00E-01		-3.33E-02	2.05E-01
	2598.48	16.90	1.05E-01		0.00E+00	0.00E+00
CO-57	122.06	85.51	6.03E-02	6.03E-02	-1.07E-02	2.93E-02
	136.48	10.60	5.01E-01		-9.50E-02	2.43E-01
CO-58	810.76	99.40	9.69E-02	9.69E-02	3.69E-04	4.46E-02
FE-59	1099.22	56.50	2.45E-01	2.45E-01	3.95E-02	1.12E-01
	1291.56	43.20	3.69E-01		3.32E-02	1.69E-01
CO-60	1173.22	100.00	1.03E-01	1.03E-01	-7.17E-03	4.73E-02
	1332.49	100.00	1.04E-01		-1.75E-02	4.75E-02
ZN-65	1115.52	50.75	1.98E-01	1.98E-01	4.72E-02	9.08E-02
GA-67	93.31	35.70	3.71E+01	3.71E+01	4.69E+01	1.81E+01
	208.95	2.24	6.72E+02		6.27E+02	3.27E+02
	300.22	16.00	9.87E+01		-3.28E+02	4.77E+01
SE-75	121.11	16.70	3.32E-01	9.71E-02	3.06E-02	1.61E-01
	136.00	59.20	9.71E-02		-2.27E-02	4.71E-02
	264.65	59.80	1.27E-01		2.18E-02	6.14E-02
	279.53	25.20	3.03E-01		-7.43E-03	1.46E-01
	400.65	11.40	7.37E-01		4.50E-01	3.52E-01
RB-82	776.52	13.00	1.23E+00	1.23E+00	2.23E-01	5.71E-01
RB-83	520.41	46.00	1.62E-01	1.62E-01	5.42E-02	7.57E-02
	529.64	30.30	3.03E-01		-2.55E-02	1.43E-01
	552.65	16.40	5.42E-01		1.01E-03	2.55E-01
KR-85	513.99	0.43	2.31E+01	2.31E+01	2.85E+01	1.11E+01
SR-85	513.99	99.27	1.32E-01	1.32E-01	1.62E-01	6.31E-02
Y-88	898.02	93.40	9.94E-02	9.94E-02	-3.25E-02	4.56E-02
	1836.01	99.38	1.01E-01		-7.54E-03	4.37E-02
NB-93M	16.57	9.43	7.78E+01	7.78E+01	8.55E+00	3.79E+01

: 00978

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94	702.63	100.00	8.95E-02	8.62E-02	5.22E-02	4.21E-02
	871.10	100.00	8.62E-02		-1.13E-02	3.99E-02
NB-95	765.79	99.81	1.71E-01	1.71E-01	1.88E-01	8.10E-02
NB-95M	235.69	25.00	5.78E+01	5.78E+01	1.12E+00	2.84E+01
ZR-95	724.18	43.70	2.89E-01	2.03E-01	-7.24E-02	1.36E-01
	756.72	55.30	2.03E-01		5.59E-03	9.50E-02
MO-99	181.06	6.20	4.93E+02	3.33E+02	7.22E+01	2.39E+02
	739.58	12.80	3.33E+02		1.76E+01	1.54E+02
	778.00	4.50	9.64E+02		-6.29E+02	4.46E+02
RU-103	497.08	89.00	1.21E-01	1.21E-01	-2.76E-02	5.70E-02
RU-106	621.84	9.80	7.88E-01	7.88E-01	-2.26E-01	3.69E-01
AG-108M	433.93	89.90	7.88E-02	7.88E-02	-1.98E-03	3.75E-02
	614.37	90.40	1.01E-01		4.03E-02	4.81E-02
	722.95	90.50	9.22E-02		1.26E-02	4.31E-02
+ CD-109	88.03	*	3.72	3.17E+00	3.86E+00	1.57E+00
AG-110M	657.75	93.14	7.85E-02	7.85E-02	-3.73E-02	3.64E-02
	677.61	10.53	7.25E-01		-5.31E-01	3.36E-01
	706.67	16.46	5.25E-01		-2.54E-01	2.46E-01
	763.93	21.98	4.21E-01		-3.41E-02	1.97E-01
	884.67	71.63	1.21E-01		-4.71E-02	5.59E-02
	1384.27	23.94	3.99E-01		4.17E-02	1.79E-01
CD-113M	263.70	0.02	2.82E+02	2.82E+02	8.37E+01	1.36E+02
SN-113	255.12	1.93	3.80E+00	1.23E-01	8.08E-01	1.83E+00
	391.69	64.90	1.23E-01		1.95E-04	5.86E-02
TE123M	159.00	84.10	7.20E-02	7.20E-02	9.16E-03	3.49E-02
SB-124	602.71	97.87	1.00E-01	1.00E-01	1.00E-02	4.70E-02
	645.85	7.26	1.38E+00		-2.71E-01	6.46E-01
	722.78	11.10	1.00E+00		1.37E-01	4.69E-01
	1691.02	49.00	2.19E-01		4.10E-02	9.49E-02
I-125	35.49	6.49	2.91E+00	2.91E+00	-1.39E+00	1.41E+00
SB-125	176.33	6.89	7.95E-01	2.35E-01	2.67E-01	3.85E-01
	427.89	29.33	2.35E-01		-2.94E-02	1.11E-01
	463.38	10.35	7.59E-01		5.13E-01	3.61E-01
	600.56	17.80	4.29E-01		1.32E-01	2.01E-01
	635.90	11.32	6.83E-01		5.86E-02	3.20E-01
SB-126	414.70	83.30	3.25E-01	3.13E-01	-1.17E-01	1.55E-01
	666.33	99.60	3.51E-01		1.92E-01	1.65E-01
	695.00	99.60	3.13E-01		-2.32E-01	1.46E-01
	720.50	53.80	6.10E-01		2.06E-01	2.85E-01
+ SN-126	87.57	*	37.00	3.07E-01	3.73E-01	1.52E-01
SB-127	473.00	25.00	2.44E+01	2.01E+01	-3.58E+00	1.15E+01
	685.20	35.70	2.01E+01		-2.77E+00	9.36E+00
	783.80	14.70	5.70E+01		3.28E+01	2.67E+01
I-129	29.78	57.00	4.27E-01	4.27E-01	-1.23E-01	2.07E-01
	33.60	13.20	1.24E+00		-3.27E-01	6.03E-01
	39.58	7.52	1.50E+00		-1.11E-01	7.31E-01
I-131	284.30	6.05	9.28E+00	6.70E-01	-2.64E+00	4.46E+00
	364.48	81.20	6.70E-01		-2.51E-01	3.19E-01
	636.97	7.26	9.08E+00		-1.90E+00	4.25E+00
	722.89	1.80	4.06E+01		5.55E+00	1.90E+01
TE-132	49.72	13.10	1.29E+02	1.66E+01	-1.70E+02	6.28E+01
	228.16	88.00	1.66E+01		-9.13E-01	8.04E+00
BA-133	81.00	33.00	1.84E-01	1.62E-01	-1.20E+00	9.01E-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)
BA-133	302.84	17.80	3.93E-01	1.62E-01	3.10E-02	1.89E-01
	356.01	60.00	1.62E-01		2.14E-02	7.86E-02
I-133	529.87	86.30	4.85E+07	4.85E+07	-4.07E+06	2.29E+07
XE-133	81.00	38.00	4.44E+00	4.44E+00	-2.89E+01	2.17E+00
CS-134	563.23	8.38	9.16E-01	8.58E-02	-1.26E-01	4.31E-01
	569.32	15.43	4.83E-01		8.83E-02	2.27E-01
	604.70	97.60	8.58E-02		9.18E-03	4.05E-02
	795.84	85.40	1.22E-01		7.81E-02	5.75E-02
	801.93	8.73	9.57E-01		-1.32E-01	4.44E-01
CS-135	268.24	16.00	4.38E-01	4.38E-01	3.82E-03	2.12E-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	2.69E+00	3.22E-01	8.89E-01	1.30E+00
	163.89	4.61	4.43E+00		1.31E+00	2.15E+00
	176.55	13.56	1.50E+00		3.65E-01	7.28E-01
	273.65	12.66	2.06E+00		-3.65E-01	9.96E-01
	340.57	48.50	6.77E-01		-5.49E-02	3.27E-01
	818.50	99.70	3.22E-01		1.29E-01	1.50E-01
	1048.07	79.60	4.69E-01		0.00E+00	2.17E-01
	1235.34	19.70	2.43E+00		-5.44E-01	1.13E+00
CS-137	661.65	85.12	8.65E-02	8.65E-02	-7.16E-02	4.03E-02
LA-138	788.74	34.00	2.73E-01	1.34E-01	7.08E-02	1.28E-01
	1435.80	66.00	1.34E-01		1.67E-02	5.97E-02
CE-139	165.85	80.35	7.68E-02	7.68E-02	1.34E-02	3.73E-02
BA-140	162.64	6.70	3.15E+00	1.24E+00	2.51E-01	1.53E+00
	304.84	4.50	5.47E+00		8.98E-01	2.63E+00
	423.70	3.20	8.01E+00		2.63E-01	3.80E+00
	437.55	2.00	1.43E+01		3.14E+00	6.80E+00
	537.32	25.00	1.24E+00		1.20E-01	5.87E-01
LA-140	328.77	20.50	1.34E+00	3.77E-01	2.84E-01	6.43E-01
	487.03	45.50	5.80E-01		-2.85E-01	2.74E-01
	815.85	23.50	1.27E+00		-7.19E-01	5.87E-01
	1596.49	95.49	3.77E-01		-5.23E-02	1.67E-01
CE-141	145.44	48.40	1.84E-01	1.84E-01	6.74E-02	8.92E-02
CE-143	57.36	11.80	1.96E+05	7.42E+04	5.22E+04	9.56E+04
	293.26	42.00	7.42E+04		1.66E+05	3.61E+04
	664.55	5.20	5.13E+05		1.57E+05	2.41E+05
CE-144	133.54	10.80	4.99E-01	4.99E-01	3.52E-02	2.43E-01
PM-144	476.78	42.00	1.69E-01	8.29E-02	-5.60E-02	8.00E-02
	618.01	98.60	8.65E-02		4.48E-02	4.08E-02
	696.49	99.49	8.29E-02		-3.22E-02	3.87E-02
PM-145	36.85	21.70	5.95E-01	3.20E-01	-2.47E-01	2.89E-01
	37.36	39.70	3.20E-01		1.02E-02	1.56E-01
	42.30	15.10	6.58E-01		-8.85E-01	3.21E-01
	72.40	2.31	3.49E+00		-7.19E+00	1.72E+00
PM-146	453.90	39.94	1.77E-01	1.77E-01	3.00E-02	8.39E-02
	735.90	14.01	5.37E-01		9.82E-02	2.49E-01
	747.13	13.10	5.71E-01		-8.27E-02	2.64E-01
ND-147	91.11	28.90	1.16E+00	1.16E+00	6.06E-01	5.67E-01
	531.02	13.10	2.80E+00		-1.10E+00	1.32E+00
PM-149	285.90	3.10	5.54E+03	5.54E+03	1.03E+03	2.66E+03
EU-152	121.78	20.50	2.37E-01	2.37E-01	-4.20E-02	1.15E-01

Analysis Report for 1510084-17

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	244.69	5.40	1.38E+00	2.37E-01	-1.05E+00	6.71E-01
	344.27	19.13	3.50E-01		-1.65E-02	1.68E-01
	778.89	9.20	8.39E-01		-3.18E-01	3.88E-01
	964.01	10.40	9.88E-01		-1.97E+00	4.61E-01
	1085.78	7.22	1.29E+00		3.26E-03	5.90E-01
	1112.02	9.60	1.10E+00		2.85E-01	5.08E-01
	1407.95	14.94	6.38E-01		-2.31E-01	2.87E-01
GD-153	97.43	31.30	1.68E-01	1.68E-01	-1.38E-01	8.15E-02
	103.18	22.20	2.33E-01		-5.18E-02	1.13E-01
EU-154	123.07	40.50	1.21E-01	1.21E-01	-9.00E-03	5.87E-02
	723.30	19.70	4.26E-01		5.82E-02	1.99E-01
	873.19	11.50	7.55E-01		-2.22E-01	3.50E-01
	996.32	10.30	7.10E-01		-7.69E-01	3.20E-01
	1004.76	17.90	4.76E-01		-6.91E-02	2.18E-01
+ EU-155 *	1274.45	35.50	2.85E-01	2.38E-01	-6.41E-02	1.30E-01
	86.50	30.90	3.72E-01		4.51E-01	1.84E-01
	105.30	20.70	2.38E-01		-1.15E-02	1.16E-01
EU-156	811.77	10.40	2.17E+00	2.17E+00	-1.19E+00	9.94E-01
	1153.47	7.20	5.03E+00		2.18E+00	2.34E+00
	1230.71	8.90	4.35E+00		1.05E-01	2.03E+00
HO-166M	184.41	72.60	9.18E-02	9.18E-02	1.30E-01	4.47E-02
	280.45	29.60	2.24E-01		-2.37E-03	1.08E-01
	410.94	11.10	7.01E-01		1.07E-03	3.35E-01
	711.69	54.10	1.55E-01		8.04E-02	7.26E-02
TM-171	66.72	0.14	5.06E+01	5.06E+01	9.69E+00	2.48E+01
HF-172	81.75	4.52	1.41E+00	4.54E-01	-3.78E+00	6.89E-01
	125.81	11.30	4.54E-01		-3.03E-01	2.20E-01
LU-172	181.53	20.60	3.47E+00	2.08E+00	5.81E-01	1.68E+00
	810.06	16.63	6.65E+00		3.67E+00	3.08E+00
	912.12	15.25	1.51E+01		3.57E+01	7.23E+00
	1093.66	62.50	2.08E+00		2.85E-01	9.57E-01
LU-173	100.72	5.24	9.50E-01	3.42E-01	-1.74E-01	4.62E-01
	272.11	21.20	3.42E-01		9.22E-02	1.65E-01
HF-175	343.40	84.00	1.05E-01	1.05E-01	1.77E-02	5.06E-02
LU-176	88.34	13.30	5.39E-01	6.76E-02	3.31E-01	2.64E-01
	201.83	86.00	7.59E-02		8.33E-03	3.69E-02
	306.78	94.00	6.76E-02		-2.11E-02	3.24E-02
TA-182	67.75	41.20	1.96E-01	1.96E-01	5.13E-02	9.61E-02
	1121.30	34.90	4.88E-01		6.18E-01	2.31E-01
	1189.05	16.23	8.31E-01		1.01E-01	3.86E-01
	1221.41	26.98	4.50E-01		5.73E-02	2.07E-01
	1231.02	11.44	1.29E+00		3.79E-01	6.01E-01
IR-192	308.46	29.68	2.78E-01	1.68E-01	-6.01E-02	1.33E-01
	468.07	48.10	1.68E-01		1.98E-02	7.91E-02
HG-203	279.19	77.30	1.29E-01	1.29E-01	9.69E-02	6.20E-02
BI-207	569.67	97.72	7.64E-02	7.64E-02	3.92E-02	3.60E-02
	1063.62	74.90	1.13E-01		3.58E-02	5.16E-02
TL-208	583.14	30.22	4.60E-01	4.60E-01	1.16E+00	2.23E-01
	860.37	4.48	2.29E+00		1.60E+00	1.07E+00
	2614.66	35.85	6.15E-01		1.00E+00	2.88E-01
BI-210M	262.00	45.00	1.43E-01	1.43E-01	3.09E-02	6.89E-02
	300.00	23.00	3.25E-01		-1.08E+00	1.57E-01
PB-210	46.50	4.25	2.15E+00	2.15E+00	7.73E-01	1.05E+00

Analysis Report for 1510084-17

CP1803S10-11

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PB-211	404.84		2.90	2.44E+00	2.44E+00	1.10E-01	1.16E+00
	831.96		2.90	2.88E+00		-9.57E-01	1.34E+00
+ BI-212	727.17	*	11.80	1.01E+00	1.01E+00	8.76E-01	4.81E-01
	1620.62		2.75	3.16E+00		1.27E+00	1.39E+00
+ PB-212	238.63	*	44.60	2.53E-01	2.53E-01	1.47E+00	1.24E-01
	300.09	*	3.41	3.41E+00		1.59E+00	1.67E+00
+ BI-214	609.31	*	46.30	1.98E-01	1.98E-01	1.24E+00	9.40E-02
	1120.29	*	15.10	1.09E+00		1.36E+00	5.19E-01
	1764.49	*	15.80	5.62E-01		1.65E+00	2.46E-01
	2204.22		4.98	2.26E+00		1.21E+00	9.99E-01
+ PB-214	295.21	*	19.19	5.91E-01	2.15E-01	1.42E+00	2.89E-01
	351.92	*	37.19	2.15E-01		1.55E+00	1.04E-01
RN-219	401.80		6.50	1.09E+00	1.09E+00	2.04E-01	5.18E-01
RA-223	323.87		3.88	1.63E+00	1.63E+00	-1.32E+00	7.83E-01
RA-224	240.98		3.95	3.35E+00	3.35E+00	1.93E+01	1.65E+00
RA-225	40.00		31.00	1.16E+00	1.16E+00	-8.57E-02	5.63E-01
+ RA-226	186.21	*	3.28	2.55E+00	2.55E+00	3.10E+00	1.25E+00
TH-227	50.10		8.40	9.36E-01	9.36E-01	-1.24E+00	4.57E-01
	236.00		11.50	9.99E-01		1.93E-02	4.91E-01
	256.20		6.30	9.83E-01		-1.51E-01	4.74E-01
+ AC-228	338.32	*	11.40	8.59E-01	5.58E-01	1.23E+00	4.17E-01
	911.07	*	27.70	5.58E-01		1.20E+00	2.67E-01
	969.11	*	16.60	7.28E-01		1.54E+00	3.43E-01
TH-230	48.44		16.90	5.06E-01	5.06E-01	-1.66E-01	2.47E-01
	62.85		4.60	1.67E+00		2.34E+00	8.20E-01
	67.67		0.37	1.88E+01		4.91E+00	9.19E+00
PA-231	283.67		1.60	3.99E+00	3.03E+00	-1.14E+00	1.92E+00
	302.67		2.30	3.03E+00		2.39E-01	1.46E+00
TH-231	25.64		14.70	3.09E+00	9.82E-01	-2.28E+00	1.50E+00
	84.21		6.40	9.82E-01		-1.86E+00	4.81E-01
PA-233	311.98		38.60	3.40E-01	3.40E-01	7.08E-02	1.64E-01
PA-234	131.20		20.40	2.61E-01	2.61E-01	1.25E-01	1.27E-01
	733.99		8.80	9.08E-01		5.32E-01	4.23E-01
	946.00		12.00	6.56E-01		1.36E-01	3.00E-01
+ PA-234M	1001.03	*	0.92	1.08E+01	1.08E+01	6.45E+00	5.02E+00
+ TH-234	63.29	*	3.80	2.26E+00	2.26E+00	1.77E+00	1.11E+00
U-235	143.76		10.50	5.03E-01	5.03E-01	2.20E-01	2.45E-01
	163.35		4.70	1.15E+00		3.40E-01	5.58E-01
	205.31		4.70	1.37E+00		-1.30E-01	6.67E-01
+ NP-237	86.50	*	12.60	9.02E-01	9.02E-01	1.10E+00	4.46E-01
NP-239	106.10		22.70	3.62E+02	3.62E+02	4.22E+01	1.76E+02
	228.18		10.70	1.06E+03		-5.86E+01	5.16E+02
	277.60		14.10	8.00E+02		4.85E+02	3.86E+02
AM-241	59.54		35.90	1.99E-01	1.99E-01	1.94E-02	9.71E-02
AM-243	74.67		66.00	1.45E-01	1.45E-01	3.87E-01	7.13E-02
CM-243	209.75		3.29	2.17E+00	4.88E-01	2.15E+00	1.06E+00
	228.14		10.60	6.50E-01		-3.58E-02	3.15E-01
	277.60		14.00	4.88E-01		2.96E-01	2.35E-01

Analysis Report for 1510084-17

CP1803S10-11

-
- + = 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: CP1803S10-11

Elapsed Live time: 3600
Elapsed Real Time: 3617

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		
	0	7	100	69	87	99	95	119	138	174	138	145	74	101	79	78	101	75	78	87	66	74	68	67	62	53	81	50	51	57	97	34	36	43	45	34	32	56	29	24	20	36	31	28	194	24		
	0	183	86	88	93	103	123	118	144	208	132	201	94	98	97	71	105	65	78	81	71	64	62	168	62	51	101	43	59	55	124	36	41	32	26	29	31	28	25	38	25	78	25	35	194	19		
	0	169	88	89	79	103	118	138	141	429	130	162	87	74	102	93	77	83	73	65	66	66	127	63	52	51	57	57	56	96	42	29	29	30	25	25	25	29	26	37	27	21	95	17	18	21		
	0	148	91	75	89	92	115	123	157	297	168	137	101	91	93	75	83	73	65	69	91	62	58	67	74	59	61	47	60	59	42	39	32	44	43	34	26	29	26	26	36	24	32	26	23	24	19	
	0	145	74	92	90	96	131	161	183	533	173	243	74	93	86	75	80	80	72	77	68	54	71	64	52	51	51	45	53	50	30	30	36	32	34	34	43	43	34	43	34	43	29	19	32	26	23	19
	0	104	104	84	79	146	124	142	158	452	142	182	89	87	87	91	83	71	57	62	67	59	59	69	59	39	47	55	184	30	37	37	53	43	31	46	23	43	31	46	23	29	19	25	30	25	17	19
	0	106	107	88	101	155	110	196	158	130	227	97	77	76	71	79	72	86	70	77	72	65	62	49	57	53	54	41	535	19	37	42	61	43	34	131	27	43	34	46	30	36	92	38	19	19		
	0	111	96	72	98	105	129	236	162	150	247	89	84	77	73	87	80	89	76	69	62	71	55	68	49	64	50	50	209	26	36	37	39	35	30	178	31	30	38	19	27	44	27	26	295	18	17	

369: 20 26 27 20 25 21 22 14

Sample Title: CP1803S10-11

Channel	1	2	3	4	5	6	7	8
377:	24	20	20	20	18	22	24	24
385:	18	29	23	19	27	22	19	16
393:	20	26	15	24	17	23	19	20
401:	25	26	24	20	13	16	22	25
409:	20	48	20	24	17	19	14	19
417:	16	13	17	19	12	18	18	16
425:	18	15	17	12	17	22	19	23
433:	15	20	16	15	21	16	20	25
441:	22	24	11	13	18	15	27	21
449:	15	15	18	19	14	16	17	17
457:	15	18	13	13	18	19	38	24
465:	15	10	14	12	15	10	14	10
473:	13	13	13	20	14	16	8	15
481:	20	20	13	7	15	14	17	19
489:	13	9	18	16	17	9	15	14
497:	12	12	21	12	14	14	19	15
505:	9	10	2	15	26	43	68	50
513:	20	20	16	12	8	5	15	9
521:	9	11	10	10	8	15	18	9
529:	20	16	8	17	13	17	18	17
537:	13	16	15	14	17	13	12	10
545:	10	14	9	14	8	13	13	12
553:	12	8	15	14	11	16	14	16
561:	17	10	15	10	9	13	11	15
569:	12	10	11	11	17	6	9	8
577:	13	16	14	13	10	23	112	114
585:	23	12	8	16	10	11	17	14
593:	5	13	7	7	13	7	15	12
601:	9	3	16	18	9	9	11	29
609:	159	153	44	8	6	14	18	9
617:	18	14	8	12	11	13	5	14
625:	9	8	10	8	9	6	9	10
633:	7	13	7	15	9	12	11	5
641:	16	11	15	9	9	6	9	9
649:	13	10	9	13	5	14	8	4
657:	13	7	12	6	5	8	14	9
665:	10	20	14	9	11	12	9	7
673:	13	15	11	13	4	9	7	7
681:	6	12	10	11	11	9	4	9
689:	13	12	8	9	3	17	10	9
697:	9	6	13	18	11	14	12	9
705:	11	12	8	8	11	10	14	11
713:	11	8	9	8	6	9	15	12
721:	10	6	8	13	11	11	37	26
729:	10	9	6	12	11	11	5	9
737:	9	3	6	4	7	16	12	7
745:	5	5	10	13	6	6	9	13
753:	12	4	11	14	11	13	8	8
761:	7	8	12	10	13	9	10	26
769:	22	9	3	9	12	11	6	12
777:	5	8	4	7	9	7	13	7
785:	7	17	12	10	6	10	8	13
793:	11	12	19	19	13	8	9	7

801: 8 9 5 8 10 6 14 6

Sample Title: CP1803S10-11

Channel	1	2	3	4	5	6	7	8
809:	8	6	4	10	7	5	1	7
817:	8	10	9	13	11	8	5	8
825:	10	3	9	8	8	6	8	10
833:	9	3	11	14	7	10	7	10
841:	11	4	5	9	9	8	8	8
849:	7	5	7	11	7	6	8	5
857:	9	5	3	16	26	11	10	6
865:	9	4	6	17	4	5	4	9
873:	8	7	9	12	10	6	10	12
881:	5	5	6	12	7	6	5	4
889:	9	6	3	3	8	8	1	4
897:	3	10	10	7	7	5	9	6
905:	10	9	8	9	8	18	71	67
913:	21	13	10	2	7	6	10	6
921:	10	6	5	3	6	9	9	5
929:	4	8	8	5	9	10	10	4
937:	7	6	5	9	3	6	6	1
945:	6	9	5	5	6	6	3	6
953:	6	6	8	6	9	13	12	3
961:	6	2	8	11	19	13	6	15
969:	53	35	6	7	4	5	6	7
977:	9	6	7	10	9	5	7	4
985:	2	5	4	10	8	9	4	5
993:	4	5	4	7	3	2	4	10
1001:	12	8	5	6	8	4	6	3
1009:	11	3	7	4	7	5	6	5
1017:	8	5	2	6	6	4	2	2
1025:	9	4	7	5	4	6	6	5
1033:	11	8	7	4	7	6	7	5
1041:	6	7	6	4	10	6	10	5
1049:	7	10	4	7	11	4	7	6
1057:	5	3	4	3	5	4	7	4
1065:	8	5	1	7	4	6	4	4
1073:	4	8	5	7	7	1	9	6
1081:	5	4	7	5	8	5	6	7
1089:	4	3	11	3	6	5	8	9
1097:	6	6	8	3	5	5	4	5
1105:	6	8	9	8	8	9	8	4
1113:	8	6	10	7	2	4	13	27
1121:	36	12	8	6	10	4	5	4
1129:	4	5	4	3	3	10	1	8
1137:	7	3	10	4	5	3	3	8
1145:	6	6	3	2	4	7	3	12
1153:	10	9	9	10	11	7	7	5
1161:	9	10	5	1	6	2	7	3
1169:	9	4	4	9	4	7	10	7
1177:	6	9	10	6	10	3	9	11
1185:	3	12	10	7	6	9	10	4
1193:	8	8	8	4	8	4	11	4
1201:	8	7	8	4	7	6	4	13
1209:	4	3	7	2	6	13	9	11
1217:	4	5	9	3	5	8	11	3
1225:	6	5	6	9	10	6	10	12

1233: 9 10 13 6 6 10 9 16

Sample Title: CP1803S10-11

Channel	1	2	3	4	5	6	7	8	9
1241:	4	10	8	2	5	2	6	9	
1249:	6	5	6	11	4	6	1	5	
1257:	3	5	5	6	3	3	8	4	
1265:	3	2	1	3	3	7	6	1	
1273:	3	4	3	5	4	5	10	3	
1281:	7	4	4	2	5	6	5	5	
1289:	3	4	4	6	3	8	5	3	
1297:	4	7	5	3	3	3	3	5	
1305:	7	5	1	0	6	2	3	5	
1313:	5	4	2	4	3	4	5	4	
1321:	4	6	7	3	4	9	3	4	
1329:	4	2	4	3	3	4	6	7	
1337:	2	1	2	7	6	5	2	3	
1345:	2	3	6	1	2	4	5	1	
1353:	2	10	3	2	3	2	4	1	
1361:	3	2	0	2	4	2	5	4	
1369:	3	1	2	4	2	7	2	4	
1377:	4	14	7	2	2	3	3	4	
1385:	4	2	4	1	4	2	2	3	
1393:	3	2	1	2	7	2	9	2	
1401:	2	6	3	4	2	2	2	7	
1409:	4	5	0	2	6	2	1	2	
1417:	3	4	2	1	1	3	2	1	
1425:	4	0	2	5	1	1	4	4	
1433:	1	2	2	3	4	1	2	4	
1441:	2	3	1	1	2	1	1	1	
1449:	4	4	0	0	3	2	3	1	
1457:	2	4	24	99	185	119	23	2	
1465:	2	3	1	3	3	4	1	1	
1473:	3	1	3	1	2	3	1	1	
1481:	1	5	1	1	1	3	1	1	
1489:	2	1	1	1	2	1	3	7	
1497:	3	2	2	2	0	4	1	1	
1505:	1	6	1	1	5	8	2	2	
1513:	2	3	1	2	5	0	1	1	
1521:	0	1	3	3	2	1	1	0	
1529:	6	3	5	3	3	1	2	1	
1537:	2	2	4	2	2	1	2	1	
1545:	2	0	3	2	4	1	3	0	
1553:	2	0	1	1	0	1	3	1	
1561:	2	0	0	1	2	1	0	1	
1569:	1	0	2	0	0	2	0	1	
1577:	1	4	3	2	0	3	3	3	
1585:	1	3	1	6	6	3	3	3	
1593:	6	6	0	0	2	1	3	0	
1601:	1	1	2	2	0	0	0	0	
1609:	2	0	1	1	1	0	2	1	
1617:	3	0	2	2	3	2	3	2	
1625:	2	0	0	2	2	6	1	2	
1633:	2	1	0	0	2	1	4	1	
1641:	2	2	1	1	1	4	2	0	
1649:	1	0	0	0	0	1	0	4	
1657:	1	2	1	1	3	3	2	0	

1665: 2 1 1 1 0 1 0 2

Sample Title: CP1803S10-11

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1673:	0	0	2	1	2	0	2	1
1681:	1	3	3	2	1	1	2	0
1689:	2	2	2	2	4	0	0	1
1697:	1	1	2	0	1	1	1	1
1705:	0	1	0	1	1	1	1	0
1713:	2	0	0	1	3	2	0	1
1721:	1	2	0	2	5	4	2	2
1729:	3	3	3	0	0	3	1	2
1737:	1	0	1	0	0	1	0	0
1745:	0	1	1	0	0	2	2	2
1753:	0	0	1	1	2	0	1	3
1761:	3	0	8	12	32	7	1	1
1769:	1	2	0	0	0	0	2	0
1777:	0	0	1	1	2	1	1	0
1785:	2	0	4	3	2	1	2	2
1793:	1	1	1	0	0	1	3	0
1801:	3	1	2	1	0	3	0	1
1809:	0	3	1	1	1	2	2	1
1817:	1	0	1	1	2	2	3	2
1825:	0	1	2	2	1	0	3	0
1833:	0	1	3	1	0	2	4	3
1841:	1	0	0	3	0	0	4	2
1849:	2	1	1	4	0	1	0	1
1857:	2	3	0	0	2	1	1	0
1865:	0	3	1	1	1	0	0	1
1873:	1	2	2	0	1	1	1	3
1881:	1	0	1	1	3	0	3	0
1889:	1	1	0	0	1	0	0	3
1897:	2	0	0	1	0	3	2	1
1905:	0	1	2	1	1	1	1	0
1913:	0	3	2	2	1	3	0	1
1921:	3	3	1	0	0	1	2	0
1929:	2	1	2	0	2	0	1	1
1937:	0	4	1	1	0	0	1	2
1945:	0	2	1	1	3	0	2	3
1953:	2	0	2	2	2	2	0	0
1961:	0	0	0	0	1	1	2	0
1969:	0	0	2	1	0	0	3	0
1977:	2	1	0	1	1	0	0	0
1985:	3	2	2	1	0	0	1	0
1993:	0	0	0	0	0	1	1	1
2001:	1	0	1	0	0	0	0	1
2009:	1	1	0	3	1	0	1	1
2017:	0	1	0	1	0	2	0	0
2025:	0	2	1	1	1	2	1	0
2033:	1	1	2	0	1	0	1	0
2041:	0	2	2	2	0	1	0	0
2049:	1	1	1	1	0	2	0	1
2057:	1	2	1	2	1	1	0	1
2065:	1	1	1	2	2	2	3	1
2073:	0	3	2	1	0	0	0	3
2081:	0	1	0	0	2	1	0	3
2089:	3	0	0	0	1	0	1	1

2097: 1 1 4 1 3 2 4 3

Sample Title: CP1803S10-11

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

2529: 1 0 1 0 0 0 0 0 0

Sample Title: CP1803S10-11

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	0	1	1	1	0	1
2545:	0	1	0	0	1	0	0	0
2553:	0	1	0	0	0	2	0	0
2561:	1	1	0	0	0	0	0	0
2569:	0	0	2	0	1	0	1	0
2577:	0	0	0	1	0	0	0	0
2585:	1	0	0	0	0	0	0	0
2593:	0	0	0	0	0	0	0	0
2601:	0	0	0	0	0	0	0	0
2609:	0	0	0	1	8	17	24	15
2617:	2	4	1	0	1	0	0	1
2625:	0	0	0	0	0	0	0	0
2633:	0	0	0	0	0	0	1	1
2641:	0	0	0	0	0	1	1	0
2649:	0	1	0	1	3	0	0	0
2657:	1	0	0	2	0	1	0	0
2665:	1	0	0	0	0	1	1	0
2673:	1	0	0	0	2	0	0	1
2681:	0	0	0	0	0	1	1	0
2689:	0	1	0	0	0	0	0	1
2697:	0	0	0	2	0	0	0	0
2705:	1	0	0	1	0	1	0	0
2713:	0	1	0	0	0	0	0	1
2721:	0	0	0	0	1	0	0	0
2729:	1	0	0	0	0	1	0	0
2737:	1	0	0	0	0	0	0	0
2745:	0	0	1	0	0	0	0	0
2753:	0	0	0	0	0	2	0	0
2761:	0	0	0	0	0	0	0	0
2769:	0	1	1	0	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0
2793:	0	0	0	0	1	0	1	1
2801:	0	0	0	0	0	0	1	0
2809:	0	2	0	0	0	0	0	0
2817:	0	0	0	0	0	0	0	0
2825:	0	0	0	0	0	1	0	0
2833:	0	0	1	0	0	0	1	0
2841:	0	1	0	0	0	0	0	0
2849:	0	0	0	0	1	0	0	0
2857:	0	0	0	0	0	1	0	0
2865:	0	0	0	0	0	0	0	1
2873:	0	0	0	0	1	0	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	1	0	0	1	1	0	0
2897:	0	0	0	0	1	0	0	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	1	0	0	2	0
2921:	0	0	0	1	1	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	1	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	1	0	0	0	0	0	0

2961: 0 0 0 1 0 0 1 0

Sample Title: CP1803S10-11

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

Sample Title: CP1803S10-11

Channel	1	2	3	4	5	6	7	8
3401:	0	0	0	1	0	0	0	0
3409:	1	1	0	0	0	0	0	0
3417:	0	0	0	0	1	1	0	0
3425:	0	1	0	0	0	0	1	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	1	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	1	0	0	0	0	0
3465:	0	0	0	0	0	1	0	1
3473:	0	0	0	0	1	1	0	0
3481:	0	0	0	1	0	0	0	0
3489:	0	1	0	0	0	1	0	0
3497:	0	0	0	0	1	0	0	0
3505:	0	0	0	1	0	0	1	1
3513:	0	0	0	0	0	0	1	0
3521:	0	0	0	0	0	0	0	1
3529:	1	0	0	0	0	0	0	0
3537:	1	0	0	0	0	0	1	0
3545:	0	0	1	0	0	0	0	1
3553:	0	0	0	0	0	0	0	0
3561:	0	0	1	0	0	0	0	0
3569:	0	0	0	0	0	0	0	1
3577:	0	1	1	0	0	0	0	1
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	1	0	0	0	0
3601:	0	0	0	0	1	1	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	1
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	1
3641:	0	0	0	0	0	0	1	0
3649:	0	1	0	1	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	1	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	1	0	1	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	1	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	1	0	0	0
3745:	0	0	0	0	1	1	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	1	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	1	0	0	2	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	1	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	1	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

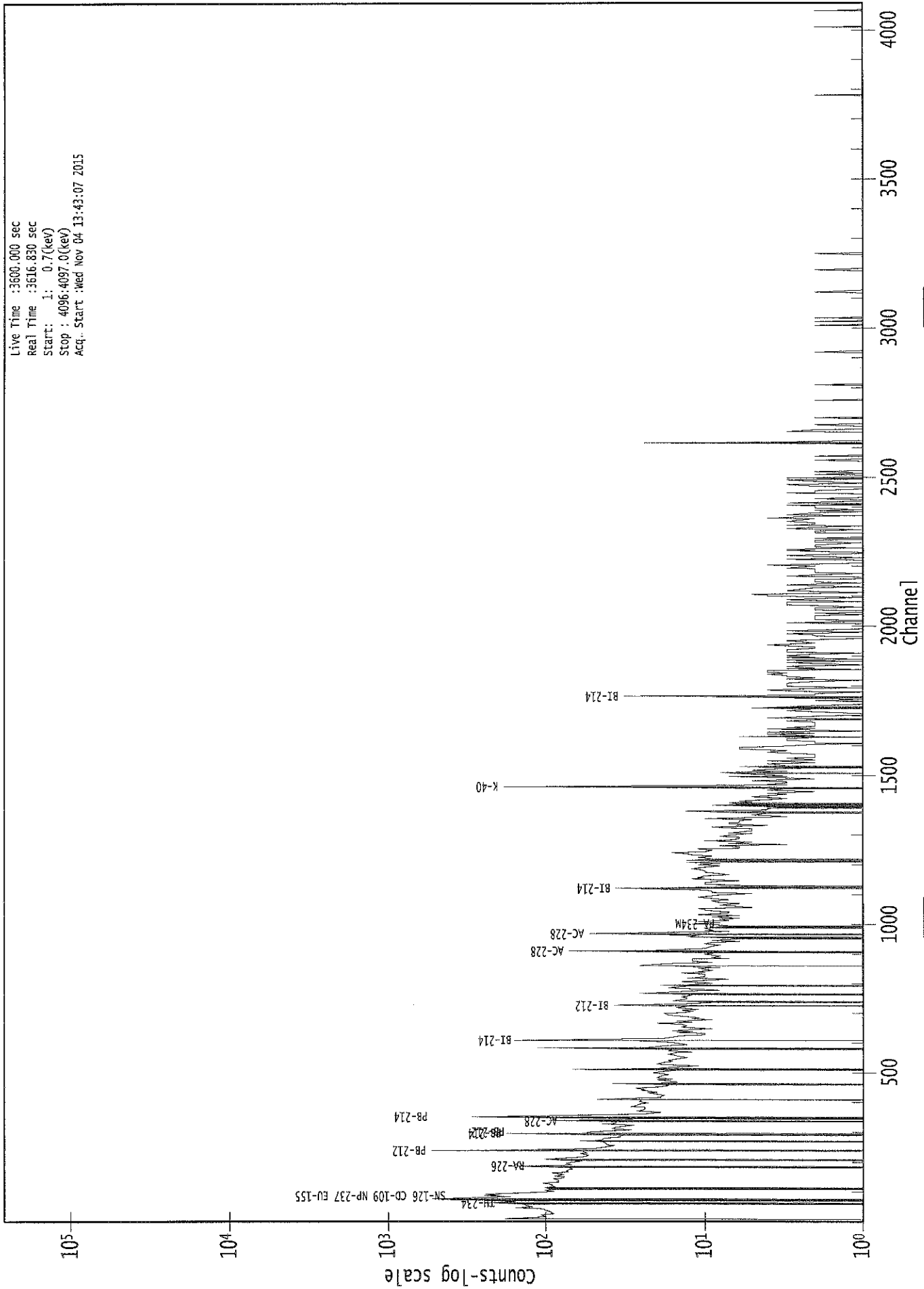
3825: 0 0 0 0 1 0 0 0

Sample Title: CP1803S10-11

Channel	1	2	3	4	5	6	7	8	9
3833:	0	0	0	0	0	1	0	0	0
3841:	0	0	0	1	0	0	0	0	0
3849:	0	0	1	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0	0
3865:	0	0	1	0	0	0	0	0	0
3873:	0	0	0	0	0	1	1	0	0
3881:	1	0	0	0	1	0	1	1	0
3889:	0	0	1	0	0	0	0	0	0
3897:	1	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	1	0
3913:	1	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0	0
3937:	0	0	1	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0	0
3961:	0	0	1	0	0	0	0	0	0
3969:	0	0	0	0	1	0	0	0	1
3977:	0	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0	0
3993:	1	0	0	0	0	1	1	0	0
4001:	0	0	0	0	0	0	0	0	0
4009:	0	2	0	0	0	0	0	0	0
4017:	0	0	0	0	0	1	0	0	0
4025:	0	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	1	0	0	0
4041:	1	0	0	0	1	0	0	0	0
4049:	0	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	1	0	1	0
4065:	2	0	1	0	0	0	0	0	0
4073:	0	0	0	0	0	0	1	0	0
4081:	0	0	0	0	0	0	1	0	0
4089:	0	0	0	0	0	0	0	0	0

0000029136.CNF

Live Time : 3600.000 sec
Real Time : 3616.830 sec
Start: 1: 0.7(keV)
Stop : 4096.4097 0(keV)
Acq. Start : Wed Nov 04 13:43:07 2015



ROI Type: 1

ROI Type: 2

KB
11/4/15



Analysis Report for 1510084-18
CP1803S12-13

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-18
Sample Description : CP1803S12-13
Sample Type : SOIL

Sample Size : 6.447E+02 grams
Facility : Countroom

Sample Taken On : 10/10/2015 9:52:55AM
Acquisition Started : 11/4/2015 1:43:17PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3638.8 seconds

Dead Time : 1.07 %

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 : 29137

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-18
CP1803S12-13

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 2:43:57PM
 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	63.30	62.57	0.0000	0.00
2	76.10	75.37	0.0000	0.00
3	167.43	166.74	0.0000	0.00
4	185.71	185.02	0.0000	0.00
5	238.90	238.23	0.0000	0.00
6	295.30	294.67	0.0000	0.00
7	300.39	299.75	0.0000	0.00
8	338.62	338.00	0.0000	0.00
9	351.79	351.18	0.0000	0.00
10	437.98	437.40	0.0000	0.00
11	490.95	490.40	0.0000	0.00
12	511.65	511.11	0.0000	0.00
13	583.74	583.24	0.0000	0.00
14	609.70	609.21	0.0000	0.00
15	719.77	719.33	0.0000	0.00
16	726.85	726.41	0.0000	0.00
17	837.97	837.59	0.0000	0.00
18	910.91	910.57	0.0000	0.00
19	969.15	968.85	0.0000	0.00
20	1008.67	1008.39	0.0000	0.00
21	1019.94	1019.66	0.0000	0.00
22	1120.15	1119.93	0.0000	0.00
23	1356.83	1356.74	0.0000	0.00
24	1461.12	1461.09	0.0000	0.00
25	1555.89	1555.92	0.0000	0.00
26	1593.33	1593.39	0.0000	0.00
27	1599.92	1599.98	0.0000	0.00
28	1660.07	1660.16	0.0000	0.00
29	1739.95	1740.10	0.0000	0.00
30	1756.35	1756.51	0.0000	0.00
31	1764.64	1764.81	0.0000	0.00
32	2332.44	2333.00	0.0000	0.00
33	2614.72	2615.49	0.0000	0.00

? = Adjacent peak noted
 Errors quoted at 2.000sigma

Analysis Report for 1510084-18
CP1803S12-13

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 2:43:57PM

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	63.30	57 -	80	62.57	2.47E+02	115.65	1.73E+03	4.13
m	2	76.10	57 -	80	75.37	8.97E+02	144.10	2.15E+03	4.09
	3	167.43	164 -	169	166.74	4.70E+01	53.67	5.32E+02	2.92
	4	185.71	180 -	190	185.02	1.76E+02	86.00	8.95E+02	2.26
	5	238.90	231 -	245	238.23	7.25E+02	109.98	9.71E+02	2.76
M	6	295.30	289 -	303	294.67	1.51E+02	43.90	2.86E+02	2.12
m	7	300.39	289 -	303	299.75	4.94E+01	48.46	3.24E+02	2.82
	8	338.62	333 -	343	338.00	1.15E+02	60.87	4.28E+02	2.42
	9	351.79	344 -	355	351.18	2.32E+02	62.90	3.80E+02	2.28
	10	437.98	432 -	441	437.40	3.07E+01	35.74	1.65E+02	3.08
	11	490.95	485 -	494	490.40	3.32E+01	34.38	1.50E+02	6.82
	12	511.65	505 -	519	511.11	1.28E+02	51.38	2.20E+02	4.41
	13	583.74	578 -	589	583.24	1.64E+02	46.22	1.82E+02	2.76
	14	609.70	604 -	615	609.21	1.45E+02	49.40	2.28E+02	2.90
	15	719.77	716 -	722	719.33	3.11E+01	22.02	6.38E+01	2.86
	16	726.85	723 -	731	726.41	3.94E+01	27.37	9.32E+01	1.86
	17	837.97	829 -	845	837.59	3.59E+01	37.30	1.18E+02	7.70
	18	910.91	905 -	916	910.57	8.75E+01	28.84	6.10E+01	2.12
	19	969.15	966 -	973	968.85	4.60E+01	22.98	5.19E+01	3.17
	20	1008.67	1004 -	1016	1008.39	1.90E+01	24.01	5.99E+01	5.77
	21	1019.94	1016 -	1025	1019.66	2.06E+01	19.18	4.28E+01	5.30
	22	1120.15	1114 -	1125	1119.93	3.12E+01	29.05	8.96E+01	1.85
	23	1356.83	1353 -	1360	1356.74	1.00E+01	9.38	8.00E+00	1.37
	24	1461.12	1454 -	1468	1461.09	2.49E+02	36.73	3.59E+01	2.81
	25	1555.89	1550 -	1561	1555.92	9.93E+00	11.49	1.01E+01	1.16
	26	1593.33	1591 -	1597	1593.39	8.38E+00	9.42	9.23E+00	1.09
	27	1599.92	1597 -	1602	1599.98	5.57E+00	6.08	2.86E+00	1.08
	28	1660.07	1657 -	1663	1660.16	8.55E+00	7.23	2.90E+00	1.29
	29	1739.95	1735 -	1744	1740.10	9.63E+00	8.54	4.75E+00	1.59
	30	1756.35	1751 -	1758	1756.51	4.29E+00	6.63	5.43E+00	0.97
	31	1764.64	1760 -	1769	1764.81	2.35E+01	12.73	9.00E+00	2.22
	32	2332.44	2328 -	2335	2333.00	7.00E+00	5.29	0.00E+00	2.50
	33	2614.72	2611 -	2620	2615.49	4.70E+01	13.71	0.00E+00	3.09

Analysis Report for 1510084-18

CP1803S12-13

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 : 11/4/2015 2:43:57PM

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	63.30	57 -	80	2.47E+02	115.65	1.73E+03	6.84E+01
m	2	76.10	57 -	80	8.97E+02	144.10	2.15E+03	7.63E+01
	3	167.43	164 -	169	4.70E+01	53.67	5.32E+02	4.27E+01
	4	185.71	180 -	190	1.76E+02	86.00	8.95E+02	6.72E+01
	5	238.90	231 -	245	7.25E+02	109.98	9.71E+02	7.88E+01
M	6	295.30	289 -	303	1.51E+02	43.90	2.86E+02	2.78E+01
m	7	300.39	289 -	303	4.94E+01	48.46	3.24E+02	2.96E+01
	8	338.62	333 -	343	1.15E+02	60.87	4.28E+02	4.68E+01
	9	351.79	344 -	355	2.32E+02	62.90	3.80E+02	4.52E+01
	10	437.98	432 -	441	3.07E+01	35.74	1.65E+02	2.79E+01
	11	490.95	485 -	494	3.32E+01	34.38	1.50E+02	2.66E+01
	12	511.65	505 -	519	1.28E+02	51.38	2.20E+02	3.79E+01
	13	583.74	578 -	589	1.64E+02	46.22	1.82E+02	3.16E+01
	14	609.70	604 -	615	1.45E+02	49.40	2.28E+02	3.55E+01
	15	719.77	716 -	722	3.11E+01	22.02	6.38E+01	1.56E+01
	16	726.85	723 -	731	3.94E+01	27.37	9.32E+01	2.00E+01
	17	837.97	829 -	845	3.59E+01	37.30	1.18E+02	2.90E+01
	18	910.91	905 -	916	8.75E+01	28.84	6.10E+01	1.80E+01
	19	969.15	966 -	973	4.60E+01	22.98	5.19E+01	2.48E+01
	20	1008.67	1004 -	1016	1.90E+01	24.01	5.99E+01	1.84E+01
	21	1019.94	1016 -	1025	2.06E+01	19.18	4.28E+01	1.39E+01
	22	1120.15	1114 -	1125	3.12E+01	29.05	8.96E+01	2.20E+01
	23	1356.83	1353 -	1360	1.00E+01	9.38	8.00E+00	5.70E+00
	24	1461.12	1454 -	1468	2.49E+02	36.73	3.59E+01	1.54E+01
	25	1555.89	1550 -	1561	9.93E+00	11.49	1.01E+01	7.90E+00
	26	1593.33	1591 -	1597	8.38E+00	9.42	9.23E+00	6.11E+00
	27	1599.92	1597 -	1602	5.57E+00	6.08	2.86E+00	3.15E+00
	28	1660.07	1657 -	1663	8.55E+00	7.23	2.90E+00	3.49E+00
	29	1739.95	1735 -	1744	9.63E+00	8.54	4.75E+00	4.83E+00
	30	1756.35	1751 -	1758	4.29E+00	6.63	5.43E+00	4.26E+00
	31	1764.64	1760 -	1769	2.35E+01	12.73	9.00E+00	6.78E+00

Analysis Report for 1510084-18

CP1803S12-13

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2332.44	2328 -	2335	7.00E+00	5.29	0.00E+00	0.00E+00
33	2614.72	2611 -	2620	4.70E+01	13.71	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 : 11/4/2015 2:43:57PM

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	63.30	57 -	80	62.57	2.47E+02	115.65	1.73E+03	TH-234 TH-230
m 2	76.10	57 -	80	75.37	8.97E+02	144.10	2.15E+03	.....
3	167.43	164 -	169	166.74	4.70E+01	53.67	5.32E+02	.....
4	185.71	180 -	190	185.02	1.76E+02	86.00	8.95E+02	RA-226
5	238.90	231 -	245	238.23	7.25E+02	109.98	9.71E+02	PB-212
M 6	295.30	289 -	303	294.67	1.51E+02	43.90	2.86E+02	PB-214
m 7	300.39	289 -	303	299.75	4.94E+01	48.46	3.24E+02	GA-67 PB-212 BI-210M
8	338.62	333 -	343	338.00	1.15E+02	60.87	4.28E+02	AC-228
9	351.79	344 -	355	351.18	2.32E+02	62.90	3.80E+02	PB-214
10	437.98	432 -	441	437.40	3.07E+01	35.74	1.65E+02	BA-140
11	490.95	485 -	494	490.40	3.32E+01	34.38	1.50E+02	.....
12	511.65	505 -	519	511.11	1.28E+02	51.38	2.20E+02	.....
13	583.74	578 -	589	583.24	1.64E+02	46.22	1.82E+02	TL-208
14	609.70	604 -	615	609.21	1.45E+02	49.40	2.28E+02	BI-214
15	719.77	716 -	722	719.33	3.11E+01	22.02	6.38E+01	SB-126
16	726.85	723 -	731	726.41	3.94E+01	27.37	9.32E+01	BI-212
17	837.97	829 -	845	837.59	3.59E+01	37.30	1.18E+02	.....
18	910.91	905 -	916	910.57	8.75E+01	28.84	6.10E+01	AC-228
19	969.15	966 -	973	968.85	4.60E+01	22.98	5.19E+01	AC-228
20	1008.67	1004 -	1016	1008.39	1.90E+01	24.01	5.99E+01	.....
21	1019.94	1016 -	1025	1019.66	2.06E+01	19.18	4.28E+01	.....

Analysis Report for 1510084-18
 CP1803S12-13

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
22	1120.15	1114 -	1125	1119.93	3.12E+01	29.05	8.96E+01	BI-214 SC-46
23	1356.83	1353 -	1360	1356.74	1.00E+01	9.38	8.00E+00	.....
24	1461.12	1454 -	1468	1461.09	2.49E+02	36.73	3.59E+01	K-40
25	1555.89	1550 -	1561	1555.92	9.93E+00	11.49	1.01E+01	.....
26	1593.33	1591 -	1597	1593.39	8.38E+00	9.42	9.23E+00	.....
27	1599.92	1597 -	1602	1599.98	5.57E+00	6.08	2.86E+00	.....
28	1660.07	1657 -	1663	1660.16	8.55E+00	7.23	2.90E+00	.....
29	1739.95	1735 -	1744	1740.10	9.63E+00	8.54	4.75E+00	.....
30	1756.35	1751 -	1758	1756.51	4.29E+00	6.63	5.43E+00	.....
31	1764.64	1760 -	1769	1764.81	2.35E+01	12.73	9.00E+00	BI-214
32	2332.44	2328 -	2335	2333.00	7.00E+00	5.29	0.00E+00	.....
33	2614.72	2611 -	2620	2615.49	4.70E+01	13.71	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 : 11/4/2015 2:43:57PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	1	63.30	2.47E+02	115.65	2.33E-02	1.76E-03
m	2	76.10	8.97E+02	144.10	2.13E-02	1.69E-03
	3	167.43	4.70E+01	53.67	1.26E-02	1.21E-03
	4	185.71	1.76E+02	86.00	1.16E-02	1.15E-03
	5	238.90	7.25E+02	109.98	9.41E-03	9.86E-04
M	6	295.30	1.51E+02	43.90	7.78E-03	8.43E-04
m	7	300.39	4.94E+01	48.46	7.66E-03	8.37E-04
	8	338.62	1.15E+02	60.87	6.85E-03	7.95E-04
	9	351.79	2.32E+02	62.90	6.61E-03	7.80E-04
	10	437.98	3.07E+01	35.74	5.36E-03	6.68E-04
	11	490.95	3.32E+01	34.38	4.79E-03	5.91E-04
	12	511.65	1.28E+02	51.38	4.60E-03	5.60E-04
	13	583.74	1.64E+02	46.22	4.04E-03	4.54E-04
	14	609.70	1.45E+02	49.40	3.87E-03	4.16E-04
	15	719.77	3.11E+01	22.02	3.29E-03	3.08E-04
	16	726.85	3.94E+01	27.37	3.26E-03	3.04E-04
	17	837.97	3.59E+01	37.30	2.83E-03	2.42E-04

Analysis Report for 1510084-18
 CP1803S12-13

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
18	910.91	8.75E+01	28.84	2.61E-03	2.06E-04
19	969.15	4.60E+01	22.98	2.46E-03	1.99E-04
20	1008.67	1.90E+01	24.01	2.37E-03	1.94E-04
21	1019.94	2.06E+01	19.18	2.34E-03	1.92E-04
22	1120.15	3.12E+01	29.05	2.14E-03	1.79E-04
23	1356.83	1.00E+01	9.38	1.80E-03	2.11E-04
24	1461.12	2.49E+02	36.73	1.68E-03	1.89E-04
25	1555.89	9.93E+00	11.49	1.59E-03	1.69E-04
26	1593.33	8.38E+00	9.42	1.56E-03	1.61E-04
27	1599.92	5.57E+00	6.08	1.56E-03	1.60E-04
28	1660.07	8.55E+00	7.23	1.51E-03	1.48E-04
29	1739.95	9.63E+00	8.54	1.45E-03	1.31E-04
30	1756.35	4.29E+00	6.63	1.44E-03	1.28E-04
31	1764.64	2.35E+01	12.73	1.43E-03	1.26E-04
32	2332.44	7.00E+00	5.29	1.16E-03	1.11E-04
33	2614.72	4.70E+01	13.71	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 : 11/4/2015 2:43:57PM

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	63.30	2.47E+02	115.65	5.38E+01	9.34E+00	1.93E+02	1.16E+02
m	2	76.10	8.97E+02	144.10			8.97E+02	1.44E+02
	3	167.43	4.70E+01	53.67			4.70E+01	5.37E+01
	4	185.71	1.76E+02	86.00	1.43E+01	7.33E+00	1.62E+02	8.63E+01
	5	238.90	7.25E+02	109.98	1.09E+01	6.39E+00	7.14E+02	1.10E+02
M	6	295.30	1.51E+02	43.90			1.51E+02	4.39E+01
m	7	300.39	4.94E+01	48.46			4.94E+01	4.85E+01
	8	338.62	1.15E+02	60.87			1.15E+02	6.09E+01
	9	351.79	2.32E+02	62.90	8.07E+00	5.01E+00	2.24E+02	6.31E+01
	10	437.98	3.07E+01	35.74			3.07E+01	3.57E+01
	11	490.95	3.32E+01	34.38			3.32E+01	3.44E+01
	12	511.65	1.28E+02	51.38	4.21E+01	4.92E+00	8.57E+01	5.16E+01
	13	583.74	1.64E+02	46.22			1.64E+02	4.62E+01
	14	609.70	1.45E+02	49.40	5.16E+00	1.63E+00	1.40E+02	4.94E+01

Analysis Report for 1510084-18

CP1803S12-13

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
15	719.77	3.11E+01	22.02			3.11E+01	2.20E+01
16	726.85	3.94E+01	27.37			3.94E+01	2.74E+01
17	837.97	3.59E+01	37.30			3.59E+01	3.73E+01
18	910.91	8.75E+01	28.84	1.01E+00	2.85E+00	8.65E+01	2.90E+01
19	969.15	4.60E+01	22.98			4.60E+01	2.30E+01
20	1008.67	1.90E+01	24.01			1.90E+01	2.40E+01
21	1019.94	2.06E+01	19.18			2.06E+01	1.92E+01
22	1120.15	3.12E+01	29.05			3.12E+01	2.91E+01
23	1356.83	1.00E+01	9.38			1.00E+01	9.38E+00
24	1461.12	2.49E+02	36.73			2.49E+02	3.67E+01
25	1555.89	9.93E+00	11.49			9.93E+00	1.15E+01
26	1593.33	8.38E+00	9.42			8.38E+00	9.42E+00
27	1599.92	5.57E+00	6.08			5.57E+00	6.08E+00
28	1660.07	8.55E+00	7.23			8.55E+00	7.23E+00
29	1739.95	9.63E+00	8.54			9.63E+00	8.54E+00
30	1756.35	4.29E+00	6.63			4.29E+00	6.63E+00
31	1764.64	2.35E+01	12.73	1.11E-01	9.77E-01	2.34E+01	1.28E+01
32	2332.44	7.00E+00	5.29			7.00E+00	5.29E+00
33	2614.72	4.70E+01	13.71	1.20E+00	1.02E+00	4.58E+01	1.37E+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 : 11/4/2015 2:43:57PM
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	63.30	2.47E+02	115.65	5.38E+01	9.34E+00	1.93E+02	1.16E+02
m 2	76.10	8.97E+02	144.10			8.97E+02	1.44E+02
3	167.43	4.70E+01	53.67			4.70E+01	5.37E+01
4	185.71	1.76E+02	86.00	1.43E+01	7.33E+00	1.62E+02	8.63E+01
5	238.90	7.25E+02	109.98	1.09E+01	6.39E+00	7.14E+02	1.10E+02
M 6	295.30	1.51E+02	43.90			1.51E+02	4.39E+01
m 7	300.39	4.94E+01	48.46			4.94E+01	4.85E+01
8	338.62	1.15E+02	60.87			1.15E+02	6.09E+01
9	351.79	2.32E+02	62.90	8.07E+00	5.01E+00	2.24E+02	6.31E+01

: 01002

Analysis Report for 1510084-18

CP1803S12-13

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
10	437.98	3.07E+01	35.74			3.07E+01	3.57E+01
11	490.95	3.32E+01	34.38			3.32E+01	3.44E+01
12	511.65	1.28E+02	51.38	4.21E+01	4.92E+00	8.57E+01	5.16E+01
13	583.74	1.64E+02	46.22			1.64E+02	4.62E+01
14	609.70	1.45E+02	49.40	5.16E+00	1.63E+00	1.40E+02	4.94E+01
15	719.77	3.11E+01	22.02			3.11E+01	2.20E+01
16	726.85	3.94E+01	27.37			3.94E+01	2.74E+01
17	837.97	3.59E+01	37.30			3.59E+01	3.73E+01
18	910.91	8.75E+01	28.84	1.01E+00	2.85E+00	8.65E+01	2.90E+01
19	969.15	4.60E+01	22.98			4.60E+01	2.30E+01
20	1008.67	1.90E+01	24.01			1.90E+01	2.40E+01
21	1019.94	2.06E+01	19.18			2.06E+01	1.92E+01
22	1120.15	3.12E+01	29.05			3.12E+01	2.91E+01
23	1356.83	1.00E+01	9.38			1.00E+01	9.38E+00
24	1461.12	2.49E+02	36.73			2.49E+02	3.67E+01
25	1555.89	9.93E+00	11.49			9.93E+00	1.15E+01
26	1593.33	8.38E+00	9.42			8.38E+00	9.42E+00
27	1599.92	5.57E+00	6.08			5.57E+00	6.08E+00
28	1660.07	8.55E+00	7.23			8.55E+00	7.23E+00
29	1739.95	9.63E+00	8.54			9.63E+00	8.54E+00
30	1756.35	4.29E+00	6.63			4.29E+00	6.63E+00
31	1764.64	2.35E+01	12.73	1.11E-01	9.77E-01	2.34E+01	1.28E+01
32	2332.44	7.00E+00	5.29			7.00E+00	5.29E+00
33	2614.72	4.70E+01	13.71	1.20E+00	1.02E+00	4.58E+01	1.37E+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	0.985	1460.81 *	10.67	1.61E+01	3.01E+00
TL-208	0.862	583.14 *	30.22	1.56E+00	4.74E-01
		860.37	4.48		
		2614.66 *	35.85	1.39E+00	4.41E-01
BI-212	0.765	727.17 *	11.80	1.19E+00	8.37E-01
		1620.62	2.75		
PB-212	0.989	238.63 *	44.60	1.98E+00	3.70E-01

Analysis Report for 1510084-18
 CP1803S12-13

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-212	0.989	300.09 *	3.41	2.20E+00	2.17E+00
BI-214	0.922	609.31 *	46.30	9.07E-01	3.35E-01
		1120.29 *	15.10	1.12E+00	1.05E+00
		1764.49 *	15.80	1.20E+00	6.64E-01
		2204.22	4.98		
PB-214	0.998	295.21 *	19.19	1.18E+00	3.65E-01
		351.92 *	37.19	1.06E+00	3.24E-01
RA-226	0.960	186.21 *	3.28	4.95E+00	9.44E+00
AC-228	0.995	338.32 *	11.40	1.72E+00	9.29E-01
		911.07 *	27.70	1.39E+00	4.79E-01
		969.11 *	16.60	1.31E+00	6.64E-01
TH-234	1.000	63.29 *	3.80	2.55E+00	1.54E+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 : 11/4/2015 2:43:57PM
 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	76.10	2.49281E-01	8.03		
3	167.43	1.30622E-02	57.07		
10	437.98	8.52753E-03	58.20	Tol.	BA-140
11	490.95	9.23354E-03	51.71		
12	511.65	2.38024E-02	30.12		
15	719.77	8.63316E-03	35.42	Tol.	SB-126
17	837.97	9.96784E-03	51.98		
20	1008.67	5.28628E-03	63.07		
21	1019.94	5.72751E-03	46.52		
23	1356.83	2.77778E-03	46.90		
25	1555.89	2.75926E-03	57.83		
26	1593.33	2.32906E-03	56.18	D-Esc	
27	1599.92	1.54762E-03	54.59		
28	1660.07	2.37500E-03	42.27		
29	1739.95	2.67361E-03	44.38		
30	1756.35	1.19048E-03	77.39	Sum	
32	2332.44	1.94444E-03	37.80		

Analysis Report for 1510084-18
CP1803S12-13

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	1.61E+01	3.01E+00
TL-208	0.86	583.14	*	30.22	1.56E+00	4.74E-01
		860.37		4.48		
		2614.66	*	35.85	1.39E+00	4.41E-01
BI-212	0.76	727.17	*	11.80	1.19E+00	8.37E-01
		1620.62		2.75		
PB-212	0.98	238.63	*	44.60	1.98E+00	3.70E-01
		300.09	*	3.41	2.20E+00	2.17E+00
BI-214	0.92	609.31	*	46.30	9.07E-01	3.35E-01
		1120.29	*	15.10	1.12E+00	1.05E+00
		1764.49	*	15.80	1.20E+00	6.64E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	1.18E+00	3.65E-01
		351.92	*	37.19	1.06E+00	3.24E-01
RA-226	0.96	186.21	*	3.28	4.95E+00	9.44E+00
AC-228	0.99	338.32	*	11.40	1.72E+00	9.29E-01
		911.07	*	27.70	1.39E+00	4.79E-01
		969.11	*	16.60	1.31E+00	6.64E-01
TH-234	1.00	63.29	*	3.80	2.55E+00	1.54E+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 1510084-18
CP1803S12-13

INTERFERENCE CORRECTED REPORT

<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>
K-40	0.985	1.61E+01	3.01E+00	
TL-208	0.862	1.47E+00	3.23E-01	
BI-212	0.765	1.19E+00	8.37E-01	
PB-212	0.989	1.99E+00	3.64E-01	
BI-214	0.922	9.79E-01	2.88E-01	
PB-214	0.998	1.11E+00	2.42E-01	
RA-226	0.960	4.95E+00	9.44E+00	
AC-228	0.995	1.42E+00	3.59E-01	
TH-234	1.000	2.55E+00	1.54E+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 1510084-18
 CP1803S12-13

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 2:43:57PM
 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	76.10	2.49281E-01	8.03		
3	167.43	1.30622E-02	57.07		
10	437.98	8.52753E-03	58.20	Tol.	BA-140
11	490.95	9.23354E-03	51.71		
12	511.65	2.38024E-02	30.12		
15	719.77	8.63316E-03	35.42	Tol.	SB-126
17	837.97	9.96784E-03	51.98		
20	1008.67	5.28628E-03	63.07		
21	1019.94	5.72751E-03	46.52		
23	1356.83	2.77778E-03	46.90		
25	1555.89	2.75926E-03	57.83		
26	1593.33	2.32906E-03	56.18	D-Esc	
27	1599.92	1.54762E-03	54.59		
28	1660.07	2.37500E-03	42.27		
29	1739.95	2.67361E-03	44.38		
30	1756.35	1.19048E-03	77.39	Sum	
32	2332.44	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 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 1510084-18

CP1803S12-13

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	7.36E-01	1.69E+00	1.69E+00
+	NA-22	1274.54	99.94	2.11E-02	1.91E-01	1.91E-01
+	NA-24	1368.53	99.99	5.98E+10	1.40E+11	2.06E+11
		2754.09	99.86	-6.55E+10		1.40E+11
+	AL-26	1808.65	99.76	3.52E-02	1.51E-01	1.51E-01
+	K-40	1460.81	*	10.67	1.61E+01	2.18E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-2.01E-01	8.36E-02	8.36E-02
		78.34	96.00	-1.86E-02		1.09E-01
+	SC-46	889.25	99.98	-7.77E-02	1.78E-01	1.78E-01
		1120.51	99.99	2.17E-01		2.69E-01
+	V-48	983.52	99.98	5.89E-02	4.55E-01	4.55E-01
		1312.10	97.50	1.54E-01		5.58E-01
+	CR-51	320.08	9.83	-3.53E-01	2.10E+00	2.10E+00
+	MN-54	834.83	99.97	3.08E-02	1.57E-01	1.57E-01
+	CO-56	846.75	99.96	-1.60E-02	1.65E-01	1.65E-01
		1037.75	14.03	-8.63E-02		1.39E+00
		1238.25	67.00	1.49E-01		4.13E-01
		1771.40	15.51	-4.81E-01		7.87E-01
		2598.48	16.90	1.33E-01		7.42E-01
+	CO-57	122.06	85.51	-7.43E-03	1.03E-01	1.03E-01
		136.48	10.60	-6.77E-01		8.80E-01
+	CO-58	810.76	99.40	-7.75E-02	1.72E-01	1.72E-01
+	FE-59	1099.22	56.50	-1.21E-01	4.28E-01	4.28E-01
		1291.56	43.20	-8.48E-02		5.60E-01
+	CO-60	1173.22	100.00	-1.32E-01	1.43E-01	1.43E-01
		1332.49	100.00	-2.23E-03		1.70E-01
+	ZN-65	1115.52	50.75	3.82E-03	4.04E-01	4.04E-01
+	GA-67	93.31	35.70	4.51E+01	5.45E+01	5.45E+01
		208.95	2.24	2.24E+02		1.00E+03
		300.22	16.00	-1.48E+02		1.51E+02
+	SE-75	121.11	16.70	-2.83E-02	1.73E-01	5.66E-01
		136.00	59.20	-6.58E-02		1.73E-01
		264.65	59.80	-1.15E-01		2.02E-01
		279.53	25.20	1.72E-02		4.80E-01
		400.65	11.40	5.49E-02		1.20E+00
+	RB-82	776.52	13.00	-1.03E+00	2.20E+00	2.20E+00
+	RB-83	520.41	46.00	-5.15E-02	2.91E-01	2.91E-01
		529.64	30.30	1.52E-01		5.08E-01
		552.65	16.40	-1.31E-01		8.98E-01
+	KR-85	513.99	0.43	5.30E+01	3.81E+01	3.81E+01
+	SR-85	513.99	99.27	3.02E-01	2.17E-01	2.17E-01
+	Y-88	898.02	93.40	5.37E-02	1.30E-01	1.97E-01
		1836.01	99.38	1.32E-02		1.30E-01
+	NB-93M	16.57	9.43	8.64E-01	4.03E-01	4.03E-01
+	NB-94	702.63	100.00	-3.39E-02	1.44E-01	1.44E-01
		871.10	100.00	1.79E-02		1.51E-01

Analysis Report for 1510084-18
CP1803S12-13

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-95	765.79	99.81	-5.40E-02	2.44E-01	2.44E-01
+	NB-95M	235.69	25.00	2.41E+02	8.52E+01	8.52E+01
+	ZR-95	724.18	43.70	2.41E-01	3.29E-01	5.10E-01
		756.72	55.30	1.20E-01		3.29E-01
+	MO-99	181.06	6.20	-7.57E+01	5.97E+02	8.81E+02
		739.58	12.80	-1.04E+02		5.97E+02
		778.00	4.50	-4.62E+02		1.82E+03
+	RU-103	497.08	89.00	4.40E-02	2.14E-01	2.14E-01
+	RU-106	621.84	9.80	8.25E-02	1.43E+00	1.43E+00
+	AG-108M	433.93	89.90	2.22E-02	1.14E-01	1.14E-01
		614.37	90.40	-1.12E-02		1.86E-01
		722.95	90.50	1.30E-01		1.93E-01
+	CD-109	88.03	3.72	1.63E+00	2.61E+00	2.61E+00
+	AG-110M	657.75	93.14	2.63E-02	1.49E-01	1.49E-01
		677.61	10.53	-3.37E-01		1.35E+00
		706.67	16.46	1.58E-01		9.37E-01
		763.93	21.98	-4.82E-01		6.76E-01
		884.67	71.63	-7.85E-03		2.16E-01
		1384.27	23.94	1.55E-02		7.10E-01
+	CD-113M	263.70	0.02	-2.42E+02	4.49E+02	4.49E+02
+	SN-113	255.12	1.93	-1.61E+00	2.01E-01	5.78E+00
		391.69	64.90	-5.79E-03		2.01E-01
+	TE123M	159.00	84.10	-4.25E-02	1.24E-01	1.24E-01
+	SB-124	602.71	97.87	-1.68E-02	1.86E-01	1.86E-01
		645.85	7.26	7.24E-01		2.46E+00
		722.78	11.10	-2.61E-01		1.93E+00
		1691.02	49.00	7.23E-02		3.21E-01
+	I-125	35.49	6.49	-3.23E-01	9.27E-01	9.27E-01
+	SB-125	176.33	6.89	-2.20E-01	3.80E-01	1.31E+00
		427.89	29.33	1.90E-01		3.80E-01
		463.38	10.35	2.53E-01		1.24E+00
		600.56	17.80	-1.27E-01		7.50E-01
		635.90	11.32	-3.52E-01		1.13E+00
+	SB-126	414.70	83.30	-1.02E-01	5.14E-01	5.32E-01
		666.33	99.60	-2.10E-01		5.14E-01
		695.00	99.60	4.27E-01		6.54E-01
		720.50	53.80	-6.95E-01		1.16E+00
+	SN-126	87.57	37.00	1.57E-01	2.52E-01	2.52E-01
+	SB-127	473.00	25.00	3.31E+00	3.85E+01	4.49E+01
		685.20	35.70	3.52E+00		3.85E+01
		783.80	14.70	9.00E+00		9.60E+01
+	I-129	29.78	57.00	1.17E-02	7.65E-02	7.65E-02
		33.60	13.20	-1.88E-01		3.32E-01
		39.58	7.52	-1.04E-01		6.36E-01
+	I-131	284.30	6.05	-8.66E+00	1.17E+00	1.47E+01
		364.48	81.20	1.73E-01		1.17E+00
		636.97	7.26	6.82E-01		1.56E+01
		722.89	1.80	-1.05E+01		7.81E+01

Analysis Report for 1510084-18

CP1803S12-13

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE-132	49.72	13.10	3.69E+01	2.47E+01	9.38E+01
		228.16	88.00	7.35E+00		2.47E+01
+	BA-133	81.00	33.00	-9.28E-02	2.64E-01	2.95E-01
		302.84	17.80	-6.42E-02		6.06E-01
		356.01	60.00	-3.18E-02		2.64E-01
+	I-133	529.87	86.30	2.43E+07	8.13E+07	8.13E+07
+	XE-133	81.00	38.00	-2.24E+00	7.11E+00	7.11E+00
+	CS-134	563.23	8.38	-2.90E-01	1.79E-01	1.52E+00
		569.32	15.43	-2.49E-01		7.86E-01
		604.70	97.60	1.80E-02		1.79E-01
		795.84	85.40	5.08E-02		1.91E-01
		801.93	8.73	8.18E-01		1.86E+00
+	CS-135	268.24	16.00	2.62E-01	7.00E-01	7.00E-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	-4.42E-01	5.51E-01	4.52E+00
		163.89	4.61	-7.51E-01		7.70E+00
		176.55	13.56	-4.14E-01		2.47E+00
		273.65	12.66	9.44E-01		3.38E+00
		340.57	48.50	1.59E+00		1.07E+00
		818.50	99.70	1.54E-01		5.51E-01
		1048.07	79.60	1.56E-01		7.85E-01
		1235.34	19.70	6.87E-01		4.16E+00
+	CS-137	661.65	85.12	5.22E-02	1.55E-01	1.55E-01
+	LA-138	788.74	34.00	-4.80E-02	1.64E-01	4.45E-01
		1435.80	66.00	-1.20E-01		1.64E-01
+	CE-139	165.85	80.35	7.33E-03	1.35E-01	1.35E-01
+	BA-140	162.64	6.70	-3.24E-01	1.99E+00	5.47E+00
		304.84	4.50	-3.54E-01		8.98E+00
		423.70	3.20	3.18E+00		1.38E+01
		437.55	2.00	3.96E+00		2.16E+01
		537.32	25.00	3.09E-01		1.99E+00
+	LA-140	328.77	20.50	1.04E+00	6.52E-01	2.34E+00
		487.03	45.50	-1.22E-01		9.45E-01
		815.85	23.50	-8.64E-01		2.24E+00
		1596.49	95.49	2.89E-01		6.52E-01
+	CE-141	145.44	48.40	1.19E-01	3.27E-01	3.27E-01
+	CE-143	57.36	11.80	1.37E+04	1.03E+05	1.84E+05
		293.26	42.00	8.05E+04		1.03E+05
		664.55	5.20	2.26E+05		8.25E+05
+	CE-144	133.54	10.80	2.63E-01	8.92E-01	8.92E-01
+	PM-144	476.78	42.00	1.10E-01	1.41E-01	3.15E-01
		618.01	98.60	2.38E-02		1.41E-01
		696.49	99.49	5.47E-02		1.66E-01
+	PM-145	36.85	21.70	-5.85E-02	1.17E-01	2.10E-01
		37.36	39.70	-1.14E-02		1.17E-01
		42.30	15.10	4.20E-02		3.39E-01
		72.40	2.31	8.12E+00		4.32E+00

Analysis Report for 1510084-18
CP1803S12-13

	<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-146	453.90	39.94	-8.88E-02	2.88E-01	2.88E-01
		735.90	14.01	3.97E-01		1.04E+00
		747.13	13.10	4.81E-01		1.06E+00
+	ND-147	91.11	28.90	2.96E+00	1.65E+00	1.65E+00
		531.02	13.10	1.31E+00		4.79E+00
+	PM-149	285.90	3.10	-2.55E+03	8.87E+03	8.87E+03
+	EU-152	121.78	20.50	-2.91E-02	4.03E-01	4.03E-01
		244.69	5.40	1.34E-01		2.39E+00
		344.27	19.13	-2.99E+00		5.69E-01
		778.89	9.20	-3.98E-01		1.57E+00
		964.01	10.40	3.13E-01		2.08E+00
		1085.78	7.22	-8.00E-01		2.13E+00
		1112.02	9.60	2.64E-01		1.85E+00
		1407.95	14.94	1.22E-01		1.01E+00
+	GD-153	97.43	31.30	-1.66E-01	2.83E-01	2.83E-01
		103.18	22.20	-1.33E-01		3.75E-01
+	EU-154	123.07	40.50	-1.08E-01	2.07E-01	2.07E-01
		723.30	19.70	5.99E-01		8.90E-01
		873.19	11.50	8.05E-02		1.34E+00
		996.32	10.30	1.83E-01		1.45E+00
		1004.76	17.90	-5.88E-02		9.14E-01
		1274.45	35.50	5.87E-02		5.31E-01
+	EU-155	86.50	30.90	5.40E-04	2.99E-01	2.99E-01
		105.30	20.70	-4.12E-02		3.76E-01
+	EU-156	811.77	10.40	-2.94E-01	4.14E+00	4.14E+00
		1153.47	7.20	1.63E-01		8.55E+00
		1230.71	8.90	-1.72E+00		6.98E+00
+	HO-166M	184.41	72.60	2.41E-01	1.52E-01	1.52E-01
		280.45	29.60	4.26E-03		3.54E-01
		410.94	11.10	-5.59E-02		1.01E+00
		711.69	54.10	1.55E-03		2.59E-01
+	TM-171	66.72	0.14	-1.66E+01	5.83E+01	5.83E+01
+	HF-172	81.75	4.52	-1.11E+00	7.88E-01	2.05E+00
		125.81	11.30	-1.99E-01		7.88E-01
+	LU-172	181.53	20.60	-1.02E+00	3.82E+00	6.52E+00
		810.06	16.63	-4.89E+00		1.09E+01
		912.12	15.25	2.30E+01		1.99E+01
		1093.66	62.50	8.10E-01		3.82E+00
+	LU-173	100.72	5.24	-9.06E-01	5.56E-01	1.55E+00
		272.11	21.20	2.33E-01		5.56E-01
+	HF-175	343.40	84.00	-3.20E-01	1.76E-01	1.76E-01
+	LU-176	88.34	13.30	1.06E+00	1.05E-01	7.19E-01
		201.83	86.00	-3.52E-02		1.18E-01
		306.78	94.00	-5.71E-03		1.05E-01
+	TA-182	67.75	41.20	-5.36E-01	2.23E-01	2.23E-01
		1121.30	34.90	4.69E-01		7.19E-01
		1189.05	16.23	-2.07E-01		1.31E+00
		1221.41	26.98	-8.72E-02		7.88E-01
		1231.02	11.44	-4.95E-01		2.01E+00

Analysis Report for 1510084-18
CP1803S12-13

	<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>
+	IR-192	308.46	29.68	-5.83E-02	3.03E-01	4.27E-01
		468.07	48.10	-2.10E-01		3.03E-01
+	HG-203	279.19	77.30	7.04E-03	1.96E-01	1.96E-01
+	BI-207	569.67	97.72	-3.85E-02	1.22E-01	1.22E-01
		1063.62	74.90	6.56E-02		2.20E-01
+	TL-208	583.14	* 30.22	1.56E+00	2.03E-01	6.29E-01
		860.37	4.48	1.53E-01		2.92E+00
		2614.66	* 35.85	1.39E+00		2.03E-01
+	BI-210M	262.00	45.00	-2.03E-02	2.25E-01	2.25E-01
		300.00	23.00	5.60E-01		5.57E-01
+	PB-210	46.50	4.25	-6.53E-01	1.27E+00	1.27E+00
+	PB-211	404.84	2.90	2.55E-01	4.05E+00	4.05E+00
		831.96	2.90	4.37E-01		5.10E+00
+	BI-212	727.17	* 11.80	1.19E+00	1.29E+00	1.29E+00
		1620.62	2.75	1.96E+00		5.18E+00
+	PB-212	238.63	* 44.60	1.98E+00	4.47E-01	4.47E-01
		300.09	* 3.41	2.20E+00		5.69E+00
+	BI-214	609.31	* 46.30	9.07E-01	4.81E-01	4.81E-01
		1120.29	* 15.10	1.12E+00		1.68E+00
		1764.49	* 15.80	1.20E+00		8.43E-01
		2204.22	4.98	1.34E+00		3.65E+00
+	PB-214	295.21	* 19.19	1.18E+00	4.46E-01	9.89E-01
		351.92	* 37.19	1.06E+00		4.46E-01
+	RN-219	401.80	6.50	-2.74E-01	1.80E+00	1.80E+00
+	RA-223	323.87	3.88	-4.76E-01	2.97E+00	2.97E+00
+	RA-224	240.98	3.95	2.01E+01	4.68E+00	4.68E+00
+	RA-225	40.00	31.00	-8.25E-02	5.03E-01	5.03E-01
+	RA-226	186.21	* 3.28	4.95E+00	4.22E+00	4.22E+00
+	TH-227	50.10	8.40	2.72E-01	6.92E-01	6.92E-01
		236.00	11.50	4.17E+00		1.47E+00
		256.20	6.30	-6.14E-01		1.51E+00
+	AC-228	338.32	* 11.40	1.72E+00	6.32E-01	1.44E+00
		911.07	* 27.70	1.39E+00		6.32E-01
		969.11	* 16.60	1.31E+00		1.49E+00
+	TH-230	48.44	16.90	7.42E-02	3.34E-01	3.34E-01
		62.85	4.60	1.87E+00		1.67E+00
		67.67	0.37	-5.12E+01		2.13E+01
+	PA-231	283.67	1.60	-2.29E+00	4.67E+00	6.39E+00
		302.67	2.30	-4.94E-01		4.67E+00
+	TH-231	25.64	14.70	-5.99E-02	2.97E-01	2.97E-01
		84.21	6.40	-5.41E-01		1.35E+00
+	PA-233	311.98	38.60	8.63E-02	5.16E-01	5.16E-01
+	PA-234	131.20	20.40	4.41E-01	4.53E-01	4.53E-01
		733.99	8.80	2.49E-01		1.61E+00
		946.00	12.00	-3.85E-02		1.29E+00
+	PA-234M	1001.03	0.92	2.24E+00	1.65E+01	1.65E+01
+	TH-234	63.29	* 3.80	2.55E+00	5.11E+00	5.11E+00

Analysis Report for 1510084-18
CP1803S12-13

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	U-235	143.76	10.50	3.59E-01	8.76E-01	8.76E-01
		163.35	4.70	-1.95E-01		2.00E+00
		205.31	4.70	7.54E-01		2.24E+00
+	NP-237	86.50	12.60	1.31E-03	7.27E-01	7.27E-01
+	NP-239	106.10	22.70	-6.18E+01	5.64E+02	5.64E+02
		228.18	10.70	2.08E+02		1.58E+03
		277.60	14.10	-2.35E+02		1.25E+03
+	AM-241	59.54	35.90	-2.83E-02	1.98E-01	1.98E-01
+	AM-243	74.67	66.00	6.07E-01	1.60E-01	1.60E-01
+	CM-243	209.75	3.29	1.42E+00	7.63E-01	3.23E+00
		228.14	10.60	2.88E-01		9.67E-01
		277.60	14.00	-1.43E-01		7.63E-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	1.69E+00	1.69E+00	7.36E-01	8.05E-01
	NA-22	1274.54	99.94	1.91E-01	1.91E-01	2.11E-02	8.71E-02
	NA-24	1368.53	99.99	2.06E+11	1.40E+11	5.98E+10	9.13E+10
		2754.09	99.86	1.40E+11		-6.55E+10	4.97E+10
	AL-26	1808.65	99.76	1.51E-01	1.51E-01	3.52E-02	6.41E-02
+	K-40	1460.81	* 10.67	2.18E+00	2.18E+00	1.61E+01	1.00E+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	8.36E-02	8.36E-02	-2.01E-01	4.11E-02
		78.34	96.00	1.09E-01		-1.86E-02	5.37E-02
	SC-46	889.25	99.98	1.78E-01	1.78E-01	-7.77E-02	8.19E-02

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Analysis Report for 1510084-18

CP1803S12-13

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	2.69E-01	1.78E-01	2.17E-01	1.25E-01
V-48	983.52	99.98	4.55E-01	4.55E-01	5.89E-02	2.08E-01
	1312.10	97.50	5.58E-01		1.54E-01	2.53E-01
CR-51	320.08	9.83	2.10E+00	2.10E+00	-3.53E-01	1.01E+00
MN-54	834.83	99.97	1.57E-01	1.57E-01	3.08E-02	7.27E-02
CO-56	846.75	99.96	1.65E-01	1.65E-01	-1.60E-02	7.54E-02
	1037.75	14.03	1.39E+00		-8.63E-02	6.36E-01
	1238.25	67.00	4.13E-01		1.49E-01	1.92E-01
	1771.40	15.51	7.87E-01		-4.81E-01	3.05E-01
	2598.48	16.90	7.42E-01		1.33E-01	2.63E-01
CO-57	122.06	85.51	1.03E-01	1.03E-01	-7.43E-03	5.02E-02
	136.48	10.60	8.80E-01		-6.77E-01	4.29E-01
CO-58	810.76	99.40	1.72E-01	1.72E-01	-7.75E-02	7.91E-02
FE-59	1099.22	56.50	4.28E-01	4.28E-01	-1.21E-01	1.95E-01
	1291.56	43.20	5.60E-01		-8.48E-02	2.51E-01
CO-60	1173.22	100.00	1.43E-01	1.43E-01	-1.32E-01	6.38E-02
	1332.49	100.00	1.70E-01		-2.23E-03	7.63E-02
ZN-65	1115.52	50.75	4.04E-01	4.04E-01	3.82E-03	1.86E-01
GA-67	93.31	35.70	5.45E+01	5.45E+01	4.51E+01	2.68E+01
	208.95	2.24	1.00E+03		2.24E+02	4.87E+02
	300.22	16.00	1.51E+02		-1.48E+02	7.28E+01
SE-75	121.11	16.70	5.66E-01	1.73E-01	-2.83E-02	2.76E-01
	136.00	59.20	1.73E-01		-6.58E-02	8.44E-02
	264.65	59.80	2.02E-01		-1.15E-01	9.76E-02
	279.53	25.20	4.80E-01		1.72E-02	2.31E-01
	400.65	11.40	1.20E+00		5.49E-02	5.71E-01
RB-82	776.52	13.00	2.20E+00	2.20E+00	-1.03E+00	1.02E+00
RB-83	520.41	46.00	2.91E-01	2.91E-01	-5.15E-02	1.36E-01
	529.64	30.30	5.08E-01		1.52E-01	2.40E-01
	552.65	16.40	8.98E-01		-1.31E-01	4.21E-01
KR-85	513.99	0.43	3.81E+01	3.81E+01	5.30E+01	1.83E+01
SR-85	513.99	99.27	2.17E-01	2.17E-01	3.02E-01	1.04E-01
Y-88	898.02	93.40	1.97E-01	1.30E-01	5.37E-02	9.12E-02
	1836.01	99.38	1.30E-01		1.32E-02	5.17E-02
NB-93M	16.57	9.43	4.03E-01	4.03E-01	8.64E-01	1.96E-01
NB-94	702.63	100.00	1.44E-01	1.44E-01	-3.39E-02	6.73E-02
	871.10	100.00	1.51E-01		1.79E-02	6.95E-02
NB-95	765.79	99.81	2.44E-01	2.44E-01	-5.40E-02	1.14E-01
NB-95M	235.69	25.00	8.52E+01	8.52E+01	2.41E+02	4.18E+01
ZR-95	724.18	43.70	5.10E-01	3.29E-01	2.41E-01	2.40E-01
	756.72	55.30	3.29E-01		1.20E-01	1.52E-01
MO-99	181.06	6.20	8.81E+02	5.97E+02	-7.57E+01	4.29E+02
	739.58	12.80	5.97E+02		-1.04E+02	2.77E+02
	778.00	4.50	1.82E+03		-4.62E+02	8.43E+02
RU-103	497.08	89.00	2.14E-01	2.14E-01	4.40E-02	1.01E-01
RU-106	621.84	9.80	1.43E+00	1.43E+00	8.25E-02	6.70E-01
AG-108M	433.93	89.90	1.14E-01	1.14E-01	2.22E-02	5.38E-02
	614.37	90.40	1.86E-01		-1.12E-02	8.82E-02
	722.95	90.50	1.93E-01		1.30E-01	9.10E-02
CD-109	88.03	3.72	2.61E+00	2.61E+00	1.63E+00	1.28E+00
AG-110M	657.75	93.14	1.49E-01	1.49E-01	2.63E-02	6.94E-02
	677.61	10.53	1.35E+00		-3.37E-01	6.28E-01
	706.67	16.46	9.37E-01		1.58E-01	4.38E-01

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Analysis Report for 1510084-18

CP1803S12-13

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	6.76E-01	1.49E-01	-4.82E-01	3.13E-01
	884.67	71.63	2.16E-01		-7.85E-03	9.90E-02
	1384.27	23.94	7.10E-01		1.55E-02	3.15E-01
CD-113M	263.70	0.02	4.49E+02	4.49E+02	-2.42E+02	2.16E+02
SN-113	255.12	1.93	5.78E+00	2.01E-01	-1.61E+00	2.78E+00
	391.69	64.90	2.01E-01		-5.79E-03	9.56E-02
TE123M	159.00	84.10	1.24E-01	1.24E-01	-4.25E-02	6.04E-02
SB-124	602.71	97.87	1.86E-01	1.86E-01	-1.68E-02	8.76E-02
	645.85	7.26	2.46E+00		7.24E-01	1.15E+00
	722.78	11.10	1.93E+00		-2.61E-01	9.08E-01
	1691.02	49.00	3.21E-01		7.23E-02	1.32E-01
I-125	35.49	6.49	9.27E-01	9.27E-01	-3.23E-01	4.52E-01
SB-125	176.33	6.89	1.31E+00	3.80E-01	-2.20E-01	6.37E-01
	427.89	29.33	3.80E-01		1.90E-01	1.80E-01
	463.38	10.35	1.24E+00		2.53E-01	5.92E-01
	600.56	17.80	7.50E-01		-1.27E-01	3.52E-01
	635.90	11.32	1.13E+00		-3.52E-01	5.28E-01
SB-126	414.70	83.30	5.32E-01	5.14E-01	-1.02E-01	2.52E-01
	666.33	99.60	5.14E-01		-2.10E-01	2.39E-01
	695.00	99.60	6.54E-01		4.27E-01	3.08E-01
	720.50	53.80	1.16E+00		-6.95E-01	5.43E-01
SN-126	87.57	37.00	2.52E-01	2.52E-01	1.57E-01	1.24E-01
SB-127	473.00	25.00	4.49E+01	3.85E+01	3.31E+00	2.13E+01
	685.20	35.70	3.85E+01		3.52E+00	1.81E+01
	783.80	14.70	9.60E+01		9.00E+00	4.47E+01
I-129	29.78	57.00	7.65E-02	7.65E-02	1.17E-02	3.73E-02
	33.60	13.20	3.32E-01		-1.88E-01	1.62E-01
	39.58	7.52	6.36E-01		-1.04E-01	3.10E-01
I-131	284.30	6.05	1.47E+01	1.17E+00	-8.66E+00	7.04E+00
	364.48	81.20	1.17E+00		1.73E-01	5.60E-01
	636.97	7.26	1.56E+01		6.82E-01	7.27E+00
	722.89	1.80	7.81E+01		-1.05E+01	3.67E+01
TE-132	49.72	13.10	9.38E+01	2.47E+01	3.69E+01	4.59E+01
	228.16	88.00	2.47E+01		7.35E+00	1.19E+01
BA-133	81.00	33.00	2.95E-01	2.64E-01	-9.28E-02	1.45E-01
	302.84	17.80	6.06E-01		-6.42E-02	2.91E-01
	356.01	60.00	2.64E-01		-3.18E-02	1.28E-01
I-133	529.87	86.30	8.13E+07	8.13E+07	2.43E+07	3.84E+07
XE-133	81.00	38.00	7.11E+00	7.11E+00	-2.24E+00	3.50E+00
CS-134	563.23	8.38	1.52E+00	1.79E-01	-2.90E-01	7.15E-01
	569.32	15.43	7.86E-01		-2.49E-01	3.68E-01
	604.70	97.60	1.79E-01		1.80E-02	8.52E-02
	795.84	85.40	1.91E-01		5.08E-02	8.92E-02
	801.93	8.73	1.86E+00		8.18E-01	8.66E-01
CS-135	268.24	16.00	7.00E-01	7.00E-01	2.62E-01	3.38E-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	4.52E+00	5.51E-01	-4.42E-01	2.20E+00
	163.89	4.61	7.70E+00		-7.51E-01	3.75E+00
	176.55	13.56	2.47E+00		-4.14E-01	1.20E+00
	273.65	12.66	3.38E+00		9.44E-01	1.63E+00
	340.57	48.50	1.07E+00		1.59E+00	5.19E-01

Analysis Report for 1510084-18

CP1803S12-13

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	5.51E-01	5.51E-01	1.54E-01	2.55E-01
	1048.07	79.60	7.85E-01		1.56E-01	3.60E-01
	1235.34	19.70	4.16E+00		6.87E-01	1.93E+00
CS-137	661.65	85.12	1.55E-01	1.55E-01	5.22E-02	7.25E-02
LA-138	788.74	34.00	4.45E-01	1.64E-01	-4.80E-02	2.07E-01
	1435.80	66.00	1.64E-01		-1.20E-01	6.79E-02
CE-139	165.85	80.35	1.35E-01	1.35E-01	7.33E-03	6.57E-02
BA-140	162.64	6.70	5.47E+00	1.99E+00	-3.24E-01	2.67E+00
	304.84	4.50	8.98E+00		-3.54E-01	4.31E+00
	423.70	3.20	1.38E+01		3.18E+00	6.53E+00
	437.55	2.00	2.16E+01		3.96E+00	1.02E+01
	537.32	25.00	1.99E+00		3.09E-01	9.37E-01
LA-140	328.77	20.50	2.34E+00	6.52E-01	1.04E+00	1.13E+00
	487.03	45.50	9.45E-01		-1.22E-01	4.45E-01
	815.85	23.50	2.24E+00		-8.64E-01	1.03E+00
CE-141	1596.49	95.49	6.52E-01		2.89E-01	2.85E-01
CE-141	145.44	48.40	3.27E-01	3.27E-01	1.19E-01	1.59E-01
CE-143	57.36	11.80	1.84E+05	1.03E+05	1.37E+04	9.02E+04
	293.26	42.00	1.03E+05		8.05E+04	4.98E+04
	664.55	5.20	8.25E+05		2.26E+05	3.85E+05
CE-144	133.54	10.80	8.92E-01	8.92E-01	2.63E-01	4.36E-01
PM-144	476.78	42.00	3.15E-01	1.41E-01	1.10E-01	1.50E-01
	618.01	98.60	1.41E-01		2.38E-02	6.62E-02
	696.49	99.49	1.66E-01		5.47E-02	7.80E-02
PM-145	36.85	21.70	2.10E-01	1.17E-01	-5.85E-02	1.03E-01
	37.36	39.70	1.17E-01		-1.14E-02	5.72E-02
	42.30	15.10	3.39E-01		4.20E-02	1.66E-01
	72.40	2.31	4.32E+00		8.12E+00	2.13E+00
PM-146	453.90	39.94	2.88E-01	2.88E-01	-8.88E-02	1.36E-01
	735.90	14.01	1.04E+00		3.97E-01	4.85E-01
	747.13	13.10	1.06E+00		4.81E-01	4.93E-01
ND-147	91.11	28.90	1.65E+00	1.65E+00	2.96E+00	8.11E-01
	531.02	13.10	4.79E+00		1.31E+00	2.26E+00
PM-149	285.90	3.10	8.87E+03	8.87E+03	-2.55E+03	4.27E+03
EU-152	121.78	20.50	4.03E-01	4.03E-01	-2.91E-02	1.97E-01
	244.69	5.40	2.39E+00		1.34E-01	1.17E+00
	344.27	19.13	5.69E-01		-2.99E+00	2.72E-01
	778.89	9.20	1.57E+00		-3.98E-01	7.27E-01
	964.01	10.40	2.08E+00		3.13E-01	9.80E-01
	1085.78	7.22	2.13E+00		-8.00E-01	9.65E-01
	1112.02	9.60	1.85E+00		2.64E-01	8.50E-01
	1407.95	14.94	1.01E+00		1.22E-01	4.44E-01
GD-153	97.43	31.30	2.83E-01	2.83E-01	-1.66E-01	1.39E-01
	103.18	22.20	3.75E-01		-1.33E-01	1.83E-01
EU-154	123.07	40.50	2.07E-01	2.07E-01	-1.08E-01	1.01E-01
	723.30	19.70	8.90E-01		5.99E-01	4.20E-01
	873.19	11.50	1.34E+00		8.05E-02	6.22E-01
	996.32	10.30	1.45E+00		1.83E-01	6.62E-01
	1004.76	17.90	9.14E-01		-5.88E-02	4.20E-01
	1274.45	35.50	5.31E-01		5.87E-02	2.42E-01
EU-155	86.50	30.90	2.99E-01	2.99E-01	5.40E-04	1.47E-01
	105.30	20.70	3.76E-01		-4.12E-02	1.83E-01
EU-156	811.77	10.40	4.14E+00	4.14E+00	-2.94E-01	1.91E+00

Analysis Report for 1510084-18
CP1803S12-13

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	8.55E+00	4.14E+00	1.63E-01	3.94E+00	
	1230.71	8.90	6.98E+00		-1.72E+00	3.21E+00	
HO-166M	184.41	72.60	1.52E-01	1.52E-01	2.41E-01	7.42E-02	
	280.45	29.60	3.54E-01		4.26E-03	1.71E-01	
	410.94	11.10	1.01E+00		-5.59E-02	4.83E-01	
	711.69	54.10	2.59E-01		1.55E-03	1.21E-01	
TM-171	66.72	0.14	5.83E+01	5.83E+01	-1.66E+01	2.87E+01	
HF-172	81.75	4.52	2.05E+00	7.88E-01	-1.11E+00	1.01E+00	
	125.81	11.30	7.88E-01		-1.99E-01	3.85E-01	
LU-172	181.53	20.60	6.52E+00	3.82E+00	-1.02E+00	3.18E+00	
	810.06	16.63	1.09E+01		-4.89E+00	5.00E+00	
	912.12	15.25	1.99E+01		2.30E+01	9.40E+00	
LU-173	1093.66	62.50	3.82E+00	5.56E-01	8.10E-01	1.75E+00	
	100.72	5.24	1.55E+00		-9.06E-01	7.56E-01	
	272.11	21.20	5.56E-01		2.33E-01	2.69E-01	
HF-175	343.40	84.00	1.76E-01	1.76E-01	-3.20E-01	8.46E-02	
LU-176	88.34	13.30	7.19E-01	1.05E-01	1.06E+00	3.53E-01	
	201.83	86.00	1.18E-01		-3.52E-02	5.74E-02	
	306.78	94.00	1.05E-01		-5.71E-03	5.03E-02	
TA-182	67.75	41.20	2.23E-01	2.23E-01	-5.36E-01	1.09E-01	
	1121.30	34.90	7.19E-01		4.69E-01	3.35E-01	
	1189.05	16.23	1.31E+00		-2.07E-01	5.99E-01	
	1221.41	26.98	7.88E-01		-8.72E-02	3.60E-01	
	1231.02	11.44	2.01E+00		-4.95E-01	9.21E-01	
IR-192	308.46	29.68	4.27E-01	3.03E-01	-5.83E-02	2.04E-01	
	468.07	48.10	3.03E-01		-2.10E-01	1.43E-01	
HG-203	279.19	77.30	1.96E-01	1.96E-01	7.04E-03	9.46E-02	
BI-207	569.67	97.72	1.22E-01	1.22E-01	-3.85E-02	5.69E-02	
	1063.62	74.90	2.20E-01		6.56E-02	1.00E-01	
+ TL-208	583.14	*	30.22	2.03E-01	1.56E+00	3.02E-01	
	860.37		4.48		2.92E+00	1.53E-01	1.33E+00
	2614.66	*	35.85		2.03E-01	1.39E+00	6.03E-02
BI-210M	262.00	45.00	2.25E-01	2.25E-01	-2.03E-02	1.09E-01	
	300.00	23.00	5.57E-01		5.60E-01	2.70E-01	
PB-210	46.50	4.25	1.27E+00	1.27E+00	-6.53E-01	6.20E-01	
PB-211	404.84	2.90	4.05E+00	4.05E+00	2.55E-01	1.93E+00	
	831.96	2.90	5.10E+00		4.37E-01	2.36E+00	
+ BI-212	727.17	*	11.80	1.29E+00	1.19E+00	6.06E-01	
	1620.62		2.75		5.18E+00	1.96E+00	2.22E+00
+ PB-212	238.63	*	44.60	4.47E-01	1.98E+00	2.20E-01	
	300.09	*	3.41		5.69E+00	2.20E+00	2.78E+00
+ BI-214	609.31	*	46.30	4.81E-01	9.07E-01	2.32E-01	
	1120.29	*	15.10		1.68E+00	1.12E+00	7.93E-01
	1764.49	*	15.80		8.43E-01	1.20E+00	3.52E-01
	2204.22		4.98		3.65E+00	1.34E+00	1.56E+00
+ PB-214	295.21	*	19.19	4.46E-01	1.18E+00	4.84E-01	
	351.92	*	37.19		4.46E-01	1.06E+00	2.16E-01
RN-219	401.80	6.50	1.80E+00	1.80E+00	-2.74E-01	8.59E-01	
RA-223	323.87	3.88	2.97E+00	2.97E+00	-4.76E-01	1.43E+00	
RA-224	240.98	3.95	4.68E+00	4.68E+00	2.01E+01	2.30E+00	
RA-225	40.00	31.00	5.03E-01	5.03E-01	-8.25E-02	2.46E-01	
+ RA-226	186.21	*	3.28	4.22E+00	4.22E+00	4.95E+00	2.07E+00
TH-227	50.10	8.40	6.92E-01	6.92E-01	2.72E-01	3.39E-01	

Analysis Report for 1510084-18
 CP1803S12-13

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	1.47E+00	6.92E-01	4.17E+00	7.23E-01
	256.20	6.30	1.51E+00		-6.14E-01	7.26E-01
+ AC-228	338.32 *	11.40	1.44E+00	6.32E-01	1.72E+00	6.98E-01
	911.07 *	27.70	6.32E-01		1.39E+00	2.94E-01
	969.11 *	16.60	1.49E+00		1.31E+00	7.06E-01
TH-230	48.44	16.90	3.34E-01	3.34E-01	7.42E-02	1.63E-01
	62.85	4.60	1.67E+00		1.87E+00	8.18E-01
	67.67	0.37	2.13E+01		-5.12E+01	1.05E+01
PA-231	283.67	1.60	6.39E+00	4.67E+00	-2.29E+00	3.08E+00
	302.67	2.30	4.67E+00		-4.94E-01	2.24E+00
TH-231	25.64	14.70	2.97E-01	2.97E-01	-5.99E-02	1.45E-01
	84.21	6.40	1.35E+00		-5.41E-01	6.65E-01
PA-233	311.98	38.60	5.16E-01	5.16E-01	8.63E-02	2.48E-01
PA-234	131.20	20.40	4.53E-01	4.53E-01	4.41E-01	2.21E-01
	733.99	8.80	1.61E+00		2.49E-01	7.52E-01
	946.00	12.00	1.29E+00		-3.85E-02	5.95E-01
PA-234M	1001.03	0.92	1.65E+01	1.65E+01	2.24E+00	7.51E+00
+ TH-234	63.29 *	3.80	5.11E+00	5.11E+00	2.55E+00	2.54E+00
U-235	143.76	10.50	8.76E-01	8.76E-01	3.59E-01	4.28E-01
	163.35	4.70	2.00E+00		-1.95E-01	9.74E-01
	205.31	4.70	2.24E+00		7.54E-01	1.09E+00
NP-237	86.50	12.60	7.27E-01	7.27E-01	1.31E-03	3.57E-01
NP-239	106.10	22.70	5.64E+02	5.64E+02	-6.18E+01	2.75E+02
	228.18	10.70	1.58E+03		2.08E+02	7.66E+02
	277.60	14.10	1.25E+03		-2.35E+02	6.03E+02
AM-241	59.54	35.90	1.98E-01	1.98E-01	-2.83E-02	9.70E-02
AM-243	74.67	66.00	1.60E-01	1.60E-01	6.07E-01	7.89E-02
CM-243	209.75	3.29	3.23E+00	7.63E-01	1.42E+00	1.57E+00
	228.14	10.60	9.67E-01		2.88E-01	4.68E-01
	277.60	14.00	7.63E-01		-1.43E-01	3.68E-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 1510084-18
CP1803S12-13

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: CP1803S12-13

Elapsed Live time: 3600

Elapsed Real Time: 3639

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	28	106
17:	79	78	72	66	70	63	58	63
25:	75	65	60	46	60	67	65	46
33:	50	54	58	52	64	67	74	68
41:	63	73	48	74	79	79	78	81
49:	69	71	87	81	98	94	64	91
57:	80	96	84	126	125	148	131	126
65:	100	115	102	137	103	113	109	115
73:	177	228	283	290	239	148	117	83
81:	100	97	118	113	111	131	128	135
89:	125	124	124	163	126	95	76	91
97:	79	77	78	72	64	62	65	64
105:	71	68	63	70	69	64	58	61
113:	63	42	70	55	62	67	66	68
121:	57	61	50	70	61	70	66	72
129:	90	70	73	73	61	63	49	43
137:	76	62	55	57	56	62	71	69
145:	59	61	63	58	50	51	62	53
153:	65	44	48	51	51	53	46	47
161:	58	57	49	51	49	64	53	59
169:	37	44	51	48	33	44	48	46
177:	36	42	41	35	45	53	57	63
185:	75	99	63	52	39	43	43	50
193:	45	43	50	46	37	43	36	52
201:	45	41	41	44	53	38	49	54
209:	46	47	39	36	39	42	48	25
217:	38	35	40	36	32	29	42	31
225:	37	31	48	45	33	28	26	41
233:	37	45	43	63	158	240	198	84
241:	86	69	45	35	40	35	33	28
249:	21	28	28	22	27	19	31	20
257:	25	29	30	20	34	27	29	26
265:	25	29	29	37	33	45	36	28
273:	25	33	24	27	34	28	32	22
281:	19	20	25	24	15	30	28	26
289:	27	20	27	12	34	75	85	44
297:	21	24	38	38	23	18	17	21
305:	17	14	20	23	17	25	17	21
313:	24	17	23	24	29	11	16	26
321:	25	24	20	24	21	31	27	32
329:	29	24	18	29	16	20	30	29
337:	48	63	43	21	19	26	14	20
345:	21	16	11	19	19	46	109	91
353:	42	15	13	16	20	20	13	22
361:	14	18	22	17	16	17	9	15

369: 15 12 16 13 20 15 16 12

Sample Title: CP1803S12-13

Channel	1	2	3	4	5	6	7	8
377:	11	14	13	11	16	16	12	18
385:	17	11	18	17	15	12	13	11
393:	14	21	17	19	13	15	19	22
401:	11	13	16	19	16	11	18	17
409:	16	16	14	17	10	8	15	8
417:	15	12	16	12	7	16	13	13
425:	12	14	16	6	11	19	6	6
433:	8	9	10	10	14	18	16	14
441:	8	13	11	10	17	10	9	15
449:	13	11	8	14	15	8	11	9
457:	17	15	16	15	16	17	17	17
465:	7	12	10	10	9	18	7	12
473:	16	10	16	12	13	13	15	12
481:	14	11	8	10	6	8	18	8
489:	9	7	16	15	15	6	8	15
497:	10	12	12	17	7	7	7	12
505:	5	14	9	14	28	33	36	23
513:	22	12	12	7	5	13	5	8
521:	15	8	7	5	10	12	12	10
529:	12	12	7	11	9	13	6	13
537:	14	14	11	6	8	12	8	8
545:	4	8	5	8	12	10	9	8
553:	7	8	7	10	11	14	12	9
561:	11	11	8	13	2	8	8	9
569:	9	9	9	10	8	11	6	8
577:	12	6	9	11	22	44	63	46
585:	18	10	11	11	4	9	11	9
593:	7	7	13	11	4	9	6	8
601:	6	13	13	10	7	14	16	50
609:	58	44	20	14	12	6	8	8
617:	8	8	7	11	10	11	10	5
625:	7	10	6	11	9	11	5	8
633:	6	11	11	7	6	7	4	8
641:	5	9	6	10	10	10	6	7
649:	8	6	4	10	7	8	6	4
657:	5	4	9	10	11	6	6	6
665:	9	7	5	5	4	10	4	6
673:	10	11	5	8	5	7	7	4
681:	6	12	8	7	9	12	9	7
689:	8	8	10	12	12	11	10	7
697:	6	11	10	7	7	3	12	8
705:	9	3	12	9	8	5	6	8
713:	4	9	3	9	6	7	14	13
721:	11	3	4	8	6	17	23	8
729:	8	6	6	7	7	8	8	8
737:	6	6	8	6	4	3	5	10
745:	4	5	7	7	9	5	4	6
753:	4	3	6	9	7	8	7	5
761:	4	3	3	11	7	3	6	12
769:	13	10	9	9	5	8	2	11
777:	6	6	7	3	10	3	7	7
785:	7	7	11	4	7	5	8	5
793:	8	9	6	5	9	12	5	10

801: 7 4 7 11 4 5 6 5

Sample Title: CP1803S12-13

Channel	1	2	3	4	5	6	7	8
809:	2	6	8	6	1	5	7	4
817:	7	2	4	8	9	6	2	4
825:	7	6	5	3	5	5	2	2
833:	6	5	12	12	2	6	6	6
841:	5	9	4	6	2	4	5	2
849:	6	1	8	4	1	4	5	4
857:	3	5	5	6	5	6	3	0
865:	5	5	3	6	6	9	5	2
873:	6	8	4	4	7	8	6	4
881:	3	2	8	6	6	3	6	5
889:	2	2	5	7	7	9	3	10
897:	7	3	6	3	4	5	6	2
905:	2	7	5	6	9	16	35	22
913:	11	3	2	0	6	4	6	9
921:	4	2	6	4	3	1	4	3
929:	5	5	5	2	6	8	7	6
937:	8	8	5	6	4	6	4	6
945:	0	7	7	2	8	4	3	8
953:	4	7	4	3	6	3	5	5
961:	11	7	6	16	9	2	10	20
969:	15	19	3	2	1	3	3	7
977:	4	3	5	4	7	5	4	3
985:	3	3	5	7	2	1	4	3
993:	6	3	2	4	3	5	7	3
1001:	6	6	2	2	3	9	4	8
1009:	2	2	6	5	3	3	2	0
1017:	5	9	5	3	4	8	2	5
1025:	1	5	3	5	3	3	3	4
1033:	5	4	2	8	4	4	5	3
1041:	2	5	4	6	6	3	3	1
1049:	4	2	6	10	6	1	5	1
1057:	6	6	3	7	1	2	4	10
1065:	5	1	6	1	3	3	3	6
1073:	4	6	1	3	7	2	4	6
1081:	3	3	1	0	3	3	5	8
1089:	4	5	6	5	5	6	3	7
1097:	2	4	5	0	7	6	2	4
1105:	5	5	1	5	3	7	4	6
1113:	4	4	4	5	8	8	6	9
1121:	13	6	4	6	3	4	3	5
1129:	3	5	4	4	4	8	8	4
1137:	2	1	3	4	6	5	6	3
1145:	7	5	2	7	5	6	6	6
1153:	9	4	5	2	5	9	4	4
1161:	8	0	3	3	3	7	7	5
1169:	1	3	1	3	2	5	4	3
1177:	1	2	8	2	2	7	4	8
1185:	7	4	6	7	1	4	2	3
1193:	5	4	3	5	7	6	4	6
1201:	4	6	6	3	6	3	5	9
1209:	4	7	6	5	4	4	7	5
1217:	2	5	3	5	4	2	5	5
1225:	6	5	5	1	5	6	7	6

1233: 4 2 7 5 8 5 9 7

Sample Title: CP1803S12-13

Channel	1	2	3	4	5	6	7	8	9
1241:	7	5	4	3	4	6	9	5	
1249:	5	5	4	4	2	3	3	2	
1257:	5	4	2	3	4	1	3	3	
1265:	6	1	4	4	4	1	3	10	
1273:	4	5	4	2	2	5	3	3	
1281:	4	3	5	4	3	3	4	2	
1289:	4	3	5	2	2	3	1	3	
1297:	4	3	5	2	4	5	1	1	
1305:	4	3	1	5	4	0	4	6	
1313:	7	1	2	3	2	3	3	5	
1321:	3	5	4	1	6	3	4	3	
1329:	6	0	3	5	2	3	2	2	
1337:	1	3	2	1	1	0	1	4	
1345:	3	2	1	4	2	2	0	1	
1353:	0	0	2	6	2	1	3	0	
1361:	1	3	1	4	1	2	4	3	
1369:	1	0	3	2	1	2	1	4	
1377:	3	3	4	2	1	2	2	5	
1385:	1	5	1	2	1	0	3	1	
1393:	0	1	1	1	3	1	1	2	
1401:	3	3	2	1	4	0	3	3	
1409:	1	5	0	1	0	2	1	3	
1417:	1	2	0	2	2	0	1	2	
1425:	0	4	3	1	2	0	4	1	
1433:	0	1	1	1	2	1	0	1	
1441:	5	0	2	2	1	2	2	2	
1449:	1	2	1	1	3	1	2	1	
1457:	4	7	20	54	84	66	18	2	
1465:	2	3	2	1	0	0	1	2	
1473:	1	1	1	2	1	1	0	1	
1481:	0	0	1	3	0	1	0	0	
1489:	0	0	0	2	1	2	2	1	
1497:	1	6	0	3	2	1	2	1	
1505:	3	1	1	2	0	3	1	2	
1513:	1	2	1	3	0	1	0	1	
1521:	3	0	3	2	1	0	1	5	
1529:	0	1	1	1	2	4	2	1	
1537:	3	2	2	0	0	1	2	2	
1545:	0	0	0	3	1	1	3	1	
1553:	1	0	0	1	5	1	1	1	
1561:	0	0	1	1	1	0	0	3	
1569:	2	2	1	0	2	0	0	1	
1577:	3	1	1	3	1	4	1	0	
1585:	3	0	6	4	5	0	2	2	
1593:	2	6	0	1	0	1	0	5	
1601:	1	0	0	1	0	1	4	1	
1609:	2	2	1	0	1	2	1	0	
1617:	3	0	3	1	3	0	1	1	
1625:	0	0	0	1	2	2	1	2	
1633:	2	0	3	2	1	0	0	1	
1641:	2	0	3	1	2	1	1	2	
1649:	0	2	0	2	1	1	4	0	
1657:	1	1	2	1	4	1	0	0	

1665: 0 1 0 0 0 0 1 2

Sample Title: CP1803S12-13

Channel	1	2	3	4	5	6	7	8
1673:	1	0	0	1	1	1	0	0
1681:	3	0	1	0	0	0	3	0
1689:	0	0	0	1	2	0	1	0
1697:	1	1	0	0	2	1	1	1
1705:	0	0	1	0	0	1	2	1
1713:	0	1	2	0	0	1	0	1
1721:	1	0	2	0	0	0	0	3
1729:	2	1	1	2	0	1	0	1
1737:	1	1	1	4	2	1	1	0
1745:	0	0	1	1	0	1	0	0
1753:	0	0	2	0	5	0	0	2
1761:	0	1	3	6	9	4	2	1
1769:	0	0	0	0	0	0	0	0
1777:	1	1	2	1	0	0	0	0
1785:	0	0	1	0	0	2	0	2
1793:	1	1	2	0	0	0	1	0
1801:	3	0	0	1	1	1	0	1
1809:	3	1	2	0	1	0	1	0
1817:	0	3	0	0	1	0	1	2
1825:	1	1	2	0	0	1	0	0
1833:	1	1	1	0	0	0	1	0
1841:	1	0	1	0	0	0	1	0
1849:	0	0	1	1	0	0	2	0
1857:	4	1	0	1	1	0	1	0
1865:	0	1	0	1	0	1	0	1
1873:	1	1	0	1	1	1	1	0
1881:	1	0	1	2	1	0	0	1
1889:	1	1	0	1	0	0	1	0
1897:	0	0	1	0	0	0	0	0
1905:	2	0	0	0	2	0	1	1
1913:	0	0	0	0	1	1	0	1
1921:	1	0	1	1	1	1	2	0
1929:	1	1	1	1	0	0	1	0
1937:	1	0	0	1	1	1	0	2
1945:	1	1	1	0	0	0	2	0
1953:	1	0	2	0	2	2	0	0
1961:	1	2	1	0	2	1	0	0
1969:	0	0	0	1	1	2	0	1
1977:	1	0	2	0	0	0	0	0
1985:	0	1	0	1	0	0	0	1
1993:	0	1	0	0	0	0	0	0
2001:	0	2	0	0	2	0	1	1
2009:	2	1	0	0	1	0	1	1
2017:	0	0	0	0	0	0	1	0
2025:	0	2	2	1	0	0	1	1
2033:	1	1	0	0	1	2	0	0
2041:	1	2	0	1	1	0	1	1
2049:	1	0	0	0	0	1	1	0
2057:	1	1	2	0	1	0	0	0
2065:	1	1	0	0	2	1	0	0
2073:	3	1	0	1	2	0	0	0
2081:	1	2	1	0	0	0	0	0
2089:	0	0	1	2	1	2	0	1

2097: 1 0 0 2 2 1 2 1

Sample Title: CP1803S12-13

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

2529: 0 0 1 0 1 0 1 0

Sample Title: CP1803S12-13

Channel	1	2	3	4	5	6	7	8	9
2537:	1	1	0	0	0	0	0	0	0
2545:	0	0	0	1	1	0	1	1	1
2553:	0	0	0	0	0	1	0	2	
2561:	0	0	0	0	0	0	1	2	
2569:	0	0	0	0	0	0	0	1	
2577:	2	0	0	0	1	0	0	0	
2585:	0	1	0	0	0	0	0	0	
2593:	2	1	1	0	0	0	0	0	
2601:	0	0	0	0	0	0	0	0	
2609:	0	0	0	0	4	6	15	10	
2617:	10	1	1	0	0	0	1	0	
2625:	0	1	0	0	0	1	0	0	
2633:	0	1	0	0	0	0	1	0	
2641:	0	0	0	0	0	0	0	1	
2649:	0	0	0	0	1	0	0	0	
2657:	0	0	0	0	0	0	0	0	
2665:	0	0	0	0	0	0	0	0	
2673:	0	0	0	1	0	0	0	0	
2681:	0	1	1	0	0	0	0	0	
2689:	0	1	0	0	1	0	0	0	
2697:	0	0	0	0	0	1	0	0	
2705:	0	0	0	0	1	0	0	0	
2713:	0	0	0	1	1	1	0	0	
2721:	0	0	0	0	0	0	0	0	
2729:	0	1	0	0	2	0	1	0	
2737:	0	0	0	0	0	1	0	0	
2745:	0	0	2	0	0	0	0	0	
2753:	0	0	0	0	0	0	1	1	
2761:	0	0	0	0	0	1	0	0	
2769:	0	0	0	0	0	0	0	0	
2777:	0	0	0	0	3	0	0	2	
2785:	0	0	0	0	0	0	0	0	
2793:	0	0	0	0	1	0	1	1	
2801:	1	0	0	0	0	0	0	0	
2809:	0	0	1	0	0	0	0	0	
2817:	0	1	0	1	1	1	0	1	
2825:	0	0	0	0	0	0	0	0	
2833:	0	0	0	0	0	0	1	0	
2841:	0	0	0	1	0	0	0	0	
2849:	0	0	0	2	0	0	0	0	
2857:	0	0	0	0	0	0	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	0	0	0	0	
2889:	0	0	0	0	1	1	0	0	
2897:	1	0	0	0	1	1	0	0	
2905:	0	0	0	0	0	0	0	0	
2913:	1	1	0	0	0	0	0	0	
2921:	0	0	0	0	0	0	0	0	
2929:	0	0	1	0	0	0	0	0	
2937:	0	1	0	0	0	1	1	1	
2945:	0	0	1	0	0	0	0	0	
2953:	0	0	0	0	0	0	0	0	

2961: 0 0 0 0 0 0 0 0 0

Sample Title: CP1803S12-13

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2969:	0	0	0	1	0	0	0	0
2977:	0	1	0	0	0	0	0	0
2985:	0	0	0	0	0	1	1	0
2993:	0	0	0	0	1	0	0	0
3001:	0	0	0	2	0	0	0	0
3009:	1	0	0	0	0	0	1	1
3017:	0	1	0	0	0	0	1	1
3025:	0	0	3	0	0	0	1	1
3033:	2	0	0	0	0	0	0	0
3041:	1	0	0	1	0	0	0	0
3049:	0	1	0	0	0	0	0	0
3057:	0	0	0	2	0	0	0	1
3065:	0	1	0	0	0	0	0	0
3073:	0	1	0	0	0	0	0	0
3081:	0	0	0	0	0	0	0	0
3089:	1	1	0	0	0	0	0	0
3097:	0	0	0	1	0	0	0	0
3105:	0	0	0	0	0	0	0	0
3113:	0	0	0	0	0	0	0	1
3121:	1	0	0	0	0	0	0	0
3129:	0	0	0	0	1	1	0	0
3137:	0	0	0	0	0	1	0	0
3145:	1	0	0	0	1	0	0	0
3153:	0	0	1	0	1	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	1	0	0
3185:	0	0	0	0	1	0	0	0
3193:	0	1	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	2	0	0
3233:	1	0	0	1	0	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	1	0	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	1	2	1	0
3273:	0	0	1	0	2	0	0	0
3281:	0	0	0	0	0	0	1	0
3289:	0	0	0	0	0	0	0	1
3297:	0	0	0	0	0	0	0	0
3305:	1	0	0	1	0	0	0	0
3313:	0	0	0	0	0	0	1	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	1	0	1	0	0
3345:	0	0	0	0	0	0	0	1
3353:	0	0	0	0	0	1	0	0
3361:	0	0	0	0	1	0	0	0
3369:	0	0	0	0	0	0	0	1
3377:	0	0	0	0	0	0	0	1
3385:	0	0	0	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0

Sample Title: CP1803S12-13

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	1	0	1	0	0	0	0	0
3409:	0	1	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	1	0	0	1
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	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	1	0	0	1	0	0	0	0
3497:	0	0	0	0	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	0	0	1	0	0	1
3529:	0	1	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	1
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	1	1
3561:	0	0	0	0	0	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:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	1	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	1	0	0	0	0	0
3657:	0	0	0	0	0	0	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	0
3689:	0	0	0	1	0	0	0	1
3697:	0	0	0	1	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	1	0	0	0	0	0	0	0
3721:	0	0	0	0	0	1	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	1	1	1
3745:	0	0	0	0	0	0	0	1
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	2	0	0	0	0	0	0	0
3777:	0	0	0	1	0	1	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	1	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	2	0

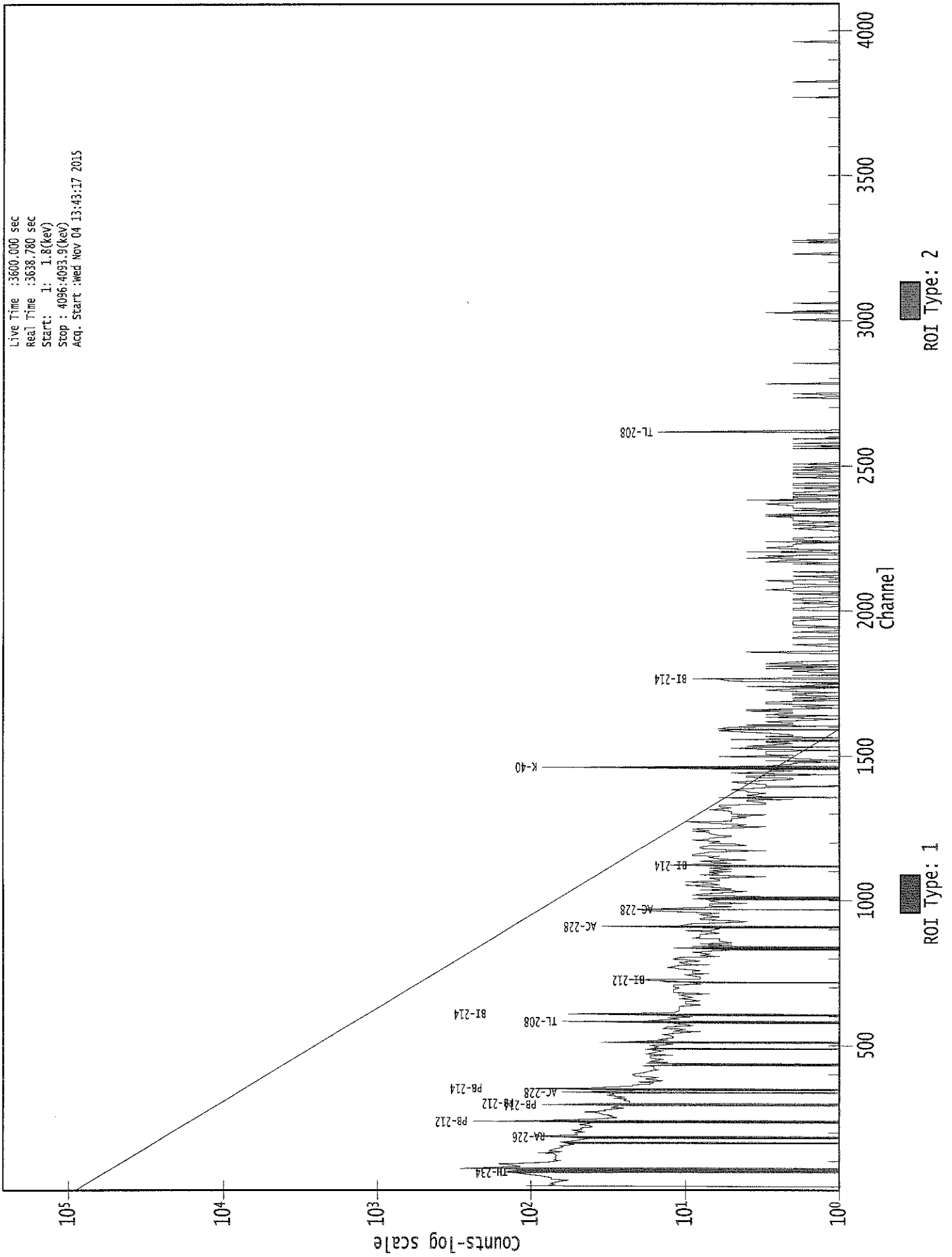
3825: 0 0 0 1 0 0 0 0

Sample Title: CP1803S12-13

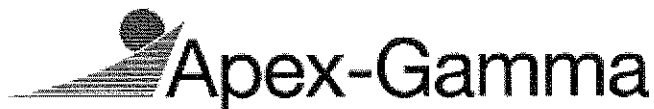
Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	1	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	1	0	0	0	0	0
3897:	1	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	1	0
3913:	1	0	0	0	0	0	0	0
3921: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

0000029137.CNF

Live Time :3600.000 sec
Real Time :3638.780 sec
Start: 1: 1.8(kev)
Stop : 4096.4093.9(kev)
Acq. Start :Wed Nov 04 13:43:17 2015



RB
11/14/15



Analysis Report for 1510084-19
CP1803S15-16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-19
Sample Description : CP1803S15-16
Sample Type : SOIL

Sample Size : 6.235E+02 grams
Facility : Countroom

Sample Taken On : 10/10/2015 9:53:24AM
Acquisition Started : 11/4/2015 2:45:17PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3638.8 seconds

Dead Time : 1.07 %

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 : 29142

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-19
CP1803S15-16

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 3:45:56PM
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	75.98	75.24	0.0000	0.00
2	93.26	92.53	0.0000	0.00
3	116.60	115.89	0.0000	0.00
4	127.88	127.17	0.0000	0.00
5	154.16	153.46	0.0000	0.00
6	164.28	163.58	0.0000	0.00
7	185.77	185.08	0.0000	0.00
8	239.20	238.54	0.0000	0.00
9	249.29	248.63	0.0000	0.00
10	270.28	269.63	0.0000	0.00
11	294.88	294.24	0.0000	0.00
12	327.19	326.56	0.0000	0.00
13	338.55	337.93	0.0000	0.00
14	351.88	351.27	0.0000	0.00
15	462.53	461.97	0.0000	0.00
16	483.10	482.55	0.0000	0.00
17	551.20	550.67	0.0000	0.00
18	582.85	582.34	0.0000	0.00
19	609.10	608.60	0.0000	0.00
20	732.29	731.86	0.0000	0.00
21	767.94	767.53	0.0000	0.00
22	877.82	877.46	0.0000	0.00
23	903.50	903.16	0.0000	0.00
24	911.20	910.86	0.0000	0.00
25	968.69	968.38	0.0000	0.00
26	1051.53	1051.27	0.0000	0.00
27	1121.90	1121.68	0.0000	0.00
28	1193.92	1193.74	0.0000	0.00
29	1227.68	1227.51	0.0000	0.00
30	1274.23	1274.10	0.0000	0.00
31	1363.44	1363.35	0.0000	0.00
32	1406.49	1406.43	0.0000	0.00
33	1460.87	1460.84	0.0000	0.00
34	1537.95	1537.97	0.0000	0.00
35	1547.84	1547.86	0.0000	0.00
36	1594.01	1594.07	0.0000	0.00
37	1764.53	1764.70	0.0000	0.00
38	1847.56	1847.78	0.0000	0.00
39	1872.19	1872.43	0.0000	0.00
40	1932.73	1933.01	0.0000	0.00
41	2187.25	2187.71	0.0000	0.00
42	2355.53	2356.11	0.0000	0.00

Analysis Report for 1510084-19
CP1803S15-16

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	2447.26	2447.90	0.0000	0.00
44	2614.74	2615.51	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510084-19
CP1803S15-16

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 3:45:56PM

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	75.98	69 -	80	75.24	8.57E+02	142.60	2.10E+03	4.07
2	93.26	91 -	97	92.53	1.35E+02	83.87	1.12E+03	1.92
3	116.60	113 -	118	115.89	5.15E+01	57.64	6.13E+02	2.55
4	127.88	123 -	131	127.17	8.07E+01	85.27	1.06E+03	3.23
5	154.16	147 -	159	153.46	1.06E+02	102.22	1.17E+03	7.78
6	164.28	160 -	168	163.58	1.07E+02	70.62	6.99E+02	4.59
7	185.77	181 -	188	185.08	1.22E+02	67.08	6.70E+02	2.75
8	239.20	232 -	245	238.54	6.30E+02	103.61	8.97E+02	2.60
9	249.29	245 -	253	248.63	4.96E+01	56.19	4.57E+02	3.07
10	270.28	266 -	273	269.63	5.98E+01	49.36	3.62E+02	2.61
11	294.88	289 -	299	294.24	1.02E+02	67.07	5.48E+02	2.19
12	327.19	321 -	332	326.56	5.72E+01	55.39	3.58E+02	7.55
13	338.55	332 -	356	337.93	1.14E+02	45.67	2.38E+02	2.97
14	351.88	332 -	356	351.27	2.67E+02	51.86	2.47E+02	2.92
15	462.53	457 -	467	461.97	7.56E+01	38.14	1.53E+02	4.13
16	483.10	478 -	486	482.55	2.85E+01	35.64	1.73E+02	4.82
17	551.20	547 -	556	550.67	3.46E+01	30.77	1.17E+02	3.56
18	582.85	575 -	586	582.34	1.32E+02	51.46	2.67E+02	2.39
19	609.10	603 -	615	608.60	1.44E+02	47.28	1.96E+02	2.27
20	732.29	719 -	746	731.86	6.79E+01	68.85	2.74E+02	17.76
21	767.94	762 -	775	767.53	3.38E+01	36.32	1.26E+02	1.11
22	877.82	870 -	887	877.46	2.93E+01	36.17	1.09E+02	6.79
23	903.50	900 -	907	903.16	1.64E+01	19.39	5.12E+01	1.80
24	911.20	908 -	916	910.86	8.22E+01	27.27	6.56E+01	2.12
25	968.69	962 -	973	968.38	7.50E+01	31.81	8.60E+01	2.09
26	1051.53	1041 -	1061	1051.27	5.73E+01	33.70	6.75E+01	16.82
27	1121.90	1117 -	1127	1121.68	4.07E+01	29.30	9.06E+01	6.92
28	1193.92	1190 -	1197	1193.74	1.38E+01	17.78	4.25E+01	1.92
29	1227.68	1225 -	1230	1227.51	1.87E+01	14.90	2.87E+01	1.90
30	1274.23	1271 -	1277	1274.10	1.91E+01	13.77	1.98E+01	3.29
31	1363.44	1360 -	1367	1363.35	1.33E+01	11.14	1.13E+01	4.85
32	1406.49	1401 -	1411	1406.43	1.43E+01	14.87	2.15E+01	2.17
33	1460.87	1455 -	1465	1460.84	2.47E+02	33.96	2.26E+01	3.00
34	1537.95	1533 -	1543	1537.97	1.15E+01	12.76	1.30E+01	1.48
35	1547.84	1545 -	1551	1547.86	8.00E+00	7.23	4.00E+00	3.30
36	1594.01	1591 -	1597	1594.07	1.50E+01	12.54	1.80E+01	1.48
37	1764.53	1761 -	1767	1764.70	1.68E+01	11.17	1.04E+01	1.86
38	1847.56	1844 -	1850	1847.78	5.43E+00	6.34	3.14E+00	2.52
39	1872.19	1868 -	1875	1872.43	7.00E+00	5.29	0.00E+00	1.98
40	1932.73	1927 -	1937	1933.01	6.61E+00	8.14	4.78E+00	2.07

M
m

Analysis Report for 1510084-19
 CP1803S15-16

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2187.25	2185 -	2190	2187.71	4.67E+00	5.74	2.67E+00	1.34
42	2355.53	2352 -	2359	2356.11	4.08E+00	6.32	3.83E+00	1.16
43	2447.26	2443 -	2450	2447.90	1.00E+01	6.32	0.00E+00	2.97
44	2614.74	2611 -	2619	2615.51	4.90E+01	14.00	0.00E+00	3.57

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 : 11/4/2015 3:45:56PM

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	75.98	69 -	80	8.57E+02	142.60	2.10E+03	1.07E+02
2	93.26	91 -	97	1.35E+02	83.87	1.12E+03	6.62E+01
3	116.60	113 -	118	5.15E+01	57.64	6.13E+02	4.59E+01
4	127.88	123 -	131	8.07E+01	85.27	1.06E+03	6.85E+01
5	154.16	147 -	159	1.06E+02	102.22	1.17E+03	8.23E+01
6	164.28	160 -	168	1.07E+02	70.62	6.99E+02	5.55E+01
7	185.77	181 -	188	1.22E+02	67.08	6.70E+02	5.21E+01
8	239.20	232 -	245	6.30E+02	103.61	8.97E+02	7.45E+01
9	249.29	245 -	253	4.96E+01	56.19	4.57E+02	4.47E+01
10	270.28	266 -	273	5.98E+01	49.36	3.62E+02	3.85E+01
11	294.88	289 -	299	1.02E+02	67.07	5.48E+02	5.26E+01
12	327.19	321 -	332	5.72E+01	55.39	3.58E+02	4.38E+01
M 13	338.55	332 -	356	1.14E+02	45.67	2.38E+02	2.53E+01
m 14	351.88	332 -	356	2.67E+02	51.86	2.47E+02	2.59E+01
15	462.53	457 -	467	7.56E+01	38.14	1.53E+02	2.79E+01
16	483.10	478 -	486	2.85E+01	35.64	1.73E+02	2.79E+01
17	551.20	547 -	556	3.46E+01	30.77	1.17E+02	2.34E+01
18	582.85	575 -	586	1.32E+02	51.46	2.67E+02	3.78E+01
19	609.10	603 -	615	1.44E+02	47.28	1.96E+02	3.35E+01
20	732.29	719 -	746	6.79E+01	68.85	2.74E+02	5.49E+01
21	767.94	762 -	775	3.38E+01	36.32	1.26E+02	2.83E+01
22	877.82	870 -	887	2.93E+01	36.17	1.09E+02	2.84E+01
23	903.50	900 -	907	1.64E+01	19.39	5.12E+01	1.45E+01

Analysis Report for 1510084-19

CP1803S15-16

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
24	911.20	908 -	916	8.22E+01	27.27	6.56E+01	1.67E+01
25	968.69	962 -	973	7.50E+01	31.81	8.60E+01	2.19E+01
26	1051.53	1041 -	1061	5.73E+01	33.70	6.75E+01	2.48E+01
27	1121.90	1117 -	1127	4.07E+01	29.30	9.06E+01	2.17E+01
28	1193.92	1190 -	1197	1.38E+01	17.78	4.25E+01	1.33E+01
29	1227.68	1225 -	1230	1.87E+01	14.90	2.87E+01	9.98E+00
30	1274.23	1271 -	1277	1.91E+01	13.77	1.98E+01	8.74E+00
31	1363.44	1360 -	1367	1.33E+01	11.14	1.13E+01	6.91E+00
32	1406.49	1401 -	1411	1.43E+01	14.87	2.15E+01	1.05E+01
33	1460.87	1455 -	1465	2.47E+02	33.96	2.26E+01	1.06E+01
34	1537.95	1533 -	1543	1.15E+01	12.76	1.30E+01	8.88E+00
35	1547.84	1545 -	1551	8.00E+00	7.23	4.00E+00	3.70E+00
36	1594.01	1591 -	1597	1.50E+01	12.54	1.80E+01	8.11E+00
37	1764.53	1761 -	1767	1.68E+01	11.17	1.04E+01	6.23E+00
38	1847.56	1844 -	1850	5.43E+00	6.34	3.14E+00	3.54E+00
39	1872.19	1868 -	1875	7.00E+00	5.29	0.00E+00	0.00E+00
40	1932.73	1927 -	1937	6.61E+00	8.14	4.78E+00	5.19E+00
41	2187.25	2185 -	2190	4.67E+00	5.74	2.67E+00	3.11E+00
42	2355.53	2352 -	2359	4.08E+00	6.32	3.83E+00	4.00E+00
43	2447.26	2443 -	2450	1.00E+01	6.32	0.00E+00	0.00E+00
44	2614.74	2611 -	2619	4.90E+01	14.00	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 : 11/4/2015 3:45:56PM

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	75.98	69 -	80	75.24	8.57E+02	142.60	2.10E+03	.....
2	93.26	91 -	97	92.53	1.35E+02	83.87	1.12E+03	GA-67
3	116.60	113 -	118	115.89	5.15E+01	57.64	6.13E+02	.....
4	127.88	123 -	131	127.17	8.07E+01	85.27	1.06E+03	.....

: 01035

Analysis Report for 1510084-19

CP1803S15-16

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
5	154.16	147 -	159	153.46	1.06E+02	102.22	1.17E+03	CS-136
6	164.28	160 -	168	163.58	1.07E+02	70.62	6.99E+02	CS-136 U-235
7	185.77	181 -	188	185.08	1.22E+02	67.08	6.70E+02	RA-226
8	239.20	232 -	245	238.54	6.30E+02	103.61	8.97E+02	PB-212
9	249.29	245 -	253	248.63	4.96E+01	56.19	4.57E+02	.....
10	270.28	266 -	273	269.63	5.98E+01	49.36	3.62E+02	.....
11	294.88	289 -	299	294.24	1.02E+02	67.07	5.48E+02	PB-214
12	327.19	321 -	332	326.56	5.72E+01	55.39	3.58E+02	.....
M	338.55	332 -	356	337.93	1.14E+02	45.67	2.38E+02	AC-228
m	351.88	332 -	356	351.27	2.67E+02	51.86	2.47E+02	PB-214
15	462.53	457 -	467	461.97	7.56E+01	38.14	1.53E+02	SB-125
16	483.10	478 -	486	482.55	2.85E+01	35.64	1.73E+02	.....
17	551.20	547 -	556	550.67	3.46E+01	30.77	1.17E+02	.....
18	582.85	575 -	586	582.34	1.32E+02	51.46	2.67E+02	TL-208
19	609.10	603 -	615	608.60	1.44E+02	47.28	1.96E+02	BI-214
20	732.29	719 -	746	731.86	6.79E+01	68.85	2.74E+02	.....
21	767.94	762 -	775	767.53	3.38E+01	36.32	1.26E+02	.....
22	877.82	870 -	887	877.46	2.93E+01	36.17	1.09E+02	.....
23	903.50	900 -	907	903.16	1.64E+01	19.39	5.12E+01	.....
24	911.20	908 -	916	910.86	8.22E+01	27.27	6.56E+01	AC-228 LU-172
25	968.69	962 -	973	968.38	7.50E+01	31.81	8.60E+01	AC-228
26	1051.53	1041 -	1061	1051.27	5.73E+01	33.70	6.75E+01	.....
27	1121.90	1117 -	1127	1121.68	4.07E+01	29.30	9.06E+01	TA-182
28	1193.92	1190 -	1197	1193.74	1.38E+01	17.78	4.25E+01	.....
29	1227.68	1225 -	1230	1227.51	1.87E+01	14.90	2.87E+01	.....
30	1274.23	1271 -	1277	1274.10	1.91E+01	13.77	1.98E+01	EU-154 NA-22
31	1363.44	1360 -	1367	1363.35	1.33E+01	11.14	1.13E+01	.....
32	1406.49	1401 -	1411	1406.43	1.43E+01	14.87	2.15E+01	.....
33	1460.87	1455 -	1465	1460.84	2.47E+02	33.96	2.26E+01	K-40
34	1537.95	1533 -	1543	1537.97	1.15E+01	12.76	1.30E+01	.....
35	1547.84	1545 -	1551	1547.86	8.00E+00	7.23	4.00E+00	.....
36	1594.01	1591 -	1597	1594.07	1.50E+01	12.54	1.80E+01	.....
37	1764.53	1761 -	1767	1764.70	1.68E+01	11.17	1.04E+01	BI-214
38	1847.56	1844 -	1850	1847.78	5.43E+00	6.34	3.14E+00	.....
39	1872.19	1868 -	1875	1872.43	7.00E+00	5.29	0.00E+00	.....
40	1932.73	1927 -	1937	1933.01	6.61E+00	8.14	4.78E+00	.....
41	2187.25	2185 -	2190	2187.71	4.67E+00	5.74	2.67E+00	.....
42	2355.53	2352 -	2359	2356.11	4.08E+00	6.32	3.83E+00	.....
43	2447.26	2443 -	2450	2447.90	1.00E+01	6.32	0.00E+00	.....
44	2614.74	2611 -	2619	2615.51	4.90E+01	14.00	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

Analysis Report for 1510084-19
CP1803S15-16

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/4/2015 3:45:56PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
1	75.98	8.57E+02	142.60	2.13E-02	1.69E-03	
2	93.26	1.35E+02	83.87	1.90E-02	1.62E-03	
3	116.60	5.15E+01	57.64	1.65E-02	1.54E-03	
4	127.88	8.07E+01	85.27	1.54E-02	1.48E-03	
5	154.16	1.06E+02	102.22	1.35E-02	1.30E-03	
6	164.28	1.07E+02	70.62	1.28E-02	1.22E-03	
7	185.77	1.22E+02	67.08	1.16E-02	1.15E-03	
8	239.20	6.30E+02	103.61	9.40E-03	9.85E-04	
9	249.29	4.96E+01	56.19	9.06E-03	9.54E-04	
10	270.28	5.98E+01	49.36	8.43E-03	8.89E-04	
11	294.88	1.02E+02	67.07	7.79E-03	8.44E-04	
12	327.19	5.72E+01	55.39	7.08E-03	8.08E-04	
M	13	338.55	1.14E+02	45.67	6.86E-03	7.95E-04
m	14	351.88	2.67E+02	51.86	6.61E-03	7.80E-04
15	462.53	7.56E+01	38.14	5.08E-03	6.32E-04	
16	483.10	2.85E+01	35.64	4.87E-03	6.02E-04	
17	551.20	3.46E+01	30.77	4.28E-03	5.02E-04	
18	582.85	1.32E+02	51.46	4.05E-03	4.56E-04	
19	609.10	1.44E+02	47.28	3.88E-03	4.17E-04	
20	732.29	6.79E+01	68.85	3.23E-03	3.01E-04	
21	767.94	3.38E+01	36.32	3.08E-03	2.81E-04	
22	877.82	2.93E+01	36.17	2.71E-03	2.19E-04	
23	903.50	1.64E+01	19.39	2.63E-03	2.07E-04	
24	911.20	8.22E+01	27.27	2.61E-03	2.06E-04	
25	968.69	7.50E+01	31.81	2.46E-03	1.99E-04	
26	1051.53	5.73E+01	33.70	2.28E-03	1.88E-04	
27	1121.90	4.07E+01	29.30	2.14E-03	1.79E-04	
28	1193.92	1.38E+01	17.78	2.02E-03	1.78E-04	
29	1227.68	1.87E+01	14.90	1.97E-03	1.87E-04	
30	1274.23	1.91E+01	13.77	1.90E-03	2.00E-04	
31	1363.44	1.33E+01	11.14	1.79E-03	2.09E-04	
32	1406.49	1.43E+01	14.87	1.74E-03	2.00E-04	
33	1460.87	2.47E+02	33.96	1.68E-03	1.89E-04	
34	1537.95	1.15E+01	12.76	1.61E-03	1.73E-04	
35	1547.84	8.00E+00	7.23	1.60E-03	1.71E-04	
36	1594.01	1.50E+01	12.54	1.56E-03	1.61E-04	
37	1764.53	1.68E+01	11.17	1.43E-03	1.26E-04	
38	1847.56	5.43E+00	6.34	1.38E-03	1.11E-04	
39	1872.19	7.00E+00	5.29	1.37E-03	1.11E-04	
40	1932.73	6.61E+00	8.14	1.33E-03	1.11E-04	
41	2187.25	4.67E+00	5.74	1.21E-03	1.11E-04	
42	2355.53	4.08E+00	6.32	1.15E-03	1.11E-04	
43	2447.26	1.00E+01	6.32	1.12E-03	1.11E-04	
44	2614.74	4.90E+01	14.00	1.07E-03	1.11E-04	

Analysis Report for 1510084-19

CP1803S15-16

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 : 11/4/2015 3:45:56PM

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	75.98	8.57E+02	142.60			8.57E+02	1.43E+02	
2	93.26	1.35E+02	83.87	5.44E+01	8.36E+00	8.06E+01	8.43E+01	
3	116.60	5.15E+01	57.64			5.15E+01	5.76E+01	
4	127.88	8.07E+01	85.27			8.07E+01	8.53E+01	
5	154.16	1.06E+02	102.22			1.06E+02	1.02E+02	
6	164.28	1.07E+02	70.62			1.07E+02	7.06E+01	
7	185.77	1.22E+02	67.08	1.43E+01	7.33E+00	1.08E+02	6.75E+01	
8	239.20	6.30E+02	103.61	1.09E+01	6.39E+00	6.20E+02	1.04E+02	
9	249.29	4.96E+01	56.19			4.96E+01	5.62E+01	
10	270.28	5.98E+01	49.36			5.98E+01	4.94E+01	
11	294.88	1.02E+02	67.07			1.02E+02	6.71E+01	
12	327.19	5.72E+01	55.39			5.72E+01	5.54E+01	
M	13	338.55	1.14E+02	45.67		1.14E+02	4.57E+01	
m	14	351.88	2.67E+02	51.86	8.07E+00	5.01E+00	2.59E+02	5.21E+01
	15	462.53	7.56E+01	38.14		7.56E+01	3.81E+01	
	16	483.10	2.85E+01	35.64		2.85E+01	3.56E+01	
	17	551.20	3.46E+01	30.77		3.46E+01	3.08E+01	
	18	582.85	1.32E+02	51.46		1.32E+02	5.15E+01	
	19	609.10	1.44E+02	47.28	5.16E+00	1.63E+00	1.39E+02	4.73E+01
	20	732.29	6.79E+01	68.85		6.79E+01	6.88E+01	
	21	767.94	3.38E+01	36.32		3.38E+01	3.63E+01	
	22	877.82	2.93E+01	36.17		2.93E+01	3.62E+01	
	23	903.50	1.64E+01	19.39		1.64E+01	1.94E+01	
	24	911.20	8.22E+01	27.27	1.01E+00	2.85E+00	8.12E+01	2.74E+01
	25	968.69	7.50E+01	31.81		7.50E+01	3.18E+01	
	26	1051.53	5.73E+01	33.70		5.73E+01	3.37E+01	
	27	1121.90	4.07E+01	29.30		4.07E+01	2.93E+01	
	28	1193.92	1.38E+01	17.78		1.38E+01	1.78E+01	
	29	1227.68	1.87E+01	14.90		1.87E+01	1.49E+01	
	30	1274.23	1.91E+01	13.77		1.91E+01	1.38E+01	
	31	1363.44	1.33E+01	11.14		1.33E+01	1.11E+01	
	32	1406.49	1.43E+01	14.87		1.43E+01	1.49E+01	
	33	1460.87	2.47E+02	33.96		2.47E+02	3.40E+01	
	34	1537.95	1.15E+01	12.76		1.15E+01	1.28E+01	
	35	1547.84	8.00E+00	7.23		8.00E+00	7.23E+00	

: 01038

Analysis Report for 1510084-19

CP1803S15-16

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
36	1594.01	1.50E+01	12.54			1.50E+01	1.25E+01
37	1764.53	1.68E+01	11.17	1.11E-01	9.77E-01	1.67E+01	1.12E+01
38	1847.56	5.43E+00	6.34			5.43E+00	6.34E+00
39	1872.19	7.00E+00	5.29			7.00E+00	5.29E+00
40	1932.73	6.61E+00	8.14			6.61E+00	8.14E+00
41	2187.25	4.67E+00	5.74			4.67E+00	5.74E+00
42	2355.53	4.08E+00	6.32			4.08E+00	6.32E+00
43	2447.26	1.00E+01	6.32			1.00E+01	6.32E+00
44	2614.74	4.90E+01	14.00	1.20E+00	1.02E+00	4.78E+01	1.40E+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 : 11/4/2015 3:45:56PM
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	75.98	8.57E+02	142.60			8.57E+02	1.43E+02	
2	93.26	1.35E+02	83.87	5.44E+01	8.36E+00	8.06E+01	8.43E+01	
3	116.60	5.15E+01	57.64			5.15E+01	5.76E+01	
4	127.88	8.07E+01	85.27			8.07E+01	8.53E+01	
5	154.16	1.06E+02	102.22			1.06E+02	1.02E+02	
6	164.28	1.07E+02	70.62			1.07E+02	7.06E+01	
7	185.77	1.22E+02	67.08	1.43E+01	7.33E+00	1.08E+02	6.75E+01	
8	239.20	6.30E+02	103.61	1.09E+01	6.39E+00	6.20E+02	1.04E+02	
9	249.29	4.96E+01	56.19			4.96E+01	5.62E+01	
10	270.28	5.98E+01	49.36			5.98E+01	4.94E+01	
11	294.88	1.02E+02	67.07			1.02E+02	6.71E+01	
12	327.19	5.72E+01	55.39			5.72E+01	5.54E+01	
M	13	338.55	1.14E+02	45.67		1.14E+02	4.57E+01	
m	14	351.88	2.67E+02	51.86	8.07E+00	5.01E+00	2.59E+02	5.21E+01
	15	462.53	7.56E+01	38.14		7.56E+01	3.81E+01	
	16	483.10	2.85E+01	35.64		2.85E+01	3.56E+01	
	17	551.20	3.46E+01	30.77		3.46E+01	3.08E+01	
	18	582.85	1.32E+02	51.46		1.32E+02	5.15E+01	
	19	609.10	1.44E+02	47.28	5.16E+00	1.63E+00	1.39E+02	4.73E+01

: 01039

Analysis Report for 1510084-19

CP1803S15-16

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
20	732.29	6.79E+01	68.85			6.79E+01	6.88E+01
21	767.94	3.38E+01	36.32			3.38E+01	3.63E+01
22	877.82	2.93E+01	36.17			2.93E+01	3.62E+01
23	903.50	1.64E+01	19.39			1.64E+01	1.94E+01
24	911.20	8.22E+01	27.27	1.01E+00	2.85E+00	8.12E+01	2.74E+01
25	968.69	7.50E+01	31.81			7.50E+01	3.18E+01
26	1051.53	5.73E+01	33.70			5.73E+01	3.37E+01
27	1121.90	4.07E+01	29.30			4.07E+01	2.93E+01
28	1193.92	1.38E+01	17.78			1.38E+01	1.78E+01
29	1227.68	1.87E+01	14.90			1.87E+01	1.49E+01
30	1274.23	1.91E+01	13.77			1.91E+01	1.38E+01
31	1363.44	1.33E+01	11.14			1.33E+01	1.11E+01
32	1406.49	1.43E+01	14.87			1.43E+01	1.49E+01
33	1460.87	2.47E+02	33.96			2.47E+02	3.40E+01
34	1537.95	1.15E+01	12.76			1.15E+01	1.28E+01
35	1547.84	8.00E+00	7.23			8.00E+00	7.23E+00
36	1594.01	1.50E+01	12.54			1.50E+01	1.25E+01
37	1764.53	1.68E+01	11.17	1.11E-01	9.77E-01	1.67E+01	1.12E+01
38	1847.56	5.43E+00	6.34			5.43E+00	6.34E+00
39	1872.19	7.00E+00	5.29			7.00E+00	5.29E+00
40	1932.73	6.61E+00	8.14			6.61E+00	8.14E+00
41	2187.25	4.67E+00	5.74			4.67E+00	5.74E+00
42	2355.53	4.08E+00	6.32			4.08E+00	6.32E+00
43	2447.26	1.00E+01	6.32			1.00E+01	6.32E+00
44	2614.74	4.90E+01	14.00	1.20E+00	1.02E+00	4.78E+01	1.40E+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
NA-22	0.985	1274.54 *	99.94	1.23E-01	8.97E-02
K-40	0.999	1460.81 *	10.67	1.65E+01	2.96E+00
GA-67	0.446	93.31 *	35.70	3.06E+01	1.11E+02
		208.95	2.24		
		300.22	16.00		
TL-208	0.881	583.14 *	30.22	1.30E+00	5.27E-01

: 01040

Analysis Report for 1510084-19
CP1803S15-16

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TL-208	0.881	860.37	4.48		
		2614.66 *	35.85	1.50E+00	4.66E-01
PB-212	0.849	238.63 *	44.60	1.78E+00	3.52E-01
		300.09	3.41		
BI-214	0.675	609.31 *	46.30	9.30E-01	3.33E-01
		1120.29	15.10		
		1764.49 *	15.80	8.88E-01	6.01E-01
		2204.22	4.98		
PB-214	0.994	295.21 *	19.19	8.22E-01	5.47E-01
		351.92 *	37.19	1.27E+00	2.96E-01
RA-226	0.969	186.21 *	3.28	3.39E+00	6.57E+00
AC-228	0.989	338.32 *	11.40	1.76E+00	7.33E-01
		911.07 *	27.70	1.35E+00	4.69E-01
		969.11 *	16.60	2.21E+00	9.55E-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 : 11/4/2015 3:45:56PM
 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	75.98	2.38040E-01	8.32		
3	116.60	1.42955E-02	56.00		
4	127.88	2.24216E-02	52.82		
5	154.16	2.95133E-02	48.11	Tol.	CS-136
6	164.28	2.98098E-02	32.90	Tol.	CS-136 U-235
9	249.29	1.37675E-02	56.68		
10	270.28	1.66056E-02	41.28		
12	327.19	1.58904E-02	48.41		
15	462.53	2.10015E-02	25.23	Tol.	SB-125
16	483.10	7.91667E-03	62.52		
17	551.20	9.60574E-03	44.50		
20	732.29	1.88523E-02	50.72		
21	767.94	9.38860E-03	53.73	Sum	
22	877.82	8.14815E-03	61.65	Sum	

Analysis Report for 1510084-19

CP1803S15-16

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
23	903.50	4.55357E-03	59.14	Sum	
26	1051.53	1.59051E-02	29.43		
27	1121.90	1.13049E-02	35.99	Tol.	TA-182
28	1193.92	3.82540E-03	64.54		
29	1227.68	5.18519E-03	39.91		
31	1363.44	3.70614E-03	41.73		
32	1406.49	3.96111E-03	52.13		
34	1537.95	3.19444E-03	55.47		
35	1547.84	2.22222E-03	45.18		
36	1594.01	4.16088E-03	41.86		
38	1847.56	1.50794E-03	58.43		
39	1872.19	1.94444E-03	37.80		
40	1932.73	1.83642E-03	61.56		
41	2187.25	1.29630E-03	61.55		
42	2355.53	1.13426E-03	77.44		
43	2447.26	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 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
NA-22	0.98	1274.54 *	99.94	1.23E-01	8.97E-02
K-40	0.99	1460.81 *	10.67	1.65E+01	2.96E+00
GA-67	0.44	93.31 *	35.70	3.06E+01	1.11E+02
		208.95	2.24		
		300.22	16.00		
TL-208	0.88	583.14 *	30.22	1.30E+00	5.27E-01
		860.37	4.48		
		2614.66 *	35.85	1.50E+00	4.66E-01
PB-212	0.84	238.63 *	44.60	1.78E+00	3.52E-01
		300.09	3.41		
BI-214	0.67	609.31 *	46.30	9.30E-01	3.33E-01
		1120.29	15.10		

: 01042

Analysis Report for 1510084-19
CP1803S15-16

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.67	1764.49 *	15.80	8.88E-01	6.01E-01
		2204.22	4.98		
PB-214	0.99	295.21 *	19.19	8.22E-01	5.47E-01
		351.92 *	37.19	1.27E+00	2.96E-01
RA-226	0.96	186.21 *	3.28	3.39E+00	6.57E+00
AC-228	0.98	338.32 *	11.40	1.76E+00	7.33E-01
		911.07 *	27.70	1.35E+00	4.69E-01
		969.11 *	16.60	2.21E+00	9.55E-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
NA-22	0.985	1.23E-01	8.97E-02	
K-40	0.999	1.65E+01	2.96E+00	
GA-67	0.446	3.06E+01	1.11E+02	
TL-208	0.881	1.41E+00	3.49E-01	
PB-212	0.849	1.78E+00	3.52E-01	
BI-214	0.675	9.20E-01	2.91E-01	
PB-214	0.994	1.17E+00	2.60E-01	
RA-226	0.969	3.39E+00	6.57E+00	
AC-228	0.989	1.58E+00	3.65E-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 1510084-19
CP1803S15-16

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 3:45:56PM
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	75.98	2.38040E-01	8.32		
3	116.60	1.42955E-02	56.00		
4	127.88	2.24216E-02	52.82		
5	154.16	2.95133E-02	48.11	Tol.	CS-136
6	164.28	2.98098E-02	32.90	Tol.	CS-136 U-235
9	249.29	1.37675E-02	56.68		
10	270.28	1.66056E-02	41.28		
12	327.19	1.58904E-02	48.41		
15	462.53	2.10015E-02	25.23	Tol.	SB-125
16	483.10	7.91667E-03	62.52		
17	551.20	9.60574E-03	44.50		
20	732.29	1.88523E-02	50.72		
21	767.94	9.38860E-03	53.73	Sum	
22	877.82	8.14815E-03	61.65	Sum	
23	903.50	4.55357E-03	59.14	Sum	
26	1051.53	1.59051E-02	29.43		
27	1121.90	1.13049E-02	35.99	Tol.	TA-182
28	1193.92	3.82540E-03	64.54		
29	1227.68	5.18519E-03	39.91		
31	1363.44	3.70614E-03	41.73		
32	1406.49	3.96111E-03	52.13		
34	1537.95	3.19444E-03	55.47		
35	1547.84	2.22222E-03	45.18		
36	1594.01	4.16088E-03	41.86		
38	1847.56	1.50794E-03	58.43		
39	1872.19	1.94444E-03	37.80		
40	1932.73	1.83642E-03	61.56		
41	2187.25	1.29630E-03	61.55		
42	2355.53	1.13426E-03	77.44		
43	2447.26	2.77778E-03	31.62		

Analysis Report for 1510084-19
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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	4.30E-01	1.69E+00	1.69E+00
+ NA-22	1274.54	* 99.94	1.23E-01	1.30E-01	1.30E-01
+ NA-24	1368.53	99.99	-4.12E+10	1.76E+11	2.03E+11
	2754.09	99.86	4.92E+10		1.76E+11
+ AL-26	1808.65	99.76	-7.44E-03	1.13E-01	1.13E-01
+ K-40	1460.81	* 10.67	1.65E+01	1.60E+00	1.60E+00
+ @ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+ TI-44	67.88	94.40	4.12E-02	8.55E-02	8.55E-02
	78.34	96.00	-1.82E-02		1.09E-01
+ SC-46	889.25	99.98	-8.22E-04	1.78E-01	1.78E-01
	1120.51	99.99	1.92E-01		3.01E-01
+ V-48	983.52	99.98	1.94E-01	4.54E-01	4.54E-01
	1312.10	97.50	-1.75E-01		4.68E-01
+ CR-51	320.08	9.83	3.90E-01	1.96E+00	1.96E+00
+ MN-54	834.83	99.97	-3.26E-02	1.46E-01	1.46E-01
+ CO-56	846.75	99.96	-1.14E-02	1.93E-01	1.93E-01
	1037.75	14.03	-3.14E-01		1.35E+00
	1238.25	67.00	2.76E-01		4.27E-01
	1771.40	15.51	-7.01E-01		1.08E+00
	2598.48	16.90	1.38E-02		7.68E-01
+ CO-57	122.06	85.51	-1.97E-02	1.04E-01	1.04E-01
	136.48	10.60	-1.65E-01		8.86E-01
+ CO-58	810.76	99.40	-9.82E-02	1.68E-01	1.68E-01
+ FE-59	1099.22	56.50	-2.57E-01	4.25E-01	4.25E-01
	1291.56	43.20	4.39E-02		5.80E-01
+ CO-60	1173.22	100.00	1.18E-02	1.76E-01	1.79E-01
	1332.49	100.00	1.99E-02		1.76E-01
+ ZN-65	1115.52	50.75	3.59E-02	4.29E-01	4.29E-01
+ GA-67	93.31	* 35.70	3.06E+01	5.24E+01	5.24E+01
	208.95	2.24	8.10E+02		1.07E+03
	300.22	16.00	-6.07E+00		1.58E+02
+ SE-75	121.11	16.70	-1.09E-01	1.70E-01	5.77E-01

Analysis Report for 1510084-19
CP1803S15-16

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	-2.22E-02	1.70E-01	1.70E-01
		264.65	59.80	2.87E-02		2.06E-01
		279.53	25.20	-3.87E-02		4.99E-01
		400.65	11.40	4.46E-01		1.18E+00
+	RB-82	776.52	13.00	-2.54E-01	2.04E+00	2.04E+00
+	RB-83	520.41	46.00	-1.23E-01	3.12E-01	3.12E-01
		529.64	30.30	-1.94E-01		4.93E-01
		552.65	16.40	5.78E-01		9.87E-01
+	KR-85	513.99	0.43	4.12E+01	3.75E+01	3.75E+01
+	SR-85	513.99	99.27	2.35E-01	2.14E-01	2.14E-01
+	Y-88	898.02	93.40	-2.76E-03	1.45E-01	1.84E-01
		1836.01	99.38	6.17E-02		1.45E-01
+	NB-93M	16.57	9.43	7.75E-01	4.12E-01	4.12E-01
+	NB-94	702.63	100.00	2.08E-02	1.45E-01	1.50E-01
		871.10	100.00	-2.45E-03		1.45E-01
+	NB-95	765.79	99.81	7.55E-02	2.67E-01	2.67E-01
+	NB-95M	235.69	25.00	2.45E+02	8.75E+01	8.75E+01
+	ZR-95	724.18	43.70	4.57E-01	3.88E-01	5.11E-01
		756.72	55.30	2.21E-01		3.88E-01
+	MO-99	181.06	6.20	-1.90E+02	6.51E+02	9.10E+02
		739.58	12.80	1.02E+02		6.51E+02
		778.00	4.50	-5.45E+02		1.73E+03
+	RU-103	497.08	89.00	-6.17E-02	2.03E-01	2.03E-01
+	RU-106	621.84	9.80	-2.15E-01	1.29E+00	1.29E+00
+	AG-108M	433.93	89.90	2.03E-02	1.28E-01	1.28E-01
		614.37	90.40	2.89E-04		1.71E-01
		722.95	90.50	5.52E-02		1.77E-01
+	CD-109	88.03	3.72	3.38E-01	2.64E+00	2.64E+00
+	AG-110M	657.75	93.14	-5.20E-02	1.53E-01	1.53E-01
		677.61	10.53	-2.96E-02		1.39E+00
		706.67	16.46	-1.79E-01		9.63E-01
		763.93	21.98	-8.33E-02		8.05E-01
		884.67	71.63	1.34E-02		2.18E-01
		1384.27	23.94	-1.02E-02		7.79E-01
+	CD-113M	263.70	0.02	4.29E+01	4.55E+02	4.55E+02
+	SN-113	255.12	1.93	-1.27E+00	1.98E-01	6.15E+00
		391.69	64.90	4.37E-02		1.98E-01
+	TE123M	159.00	84.10	-8.88E-02	1.29E-01	1.29E-01
+	SB-124	602.71	97.87	-3.34E-02	1.89E-01	1.89E-01
		645.85	7.26	-7.48E-01		2.29E+00
		722.78	11.10	-6.79E-01		1.78E+00
		1691.02	49.00	-8.29E-02		2.66E-01
+	I-125	35.49	6.49	-2.90E-01	9.78E-01	9.78E-01
+	SB-125	176.33	6.89	3.23E-01	4.06E-01	1.42E+00
		427.89	29.33	8.97E-02		4.06E-01
		463.38	10.35	8.36E-01		1.30E+00
		600.56	17.80	-1.62E-01		7.67E-01
		635.90	11.32	-1.16E-01		1.13E+00

Analysis Report for 1510084-19
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	7.17E-02	5.46E-01	6.05E-01
		666.33	99.60	1.17E-01		6.47E-01
		695.00	99.60	-5.06E-02		5.46E-01
		720.50	53.80	3.95E-02		9.94E-01
+	SN-126	87.57	37.00	3.27E-02	2.54E-01	2.54E-01
+	SB-127	473.00	25.00	1.67E+01	3.47E+01	4.50E+01
		685.20	35.70	3.88E+00		3.47E+01
		783.80	14.70	5.10E+01		1.07E+02
+	I-129	29.78	57.00	-3.60E-03	8.11E-02	8.11E-02
		33.60	13.20	-1.31E-01		3.50E-01
		39.58	7.52	-6.02E-01		6.56E-01
+	I-131	284.30	6.05	-3.61E+00	1.15E+00	1.55E+01
		364.48	81.20	-3.66E-01		1.15E+00
		636.97	7.26	1.72E-01		1.54E+01
		722.89	1.80	-2.75E+01		7.23E+01
+	TE-132	49.72	13.10	1.55E+01	2.63E+01	9.97E+01
		228.16	88.00	6.47E+00		2.63E+01
+	BA-133	81.00	33.00	-1.19E-01	2.73E-01	2.94E-01
		302.84	17.80	3.72E-02		6.44E-01
		356.01	60.00	1.51E-02		2.73E-01
+	I-133	529.87	86.30	-3.21E+07	8.16E+07	8.16E+07
+	XE-133	81.00	38.00	-2.88E+00	7.14E+00	7.14E+00
+	CS-134	563.23	8.38	-4.18E-02	1.69E-01	1.67E+00
		569.32	15.43	-1.32E-01		9.44E-01
		604.70	97.60	3.75E-03		1.80E-01
		795.84	85.40	-4.08E-02		1.69E-01
		801.93	8.73	7.16E-02		1.67E+00
+	CS-135	268.24	16.00	6.01E-02	7.14E-01	7.14E-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	4.00E+00	5.55E-01	4.85E+00
		163.89	4.61	3.70E+00		7.81E+00
		176.55	13.56	6.09E-01		2.68E+00
		273.65	12.66	-1.55E-01		3.38E+00
		340.57	48.50	8.38E-01		9.97E-01
		818.50	99.70	3.24E-02		5.55E-01
		1048.07	79.60	4.12E-01		8.49E-01
		1235.34	19.70	-1.31E-02		4.24E+00
+	CS-137	661.65	85.12	7.97E-02	1.78E-01	1.78E-01
+	LA-138	788.74	34.00	1.92E-02	1.60E-01	4.53E-01
		1435.80	66.00	-8.08E-02		1.60E-01
+	CE-139	165.85	80.35	6.24E-02	1.35E-01	1.35E-01
+	BA-140	162.64	6.70	1.86E+00	2.10E+00	5.56E+00
		304.84	4.50	1.64E+00		9.68E+00
		423.70	3.20	1.20E+00		1.43E+01
		437.55	2.00	2.89E+00		2.29E+01
		537.32	25.00	6.81E-01		2.10E+00
+	LA-140	328.77	20.50	9.91E-01	7.94E-01	2.17E+00

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Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
LA-140	487.03	45.50	1.20E-01	7.94E-01	1.11E+00
	815.85	23.50	7.18E-01		2.42E+00
	1596.49	95.49	-1.90E-01		7.94E-01
+ CE-141	145.44	48.40	2.54E-02	3.21E-01	3.21E-01
+ CE-143	57.36	11.80	-1.51E+05	1.05E+05	1.94E+05
	293.26	42.00	1.13E+05		1.05E+05
	664.55	5.20	5.87E+04		9.77E+05
+ CE-144	133.54	10.80	2.27E-01	8.78E-01	8.78E-01
+ PM-144	476.78	42.00	6.46E-02	1.31E-01	3.04E-01
	618.01	98.60	-1.45E-02		1.31E-01
	696.49	99.49	-3.77E-02		1.40E-01
+ PM-145	36.85	21.70	-9.96E-02	1.21E-01	2.18E-01
	37.36	39.70	-6.63E-02		1.21E-01
	42.30	15.10	1.62E-01		3.60E-01
	72.40	2.31	8.20E+00		4.37E+00
+ PM-146	453.90	39.94	1.37E-02	2.91E-01	2.91E-01
	735.90	14.01	2.85E-01		1.08E+00
	747.13	13.10	-2.54E-01		1.06E+00
+ ND-147	91.11	28.90	-3.63E-01	1.68E+00	1.68E+00
	531.02	13.10	-2.21E+00		4.59E+00
+ PM-149	285.90	3.10	-1.89E+03	9.28E+03	9.28E+03
+ EU-152	121.78	20.50	-7.72E-02	4.09E-01	4.09E-01
	244.69	5.40	-8.29E+00		2.34E+00
	344.27	19.13	-3.08E+00		5.55E-01
	778.89	9.20	-4.65E-01		1.48E+00
	964.01	10.40	-4.86E-01		1.96E+00
	1085.78	7.22	7.58E-02		2.17E+00
	1112.02	9.60	-1.61E+00		1.81E+00
	1407.95	14.94	4.33E-01		1.16E+00
+ GD-153	97.43	31.30	-2.02E-02	2.78E-01	2.78E-01
	103.18	22.20	1.91E-02		3.86E-01
+ EU-154	123.07	40.50	-3.95E-02	2.09E-01	2.09E-01
	723.30	19.70	2.55E-01		8.18E-01
	873.19	11.50	-2.35E-01		1.27E+00
	996.32	10.30	2.02E-01		1.61E+00
	1004.76	17.90	3.48E-01		9.15E-01
	1274.45	35.50	3.58E-02		5.20E-01
+ EU-155	86.50	30.90	4.93E-02	3.04E-01	3.04E-01
	105.30	20.70	2.17E-01		3.97E-01
+ EU-156	811.77	10.40	-1.58E+00	4.03E+00	4.03E+00
	1153.47	7.20	-5.05E+00		8.51E+00
	1230.71	8.90	-2.55E+00		7.46E+00
+ HO-166M	184.41	72.60	1.22E-01	1.50E-01	1.50E-01
	280.45	29.60	2.03E-01		3.78E-01
	410.94	11.10	5.85E-02		1.11E+00
	711.69	54.10	6.71E-02		2.65E-01
+ TM-171	66.72	0.14	4.26E+01	5.89E+01	5.89E+01
+ HF-172	81.75	4.52	-7.82E-01	8.40E-01	2.03E+00
	125.81	11.30	-4.86E-02		8.40E-01

Analysis Report for 1510084-19
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	-1.08E+00	3.61E+00	6.76E+00
		810.06	16.63	-6.23E+00		1.07E+01
		912.12	15.25	3.26E+01		2.16E+01
		1093.66	62.50	2.59E-01		3.61E+00
+	LU-173	100.72	5.24	-5.94E-01	5.45E-01	1.53E+00
		272.11	21.20	-1.11E-01		5.45E-01
+	HF-175	343.40	84.00	-4.56E-01	1.69E-01	1.69E-01
+	LU-176	88.34	13.30	-1.50E-01	1.10E-01	7.25E-01
		201.83	86.00	-2.72E-02		1.22E-01
		306.78	94.00	-6.16E-02		1.10E-01
+	TA-182	67.75	41.20	1.10E-01	2.28E-01	2.28E-01
		1121.30	34.90	4.02E-01		8.07E-01
		1189.05	16.23	1.79E-02		1.25E+00
		1221.41	26.98	-2.84E-01		7.74E-01
		1231.02	11.44	-7.31E-01		2.14E+00
+	IR-192	308.46	29.68	-2.43E-03	3.03E-01	4.43E-01
		468.07	48.10	-6.38E-02		3.03E-01
+	HG-203	279.19	77.30	-1.59E-02	2.05E-01	2.05E-01
+	BI-207	569.67	97.72	-2.05E-02	1.46E-01	1.46E-01
		1063.62	74.90	-2.79E-02		1.92E-01
+	TL-208	583.14	* 30.22	1.30E+00	2.10E-01	7.72E-01
		860.37	4.48	3.25E-01		3.74E+00
		2614.66	* 35.85	1.50E+00		2.10E-01
+	BI-210M	262.00	45.00	-1.23E-02	2.30E-01	2.30E-01
		300.00	23.00	3.57E-02		5.60E-01
+	PB-210	46.50	4.25	-3.29E-02	1.35E+00	1.35E+00
+	PB-211	404.84	2.90	-1.74E-01	4.06E+00	4.06E+00
		831.96	2.90	-1.55E+00		4.68E+00
+	BI-212	727.17	11.80	8.98E-01	1.44E+00	1.44E+00
		1620.62	2.75	-7.58E-01		5.35E+00
+	PB-212	238.63	* 44.60	1.78E+00	4.38E-01	4.38E-01
		300.09	3.41	2.41E-01		3.78E+00
+	BI-214	609.31	* 46.30	9.30E-01	4.71E-01	4.71E-01
		1120.29	15.10	1.03E+00		1.62E+00
		1764.49	* 15.80	8.88E-01		8.14E-01
		2204.22	4.98	1.15E+00		3.63E+00
+	PB-214	295.21	* 19.19	8.22E-01	7.77E-01	8.69E-01
		351.92	* 37.19	1.27E+00		7.77E-01
+	RN-219	401.80	6.50	3.52E-01	1.79E+00	1.79E+00
+	RA-223	323.87	3.88	-2.04E-01	2.70E+00	2.70E+00
+	RA-224	240.98	3.95	1.89E+01	4.64E+00	4.64E+00
+	RA-225	40.00	31.00	-4.77E-01	5.20E-01	5.20E-01
+	RA-226	186.21	* 3.28	3.39E+00	3.42E+00	3.42E+00
+	TH-227	50.10	8.40	1.13E-01	7.29E-01	7.29E-01
		236.00	11.50	4.20E+00		1.50E+00
		256.20	6.30	-1.82E-01		1.63E+00
+	AC-228	338.32	* 11.40	1.76E+00	6.11E-01	2.43E+00
		911.07	* 27.70	1.35E+00		6.11E-01

Analysis Report for 1510084-19
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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	2.21E+00	6.11E-01	1.37E+00
+	TH-230	48.44		16.90	-4.11E-02	3.53E-01	3.53E-01
		62.85		4.60	1.43E+00		1.68E+00
		67.67		0.37	1.05E+01		2.18E+01
+	PA-231	283.67		1.60	-6.30E-01	4.96E+00	6.82E+00
		302.67		2.30	2.87E-01		4.96E+00
+	TH-231	25.64		14.70	-6.71E-02	3.18E-01	3.18E-01
		84.21		6.40	9.33E-01		1.37E+00
+	PA-233	311.98		38.60	-2.74E-01	4.96E-01	4.96E-01
+	PA-234	131.20		20.40	-1.14E-02	4.52E-01	4.52E-01
		733.99		8.80	-5.77E-01		1.67E+00
		946.00		12.00	4.02E-02		1.30E+00
+	PA-234M	1001.03		0.92	2.84E+00	1.78E+01	1.78E+01
+	TH-234	63.29		3.80	2.36E+00	2.07E+00	2.07E+00
+	U-235	143.76		10.50	7.07E-02	8.49E-01	8.49E-01
		163.35		4.70	9.58E-01		2.02E+00
		205.31		4.70	1.39E+00		2.38E+00
+	NP-237	86.50		12.60	1.20E-01	7.38E-01	7.38E-01
+	NP-239	106.10		22.70	3.30E+02	6.04E+02	6.04E+02
		228.18		10.70	7.36E+02		1.71E+03
		277.60		14.10	2.00E+02		1.28E+03
+	AM-241	59.54		35.90	3.74E-02	2.03E-01	2.03E-01
+	AM-243	74.67		66.00	6.91E-01	1.63E-01	1.63E-01
+	CM-243	209.75		3.29	1.95E+00	7.73E-01	3.43E+00
		228.14		10.60	2.51E-01		1.02E+00
		277.60		14.00	1.21E-01		7.73E-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

: 01050

Analysis Report for 1510084-19

CP1803S15-16

	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	1.69E+00	1.69E+00	4.30E-01	8.01E-01
+	NA-22	1274.54 *	99.94	1.30E-01	1.30E-01	1.23E-01	5.64E-02
	NA-24	1368.53	99.99	2.03E+11	1.76E+11	-4.12E+10	8.85E+10
		2754.09	99.86	1.76E+11		4.92E+10	6.60E+10
	AL-26	1808.65	99.76	1.13E-01	1.13E-01	-7.44E-03	4.47E-02
+	K-40	1460.81 *	10.67	1.60E+00	1.60E+00	1.65E+01	7.10E-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	8.55E-02	8.55E-02	4.12E-02	4.20E-02
		78.34	96.00	1.09E-01		-1.82E-02	5.34E-02
	SC-46	889.25	99.98	1.78E-01	1.78E-01	-8.22E-04	8.17E-02
		1120.51	99.99	3.01E-01		1.92E-01	1.41E-01
	V-48	983.52	99.98	4.54E-01	4.54E-01	1.94E-01	2.07E-01
		1312.10	97.50	4.68E-01		-1.75E-01	2.07E-01
	CR-51	320.08	9.83	1.96E+00	1.96E+00	3.90E-01	9.38E-01
	MN-54	834.83	99.97	1.46E-01	1.46E-01	-3.26E-02	6.68E-02
	CO-56	846.75	99.96	1.93E-01	1.93E-01	-1.14E-02	8.91E-02
		1037.75	14.03	1.35E+00		-3.14E-01	6.12E-01
		1238.25	67.00	4.27E-01		2.76E-01	1.98E-01
		1771.40	15.51	1.08E+00		-7.01E-01	4.46E-01
		2598.48	16.90	7.68E-01		1.38E-02	2.72E-01
	CO-57	122.06	85.51	1.04E-01	1.04E-01	-1.97E-02	5.10E-02
		136.48	10.60	8.86E-01		-1.65E-01	4.32E-01
	CO-58	810.76	99.40	1.68E-01	1.68E-01	-9.82E-02	7.70E-02
	FE-59	1099.22	56.50	4.25E-01	4.25E-01	-2.57E-01	1.93E-01
		1291.56	43.20	5.80E-01		4.39E-02	2.60E-01
	CO-60	1173.22	100.00	1.79E-01	1.76E-01	1.18E-02	8.14E-02
		1332.49	100.00	1.76E-01		1.99E-02	7.89E-02
	ZN-65	1115.52	50.75	4.29E-01	4.29E-01	3.59E-02	1.99E-01
+	GA-67	93.31 *	35.70	5.24E+01	5.24E+01	3.06E+01	2.57E+01
		208.95	2.24	1.07E+03		8.10E+02	5.22E+02
		300.22	16.00	1.58E+02		-6.07E+00	7.60E+01
	SE-75	121.11	16.70	5.77E-01	1.70E-01	-1.09E-01	2.81E-01
		136.00	59.20	1.70E-01		-2.22E-02	8.30E-02
		264.65	59.80	2.06E-01		2.87E-02	9.91E-02
		279.53	25.20	4.99E-01		-3.87E-02	2.41E-01
		400.65	11.40	1.18E+00		4.46E-01	5.61E-01
	RB-82	776.52	13.00	2.04E+00	2.04E+00	-2.54E-01	9.39E-01
	RB-83	520.41	46.00	3.12E-01	3.12E-01	-1.23E-01	1.46E-01
		529.64	30.30	4.93E-01		-1.94E-01	2.32E-01
		552.65	16.40	9.87E-01		5.78E-01	4.65E-01
	KR-85	513.99	0.43	3.75E+01	3.75E+01	4.12E+01	1.80E+01
	SR-85	513.99	99.27	2.14E-01	2.14E-01	2.35E-01	1.02E-01
	Y-88	898.02	93.40	1.84E-01	1.45E-01	-2.76E-03	8.44E-02
		1836.01	99.38	1.45E-01		6.17E-02	5.86E-02
	NB-93M	16.57	9.43	4.12E-01	4.12E-01	7.75E-01	2.00E-01
	NB-94	702.63	100.00	1.50E-01	1.45E-01	2.08E-02	7.01E-02
		871.10	100.00	1.45E-01		-2.45E-03	6.66E-02
	NB-95	765.79	99.81	2.67E-01	2.67E-01	7.55E-02	1.25E-01
	NB-95M	235.69	25.00	8.75E+01	8.75E+01	2.45E+02	4.29E+01
	ZR-95	724.18	43.70	5.11E-01	3.88E-01	4.57E-01	2.40E-01
		756.72	55.30	3.88E-01		2.21E-01	1.82E-01

Analysis Report for 1510084-19

CP1803S15-16

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	9.10E+02	6.51E+02	-1.90E+02	4.42E+02
	739.58	12.80	6.51E+02		1.02E+02	3.02E+02
	778.00	4.50	1.73E+03		-5.45E+02	7.98E+02
RU-103	497.08	89.00	2.03E-01	2.03E-01	-6.17E-02	9.56E-02
RU-106	621.84	9.80	1.29E+00	1.29E+00	-2.15E-01	6.01E-01
AG-108M	433.93	89.90	1.28E-01	1.28E-01	2.03E-02	6.07E-02
	614.37	90.40	1.71E-01		2.89E-04	8.07E-02
	722.95	90.50	1.77E-01		5.52E-02	8.30E-02
CD-109	88.03	3.72	2.64E+00	2.64E+00	3.38E-01	1.29E+00
AG-110M	657.75	93.14	1.53E-01	1.53E-01	-5.20E-02	7.13E-02
	677.61	10.53	1.39E+00		-2.96E-02	6.49E-01
	706.67	16.46	9.63E-01		-1.79E-01	4.50E-01
	763.93	21.98	8.05E-01		-8.33E-02	3.77E-01
	884.67	71.63	2.18E-01		1.34E-02	1.00E-01
CD-113M	1384.27	23.94	7.79E-01		-1.02E-02	3.48E-01
SN-113	263.70	0.02	4.55E+02	4.55E+02	4.29E+01	2.19E+02
TE123M	255.12	1.93	6.15E+00	1.98E-01	-1.27E+00	2.97E+00
	391.69	64.90	1.98E-01		4.37E-02	9.41E-02
	159.00	84.10	1.29E-01		1.29E-01	-8.88E-02	6.26E-02
SB-124	602.71	97.87	1.89E-01	1.89E-01	-3.34E-02	8.90E-02
	645.85	7.26	2.29E+00		-7.48E-01	1.06E+00
	722.78	11.10	1.78E+00		-6.79E-01	8.31E-01
	1691.02	49.00	2.66E-01		-8.29E-02	1.03E-01
	I-125	35.49	6.49		9.78E-01	9.78E-01	-2.90E-01	4.77E-01
SB-125	176.33	6.89	1.42E+00	4.06E-01	3.23E-01	6.90E-01
	427.89	29.33	4.06E-01		8.97E-02	1.93E-01
	463.38	10.35	1.30E+00		8.36E-01	6.19E-01
	600.56	17.80	7.67E-01		-1.62E-01	3.60E-01
	635.90	11.32	1.13E+00		-1.16E-01	5.25E-01
SB-126	414.70	83.30	6.05E-01	5.46E-01	7.17E-02	2.88E-01
	666.33	99.60	6.47E-01		1.17E-01	3.05E-01
	695.00	99.60	5.46E-01		-5.06E-02	2.53E-01
	720.50	53.80	9.94E-01		3.95E-02	4.59E-01
SN-126	87.57	37.00	2.54E-01	2.54E-01	3.27E-02	1.25E-01
SB-127	473.00	25.00	4.50E+01	3.47E+01	1.67E+01	2.12E+01
	685.20	35.70	3.47E+01		3.88E+00	1.61E+01
	783.80	14.70	1.07E+02		5.10E+01	5.02E+01
I-129	29.78	57.00	8.11E-02	8.11E-02	-3.60E-03	3.96E-02
	33.60	13.20	3.50E-01		-1.31E-01	1.71E-01
	39.58	7.52	6.56E-01		-6.02E-01	3.20E-01
I-131	284.30	6.05	1.55E+01	1.15E+00	-3.61E+00	7.43E+00
	364.48	81.20	1.15E+00		-3.66E-01	5.45E-01
	636.97	7.26	1.54E+01		1.72E-01	7.15E+00
	722.89	1.80	7.23E+01		-2.75E+01	3.37E+01
TE-132	49.72	13.10	9.97E+01	2.63E+01	1.55E+01	4.88E+01
BA-133	228.16	88.00	2.63E+01	2.73E-01	6.47E+00	1.28E+01
	81.00	33.00	2.94E-01		-1.19E-01	1.45E-01
	302.84	17.80	6.44E-01		3.72E-02	3.10E-01
I-133	356.01	60.00	2.73E-01		1.51E-02	1.32E-01
XE-133	529.87	86.30	8.16E+07	8.16E+07	-3.21E+07	3.84E+07
CS-134	81.00	38.00	7.14E+00	7.14E+00	-2.88E+00	3.51E+00
CS-134	563.23	8.38	1.67E+00	1.69E-01	-4.18E-02	7.88E-01
	569.32	15.43	9.44E-01		-1.32E-01	4.46E-01

Analysis Report for 1510084-19

CP1803S15-16

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	1.80E-01	1.69E-01	3.75E-03	8.55E-02
	795.84	85.40	1.69E-01		-4.08E-02	7.81E-02
	801.93	8.73	1.67E+00		7.16E-02	7.70E-01
@ I-135 @	268.24	16.00	7.14E-01	7.14E-01	6.01E-02	3.45E-01
	1131.51	22.50	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	4.85E+00	5.55E-01	4.00E+00	2.36E+00
	163.89	4.61	7.81E+00		3.70E+00	3.80E+00
	176.55	13.56	2.68E+00		6.09E-01	1.30E+00
	273.65	12.66	3.38E+00		-1.55E-01	1.63E+00
	340.57	48.50	9.97E-01		8.38E-01	4.80E-01
	818.50	99.70	5.55E-01		3.24E-02	2.56E-01
	1048.07	79.60	8.49E-01		4.12E-01	3.90E-01
	1235.34	19.70	4.24E+00		-1.31E-02	1.96E+00
CS-137	661.65	85.12	1.78E-01	1.78E-01	7.97E-02	8.36E-02
LA-138	788.74	34.00	4.53E-01	1.60E-01	1.92E-02	2.11E-01
	1435.80	66.00	1.60E-01		-8.08E-02	6.57E-02
CE-139	165.85	80.35	1.35E-01	1.35E-01	6.24E-02	6.59E-02
BA-140	162.64	6.70	5.56E+00	2.10E+00	1.86E+00	2.70E+00
	304.84	4.50	9.68E+00		1.64E+00	4.65E+00
	423.70	3.20	1.43E+01		1.20E+00	6.77E+00
	437.55	2.00	2.29E+01		2.89E+00	1.08E+01
	537.32	25.00	2.10E+00		6.81E-01	9.92E-01
LA-140	328.77	20.50	2.17E+00	7.94E-01	9.91E-01	1.04E+00
	487.03	45.50	1.11E+00		1.20E-01	5.27E-01
	815.85	23.50	2.42E+00		7.18E-01	1.11E+00
	1596.49	95.49	7.94E-01		-1.90E-01	3.54E-01
CE-141	145.44	48.40	3.21E-01	3.21E-01	2.54E-02	1.56E-01
CE-143	57.36	11.80	1.94E+05	1.05E+05	-1.51E+05	9.50E+04
	293.26	42.00	1.05E+05		1.13E+05	5.09E+04
	664.55	5.20	9.77E+05		5.87E+04	4.59E+05
CE-144	133.54	10.80	8.78E-01	8.78E-01	2.27E-01	4.29E-01
PM-144	476.78	42.00	3.04E-01	1.31E-01	6.46E-02	1.44E-01
	618.01	98.60	1.31E-01		-1.45E-02	6.09E-02
	696.49	99.49	1.40E-01		-3.77E-02	6.51E-02
PM-145	36.85	21.70	2.18E-01	1.21E-01	-9.96E-02	1.06E-01
	37.36	39.70	1.21E-01		-6.63E-02	5.89E-02
	42.30	15.10	3.60E-01		1.62E-01	1.76E-01
	72.40	2.31	4.37E+00		8.20E+00	2.15E+00
PM-146	453.90	39.94	2.91E-01	2.91E-01	1.37E-02	1.37E-01
	735.90	14.01	1.08E+00		2.85E-01	5.02E-01
	747.13	13.10	1.06E+00		-2.54E-01	4.91E-01
ND-147	91.11	28.90	1.68E+00	1.68E+00	-3.63E-01	8.24E-01
	531.02	13.10	4.59E+00		-2.21E+00	2.16E+00
PM-149	285.90	3.10	9.28E+03	9.28E+03	-1.89E+03	4.46E+03
EU-152	121.78	20.50	4.09E-01	4.09E-01	-7.72E-02	2.00E-01
	244.69	5.40	2.34E+00		-8.29E+00	1.14E+00
	344.27	19.13	5.55E-01		-3.08E+00	2.65E-01
	778.89	9.20	1.48E+00		-4.65E-01	6.81E-01
	964.01	10.40	1.96E+00		-4.86E-01	9.15E-01
	1085.78	7.22	2.17E+00		7.58E-02	9.82E-01
	1112.02	9.60	1.81E+00		-1.61E+00	8.25E-01

Analysis Report for 1510084-19
CP1803S15-16

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	1.16E+00	4.09E-01	4.33E-01	5.19E-01
GD-153	97.43	31.30	2.78E-01	2.78E-01	-2.02E-02	1.36E-01
	103.18	22.20	3.86E-01		1.91E-02	1.89E-01
EU-154	123.07	40.50	2.09E-01	2.09E-01	-3.95E-02	1.02E-01
	723.30	19.70	8.18E-01		2.55E-01	3.83E-01
	873.19	11.50	1.27E+00		-2.35E-01	5.83E-01
	996.32	10.30	1.61E+00		2.02E-01	7.40E-01
	1004.76	17.90	9.15E-01		3.48E-01	4.19E-01
	1274.45	35.50	5.20E-01		3.58E-02	2.36E-01
EU-155	86.50	30.90	3.04E-01	3.04E-01	4.93E-02	1.49E-01
	105.30	20.70	3.97E-01		2.17E-01	1.94E-01
EU-156	811.77	10.40	4.03E+00	4.03E+00	-1.58E+00	1.84E+00
	1153.47	7.20	8.51E+00		-5.05E+00	3.91E+00
	1230.71	8.90	7.46E+00		-2.55E+00	3.44E+00
HO-166M	184.41	72.60	1.50E-01	1.50E-01	1.22E-01	7.32E-02
	280.45	29.60	3.78E-01		2.03E-01	1.82E-01
	410.94	11.10	1.11E+00		5.85E-02	5.30E-01
	711.69	54.10	2.65E-01		6.71E-02	1.24E-01
TM-171	66.72	0.14	5.89E+01	5.89E+01	4.26E+01	2.89E+01
HF-172	81.75	4.52	2.03E+00	8.40E-01	-7.82E-01	9.99E-01
	125.81	11.30	8.40E-01		-4.86E-02	4.10E-01
LU-172	181.53	20.60	6.76E+00	3.61E+00	-1.08E+00	3.29E+00
	810.06	16.63	1.07E+01		-6.23E+00	4.88E+00
	912.12	15.25	2.16E+01		3.26E+01	1.03E+01
	1093.66	62.50	3.61E+00		2.59E-01	1.64E+00
LU-173	100.72	5.24	1.53E+00	5.45E-01	-5.94E-01	7.46E-01
	272.11	21.20	5.45E-01		-1.11E-01	2.63E-01
HF-175	343.40	84.00	1.69E-01	1.69E-01	-4.56E-01	8.11E-02
LU-176	88.34	13.30	7.25E-01	1.10E-01	-1.50E-01	3.56E-01
	201.83	86.00	1.22E-01		-2.72E-02	5.91E-02
	306.78	94.00	1.10E-01		-6.16E-02	5.29E-02
TA-182	67.75	41.20	2.28E-01	2.28E-01	1.10E-01	1.12E-01
	1121.30	34.90	8.07E-01		4.02E-01	3.78E-01
	1189.05	16.23	1.25E+00		1.79E-02	5.70E-01
	1221.41	26.98	7.74E-01		-2.84E-01	3.51E-01
	1231.02	11.44	2.14E+00		-7.31E-01	9.85E-01
IR-192	308.46	29.68	4.43E-01	3.03E-01	-2.43E-03	2.12E-01
	468.07	48.10	3.03E-01		-6.38E-02	1.43E-01
HG-203	279.19	77.30	2.05E-01	2.05E-01	-1.59E-02	9.85E-02
BI-207	569.67	97.72	1.46E-01	1.46E-01	-2.05E-02	6.90E-02
	1063.62	74.90	1.92E-01		-2.79E-02	8.65E-02
+ TL-208	583.14	*	30.22	2.10E-01	1.30E+00	3.73E-01
	860.37		4.48		3.25E-01	1.74E+00
	2614.66	*	35.85		1.50E+00	6.24E-02
BI-210M	262.00		45.00	2.30E-01	-1.23E-02	1.11E-01
	300.00		23.00		3.57E-02	2.71E-01
PB-210	464.50		4.25	1.35E+00	-3.29E-02	6.61E-01
PB-211	404.84		2.90	4.06E+00	-1.74E-01	1.93E+00
	831.96		2.90	4.68E+00	-1.55E+00	2.14E+00
BI-212	727.17		11.80	1.44E+00	8.98E-01	6.76E-01
	1620.62		2.75	5.35E+00	-7.58E-01	2.29E+00
+ PB-212	238.63	*	44.60	4.38E-01	1.78E+00	2.15E-01
	300.09		3.41	3.78E+00	2.41E-01	1.83E+00

Analysis Report for 1510084-19

CP1803S15-16

	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	4.71E-01	4.71E-01	9.30E-01	2.26E-01
		1120.29		15.10	1.62E+00		1.03E+00	7.59E-01
		1764.49	*	15.80	8.14E-01		8.88E-01	3.35E-01
		2204.22		4.98	3.63E+00		1.15E+00	1.55E+00
+	PB-214	295.21	*	19.19	8.69E-01	7.77E-01	8.22E-01	4.24E-01
		351.92	*	37.19	7.77E-01		1.27E+00	3.82E-01
	RN-219	401.80		6.50	1.79E+00	1.79E+00	3.52E-01	8.50E-01
	RA-223	323.87		3.88	2.70E+00	2.70E+00	-2.04E-01	1.29E+00
	RA-224	240.98		3.95	4.64E+00	4.64E+00	1.89E+01	2.27E+00
	RA-225	40.00		31.00	5.20E-01	5.20E-01	-4.77E-01	2.54E-01
+	RA-226	186.21	*	3.28	3.42E+00	3.42E+00	3.39E+00	1.67E+00
	TH-227	50.10		8.40	7.29E-01	7.29E-01	1.13E-01	3.57E-01
		236.00		11.50	1.50E+00		4.20E+00	7.36E-01
		256.20		6.30	1.63E+00		-1.82E-01	7.85E-01
+	AC-228	338.32	*	11.40	2.43E+00	6.11E-01	1.76E+00	1.20E+00
		911.07	*	27.70	6.11E-01		1.35E+00	2.83E-01
		969.11	*	16.60	1.37E+00		2.21E+00	6.47E-01
	TH-230	48.44		16.90	3.53E-01	3.53E-01	-4.11E-02	1.73E-01
		62.85		4.60	1.68E+00		1.43E+00	8.26E-01
		67.67		0.37	2.18E+01		1.05E+01	1.07E+01
	PA-231	283.67		1.60	6.82E+00	4.96E+00	-6.30E-01	3.28E+00
		302.67		2.30	4.96E+00		2.87E-01	2.39E+00
	TH-231	25.64		14.70	3.18E-01	3.18E-01	-6.71E-02	1.56E-01
		84.21		6.40	1.37E+00		9.33E-01	6.74E-01
	PA-233	311.98		38.60	4.96E-01	4.96E-01	-2.74E-01	2.37E-01
	PA-234	131.20		20.40	4.52E-01	4.52E-01	-1.14E-02	2.21E-01
		733.99		8.80	1.67E+00		-5.77E-01	7.77E-01
		946.00		12.00	1.30E+00		4.02E-02	5.94E-01
	PA-234M	1001.03		0.92	1.78E+01	1.78E+01	2.84E+00	8.18E+00
	TH-234	63.29		3.80	2.07E+00	2.07E+00	2.36E+00	1.01E+00
	U-235	143.76		10.50	8.49E-01	8.49E-01	7.07E-02	4.14E-01
		163.35		4.70	2.02E+00		9.58E-01	9.85E-01
		205.31		4.70	2.38E+00		1.39E+00	1.16E+00
	NP-237	86.50		12.60	7.38E-01	7.38E-01	1.20E-01	3.62E-01
	NP-239	106.10		22.70	6.04E+02	6.04E+02	3.30E+02	2.95E+02
		228.18		10.70	1.71E+03		7.36E+02	8.29E+02
		277.60		14.10	1.28E+03		2.00E+02	6.19E+02
	AM-241	59.54		35.90	2.03E-01	2.03E-01	3.74E-02	9.98E-02
	AM-243	74.67		66.00	1.63E-01	1.63E-01	6.91E-01	8.04E-02
	CM-243	209.75		3.29	3.43E+00	7.73E-01	1.95E+00	1.67E+00
		228.14		10.60	1.02E+00		2.51E-01	4.96E-01
		277.60		14.00	7.73E-01		1.21E-01	3.72E-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

Analysis Report for 1510084-19
CP1803S15-16

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.

369: 14 16 16 17 16 12 23 18

Sample Title: CP1803S15-16

Channel	1	2	3	4	5	6	7	8
377:	13	16	19	11	13	12	16	16
385:	11	15	11	9	21	16	12	14
393:	13	15	14	14	9	11	16	21
401:	16	15	18	13	13	9	11	18
409:	23	13	16	23	19	11	17	22
417:	10	9	14	13	12	11	16	16
425:	13	19	5	15	9	12	13	9
433:	13	13	15	14	13	8	13	9
441:	14	15	9	12	15	12	9	16
449:	15	11	13	14	10	8	15	7
457:	8	14	10	15	22	15	24	17
465:	10	11	6	7	16	10	7	11
473:	15	11	17	7	12	15	1	14
481:	20	15	13	18	14	5	8	16
489:	10	12	7	8	11	9	3	11
497:	10	13	7	12	9	13	11	14
505:	12	14	9	14	17	34	30	20
513:	15	12	14	13	6	12	9	7
521:	10	7	7	8	8	8	10	8
529:	9	16	8	9	7	8	19	16
537:	9	9	6	15	9	7	10	6
545:	6	7	3	14	11	12	11	8
553:	8	10	10	6	7	8	9	9
561:	8	18	9	11	4	15	10	10
569:	16	14	12	7	11	7	18	8
577:	4	7	13	16	33	47	65	31
585:	19	5	14	6	11	9	5	10
593:	11	4	13	11	6	4	10	13
601:	7	9	5	13	13	9	14	46
609:	62	33	15	8	8	6	10	6
617:	3	11	10	3	4	8	5	5
625:	9	5	10	6	10	7	7	9
633:	5	7	5	6	8	3	10	8
641:	5	7	5	8	2	6	9	11
649:	4	9	8	8	5	4	7	5
657:	9	7	8	7	11	9	6	11
665:	14	8	11	6	18	5	6	9
673:	12	10	7	4	8	8	7	2
681:	5	5	13	4	8	6	9	4
689:	3	4	9	5	4	4	10	5
697:	5	6	8	9	11	7	10	10
705:	6	4	5	9	9	8	7	9
713:	7	3	6	8	2	6	6	4
721:	4	10	5	5	10	15	18	16
729:	5	7	5	9	7	4	11	5
737:	7	7	9	2	3	4	11	8
745:	6	2	6	6	2	4	7	9
753:	5	9	6	9	13	6	9	7
761:	4	8	7	7	8	10	7	15
769:	4	8	5	4	7	4	3	4
777:	3	5	9	6	6	6	11	8
785:	9	6	11	6	7	9	3	0
793:	5	7	5	5	9	7	7	6

801: 2 7 4 4 5 6 3 5

Sample Title: CP1803S15-16

Channel	1	2	3	4	5	6	7	8
809:	5	2	5	4	3	6	7	5
817:	12	3	3	4	3	6	4	7
825:	7	8	3	5	5	2	5	6
833:	3	5	6	3	3	8	5	8
841:	6	12	5	6	6	4	6	5
849:	4	3	5	2	10	6	2	4
857:	4	5	14	9	8	5	5	5
865:	6	7	6	4	2	3	2	6
873:	5	10	4	5	5	5	3	7
881:	3	4	4	5	4	7	2	5
889:	2	5	6	6	3	6	4	4
897:	5	7	1	6	4	3	10	9
905:	3	5	2	4	11	26	38	16
913:	8	2	5	5	3	6	4	8
921:	2	2	2	6	7	3	6	6
929:	6	0	5	5	7	5	7	5
937:	1	5	5	1	5	2	4	3
945:	1	6	7	6	7	5	7	5
953:	4	2	7	5	10	3	10	2
961:	3	9	5	9	7	10	7	18
969:	24	10	11	6	2	1	4	2
977:	5	2	2	4	2	4	2	3
985:	6	6	7	2	0	4	7	4
993:	6	4	4	6	0	10	1	7
1001:	3	3	8	1	8	2	2	6
1009:	4	3	1	4	3	3	4	3
1017:	6	4	6	4	6	0	1	5
1025:	7	5	4	5	4	7	6	4
1033:	6	2	5	4	2	2	5	5
1041:	1	6	5	7	4	4	7	9
1049:	5	6	1	2	4	3	1	7
1057:	4	5	3	7	0	1	2	3
1065:	2	3	6	5	3	3	2	4
1073:	7	1	3	7	5	5	3	2
1081:	5	3	3	4	1	1	4	8
1089:	3	4	3	5	2	3	5	5
1097:	5	3	5	1	5	1	3	6
1105:	7	8	7	1	2	3	4	3
1113:	5	8	5	6	4	6	11	12
1121:	17	9	3	9	4	10	1	6
1129:	8	4	8	6	4	5	4	2
1137:	4	4	6	4	1	4	5	3
1145:	3	10	6	3	4	5	5	6
1153:	6	6	6	4	2	6	7	10
1161:	2	5	3	5	3	2	3	6
1169:	6	5	1	4	5	6	0	5
1177:	3	6	1	4	7	4	2	3
1185:	1	3	6	7	2	5	2	6
1193:	1	8	7	4	2	2	4	4
1201:	4	2	5	3	3	2	5	7
1209:	4	5	4	6	3	6	5	2
1217:	5	1	5	2	5	2	7	0
1225:	6	4	5	10	7	1	3	3

1233: 6 9 2 2 9 12 5 5

Sample Title: CP1803S15-16

Channel	1	2	3	4	5	6	7	8	9
1241:	6	5	4	3	2	6	5	1	
1249:	2	9	2	2	1	4	5	6	
1257:	4	5	1	3	2	4	1	6	
1265:	2	1	2	2	6	2	2	3	
1273:	7	6	7	3	1	1	5	2	
1281:	3	5	5	2	1	5	3	1	
1289:	2	3	3	1	2	6	5	2	
1297:	2	4	1	2	0	3	1	3	
1305:	4	3	2	2	4	3	2	1	
1313:	2	0	4	2	4	5	1	5	
1321:	2	1	1	5	1	5	3	5	
1329:	4	4	3	3	1	2	4	0	
1337:	0	3	4	4	1	2	1	3	
1345:	2	0	2	2	1	2	0	2	
1353:	3	2	5	1	1	3	2	0	
1361:	6	1	2	2	7	1	0	1	
1369:	0	4	0	1	0	2	3	3	
1377:	2	1	4	3	2	1	4	4	
1385:	3	3	1	3	3	2	4	1	
1393:	3	1	1	2	1	0	2	1	
1401:	0	1	3	2	0	3	6	5	
1409:	1	3	1	2	2	2	1	3	
1417:	0	3	0	2	0	0	1	2	
1425:	1	0	2	1	2	2	2	2	
1433:	0	0	0	2	0	2	1	0	
1441:	2	1	1	0	0	1	2	1	
1449:	2	0	1	1	1	3	0	3	
1457:	2	10	25	61	79	53	22	3	
1465:	0	1	1	3	2	2	0	0	
1473:	2	1	3	2	2	0	1	1	
1481:	0	2	0	6	1	0	2	0	
1489:	4	3	1	3	1	1	1	1	
1497:	0	0	0	1	1	4	0	2	
1505:	1	1	0	3	2	3	1	0	
1513:	2	1	2	2	0	0	1	1	
1521:	0	0	0	1	2	0	5	0	
1529:	1	3	1	1	2	1	0	5	
1537:	3	1	2	1	1	2	0	0	
1545:	0	1	3	2	3	1	0	1	
1553:	0	1	0	2	1	0	1	2	
1561:	2	2	3	1	1	0	0	0	
1569:	1	2	1	0	1	1	1	1	
1577:	0	0	1	1	4	1	3	2	
1585:	2	5	3	1	7	0	2	4	
1593:	3	3	8	4	0	3	0	1	
1601:	1	2	3	2	1	0	1	0	
1609:	1	0	0	0	0	2	0	1	
1617:	0	2	3	0	4	2	1	0	
1625:	0	1	3	2	2	3	1	5	
1633:	1	1	2	0	0	1	0	1	
1641:	1	1	0	0	1	1	0	1	
1649:	1	0	3	1	1	1	1	1	
1657:	0	1	0	0	1	2	2	0	

1665: 0 3 0 4 2 0 1 2

Sample Title: CP1803S15-16

Channel	1	2	3	4	5	6	7	8
1673:	1	2	2	1	0	0	1	2
1681:	1	0	2	0	0	2	1	0
1689:	0	1	0	1	0	1	0	1
1697:	1	1	0	3	2	0	0	0
1705:	1	2	1	0	1	0	0	0
1713:	1	1	0	1	2	0	0	0
1721:	1	1	2	0	0	1	2	1
1729:	2	3	2	2	1	0	0	0
1737:	0	0	0	1	2	2	1	3
1745:	2	1	0	0	2	0	0	2
1753:	2	2	0	2	0	2	3	1
1761:	1	2	3	3	8	5	0	1
1769:	2	0	0	0	4	0	0	1
1777:	0	0	0	1	0	1	0	1
1785:	1	0	2	0	1	0	1	1
1793:	0	1	1	1	2	0	2	0
1801:	0	2	0	0	0	0	0	0
1809:	1	0	0	0	1	3	0	0
1817:	0	1	1	0	1	0	1	1
1825:	1	1	0	0	0	0	2	0
1833:	1	0	2	0	0	1	0	0
1841:	0	0	0	0	0	0	3	2
1849:	2	0	1	1	0	4	1	0
1857:	1	2	1	0	0	0	3	0
1865:	1	3	0	0	0	1	0	2
1873:	3	1	0	0	0	1	0	1
1881:	0	1	2	0	0	0	0	1
1889:	0	0	2	1	0	0	1	0
1897:	4	0	0	2	0	1	2	0
1905:	0	0	0	0	1	1	2	0
1913:	3	2	0	0	1	2	0	0
1921:	1	1	2	1	1	0	0	1
1929:	1	0	0	0	1	2	3	1
1937:	0	1	2	1	0	0	0	1
1945:	0	0	0	2	0	1	0	1
1953:	2	0	0	2	1	0	0	0
1961:	0	2	2	3	2	0	2	0
1969:	0	0	3	1	0	3	0	0
1977:	1	0	0	1	0	1	1	0
1985:	0	1	0	1	2	0	2	1
1993:	1	0	2	0	1	0	1	0
2001:	1	0	1	0	0	0	0	0
2009:	1	0	0	0	1	0	0	1
2017:	0	0	1	0	0	1	0	0
2025:	3	3	0	2	1	0	0	0
2033:	1	0	0	0	0	2	0	0
2041:	0	1	1	0	0	0	2	1
2049:	0	0	0	0	1	0	0	0
2057:	0	1	0	1	2	0	0	0
2065:	0	2	1	2	0	2	0	0
2073:	1	3	1	0	0	1	0	1
2081:	0	1	2	2	3	0	1	0
2089:	1	0	0	0	2	0	0	0

2097: 1 1 1 0 0 2 2 3

Sample Title: CP1803S15-16

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

2529: 0 0 1 1 0 2 0 0

Sample Title: CP1803S15-16

Channel	1	2	3	4	5	6	7	8
2537:	0	1	0	0	0	0	1	0
2545:	0	0	1	0	1	0	1	0
2553:	0	0	0	0	1	0	0	1
2561:	0	0	0	0	1	0	0	0
2569:	0	0	0	0	0	0	0	0
2577:	0	1	0	0	0	0	0	1
2585:	1	1	0	0	0	0	0	0
2593:	0	0	0	0	1	0	0	0
2601:	0	1	0	0	0	0	1	1
2609:	0	0	0	0	4	8	11	14
2617:	9	3	0	0	0	0	0	0
2625:	0	1	0	0	0	0	0	0
2633:	0	0	0	0	1	0	0	0
2641:	0	0	0	0	0	0	0	1
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	0	0	0	0	1
2665:	0	0	0	0	0	1	0	0
2673:	0	1	0	0	0	0	0	0
2681:	0	0	0	0	1	0	0	0
2689:	0	0	0	0	1	0	1	0
2697:	0	0	0	0	1	0	1	0
2705:	0	0	0	1	0	0	0	0
2713:	0	0	1	1	0	0	1	0
2721:	1	0	0	0	0	1	0	0
2729:	0	1	0	0	0	0	0	0
2737:	0	0	0	1	0	0	0	0
2745:	0	0	0	0	0	0	0	0
2753:	0	1	0	0	1	1	0	0
2761:	0	0	0	0	1	0	0	0
2769:	1	0	0	1	0	0	0	0
2777:	0	1	0	0	0	0	0	0
2785:	0	0	0	0	1	0	0	0
2793:	0	0	0	2	0	0	0	0
2801:	0	1	0	0	0	0	0	0
2809:	1	0	0	0	0	0	0	0
2817:	0	0	0	0	0	0	0	0
2825:	0	0	0	1	0	0	1	0
2833:	0	3	0	0	0	0	1	0
2841:	0	0	0	1	1	0	0	0
2849:	0	0	0	0	0	0	0	1
2857:	0	1	0	0	0	0	0	0
2865:	0	0	1	0	0	0	0	0
2873:	0	0	2	0	0	0	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	1	0	0	0
2897:	0	0	1	0	0	0	0	0
2905:	1	0	0	0	0	0	0	0
2913:	1	0	0	0	0	0	0	1
2921:	1	0	0	0	0	0	0	1
2929:	0	0	0	0	1	0	1	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	0	1	0	0	0	0	0

2961: 0 0 0 0 0 0 0 0 1

Sample Title: CP1803S15-16

Channel	1	2	3	4	5	6	7	8	9
2969:	0	0	0	0	1	0	1	0	
2977:	1	0	0	0	0	0	0	0	
2985:	0	0	0	0	0	0	0	0	
2993:	0	0	0	1	0	0	0	1	
3001:	0	0	0	0	0	0	0	0	
3009:	0	0	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	0	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	0	0	0	0	0	0	
3065:	0	1	1	0	0	0	0	0	
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:	0	0	0	0	0	0	0	1	
3105:	0	0	0	0	0	0	0	0	
3113:	0	1	1	0	0	1	0	0	
3121:	0	1	0	0	0	1	0	1	
3129:	0	0	0	0	0	0	1	0	
3137:	0	0	0	0	2	0	2	0	
3145:	0	1	0	0	0	0	1	0	
3153:	1	0	0	0	0	0	0	0	
3161:	0	0	0	0	0	1	0	1	
3169:	0	0	1	0	0	0	0	0	
3177:	0	0	0	0	1	0	0	0	
3185:	0	1	0	0	0	0	0	1	
3193:	0	1	0	0	0	0	0	0	
3201:	0	0	0	0	0	0	0	1	
3209:	0	0	0	0	0	0	0	0	
3217:	0	0	0	0	0	1	0	0	
3225:	0	0	0	0	0	0	0	0	
3233:	0	0	0	0	0	0	0	0	
3241:	0	0	0	0	1	0	0	0	
3249:	0	0	1	0	0	0	1	0	
3257:	0	1	1	0	0	0	0	0	
3265:	0	0	0	0	0	0	0	0	
3273:	0	0	1	0	0	0	0	1	
3281:	1	0	0	0	0	0	0	0	
3289:	0	0	0	0	0	0	0	0	
3297:	0	0	0	0	0	0	1	0	
3305:	0	0	0	0	0	0	0	0	
3313:	0	1	0	0	0	0	0	0	
3321:	0	0	0	1	0	0	0	0	
3329:	0	0	0	0	0	0	0	1	
3337:	0	0	0	0	0	0	0	0	
3345:	1	1	1	2	0	0	0	0	
3353:	1	0	0	0	0	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	1	1	0	0	

3393: 1 0 1 0 1 0 0 0

Sample Title: CP1803S15-16

Channel	1	2	3	4	5	6	7	8
3401:	0	0	0	0	0	0	0	1
3409:	0	0	0	0	0	0	0	1
3417:	0	0	0	0	0	0	1	0
3425:	0	0	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	0	0	0
3457:	0	0	0	0	0	0	1	0
3465:	0	0	0	0	0	0	0	0
3473:	0	1	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	0	0	0	1	1	0
3505:	1	0	0	0	0	0	0	0
3513:	0	0	0	0	0	1	0	0
3521:	0	1	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	1	0	0	0	0	0	0
3553:	0	0	0	1	0	0	0	0
3561:	0	0	1	0	1	0	0	0
3569:	0	0	0	0	0	0	0	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	0	0	0	0	0	0
3609:	0	0	0	0	1	0	0	0
3617:	0	0	0	0	1	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	1	0	0	0	0	0
3649:	0	1	0	0	0	0	0	0
3657:	0	1	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	1	0	0	0	0	0	0
3697:	1	0	0	0	0	1	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	2	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	1	0	0	1
3737:	0	0	0	0	0	0	0	0
3745:	0	1	0	0	0	0	0	0
3753:	0	2	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	1	0	0
3801:	0	0	1	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	1	0	0	0	0	0	0	0

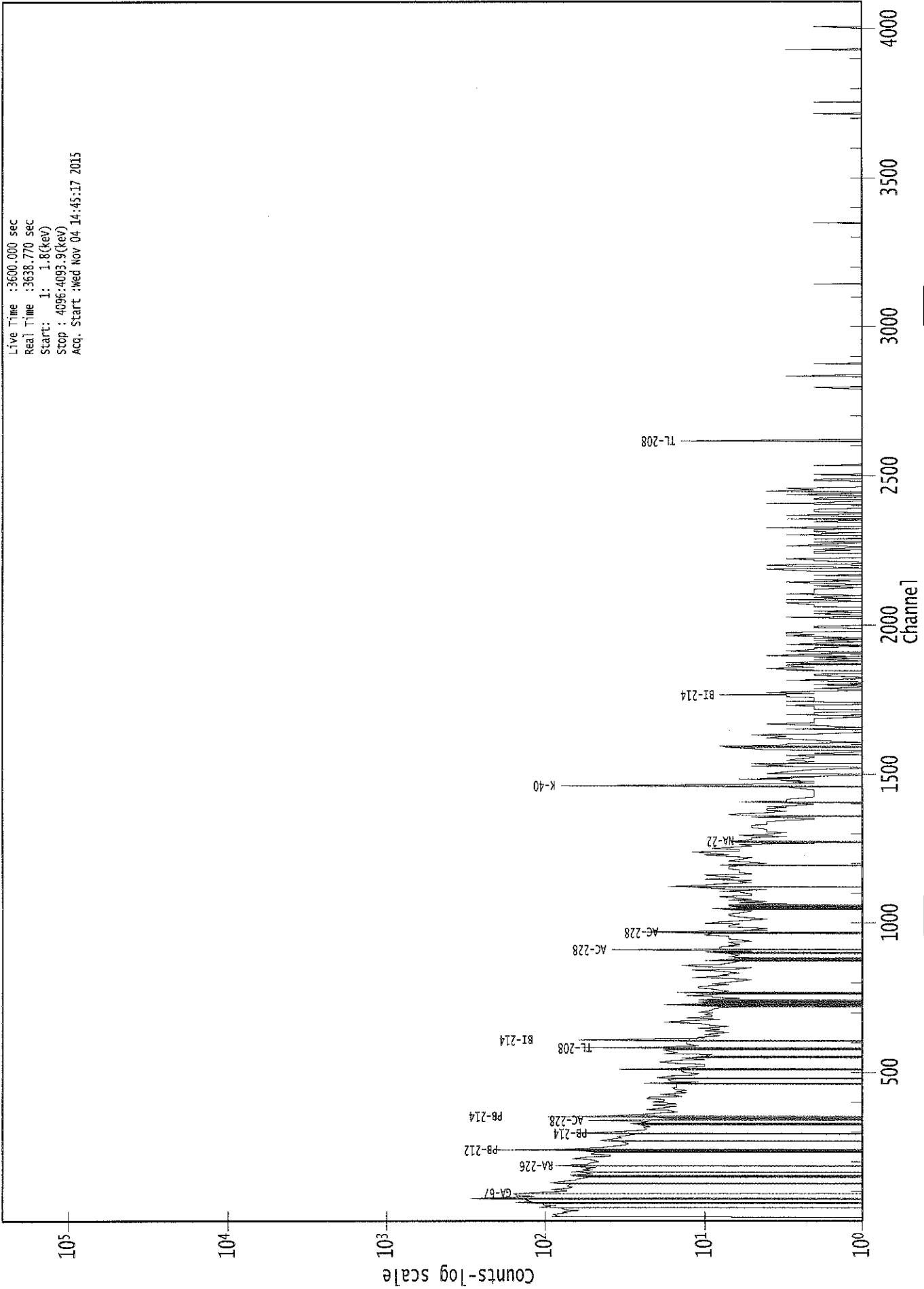
3825: 0 1 0 0 0 0 0 0

Sample Title: CP1803S15-16

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	1	0
3849:	1	0	0	0	0	0	0	1
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	1
3881:	0	0	1	0	0	0	0	0
3889:	0	0	0	1	0	0	1	0
3897:	0	0	1	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	1	1	0	1
3921:	1	1	0	0	0	0	0	0
3929:	0	0	3	1	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	1	1	0	0	0	0
3953:	0	0	0	0	0	0	1	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	1	0	0	0	0	0	1	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	1	0	1	0	0	2
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	1	0	0
4025:	0	0	0	1	0	0	0	0
4033:	1	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	1
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	1	0	0	0	0	0
4089:	0	0	0	0	1	0	0	0

0000029142.CNF

Live Time :3600.000 sec
Real Time :3638.770 sec
Start: 1: 1.8(keV)
Stop : 4096:4093.9(keV)
Acq. Start :Wed Nov 04 14:45:17 2015



KB
11/4/15Analysis Report for 1510084-20
CP1803S18-19

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510084-20
Sample Description : CP1803S18-19
Sample Type : SOIL

Sample Size : 5.961E+02 grams
Facility : Countroom

Sample Taken On : 10/10/2015 9:53:58AM
Acquisition Started : 11/4/2015 3:46:57PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3638.9 seconds

Dead Time : 1.07 %

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 : 29147

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/5/15

Analysis Report for 1510084-20
CP1803S18-19

PEAK LOCATE REPORT

Peak Locate Performed on : 11/4/2015 4:47:38PM
 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	64.81	64.08	0.0000	0.00
2	76.07	75.33	0.0000	0.00
3	186.15	185.47	0.0000	0.00
4	239.27	238.61	0.0000	0.00
5	295.41	294.77	0.0000	0.00
6	339.08	338.46	0.0000	0.00
7	352.29	351.68	0.0000	0.00
8	379.08	378.48	0.0000	0.00
9	463.47	462.91	0.0000	0.00
10	583.06	582.56	0.0000	0.00
11	609.51	609.01	0.0000	0.00
12	627.07	626.59	0.0000	0.00
13	705.71	705.26	0.0000	0.00
14	785.21	784.80	0.0000	0.00
15	794.43	794.03	0.0000	0.00
16	805.12	804.73	0.0000	0.00
17	911.10	910.76	0.0000	0.00
18	950.95	950.63	0.0000	0.00
19	967.84	967.53	0.0000	0.00
20	1069.47	1069.21	0.0000	0.00
21	1121.18	1120.95	0.0000	0.00
22	1245.93	1245.78	0.0000	0.00
23	1327.83	1327.72	0.0000	0.00
24	1334.07	1333.97	0.0000	0.00
25	1379.11	1379.03	0.0000	0.00
26	1461.06	1461.03	0.0000	0.00
27	1573.58	1573.63	0.0000	0.00
28	1581.45	1581.50	0.0000	0.00
29	1621.43	1621.50	0.0000	0.00
30	1765.05	1765.21	0.0000	0.00
31	1864.88	1865.11	0.0000	0.00
32	1937.39	1937.67	0.0000	0.00
33	2073.42	2073.79	0.0000	0.00
34	2203.74	2204.20	0.0000	0.00
35	2280.40	2280.92	0.0000	0.00
36	2614.74	2615.51	0.0000	0.00

? = Adjacent peak noted
 Errors quoted at 2.000sigma

Analysis Report for 1510084-20

CP1803S18-19

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/4/2015 4:47:38PM

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	64.81	60 -	69	64.08	1.77E+02	116.32	1.84E+03	3.47
2	76.07	70 -	81	75.33	8.27E+02	145.62	2.23E+03	4.38
3	186.15	181 -	190	185.47	1.06E+02	82.73	9.10E+02	2.36
4	239.27	233 -	245	238.61	5.76E+02	93.29	7.29E+02	2.87
5	295.41	289 -	300	294.77	1.47E+02	71.11	5.60E+02	1.86
6	339.08	332 -	344	338.46	6.59E+01	66.34	4.84E+02	2.65
7	352.29	347 -	359	351.68	2.36E+02	71.77	4.99E+02	2.69
8	379.08	376 -	381	378.48	2.48E+01	27.26	1.28E+02	2.53
9	463.47	455 -	470	462.91	8.72E+01	43.22	1.52E+02	7.86
10	583.06	576 -	587	582.56	1.24E+02	45.08	1.92E+02	2.44
11	609.51	604 -	612	609.01	1.85E+02	37.22	9.99E+01	2.68
12	627.07	622 -	632	626.59	2.95E+01	32.68	1.27E+02	5.82
13	705.71	696 -	718	705.26	5.24E+01	57.52	2.27E+02	14.14
14	785.21	780 -	789	784.80	3.44E+01	22.78	5.31E+01	5.77
M 15	794.43	790 -	811	794.03	4.02E+01	19.14	3.08E+01	3.76
m 16	805.12	790 -	811	804.73	1.81E+01	24.14	5.97E+01	3.76
17	911.10	905 -	917	910.76	9.59E+01	34.84	9.82E+01	2.23
18	950.95	947 -	954	950.63	1.75E+01	17.55	3.89E+01	3.59
19	967.84	962 -	972	967.53	6.37E+01	26.62	6.06E+01	3.14
20	1069.47	1061 -	1076	1069.21	2.72E+01	30.13	7.96E+01	11.72
21	1121.18	1117 -	1127	1120.95	3.74E+01	24.51	5.93E+01	1.43
22	1245.93	1243 -	1248	1245.78	1.51E+01	14.80	2.98E+01	1.18
M 23	1327.83	1326 -	1340	1327.72	1.04E+01	6.36	5.10E+00	2.94
m 24	1334.07	1326 -	1340	1333.97	1.39E+01	13.27	8.84E+00	3.90
25	1379.11	1373 -	1386	1379.03	2.00E+01	16.34	1.99E+01	1.32
26	1461.06	1457 -	1468	1461.03	2.48E+02	33.76	1.99E+01	2.87
27	1573.58	1571 -	1576	1573.63	8.00E+00	5.66	0.00E+00	3.74
28	1581.45	1579 -	1584	1581.50	6.00E+00	4.90	0.00E+00	1.16
29	1621.43	1618 -	1624	1621.50	8.00E+00	5.66	0.00E+00	1.98
30	1765.05	1760 -	1768	1765.21	2.15E+01	12.02	9.00E+00	4.65
31	1864.88	1861 -	1868	1865.11	5.07E+00	6.63	3.86E+00	1.80
32	1937.39	1933 -	1940	1937.67	6.00E+00	4.90	0.00E+00	1.00
33	2073.42	2070 -	2076	2073.79	7.22E+00	6.95	3.56E+00	2.64
34	2203.74	2198 -	2207	2204.20	1.20E+01	12.45	1.59E+01	1.89
35	2280.40	2278 -	2283	2280.92	6.56E+00	6.40	2.88E+00	1.37
36	2614.74	2611 -	2619	2615.51	4.10E+01	12.81	0.00E+00	3.56

Analysis Report for 1510084-20
CP1803S18-19

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 : 11/4/2015 4:47:38PM

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	64.81	60 -	69	1.77E+02	116.32	1.84E+03	9.31E+01
2	76.07	70 -	81	8.27E+02	145.62	2.23E+03	1.10E+02
3	186.15	181 -	190	1.06E+02	82.73	9.10E+02	6.59E+01
4	239.27	233 -	245	5.76E+02	93.29	7.29E+02	6.58E+01
5	295.41	289 -	300	1.47E+02	71.11	5.60E+02	5.49E+01
6	339.08	332 -	344	6.59E+01	66.34	4.84E+02	5.29E+01
7	352.29	347 -	359	2.36E+02	71.77	4.99E+02	5.33E+01
8	379.08	376 -	381	2.48E+01	27.26	1.28E+02	2.09E+01
9	463.47	455 -	470	8.72E+01	43.22	1.52E+02	3.20E+01
10	583.06	576 -	587	1.24E+02	45.08	1.92E+02	3.22E+01
11	609.51	604 -	612	1.85E+02	37.22	9.99E+01	2.09E+01
12	627.07	622 -	632	2.95E+01	32.68	1.27E+02	2.53E+01
13	705.71	696 -	718	5.24E+01	57.52	2.27E+02	4.58E+01
14	785.21	780 -	789	3.44E+01	22.78	5.31E+01	1.61E+01
M	794.43	790 -	811	4.02E+01	19.14	3.08E+01	9.13E+00
m	805.12	790 -	811	1.81E+01	24.14	5.97E+01	1.27E+01
17	911.10	905 -	917	9.59E+01	34.84	9.82E+01	2.37E+01
18	950.95	947 -	954	1.75E+01	17.55	3.89E+01	1.27E+01
19	967.84	962 -	972	6.37E+01	26.62	6.06E+01	1.75E+01
20	1069.47	1061 -	1076	2.72E+01	30.13	7.96E+01	2.32E+01
21	1121.18	1117 -	1127	3.74E+01	24.51	5.93E+01	1.75E+01
22	1245.93	1243 -	1248	1.51E+01	14.80	2.98E+01	1.04E+01
M	1327.83	1326 -	1340	1.04E+01	6.36	5.10E+00	3.71E+00
m	1334.07	1326 -	1340	1.39E+01	13.27	8.84E+00	4.89E+00
25	1379.11	1373 -	1386	2.00E+01	16.34	1.99E+01	1.12E+01
26	1461.06	1457 -	1468	2.48E+02	33.76	1.99E+01	9.99E+00
27	1573.58	1571 -	1576	8.00E+00	5.66	0.00E+00	0.00E+00
28	1581.45	1579 -	1584	6.00E+00	4.90	0.00E+00	0.00E+00
29	1621.43	1618 -	1624	8.00E+00	5.66	0.00E+00	0.00E+00
30	1765.05	1760 -	1768	2.15E+01	12.02	9.00E+00	6.29E+00
31	1864.88	1861 -	1868	5.07E+00	6.63	3.86E+00	4.00E+00

Analysis Report for 1510084-20

CP1803S18-19

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	1937.39	1933 -	1940	6.00E+00	4.90	0.00E+00	0.00E+00
33	2073.42	2070 -	2076	7.22E+00	6.95	3.56E+00	3.62E+00
34	2203.74	2198 -	2207	1.20E+01	12.45	1.59E+01	8.50E+00
35	2280.40	2278 -	2283	6.56E+00	6.40	2.88E+00	3.16E+00
36	2614.74	2611 -	2619	4.10E+01	12.81	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 : 11/4/2015 4:47:38PM

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	64.81	60 -	69	64.08	1.77E+02	116.32	1.84E+03	.....
2	76.07	70 -	81	75.33	8.27E+02	145.62	2.23E+03	.....
3	186.15	181 -	190	185.47	1.06E+02	82.73	9.10E+02	RA-226
4	239.27	233 -	245	238.61	5.76E+02	93.29	7.29E+02	PB-212
5	295.41	289 -	300	294.77	1.47E+02	71.11	5.60E+02	PB-214
6	339.08	332 -	344	338.46	6.59E+01	66.34	4.84E+02	AC-228
7	352.29	347 -	359	351.68	2.36E+02	71.77	4.99E+02	PB-214
8	379.08	376 -	381	378.48	2.48E+01	27.26	1.28E+02	.....
9	463.47	455 -	470	462.91	8.72E+01	43.22	1.52E+02	SB-125
10	583.06	576 -	587	582.56	1.24E+02	45.08	1.92E+02	TL-208
11	609.51	604 -	612	609.01	1.85E+02	37.22	9.99E+01	BI-214
12	627.07	622 -	632	626.59	2.95E+01	32.68	1.27E+02	.....
13	705.71	696 -	718	705.26	5.24E+01	57.52	2.27E+02	AG-110M
14	785.21	780 -	789	784.80	3.44E+01	22.78	5.31E+01	.....
M 15	794.43	790 -	811	794.03	4.02E+01	19.14	3.08E+01	.....
m 16	805.12	790 -	811	804.73	1.81E+01	24.14	5.97E+01	.....
17	911.10	905 -	917	910.76	9.59E+01	34.84	9.82E+01	AC-228
18	950.95	947 -	954	950.63	1.75E+01	17.55	3.89E+01	.....
19	967.84	962 -	972	967.53	6.37E+01	26.62	6.06E+01	.....
20	1069.47	1061 -	1076	1069.21	2.72E+01	30.13	7.96E+01	.....
21	1121.18	1117 -	1127	1120.95	3.74E+01	24.51	5.93E+01	TA-182

Analysis Report for 1510084-20

CP1803S18-19

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									SC-46
									BI-214
	22	1245.93	1243 -	1248	1245.78	1.51E+01	14.80	2.98E+01	.....
M	23	1327.83	1326 -	1340	1327.72	1.04E+01	6.36	5.10E+00	.....
m	24	1334.07	1326 -	1340	1333.97	1.39E+01	13.27	8.84E+00	.....
	25	1379.11	1373 -	1386	1379.03	2.00E+01	16.34	1.99E+01	.....
	26	1461.06	1457 -	1468	1461.03	2.48E+02	33.76	1.99E+01	K-40
	27	1573.58	1571 -	1576	1573.63	8.00E+00	5.66	0.00E+00	.....
	28	1581.45	1579 -	1584	1581.50	6.00E+00	4.90	0.00E+00	.....
	29	1621.43	1618 -	1624	1621.50	8.00E+00	5.66	0.00E+00	BI-212
	30	1765.05	1760 -	1768	1765.21	2.15E+01	12.02	9.00E+00	BI-214
	31	1864.88	1861 -	1868	1865.11	5.07E+00	6.63	3.86E+00	.....
	32	1937.39	1933 -	1940	1937.67	6.00E+00	4.90	0.00E+00	.....
	33	2073.42	2070 -	2076	2073.79	7.22E+00	6.95	3.56E+00	.....
	34	2203.74	2198 -	2207	2204.20	1.20E+01	12.45	1.59E+01	BI-214
	35	2280.40	2278 -	2283	2280.92	6.56E+00	6.40	2.88E+00	.....
	36	2614.74	2611 -	2619	2615.51	4.10E+01	12.81	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 : 11/4/2015 4:47:38PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	64.81	1.77E+02	116.32	2.30E-02	1.75E-03
2	76.07	8.27E+02	145.62	2.13E-02	1.69E-03
3	186.15	1.06E+02	82.73	1.16E-02	1.15E-03
4	239.27	5.76E+02	93.29	9.40E-03	9.85E-04
5	295.41	1.47E+02	71.11	7.78E-03	8.43E-04
6	339.08	6.59E+01	66.34	6.85E-03	7.94E-04
7	352.29	2.36E+02	71.77	6.60E-03	7.80E-04
8	379.08	2.48E+01	27.26	6.16E-03	7.50E-04
9	463.47	8.72E+01	43.22	5.07E-03	6.31E-04
10	583.06	1.24E+02	45.08	4.05E-03	4.55E-04
11	609.51	1.85E+02	37.22	3.87E-03	4.17E-04
12	627.07	2.95E+01	32.68	3.77E-03	3.91E-04
13	705.71	5.24E+01	57.52	3.35E-03	3.16E-04

: 01072

Analysis Report for 1510084-20
CP1803S18-19

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	14	785.21	3.44E+01	22.78	3.02E-03	2.71E-04
M	15	794.43	4.02E+01	19.14	2.98E-03	2.66E-04
m	16	805.12	1.81E+01	24.14	2.94E-03	2.60E-04
	17	911.10	9.59E+01	34.84	2.61E-03	2.06E-04
	18	950.95	1.75E+01	17.55	2.51E-03	2.01E-04
	19	967.84	6.37E+01	26.62	2.46E-03	1.99E-04
	20	1069.47	2.72E+01	30.13	2.24E-03	1.86E-04
	21	1121.18	3.74E+01	24.51	2.14E-03	1.79E-04
	22	1245.93	1.51E+01	14.80	1.94E-03	1.92E-04
M	23	1327.83	1.04E+01	6.36	1.83E-03	2.14E-04
m	24	1334.07	1.39E+01	13.27	1.83E-03	2.15E-04
	25	1379.11	2.00E+01	16.34	1.77E-03	2.06E-04
	26	1461.06	2.48E+02	33.76	1.68E-03	1.89E-04
	27	1573.58	8.00E+00	5.66	1.58E-03	1.66E-04
	28	1581.45	6.00E+00	4.90	1.57E-03	1.64E-04
	29	1621.43	8.00E+00	5.66	1.54E-03	1.56E-04
	30	1765.05	2.15E+01	12.02	1.43E-03	1.26E-04
	31	1864.88	5.07E+00	6.63	1.37E-03	1.11E-04
	32	1937.39	6.00E+00	4.90	1.33E-03	1.11E-04
	33	2073.42	7.22E+00	6.95	1.26E-03	1.11E-04
	34	2203.74	1.20E+01	12.45	1.21E-03	1.11E-04
	35	2280.40	6.56E+00	6.40	1.18E-03	1.11E-04
	36	2614.74	4.10E+01	12.81	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 : 11/4/2015 4:47:38PM

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	64.81	1.77E+02	116.32			1.77E+02	1.16E+02
2	76.07	8.27E+02	145.62			8.27E+02	1.46E+02
3	186.15	1.06E+02	82.73	1.43E+01	7.33E+00	9.19E+01	8.31E+01
4	239.27	5.76E+02	93.29	1.09E+01	6.39E+00	5.65E+02	9.35E+01
5	295.41	1.47E+02	71.11			1.47E+02	7.11E+01
6	339.08	6.59E+01	66.34			6.59E+01	6.63E+01
7	352.29	2.36E+02	71.77	8.07E+00	5.01E+00	2.28E+02	7.19E+01

: 01073

Analysis Report for 1510084-20

CP1803S18-19

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
8	379.08	2.48E+01	27.26			2.48E+01	2.73E+01
9	463.47	8.72E+01	43.22			8.72E+01	4.32E+01
10	583.06	1.24E+02	45.08			1.24E+02	4.51E+01
11	609.51	1.85E+02	37.22	5.16E+00	1.63E+00	1.80E+02	3.73E+01
12	627.07	2.95E+01	32.68			2.95E+01	3.27E+01
13	705.71	5.24E+01	57.52			5.24E+01	5.75E+01
14	785.21	3.44E+01	22.78			3.44E+01	2.28E+01
M 15	794.43	4.02E+01	19.14			4.02E+01	1.91E+01
m 16	805.12	1.81E+01	24.14			1.81E+01	2.41E+01
17	911.10	9.59E+01	34.84	1.01E+00	2.85E+00	9.49E+01	3.50E+01
18	950.95	1.75E+01	17.55			1.75E+01	1.75E+01
19	967.84	6.37E+01	26.62			6.37E+01	2.66E+01
20	1069.47	2.72E+01	30.13			2.72E+01	3.01E+01
21	1121.18	3.74E+01	24.51			3.74E+01	2.45E+01
22	1245.93	1.51E+01	14.80			1.51E+01	1.48E+01
M 23	1327.83	1.04E+01	6.36			1.04E+01	6.36E+00
m 24	1334.07	1.39E+01	13.27			1.39E+01	1.33E+01
25	1379.11	2.00E+01	16.34			2.00E+01	1.63E+01
26	1461.06	2.48E+02	33.76			2.48E+02	3.38E+01
27	1573.58	8.00E+00	5.66			8.00E+00	5.66E+00
28	1581.45	6.00E+00	4.90			6.00E+00	4.90E+00
29	1621.43	8.00E+00	5.66			8.00E+00	5.66E+00
30	1765.05	2.15E+01	12.02	1.11E-01	9.77E-01	2.14E+01	1.21E+01
31	1864.88	5.07E+00	6.63			5.07E+00	6.63E+00
32	1937.39	6.00E+00	4.90			6.00E+00	4.90E+00
33	2073.42	7.22E+00	6.95			7.22E+00	6.95E+00
34	2203.74	1.20E+01	12.45			1.20E+01	1.24E+01
35	2280.40	6.56E+00	6.40			6.56E+00	6.40E+00
36	2614.74	4.10E+01	12.81	1.20E+00	1.02E+00	3.98E+01	1.28E+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 : 11/4/2015 4:47:38PM
 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

Analysis Report for 1510084-20

CP1803S18-19

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	64.81	1.77E+02	116.32			1.77E+02	1.16E+02
2	76.07	8.27E+02	145.62			8.27E+02	1.46E+02
3	186.15	1.06E+02	82.73	1.43E+01	7.33E+00	9.19E+01	8.31E+01
4	239.27	5.76E+02	93.29	1.09E+01	6.39E+00	5.65E+02	9.35E+01
5	295.41	1.47E+02	71.11			1.47E+02	7.11E+01
6	339.08	6.59E+01	66.34			6.59E+01	6.63E+01
7	352.29	2.36E+02	71.77	8.07E+00	5.01E+00	2.28E+02	7.19E+01
8	379.08	2.48E+01	27.26			2.48E+01	2.73E+01
9	463.47	8.72E+01	43.22			8.72E+01	4.32E+01
10	583.06	1.24E+02	45.08			1.24E+02	4.51E+01
11	609.51	1.85E+02	37.22	5.16E+00	1.63E+00	1.80E+02	3.73E+01
12	627.07	2.95E+01	32.68			2.95E+01	3.27E+01
13	705.71	5.24E+01	57.52			5.24E+01	5.75E+01
14	785.21	3.44E+01	22.78			3.44E+01	2.28E+01
M	15	794.43	4.02E+01			4.02E+01	1.91E+01
m	16	805.12	1.81E+01			1.81E+01	2.41E+01
	17	911.10	9.59E+01	1.01E+00	2.85E+00	9.49E+01	3.50E+01
	18	950.95	1.75E+01			1.75E+01	1.75E+01
	19	967.84	6.37E+01			6.37E+01	2.66E+01
	20	1069.47	2.72E+01			2.72E+01	3.01E+01
	21	1121.18	3.74E+01			3.74E+01	2.45E+01
	22	1245.93	1.51E+01			1.51E+01	1.48E+01
M	23	1327.83	1.04E+01			1.04E+01	6.36E+00
m	24	1334.07	1.39E+01			1.39E+01	1.33E+01
	25	1379.11	2.00E+01			2.00E+01	1.63E+01
	26	1461.06	2.48E+02			2.48E+02	3.38E+01
	27	1573.58	8.00E+00			8.00E+00	5.66E+00
	28	1581.45	6.00E+00			6.00E+00	4.90E+00
	29	1621.43	8.00E+00			8.00E+00	5.66E+00
	30	1765.05	2.15E+01	1.11E-01	9.77E-01	2.14E+01	1.21E+01
	31	1864.88	5.07E+00			5.07E+00	6.63E+00
	32	1937.39	6.00E+00			6.00E+00	4.90E+00
	33	2073.42	7.22E+00			7.22E+00	6.95E+00
	34	2203.74	1.20E+01			1.20E+01	1.24E+01
	35	2280.40	6.56E+00			6.56E+00	6.40E+00
	36	2614.74	4.10E+01	1.20E+00	1.02E+00	3.98E+01	1.28E+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

: 01075

Analysis Report for 1510084-20
CP1803S18-19

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.990	1460.81 *	10.67	1.74E+01	3.09E+00
TL-208	0.886	583.14 *	30.22	1.28E+00	4.86E-01
		860.37	4.48		
		2614.66 *	35.85	1.30E+00	4.42E-01
PB-212	0.838	238.63 *	44.60	1.70E+00	3.33E-01
		300.09	3.41		
BI-214	0.962	609.31 *	46.30	1.26E+00	2.95E-01
		1120.29 *	15.10	1.45E+00	9.62E-01
		1764.49 *	15.80	1.19E+00	6.78E-01
		2204.22 *	4.98	2.53E+00	2.62E+00
PB-214	0.984	295.21 *	19.19	1.24E+00	6.15E-01
		351.92 *	37.19	1.17E+00	3.94E-01
RA-226	0.999	186.21 *	3.28	3.04E+00	6.21E+00
AC-228	0.568	338.32 *	11.40	1.06E+00	1.08E+00
		911.07 *	27.70	1.65E+00	6.23E-01
		969.11	16.60		

* = 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 : 11/4/2015 4:47:38PM

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	64.81	4.90855E-02	32.91		
2	76.07	2.29764E-01	8.80		
8	379.08	6.89607E-03	54.90		
9	463.47	2.42152E-02	24.79	Tol.	SB-125
12	627.07	8.18997E-03	55.41		
13	705.71	1.45465E-02	54.92	Tol.	AG-110M
14	785.21	9.56512E-03	33.08		
M	15	794.43	1.11675E-02	23.81	
m	16	805.12	5.03792E-03	66.54	
	18	950.95	4.87237E-03	50.03	S-Esc

Analysis Report for 1510084-20
CP1803S18-19

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
19	967.84	1.76906E-02	20.90		
20	1069.47	7.55390E-03	55.40		
22	1245.93	4.18981E-03	49.06		
M 23	1327.83	2.87857E-03	30.71		
m 24	1334.07	3.86330E-03	47.69		
25	1379.11	5.56481E-03	40.78		
27	1573.58	2.22222E-03	35.36		
28	1581.45	1.66667E-03	40.82		
29	1621.43	2.22222E-03	35.36	Tol.	BI-212
31	1864.88	1.40873E-03	65.40		
32	1937.39	1.66667E-03	40.82		
33	2073.42	2.00617E-03	48.09		
35	2280.40	1.82292E-03	48.79		

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	1.74E+01	3.09E+00
TL-208	0.88	583.14 *	30.22	1.28E+00	4.86E-01
		860.37 *	4.48		
		2614.66 *	35.85	1.30E+00	4.42E-01
PB-212	0.83	238.63 *	44.60	1.70E+00	3.33E-01
		300.09 *	3.41		
BI-214	0.96	609.31 *	46.30	1.26E+00	2.95E-01
		1120.29 *	15.10	1.45E+00	9.62E-01
		1764.49 *	15.80	1.19E+00	6.78E-01
		2204.22 *	4.98	2.53E+00	2.62E+00
PB-214	0.98	295.21 *	19.19	1.24E+00	6.15E-01
		351.92 *	37.19	1.17E+00	3.94E-01
RA-226	0.99	186.21 *	3.28	3.04E+00	6.21E+00
AC-228	0.56	338.32 *	11.40	1.06E+00	1.08E+00
		911.07 *	27.70	1.65E+00	6.23E-01

Analysis Report for 1510084-20
CP1803S18-19

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AC-228	0.56	969.11	16.60		

* = 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	0.990	1.74E+01	3.09E+00	
TL-208	0.886	1.29E+00	3.27E-01	
PB-212	0.838	1.70E+00	3.33E-01	
BI-214	0.962	1.28E+00	2.59E-01	
PB-214	0.984	1.19E+00	3.32E-01	
RA-226	0.999	3.04E+00	6.21E+00	
AC-228	0.568	1.51E+00	5.39E-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 1510084-20
CP1803S18-19

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/4/2015 4:47:38PM
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	64.81	4.90855E-02	32.91		
2	76.07	2.29764E-01	8.80		
8	379.08	6.89607E-03	54.90		
9	463.47	2.42152E-02	24.79	Tol.	SB-125
12	627.07	8.18997E-03	55.41		
13	705.71	1.45465E-02	54.92	Tol.	AG-110M
14	785.21	9.56512E-03	33.08		
M	15	794.43	1.11675E-02	23.81	
m	16	805.12	5.03792E-03	66.54	
	18	950.95	4.87237E-03	50.03	S-Esc
	19	967.84	1.76906E-02	20.90	
	20	1069.47	7.55390E-03	55.40	
	22	1245.93	4.18981E-03	49.06	
M	23	1327.83	2.87857E-03	30.71	
m	24	1334.07	3.86330E-03	47.69	
	25	1379.11	5.56481E-03	40.78	
	27	1573.58	2.22222E-03	35.36	
	28	1581.45	1.66667E-03	40.82	
	29	1621.43	2.22222E-03	35.36	Tol. BI-212
	31	1864.88	1.40873E-03	65.40	
	32	1937.39	1.66667E-03	40.82	
	33	2073.42	2.00617E-03	48.09	
	35	2280.40	1.82292E-03	48.79	

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 1510084-20
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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	3.20E-01	1.68E+00	1.68E+00
+	NA-22	1274.54	99.94	5.78E-02	2.14E-01	2.14E-01
+	NA-24	1368.53	99.99	1.56E+10	4.86E+10	2.22E+11
		2754.09	99.86	0.00E+00		4.86E+10
+	AL-26	1808.65	99.76	7.48E-03	1.27E-01	1.27E-01
+	K-40	1460.81	* 10.67	1.74E+01	1.59E+00	1.59E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.90E-01	8.86E-02	8.86E-02
		78.34	96.00	3.58E-01		1.17E-01
+	SC-46	889.25	99.98	6.92E-02	1.91E-01	1.91E-01
		1120.51	99.99	9.98E-02		2.76E-01
+	V-48	983.52	99.98	-1.09E-01	4.70E-01	4.70E-01
		1312.10	97.50	3.04E-02		5.32E-01
+	CR-51	320.08	9.83	-2.05E-01	2.28E+00	2.28E+00
+	MN-54	834.83	99.97	-4.69E-03	1.71E-01	1.71E-01
+	CO-56	846.75	99.96	6.22E-02	2.09E-01	2.09E-01
		1037.75	14.03	7.01E-01		1.37E+00
		1238.25	67.00	7.60E-02		4.40E-01
		1771.40	15.51	-6.83E-01		1.47E+00
		2598.48	16.90	-2.74E-01		8.03E-01
+	CO-57	122.06	85.51	-3.57E-02	1.08E-01	1.08E-01
		136.48	10.60	-2.88E-01		9.58E-01
+	CO-58	810.76	99.40	7.40E-03	1.99E-01	1.99E-01
+	FE-59	1099.22	56.50	1.00E-01	5.08E-01	5.08E-01
		1291.56	43.20	1.55E-02		6.85E-01
+	CO-60	1173.22	100.00	-6.36E-03	1.71E-01	1.90E-01
		1332.49	100.00	3.86E-02		1.71E-01
+	ZN-65	1115.52	50.75	-4.95E-02	4.16E-01	4.16E-01
+	GA-67	93.31	35.70	3.05E+01	5.62E+01	5.62E+01
		208.95	2.24	2.66E+02		1.09E+03
		300.22	16.00	-4.81E+01		1.66E+02
+	SE-75	121.11	16.70	-1.83E-01	1.87E-01	5.93E-01
		136.00	59.20	-3.30E-02		1.87E-01
		264.65	59.80	-1.81E-01		2.06E-01
		279.53	25.20	4.37E-02		5.18E-01
		400.65	11.40	-9.65E-02		1.27E+00
+	RB-82	776.52	13.00	-2.10E-01	2.09E+00	2.09E+00
+	RB-83	520.41	46.00	1.13E-01	3.65E-01	3.65E-01
		529.64	30.30	-1.64E-01		5.22E-01
		552.65	16.40	2.10E-01		9.60E-01
+	KR-85	513.99	0.43	5.03E+01	4.10E+01	4.10E+01
+	SR-85	513.99	99.27	2.87E-01	2.34E-01	2.34E-01

Analysis Report for 1510084-20
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	93.40	9.60E-03	1.61E-01	1.93E-01
		1836.01	99.38	-9.22E-03		1.61E-01
+	NB-93M	16.57	9.43	8.27E-01	4.22E-01	4.22E-01
+	NB-94	702.63	100.00	1.28E-01	1.63E-01	1.72E-01
		871.10	100.00	2.35E-02		1.63E-01
+	NB-95	765.79	99.81	1.17E-01	2.56E-01	2.56E-01
+	NB-95M	235.69	25.00	-3.24E+00	8.71E+01	8.71E+01
+	ZR-95	724.18	43.70	2.28E-01	3.21E-01	4.86E-01
		756.72	55.30	-1.67E-02		3.21E-01
+	MO-99	181.06	6.20	-8.89E+01	6.49E+02	1.01E+03
		739.58	12.80	-1.71E+02		6.49E+02
		778.00	4.50	-5.21E+02		1.76E+03
+	RU-103	497.08	89.00	-8.85E-02	1.99E-01	1.99E-01
+	RU-106	621.84	9.80	-1.88E-01	1.43E+00	1.43E+00
+	AG-108M	433.93	89.90	-5.72E-02	1.31E-01	1.31E-01
		614.37	90.40	-1.52E-01		1.88E-01
		722.95	90.50	2.90E-02		1.75E-01
+	CD-109	88.03	3.72	5.48E-01	2.69E+00	2.69E+00
+	AG-110M	657.75	93.14	4.00E-02	1.58E-01	1.58E-01
		677.61	10.53	-2.28E-01		1.51E+00
		706.67	16.46	1.97E-01		1.04E+00
		763.93	21.98	2.14E-01		7.44E-01
		884.67	71.63	-4.02E-02		2.15E-01
		1384.27	23.94	-5.33E-02		5.57E-01
+	CD-113M	263.70	0.02	-4.54E+02	4.62E+02	4.62E+02
+	SN-113	255.12	1.93	2.33E+00	2.30E-01	6.74E+00
		391.69	64.90	7.77E-02		2.30E-01
+	TE123M	159.00	84.10	-6.01E-03	1.34E-01	1.34E-01
+	SB-124	602.71	97.87	-2.86E-03	1.68E-01	1.68E-01
		645.85	7.26	4.88E-02		2.42E+00
		722.78	11.10	-6.74E-01		1.73E+00
		1691.02	49.00	-2.31E-02		3.67E-01
+	I-125	35.49	6.49	-8.83E-02	1.01E+00	1.01E+00
+	SB-125	176.33	6.89	-4.40E-01	4.02E-01	1.52E+00
		427.89	29.33	-9.13E-02		4.02E-01
		463.38	10.35	2.08E-01		1.19E+00
		600.56	17.80	-7.29E-02		7.26E-01
		635.90	11.32	2.62E-01		1.29E+00
+	SB-126	414.70	83.30	-3.42E-01	5.53E-01	5.87E-01
		666.33	99.60	1.46E-01		6.21E-01
		695.00	99.60	-1.36E-01		5.53E-01
		720.50	53.80	-3.45E-01		1.05E+00
+	SN-126	87.57	37.00	5.29E-02	2.60E-01	2.60E-01
+	SB-127	473.00	25.00	-9.27E+00	4.18E+01	4.32E+01
		685.20	35.70	1.86E+01		4.18E+01
		783.80	14.70	4.44E+01		1.01E+02
+	I-129	29.78	57.00	-7.09E-02	8.01E-02	8.01E-02
		33.60	13.20	-2.39E-02		3.62E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	-5.91E-01	8.01E-02	6.82E-01
+	I-131	284.30	6.05	-5.41E+00	1.26E+00	1.60E+01
		364.48	81.20	-4.78E-01		1.26E+00
		636.97	7.26	2.76E+00		1.71E+01
		722.89	1.80	-2.74E+01		7.02E+01
+	TE-132	49.72	13.10	4.26E+01	2.71E+01	1.02E+02
		228.16	88.00	7.94E+00		2.71E+01
+	BA-133	81.00	33.00	-1.15E-01	2.99E-01	3.09E-01
		302.84	17.80	-4.58E-01		6.69E-01
		356.01	60.00	5.92E-01		2.99E-01
+	I-133	529.87	86.30	-2.80E+07	8.93E+07	8.93E+07
+	XE-133	81.00	38.00	-2.81E+00	7.54E+00	7.54E+00
+	CS-134	563.23	8.38	-8.72E-01	1.77E-01	1.49E+00
		569.32	15.43	5.24E-01		9.09E-01
		604.70	97.60	-2.08E-03		1.77E-01
		795.84	85.40	1.63E-01		2.15E-01
		801.93	8.73	-3.51E-01		1.87E+00
+	CS-135	268.24	16.00	1.53E-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	0.00E+00		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	-2.66E+00	5.71E-01	4.83E+00
		163.89	4.61	-8.81E-01		8.09E+00
		176.55	13.56	-8.32E-01		2.87E+00
		273.65	12.66	1.08E+00		3.53E+00
		340.57	48.50	1.08E+00		1.07E+00
		818.50	99.70	-9.47E-02		5.71E-01
		1048.07	79.60	-8.74E-02		7.83E-01
		1235.34	19.70	3.21E+00		4.71E+00
+	CS-137	661.65	85.12	-7.93E-02	1.52E-01	1.52E-01
+	LA-138	788.74	34.00	-4.40E-01	2.02E-01	4.51E-01
		1435.80	66.00	-1.12E-02		2.02E-01
+	CE-139	165.85	80.35	-3.32E-02	1.39E-01	1.39E-01
+	BA-140	162.64	6.70	3.75E-01	2.14E+00	5.81E+00
		304.84	4.50	-3.82E+00		1.01E+01
		423.70	3.20	3.78E+00		1.50E+01
		437.55	2.00	9.70E+00		2.42E+01
		537.32	25.00	2.47E-01		2.14E+00
+	LA-140	328.77	20.50	1.01E+00	7.99E-01	2.38E+00
		487.03	45.50	4.79E-02		1.09E+00
		815.85	23.50	-1.05E-01		2.36E+00
		1596.49	95.49	2.67E-01		7.99E-01
+	CE-141	145.44	48.40	3.21E-02	3.41E-01	3.41E-01
+	CE-143	57.36	11.80	-6.13E+04	1.14E+05	1.95E+05
		293.26	42.00	1.28E+05		1.14E+05
		664.55	5.20	-2.88E+05		9.18E+05
+	CE-144	133.54	10.80	2.10E-01	9.43E-01	9.43E-01
+	PM-144	476.78	42.00	-2.93E-02	1.40E-01	3.11E-01
		618.01	98.60	-4.28E-02		1.40E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-144	696.49	99.49	-1.96E-03	1.40E-01	1.52E-01
+	PM-145	36.85	21.70	9.40E-03	1.27E-01	2.29E-01
		37.36	39.70	-3.71E-03		1.27E-01
		42.30	15.10	7.89E-02		3.69E-01
		72.40	2.31	8.04E+00		4.57E+00
+	PM-146	453.90	39.94	5.51E-02	3.00E-01	3.00E-01
		735.90	14.01	-3.17E-01		1.00E+00
		747.13	13.10	3.81E-01		1.19E+00
+	ND-147	91.11	28.90	4.04E+00	1.72E+00	1.72E+00
		531.02	13.10	1.22E+00		4.97E+00
+	PM-149	285.90	3.10	-2.83E+03	9.68E+03	9.68E+03
+	EU-152	121.78	20.50	-1.40E-01	4.23E-01	4.23E-01
		244.69	5.40	-3.20E-01		2.28E+00
		344.27	19.13	4.90E-02		6.29E-01
		778.89	9.20	-4.40E-01		1.48E+00
		964.01	10.40	-2.13E-01		1.95E+00
		1085.78	7.22	-8.07E-01		2.24E+00
		1112.02	9.60	-2.44E-01		2.05E+00
		1407.95	14.94	3.42E-01		1.26E+00
+	GD-153	97.43	31.30	-3.65E-01	2.84E-01	2.84E-01
		103.18	22.20	6.82E-02		3.96E-01
+	EU-154	123.07	40.50	-1.05E-01	2.16E-01	2.16E-01
		723.30	19.70	1.34E-01		8.07E-01
		873.19	11.50	6.72E-02		1.41E+00
		996.32	10.30	-4.79E-01		1.55E+00
		1004.76	17.90	3.93E-01		9.67E-01
		1274.45	35.50	1.61E-01		5.95E-01
+	EU-155	86.50	30.90	-3.91E-02	3.09E-01	3.09E-01
		105.30	20.70	-6.99E-02		4.02E-01
+	EU-156	811.77	10.40	5.73E-01	4.68E+00	4.68E+00
		1153.47	7.20	5.17E-01		8.24E+00
		1230.71	8.90	-4.85E-02		7.90E+00
+	HO-166M	184.41	72.60	2.11E-01	1.64E-01	1.64E-01
		280.45	29.60	-6.20E-03		3.81E-01
		410.94	11.10	1.19E-01		1.15E+00
		711.69	54.10	0.00E+00		2.63E-01
+	TM-171	66.72	0.14	-5.98E+00	6.13E+01	6.13E+01
+	HF-172	81.75	4.52	-8.14E-01	8.26E-01	2.15E+00
		125.81	11.30	-1.04E-01		8.26E-01
+	LU-172	181.53	20.60	-1.97E-01	4.08E+00	7.35E+00
		810.06	16.63	4.71E-01		1.27E+01
		912.12	15.25	3.49E+01		2.35E+01
		1093.66	62.50	1.12E+00		4.08E+00
+	LU-173	100.72	5.24	-1.34E+00	5.71E-01	1.59E+00
		272.11	21.20	1.26E-01		5.71E-01
+	HF-175	343.40	84.00	1.42E-02	1.90E-01	1.90E-01
+	LU-176	88.34	13.30	1.10E+00	1.20E-01	7.43E-01
		201.83	86.00	1.87E-02		1.29E-01
		306.78	94.00	-1.73E-02		1.20E-01

Analysis Report for 1510084-20

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TA-182	67.75	41.20	-5.06E-01	2.36E-01	2.36E-01
		1121.30	34.90	3.16E-01		7.49E-01
		1189.05	16.23	-2.89E-02		1.33E+00
		1221.41	26.98	1.07E-01		9.42E-01
		1231.02	11.44	-1.39E-02		2.26E+00
+	IR-192	308.46	29.68	1.37E-01	2.96E-01	4.79E-01
		468.07	48.10	-2.42E-02		2.96E-01
+	HG-203	279.19	77.30	1.79E-02	2.12E-01	2.12E-01
+	BI-207	569.67	97.72	8.10E-02	1.41E-01	1.41E-01
		1063.62	74.90	4.99E-03		2.23E-01
+	TL-208	583.14	* 30.22	1.28E+00	2.19E-01	6.92E-01
		860.37	4.48	1.27E+00		3.82E+00
		2614.66	* 35.85	1.30E+00		2.19E-01
+	BI-210M	262.00	45.00	-8.33E-02	2.40E-01	2.40E-01
		300.00	23.00	-5.90E-02		6.00E-01
+	PB-210	46.50	4.25	4.36E-01	1.39E+00	1.39E+00
+	PB-211	404.84	2.90	2.09E+00	4.60E+00	4.60E+00
		831.96	2.90	7.84E-01		5.67E+00
+	BI-212	727.17	11.80	1.01E+00	1.45E+00	1.45E+00
		1620.62	2.75	1.49E-01		4.72E+00
+	PB-212	238.63	* 44.60	1.70E+00	4.06E-01	4.06E-01
		300.09	3.41	-3.98E-01		4.05E+00
+	BI-214	609.31	* 46.30	1.26E+00	3.18E-01	3.18E-01
		1120.29	* 15.10	1.45E+00		1.47E+00
		1764.49	* 15.80	1.19E+00		8.58E-01
		2204.22	* 4.98	2.53E+00		4.13E+00
+	PB-214	295.21	* 19.19	1.24E+00	5.65E-01	9.51E-01
		351.92	* 37.19	1.17E+00		5.65E-01
+	RN-219	401.80	6.50	3.59E-01	1.97E+00	1.97E+00
+	RA-223	323.87	3.88	7.94E-01	3.22E+00	3.22E+00
+	RA-224	240.98	3.95	1.99E+01	4.63E+00	4.63E+00
+	RA-225	40.00	31.00	-4.69E-01	5.42E-01	5.42E-01
+	RA-226	186.21	* 3.28	3.04E+00	4.49E+00	4.49E+00
+	TH-227	50.10	8.40	3.09E-01	7.36E-01	7.36E-01
		236.00	11.50	-5.51E-02		1.48E+00
		256.20	6.30	5.79E-01		1.78E+00
+	AC-228	338.32	* 11.40	1.06E+00	8.79E-01	1.75E+00
		911.07	* 27.70	1.65E+00		8.79E-01
		969.11	16.60	1.56E+00		1.38E+00
+	TH-230	48.44	16.90	1.33E-01	3.61E-01	3.61E-01
		62.85	4.60	5.51E-02		1.74E+00
		67.67	0.37	-4.83E+01		2.26E+01
+	PA-231	283.67	1.60	-2.92E+00	5.15E+00	6.87E+00
		302.67	2.30	-3.53E+00		5.15E+00
+	TH-231	25.64	14.70	-3.61E-02	3.20E-01	3.20E-01
		84.21	6.40	5.69E-01		1.42E+00
+	PA-233	311.98	38.60	-1.90E-01	5.52E-01	5.52E-01
+	PA-234	131.20	20.40	9.92E-02	4.66E-01	4.66E-01

Analysis Report for 1510084-20
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	733.99	8.80	-5.68E-01	4.66E-01	1.64E+00
		946.00	12.00	-1.06E-01		1.23E+00
+	PA-234M	1001.03	0.92	3.25E+00	1.84E+01	1.84E+01
+	TH-234	63.29	3.80	2.29E+00	2.12E+00	2.12E+00
+	U-235	143.76	10.50	3.15E-01	9.26E-01	9.26E-01
		163.35	4.70	-2.28E-01		2.09E+00
		205.31	4.70	5.39E-01		2.43E+00
+	NP-237	86.50	12.60	-9.51E-02	7.50E-01	7.50E-01
+	NP-239	106.10	22.70	-1.08E+02	6.19E+02	6.19E+02
		228.18	10.70	1.65E+02		1.75E+03
		277.60	14.10	8.08E+01		1.38E+03
+	AM-241	59.54	35.90	-4.21E-02	2.04E-01	2.04E-01
+	AM-243	74.67	66.00	6.94E-01	1.71E-01	1.71E-01
+	CM-243	209.75	3.29	1.90E+00	8.22E-01	3.50E+00
		228.14	10.60	3.06E-01		1.04E+00
		277.60	14.00	4.80E-02		8.22E-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	1.68E+00	1.68E+00	3.20E-01	7.92E-01
	NA-22	1274.54	99.94	2.14E-01	2.14E-01	5.78E-02	9.80E-02
	NA-24	1368.53	99.99	2.22E+11	4.86E+10	1.56E+10	9.70E+10
		2754.09	99.86	4.86E+10		0.00E+00	0.00E+00
	AL-26	1808.65	99.76	1.27E-01	1.27E-01	7.48E-03	5.12E-02
+	K-40	1460.81	* 10.67	1.59E+00	1.59E+00	1.74E+01	7.01E-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)
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	8.86E-02	8.86E-02	-1.90E-01	4.35E-02
	78.34	96.00	1.17E-01		3.58E-01	5.75E-02
SC-46	889.25	99.98	1.91E-01	1.91E-01	6.92E-02	8.76E-02
	1120.51	99.99	2.76E-01		9.98E-02	1.28E-01
V-48	983.52	99.98	4.70E-01	4.70E-01	-1.09E-01	2.14E-01
	1312.10	97.50	5.32E-01		3.04E-02	2.38E-01
CR-51	320.08	9.83	2.28E+00	2.28E+00	-2.05E-01	1.10E+00
MN-54	834.83	99.97	1.71E-01	1.71E-01	-4.69E-03	7.94E-02
CO-56	846.75	99.96	2.09E-01	2.09E-01	6.22E-02	9.69E-02
	1037.75	14.03	1.37E+00		7.01E-01	6.20E-01
	1238.25	67.00	4.40E-01		7.60E-02	2.04E-01
	1771.40	15.51	1.47E+00		-6.83E-01	6.39E-01
	2598.48	16.90	8.03E-01		-2.74E-01	2.85E-01
CO-57	122.06	85.51	1.08E-01	1.08E-01	-3.57E-02	5.27E-02
	136.48	10.60	9.58E-01		-2.88E-01	4.67E-01
CO-58	810.76	99.40	1.99E-01	1.99E-01	7.40E-03	9.22E-02
FE-59	1099.22	56.50	5.08E-01	5.08E-01	1.00E-01	2.33E-01
	1291.56	43.20	6.85E-01		1.55E-02	3.11E-01
CO-60	1173.22	100.00	1.90E-01	1.71E-01	-6.36E-03	8.64E-02
	1332.49	100.00	1.71E-01		3.86E-02	7.59E-02
ZN-65	1115.52	50.75	4.16E-01	4.16E-01	-4.95E-02	1.91E-01
GA-67	93.31	35.70	5.62E+01	5.62E+01	3.05E+01	2.76E+01
	208.95	2.24	1.09E+03		2.66E+02	5.32E+02
	300.22	16.00	1.66E+02		-4.81E+01	8.01E+01
SE-75	121.11	16.70	5.93E-01	1.87E-01	-1.83E-01	2.89E-01
	136.00	59.20	1.87E-01		-3.30E-02	9.13E-02
	264.65	59.80	2.06E-01		-1.81E-01	9.90E-02
	279.53	25.20	5.18E-01		4.37E-02	2.49E-01
	400.65	11.40	1.27E+00		-9.65E-02	6.05E-01
RB-82	776.52	13.00	2.09E+00	2.09E+00	-2.10E-01	9.61E-01
RB-83	520.41	46.00	3.65E-01	3.65E-01	1.13E-01	1.72E-01
	529.64	30.30	5.22E-01		-1.64E-01	2.45E-01
	552.65	16.40	9.60E-01		2.10E-01	4.50E-01
KR-85	513.99	0.43	4.10E+01	4.10E+01	5.03E+01	1.96E+01
SR-85	513.99	99.27	2.34E-01	2.34E-01	2.87E-01	1.12E-01
Y-88	898.02	93.40	1.93E-01	1.61E-01	9.60E-03	8.83E-02
	1836.01	99.38	1.61E-01		-9.22E-03	6.62E-02
NB-93M	16.57	9.43	4.22E-01	4.22E-01	8.27E-01	2.05E-01
NB-94	702.63	100.00	1.72E-01	1.63E-01	1.28E-01	8.12E-02
	871.10	100.00	1.63E-01		2.35E-02	7.52E-02
NB-95	765.79	99.81	2.56E-01	2.56E-01	1.17E-01	1.19E-01
NB-95M	235.69	25.00	8.71E+01	8.71E+01	-3.24E+00	4.26E+01
ZR-95	724.18	43.70	4.86E-01	3.21E-01	2.28E-01	2.27E-01
	756.72	55.30	3.21E-01		-1.67E-02	1.48E-01
MO-99	181.06	6.20	1.01E+03	6.49E+02	-8.89E+01	4.90E+02
	739.58	12.80	6.49E+02		-1.71E+02	3.00E+02
	778.00	4.50	1.76E+03		5.21E+02	8.06E+02
RU-103	497.08	89.00	1.99E-01	1.99E-01	-8.85E-02	9.33E-02
RU-106	621.84	9.80	1.43E+00	1.43E+00	-1.88E-01	6.66E-01
AG-108M	433.93	89.90	1.31E-01	1.31E-01	-5.72E-02	6.18E-02
	614.37	90.40	1.88E-01		-1.52E-01	8.93E-02
	722.95	90.50	1.75E-01		2.90E-02	8.16E-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)
CD-109	88.03	3.72	2.69E+00	2.69E+00	5.48E-01	1.32E+00
AG-110M	657.75	93.14	1.58E-01	1.58E-01	4.00E-02	7.33E-02
	677.61	10.53	1.51E+00		-2.28E-01	7.05E-01
	706.67	16.46	1.04E+00		1.97E-01	4.87E-01
	763.93	21.98	7.44E-01		2.14E-01	3.45E-01
	884.67	71.63	2.15E-01		-4.02E-02	9.80E-02
	1384.27	23.94	5.57E-01		-5.33E-02	2.35E-01
CD-113M	263.70	0.02	4.62E+02	4.62E+02	-4.54E+02	2.22E+02
SN-113	255.12	1.93	6.74E+00	2.30E-01	2.33E+00	3.25E+00
	391.69	64.90	2.30E-01		7.77E-02	1.10E-01
TE123M	159.00	84.10	1.34E-01	1.34E-01	-6.01E-03	6.54E-02
SB-124	602.71	97.87	1.68E-01	1.68E-01	-2.86E-03	7.79E-02
	645.85	7.26	2.42E+00		4.88E-02	1.12E+00
	722.78	11.10	1.73E+00		-6.74E-01	8.00E-01
	1691.02	49.00	3.67E-01		-2.31E-02	1.52E-01
I-125	35.49	6.49	1.01E+00	1.01E+00	-8.83E-02	4.92E-01
SB-125	176.33	6.89	1.52E+00	4.02E-01	-4.40E-01	7.38E-01
	427.89	29.33	4.02E-01		-9.13E-02	1.90E-01
	463.38	10.35	1.19E+00		2.08E-01	5.62E-01
	600.56	17.80	7.26E-01		-7.29E-02	3.38E-01
	635.90	11.32	1.29E+00		2.62E-01	6.01E-01
SB-126	414.70	83.30	5.87E-01	5.53E-01	-3.42E-01	2.79E-01
	666.33	99.60	6.21E-01		1.46E-01	2.91E-01
	695.00	99.60	5.53E-01		-1.36E-01	2.56E-01
	720.50	53.80	1.05E+00		-3.45E-01	4.86E-01
SN-126	87.57	37.00	2.60E-01	2.60E-01	5.29E-02	1.27E-01
SB-127	473.00	25.00	4.32E+01	4.18E+01	-9.27E+00	2.03E+01
	685.20	35.70	4.18E+01		1.86E+01	1.96E+01
	783.80	14.70	1.01E+02		4.44E+01	4.66E+01
I-129	29.78	57.00	8.01E-02	8.01E-02	-7.09E-02	3.90E-02
	33.60	13.20	3.62E-01		-2.39E-02	1.76E-01
	39.58	7.52	6.82E-01		-5.91E-01	3.33E-01
I-131	284.30	6.05	1.60E+01	1.26E+00	-5.41E+00	7.67E+00
	364.48	81.20	1.26E+00		-4.78E-01	6.02E-01
	636.97	7.26	1.71E+01		2.76E+00	7.98E+00
	722.89	1.80	7.02E+01		-2.74E+01	3.26E+01
TE-132	49.72	13.10	1.02E+02	2.71E+01	4.26E+01	4.97E+01
	228.16	88.00	2.71E+01		7.94E+00	1.31E+01
BA-133	81.00	33.00	3.09E-01	2.99E-01	-1.15E-01	1.52E-01
	302.84	17.80	6.69E-01		-4.58E-01	3.22E-01
	356.01	60.00	2.99E-01		5.92E-01	1.45E-01
I-133	529.87	86.30	8.93E+07	8.93E+07	-2.80E+07	4.20E+07
XE-133	81.00	38.00	7.54E+00	7.54E+00	-2.81E+00	3.71E+00
CS-134	563.23	8.38	1.49E+00	1.77E-01	-8.72E-01	6.94E-01
	569.32	15.43	9.09E-01		5.24E-01	4.27E-01
	604.70	97.60	1.77E-01		-2.08E-03	8.40E-02
	795.84	85.40	2.15E-01		1.63E-01	1.01E-01
	801.93	8.73	1.87E+00		-3.51E-01	8.70E-01
CS-135	268.24	16.00	7.03E-01	7.03E-01	1.53E-01	3.39E-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+00	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	4.83E+00	5.71E-01	-2.66E+00	2.35E+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)
CS-136	163.89	4.61	8.09E+00	5.71E-01	-8.81E-01	3.94E+00
	176.55	13.56	2.87E+00		-8.32E-01	1.40E+00
	273.65	12.66	3.53E+00		1.08E+00	1.70E+00
	340.57	48.50	1.07E+00		1.08E+00	5.17E-01
	818.50	99.70	5.71E-01		-9.47E-02	2.63E-01
	1048.07	79.60	7.83E-01		-8.74E-02	3.56E-01
	1235.34	19.70	4.71E+00		3.21E+00	2.19E+00
CS-137	661.65	85.12	1.52E-01	1.52E-01	-7.93E-02	7.03E-02
LA-138	788.74	34.00	4.51E-01	2.02E-01	-4.40E-01	2.09E-01
	1435.80	66.00	2.02E-01		-1.12E-02	8.61E-02
CE-139	165.85	80.35	1.39E-01	1.39E-01	-3.32E-02	6.77E-02
BA-140	162.64	6.70	5.81E+00	2.14E+00	3.75E-01	2.83E+00
	304.84	4.50	1.01E+01		-3.82E+00	4.85E+00
	423.70	3.20	1.50E+01		3.78E+00	7.10E+00
	437.55	2.00	2.42E+01		9.70E+00	1.15E+01
	537.32	25.00	2.14E+00		2.47E-01	1.01E+00
LA-140	328.77	20.50	2.38E+00	7.99E-01	1.01E+00	1.14E+00
	487.03	45.50	1.09E+00		4.79E-02	5.14E-01
	815.85	23.50	2.36E+00		-1.05E-01	1.08E+00
	1596.49	95.49	7.99E-01		2.67E-01	3.55E-01
CE-141	145.44	48.40	3.41E-01	3.41E-01	3.21E-02	1.66E-01
CE-143	57.36	11.80	1.95E+05	1.14E+05	-6.13E+04	9.55E+04
	293.26	42.00	1.14E+05		1.28E+05	5.50E+04
	664.55	5.20	9.18E+05		-2.88E+05	4.28E+05
CE-144	133.54	10.80	9.43E-01	9.43E-01	2.10E-01	4.60E-01
PM-144	476.78	42.00	3.11E-01	1.40E-01	-2.93E-02	1.47E-01
	618.01	98.60	1.40E-01		-4.28E-02	6.53E-02
	696.49	99.49	1.52E-01		-1.96E-03	7.05E-02
PM-145	36.85	21.70	2.29E-01	1.27E-01	9.40E-03	1.12E-01
	37.36	39.70	1.27E-01		-3.71E-03	6.19E-02
	42.30	15.10	3.69E-01		7.89E-02	1.81E-01
	72.40	2.31	4.57E+00		8.04E+00	2.25E+00
PM-146	453.90	39.94	3.00E-01	3.00E-01	5.51E-02	1.42E-01
	735.90	14.01	1.00E+00		-3.17E-01	4.64E-01
	747.13	13.10	1.19E+00		3.81E-01	5.56E-01
ND-147	91.11	28.90	1.72E+00	1.72E+00	4.04E+00	8.47E-01
	531.02	13.10	4.97E+00		1.22E+00	2.34E+00
PM-149	285.90	3.10	9.68E+03	9.68E+03	-2.83E+03	4.65E+03
EU-152	121.78	20.50	4.23E-01	4.23E-01	-1.40E-01	2.06E-01
	244.69	5.40	2.28E+00		-3.20E-01	1.10E+00
	344.27	19.13	6.29E-01		4.90E-02	3.01E-01
	778.89	9.20	1.48E+00		-4.40E-01	6.81E-01
	964.01	10.40	1.95E+00		-2.13E-01	9.08E-01
	1085.78	7.22	2.24E+00		-8.07E-01	1.01E+00
	1112.02	9.60	2.05E+00		-2.44E-01	9.41E-01
	1407.95	14.94	1.26E+00		3.42E-01	5.66E-01
GD-153	97.43	31.30	2.84E-01	2.84E-01	-3.65E-01	1.39E-01
	103.18	22.20	3.96E-01		6.82E-02	1.94E-01
EU-154	123.07	40.50	2.16E-01	2.16E-01	-1.05E-01	1.05E-01
	723.30	19.70	8.07E-01		1.34E-01	3.77E-01
	873.19	11.50	1.41E+00		6.72E-02	6.52E-01
	996.32	10.30	1.55E+00		-4.79E-01	7.06E-01
	1004.76	17.90	9.67E-01		3.93E-01	4.43E-01

Analysis Report for 1510084-20

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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-154	1274.45	35.50	5.95E-01	2.16E-01	1.61E-01	2.72E-01
EU-155	86.50	30.90	3.09E-01	3.09E-01	-3.91E-02	1.52E-01
	105.30	20.70	4.02E-01		-6.99E-02	1.96E-01
EU-156	811.77	10.40	4.68E+00	4.68E+00	5.73E-01	2.16E+00
	1153.47	7.20	8.24E+00		5.17E-01	3.76E+00
	1230.71	8.90	7.90E+00		-4.85E-02	3.64E+00
HO-166M	184.41	72.60	1.64E-01	1.64E-01	2.11E-01	8.01E-02
	280.45	29.60	3.81E-01		-6.20E-03	1.84E-01
	410.94	11.10	1.15E+00		1.19E-01	5.46E-01
	711.69	54.10	2.63E-01		0.00E+00	1.22E-01
TM-171	66.72	0.14	6.13E+01	6.13E+01	-5.98E+00	3.01E+01
HF-172	81.75	4.52	2.15E+00	8.26E-01	-8.14E-01	1.06E+00
	125.81	11.30	8.26E-01		-1.04E-01	4.03E-01
LU-172	181.53	20.60	7.35E+00	4.08E+00	-1.97E-01	3.58E+00
	810.06	16.63	1.27E+01		4.71E-01	5.87E+00
	912.12	15.25	2.35E+01		3.49E+01	1.12E+01
	1093.66	62.50	4.08E+00		1.12E+00	1.87E+00
LU-173	100.72	5.24	1.59E+00	5.71E-01	-1.34E+00	7.76E-01
	272.11	21.20	5.71E-01		1.26E-01	2.75E-01
HF-175	343.40	84.00	1.90E-01	1.90E-01	1.42E-02	9.10E-02
LU-176	88.34	13.30	7.43E-01	1.20E-01	1.10E+00	3.65E-01
	201.83	86.00	1.29E-01		1.87E-02	6.29E-02
	306.78	94.00	1.20E-01		-1.73E-02	5.76E-02
TA-182	67.75	41.20	2.36E-01	2.36E-01	-5.06E-01	1.16E-01
	1121.30	34.90	7.49E-01		3.16E-01	3.48E-01
	1189.05	16.23	1.33E+00		-2.89E-02	6.05E-01
	1221.41	26.98	9.42E-01		1.07E-01	4.34E-01
	1231.02	11.44	2.26E+00		-1.39E-02	1.04E+00
IR-192	308.46	29.68	4.79E-01	2.96E-01	1.37E-01	2.30E-01
	468.07	48.10	2.96E-01		-2.42E-02	1.39E-01
HG-203	279.19	77.30	2.12E-01	2.12E-01	1.79E-02	1.02E-01
BI-207	569.67	97.72	1.41E-01	1.41E-01	8.10E-02	6.61E-02
	1063.62	74.90	2.23E-01		4.99E-03	1.01E-01
+ TL-208	583.14	*	30.22	2.19E-01	1.28E+00	3.32E-01
	860.37		4.48		1.27E+00	1.77E+00
	2614.66	*	35.85		1.30E+00	6.52E-02
BI-210M	262.00	45.00	2.40E-01	2.40E-01	-8.33E-02	1.16E-01
	300.00	23.00	6.00E-01		-5.90E-02	2.91E-01
PB-210	46.50	4.25	1.39E+00	1.39E+00	4.36E-01	6.80E-01
PB-211	404.84	2.90	4.60E+00	4.60E+00	2.09E+00	2.20E+00
	831.96	2.90	5.67E+00		7.84E-01	2.63E+00
BI-212	727.17	11.80	1.45E+00	1.45E+00	1.01E+00	6.82E-01
	1620.62	2.75	4.72E+00		1.49E-01	1.96E+00
+ PB-212	238.63	*	44.60	4.06E-01	1.70E+00	1.99E-01
	300.09		3.41		-3.98E-01	1.96E+00
+ BI-214	609.31	*	46.30	3.18E-01	1.26E+00	1.49E-01
	1120.29	*	15.10		1.45E+00	6.80E-01
	1764.49	*	15.80		1.19E+00	3.54E-01
	2204.22	*	4.98		2.53E+00	1.78E+00
+ PB-214	295.21	*	19.19	5.65E-01	1.24E+00	4.64E-01
	351.92	*	37.19		1.17E+00	2.76E-01
RN-219	401.80	6.50	1.97E+00	1.97E+00	3.59E-01	9.38E-01
RA-223	323.87	3.88	3.22E+00	3.22E+00	7.94E-01	1.55E+00

Analysis Report for 1510084-20
CP1803S18-19

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	4.63E+00	4.63E+00	1.99E+01	2.27E+00
RA-225	40.00	31.00	5.42E-01	5.42E-01	-4.69E-01	2.65E-01
+ RA-226	186.21 *	3.28	4.49E+00	4.49E+00	3.04E+00	2.20E+00
TH-227	50.10	8.40	7.36E-01	7.36E-01	3.09E-01	3.60E-01
	236.00	11.50	1.48E+00		-5.51E-02	7.25E-01
	256.20	6.30	1.78E+00		5.79E-01	8.59E-01
+ AC-228	338.32 *	11.40	1.75E+00	8.79E-01	1.06E+00	8.54E-01
	911.07 *	27.70	8.79E-01		1.65E+00	4.16E-01
	969.11	16.60	1.38E+00		1.56E+00	6.50E-01
TH-230	48.44	16.90	3.61E-01	3.61E-01	1.33E-01	1.77E-01
	62.85	4.60	1.74E+00		5.51E-02	8.52E-01
	67.67	0.37	2.26E+01		-4.83E+01	1.11E+01
PA-231	283.67	1.60	6.87E+00	5.15E+00	-2.92E+00	3.30E+00
	302.67	2.30	5.15E+00		-3.53E+00	2.48E+00
TH-231	25.64	14.70	3.20E-01	3.20E-01	-3.61E-02	1.56E-01
	84.21	6.40	1.42E+00		5.69E-01	6.96E-01
PA-233	311.98	38.60	5.52E-01	5.52E-01	-1.90E-01	2.65E-01
PA-234	131.20	20.40	4.66E-01	4.66E-01	9.92E-02	2.27E-01
	733.99	8.80	1.64E+00		-5.68E-01	7.59E-01
	946.00	12.00	1.23E+00		-1.06E-01	5.57E-01
PA-234M	1001.03	0.92	1.84E+01	1.84E+01	3.25E+00	8.45E+00
TH-234	63.29	3.80	2.12E+00	2.12E+00	2.29E+00	1.04E+00
U-235	143.76	10.50	9.26E-01	9.26E-01	3.15E-01	4.51E-01
	163.35	4.70	2.09E+00		-2.28E-01	1.02E+00
	205.31	4.70	2.43E+00		5.39E-01	1.18E+00
NP-237	86.50	12.60	7.50E-01	7.50E-01	-9.51E-02	3.68E-01
NP-239	106.10	22.70	6.19E+02	6.19E+02	-1.08E+02	3.02E+02
	228.18	10.70	1.75E+03		1.65E+02	8.49E+02
	277.60	14.10	1.38E+03		8.08E+01	6.66E+02
AM-241	59.54	35.90	2.04E-01	2.04E-01	-4.21E-02	1.00E-01
AM-243	74.67	66.00	1.71E-01	1.71E-01	6.94E-01	8.45E-02
CM-243	209.75	3.29	3.50E+00	8.22E-01	1.90E+00	1.70E+00
	228.14	10.60	1.04E+00		3.06E-01	5.05E-01
	277.60	14.00	8.22E-01		4.80E-02	3.96E-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 1510084-20
CP1803S18-19

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: CP1803S18-19

Elapsed Live time: 3600

Elapsed Real Time: 3639

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	19	87
17:	75	67	73	81	73	60	69	72
25:	63	62	41	59	55	57	60	49
33:	54	63	64	69	52	61	64	64
41:	60	67	57	76	84	100	68	69
49:	82	67	85	68	76	82	85	60
57:	83	96	99	77	97	131	134	124
65:	113	103	105	114	97	93	111	118
73:	163	254	262	276	240	152	83	103
81:	89	94	103	86	107	122	149	103
89:	111	110	112	151	123	82	60	77
97:	50	74	71	56	57	69	60	73
105:	74	57	68	63	62	63	76	62
113:	60	66	60	61	54	61	61	50
121:	63	54	58	59	68	51	65	73
129:	69	65	66	77	69	41	59	59
137:	65	64	55	57	55	68	65	52
145:	49	58	68	51	41	51	51	56
153:	65	47	54	52	41	51	62	54
161:	42	52	55	49	34	52	42	45
169:	62	49	44	47	55	40	49	47
177:	44	51	43	52	48	38	64	60
185:	77	87	61	52	43	31	53	46
193:	45	42	44	40	44	44	53	42
201:	42	50	46	36	45	39	34	59
209:	62	43	39	41	39	33	42	29
217:	37	30	27	31	37	22	40	35
225:	39	35	25	43	33	41	28	41
233:	33	30	45	62	145	202	147	85
241:	69	50	31	26	15	28	20	25
249:	36	32	24	34	22	23	31	33
257:	34	34	32	24	23	30	18	18
265:	24	27	29	32	24	41	28	24
273:	27	30	25	33	31	26	20	27
281:	23	19	26	24	32	14	27	17
289:	24	32	22	17	22	67	85	34
297:	27	37	32	28	24	17	22	22
305:	23	14	33	22	23	17	19	16
313:	19	16	17	27	27	20	23	20
321:	19	28	18	23	30	29	24	24
329:	20	14	21	20	12	22	16	21
337:	42	43	33	19	23	26	18	13
345:	21	22	14	19	24	54	105	97
353:	60	18	15	14	18	29	18	22
361:	15	15	8	20	17	14	14	21

369: 13 20 16 18 14 15 7 15

Sample Title: CP1803S18-19

Channel	1	2	3	4	5	6	7	8
377:	15	17	14	22	6	15	11	23
385:	16	21	24	16	13	11	18	21
393:	22	13	17	9	10	14	16	18
401:	24	16	17	17	15	14	16	21
409:	21	14	11	15	15	12	18	10
417:	13	11	15	9	20	17	11	13
425:	8	17	9	9	15	12	11	8
433:	17	8	6	16	12	14	17	17
441:	7	10	8	13	10	9	15	11
449:	14	17	9	9	16	5	5	12
457:	11	9	6	6	11	15	21	12
465:	9	12	6	6	17	5	4	11
473:	12	8	8	12	15	10	11	11
481:	13	14	14	11	10	15	8	11
489:	6	7	9	8	12	6	9	11
497:	8	5	6	8	9	14	9	13
505:	13	6	14	9	25	37	33	22
513:	9	15	9	9	17	8	14	12
521:	11	19	4	6	7	9	9	10
529:	8	7	8	15	12	11	8	18
537:	8	5	9	10	11	8	9	11
545:	7	6	8	2	12	4	9	11
553:	8	13	6	12	7	12	5	9
561:	9	6	6	7	7	10	7	7
569:	9	13	12	9	9	3	9	7
577:	12	6	9	8	22	42	56	31
585:	13	8	6	10	13	5	9	3
593:	10	11	8	6	10	7	7	7
601:	10	3	6	7	6	5	20	50
609:	74	49	21	3	6	10	6	7
617:	8	2	10	10	2	9	10	3
625:	11	5	13	13	7	5	9	8
633:	4	10	8	9	4	8	12	6
641:	6	6	7	5	6	6	5	11
649:	6	5	5	3	10	9	5	6
657:	3	6	8	6	8	11	4	5
665:	2	9	11	7	12	12	8	8
673:	4	7	17	2	8	7	6	7
681:	10	7	5	10	10	7	10	10
689:	7	9	3	6	9	0	9	2
697:	6	10	7	11	7	14	15	8
705:	4	11	6	7	5	3	9	7
713:	4	10	5	8	4	3	6	2
721:	8	3	9	8	6	10	16	9
729:	10	8	4	7	7	5	2	6
737:	8	7	4	4	4	7	10	5
745:	6	11	5	6	7	6	5	4
753:	6	7	2	3	6	7	4	5
761:	6	5	2	3	12	5	7	11
769:	7	1	5	5	8	5	2	7
777:	6	3	2	5	6	6	7	4
785:	9	9	8	6	1	3	5	8
793:	13	13	11	8	4	5	6	2

801: 7 7 3 10 9 7 4 12

Sample Title: CP1803S18-19

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	3	8	1	5	6	5	6	5
817:	5	4	4	10	4	4	11	5
825:	6	7	6	5	7	1	2	5
833:	11	9	5	10	5	5	4	6
841:	8	8	6	4	5	9	5	3
849:	10	5	2	6	4	4	4	6
857:	10	7	4	12	8	2	4	3
865:	5	5	6	5	5	6	4	4
873:	7	7	5	6	4	6	5	4
881:	5	3	4	4	3	3	5	5
889:	2	7	4	5	8	3	4	2
897:	7	5	7	4	1	7	2	4
905:	3	8	5	4	12	24	41	24
913:	6	6	4	2	6	2	5	2
921:	4	2	1	4	6	3	2	2
929:	8	5	4	3	8	7	8	1
937:	6	4	4	3	3	2	2	5
945:	5	2	4	2	6	5	8	7
953:	3	2	2	4	3	3	7	4
961:	2	3	6	7	10	5	9	17
969:	17	13	5	2	4	2	2	3
977:	6	5	6	2	5	3	6	4
985:	4	2	3	7	1	6	4	3
993:	4	4	4	6	2	3	3	6
1001:	5	7	6	6	2	3	2	4
1009:	2	4	4	5	7	2	6	1
1017:	4	4	5	6	3	7	2	5
1025:	5	2	8	0	4	0	0	4
1033:	2	1	1	3	1	4	7	4
1041:	7	2	1	4	3	3	8	4
1049:	5	5	1	1	3	5	6	6
1057:	1	4	3	3	1	3	3	8
1065:	0	9	4	2	4	3	4	4
1073:	6	7	8	1	5	3	6	4
1081:	6	6	7	1	4	2	1	5
1089:	2	2	3	3	6	7	5	7
1097:	6	2	9	3	3	4	5	1
1105:	4	5	7	4	4	8	4	3
1113:	4	4	9	4	2	6	8	20
1121:	8	5	1	4	4	7	2	3
1129:	6	3	4	3	2	6	7	6
1137:	2	4	6	6	3	5	3	3
1145:	4	7	3	5	7	2	2	5
1153:	4	2	6	6	3	6	1	2
1161:	3	2	9	4	3	5	4	4
1169:	9	2	5	6	5	2	1	3
1177:	3	5	4	3	2	4	3	4
1185:	2	5	3	3	6	6	1	6
1193:	2	7	3	2	5	5	4	5
1201:	5	4	9	6	4	7	4	4
1209:	7	6	5	2	3	5	7	5
1217:	5	8	4	4	8	5	4	4
1225:	4	5	6	1	4	3	4	4

1233: 10 4 11 6 6 7 6 5

Sample Title: CP1803S18-19

Channel	1	2	3	4	5	6	7	8	9
1241:	7	1	7	3	4	5	10	1	
1249:	2	4	4	8	4	3	4	3	
1257:	2	4	2	5	1	4	2	7	
1265:	3	3	3	3	1	4	3	5	
1273:	5	4	3	3	6	6	5	4	
1281:	4	6	3	5	2	6	4	5	
1289:	5	4	7	1	4	3	1	4	
1297:	4	2	3	3	1	4	6	3	
1305:	3	5	1	3	1	5	0	2	
1313:	0	5	4	4	2	2	2	2	
1321:	5	2	4	2	2	0	5	4	
1329:	0	0	2	3	5	3	3	2	
1337:	2	1	1	0	0	1	2	4	
1345:	3	1	3	3	1	1	1	4	
1353:	2	3	2	1	4	6	0	2	
1361:	1	0	5	3	1	3	1	2	
1369:	0	2	2	2	0	2	2	3	
1377:	3	4	8	0	1	2	1	1	
1385:	3	0	1	1	3	1	2	3	
1393:	2	1	1	1	1	1	2	4	
1401:	1	1	3	1	3	2	2	3	
1409:	3	6	2	3	3	1	3	1	
1417:	1	2	1	3	2	1	5	1	
1425:	0	1	1	3	1	0	3	0	
1433:	0	2	2	1	1	1	3	1	
1441:	0	3	1	2	2	1	1	2	
1449:	0	3	2	1	3	2	1	1	
1457:	0	11	20	54	80	56	23	8	
1465:	1	2	1	2	0	3	1	2	
1473:	1	0	0	0	1	1	3	0	
1481:	2	3	2	0	2	0	3	0	
1489:	2	0	1	3	0	1	1	3	
1497:	1	1	3	1	1	2	0	1	
1505:	1	1	0	4	1	2	2	3	
1513:	0	3	2	0	1	2	2	2	
1521:	4	4	2	0	1	2	1	0	
1529:	0	2	1	2	1	1	3	1	
1537:	1	4	1	1	2	0	1	2	
1545:	2	0	3	2	1	0	2	4	
1553:	2	2	3	2	1	1	2	1	
1561:	1	0	0	1	1	1	4	0	
1569:	0	0	0	2	2	1	3	0	
1577:	0	0	0	0	4	1	1	0	
1585:	0	2	3	2	7	3	4	5	
1593:	6	6	0	4	2	0	3	0	
1601:	0	0	1	1	1	0	2	1	
1609:	3	1	2	1	0	2	0	1	
1617:	0	0	1	1	1	3	2	0	
1625:	0	0	1	1	3	0	0	4	
1633:	0	1	1	1	1	0	2	0	
1641:	1	0	3	0	0	0	0	0	
1649:	0	2	1	2	1	1	0	1	
1657:	1	0	1	1	4	2	1	0	

1665: 1 1 1 1 0 0 1 1

Sample Title: CP1803S18-19

Channel	1	2	3	4	5	6	7	8
1673:	1	1	1	2	0	2	0	1
1681:	0	0	1	2	0	1	2	1
1689:	1	0	1	2	1	0	0	2
1697:	1	0	2	0	0	1	1	0
1705:	1	0	3	0	0	2	0	1
1713:	0	2	0	0	0	1	0	1
1721:	1	1	1	3	1	1	2	2
1729:	2	0	0	0	0	0	2	1
1737:	1	0	0	1	2	2	1	2
1745:	3	2	0	2	0	1	0	2
1753:	1	1	0	0	1	1	1	0
1761:	0	0	5	4	5	5	7	0
1769:	1	3	0	1	1	1	0	0
1777:	1	1	1	1	0	0	0	2
1785:	1	3	1	1	1	2	0	0
1793:	1	1	2	0	0	1	1	1
1801:	1	0	0	0	0	0	1	1
1809:	0	1	1	0	1	1	1	0
1817:	1	0	2	1	0	1	1	1
1825:	0	2	0	0	1	0	0	1
1833:	0	1	1	2	0	1	1	0
1841:	0	0	2	1	0	1	3	1
1849:	2	1	1	1	1	0	0	0
1857:	2	0	0	0	1	0	0	0
1865:	3	3	0	0	0	2	0	2
1873:	0	0	1	0	0	0	0	1
1881:	1	1	1	0	0	2	0	2
1889:	0	0	0	1	2	3	0	0
1897:	2	0	2	0	1	1	1	1
1905:	0	0	0	2	0	0	1	1
1913:	0	1	1	1	0	0	1	2
1921:	0	1	1	0	1	1	0	1
1929:	0	0	2	0	0	0	0	0
1937:	4	0	2	0	0	1	1	2
1945:	0	0	0	0	0	1	0	1
1953:	0	0	2	1	2	0	0	0
1961:	2	1	0	2	1	0	1	1
1969:	0	1	1	0	1	0	0	0
1977:	1	0	1	1	0	1	1	0
1985:	0	0	0	1	1	0	2	0
1993:	0	0	0	0	0	1	1	0
2001:	1	1	1	2	0	0	0	0
2009:	0	1	1	1	0	1	0	0
2017:	0	0	3	0	1	0	1	1
2025:	0	2	2	1	1	1	0	1
2033:	1	1	0	0	1	1	2	1
2041:	1	1	0	4	0	0	1	0
2049:	0	0	0	2	0	1	0	1
2057:	0	0	2	1	1	1	0	1
2065:	0	0	1	0	1	0	1	1
2073:	2	2	3	0	0	0	2	1
2081:	1	0	0	0	0	3	1	0
2089:	1	1	2	0	0	0	0	0

2097: 0 3 1 0 2 1 2 1

Sample Title: CP1803S18-19

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

2529: 0 0 0 1 0 1 0 0

Sample Title: CP1803S18-19

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	0	0	0	1	0	0
2545:	0	1	0	0	0	0	0	0
2553:	0	0	0	0	0	1	1	0
2561:	1	0	1	0	0	0	0	0
2569:	0	0	0	1	0	0	0	0
2577:	0	0	0	0	0	0	0	0
2585:	1	1	0	0	0	0	1	0
2593:	1	0	1	0	0	0	0	0
2601:	0	1	0	0	0	0	1	0
2609:	0	0	0	1	3	6	11	9
2617:	6	5	0	0	0	0	0	0
2625:	2	1	0	0	0	1	1	0
2633:	0	1	0	0	0	0	0	0
2641:	0	0	1	0	0	0	1	0
2649:	1	0	0	1	0	0	0	0
2657:	0	0	1	0	0	0	0	0
2665:	0	0	1	0	0	0	0	0
2673:	0	1	1	0	0	0	1	0
2681:	0	0	0	0	0	0	0	0
2689:	0	0	0	0	0	0	0	0
2697:	0	0	1	0	0	0	1	0
2705:	0	0	1	0	0	0	0	0
2713:	0	0	0	0	1	0	0	0
2721:	0	0	0	1	0	0	0	0
2729:	0	1	0	0	0	1	1	1
2737:	0	0	1	0	1	0	1	0
2745:	0	0	0	0	0	0	0	0
2753:	0	0	0	0	0	0	0	0
2761:	0	0	0	0	1	0	0	0
2769:	0	1	0	1	0	0	0	0
2777:	0	0	0	1	0	0	0	0
2785:	0	0	0	0	1	0	0	0
2793:	0	0	0	0	0	0	0	1
2801:	0	0	1	1	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	0	1	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	1	0	1	0	1	0	0
2849:	0	0	1	0	2	0	0	0
2857:	0	1	0	0	0	0	1	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	1	1	0	0	0	1
2881:	1	0	0	0	0	0	0	1
2889:	1	0	0	0	0	0	0	1
2897:	0	0	1	0	0	1	0	0
2905:	1	0	0	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	0	0	0	1	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	1
2945:	0	0	0	0	1	0	0	0
2953:	0	0	1	2	1	0	0	0

2961: 0 0 0 0 0 1 1 0

Sample Title: CP1803S18-19

Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	0	1	0	0	0
2985:	0	0	0	0	0	0	0	0
2993:	1	0	0	0	0	1	1	0
3001:	0	0	0	0	0	0	0	0
3009:	0	0	0	0	1	0	0	0
3017:	1	0	1	0	0	0	0	0
3025:	0	0	0	0	0	0	0	1
3033:	0	0	0	0	0	0	0	0
3041:	0	1	0	0	0	0	0	0
3049:	0	0	0	0	0	0	1	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	1	1
3081:	0	0	1	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	0	2
3113:	0	0	0	0	0	0	0	0
3121:	0	0	1	0	0	0	0	1
3129:	0	0	1	0	1	1	0	0
3137:	0	0	0	0	0	0	0	0
3145:	0	0	1	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	1	0	0	0	1	0	1
3169:	0	0	0	0	0	0	0	2
3177:	0	0	0	0	0	0	0	0
3185:	2	0	0	0	0	0	1	0
3193:	1	0	0	0	0	0	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	1	0	0	1	0	0	0
3217:	0	0	0	1	0	1	0	0
3225:	0	0	0	0	0	1	0	0
3233:	0	0	0	0	0	0	1	1
3241:	0	0	0	0	0	1	0	0
3249:	0	0	0	0	0	0	0	1
3257:	0	0	0	0	0	0	3	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	1	0	0	0	1	0
3289:	1	0	0	0	1	0	0	1
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	1	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	0	0	0	0	0	0	0
3345:	0	0	1	0	0	1	0	0
3353:	0	1	0	1	0	0	1	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	1	0	0
3377:	0	0	1	0	0	0	0	0
3385:	0	0	0	0	0	0	1	0

3393: 0 0 0 0 1 0 1 1

Sample Title: CP1803S18-19

Channel	1	2	3	4	5	6	7	8
3401:	0	0	0	0	0	0	0	0
3409:	1	0	0	0	0	0	0	0
3417:	0	0	0	1	0	0	0	0
3425:	0	0	1	0	0	0	1	0
3433:	0	0	0	0	0	0	2	1
3441:	0	0	0	0	0	0	0	0
3449:	1	0	0	1	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	0	0	0
3481:	2	0	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	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	1	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	1
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	1	0	0	0	0
3569:	0	0	1	0	0	0	0	0
3577:	0	0	0	2	0	0	0	0
3585:	0	0	0	0	0	0	1	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	1	0	0	0
3609:	0	0	1	1	0	0	1	0
3617:	0	0	0	0	0	0	0	0
3625:	0	1	0	0	0	0	0	0
3633:	1	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	1	0	0
3657:	0	0	0	0	0	1	0	0
3665:	1	1	1	0	0	0	0	0
3673:	0	0	0	1	0	0	0	0
3681:	0	0	0	1	1	0	0	0
3689:	0	1	0	0	0	0	0	1
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	1	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	1	1	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	1	0	0	0	0	0	0
3745:	1	0	2	0	0	1	0	0
3753:	0	0	1	0	0	0	0	2
3761:	0	0	0	0	0	0	0	0
3769:	1	0	0	0	0	0	0	0
3777:	0	0	0	0	1	0	0	0
3785:	0	0	0	0	0	0	0	1
3793:	0	0	0	1	0	1	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	1	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

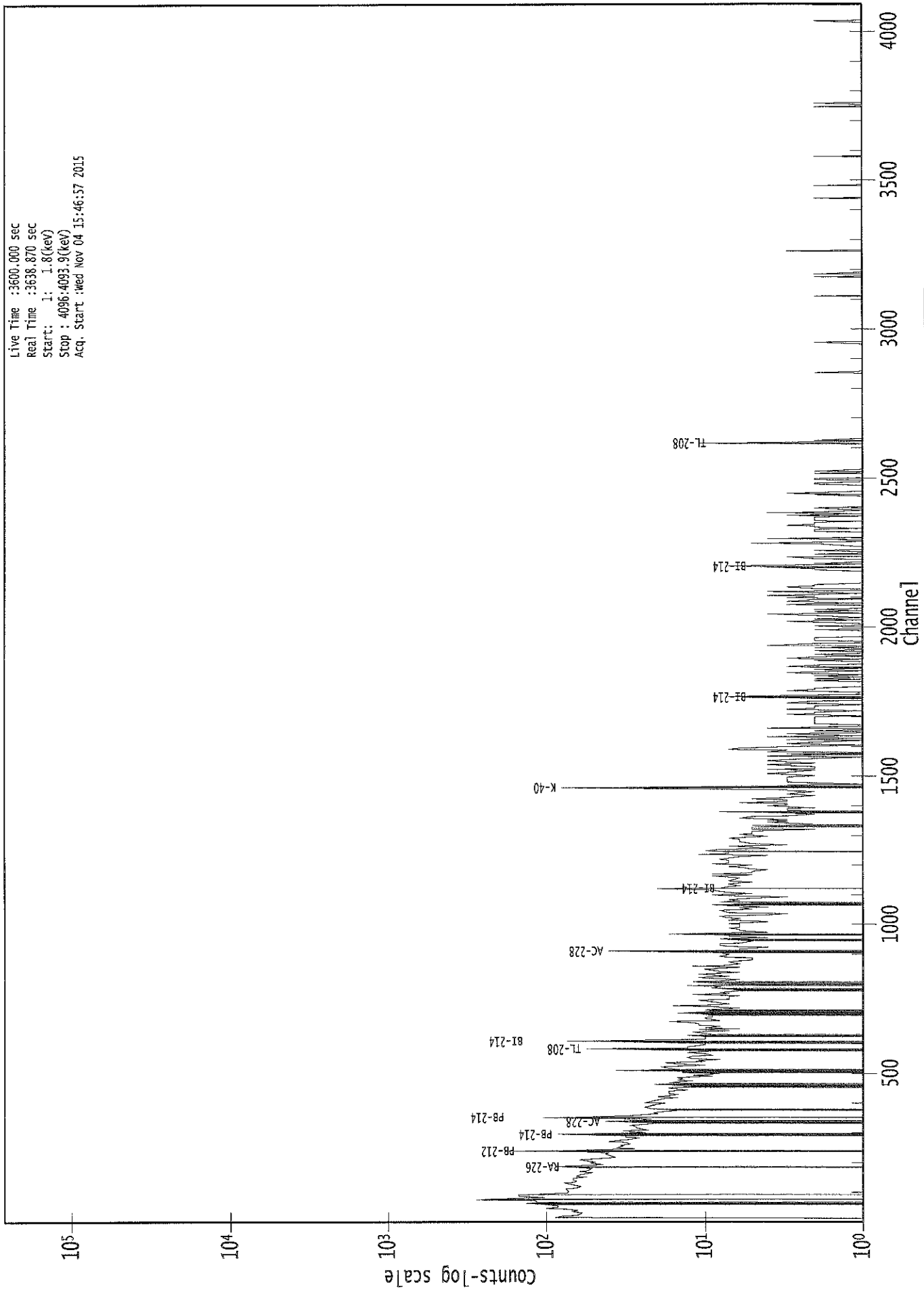
3825: 0 0 0 0 0 0 0 0

Sample Title: CP1803S18-19

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	1	0	0	0	0	0
3841:	1	0	0	0	0	1	0	0
3849:	0	0	0	0	0	1	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	1
3881:	0	1	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	1	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	1	0	0	1
3929:	0	0	0	1	0	1	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	1	0	1	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	1	0
3985:	0	0	0	1	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	1	0	0	0	0	0
4009:	0	0	1	0	1	0	0	0
4017:	1	0	0	0	0	0	0	0
4025:	0	0	0	0	1	0	0	0
4033:	0	0	0	2	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	1	0	0	0	0	0
4065:	1	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	1	0
4081:	0	0	0	0	0	0	0	0
4089:	2	0	0	0	0	0	0	0

0000029147.CNF

Live Time : 3600.000 sec
Real Time : 3638.870 sec
Start : 1: 1.8(keV)
Stop : 4096.4093.9(keV)
Acq. Start : Wed Nov 04 15:46:57 2015



 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 11/4/15 6:12:40 AM

CE/114

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: 11/4/15 5:57:16 AM
 Measurement Date: 11/4/15 5:57:18 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 911.9 seconds

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >
DAILY BKG CT RATE GE4	1.8956E+000	-4.1913E-002
[SD: 8.7753E+000+/-164.14]		< : : : >
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
 11/4/15 6:35:17 AM

1119

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000003B.QCK

Detector: GE3
 Geometry: <None>
 Certificate: <None>
 Sample ID: QA Background Ch
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 11/4/15 6:19:58 AM
 Measurement Date: 11/4/15 6:20:01 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 903.9 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE3 [SD: 2.2900E+003+/-1499.7]	1.8560E+003	-2.8939E-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
 11/4/15 6:12:13 AM

Handwritten signature

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D000000002B.QCK

Detector: GE2
 Geometry: <None>
 Certificate: <None>
 Sample ID: QA Background Ch
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 11/4/15 5:56:59 AM
 Measurement Date: 11/4/15 5:57:02 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 900.1 seconds

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >
DAILY BKG CT RATE GE2	4.5944E+000	1.4591E-001
[SD: 4.5535E+000+/- 0.281]		< : : : >

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
 11/4/15 6:12:04 AM

1114

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000001B.QCK

Detector: GE1
 Geometry: <None>
 Certificate: <None>
 Sample ID: QA Background Ch
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 11/4/15 5:56:50 AM
 Measurement Date: 11/4/15 5:56:52 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 900.1 seconds

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >
DAILY BKG CT RATE GE1	2.2289E+000	-4.4035E-002
[SD: 2.3036E+000+/- 1.697]		< : : : >
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
 11/4/15 5:41:55 AM

(Handwritten mark)
 1114

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: 11/4/15 5:25:46 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 956.9 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]	5.8667E+001	<	:	:	>
Peak centroid 661.65 keV Boundary Limits: [6.600E+002, 6.630E+002]	6.6110E+002	<	:	:	>
Peak centroid 1332.49 ke Boundary Limits: [1.331E+003, 1.334E+003]	1.3323E+003	<	:	:	>
Peak centroid 1836.1 keV Boundary Limits: [1.834E+003, 1.838E+003] Trend Test: The last 9 samples exhibit a bias trend.	1.8362E+003	<	:	:	>
Peak FWHM Am-241 Boundary Limits: [5.000E-001, 3.000E+000]	2.2365E+000	<	:	:	>
Peak FWHM Cs-137 Boundary Limits: [5.000E-001, 3.000E+000]	2.7060E+000	<	:	:	>
Peak FWHM Co-60 Boundary Limits: [5.000E-001, 3.000E+000]	2.9270E+000	<	:	:	>
Peak FWHM Y-88 Boundary Limits: [5.000E-001, 3.500E+000]	3.3005E+000	<	:	:	>
Decay corrected activity Boundary Limits: [1.200E-001, 1.816E-001]	1.2389E+005	<	:	:	>
Decay corrected activity Boundary Limits: [4.918E-002, 7.377E-002]	6.2664E+004	<	:	:	>
Decay corrected activity	9.7308E+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	2.0760E+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
11/4/15 5:41:26 AM

Handwritten mark resembling '1104' with a flourish above it.

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000003GAS-1402C.QC

Detector: GE3
Geometry: <None>
Certificate: GAS-1402
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: 11/4/15 5:25:38 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 937.3 seconds

Table with 4 columns: Parameter Description, Value, Deviation/Flags, and a right-side marker. Rows include peak centroid data for 59.54 keV, 661.65 keV, 1332.49 ke, 1836.1 keV, and FWHM data for Am-241, Cs-137, Co-60, and Y-88. It also includes decay corrected activity data with trend test results.

Decay corrected activity 9.9938E+004
Boundary Limits: [7.972E-002, 1.120E-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 1.9589E+005
Boundary Limits: [1.713E-001, 2.569E-001] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
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 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 11/4/15 5:41:11 AM

11/4

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000002GAS-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: 11/4/15 5:25:30 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 926.7 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	6.6146E+002				
Boundary Limits: [6.600E+002, 6.640E+002]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak centroid 1332.49 ke	1.3321E+003				
Boundary Limits: [1.331E+003, 1.334E+003]		<	:	:	>
Peak centroid 1836.1 keV	1.8353E+003				
Boundary Limits: [1.834E+003, 1.838E+003]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak FWHM Am-241	1.3664E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak FWHM Cs-137	2.1044E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak FWHM Co-60	2.1268E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Peak FWHM Y-88	2.6073E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Decay corrected activity	1.5564E+005				
Boundary Limits: [1.224E-001, 1.836E-001]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					

Decay corrected activity 6.3557E+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 1.0527E+005
Boundary Limits: [7.978E-002, 1.197E-001] < : : >
Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 2.2068E+005
Boundary Limits: [1.714E-001, 2.571E-001] < : : >
Trend Test: The last 9 samples exhibit a bias trend.

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UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** G E N I E Q U A L I T Y A S S U R A N C E *****

Last Results Report
 11/4/15 5:41:01 AM

1114

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: 11/4/15 5:25:23 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 924.3 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]	6.0000E+001	<	:	:	>
Peak centroid 661.65 keV Boundary Limits: [6.600E+002, 6.630E+002]	6.6203E+002	<	:	:	>
Peak centroid 1332.49 keV Boundary Limits: [1.331E+003, 1.334E+003]	1.3329E+003	<	:	:	>
Peak centroid 1836.01 keV Boundary Limits: [1.834E+003, 1.838E+003]	1.8365E+003	<	:	:	>
Peak FWHM Am-241 Boundary Limits: [5.000E-001, 3.000E+000]	1.2147E+000	<	:	:	>
Peak FWHM Cs-137 Boundary Limits: [5.000E-001, 3.000E+000]	1.5873E+000	<	:	:	>
Peak FWHM Co-60 Boundary Limits: [5.000E-001, 3.000E+000] Trend Test: The last 9 samples exhibit a bias trend.	2.0467E+000	<	:	:	>
Peak FWHM Y-90 Boundary Limits: [5.000E-001, 3.000E+000]	2.5718E+000	<	:	:	>
Decay corrected activity Boundary Limits: [1.170E-002, 1.754E-002]	1.4715E+004	<	:	:	>
Decay corrected activity Boundary Limits: [4.716E-003, 7.075E-003]	6.3420E+003	<	:	:	>
Decay corrected activity	1.0656E+004				

Boundary Limits: [7.572E-003, 1.136E-002] < : : : >

Decay corrected activity 1.9996E+004

Boundary Limits: [1.626E-002, 2.440E-002] < : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
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 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)