

AUXIER & ASSOCIATES, INC.

PAP-KAN

**STANDARD LEVEL IV
REPORT OF ANALYSIS**

WORK ORDER #15-10088-OR

November 17, 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 - 10088

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

Date for Partial	Initials	Date	Initials	Checklist Items
		10-15-15	JTB	Sample Log-In
		11/10/15	UG	Data Compilation
		11-10-15	MLT	First Technical Data Review
		11/10/15	UG	Second Technical Data Review
		11/11/15		Data Entry/Electronic Deliverable
		11/11/15		Case Narrative
		11/16/15	HB	Electronic Deliverable Proof
		11/17/15	UG	Samples Analyzed within Holding Time Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/>
		11/17/15	UG	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: Lath B. Shanks for M.R. McDougall 11/17/15
Laboratory Manager Date

SECTION I
CHAIN OF CUSTODY

Chain of Custody Record

No 7128

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



Project Name: PAP/KHAN		Project Number:		Page ___ of ___				
Send Report To: Cecil Greene		Sampler (Print Name): Parkley Sabir		RECD OCT 14 2015				
Address:		Sampler (Print Name):		15-10088				
9821 Cordell Rd, Suite 1		Shipment Method: FedEx		Purchase Order #:				
Hoxville, TN 37832		Airbill Number:						
Phone: 615-675-2669		Laboratory Receiving:						
Fax: CGreene@dayview.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)	
CP4104503-04	10/8/15	0930	S	1	Isotope Uranium	21 Day Growth		
CP4104508-09	10/8/15	0940	S	1	Isotope Thorium			
CP4104511-12	10/8/15	0950	S	1	Gamma Spec			
CP4104517-18	10/8/15	1000	S	1				
CP1804503-04	10/8/15	1030	S	1				
CP1804505-06	10/8/15	1040	S	1				
CP1804508-09	10/8/15	1050	S	1				
CP1804510-11	10/8/15	1100	S	1				
CP1804512-13	10/8/15	1120	S	1				
CP1804515-16	10/8/15	1130	S	1				
CP1804517-18	10/8/15	1140	S	1				
CP5008503-04	10/8/15	1330	S	1				
CP5008506-07	10/8/15	1340	S	1				
CP5008509-10	10/8/15	1350	S	1				
CP5008512-13	10/8/15	1400	S	1				
CP5008514-15	10/8/15	1410	S	1				
CP5008517-18	10/8/15	1420	S	1				
Relinquished by: (Signature)		Received by: (Signature)		Date: 10/12/15	Time: 1300		Sample Custodian Remarks (Completed By Laboratory):	
Relinquished by: (Signature)		Received by: (Signature)		Date: 10-14-15	Time:		QA/QC Level	
Relinquished by: (Signature)		Received by: (Signature)		Date:	Time:		Turnaround	
						Level I <input type="checkbox"/>		
						Level II <input type="checkbox"/>		
						Level III <input type="checkbox"/>		
						Other <input type="checkbox"/>		
						Routine <input type="checkbox"/>		
						24 Hour <input type="checkbox"/>		
						1 Week <input type="checkbox"/>		
						Other _____		
						Total # Containers Received?		
						COC Seals Present?		
						COC Seals Intact?		
						Received Containers Intact?		
						Temperature?		

150805



EBERLINE
SERVICES
Oak Ridge Laboratory

Internal Chain of Custody

Work Order #

15-10088

Lab Deadline

11/5/2015

Analysis

UISO - Level 4

Sample Matrix

Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	42	K1.1
	05	40	K1.1
	06	32	K1.1
	07	36	K1.1
	08	35	K1.1
	09	35	K1.1
	10	32	K1.1
	11	36	K1.1
	12	33	K1.1
	13	34	K1.1
	14	36	K1.1
	15	33	K1.1
	16	41	K1.1
	17	34	K1.1
	18	34	K1.1
	19	38	K1.1
	20	20	K1.1

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1230 Key Seei	10-16-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1032 Key Seei	10-19-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1057 J. Schuler	10-19-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	J. Schuler	10-19-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	200/100	10-21-15 1020
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	200/100	10-29-15 0801
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		10-29-15 0801
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	VCB	10/29/15 1129
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 #

15-10088

Lab Deadline

11/5/2015

Analysis

ThISO - Level 4

Sample Matrix

Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	42	K1.1
	05	40	K1.1
	06	32	K1.1
	07	36	K1.1
	08	35	K1.1
	09	35	K1.1
	10	32	K1.1
	11	36	K1.1
	12	33	K1.1
	13	34	K1.1
	14	36	K1.1
	15	33	K1.1
	16	41	K1.1
	17	34	K1.1
	18	34	K1.1
	19	38	K1.1
	20	20	K1.1

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	Kenny Seay	10-16-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	Kenny Seay	10-19-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	Pachelle	10-19-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	J. Wolf	10-21-15 10:00
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	J. Wolf	10-21-15 10:20
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	J. Wolf	10-29-15 08:01
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	J. Wolf	10-29-15 08:01
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	J. Wolf	10-29-15 14:31
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 #

15-10088

Lab Deadline

11/5/2015

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	42	K1.1
	05	40	K1.1
	06	32	K1.1
	07	36	K1.1
	08	35	K1.1
	09	35	K1.1
	10	32	K1.1
	11	36	K1.1
	12	33	K1.1
	13	34	K1.1
	14	36	K1.1
	15	33	K1.1
	16	41	K1.1
	17	34	K1.1
	18	34	K1.1
	19	38	K1.1
	20	20	K1.1

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1230 Kerry Selis	10-10-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1225 Kerry Selis	10-19-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB 10/19/15	1227
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	AG 11/10/15	0600
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		15-10088	
Project Name		Client WO		Sample Disp		Lab Deadline		Internal Deadline		Client Deadline	
PAP-KAN		PAP-KAN		H		11/05/2015		11/10/2015		11/11/2015	
Internal ID	Client ID	Sample Date	Matrix	Storage	Gamma	ThiSO	UuISO				
01	LCS	10/15/15	SO	K1.1	X	X	X				
02	BLANK	10/15/15	SO	K1.1	X	X	X				
03	DUP	10/15/15	SO	K1.1	X	X	X				
04	CP4104S03-04	10/08/15 09:30	SO	K1.1	X	X	X				
05	CP4104S08-09	10/08/15 09:40	SO	K1.1	X	X	X				
06	CP4104S11-12	10/08/15 09:50	SO	K1.1	X	X	X				
07	CP4104S17-18	10/08/15 10:00	SO	K1.1	X	X	X				
08	CP1804S03-04	10/08/15 10:30	SO	K1.1	X	X	X				
09	CP1804S05-06	10/08/15 10:40	SO	K1.1	X	X	X				
10	CP1804S08-09	10/08/15 10:50	SO	K1.1	X	X	X				
11	CP1804S10-11	10/08/15 11:00	SO	K1.1	X	X	X				
12	CP1804S12-13	10/08/15 11:20	SO	K1.1	X	X	X				
13	CP1804S15-16	10/08/15 11:30	SO	K1.1	X	X	X				
14	CP1804S17-18	10/08/15 11:40	SO	K1.1	X	X	X				
15	CP5008S03-04	10/08/15 13:30	SO	K1.1	X	X	X				
16	CP5008S06-07	10/08/15 13:40	SO	K1.1	X	X	X				
17	CP5008S09-10	10/08/15 13:50	SO	K1.1	X	X	X				
18	CP5008S12-13	10/08/15 14:00	SO	K1.1	X	X	X				
19	CP5008S14-15	10/08/15 14:10	SO	K1.1	X	X	X				
20	CP5008S17-18	10/08/15 14:20	SO	K1.1	X	X	X				
Totals Per Analysis (non QA samples)					17	17	17	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 Cogdell Drive #1 Knoxville, TN 37932 Voice 865-675-3669 Fax 865-675-3877 Contact Harvey Cohen Voice 301-718-8900 Fax 301-718-8909	Report Data Cecilia Greene Auxier & Associates, Inc. 9821 Cogdell Road, Suite 1 Knoxville, TN 37830 Voice 865-675-3669 Fax 865-675-3677
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STANDARD OPERATING PROCEDURE

Sample Receiving

MP-001, Rev. 15
Effective: 2/2/15
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Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST MP-001-2

WORK ORDER # 15 - 10088

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

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

WERE SAMPLES:

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

WERE CHAIN OF CUSTODY SEALS:

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

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

REMARKS: _____

SIGNATURE: *James E. Butler* DATE: 10-15-15

SECTION III
CASE NARRATIVE



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

EBS-OR-39963

November 17, 2015

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

CASE NARRATIVE
Work Order # 15-10088-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>
CP4104S03-04	15-10088-04	CP1804S15-16	15-10088-13
CP4104S08-09	15-10088-05	CP1804S17-18	15-10088-14
CP4104S11-12	15-10088-06	CP5008S03-04	15-10088-15
CP4104S17-18	15-10088-07	CP5008S06-07	15-10088-16
CP1804S03-04	15-10088-08	CP5008S09-10	15-10088-17
CP1804S05-06	15-10088-09	CP5008S12-13	15-10088-18
CP1804S08-09	15-10088-10	CP5008S14-15	15-10088-19
CP1804S10-11	15-10088-11	CP5008S17-18	15-10088-20
CP1804S12-13	15-10088-12		

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 and Thorium-232 method blank demonstrated acceptable results. The Thorium-230 method blank demonstrated a result slightly greater than the detection limit. In this case, the Thorium-230 method blank result is background equivalent. Results for the Thorium-228 and Thorium-230 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Thorium-232 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.

Kathy B. Shauls

for M.R. McDougall
Laboratory Manager

Date: 11/17/2015

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

Report To:

SDG: 15-10088
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
15-10088-01	LCS	KNOWN	10/15/15 00:00	10/14/2015	11/9/2015	15-10088	Cobalt-60	LANL ER-130 Modified	1.37E+02	5.48E+00				pCi/g
15-10088-01	LCS	KNOWN	10/15/15 00:00	10/14/2015	11/9/2015	15-10088	Cesium-137	LANL ER-130 Modified	8.69E+01	3.48E+00				pCi/g
15-10088-01	LCS	SPIKE	10/15/15 00:00	10/14/2015	11/9/2015	15-10088	Cobalt-60	LANL ER-130 Modified	1.34E+02	9.31E+00	1.16E+01	1.54E+00	1.40E+00	pCi/g
15-10088-01	LCS	SPIKE	10/15/15 00:00	10/14/2015	11/9/2015	15-10088	Cesium-137	LANL ER-130 Modified	8.15E+01	7.85E+00	8.89E+00	1.88E+00	9.30E-01	pCi/g
15-10088-02	MBL	BLANK	10/15/15 00:00	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	2.15E-02	1.69E-01	1.69E-01	2.82E-01	1.23E-01	pCi/g
15-10088-02	MBL	BLANK	10/15/15 00:00	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	2.35E-02	9.11E-02	9.11E-02	1.51E-01	6.81E-02	pCi/g
15-10088-02	MBL	BLANK	10/15/15 00:00	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	3.38E-01	3.84E-01	3.84E-01	8.89E-01	3.72E-01	pCi/g
15-10088-02	MBL	BLANK	10/15/15 00:00	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	6.62E-02	5.91E-02	5.92E-02	1.05E-01	4.92E-02	pCi/g
15-10088-02	MBL	BLANK	10/15/15 00:00	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	2.33E-02	7.89E-02	7.90E-02	1.29E-01	5.95E-02	pCi/g
15-10088-02	MBL	BLANK	10/15/15 00:00	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	2.35E-02	9.11E-02	9.11E-02	1.51E-01	6.03E-01	pCi/g
15-10088-02	MBL	BLANK	10/15/15 00:00	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	2.15E-02	1.69E-01	1.69E-01	2.82E-01	1.23E-01	pCi/g
15-10088-02	MBL	BLANK	10/15/15 00:00	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	5.34E-01	4.15E-01	4.16E-01	7.04E-01	3.37E-01	pCi/g
15-10088-02	MBL	BLANK	10/15/15 00:00	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.02E-01	1.09E-01	1.09E-01	2.11E-01	9.47E-02	pCi/g
15-10088-03	DUP	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.51E+00	1.83E-01	1.98E-01	3.45E-01	1.64E-01	pCi/g
15-10088-03	DUP	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.23E+00	1.48E-01	1.61E-01	2.35E-01	1.13E-01	pCi/g
15-10088-03	DUP	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.95E+01	2.22E+00	2.44E+00	1.02E+00	4.75E-01	pCi/g
15-10088-03	DUP	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.51E+00	1.68E-01	1.85E-01	2.26E-01	1.11E-01	pCi/g
15-10088-03	DUP	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.20E+00	1.31E-01	1.45E-01	5.36E-01	2.71E-01	pCi/g
15-10088-03	DUP	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.23E+00	1.48E-01	1.61E-01	2.35E-01	1.24E+00	pCi/g
15-10088-03	DUP	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.51E+00	1.83E-01	1.99E-01	3.45E-01	1.64E-01	pCi/g
15-10088-03	DUP	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	1.26E+00	1.45E+00	1.45E+00	2.43E+00	1.20E+00	pCi/g
15-10088-03	DUP	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.22E+00	1.53E-01	1.66E-01	1.33E-01	1.21E-01	pCi/g
15-10088-04	DO	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.64E+00	2.26E-01	2.41E-01	4.21E-01	2.01E-01	pCi/g
15-10088-04	DO	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.16E+00	1.58E-01	1.69E-01	1.91E-01	9.18E-02	pCi/g
15-10088-04	DO	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.98E+01	2.21E+00	2.43E+00	6.99E-01	3.16E-01	pCi/g
15-10088-04	DO	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.56E+00	1.77E-01	1.94E-01	2.04E-01	1.00E-01	pCi/g
15-10088-04	DO	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.25E+00	1.52E-01	1.65E-01	2.44E-01	1.19E-01	pCi/g
15-10088-04	DO	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.16E+00	1.58E-01	1.69E-01	1.91E-01	1.10E+00	pCi/g
15-10088-04	DO	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.64E+00	2.26E-01	2.41E-01	4.21E-01	2.01E-01	pCi/g
15-10088-04	DO	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	1.48E+00	1.58E+00	1.58E+00	2.64E+00	1.30E+00	pCi/g
15-10088-04	DO	CP4104S03-04	10/08/15 09:30	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.13E+00	1.69E-01	1.78E-01	9.03E-02	1.72E-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

SDG:
Project:
Analysis Category:
Sample Matrix:

15-10088
PAP-KAN
ENVIRONMENTAL
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
15-10088-05	TRG	CP4104S08-09	10/08/15 09:40	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.29E+00	2.81E-01	2.89E-01	5.31E-01	2.51E-01	pCi/g
15-10088-05	TRG	CP4104S08-09	10/08/15 09:40	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.18E+00	1.94E-01	2.04E-01	2.63E-01	1.25E-01	pCi/g
15-10088-05	TRG	CP4104S08-09	10/08/15 09:40	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.99E+01	2.45E+00	2.68E+00	9.85E-01	4.39E-01	pCi/g
15-10088-05	TRG	CP4104S08-09	10/08/15 09:40	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.69E+00	1.92E-01	2.11E-01	3.08E-01	1.51E-01	pCi/g
15-10088-05	TRG	CP4104S08-09	10/08/15 09:40	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.45E+00	2.03E-01	2.16E-01	2.94E-01	1.43E-01	pCi/g
15-10088-05	TRG	CP4104S08-09	10/08/15 09:40	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.18E+00	1.94E-01	2.04E-01	2.63E-01	1.52E+00	pCi/g
15-10088-05	TRG	CP4104S08-09	10/08/15 09:40	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.29E+00	2.81E-01	2.89E-01	5.31E-01	2.51E-01	pCi/g
15-10088-05	TRG	CP4104S08-09	10/08/15 09:40	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	1.59E+00	1.75E+00	1.76E+00	2.92E+00	1.44E+00	pCi/g
15-10088-05	TRG	CP4104S08-09	10/08/15 09:40	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.08E+00	1.95E-01	2.03E-01	4.73E-02	1.92E-01	pCi/g
15-10088-06	TRG	CP4104S11-12	10/08/15 09:50	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.34E+00	2.06E-01	2.17E-01	3.76E-01	1.78E-01	pCi/g
15-10088-06	TRG	CP4104S11-12	10/08/15 09:50	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.22E+00	1.79E-01	1.90E-01	2.17E-01	1.04E-01	pCi/g
15-10088-06	TRG	CP4104S11-12	10/08/15 09:50	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.93E+01	2.54E+00	2.73E+00	1.34E+00	6.32E-01	pCi/g
15-10088-06	TRG	CP4104S11-12	10/08/15 09:50	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.56E+00	2.19E-01	2.33E-01	2.40E-01	1.18E-01	pCi/g
15-10088-06	TRG	CP4104S11-12	10/08/15 09:50	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.33E+00	1.64E-01	1.77E-01	2.35E-01	1.14E-01	pCi/g
15-10088-06	TRG	CP4104S11-12	10/08/15 09:50	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.22E+00	1.79E-01	1.90E-01	2.17E-01	1.32E+00	pCi/g
15-10088-06	TRG	CP4104S11-12	10/08/15 09:50	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.34E+00	2.06E-01	2.17E-01	3.76E-01	1.78E-01	pCi/g
15-10088-06	TRG	CP4104S11-12	10/08/15 09:50	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	1.35E+00	9.22E-01	9.25E-01	1.49E+00	7.24E-01	pCi/g
15-10088-06	TRG	CP4104S11-12	10/08/15 09:50	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.09E+00	1.62E-01	1.71E-01	1.14E-01	1.60E-01	pCi/g
15-10088-07	TRG	CP4104S17-18	10/08/15 10:00	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.41E+00	2.51E-01	2.61E-01	4.67E-01	2.20E-01	pCi/g
15-10088-07	TRG	CP4104S17-18	10/08/15 10:00	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.03E+00	1.93E-01	2.01E-01	2.60E-01	1.24E-01	pCi/g
15-10088-07	TRG	CP4104S17-18	10/08/15 10:00	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.94E+01	2.41E+00	2.61E+00	1.10E+00	4.99E-01	pCi/g
15-10088-07	TRG	CP4104S17-18	10/08/15 10:00	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.40E+00	1.69E-01	1.84E-01	2.94E-01	1.44E-01	pCi/g
15-10088-07	TRG	CP4104S17-18	10/08/15 10:00	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	9.85E-01	1.57E-01	1.65E-01	2.39E-01	1.15E-01	pCi/g
15-10088-07	TRG	CP4104S17-18	10/08/15 10:00	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.03E+00	1.93E-01	2.01E-01	2.60E-01	1.72E+00	pCi/g
15-10088-07	TRG	CP4104S17-18	10/08/15 10:00	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.41E+00	2.51E-01	2.61E-01	4.67E-01	2.20E-01	pCi/g
15-10088-07	TRG	CP4104S17-18	10/08/15 10:00	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	1.96E+00	1.69E+00	1.69E+00	2.70E+00	1.39E+00	pCi/g
15-10088-07	TRG	CP4104S17-18	10/08/15 10:00	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.11E+00	2.09E-01	2.16E-01	4.56E-02	2.05E-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

Report To:

15-10088
PAP-KAN
ENVIRONMENTAL
SO

Work Order Details:

SDG:
Project:
Analysis Category:
Sample Matrix:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10088-08	TRG	CP1804S03-04	10/08/15 10:30	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.38E+00	2.46E-01	2.56E-01	3.89E-01	1.84E-01	pCi/g
15-10088-08	TRG	CP1804S03-04	10/08/15 10:30	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.38E+00	1.87E-01	2.00E-01	2.47E-01	1.19E-01	pCi/g
15-10088-08	TRG	CP1804S03-04	10/08/15 10:30	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.99E+01	2.58E+00	2.75E+00	8.88E-01	4.05E-01	pCi/g
15-10088-08	TRG	CP1804S03-04	10/08/15 10:30	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.55E+00	1.93E-01	2.09E-01	2.35E-01	1.15E-01	pCi/g
15-10088-08	TRG	CP1804S03-04	10/08/15 10:30	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.52E+00	1.86E-01	2.02E-01	2.58E-01	1.25E-01	pCi/g
15-10088-08	TRG	CP1804S03-04	10/08/15 10:30	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.36E+00	1.87E-01	2.00E-01	2.47E-01	1.04E+00	pCi/g
15-10088-08	TRG	CP1804S03-04	10/08/15 10:30	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.38E+00	2.46E-01	2.56E-01	3.89E-01	1.84E-01	pCi/g
15-10088-08	TRG	CP1804S03-04	10/08/15 10:30	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	1.91E+00	1.35E+00	1.36E+00	2.22E+00	1.09E+00	pCi/g
15-10088-08	TRG	CP1804S03-04	10/08/15 10:30	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.28E+00	1.75E-01	1.86E-01	1.19E-01	1.55E-01	pCi/g
15-10088-09	TRG	CP1804S05-06	10/08/15 10:40	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.40E+00	2.76E-01	2.85E-01	4.44E-01	2.09E-01	pCi/g
15-10088-09	TRG	CP1804S05-06	10/08/15 10:40	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.51E+00	2.16E-01	2.29E-01	2.82E-01	1.35E-01	pCi/g
15-10088-09	TRG	CP1804S05-06	10/08/15 10:40	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.86E+01	2.34E+00	2.53E+00	1.20E+00	5.48E-01	pCi/g
15-10088-09	TRG	CP1804S05-06	10/08/15 10:40	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.66E+00	1.84E-01	2.03E-01	2.80E-01	1.37E-01	pCi/g
15-10088-09	TRG	CP1804S05-06	10/08/15 10:40	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.59E+00	1.90E-01	2.07E-01	2.44E-01	1.18E-01	pCi/g
15-10088-09	TRG	CP1804S05-06	10/08/15 10:40	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.51E+00	2.16E-01	2.29E-01	2.82E-01	1.33E+00	pCi/g
15-10088-09	TRG	CP1804S05-06	10/08/15 10:40	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.40E+00	2.76E-01	2.85E-01	4.44E-01	2.09E-01	pCi/g
15-10088-09	TRG	CP1804S05-06	10/08/15 10:40	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	1.41E+00	1.52E+00	1.52E+00	2.54E+00	1.25E+00	pCi/g
15-10088-09	TRG	CP1804S05-06	10/08/15 10:40	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.19E+00	2.01E-01	2.10E-01	1.94E-01	1.55E-01	pCi/g
15-10088-10	TRG	CP1804S08-09	10/08/15 10:50	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.49E+00	2.14E-01	2.28E-01	3.66E-01	1.74E-01	pCi/g
15-10088-10	TRG	CP1804S08-09	10/08/15 10:50	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.42E+00	1.71E-01	1.86E-01	2.03E-01	9.80E-02	pCi/g
15-10088-10	TRG	CP1804S08-09	10/08/15 10:50	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.79E+01	2.02E+00	2.22E+00	9.67E-01	4.52E-01	pCi/g
15-10088-10	TRG	CP1804S08-09	10/08/15 10:50	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.59E+00	1.77E-01	1.94E-01	2.50E-01	1.23E-01	pCi/g
15-10088-10	TRG	CP1804S08-09	10/08/15 10:50	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.62E+00	1.71E-01	1.90E-01	2.57E-01	1.25E-01	pCi/g
15-10088-10	TRG	CP1804S08-09	10/08/15 10:50	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.42E+00	1.71E-01	1.86E-01	2.03E-01	1.34E+00	pCi/g
15-10088-10	TRG	CP1804S08-09	10/08/15 10:50	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.49E+00	2.14E-01	2.28E-01	3.66E-01	1.74E-01	pCi/g
15-10088-10	TRG	CP1804S08-09	10/08/15 10:50	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	1.62E+00	1.58E+00	1.59E+00	2.64E+00	1.30E+00	pCi/g
15-10088-10	TRG	CP1804S08-09	10/08/15 10:50	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.50E+00	1.93E-01	2.07E-01	1.77E-01	1.60E-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

Report To:

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

Work Order Details:

SDG: 15-10088
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
15-10088-11	TRG	CP1804S10-11	10/08/15 11:00	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.56E+00	3.78E-01	3.88E-01	1.04E+00	4.97E-01	pCi/g
15-10088-11	TRG	CP1804S10-11	10/08/15 11:00	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.56E+00	3.03E-01	3.13E-01	3.74E-01	1.78E-01	pCi/g
15-10088-11	TRG	CP1804S10-11	10/08/15 11:00	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.59E+01	3.06E+00	3.17E+00	2.51E+00	1.16E+00	pCi/g
15-10088-11	TRG	CP1804S10-11	10/08/15 11:00	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.88E+00	3.72E-01	3.85E-01	4.81E-01	2.37E-01	pCi/g
15-10088-11	TRG	CP1804S10-11	10/08/15 11:00	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.29E+00	3.04E-01	3.11E-01	5.18E-01	2.52E-01	pCi/g
15-10088-11	TRG	CP1804S10-11	10/08/15 11:00	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.56E+00	3.03E-01	3.13E-01	3.74E-01	1.99E+00	pCi/g
15-10088-11	TRG	CP1804S10-11	10/08/15 11:00	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.56E+00	3.79E-01	3.88E-01	1.04E+00	4.97E-01	pCi/g
15-10088-11	TRG	CP1804S10-11	10/08/15 11:00	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	2.45E+00	1.54E+00	1.54E+00	2.52E+00	1.24E+00	pCi/g
15-10088-11	TRG	CP1804S10-11	10/08/15 11:00	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.13E+00	3.00E-01	3.05E-01	4.28E-01	4.10E-01	pCi/g
15-10088-12	TRG	CP1804S12-13	10/08/15 11:20	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.37E+00	2.10E-01	2.21E-01	4.13E-01	1.98E-01	pCi/g
15-10088-12	TRG	CP1804S12-13	10/08/15 11:20	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.09E+00	1.49E-01	1.59E-01	1.77E-01	8.48E-02	pCi/g
15-10088-12	TRG	CP1804S12-13	10/08/15 11:20	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.49E+01	1.97E+00	2.11E+00	7.28E-01	3.30E-01	pCi/g
15-10088-12	TRG	CP1804S12-13	10/08/15 11:20	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.47E+00	1.69E-01	1.85E-01	2.24E-01	1.10E-01	pCi/g
15-10088-12	TRG	CP1804S12-13	10/08/15 11:20	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.15E+00	1.40E-01	1.52E-01	1.93E-01	9.30E-02	pCi/g
15-10088-12	TRG	CP1804S12-13	10/08/15 11:20	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.09E+00	1.49E-01	1.59E-01	1.77E-01	1.09E+00	pCi/g
15-10088-12	TRG	CP1804S12-13	10/08/15 11:20	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.37E+00	2.10E-01	2.21E-01	4.13E-01	1.98E-01	pCi/g
15-10088-12	TRG	CP1804S12-13	10/08/15 11:20	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	1.03E+00	1.03E+00	1.03E+00	1.71E+00	8.39E-01	pCi/g
15-10088-12	TRG	CP1804S12-13	10/08/15 11:20	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.07E+00	1.49E-01	1.59E-01	1.02E-01	1.29E-01	pCi/g
15-10088-13	TRG	CP1804S15-16	10/08/15 11:30	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.53E+00	2.53E-01	2.65E-01	5.60E-01	2.67E-01	pCi/g
15-10088-13	TRG	CP1804S15-16	10/08/15 11:30	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.08E+00	1.86E-01	1.94E-01	2.72E-01	1.31E-01	pCi/g
15-10088-13	TRG	CP1804S15-16	10/08/15 11:30	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.60E+01	2.16E+00	2.31E+00	1.51E+00	7.06E-01	pCi/g
15-10088-13	TRG	CP1804S15-16	10/08/15 11:30	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.65E+00	1.84E-01	2.08E-01	2.31E-01	1.13E-01	pCi/g
15-10088-13	TRG	CP1804S15-16	10/08/15 11:30	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.11E+00	1.92E-01	2.00E-01	3.05E-01	1.48E-01	pCi/g
15-10088-13	TRG	CP1804S15-16	10/08/15 11:30	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.08E+00	1.86E-01	1.94E-01	2.72E-01	1.73E+00	pCi/g
15-10088-13	TRG	CP1804S15-16	10/08/15 11:30	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.53E+00	2.53E-01	2.65E-01	5.60E-01	2.67E-01	pCi/g
15-10088-13	TRG	CP1804S15-16	10/08/15 11:30	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	1.57E+00	1.54E+00	1.54E+00	2.08E+00	9.97E-01	pCi/g
15-10088-13	TRG	CP1804S15-16	10/08/15 11:30	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.27E+00	2.03E-01	2.13E-01	4.22E-02	1.61E-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: 15-10088
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
15-10088-14	TRG	CP1804S17-18	10/08/15 11:40	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.39E+00	2.11E-01	2.23E-01	3.33E-01	1.58E-01	pCi/g
15-10088-14	TRG	CP1804S17-18	10/08/15 11:40	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.16E+00	1.41E-01	1.53E-01	1.51E-01	7.20E-02	pCi/g
15-10088-14	TRG	CP1804S17-18	10/08/15 11:40	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.54E+01	1.79E+00	1.96E+00	7.96E-01	3.68E-01	pCi/g
15-10088-14	TRG	CP1804S17-18	10/08/15 11:40	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.39E+00	1.58E-01	1.73E-01	1.96E-01	9.60E-02	pCi/g
15-10088-14	TRG	CP1804S17-18	10/08/15 11:40	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.23E+00	1.29E-01	1.43E-01	1.62E-01	7.83E-02	pCi/g
15-10088-14	TRG	CP1804S17-18	10/08/15 11:40	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.16E+00	1.41E-01	1.53E-01	1.51E-01	1.08E-01	pCi/g
15-10088-14	TRG	CP1804S17-18	10/08/15 11:40	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.39E+00	2.11E-01	2.23E-01	3.33E-01	1.58E-01	pCi/g
15-10088-14	TRG	CP1804S17-18	10/08/15 11:40	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	1.97E+00	1.45E+00	1.45E+00	2.40E+00	1.18E+00	pCi/g
15-10088-14	TRG	CP1804S17-18	10/08/15 11:40	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.22E+00	1.67E-01	1.78E-01	1.77E-01	1.40E-01	pCi/g
15-10088-15	TRG	CP5008S03-04	10/08/15 13:30	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.16E+00	4.78E-01	4.81E-01	9.22E-01	4.37E-01	pCi/g
15-10088-15	TRG	CP5008S03-04	10/08/15 13:30	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.38E+00	3.09E-01	3.17E-01	4.82E-01	2.31E-01	pCi/g
15-10088-15	TRG	CP5008S03-04	10/08/15 13:30	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.71E+01	3.39E+00	3.50E+00	3.17E+00	1.49E+00	pCi/g
15-10088-15	TRG	CP5008S03-04	10/08/15 13:30	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.82E+00	3.67E-01	3.79E-01	4.79E-01	2.35E-01	pCi/g
15-10088-15	TRG	CP5008S03-04	10/08/15 13:30	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.31E+00	2.90E-01	2.98E-01	4.39E-01	2.12E-01	pCi/g
15-10088-15	TRG	CP5008S03-04	10/08/15 13:30	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.38E+00	3.09E-01	3.17E-01	4.82E-01	2.52E+00	pCi/g
15-10088-15	TRG	CP5008S03-04	10/08/15 13:30	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.16E+00	4.78E-01	4.81E-01	9.22E-01	4.37E-01	pCi/g
15-10088-15	TRG	CP5008S03-04	10/08/15 13:30	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	1.53E+00	1.48E+00	1.48E+00	2.47E+00	1.21E+00	pCi/g
15-10088-15	TRG	CP5008S03-04	10/08/15 13:30	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.39E+00	3.14E-01	3.22E-01	9.04E-02	2.80E-01	pCi/g
15-10088-16	TRG	CP5008S06-07	10/08/15 13:40	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.30E+00	2.16E-01	2.26E-01	3.33E-01	1.57E-01	pCi/g
15-10088-16	TRG	CP5008S06-07	10/08/15 13:40	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.52E+00	2.02E-01	2.17E-01	3.15E-01	1.53E-01	pCi/g
15-10088-16	TRG	CP5008S06-07	10/08/15 13:40	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.72E+01	2.28E+00	2.44E+00	1.03E+00	4.76E-01	pCi/g
15-10088-16	TRG	CP5008S06-07	10/08/15 13:40	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.03E+00	1.42E-01	1.52E-01	2.65E-01	1.30E-01	pCi/g
15-10088-16	TRG	CP5008S06-07	10/08/15 13:40	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.51E+00	1.72E-01	1.88E-01	2.27E-01	1.10E-01	pCi/g
15-10088-16	TRG	CP5008S06-07	10/08/15 13:40	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.52E+00	2.02E-01	2.17E-01	3.15E-01	1.32E+00	pCi/g
15-10088-16	TRG	CP5008S06-07	10/08/15 13:40	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.30E+00	2.16E-01	2.26E-01	3.33E-01	1.57E-01	pCi/g
15-10088-16	TRG	CP5008S06-07	10/08/15 13:40	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	1.52E+00	9.44E-01	9.47E-01	1.52E+00	7.41E-01	pCi/g
15-10088-16	TRG	CP5008S06-07	10/08/15 13:40	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	8.98E-01	1.44E-01	1.52E-01	1.15E-01	1.37E-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

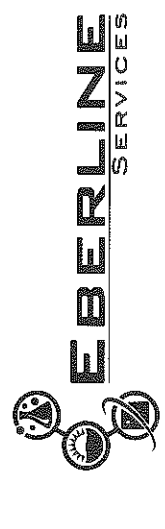
Cecilia Greene
Auxier & Associates, Inc.
9821 Cogdill Road, Suite 1
Knoxville, TN 37932

SDG: 15-10088
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
15-10088-17	TRG	CP5008S09-10	10/08/15 13:50	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.49E+00	2.96E-01	3.06E-01	5.86E-01	2.79E-01	pCi/g
15-10088-17	TRG	CP5008S09-10	10/08/15 13:50	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.58E+00	2.12E-01	2.27E-01	2.65E-01	1.27E-01	pCi/g
15-10088-17	TRG	CP5008S09-10	10/08/15 13:50	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	2.00E+01	2.58E+00	2.78E+00	1.75E+00	8.25E-01	pCi/g
15-10088-17	TRG	CP5008S09-10	10/08/15 13:50	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.58E+00	1.83E-01	2.00E-01	3.46E-01	1.70E-01	pCi/g
15-10088-17	TRG	CP5008S09-10	10/08/15 13:50	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.38E+00	2.09E-01	2.27E-01	3.03E-01	1.47E-01	pCi/g
15-10088-17	TRG	CP5008S09-10	10/08/15 13:50	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.58E+00	2.12E-01	2.27E-01	2.65E-01	1.66E+00	pCi/g
15-10088-17	TRG	CP5008S09-10	10/08/15 13:50	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.49E+00	2.96E-01	3.06E-01	5.86E-01	2.79E-01	pCi/g
15-10088-17	TRG	CP5008S09-10	10/08/15 13:50	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	4.52E-01	1.67E+00	1.67E+00	2.15E+00	1.08E+00	pCi/g
15-10088-17	TRG	CP5008S09-10	10/08/15 13:50	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.36E+00	2.37E-01	2.47E-01	1.42E-01	2.37E-01	pCi/g
15-10088-18	TRG	CP5008S12-13	10/08/15 14:00	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.65E+00	4.36E-01	4.45E-01	7.94E-01	3.71E-01	pCi/g
15-10088-18	TRG	CP5008S12-13	10/08/15 14:00	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.15E+00	3.54E-01	3.59E-01	5.46E-01	2.63E-01	pCi/g
15-10088-18	TRG	CP5008S12-13	10/08/15 14:00	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.93E+01	3.46E+00	3.60E+00	2.26E+00	1.02E+00	pCi/g
15-10088-18	TRG	CP5008S12-13	10/08/15 14:00	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	2.03E+00	3.62E-01	3.77E-01	4.25E-01	2.08E-01	pCi/g
15-10088-18	TRG	CP5008S12-13	10/08/15 14:00	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.41E+00	3.59E-01	3.66E-01	4.64E-01	2.24E-01	pCi/g
15-10088-18	TRG	CP5008S12-13	10/08/15 14:00	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.15E+00	3.54E-01	3.59E-01	5.46E-01	1.87E+00	pCi/g
15-10088-18	TRG	CP5008S12-13	10/08/15 14:00	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.65E+00	4.36E-01	4.45E-01	7.94E-01	3.71E-01	pCi/g
15-10088-18	TRG	CP5008S12-13	10/08/15 14:00	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	1.70E+00	1.49E+00	1.50E+00	2.48E+00	1.22E+00	pCi/g
15-10088-18	TRG	CP5008S12-13	10/08/15 14:00	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.49E+00	3.58E-01	3.66E-01	2.44E-01	3.98E-01	pCi/g
15-10088-19	TRG	CP5008S14-15	10/08/15 14:10	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.58E+00	2.41E-01	2.54E-01	5.73E-01	2.77E-01	pCi/g
15-10088-19	TRG	CP5008S14-15	10/08/15 14:10	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.04E+00	1.48E-01	1.57E-01	1.66E-01	7.90E-02	pCi/g
15-10088-19	TRG	CP5008S14-15	10/08/15 14:10	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.99E-01	2.49E+00	2.68E+00	6.28E-01	2.78E-01	pCi/g
15-10088-19	TRG	CP5008S14-15	10/08/15 14:10	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.30E+00	1.62E-01	1.75E-01	2.55E-01	1.25E-01	pCi/g
15-10088-19	TRG	CP5008S14-15	10/08/15 14:10	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.11E+00	1.41E-01	1.52E-01	1.92E-01	9.24E-02	pCi/g
15-10088-19	TRG	CP5008S14-15	10/08/15 14:10	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.04E+00	1.48E-01	1.57E-01	1.66E-01	1.26E+00	pCi/g
15-10088-19	TRG	CP5008S14-15	10/08/15 14:10	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.58E+00	2.41E-01	2.54E-01	5.73E-01	2.77E-01	pCi/g
15-10088-19	TRG	CP5008S14-15	10/08/15 14:10	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	2.49E+00	1.66E+00	1.66E+00	2.73E+00	1.35E+00	pCi/g
15-10088-19	TRG	CP5008S14-15	10/08/15 14:10	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.12E+00	1.61E-01	1.71E-01	1.47E-01	1.42E-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

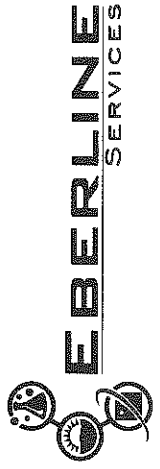
Work Order Details:

Client: **Cecilia Greene**
Project: **15-10088**
Address: **Auxier & Associates, Inc.**
Address: **9821 Cogdill Road, Suite 1**
Address: **Knoxville, TN 37932**
SDG: **PAP-KAN**
Project: **ENVIRONMENTAL**
Analysis Category: **SO**
Sample Matrix: **SO**

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10088-20	TRG	CP5006S17-18	10/08/15 14:20	10/14/2015	11/9/2015	15-10088	Actinium-228	LANL ER-130 Modified	1.34E+00	2.59E-01	2.68E-01	5.55E-01	2.65E-01	pCi/g
15-10088-20	TRG	CP5006S17-18	10/08/15 14:20	10/14/2015	11/9/2015	15-10088	Bismuth-214	LANL ER-130 Modified	1.03E+00	1.61E-01	1.70E-01	2.60E-01	1.24E-01	pCi/g
15-10088-20	TRG	CP5006S17-18	10/08/15 14:20	10/14/2015	11/9/2015	15-10088	Potassium-40	LANL ER-130 Modified	1.94E+01	2.40E+00	2.60E+00	1.22E+00	5.61E-01	pCi/g
15-10088-20	TRG	CP5006S17-18	10/08/15 14:20	10/14/2015	11/9/2015	15-10088	Lead-212	LANL ER-130 Modified	1.57E+00	1.80E-01	1.97E-01	2.43E-01	1.19E-01	pCi/g
15-10088-20	TRG	CP5006S17-18	10/08/15 14:20	10/14/2015	11/9/2015	15-10088	Lead-214	LANL ER-130 Modified	1.26E+00	1.81E-01	1.92E-01	2.54E-01	1.23E-01	pCi/g
15-10088-20	TRG	CP5006S17-18	10/08/15 14:20	10/14/2015	11/9/2015	15-10088	Radium-226	LANL ER-130 Modified	1.03E+00	1.61E-01	1.70E-01	2.60E-01	1.56E+00	pCi/g
15-10088-20	TRG	CP5006S17-18	10/08/15 14:20	10/14/2015	11/9/2015	15-10088	Radium-228	LANL ER-130 Modified	1.34E+00	2.59E-01	2.68E-01	5.55E-01	2.65E-01	pCi/g
15-10088-20	TRG	CP5006S17-18	10/08/15 14:20	10/14/2015	11/9/2015	15-10088	Thorium-234	LANL ER-130 Modified	2.49E+00	1.74E+00	1.74E+00	2.87E+00	1.41E+00	pCi/g
15-10088-20	TRG	CP5006S17-18	10/08/15 14:20	10/14/2015	11/9/2015	15-10088	Thallium-208	LANL ER-130 Modified	1.29E+00	1.98E-01	2.08E-01	2.49E-01	1.82E-01	pCi/g
15-10088-01	LCS	KNOWN	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	4.73E+00	1.70E-01				pCi/g
15-10088-01	LCS	SPIKE	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	5.62E+00	9.35E-01	1.07E+00	1.12E-01	2.52E-02	pCi/g
15-10088-02	MBL	BLANK	10/15/15 09:30	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	-1.08E-02	2.66E-02	2.66E-02	7.58E-02	1.18E-02	pCi/g
15-10088-03	DUP	CP4104S03-04	10/08/15 09:30	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.36E+00	3.24E-01	3.48E-01	5.92E-02	9.00E-03	pCi/g
15-10088-04	DO	CP4104S03-04	10/08/15 09:30	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.08E+00	2.89E-01	3.07E-01	6.66E-02	1.01E-02	pCi/g
15-10088-05	TRG	CP4104S08-09	10/08/15 09:40	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.62E+00	3.92E-01	4.20E-01	8.27E-02	2.08E-02	pCi/g
15-10088-06	TRG	CP4104S11-12	10/08/15 09:50	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.01E+00	2.54E-01	2.71E-01	9.86E-02	4.76E-02	pCi/g
15-10088-07	TRG	CP4104S17-18	10/08/15 10:00	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.17E+00	2.91E-01	3.11E-01	6.24E-02	1.06E-02	pCi/g
15-10088-08	TRG	CP1804S03-04	10/08/15 10:30	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.08E+00	2.57E-01	2.76E-01	6.07E-02	1.34E-02	pCi/g
15-10088-09	TRG	CP1804S05-06	10/08/15 10:40	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.30E+00	3.29E-01	3.51E-01	8.01E-02	1.90E-02	pCi/g
15-10088-10	TRG	CP1804S08-09	10/08/15 10:50	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.05E+00	2.62E-01	2.80E-01	5.91E-02	1.01E-02	pCi/g
15-10088-11	TRG	CP1804S10-11	10/08/15 11:00	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.04E+00	2.61E-01	2.79E-01	7.30E-02	1.95E-02	pCi/g
15-10088-12	TRG	CP1804S12-13	10/08/15 11:20	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.42E+00	3.27E-01	3.54E-01	4.49E-02	3.84E-03	pCi/g
15-10088-13	TRG	CP1804S15-16	10/08/15 11:30	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.20E+00	2.90E-01	3.11E-01	5.00E-02	5.50E-03	pCi/g
15-10088-14	TRG	CP1804S17-18	10/08/15 11:40	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.30E+00	3.17E-01	3.40E-01	4.84E-02	4.14E-03	pCi/g
15-10088-15	TRG	CP5006S03-04	10/08/15 13:30	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.41E+00	3.74E-01	3.97E-01	9.47E-02	2.39E-02	pCi/g
15-10088-16	TRG	CP5006S06-07	10/08/15 13:40	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.08E+00	2.63E-01	2.82E-01	5.51E-02	8.36E-03	pCi/g
15-10088-17	TRG	CP5006S09-10	10/08/15 13:50	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.30E+00	3.02E-01	3.26E-01	5.11E-02	6.71E-03	pCi/g
15-10088-18	TRG	CP5006S12-13	10/08/15 14:00	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.63E+00	3.94E-01	4.23E-01	9.60E-02	3.19E-02	pCi/g
15-10088-19	TRG	CP5006S14-15	10/08/15 14:10	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.33E+00	3.05E-01	3.30E-01	5.37E-02	8.14E-03	pCi/g
15-10088-20	TRG	CP5006S17-18	10/08/15 14:20	10/14/2015	10/29/2015	15-10088	Thorium-228	EML Th-01 Modified	1.23E+00	2.89E-01	3.11E-01	6.33E-02	1.41E-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

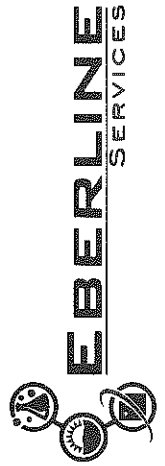
Final Report of Analysis

Report To: Cecilia Greene
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 9821 Cogdill Road, Suite 1
 Knoxville, TN 37932

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 SDG: 15-10088
 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
15-10088-01	LCS	KNOWN	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	5.32E+00	1.44E-01	1.32E+00	8.87E-02	9.10E-02	pC/g
15-10088-01	LCS	SPIKE	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	6.45E+00	1.05E+00	1.21E-01	5.29E-02	6.70E-02	pC/g
15-10088-02	MBL	BLANK	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	2.39E-01	1.17E-01	3.65E-01	5.09E-02	5.46E-02	pC/g
15-10088-03	DUP	CP4104S03-04	10/08/15 09:30	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.36E+00	2.88E-01	3.17E-01	6.54E-02	5.57E-02	pC/g
15-10088-04	DO	CP4104S03-04	10/08/15 09:30	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.08E+00	2.88E-01	3.17E-01	6.20E-02	5.75E-02	pC/g
15-10088-05	TRG	CP4104S08-09	10/08/15 09:40	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.52E+00	3.71E-01	4.17E-01	6.04E-02	6.20E-02	pC/g
15-10088-06	TRG	CP4104S11-12	10/08/15 09:50	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.38E+00	3.15E-01	3.59E-01	7.11E-02	6.53E-02	pC/g
15-10088-07	TRG	CP4104S17-18	10/08/15 10:00	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.27E+00	3.07E-01	3.44E-01	5.48E-02	5.62E-02	pC/g
15-10088-08	TRG	CP1804S03-04	10/08/15 10:30	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.62E+00	3.47E-01	4.01E-01	5.28E-02	5.12E-02	pC/g
15-10088-09	TRG	CP1804S05-06	10/08/15 10:40	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.77E+00	4.14E-01	4.68E-01	4.48E-02	5.68E-02	pC/g
15-10088-10	TRG	CP1804S08-09	10/08/15 10:50	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.37E+00	3.17E-01	3.59E-01	6.06E-02	5.82E-02	pC/g
15-10088-11	TRG	CP1804S10-11	10/08/15 11:00	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.37E+00	3.17E-01	3.59E-01	5.79E-02	5.64E-02	pC/g
15-10088-12	TRG	CP1804S12-13	10/08/15 11:20	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	8.07E-01	2.16E-01	2.38E-01	4.40E-02	5.01E-02	pC/g
15-10088-13	TRG	CP1804S15-16	10/08/15 11:30	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.01E+00	2.54E-01	2.83E-01	3.90E-02	4.96E-02	pC/g
15-10088-14	TRG	CP1804S17-18	10/08/15 11:40	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.31E+00	3.18E-01	3.57E-01	5.20E-02	5.57E-02	pC/g
15-10088-15	TRG	CP5008S03-04	10/08/15 13:30	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.62E+00	4.12E-01	4.58E-01	7.72E-02	7.54E-02	pC/g
15-10088-16	TRG	CP5008S05-07	10/08/15 13:40	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.29E+00	3.00E-01	3.40E-01	4.73E-02	5.07E-02	pC/g
15-10088-17	TRG	CP5008S09-10	10/08/15 13:50	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.31E+00	3.02E-01	3.43E-01	5.01E-02	5.19E-02	pC/g
15-10088-18	TRG	CP5008S12-13	10/08/15 14:00	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.57E+00	3.80E-01	4.26E-01	9.78E-02	8.99E-02	pC/g
15-10088-19	TRG	CP5008S14-15	10/08/15 14:10	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.26E+00	2.92E-01	3.31E-01	4.62E-02	4.94E-02	pC/g
15-10088-20	TRG	CP5008S17-18	10/08/15 14:20	10/14/2015	10/29/2015	15-10088	Thorium-230	EML Th-01 Modified	1.22E+00	2.84E-01	3.21E-01	4.93E-02	5.07E-02	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

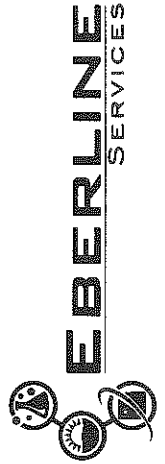
Final Report of Analysis

Report To: Cecilia Greene
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Work Order Details:
 SDG: 15-10088
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 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
15-10088-01	LCS	KNOWN	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	4.73E+00	1.70E-01	9.92E-01	1.12E-01	2.50E-02	pCi/g
15-10088-01	LCS	SPIKE	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	5.20E+00	8.80E-01	9.92E-01	1.12E-01	2.50E-02	pCi/g
15-10088-02	MBL	BLANK	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.45E-02	3.64E-02	3.64E-02	7.57E-02	1.16E-02	pCi/g
15-10088-03	DUP	CP4104S03-04	10/08/15 09:30	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	9.87E-01	2.96E-01	2.70E-01	6.10E-02	1.05E-02	pCi/g
15-10088-04	DO	CP4104S03-04	10/08/15 09:30	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.28E+00	3.25E-01	3.44E-01	6.52E-02	9.98E-03	pCi/g
15-10088-05	TRG	CP4104S08-09	10/08/15 09:40	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.56E+00	3.77E-01	4.01E-01	5.11E-02	4.35E-03	pCi/g
15-10088-06	TRG	CP4104S11-12	10/08/15 09:50	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.20E+00	2.82E-01	3.02E-01	4.24E-02	3.62E-03	pCi/g
15-10088-07	TRG	CP4104S17-18	10/08/15 10:00	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.14E+00	2.84E-01	3.01E-01	4.63E-02	3.94E-03	pCi/g
15-10088-08	TRG	CP1804S03-04	10/08/15 10:30	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.28E+00	2.88E-01	3.09E-01	4.00E-02	3.39E-03	pCi/g
15-10088-09	TRG	CP1804S05-06	10/08/15 10:40	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.28E+00	3.23E-01	3.42E-01	6.40E-02	7.19E-04	pCi/g
15-10088-10	TRG	CP1804S08-09	10/08/15 10:50	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.27E+00	2.99E-01	3.19E-01	5.79E-02	1.00E-02	pCi/g
15-10088-11	TRG	CP1804S10-11	10/08/15 11:00	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.29E+00	3.04E-01	3.24E-01	5.78E-02	9.98E-03	pCi/g
15-10088-12	TRG	CP1804S12-13	10/08/15 11:20	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.29E+00	3.03E-01	3.23E-01	4.39E-02	3.73E-03	pCi/g
15-10088-13	TRG	CP1804S15-16	10/08/15 11:30	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.02E+00	2.56E-01	2.72E-01	5.59E-02	8.56E-03	pCi/g
15-10088-14	TRG	CP1804S17-18	10/08/15 11:40	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.41E+00	3.95E-01	3.57E-01	5.19E-02	5.71E-03	pCi/g
15-10088-15	TRG	CP5008S03-04	10/08/15 13:30	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.31E+00	3.50E-01	3.69E-01	7.34E-02	8.25E-04	pCi/g
15-10088-16	TRG	CP5008S06-07	10/08/15 13:40	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	9.81E-01	2.45E-01	2.60E-01	5.40E-02	6.06E-04	pCi/g
15-10088-17	TRG	CP5008S09-10	10/08/15 13:50	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.21E+00	3.04E-01	3.04E-01	4.65E-02	5.10E-03	pCi/g
15-10088-18	TRG	CP5008S12-13	10/08/15 14:00	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.64E+00	3.92E-01	4.18E-01	9.00E-02	2.81E-02	pCi/g
15-10088-19	TRG	CP5008S14-15	10/08/15 14:10	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.34E+00	3.05E-01	3.27E-01	4.95E-02	6.55E-03	pCi/g
15-10088-20	TRG	CP5008S17-18	10/08/15 14:20	10/14/2015	10/29/2015	15-10088	Thorium-232	EML Th-01 Modified	1.24E+00	2.90E-01	3.10E-01	7.93E-02	2.88E-02	pCi/g

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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
15-10088-01	LCS	KNOWN	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	8.01E+00	2.88E-01	1.10E+00	1.00E-01	2.23E-02	pCi/g
15-10088-01	LCS	SPIKE	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	6.87E+00	9.85E-01	1.10E+00	1.00E-01	2.23E-02	pCi/g
15-10088-02	MBL	BLANK	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	2.84E-02	3.60E-02	3.61E-02	5.39E-02	9.18E-03	pCi/g
15-10088-03	DUP	CP4104S03-04	10/08/15 09:30	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.51E+00	2.90E-01	3.09E-01	6.33E-02	1.31E-02	pCi/g
15-10088-04	DO	CP4104S03-04	10/08/15 09:30	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.43E+00	2.68E-01	2.87E-01	6.24E-02	1.49E-02	pCi/g
15-10088-05	TRG	CP4104S08-09	10/08/15 09:40	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.16E+00	2.31E-01	2.46E-01	4.10E-02	4.36E-03	pCi/g
15-10088-06	TRG	CP4104S11-12	10/08/15 09:50	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.10E+00	2.39E-01	2.52E-01	6.88E-02	1.64E-02	pCi/g
15-10088-07	TRG	CP4104S17-18	10/08/15 10:00	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	9.63E-01	1.86E-01	1.98E-01	3.62E-02	4.68E-03	pCi/g
15-10088-08	TRG	CP1804S03-04	10/08/15 10:30	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.06E+00	2.18E-01	2.30E-01	4.49E-02	5.82E-03	pCi/g
15-10088-09	TRG	CP1804S05-06	10/08/15 10:40	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.21E+00	2.28E-01	2.44E-01	4.13E-02	5.33E-03	pCi/g
15-10088-10	TRG	CP1804S08-09	10/08/15 10:50	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.12E+00	2.29E-01	2.42E-01	3.70E-02	3.01E-03	pCi/g
15-10088-11	TRG	CP1804S10-11	10/08/15 11:00	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.06E+00	2.23E-01	2.35E-01	5.29E-02	1.50E-03	pCi/g
15-10088-12	TRG	CP1804S12-13	10/08/15 11:20	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	8.56E-01	1.96E-01	2.06E-01	4.75E-02	6.15E-03	pCi/g
15-10088-13	TRG	CP1804S15-16	10/08/15 11:30	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.06E+00	2.30E-01	2.43E-01	5.34E-02	8.01E-03	pCi/g
15-10088-14	TRG	CP1804S17-18	10/08/15 11:40	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.12E+00	2.46E-01	2.59E-01	7.14E-02	1.71E-02	pCi/g
15-10088-15	TRG	CP5008S03-04	10/08/15 13:30	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.29E+00	2.54E-01	2.70E-01	3.79E-02	3.07E-03	pCi/g
15-10088-16	TRG	CP5008S06-07	10/08/15 13:40	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.03E+00	2.11E-01	2.23E-01	4.66E-02	7.02E-03	pCi/g
15-10088-17	TRG	CP5008S09-10	10/08/15 13:50	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.14E+00	2.47E-01	2.60E-01	5.30E-02	6.84E-03	pCi/g
15-10088-18	TRG	CP5008S12-13	10/08/15 14:00	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.19E+00	2.48E-01	2.62E-01	5.05E-02	6.53E-03	pCi/g
15-10088-19	TRG	CP5008S14-15	10/08/15 14:10	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.35E+00	2.68E-01	2.85E-01	5.03E-02	6.49E-03	pCi/g
15-10088-20	TRG	CP5008S17-18	10/08/15 14:20	10/14/2015	10/29/2015	15-10088	Uranium-234	EML U-02 Modified	1.41E+00	3.04E-01	3.21E-01	6.57E-02	9.88E-03	pCi/g

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



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EBERLINE ANALYTICAL CORPORATION

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

Eberline Analytical

Final Report of Analysis

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

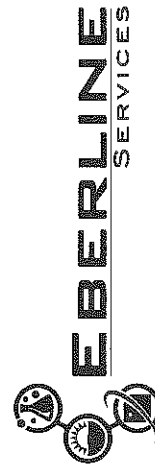
Work Order Details:

SDG: 15-10088
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10088-01	LCS	SPIKE	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	3.69E-01	1.67E-01	1.99E-01	9.45E-02	8.48E-03	pCi/g
15-10088-02	MBL	BLANK	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	3.50E-02	4.45E-02	4.45E-02	6.65E-02	8.29E-03	pCi/g
15-10088-03	DUP	CP4104S03-04	10/08/15 08:30	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	1.82E-01	9.55E-02	9.63E-02	6.69E-02	7.21E-03	pCi/g
15-10088-04	DO	CP4104S03-04	10/08/15 08:30	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	9.73E-02	6.85E-02	6.89E-02	6.63E-02	9.58E-03	pCi/g
15-10088-05	TRG	CP4104S08-09	10/08/15 09:40	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	1.73E-01	8.77E-02	8.86E-02	5.97E-02	6.42E-03	pCi/g
15-10088-06	TRG	CP4104S11-12	10/08/15 09:50	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	1.03E-01	7.14E-02	7.18E-02	5.71E-02	3.98E-03	pCi/g
15-10088-07	TRG	CP4104S17-18	10/08/15 10:00	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	8.37E-02	5.35E-02	5.38E-02	3.55E-02	1.66E-03	pCi/g
15-10088-08	TRG	CP1804S03-04	10/08/15 10:30	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	1.14E-01	6.97E-02	7.02E-02	4.40E-02	2.06E-03	pCi/g
15-10088-09	TRG	CP1804S05-06	10/08/15 10:40	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	8.57E-02	5.78E-02	5.81E-02	4.05E-02	1.89E-03	pCi/g
15-10088-10	TRG	CP1804S08-09	10/08/15 10:50	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	1.08E-01	6.89E-02	6.93E-02	4.56E-02	2.13E-03	pCi/g
15-10088-11	TRG	CP1804S10-11	10/08/15 11:00	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	7.25E-02	5.72E-02	5.75E-02	5.20E-02	3.61E-03	pCi/g
15-10088-12	TRG	CP1804S12-13	10/08/15 11:20	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	9.68E-02	6.68E-02	6.71E-02	5.34E-02	3.72E-03	pCi/g
15-10088-13	TRG	CP1804S15-16	10/08/15 11:30	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	5.84E-02	5.65E-02	5.66E-02	7.00E-02	6.72E-04	pCi/g
15-10088-14	TRG	CP1804S17-18	10/08/15 11:40	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	1.07E-01	8.29E-02	8.33E-02	1.02E-01	2.46E-02	pCi/g
15-10088-15	TRG	CP5008S03-04	10/08/15 13:30	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	6.52E-02	5.43E-02	5.45E-02	4.67E-02	2.18E-03	pCi/g
15-10088-16	TRG	CP5008S06-07	10/08/15 13:40	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	2.36E-02	3.53E-02	3.54E-02	5.74E-02	6.20E-03	pCi/g
15-10088-17	TRG	CP5008S08-10	10/08/15 13:50	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	1.47E-01	8.63E-02	8.68E-02	5.20E-02	2.43E-03	pCi/g
15-10088-18	TRG	CP5008S12-13	10/08/15 14:00	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	7.71E-02	6.26E-02	6.28E-02	6.23E-02	5.58E-03	pCi/g
15-10088-19	TRG	CP5008S14-15	10/08/15 14:10	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	1.30E-01	8.15E-02	8.20E-02	7.08E-02	6.80E-04	pCi/g
15-10088-20	TRG	CP5008S17-18	10/08/15 14:20	10/14/2015	10/29/2015	15-10088	Uranium-235	EML U-02 Modified	1.24E-01	8.60E-02	8.65E-02	6.86E-02	4.78E-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

Eberline Analytical

Final Report of Analysis

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

SDG: 15-10088
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
15-10088-01	LCS	KNOWN	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	7.81E+00	2.81E-01	1.20E+00	7.63E-02	8.60E-03	pCi/g
15-10088-01	LCS	SPIKE	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	7.66E+00	1.07E+00	1.81E-02	4.29E-02	3.77E-03	pCi/g
15-10088-02	MBL	BLANK	10/15/15 00:00	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	-3.05E-03	1.81E-02	1.81E-02	6.56E-02	1.38E-02	pCi/g
15-10088-03	DUP	CP4104S03-04	10/08/15 09:30	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.32E+00	2.65E-01	2.81E-01	6.56E-02	1.38E-02	pCi/g
15-10088-04	DO	CP4104S03-04	10/08/15 09:30	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.13E+00	2.30E-01	2.43E-01	5.51E-02	9.65E-03	pCi/g
15-10088-05	TRG	CP4104S08-09	10/08/15 09:40	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.25E+00	2.42E-01	2.58E-01	4.08E-02	3.58E-03	pCi/g
15-10088-06	TRG	CP4104S11-12	10/08/15 09:50	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	9.62E-01	2.19E-01	2.30E-01	6.35E-02	1.23E-02	pCi/g
15-10088-07	TRG	CP4104S17-18	10/08/15 10:00	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.16E+00	2.09E-01	2.25E-01	3.28E-02	2.88E-03	pCi/g
15-10088-08	TRG	CP1804S03-04	10/08/15 10:30	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.18E+00	2.33E-01	2.48E-01	3.55E-02	2.13E-03	pCi/g
15-10088-09	TRG	CP1804S06-06	10/08/15 10:40	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.22E+00	2.30E-01	2.46E-01	4.42E-02	5.95E-03	pCi/g
15-10088-10	TRG	CP1804S08-09	10/08/15 10:50	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.07E+00	2.23E-01	2.36E-01	5.29E-02	7.00E-04	pCi/g
15-10088-11	TRG	CP1804S10-11	10/08/15 11:00	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	9.84E-01	2.12E-01	2.24E-01	5.27E-02	6.96E-04	pCi/g
15-10088-12	TRG	CP1804S12-13	10/08/15 11:20	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.03E+00	2.20E-01	2.32E-01	5.41E-02	7.16E-04	pCi/g
15-10088-13	TRG	CP1804S15-16	10/08/15 11:30	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.12E+00	2.38E-01	2.51E-01	5.65E-02	7.46E-04	pCi/g
15-10088-14	TRG	CP1804S17-18	10/08/15 11:40	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.04E+00	2.35E-01	2.46E-01	7.79E-02	2.13E-02	pCi/g
15-10088-15	TRG	CP5008S03-04	10/08/15 13:30	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.24E+00	2.47E-01	2.62E-01	3.77E-02	2.26E-03	pCi/g
15-10088-16	TRG	CP5008S06-07	10/08/15 13:40	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.03E+00	2.12E-01	2.24E-01	7.48E-02	2.73E-02	pCi/g
15-10088-17	TRG	CP5008S09-10	10/08/15 13:50	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.21E+00	2.57E-01	2.71E-01	5.67E-02	7.64E-03	pCi/g
15-10088-18	TRG	CP5008S12-13	10/08/15 14:00	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.16E+00	2.44E-01	2.58E-01	5.03E-02	5.66E-03	pCi/g
15-10088-19	TRG	CP5008S14-15	10/08/15 14:10	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.35E+00	2.68E-01	2.85E-01	3.98E-02	2.38E-03	pCi/g
15-10088-20	TRG	CP5008S17-18	10/08/15 14:20	10/14/2015	10/29/2015	15-10088	Uranium-238	EML U-02 Modified	1.54E+00	3.22E-01	3.40E-01	7.95E-02	1.67E-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



EBERLINE
 SERVICES

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 WA

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).


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 8.016E+00 $\mu\text{Ci per gram}$

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

Chemical Composition of Standard Solution
Uranyl nitrate in dilute HNO₃

Dilution Instructions: Dilution Solvent Used 1M HNO₃

Dilute to a volume of 1000.00 milliliters

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

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

Expiration Date: July 27, 2016

Verified & Approved By [Signature]

Date: 10/1/2015 0:00

QC Approval [Signature]

Date: 10/1/15



QUALITY CONTROL PROGRAM
MP-009

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

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

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

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

Date: **10/1/2015 0:00**

QC Approval 

Date: **10/1/15**

RECORD COPY

Tracer Solution for Environmental Analysis & Disequilibrium Studies

Product Description & Measurement Certificate

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

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

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

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

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

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

Not measured

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

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

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

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

Approved
Signatory



Roger Wiltshire

Project Ref. AE2315

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



QUALITY CONTROL PROGRAM
MP-009

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

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

CURRENT DATE 10/27/2015 0:00

SOLUTION REFERENCE # AEA/Amersham 92/232/67

SOLUTION # U-10

Principal Radionuclide	Half Life, Years	Half Life, Days
²³² U	7.200E+01	2.630E+04

Radionuclide	²³² U	Reference Date	3/1/2000 0:00
Certified Activity	9.760E-01 μ Ci		
Certified Concentration	μ Ci per gram		

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

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

Dilution Instructions: Dilution Solvent Used 2M HNO₃

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution:	10.0000 ml	Final Activity Concentration:	2.1670E+01 dpm/ml
Total Activity:	2.1670E+04 dpm		
Final Volume:	1000.00 ml		

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

Expiration Date: October 26, 2016

Verified & Approved By

Date: 10/27/2015 0:00

QC Approval

Date: 10/28/15

Th-8

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(NO3)4 in water
c. Carrier content:	None added
d. Density:	Approx. 1.21 g/ml @ 20°C.

Radioimpurities None detected (other than daughters).

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

Radionuclide Concentration
(Th-232) 0.00779 μ Ci/g.

Method of Calibration
Activity calculations are based upon known specific activity and mass.

Uncertainty of Measurement

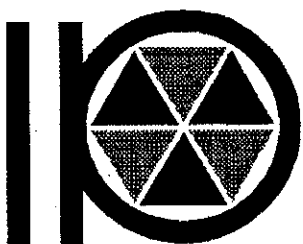
a. Systematic uncertainty in instrument calibration:	$\pm 3.0\%$
b. Random uncertainty in assay:	$\pm 0.0\%$
c. Random uncertainty in weighing(s):	$\pm 2.0\%$
d. Total uncertainty at the 99% confidence level:	$\pm 3.6\%$

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

Leak Test(s)
See reverse side for Leak Test(s) applied to this source.

Notes

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

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

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

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

Dilution Instructions: Dilution Solvent Used 1% Nitric Acid

Dilute to a volume of 1000.00 milliliters

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

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

Expiration Date: August 25, 2016

Verified & Approved By [Signature] Date: 9/29/2015 0:00
QC Approval [Signature] 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 IPL 435-104-2 Date 9/29/2015 0:00
Solution # Th-8b

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

Radionuclide of Interest ²²⁸Th Reference Date 11/1/1993 0:00
Parent Solution Conc. 2.07E+02 dpm/ml

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 Activity Concentration: 1.0355E+02 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 25, 2016

Verified & Approved By [Signature]

Date: 9/29/2015 0:00

QC Approval [Signature]

Date: 9/30/15

QA/QC REVIEWED

Date 10/14/91 Initials wt

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 1.036E+00 $\mu\text{Ci per gram}$

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 Reference Date 11/1/1991 0:00
Parent Solution Conc. 2.30E+03 dpm/ml

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

Dilution Instructions: Dilution Solvent Used 0.1N HNO₃

SECONDARY VOLUMETRIC DILUTION

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

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

Expiration Date: February 12, 2016

Recertified By [Signature]

Date: 4/15/2015 0:00

QC Approval [Signature]

Date: 4/5/15



**Isotope Products
Laboratories**

An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010

Fax 661•257•8303

Th-18

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

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

Physical Description:

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

Radioimpurities:

None detected (daughters in equilibrium)

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

Method of Calibration:

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

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

Uncertainty of Measurement:

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

Notes:

- See reverse side for leak test(s) performed on this source.
- IPL participates in a NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).
- Nuclear data was taken from IAEA Technical Report Series No. 261.
- This solution has a working life of 5 years.

Am U Khan
Quality Control

9-Jan-02
Date Signed

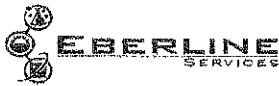
IPL Ref. No.: 867-54

ISO 9001 CERTIFIED

Medical Imaging Laboratory
24937 Avenue Tibbitts Valencia, California 91355

Industrial Gauging Laboratory
1800 North Keystone Street Burbank, California 91504

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

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

Radionuclide ²²⁸Th Reference Date 1/15/2002 0:00
Certified Activity 1.013E+00 μCi
Certified Concentration 1.0130 $\mu\text{Ci per gram}$

Ampoule /Solution Gross 8.7762 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.

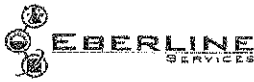
Expiration Date: August 24, 2016

Verified & Approved By [Signature]

Date: 9/29/2015 0:00

QC Approval [Signature]

Date: 9/30/15



QUALITY CONTROL PROGRAM
MP-009

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

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

Solution Reference # MP-009 Date 9/29/2015 0:00
IPL 867-54 Solution # Th-18a

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

Date: 9/29/2015 0:00

QC Approval

Date: 9/30/15

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

GAS-1402

98503

Sand in 16 Ounce PP Taral Jar Filled to Capacity

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

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solutions. Additional radionuclides were added gravimetrically from solutions calibrated by gamma-ray spectrometry, ionization chamber, or liquid scintillation counting. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Nuclide	Gamma-Ray Energy (keV)	Half-Life, Days	Master Source* yps/gram	This Source yps	Uncertainty*, %			Calibration Method*
					Type	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
Sr-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)



SECTION VI
QUALITY CONTROL SAMPLE RESULTS SUMMARY

WC	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10088	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	85.80%	16.02%	100.00%	3.60%	8.01E+00	2.88E-01	6.87E+00	1.10E+00	U-8a	3.52E+01	3.60E+00	5.05E-01
U-238	98.04%	15.74%	100.00%	3.60%	7.81E+00	2.81E-01	7.66E+00	1.20E+00	U-8a	3.44E+01	3.60E+00	5.05E-01

Matrix Spike

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

Replicate Sample

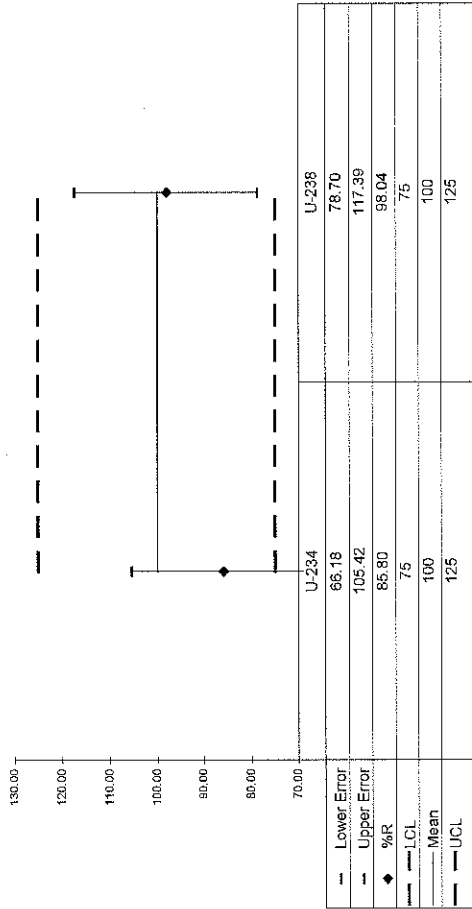
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
U-234	0.37	5.50	1.43E+00	2.87E-01	1.51E+00	3.09E-01	0.86	OK			OK	OK
U-238	1.00	15.51	1.13E+00	2.43E-01	1.32E+00	2.81E-01	0.98	OK			OK	OK
U-235	1.40	60.51	9.73E-02	6.89E-02	1.82E-01	9.63E-02		OK			NA	OK

QC Summary

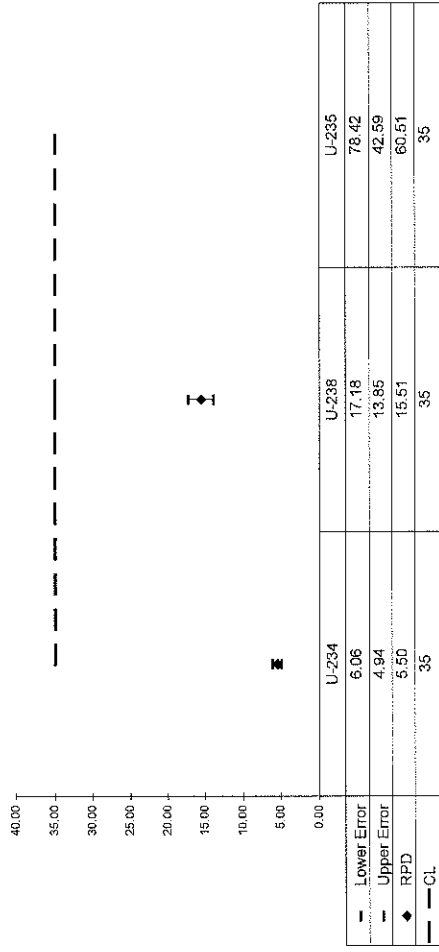
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
U-234	0.37	5.50	1.43E+00	2.87E-01	1.51E+00	3.09E-01	0.86	OK			OK	OK
U-238	1.00	15.51	1.13E+00	2.43E-01	1.32E+00	2.81E-01	0.98	OK			OK	OK
U-235	1.40	60.51	9.73E-02	6.89E-02	1.82E-01	9.63E-02		OK			NA	OK

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10088	UUIISO	1	pCi	g	Auxier & Associates, Inc.

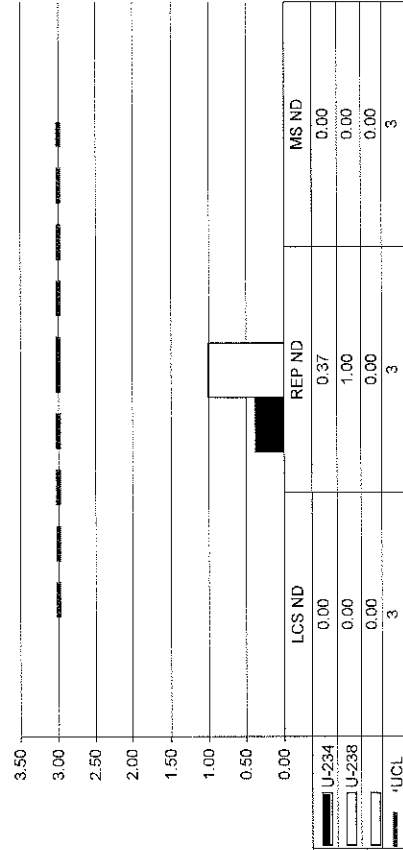
LCS % Recovery



Replicate Sample RPD



Normalized Difference



No Matrix Spike

WC	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10088	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	118.86%	19.13%	100.00%	3.60%	4.73E+00	1.70E-01	5.62E+00	1.07E+00	Th-8b	1.04E+02	3.60E+00	1.01E-01
TH-230	121.41%	20.40%	100.00%	2.70%	5.32E+00	1.44E-01	6.45E+00	1.32E+00	Th-1b	2.35E+01	2.70E+00	5.02E-01
TH-232	110.14%	19.06%	100.00%	3.60%	4.73E+00	1.70E-01	5.20E+00	9.92E-01	Th-8b	1.04E+02	3.60E+00	1.01E-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)

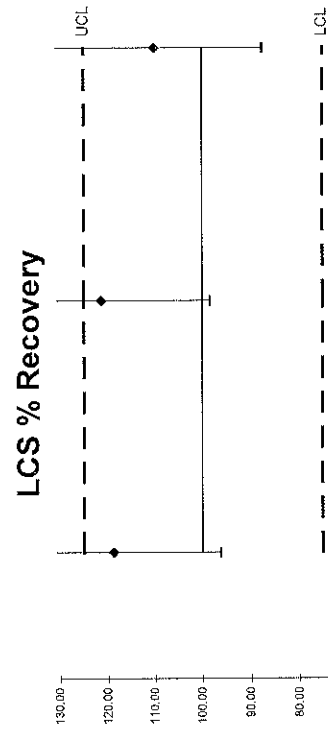
Replicate Sample

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	1.16	22.58	1.08E+00	3.07E-01	1.36E+00	3.48E-01	1.19	OK			OK	OK
TH-230	1.14	23.09	1.08E+00	3.17E-01	1.36E+00	3.65E-01	1.21	OK			OK	OK
TH-232	1.30	25.53	1.28E+00	3.44E-01	9.87E-01	2.70E-01	1.10	OK			INV	OK

QC Summary

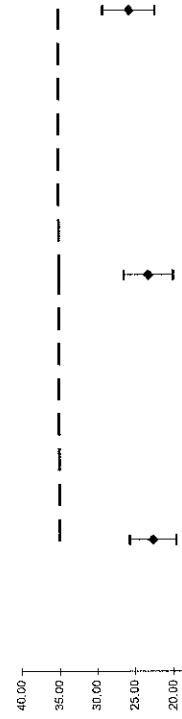
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
TH-228	1.16	22.58	1.08E+00	3.07E-01	1.36E+00	3.48E-01	1.19	OK			OK	OK
TH-230	1.14	23.09	1.08E+00	3.17E-01	1.36E+00	3.65E-01	1.21	OK			OK	OK
TH-232	1.30	25.53	1.28E+00	3.44E-01	9.87E-01	2.70E-01	1.10	OK			INV	OK

WC	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10088	THISO	1	pCi	g	Auxier & Associates, Inc.



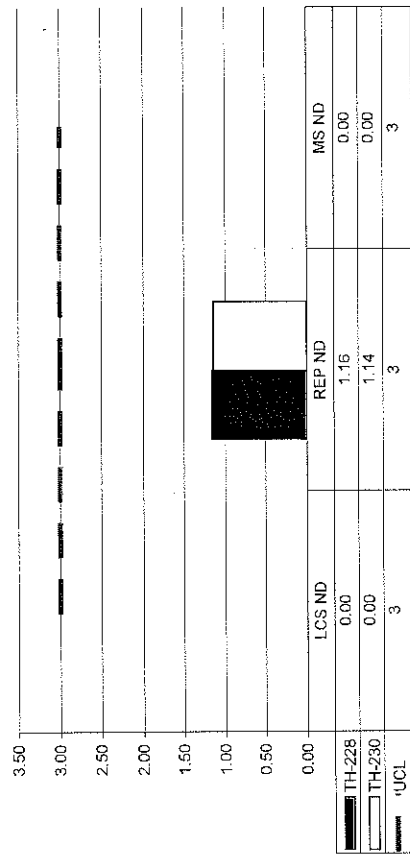
	TH-228	TH-230	TH-232
Lower Error	141.59	144.50	132.81
Upper Error	118.95	121.41	110.14
%R	75	75	75
LCL	100	100	100
Mean	125	125	125
UCL			

Replicate Sample RPD



	TH-228	TH-230	TH-232
Lower Error	25.62	26.32	28.99
Upper Error	19.55	19.67	22.07
RPD	22.58	23.09	25.53
CL	35	35	35

Normalized Difference



No Matrix Spike

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10088	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	98.05%	8.62%	100.00%	4.00%	1.37E+02	5.48E+00	1.34E+02	1.16E+01	GAS-1302	1.37E+02	5.48E+00	7.36E+02
CS-137	93.81%	10.91%	100.00%	4.00%	8.69E+01	3.48E+00	8.15E+01	8.89E+00	GAS-1302	8.69E+01	3.48E+00	7.36E+02

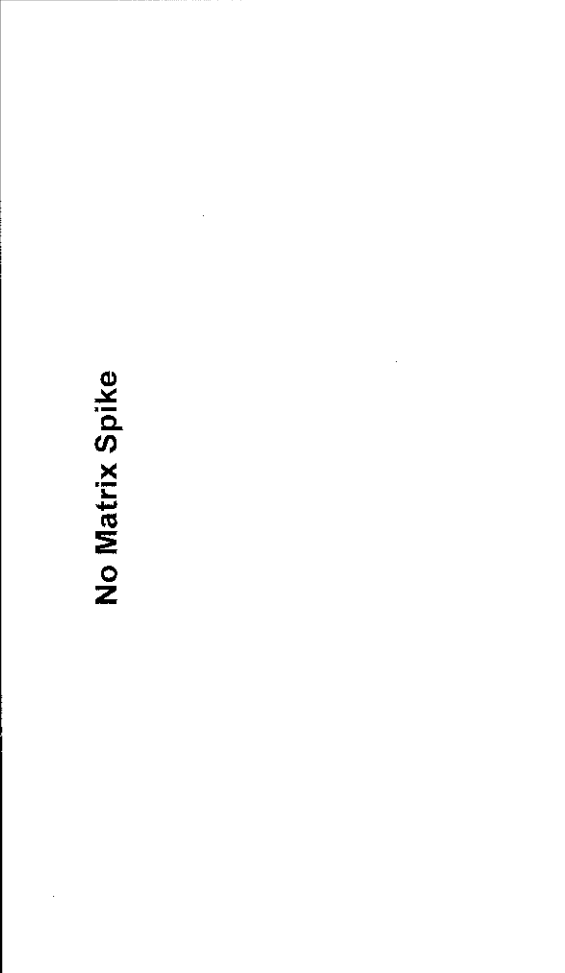
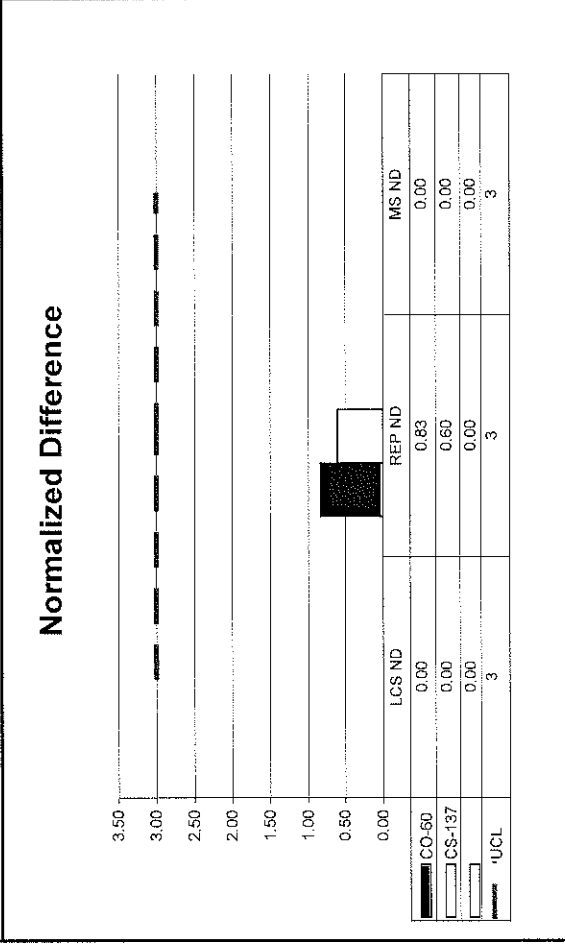
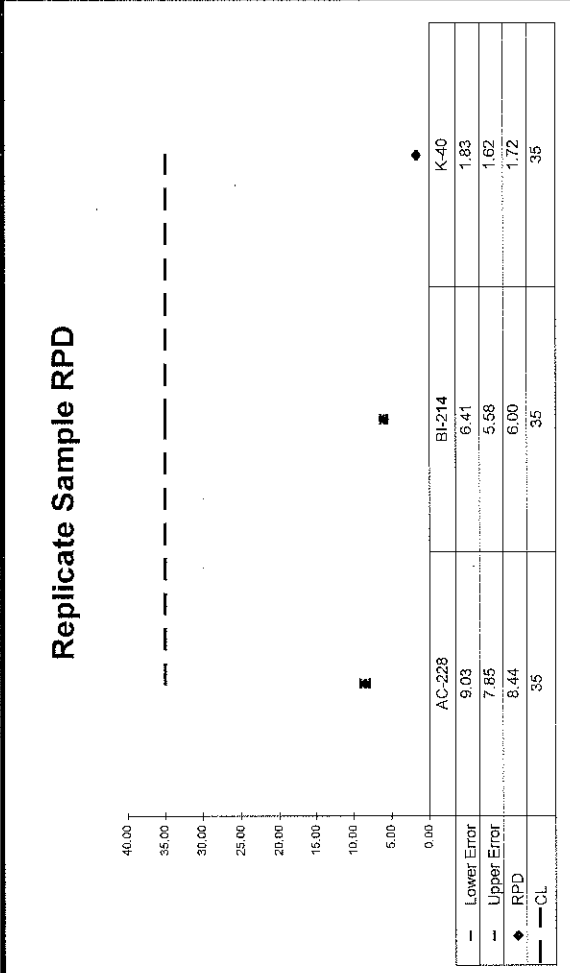
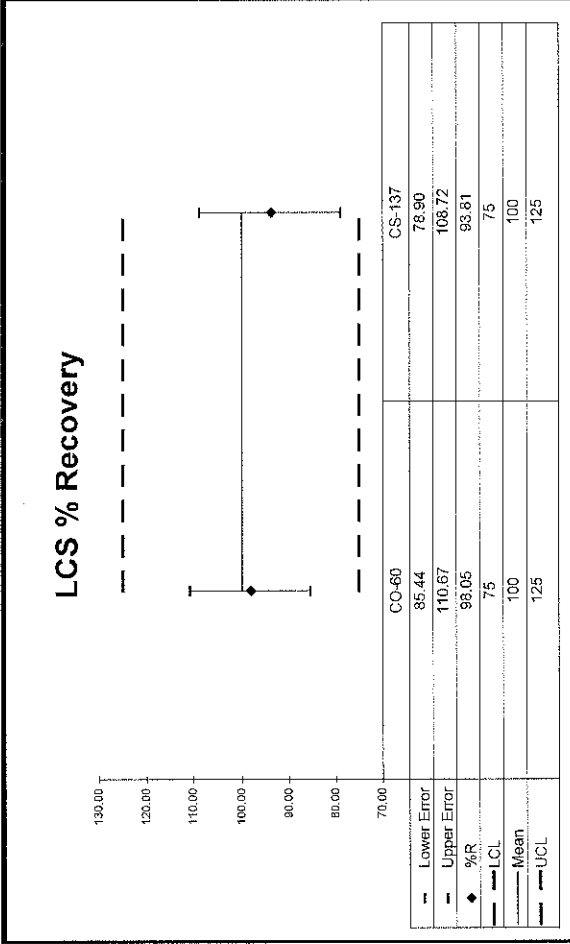
Matrix Spike

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	0.83	8.44	1.64E+00	2.41E-01	1.51E+00	1.99E-01	0.98	OK	<CS-137	AC-228>	OK	
BI-214	0.60	6.00	1.16E+00	1.69E-01	1.23E+00	1.61E-01	0.94	OK	<CO-60	BI-214>	OK	OK
K-40	0.19	1.72	1.98E+01	2.43E+00	1.98E+01	2.44E+00				K-40>	OK	OK

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10088	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	15-10088
		Analysis Code	UUISO
		Run Number	1


#	Date	Dept	User	Notes
1	10/19/15 11:56	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested with HF till dry. Samples were further digested in a mixed acid digestion till dry. Samples were submitted to separations.

10-19-15 JPachella


 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com		Internal Work Order	15-10088
			Analysis Code	UUISO
			Run Number	1


#	Date	Dept	User	Notes
1	10/19/15 11:56	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	10/28/15 16:53	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.

J. Demelas
 10/28/15

 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	15-10088
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	10/19/15 11:56	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	10/28/15 16:53	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 D! H2O. Set samples aside for later precipitation and filtering.
3	10/29/15 04:57	CHEM	TSMITH	Followed steps 12.1.7 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Uranium)

10/29/15


 EBERLINE SERVICES		Internal Work Order		
		15-10088		
Reagents Used in an Analysis		Analysis Code		Run
		UUISO		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
016569P	Hydrofluoric Acid	Reagent Grade	JPACHELLA	10/19/2015
016519P	Nitric Acid	Reagent Grade	JPACHELLA	10/19/2015
016158P	Perchloric Acid	Reagent Grade	JPACHELLA	10/19/2015
016679P	Sulfuric Acid	Reagent Grade	JPACHELLA	10/19/2015
016862P	Anion Exchange Resin	Reagent Grade	JDEMELAS	10/28/2015
016927S	HCl - HF	6.5N - 0.04N	JDEMELAS	10/28/2015
016745D03	Hydrochloric Acid	0.5N	JDEMELAS	10/28/2015
016803S	Hydrochloric Acid	6.5N	JDEMELAS	10/28/2015
016937S	Hydrochloric Acid	8N	JDEMELAS	10/28/2015
016874P	Hydrochloric Acid	Reagent Grade	JDEMELAS	10/28/2015
016950S	HCl - NH4I	8N - 0.1M	JDEMELAS	10/28/2015
016924S	Carbon substrate	Solution	TSMITH	10/29/2015
016569P	Hydrofluoric Acid	Reagent Grade	TSMITH	10/29/2015
016583S	Neodymium Carrier	1 mg/ml	TSMITH	10/29/2015
016514P	Reagent Alcohol	Reagent Grade	TSMITH	10/29/2015
016606P	Titanous Chloride	Reagent Grade	TSMITH	10/29/2015


Alphabet 3

Date	Sample #	Client	Location	CT Time	Analysis	Prod
10/27	15100824(1-2)	ucon	0907	2hr	Three	C
10/27/15	15100824(3-4)	ucon	1152	2hr50-	Three	KB
10/27/15	1510069A(1-4)	Unitech	1153	2hr50+	Np	KB
10/27/15	1510069A(1-4)	Unitech	1153	2hr50-	ULL	KB
10/27/15	1510089A(1-7)	Auxier	1156	2hr50-	750-Th	KB
10/28	DailyPins	ATS	0525	1hr	NR	-
10/28	1510085A(4-10)	Auxier	0909	2hr	UAT50	-
10/28	1510069A(1-5)	Unitech	0910	2hr	Put50	-
10/28/15	1510071A(1-4)	Unitech	1207	2hr50-	Np	KB
10/28/15	1510085A(1-20)	Auxier	1210	2hr50-	ISO-TH	KB
10/28	1510150A(1-4)	STOFND	1705	2hr50	Rule	C
10/28/15	1510073A(1-7)	Accutest	1504	2hr50-	Rule	KB
10/28/15	1510096A(1-4)	Searay	1503	2hr50-	Rule	KB
10/29	DailyPins	ATS	0515	1hr	NR	-
10/29	1510088A(16-20)	Auxier	0826	2hr50	UAT50	-
10/29	1510088A(1-15)	Auxier	0826	2hr50	Th50	-

Alpha #1


Date	Sample #	Client	Analyst	CT Time	Method	Test
10/19/15	15100540 (1-4)	USA	0959	2hr50-	ISO 41	KB
10/19/15	1510021A (1-3)	UCOR	1000	2hr50-	Amz41	KB
10/22	Daily Pulse	LAB	0515	1-	NA	-
10/22	1510067A (1-7)	Auxier	0909	2hr5-	U4750	-
10/20/15	1510051A (1-6)	TN Dept. of Health	1209	16.40 hrs	U41	KB
10/20/15	1510051A (1)	TN Dept. of Health	1208	16.40 hrs	ISO-PU	KB
10/21	Daily Pulse	LAB	0530	1-	NA	-
10/21	1510084A (1-6)	Auxier	0851	2hr5-	U4750	-
10/21/15	1510051A (1-3, 5-6)	TN Dept. of Health	1147	16.40 hrs	Amz41	KB
10/22	Daily Pulse	LAB	0527	1-	NA	-
10/22	1510114A (1-4)	PEC	0904	2hr5-	Th750	-
10/22	1509055A (1-2)	Env. Dim	0905	2hr5-	Th750	-
10/22/15	1510052A (1-6)	TN Dept. of Health	1205	16.40 hrs	U41	KB
10/22	Daily Pulse	LAB	0503	1-	NA	-
10/22	SC-4113-151	LAB	1120	2hr5-	NA	-
10/22	1510115A (1-4)	UCOR	0820	2hr5-	U4750	-
10/22	1510104A (1-2)	ELT	0821	2hr5-	U4750	-
10/23/15	System Disk	Lab	1620	16.40 hrs	-	KB
10/24/15	Daily Pulse	Lab	0951	10min	NA	AK
10/26	Daily Pulse	LAB	0516	1-	NA	-
10/26	1510082A (1-4)	UCOR	0902	2hr5-	Amz41	-
10/26	1510082A (1-7)	UCOR	0903	2hr5-	Amz41	-
10/26/15	1510080A (1-7)	Accutest	1353	2hr50-	Rare	KB
10/27	Daily Pulse	LAB	0516	10.00	NA	-
10/27	1510144A (1-4)	Mutigen	0856	2hr5-	Th750	-
10/27	1510068A (1-3)	UCOR	0856	2hr5-	U4750	-
10/28	Daily Pulse	LAB	0525	1-	NA	-
10/28	1510071A (1-4)	United	0908	2hr5-	Amz41	-
10/28	1510085A (1-3)	Auxier	0909	2hr5-	U4750	-
10/29/15	1510078A (1-4)	Env. Dimensions	1230	2hr50-	Rele	KB
10/29	Daily Pulse	LAB	0515	1-	NA	-
10/29	1510088A (1-7)	Auxier	0826	2hr5-	U4750	-

ISO-TH NOTES

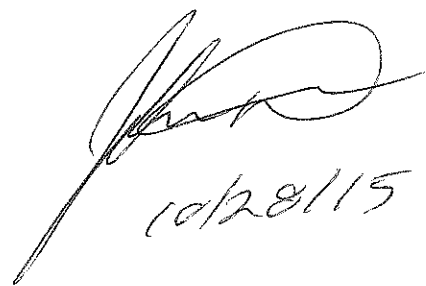
 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	15-10088
		Analysis Code	ThISO
		Run Number	1


#	Date	Dept	User	Notes
1	10/19/15 11:55	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested with HF till dry. Samples were further digested in a mixed acid digestion till dry. Samples were submitted to separations.

10-19-15 JPachella


 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com		Internal Work Order	15-10088
			Analysis Code	ThISO
			Run Number	1

#	Date	Dept	User	Notes
1	10/19/15 11:55	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	10/28/15 16:54	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.


 10/28/15

 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	15-10088
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	10/19/15 11:55	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	10/28/15 16:54	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	10/29/15 04:59	CHEM	TSMITH	Followed steps 12.2.5 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Thorium)

10-29-15




EBERLINE
SERVICES

Reagents Used in an Analysis

Internal Work Order

15-10088

Analysis Code

Run

ThISO

1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
016569P	Hydrofluoric Acid	Reagent Grade	JPACHELLA	10/19/2015
016519P	Nitric Acid	Reagent Grade	JPACHELLA	10/19/2015
016679P	Sulfuric Acid	Reagent Grade	JPACHELLA	10/19/2015
016158P	Perchloric Acid	Reagent Grade	JPACHELLA	10/19/2015
016862P	Anion Exchange Resin	Reagent Grade	JDEMELAS	10/28/2015
016937S	Hydrochloric Acid	8N	JDEMELAS	10/28/2015
016874P	Hydrochloric Acid	Reagent Grade	JDEMELAS	10/28/2015
016936S	Nitric Acid	8N	JDEMELAS	10/28/2015
016516P	Nitric Acid	Reagent Grade	JDEMELAS	10/28/2015
016924S	Carbon substrate	Solution	TSMITH	10/29/2015
016869S	Cerrium Carrier	0.1mg/ml	TSMITH	10/29/2015
016569P	Hydrofluoric Acid	Reagent Grade	TSMITH	10/29/2015
016514P	Reagent Alcohol	Reagent Grade	TSMITH	10/29/2015

Alphabet 3

Date	Account #	Client	Location	CT Time	Analysis	Fee
10/27	15100824(1-2)	ucon	0907	2hr	Three	C
10/27/15	15100824(3-4)	ucon	1152	2hr50-	Three	KB
10/27/15	15100691A(1-4)	Unitel	1153	2hr50+	Np	KB
10/27/15	15100691A(1-4)	Unitel	1153	2hr50-	ULL	KB
10/27/15	15100899A(1-7)	Auxier	1156	2hr50-	F50-Th	KB
10/28	Daily Price	ATB	0525	1hr	1hr	-
10/28	15100854(4-20)	Auxier	0909	2hr	Unitso	-
10/28	15100694(1-5)	Unitel	0910	2hr	Puzso	-
10/28/15	15100711A(1-4)	Unitel	1207	2hr50-	Np	KB
10/29/15	15100954(1-20)	Auxier	1210	2hr50-	ISO-Th	KB
10/28	15101504(1-4)	STOFND	1705	2hr50	Rule	C
10/28/15	15100734(1-7)	Accutest	1504	2hr50-	Rule	KB
10/28/15	15100964(1-4)	Searay	1503	2hr50-	Rule	KB
10/29	Daily Price	ATB	0505	1hr	1hr	-
10/29	15100884(1-20)	Auxier	0826	2hr50-	Unitso	-
10/29	15100884(1-15)	Auxier	0826	2hr50-	Thlso	-

Alpha 3

Date	Account	Client	Location	CT Time	Analysis	Prod
10/27	1510082A(1-2)	ucon	0907	2hr	Three	C
10/27/15	1510082A(3-4)	ucon	1152	2hr50+	Three	KB
10/27/15	1510069A(1-4)	Unitech	1153	2hr50+	Np	KB
10/27/15	1510069A(1-4)	Unitech	1153	2hr50+	UU	KB
10/27/15	1510089A(1-7)	Auxin	1156	2hr50+	ISO-Th	KB
10/28	Daily Pkg	LAB	0525			
10/28	1510085A(4-20)	Auxin	0909	2hr	Uniso	
10/28	1510069A(1-5)	Unitech	0910	2hr	Puzso	
10/28/15	1510071A(1-4)	Unitech	1207	2hr50+	Np	KB
10/28/15	1510085A(1-20)	Auxin	1210	2hr50+	ISO-Th	KB
10/28	1510150A(1-4)	STOFND	1705	2hr	Pub	
10/28/15	1510073A(1-7)	Accutest	1504	2hr50+	Pub	KB
10/28/15	1510096A(1-4)	Searay	1503	2hr50+	Pub	KB
10/29	Daily Pkg	LAB	0505			
10/29	1510088A(8-20)	Auxin	0826	2hr	Uniso	
10/29	1510088A(1-15)	Auxin	0826	2hr	Thys	
10/29/15	1510145A(1-7)	Washen	1123	2hr50+	UU	KB
10/29/15	1510083A(1-20)	Auxin	1124	2hr50+	ISO-Th	KB

GAMMA NOTES

GE 1

105

DATE	SAMPLE #	CLIENT	LOAD TIME	CT. TIME	ANALYSIS TECH
11/9/65	1510088-14	AUXIER	635	1h	Y KCB

GE 1

103

DATE	SAMPLE #	Client	Load	Time	CT	Time	Analysis	Tech
1115	CAF-14	UAB	0514	15			✓	✓
1115	Du442	UAB	0545	15			✓	✓
1115	1511002-02	Unitech	0609	20			✓	✓
1115	1511018-03	UCON	0837	4h			✓	✓
11/5/15	1511018-01	UCON	1237	30mins			✓	KB
1115	1511018-04	UCON	1706	4h			✓	✓
1116	CAF-14	UAB	0517	15			✓	✓
1116	Du442	UAB	0545	15			✓	✓
1116	1510085-03	Auxier	0608	2h			✓	✓
1116	1510085-04	Auxier	0711	2h			✓	✓
1116	1510085-11	Auxier	0817	2h			✓	✓
1116	1510085-15	Auxier	0920	2h			✓	✓
1116	1510085-19	Auxier	1021	2h			✓	✓
1116	1510086-06	Auxier	1127	2h			✓	✓
11/6/15	1510086-09	Auxier	1224	1hr			✓	KB
11/6/15	1510086-13	Auxier	1337	1hr			✓	KB
11/6/15	1510086-17	Auxier	1440	1hr			✓	KB
11/6/15	1511026-05	Toxicology Cons.	1547	1hr			✓	KB
11/6/15	1511026-07	Toxicology Cons.	1649	1hr			✓	KB
11/6/15	1511026-10	Toxicology Cons.	1750	1hr			✓	KB
11/7/15	System D Kgel	Lab	0909	24hr			✓	KB
1119	CAF-14	UAB	0520	15			✓	✓
1119	Du442	UAB	0550	15			✓	✓
1119	1510087-03	Auxier	0608	2h			✓	✓
1119	1510087-04	Auxier	0717	2h			✓	✓
1119	1510087-09	Auxier	0816	2h			✓	✓
1119	1510087-12	Auxier	0911	2h			✓	✓
1119	1510087-15	Auxier	1021	2h			✓	✓
1119	1510087-01	Auxier	1122	2h			✓	✓
1119	1510087-05	Auxier	1154	2h			✓	✓
11/9/15	1510089-01	Auxier	1701	30mins			✓	KB
1119	1510088-03	Auxier	1333	2h			✓	✓
1119	1510088-04	Auxier	1439	2h			✓	✓
11/9/15	1510088-10	Auxier	1535	1hr			✓	KB

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DATE	Sample #	Client	LoadTime	CT-Time	Analysis	Tech
11/5/15	1511021-02	Republic Serv.	1701	2hr	Y	KB
11/6	6481401	LAD	0517	1R	Y	KB
11/6	Dwyla	LAD	0543	1R	Y	KB
11/6	1510085-05	Auxier	0608	2L	Y	KB
11/6	1510085-08	Auxier	0711	2L	Y	KB
11/6	1510085-12	Auxier	0817	2L	Y	KB
11/6	1510085-16	Auxier	0920	2L	Y	KB
11/6	1510085-20	Auxier	1021	2L	Y	KB
11/6	1510086-07	Auxier	1127	2L	Y	KB
11/6/15	1510086-10	Auxier	1224	1hr	Y	KB
11/6/15	1510086-14	Auxier	1337	1hr	Y	KB
11/6/15	1510086-18	Auxier	1440	1hr	Y	KB
11/6/15	1511026-06	Toxicology Cons.	1547	1hr	Y	KB
11/6/15	1511026-08	Toxicology Cons.	1649	1hr	Y	KB
11/7/15	System Bkcd	Lab	0909	24hr	Y	KB
11/9	6481401	LAD	0520	1R	Y	KB
11/9	Dwyla	NO	0550	1R	Y	KB
11/9	1510087-05	Auxier	0608	2L	Y	KB
11/9	1510087-07	Auxier	0717	2L	Y	KB
11/9	1510087-10	Auxier	0816	2L	Y	KB
11/9	1510087-13	Auxier	0918	2L	Y	KB
11/9	1510087-16	Auxier	1021	2L	Y	KB
11/9	1510087-02	Auxier	1122	2L	Y	KB
11/9	1510089-06	Auxier	1222	2L	Y	KB
11/9/15	1510089-07	Auxier	1725	1hr	Y	KB
11/9/15	1510088-06	Auxier	1424	1hr	Y	KB
11/9/15	1510088-08	Auxier	1525	1hr	Y	KB
11/9/15	1510088-12	Auxier	1625	1hr	Y	KB
11/9/15	1510088-16	Auxier	1726	1hr	Y	KB
11/9/15	1510088-19	Auxier	1826	1hr	Y	KB

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DATE Sample # Client Load Time CT Time Analysis Tech

DATE	Sample #	Client	Load Time	CT Time	Analysis	Tech
11/6/15	1510086-15	Auxin	1337	1hr	Y	KB
11/6/15	1511026-03	Toxicology Cons.	1441	1hr	Y	KB
11/6/15	1511026-04	Toxicology Cons.	1577	1hr	Y	KB
11/6/15	1511026-09	Toxicology Cons.	1649	2hr	Y	KB
11/7/15	System Dkset	Lab	0909	24hrs	Y	KB
11/9	CT51402	LAD	0520	15	Y	}
11/9	DWYN	WB	0550	15	Y	
11/9	CT51402	LAD	0608	15	Y	
11/9	1511028-03	Turner	0755	2L	Y	}
11/9	1511028-04	Turner	0879	2L	Y	
11/9	1511028-05	Turner	0941	2L	Y	
11/9	1511028-06	Turner	1042	2L	Y	Y
11/9	1511028-01	Turner	1153	2L	Y	Y
11/9	1511028-02	Turner	1224	2L	Y	Y
11/9	1510088-05	Auxin	1326	2L	Y	Y
11/9/15	1510088-07	Auxin	1427	1hr	Y	KB
11/9/15	1510088-09	Auxin	1528	1hr	Y	KB
11/9/15	1510088-13	Auxin	1628	1hr	Y	KB
11/9/15	1510088-17	Auxin	1729	1hr	Y	KB
11/9/15	1510088-20	Auxin	1830	1hr	Y	KB

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DATE	SAMPLE #	Client	Load Time	CT Time	Analysis	Tech
1119	CFW 14	LAB	0520	15	✓	C
1119	Dialyn	LAB	0550	15	✓	C
1119	1510087-06	Auxier	0609	2L	✓	
1119	1510087-08	Auxier	0717	2L	✓	
1119	1510087-11	Auxier	0816	2L	✓	
1119	1510087-14	Auxier	0912	2L	✓	
1119	1510087-17	Auxier	1021	2L	✓	✓
1119	1510087-07	Auxier	1122	2L	✓	C
1119	1510087-24	Auxier	1225	2L	✓	C
1119	1510087-02	Auxier	1328	2L	✓	
11/9/15	1510088-02	Auxier	1429	1hr	✓	KB
11/9/15	1510088-01	Auxier	1530	30 mins	✓	KB
11/9/15	1510088-11	Auxier	1602	1hr	✓	KB
11/9/15	1510088-15	Auxier	1703	1hr	✓	KB
11/9/15	1510088-19	Auxier	1905	1hr	✓	KB

SECTION VIII
ANALYTICAL DATA (ISOTOPIC URANIUM)

Work Order	15-10088
Analysis Code	UIISO
Run	1
Date Received	10/14/2015
Lab Deadline	11/5/2015
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		10/15/15 00:00	1.0000E+00
02	MBL	BLANK		10/15/15 00:00	1.5000E+00
03	DUP	CP4104S03-04	42	10/08/15 09:30	1.5035E+00
04	DO	CP4104S03-04	42	10/08/15 09:30	1.5069E+00
05	TRG	CP4104S08-09	40	10/08/15 09:40	1.5078E+00
06	TRG	CP4104S11-12	32	10/08/15 09:50	1.5777E+00
07	TRG	CP4104S17-18	36	10/08/15 10:00	1.5757E+00
08	TRG	CP1804S03-04	35	10/08/15 10:30	1.5255E+00
09	TRG	CP1804S05-06	35	10/08/15 10:40	1.5216E+00
10	TRG	CP1804S08-09	32	10/08/15 10:50	1.5139E+00
11	TRG	CP1804S10-11	36	10/08/15 11:00	1.5825E+00
12	TRG	CP1804S12-13	33	10/08/15 11:20	1.5152E+00
13	TRG	CP1804S15-16	34	10/08/15 11:30	1.5533E+00
14	TRG	CP1804S17-18	36	10/08/15 11:40	1.5622E+00
15	TRG	CP5008S03-04	33	10/08/15 13:30	1.5321E+00
16	TRG	CP5008S06-07	41	10/08/15 13:40	1.5402E+00
17	TRG	CP5008S09-10	34	10/08/15 13:50	1.5554E+00
18	TRG	CP5008S12-13	34	10/08/15 14:00	1.5012E+00
19	TRG	CP5008S14-15	38	10/08/15 14:10	1.5008E+00
20	TRG	CP5008S17-18	20	10/08/15 14:20	1.5364E+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.

10/29/15

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	0.6498	12.1		0.00								
02	MBL	0.6493	12.1		0.00								
03	DUP	0.6509	12.1		0.00								
04	DO	0.6506	12.1		0.00								
05	TRG	0.6518	12.1		0.00								
06	TRG	0.6514	12.1		0.00								
07	TRG	0.6491	12.1		0.00								
08	TRG	0.6517	12.1		0.00								
09	TRG	0.6508	12.1		0.00								
10	TRG	0.6513	12.1		0.00								
11	TRG	0.6514	12.1		0.00								
12	TRG	0.6509	12.1		0.00								
13	TRG	0.6504	12.1		0.00								
14	TRG	0.6505	12.1		0.00								
15	TRG	0.6498	12.1		0.00								
16	TRG	0.6510	12.1		0.00								
17	TRG	0.6510	12.1		0.00								
18	TRG	0.6507	12.1		0.00								
19	TRG	0.6514	12.1		0.00								
20	TRG	0.6577	12.3		0.00								

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

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			10/19/15 14:55	JPACHELLA				
02	MBL			10/19/15 14:55	JPACHELLA				
03	DUP			10/19/15 14:55	JPACHELLA				
04	DO	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
05	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
06	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
07	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
08	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
09	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
10	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
11	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
12	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
13	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
14	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
15	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
16	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
17	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
18	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
19	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	JPACHELLA				
20	TRG	10/19/15 08:59	KSALLINGS	10/19/15 14:55	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.

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-234	LCS	LCS	pCi/g	6.87E+00	9.85E-01	1.00E-01	8.01E+00	85.80	OK		OK	
02	U-234	MBL	BLANK	pCi/g	2.84E-02	3.60E-02	5.39E-02					OK	OK
03	U-234	DUP	CP4104S03-04	pCi/g	1.51E+00	2.90E-01	6.33E-02				OK	OK	
04	U-234	DO	CP4104S03-04	pCi/g	1.43E+00	2.68E-01	6.24E-02					OK	
05	U-234	TRG	CP4104S08-09	pCi/g	1.16E+00	2.31E-01	4.10E-02					OK	
06	U-234	TRG	CP4104S11-12	pCi/g	1.10E+00	2.39E-01	6.88E-02					OK	
07	U-234	TRG	CP4104S17-18	pCi/g	9.63E-01	1.86E-01	3.62E-02					OK	
08	U-234	TRG	CP1804S03-04	pCi/g	1.06E+00	2.18E-01	4.49E-02					OK	
09	U-234	TRG	CP1804S05-06	pCi/g	1.21E+00	2.28E-01	4.13E-02					OK	
10	U-234	TRG	CP1804S08-09	pCi/g	1.12E+00	2.29E-01	3.70E-02					OK	
11	U-234	TRG	CP1804S10-11	pCi/g	1.06E+00	2.23E-01	5.29E-02					OK	
12	U-234	TRG	CP1804S12-13	pCi/g	8.56E-01	1.96E-01	4.75E-02					OK	
13	U-234	TRG	CP1804S15-16	pCi/g	1.06E+00	2.30E-01	5.34E-02					OK	
14	U-234	TRG	CP1804S17-18	pCi/g	1.12E+00	2.46E-01	7.14E-02					OK	
15	U-234	TRG	CP5008S03-04	pCi/g	1.29E+00	2.54E-01	3.79E-02					OK	
16	U-234	TRG	CP5008S06-07	pCi/g	1.03E+00	2.11E-01	4.66E-02					OK	
17	U-234	TRG	CP5008S09-10	pCi/g	1.14E+00	2.47E-01	5.30E-02					OK	
18	U-234	TRG	CP5008S12-13	pCi/g	1.19E+00	2.48E-01	5.05E-02					OK	
19	U-234	TRG	CP5008S14-15	pCi/g	1.35E+00	2.68E-01	5.03E-02					OK	
20	U-234	TRG	CP5008S17-18	pCi/g	1.41E+00	3.04E-01	6.57E-02					OK	

	Run	1
	Analysis Code	UISO
Client	Auxier & Associates, Inc.	
Eberline Services Work Order	15-10088	

	1 Run	UISO Analysis Code	15-10088 Eberline Services Work Order	Auxier & Associates, Inc. Client
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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	10/15/15 00:00	1.00E+00	104.37	0.00	0.00			
02	U-234	MBL	10/15/15 00:00	1.50E+00	103.92	0.00	0.00			
03	U-234	DUP	10/08/15 09:30	1.50E+00	95.62	0.00	0.00			
04	U-234	DO	10/08/15 09:30	1.51E+00	100.12	0.00	0.00			
05	U-234	TRG	10/08/15 09:40	1.51E+00	106.01	0.00	0.00			
06	U-234	TRG	10/08/15 09:50	1.58E+00	94.41	0.00	0.00			
07	U-234	TRG	10/08/15 10:00	1.58E+00	103.99	0.00	0.00			
08	U-234	TRG	10/08/15 10:30	1.53E+00	112.79	0.00	0.00			
09	U-234	TRG	10/08/15 10:40	1.52E+00	124.06	0.00	0.00			
10	U-234	TRG	10/08/15 10:50	1.51E+00	120.08	0.00	0.00			
11	U-234	TRG	10/08/15 11:00	1.58E+00	105.31	0.00	0.00			
12	U-234	TRG	10/08/15 11:20	1.52E+00	113.17	0.00	0.00			
13	U-234	TRG	10/08/15 11:30	1.55E+00	111.75	0.00	0.00			
14	U-234	TRG	10/08/15 11:40	1.56E+00	87.49	0.00	0.00			
15	U-234	TRG	10/08/15 13:30	1.53E+00	102.94	0.00	0.00			
16	U-234	TRG	10/08/15 13:40	1.54E+00	111.47	0.00	0.00			
17	U-234	TRG	10/08/15 13:50	1.56E+00	97.34	0.00	0.00			
18	U-234	TRG	10/08/15 14:00	1.50E+00	91.92	0.00	0.00			
19	U-234	TRG	10/08/15 14:10	1.50E+00	100.56	0.00	0.00			
20	U-234	TRG	10/08/15 14:20	1.54E+00	84.35	0.00	0.00			

Preliminary Data Report & Analytical Calculations
Work Order: 15-10088-UJISO-1

	Run	1
Analysts Code	UJISO	
Eberline Services Work Order	15-10088	
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	10/29/15 08:26		A_Spec	Alpha_003	170.02	4.71 E+02	8.00 E-03	17.4
02	U-234	MBL	10/29/15 08:26		A_Spec	Alpha_004	170.02	3.15 E+00	5.00 E-03	18.9
03	U-234	DUP	10/29/15 08:26		A_Spec	Alpha_010	170.03	1.57 E+02	7.00 E-03	19.2
04	U-234	DO	10/29/15 08:26		A_Spec	Alpha_011	170	1.62 E+02	9.00 E-03	20
05	U-234	TRG	10/29/15 08:26		A_Spec	Alpha_012	170.02	1.38 E+02	2.00 E-03	19.4
06	U-234	TRG	10/29/15 08:26		A_Spec	Alpha_014	170.03	1.13 E+02	9.00 E-03	18.4
07	U-234	TRG	10/29/15 08:26		A_Spec	Alpha_015	170	1.39 E+02	3.00 E-03	23.5
08	U-234	TRG	10/29/15 08:26		A_Spec	Alpha_033	170	1.23 E+02	3.00 E-03	18
09	U-234	TRG	10/29/15 08:26		A_Spec	Alpha_034	170	1.53 E+02	3.00 E-03	17.9
10	U-234	TRG	10/29/15 08:26		A_Spec	Alpha_035	170	1.26 E+02	1.00 E-03	16.5
11	U-234	TRG	10/29/15 08:26		A_Spec	Alpha_036	170	1.20 E+02	0.00 E+00	18.1
12	U-234	TRG	10/29/15 08:26		A_Spec	Alpha_037	170	9.45 E+01	3.00 E-03	17.1
13	U-234	TRG	10/29/15 08:26		A_Spec	Alpha_038	170	1.12 E+02	4.00 E-03	16.2
14	U-234	TRG	10/29/15 08:26		A_Spec	Alpha_039	170	1.11 E+02	9.00 E-03	19.3
15	U-234	TRG	10/29/15 08:26		A_Spec	Alpha_040	170	1.42 E+02	1.00 E-03	18.6
16	U-234	TRG	10/29/15 08:26		A_Spec	Alpha_041	170	1.24 E+02	4.00 E-03	18.7
17	U-234	TRG	10/29/15 08:26		A_Spec	Alpha_042	170	1.12 E+02	3.00 E-03	17.4
18	U-234	TRG	10/29/15 08:27		A_Spec	Alpha_043	170	1.23 E+02	3.00 E-03	20
19	U-234	TRG	10/29/15 08:27		A_Spec	Alpha_044	170	1.40 E+02	3.00 E-03	18.4
20	U-234	TRG	10/29/15 08:27		A_Spec	Alpha_045	170	1.21 E+02	4.00 E-03	17.6

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-238	LCS	LCS	pCi/g	7.66E+00	1.07E+00	7.63E-02	7.81E+00	98.04	OK		OK	
02	U-238	MBL	BLANK	pCi/g	-3.06E-03	1.81E-02	4.29E-02					OK	OK
03	U-238	DUP	CP4104S03-04	pCi/g	1.32E+00	2.65E-01	6.56E-02				OK	OK	
04	U-238	DO	CP4104S03-04	pCi/g	1.13E+00	2.30E-01	5.51E-02					OK	
05	U-238	TRG	CP4104S08-09	pCi/g	1.25E+00	2.42E-01	4.08E-02					OK	
06	U-238	TRG	CP4104S11-12	pCi/g	9.62E-01	2.19E-01	6.35E-02					OK	
07	U-238	TRG	CP4104S17-18	pCi/g	1.16E+00	2.09E-01	3.28E-02					OK	
08	U-238	TRG	CP1804S03-04	pCi/g	1.18E+00	2.33E-01	3.55E-02					OK	
09	U-238	TRG	CP1804S05-06	pCi/g	1.22E+00	2.30E-01	4.42E-02					OK	
10	U-238	TRG	CP1804S08-09	pCi/g	1.07E+00	2.23E-01	5.29E-02					OK	
11	U-238	TRG	CP1804S10-11	pCi/g	9.84E-01	2.12E-01	5.27E-02					OK	
12	U-238	TRG	CP1804S12-13	pCi/g	1.03E+00	2.20E-01	5.41E-02					OK	
13	U-238	TRG	CP1804S15-16	pCi/g	1.12E+00	2.38E-01	5.65E-02					OK	
14	U-238	TRG	CP1804S17-18	pCi/g	1.04E+00	2.35E-01	7.79E-02					OK	
15	U-238	TRG	CP5008S03-04	pCi/g	1.24E+00	2.47E-01	3.77E-02					OK	
16	U-238	TRG	CP5008S06-07	pCi/g	1.03E+00	2.12E-01	7.48E-02					OK	
17	U-238	TRG	CP5008S09-10	pCi/g	1.21E+00	2.57E-01	5.67E-02					OK	
18	U-238	TRG	CP5008S12-13	pCi/g	1.16E+00	2.44E-01	5.03E-02					OK	
19	U-238	TRG	CP5008S14-15	pCi/g	1.35E+00	2.68E-01	3.98E-02					OK	
20	U-238	TRG	CP5008S17-18	pCi/g	1.54E+00	3.22E-01	7.95E-02					OK	


	1 Run	UISO Analysis Code	15-10088 Eberline Services Work Order	Auxier & Associates, Inc. Client
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Client	Auxier & Associates, Inc.
Eberline Services Work Order	15-10088
Analysis Code	UISO
Run	1

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	10/15/15 00:00	1.00E+00	104.37	0.00	0.00			
02	U-238	MBL	10/15/15 00:00	1.50E+00	103.92	0.00	0.00			
03	U-238	DUP	10/08/15 09:30	1.50E+00	95.62	0.00	0.00			
04	U-238	DO	10/08/15 09:30	1.51E+00	100.12	0.00	0.00			
05	U-238	TRG	10/08/15 09:40	1.51E+00	106.01	0.00	0.00			
06	U-238	TRG	10/08/15 09:50	1.58E+00	94.41	0.00	0.00			
07	U-238	TRG	10/08/15 10:00	1.58E+00	103.99	0.00	0.00			
08	U-238	TRG	10/08/15 10:30	1.53E+00	112.79	0.00	0.00			
09	U-238	TRG	10/08/15 10:40	1.52E+00	124.06	0.00	0.00			
10	U-238	TRG	10/08/15 10:50	1.51E+00	120.08	0.00	0.00			
11	U-238	TRG	10/08/15 11:00	1.58E+00	105.31	0.00	0.00			
12	U-238	TRG	10/08/15 11:20	1.52E+00	113.17	0.00	0.00			
13	U-238	TRG	10/08/15 11:30	1.58E+00	111.75	0.00	0.00			
14	U-238	TRG	10/08/15 11:40	1.56E+00	87.49	0.00	0.00			
15	U-238	TRG	10/08/15 13:30	1.53E+00	102.94	0.00	0.00			
16	U-238	TRG	10/08/15 13:40	1.54E+00	111.47	0.00	0.00			
17	U-238	TRG	10/08/15 13:50	1.56E+00	97.34	0.00	0.00			
18	U-238	TRG	10/08/15 14:00	1.50E+00	91.92	0.00	0.00			
19	U-238	TRG	10/08/15 14:10	1.50E+00	100.56	0.00	0.00			
20	U-238	TRG	10/08/15 14:20	1.54E+00	84.35	0.00	0.00			

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

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-238	LCS	10/29/15 08:26		A_Spec	Alpha_003	170.02	5.26 E+02	3.00 E-03	17.4
02	U-238	MBL	10/29/15 08:26		A_Spec	Alpha_004	170.02	3.40 E+01	2.00 E-03	18.9
03	U-238	DUP	10/29/15 08:26		A_Spec	Alpha_010	170.03	1.38 E+02	8.00 E-03	19.2
04	U-238	DO	10/29/15 08:26		A_Spec	Alpha_011	170	1.29 E+02	6.00 E-03	20
05	U-238	TRG	10/29/15 08:26		A_Spec	Alpha_012	170.02	1.47 E+02	2.00 E-03	19.4
06	U-238	TRG	10/29/15 08:26		A_Spec	Alpha_014	170.03	9.98 E+01	7.00 E-03	18.4
07	U-238	TRG	10/29/15 08:26		A_Spec	Alpha_015	170	1.69 E+02	2.00 E-03	23.6
08	U-238	TRG	10/29/15 08:26		A_Spec	Alpha_033	170	1.39 E+02	1.00 E-03	18
09	U-238	TRG	10/29/15 08:26		A_Spec	Alpha_034	170	1.56 E+02	4.00 E-03	17.9
10	U-238	TRG	10/29/15 08:26		A_Spec	Alpha_035	170	1.21 E+02	0.00 E+00	16.5
11	U-238	TRG	10/29/15 08:26		A_Spec	Alpha_036	170	1.12 E+02	0.00 E+00	18.1
12	U-238	TRG	10/29/15 08:26		A_Spec	Alpha_037	170	1.14 E+02	0.00 E+00	17.1
13	U-238	TRG	10/29/15 08:26		A_Spec	Alpha_038	170	1.19 E+02	0.00 E+00	16.2
14	U-238	TRG	10/29/15 08:26		A_Spec	Alpha_039	170	1.04 E+02	1.20 E-02	19.3
15	U-238	TRG	10/29/15 08:26		A_Spec	Alpha_040	170	1.37 E+02	1.00 E-03	18.6
16	U-238	TRG	10/29/15 08:26		A_Spec	Alpha_041	170	1.25 E+02	1.90 E-02	18.7
17	U-238	TRG	10/29/15 08:26		A_Spec	Alpha_042	170	1.20 E+02	4.00 E-03	17.4
18	U-238	TRG	10/29/15 08:27		A_Spec	Alpha_043	170	1.21 E+02	3.00 E-03	20
19	U-238	TRG	10/29/15 08:27		A_Spec	Alpha_044	170	1.42 E+02	1.00 E-03	18.4
20	U-238	TRG	10/29/15 08:27		A_Spec	Alpha_045	170	1.33 E+02	8.00 E-03	17.6

	1 Run
UJISO Analysis Code	15-10088 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	3.69E-01	1.67E-01	9.45E-02					OK	
02	U-235	MBL	BLANK	pCi/g	3.50E-02	4.45E-02	6.65E-02					OK	OK
03	U-235	DUP	CP4104S03-04	pCi/g	1.82E-01	9.55E-02	6.69E-02				NA	OK	
04	U-235	DO	CP4104S03-04	pCi/g	9.73E-02	6.85E-02	6.83E-02					OK	
05	U-235	TRG	CP4104S08-09	pCi/g	1.73E-01	8.77E-02	5.97E-02					OK	
06	U-235	TRG	CP4104S11-12	pCi/g	1.03E-01	7.14E-02	5.71E-02					OK	
07	U-235	TRG	CP4104S17-18	pCi/g	8.37E-02	5.35E-02	3.55E-02					OK	
08	U-235	TRG	CP1804S03-04	pCi/g	1.14E-01	6.97E-02	4.40E-02					OK	
09	U-235	TRG	CP1804S05-06	pCi/g	8.57E-02	5.78E-02	4.05E-02					OK	
10	U-235	TRG	CP1804S08-09	pCi/g	1.08E-01	6.89E-02	4.56E-02					OK	
11	U-235	TRG	CP1804S10-11	pCi/g	7.25E-02	5.72E-02	5.20E-02					OK	
12	U-235	TRG	CP1804S12-13	pCi/g	9.68E-02	6.68E-02	5.34E-02					OK	
13	U-235	TRG	CP1804S15-16	pCi/g	5.84E-02	5.65E-02	7.00E-02					OK	
14	U-235	TRG	CP1804S17-18	pCi/g	1.07E-01	8.29E-02	1.02E-01					OK	
15	U-235	TRG	CP5008S03-04	pCi/g	6.52E-02	5.43E-02	4.67E-02					OK	
16	U-235	TRG	CP5008S06-07	pCi/g	2.36E-02	3.53E-02	5.74E-02					OK	
17	U-235	TRG	CP5008S09-10	pCi/g	1.47E-01	8.63E-02	5.20E-02					OK	
18	U-235	TRG	CP5008S12-13	pCi/g	7.71E-02	6.26E-02	6.23E-02					OK	
19	U-235	TRG	CP5008S14-15	pCi/g	1.30E-01	8.15E-02	7.08E-02					OK	
20	U-235	TRG	CP5008S17-18	pCi/g	1.24E-01	8.60E-02	6.86E-02					OK	

	1 Run
UISO Analysis Code	15-10088 Eberline Services Work Order
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	10/15/15 00:00	1.00E+00	104.37	0.00	0.00			
02	U-235	MBL	10/15/15 00:00	1.50E+00	103.92	0.00	0.00			
03	U-235	DUP	10/08/15 09:30	1.50E+00	95.62	0.00	0.00			
04	U-235	DO	10/08/15 09:30	1.51E+00	100.12	0.00	0.00			
05	U-235	TRG	10/08/15 09:40	1.51E+00	106.01	0.00	0.00			
06	U-235	TRG	10/08/15 09:50	1.58E+00	94.41	0.00	0.00			
07	U-235	TRG	10/08/15 10:00	1.58E+00	103.99	0.00	0.00			
08	U-235	TRG	10/08/15 10:30	1.53E+00	112.79	0.00	0.00			
09	U-235	TRG	10/08/15 10:40	1.52E+00	124.06	0.00	0.00			
10	U-235	TRG	10/08/15 10:50	1.51E+00	120.08	0.00	0.00			
11	U-235	TRG	10/08/15 11:00	1.58E+00	105.31	0.00	0.00			
12	U-235	TRG	10/08/15 11:20	1.52E+00	113.17	0.00	0.00			
13	U-235	TRG	10/08/15 11:30	1.55E+00	111.75	0.00	0.00			
14	U-235	TRG	10/08/15 11:40	1.56E+00	87.49	0.00	0.00			
15	U-235	TRG	10/08/15 13:30	1.53E+00	102.94	0.00	0.00			
16	U-235	TRG	10/08/15 13:40	1.54E+00	111.47	0.00	0.00			
17	U-235	TRG	10/08/15 13:50	1.56E+00	97.34	0.00	0.00			
18	U-235	TRG	10/08/15 14:00	1.50E+00	91.92	0.00	0.00			
19	U-235	TRG	10/08/15 14:10	1.50E+00	100.56	0.00	0.00			
20	U-235	TRG	10/08/15 14:20	1.54E+00	84.35	0.00	0.00			

	Run	1
Client	Auxier & Associates, Inc.	
Eberline Services Work Order	15-10088	
Analysis Code	UISO	

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Defect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-235	LCS	10/29/15 08:26		A_Spec	Alpha_003	170.02	2.05 E+01	3.00 E-03	17.4
02	U-235	MBL	10/29/15 08:26		A_Spec	Alpha_004	170.02	3.15 E+00	5.00 E-03	18.9
03	U-235	DUP	10/29/15 08:26		A_Spec	Alpha_010	170.03	1.53 E+01	4.00 E-03	19.2
04	U-235	DO	10/29/15 08:26		A_Spec	Alpha_011	170	8.98 E+00	6.00 E-03	20
05	U-235	TRG	10/29/15 08:26		A_Spec	Alpha_012	170.02	1.63 E+01	4.00 E-03	19.4
06	U-235	TRG	10/29/15 08:26		A_Spec	Alpha_014	170.03	8.66 E+00	2.00 E-03	18.4
07	U-235	TRG	10/29/15 08:26		A_Spec	Alpha_015	170	9.83 E+00	1.00 E-03	23.5
08	U-235	TRG	10/29/15 08:26		A_Spec	Alpha_033	170	1.08 E+01	1.00 E-03	18
09	U-235	TRG	10/29/15 08:26		A_Spec	Alpha_034	170	8.83 E+00	1.00 E-03	17.9
10	U-235	TRG	10/29/15 08:26		A_Spec	Alpha_035	170	9.83 E+00	1.00 E-03	16.5
11	U-235	TRG	10/29/15 08:26		A_Spec	Alpha_036	170	6.66 E+00	2.00 E-03	18.1
12	U-235	TRG	10/29/15 08:26		A_Spec	Alpha_037	170	8.66 E+00	2.00 E-03	17.1
13	U-235	TRG	10/29/15 08:26		A_Spec	Alpha_038	170	5.00 E+00	0.00 E+00	16.2
14	U-235	TRG	10/29/15 08:26		A_Spec	Alpha_039	170	8.62 E+00	1.40 E-02	19.3
15	U-235	TRG	10/29/15 08:26		A_Spec	Alpha_040	170	5.83 E+00	1.00 E-03	18.6
16	U-235	TRG	10/29/15 08:26		A_Spec	Alpha_041	170	2.32 E+00	4.00 E-03	18.7
17	U-235	TRG	10/29/15 08:26		A_Spec	Alpha_042	170	1.18 E+01	1.00 E-03	17.4
18	U-235	TRG	10/29/15 08:27		A_Spec	Alpha_043	170	6.49 E+00	3.00 E-03	20
19	U-235	TRG	10/29/15 08:27		A_Spec	Alpha_044	170	1.10 E+01	0.00 E+00	18.4
20	U-235	TRG	10/29/15 08:27		A_Spec	Alpha_045	170	8.66 E+00	2.00 E-03	17.6

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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	10/15/15 00:00	1.0000	0.6498	12.1123		0.00		
02	MBL	BLANK	10/15/15 00:00	1.5000	0.6493	12.1030		0.00		
03	DUP	CP4104S03-04	10/08/15 09:30	1.5035	0.6509	12.1328		0.00		
04	DO	CP4104S03-04	10/08/15 09:30	1.5069	0.6506	12.1272		0.00		
05	TRG	CP4104S08-09	10/08/15 09:40	1.5078	0.6518	12.1496		0.00		
06	TRG	CP4104S11-12	10/08/15 09:50	1.5777	0.6514	12.1421		0.00		
07	TRG	CP4104S17-18	10/08/15 10:00	1.5757	0.6491	12.0992		0.00		
08	TRG	CP1804S03-04	10/08/15 10:30	1.5255	0.6517	12.1477		0.00		
09	TRG	CP1804S05-06	10/08/15 10:40	1.5216	0.6508	12.1309		0.00		
10	TRG	CP1804S08-09	10/08/15 10:50	1.5139	0.6513	12.1402		0.00		
11	TRG	CP1804S10-11	10/08/15 11:00	1.5825	0.6514	12.1421		0.00		
12	TRG	CP1804S12-13	10/08/15 11:20	1.5152	0.6509	12.1328		0.00		
13	TRG	CP1804S15-16	10/08/15 11:30	1.5533	0.6504	12.1235		0.00		
14	TRG	CP1804S17-18	10/08/15 11:40	1.5622	0.6505	12.1253		0.00		
15	TRG	CP5008S03-04	10/08/15 13:30	1.5321	0.6498	12.1123		0.00		
16	TRG	CP5008S06-07	10/08/15 13:40	1.5402	0.6510	12.1346		0.00		
17	TRG	CP5008S09-10	10/08/15 13:50	1.5554	0.6510	12.1346		0.00		
18	TRG	CP5008S12-13	10/08/15 14:00	1.5012	0.6507	12.1290		0.00		
19	TRG	CP5008S14-15	10/08/15 14:10	1.5008	0.6514	12.1421		0.00		
20	TRG	CP5008S17-18	10/08/15 14:20	1.5364	0.6577	12.2595		0.00		

Handwritten notes and signatures at the bottom of the page, including a large 'A' and some illegible scribbles.

Spike and Tracer Worksheet

Internal Work Order		Run	Analysis Code		Date		Technician		Technician Initials		Witness Initials		
15-10088		1	UUIISO		10/19/2015 14:42		JPACHELLA		JMP				
LCS & Matrix Spikes			LCS	MS	LCS	MS	LCS	MS	LCS	MS	LCS	MS	
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	Volume Used (g)	Volume Used (g)	Known pCi	Error Estimate	Added pCi	Error Estimate	Known pCi	Error Estimate	
U-234	U-8a	35.240	10/19/2015	0.500	0.5046		8.01	0.288	0.00	0.000	0.00	0.000	
U-238	U-8a	34.350	10/19/2015	0.500	0.5046		7.81	0.281	0.00	0.000	0.00	0.000	
T-99 MS T-2a			22043.636	7/5/2014	0.1								
Tracers													
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Tracer						LCS
01	U-232	U-10a	18.640	10/19/2015	0.6498	0.6500							
02	U-232	U-10a	18.640	10/19/2015	0.6493	0.6500							
03	U-232	U-10a	18.640	10/19/2015	0.6509	0.6500							
04	U-232	U-10a	18.640	10/19/2015	0.6506	0.6500							
05	U-232	U-10a	18.640	10/19/2015	0.6518	0.6500							
06	U-232	U-10a	18.640	10/19/2015	0.6514	0.6500							
07	U-232	U-10a	18.640	10/19/2015	0.6491	0.6500							
08	U-232	U-10a	18.640	10/19/2015	0.6517	0.6500							
09	U-232	U-10a	18.640	10/19/2015	0.6508	0.6500							
10	U-232	U-10a	18.640	10/19/2015	0.6513	0.6500							
11	U-232	U-10a	18.640	10/19/2015	0.6514	0.6500							
12	U-232	U-10a	18.640	10/19/2015	0.6509	0.6500							
13	U-232	U-10a	18.640	10/19/2015	0.6504	0.6500							
14	U-232	U-10a	18.640	10/19/2015	0.6505	0.6500							
15	U-232	U-10a	18.640	10/19/2015	0.6498	0.6500							
16	U-232	U-10a	18.640	10/19/2015	0.6510	0.6500							
17	U-232	U-10a	18.640	10/19/2015	0.6510	0.6500							
18	U-232	U-10a	18.640	10/19/2015	0.6507	0.6500							
19	U-232	U-10a	18.640	10/19/2015	0.6514	0.6500							
20	U-232	U-10a	18.640	10/19/2015	0.6577	0.6500							
Matrix Spike													

Aliquot Worksheet

Work Order		Run	Analysis Code	Rpt Units	Lab Deadline	Technician	
15-10088		1	UUISO	grams	11/5/2015	JPACHELLA	

Lab Fraction	Auxier & Associates, Inc.		Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID			Ratio Post/Pre	No. of Dilis	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	CP4104S03-04		DUP						1.5035E+00	1.5035E+00				
04	CP4104S03-04		DO						1.5069E+00	1.5069E+00				
05	CP4104S08-09		TRG						1.5078E+00	1.5078E+00				
06	CP4104S11-12		TRG						1.577E+00	1.577E+00				
07	CP4104S17-18		TRG						1.5757E+00	1.5757E+00				
08	CP1804S03-04		TRG						1.5255E+00	1.5255E+00				
09	CP1804S05-06		TRG						1.5216E+00	1.5216E+00				
10	CP1804S08-09		TRG						1.5139E+00	1.5139E+00				
11	CP1804S10-11		TRG						1.5825E+00	1.5825E+00				
12	CP1804S12-13		TRG						1.5152E+00	1.5152E+00				
13	CP1804S15-16		TRG						1.5533E+00	1.5533E+00				
14	CP1804S17-18		TRG						1.5622E+00	1.5622E+00				
15	CP5008S03-04		TRG						1.5321E+00	1.5321E+00				
16	CP5008S06-07		TRG						1.5402E+00	1.5402E+00				
17	CP5008S09-10		TRG						1.5554E+00	1.5554E+00				
18	CP5008S12-13		TRG						1.5012E+00	1.5012E+00				
19	CP5008S14-15		TRG						1.5008E+00	1.5008E+00				
20	CP5008S17-18		TRG						1.5364E+00	1.5364E+00				

Comments

Technician: JPachella Date: 10/19/15



KB
10/29/15

Apex-Alpha™

Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001325
 Batch Identification: 1510088A-UU
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_003
 Chamber Serial Number:
 Detector Serial Number: 3
 Env. Background: System Bkgd 132571
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/29/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:36 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: 0.1818 +/- 0.0103
 Counting Efficiency: 0.1742 +/- 0.0031 on 10/25/2014 6:43:48 PM
 Chem. Recovery Factor: 1.0437 +/- 0.0620

Control Certificate Name: NatU_U-8A
 Chem. Recov. of Control: U-238 0.955740 +/- 0.074168
 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	371.83	10.17	0.17	0.00E+000	30.3
U-234	4.735	470.64	9.05	1.36	0.00E+000	31.5
U-235	4.385	20.49	43.93	0.51	0.00E+000	3.0
U-238	4.154	526.49	8.55	0.51	0.00E+000	23.7

T = Tracer Peak used for Effective Efficiency

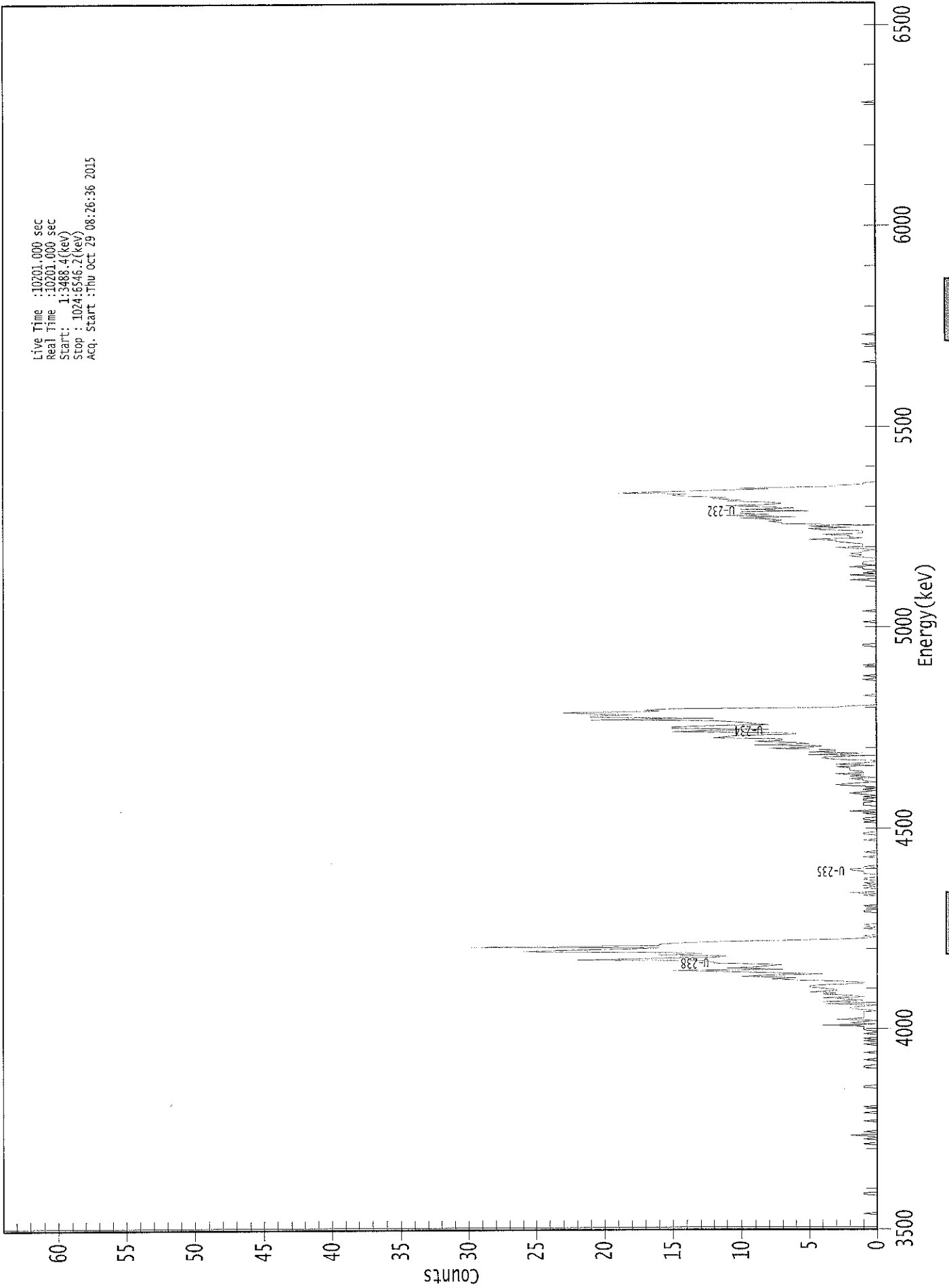
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	5.43E+000 +/- 6.04E-001	6.09E-002 +/- 6.78E-003
U-234	0.995	4761.50*	6.87E+000 +/- 9.85E-001	1.00E-001 +/- 1.11E-002
U-235	1.000	4385.50*	3.69E-001 +/- 1.67E-001	9.45E-002 +/- 1.05E-002
U-238	0.993	4184.40*	7.66E+000 +/- 1.07E+000	7.63E-002 +/- 8.49E-003

AG
10/29/15

0000132588.CNF

Live Time :10201.000 sec
Real Time :10201.000 sec
Start: 1:3488.4(keV)
Stop : 1024.6546.2(keV)
Acq. Start :Thu Oct 29 08:26:36 2015



: 000001

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: 10201
 Elapsed Real Time: 10201

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	1	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	1	1	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	1
73:	0	0	0	1	0	0	2	0
81:	0	1	0	0	0	0	0	0
89:	0	0	1	0	0	0	0	0
97:	0	1	0	0	0	0	1	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	1	1
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	1
137:	1	0	0	0	0	1	0	0
145:	0	0	0	1	0	0	0	0
153:	0	0	1	0	0	1	0	1
161:	0	0	0	1	0	0	1	1
169:	1	1	4	0	2	1	0	3
177:	1	1	1	1	1	1	0	1
185:	2	2	1	0	4	0	4	1
193:	2	4	1	2	4	3	5	3
201:	3	4	5	5	4	1	1	3
209:	6	8	6	10	8	4	8	11
217:	15	7	11	9	8	7	12	12
225:	13	22	17	12	11	16	13	14
233:	26	24	19	16	30	16	16	15
241:	12	8	3	1	0	1	0	0
249:	0	0	0	1	0	1	1	0
257:	0	0	0	0	0	0	0	0
265:	0	1	1	0	0	0	1	0
273:	0	0	0	0	0	0	0	1
281:	0	2	0	0	0	1	0	1
289:	0	1	0	0	1	1	0	0
297:	0	1	1	1	2	2	0	1
305:	0	0	0	0	0	0	0	1
313:	0	0	0	1	0	0	0	0
321:	0	0	0	0	0	1	0	0
329:	0	0	1	1	0	0	0	0
337:	0	0	0	0	1	0	1	1
345:	0	0	0	1	0	2	0	0
353:	0	0	1	1	1	0	1	1
361:	0	1	0	1	2	1	0	1

369: 0 0 2 3 2 0 1 1

Sample Title: 01

Channel	1	2	3	4	5	6	7	8
377:	2	0	2	1	3	1	1	2
385:	2	2	3	0	3	1	0	0
393:	3	4	4	0	5	1	5	3
401:	3	8	5	4	9	5	6	9
409:	7	7	12	11	10	6	6	15
417:	13	8	15	15	13	8	9	10
425:	12	21	12	21	21	18	21	23
433:	16	17	15	3	2	0	0	0
441:	0	0	0	0	0	1	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	1	0	0	1	0	0
465:	0	0	0	0	0	0	1	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	1	1
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	1	0	0	0	0	0
513:	0	0	0	1	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	0	0	0	2	0	0
545:	0	2	0	1	0	0	1	1
553:	2	0	1	1	1	0	0	0
561:	1	2	1	2	1	1	0	1
569:	3	1	1	1	2	3	3	5
577:	1	2	2	4	1	1	1	4
585:	5	2	5	0	7	7	8	7
593:	8	10	6	11	8	10	10	5
601:	10	6	8	11	8	7	8	11
609:	10	12	11	14	15	14	19	15
617:	12	8	10	3	3	1	1	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	1	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	1	0	0	0	0	0
745:	0	0	1	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	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	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



KB
10/29/15

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001325
 Batch Identification: 1510088A-UU
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_004
 Chamber Serial Number:
 Detector Serial Number: 4
 Env. Background: System Bkgd 132572
 Reagent Blank: <not performed>

Sample Size: 1.500E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/29/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:37 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.649 mL
 Effective Efficiency: 0.1966 +/- 0.0108
 Counting Efficiency: 0.1892 +/- 0.0033 on 10/25/2014 6:43:53 PM
 Chem. Recovery Factor: 1.0392 +/- 0.0599

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.275	401.83	9.78	0.17	0.00E+000	27.6
U-234	4.762	3.15	126.68	0.85	0.00E+000	2.9
U-235	4.439	3.15	126.68	0.85	0.00E+000	2.9
U-238	4.132	-0.34	592.85	0.34	0.00E+000	0.0

T = Tracer Peak used for Effective Efficiency

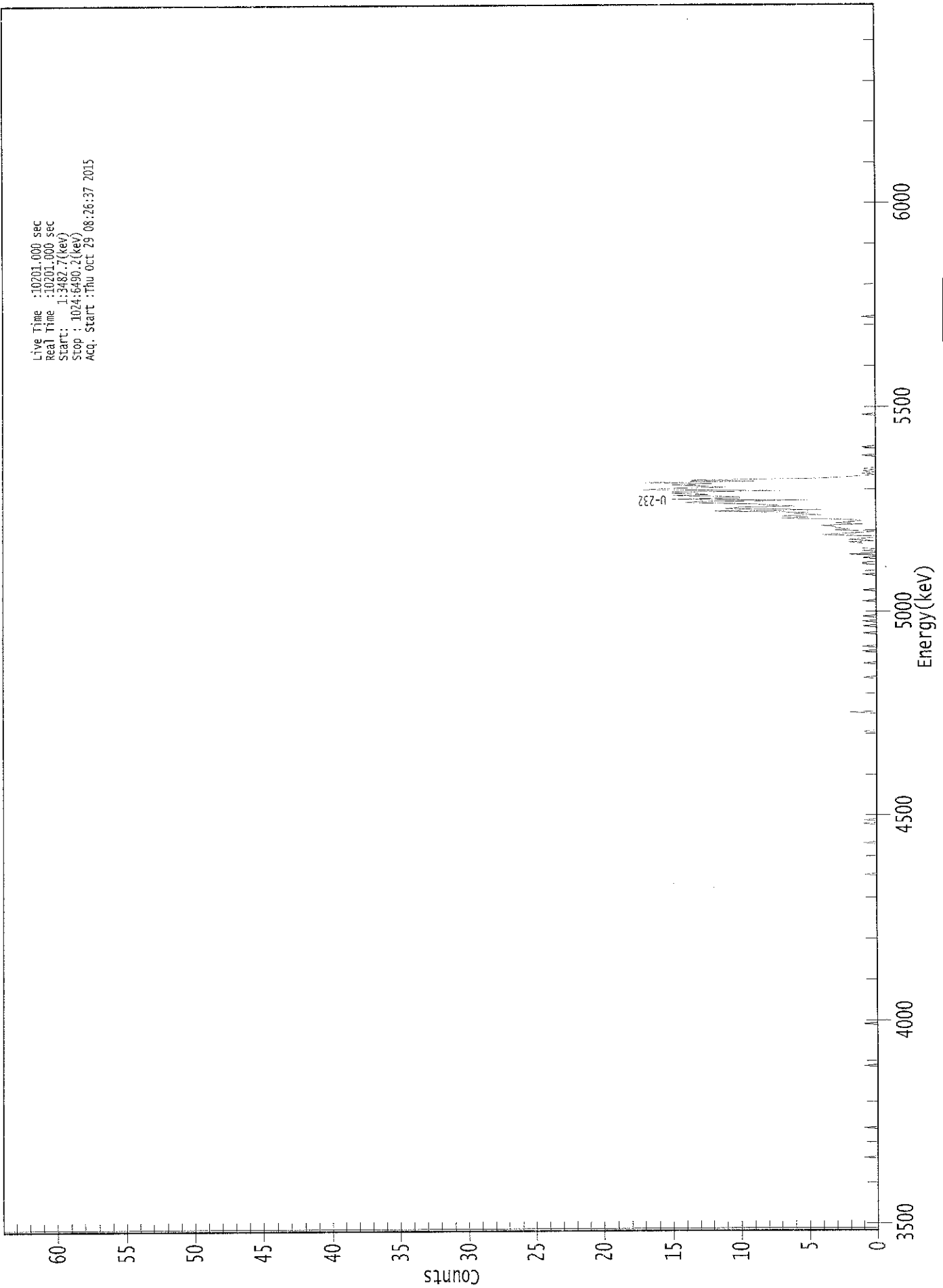
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	3.62E+000 +/- 3.90E-001	3.76E-002 +/- 4.05E-003
U-234	1.000	4761.50*	2.84E-002 +/- 3.60E-002	5.39E-002 +/- 5.80E-003
U-235	0.980	4385.50*	3.50E-002 +/- 4.45E-002	6.65E-002 +/- 7.16E-003
U-238	0.981	4184.40*	-3.05E-003 +/- 1.81E-002	4.29E-002 +/- 4.62E-003

AG
10/29/15

0000132589.CNF

Live Time :10201.000 sec
Real Time :10201.000 sec
Start : 1:3482.7(kev)
Stop : 1024:6490.2(kev)
Acq. Start :Thu Oct 29 08:26:37 2015



ROI Type: 3

ROI Type: 1

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

Sample Title: 02

Elapsed Live time: 10201
Elapsed Real Time: 10201

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	1	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	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	1	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	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	0	0
289:	0	0	0	0	0	0	0	0
297:	0	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	1	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	1	0	0	1	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	0	0

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	0	0	0	0	0
417:	1	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0
433:	2	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	1	0	0
465:	0	0	0	0	0	0	0	0
473:	0	1	0	0	0	0	0	0
481:	0	0	0	1	0	0	0	1
489:	0	0	0	0	0	0	0	0
497:	0	0	1	0	0	0	0	0
505:	1	0	0	0	1	0	0	0
513:	1	0	0	0	0	0	0	0
521:	0	0	0	0	0	1	0	0
529:	0	0	0	0	0	0	1	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	1	0	0	0	0
553:	0	0	0	0	1	1	0	0
561:	0	1	0	0	2	0	0	1
569:	0	1	1	1	1	1	2	0
577:	2	1	0	0	4	3	1	0
585:	3	2	3	3	4	1	3	2
593:	1	2	7	5	7	4	6	5
601:	12	4	11	10	6	8	9	14
609:	13	5	15	10	10	15	12	15
617:	15	7	17	15	11	13	15	12
625:	17	9	14	4	3	1	0	1
633:	0	1	0	1	0	0	0	0
641:	0	0	0	0	0	0	1	0
649:	0	0	0	0	0	1	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	1	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	1	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	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
10/29/15

Apex-Alpha™

Sample Description: CP4104S03-04-DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001325
 Batch Identification: 1510088A-UU
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_010
 Chamber Serial Number:
 Detector Serial Number: 10
 Env. Background: System Bkgd 132573
 Reagent Blank: <not performed>

Sample Size: 1.503E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:38 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: 0.1837 +/- 0.0104
 Counting Efficiency: 0.1921 +/- 0.0033 on 10/25/2014 6:44:30 PM
 Chem. Recovery Factor: 0.9562 +/- 0.0566

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	376.30	10.13	1.70	0.00E+000	14.3
U-234	4.738	156.81	15.72	1.19	0.00E+000	8.0
U-235	4.410	15.32	51.36	0.68	0.00E+000	2.9
U-238	4.157	137.64	16.80	1.36	0.00E+000	13.2

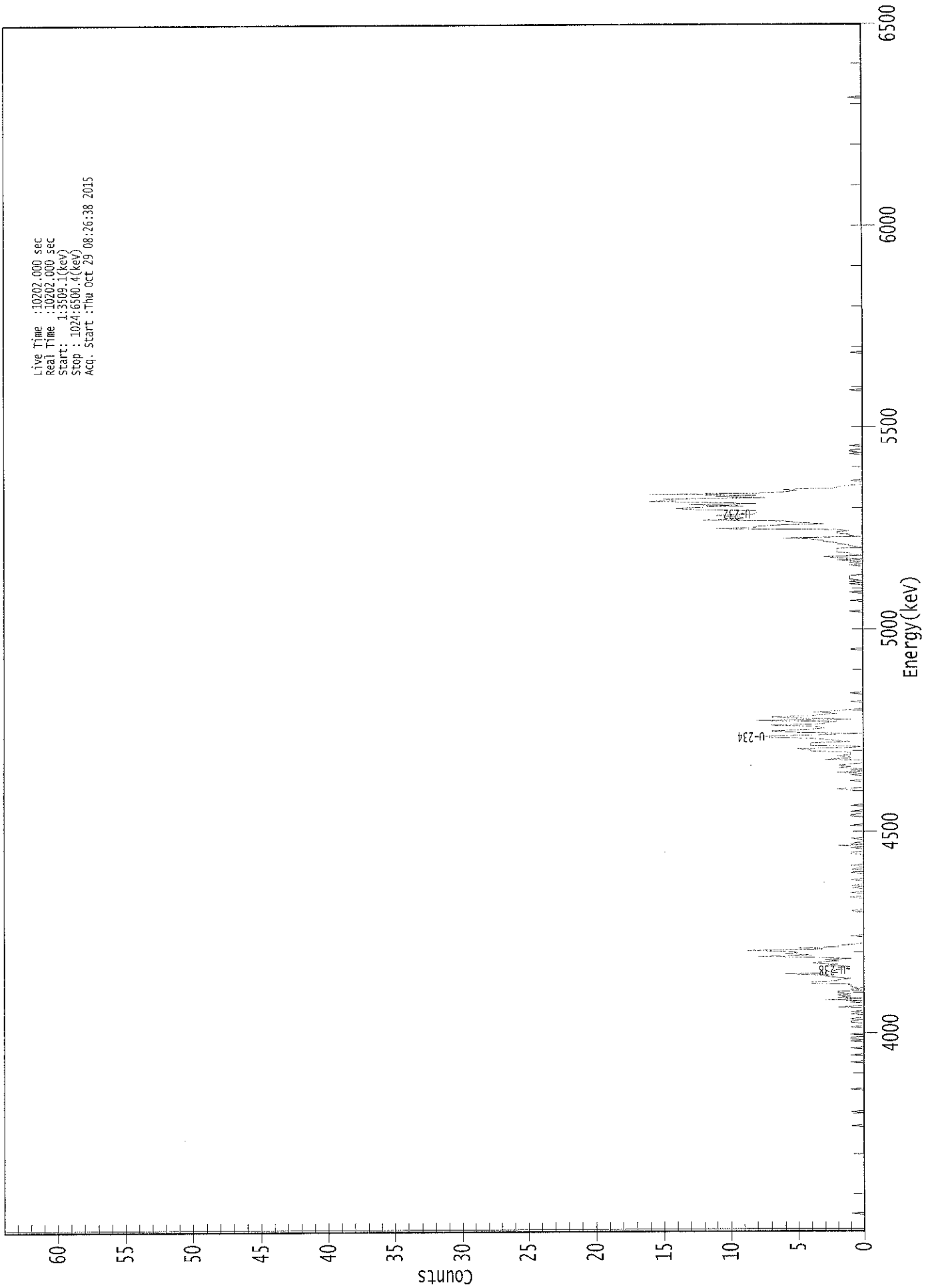
T = Tracer Peak used for Effective Efficiency

 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	3.62E+000 +/- 4.01E-001	7.07E-002 +/- 7.84E-003
U-234	0.996	4761.50*	1.51E+000 +/- 2.90E-001	6.33E-002 +/- 7.02E-003
U-235	0.996	4385.50*	1.82E-001 +/- 9.55E-002	6.69E-002 +/- 7.42E-003
U-238	0.995	4184.40*	1.32E+000 +/- 2.65E-001	6.56E-002 +/- 7.28E-003

AG
10/29/15

0000132590.CNF



Live Time :10202.000 sec
Real Time :10202.000 sec
Start : 1:3509.1(keV)
Stop : 1024:6500.4(keV)
Acq. Start :Thu Oct 29 08:26:38 2015

: 00101

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: 03

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

369: 0 0 0 0 0 0 0 1 2

Sample Title: 03

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	1	0
385:	0	0	0	1	0	2	0	1
393:	0	2	1	2	1	0	0	0
401:	3	1	1	2	1	1	1	4
409:	4	5	1	0	4	4	4	1
417:	2	3	4	8	7	3	0	5
425:	7	5	3	3	4	7	3	3
433:	2	8	1	5	7	4	3	2
441:	4	2	1	0	0	0	0	0
449:	0	1	0	0	0	0	0	0
457:	1	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	1	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	1	0	0
529:	0	0	0	0	0	0	1	0
537:	0	0	0	0	0	1	0	0
545:	0	0	0	0	1	0	1	0
553:	1	1	1	1	0	0	0	0
561:	0	0	0	0	1	0	1	0
569:	2	0	2	3	0	1	1	2
577:	2	2	2	0	1	1	2	2
585:	3	3	4	6	0	1	1	2
593:	2	1	2	11	8	8	6	3
601:	5	6	12	9	9	10	11	8
609:	8	8	8	13	14	12	9	13
617:	8	12	16	14	15	7	11	8
625:	16	7	6	5	6	2	2	1
633:	0	0	0	1	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	1	1	0	0
665:	0	1	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	1	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:	1	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	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:	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



KB
10/29/15

Sample Description: CP4104S03-04
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001325
 Batch Identification: 1510088A-UU
 Sample Identification: 04
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_011
 Chamber Serial Number:
 Detector Serial Number: 11
 Env. Background: System Bkgd 132574
 Reagent Blank: <not performed>

Sample Size: 1.507E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:39 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: 0.2006 +/- 0.0109
 Counting Efficiency: 0.2004 +/- 0.0035 on 10/25/2014 6:44:33 PM
 Chem. Recovery Factor: 1.0012 +/- 0.0573

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	410.81	9.69	1.19	0.00E+000	16.0
U-234	4.723	162.47	15.46	1.53	0.00E+000	4.4
U-235	4.376	8.98	69.62	1.02	0.00E+000	2.6
U-238	4.140	128.98	17.34	1.02	0.00E+000	5.1

T = Tracer Peak used for Effective Efficiency

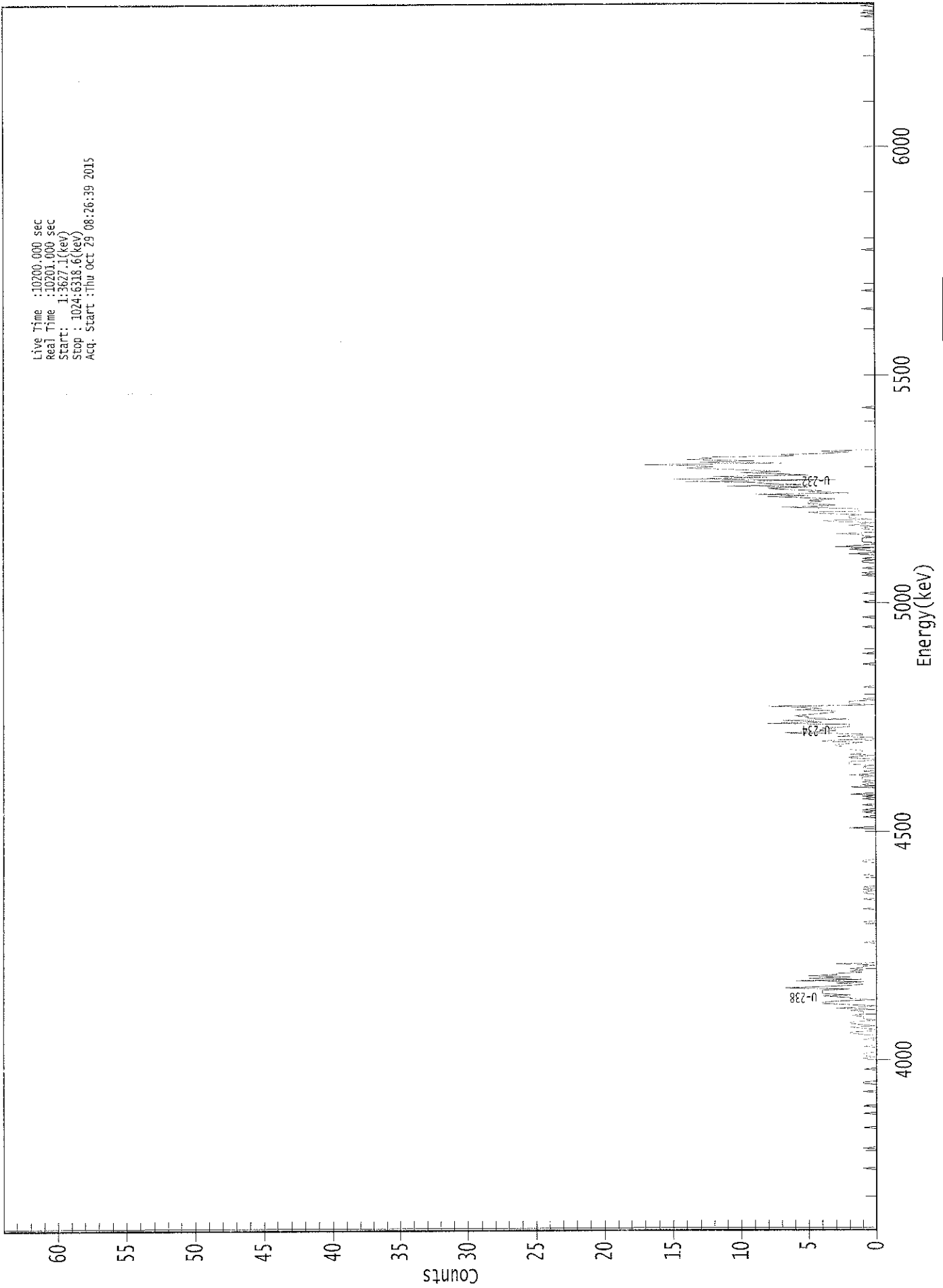
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.993	5302.50*	3.61E+000 +/- 3.86E-001	5.79E-002 +/- 6.19E-003
U-234	0.990	4761.50*	1.43E+000 +/- 2.68E-001	6.24E-002 +/- 6.67E-003
U-235	0.999	4385.50*	9.73E-002 +/- 6.85E-002	6.83E-002 +/- 7.29E-003
U-238	0.986	4184.40*	1.13E+000 +/- 2.30E-001	5.51E-002 +/- 5.89E-003

AG
10/29/15

0000132591.CNF

Live Time : 10200.000 sec
Real Time : 10201.000 sec
Start : 1:3627.1(kev)
Stop : 1024:6318.6(kev)
Acq. Start : Thu Oct 29 08:26:39 2015



ROI Type: 1

ROI Type: 3

00100

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

Sample Title: 04

Elapsed Live time: 10200

Elapsed Real Time: 10201

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10201	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	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	1	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	1	0	0
89:	0	0	0	0	0	0	0	0
97:	0	1	0	0	0	0	0	1
105:	0	0	0	0	0	0	0	0
113:	0	0	0	1	0	0	0	0
121:	0	0	1	1	0	0	0	0
129:	0	0	0	0	0	0	1	0
137:	0	0	0	0	0	0	0	1
145:	0	1	1	1	0	0	0	0
153:	0	1	0	0	0	0	0	1
161:	0	0	0	1	2	2	0	0
169:	1	2	0	1	2	2	1	0
177:	1	1	1	2	1	1	1	2
185:	0	3	1	0	2	4	4	3
193:	0	2	2	4	2	4	4	4
201:	4	2	7	4	2	1	3	1
209:	6	1	5	2	5	3	3	1
217:	2	1	2	1	1	0	3	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	1	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	1	0	0	0	0	0	0
265:	0	0	0	0	1	0	0	0
273:	0	0	0	0	1	0	0	0
281:	0	1	1	0	1	0	1	0
289:	0	0	0	0	0	0	0	0
297:	1	0	0	0	0	0	0	0
305:	0	0	0	1	1	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	2
337:	0	0	0	0	0	0	0	0
345:	1	0	0	0	1	0	1	0
353:	0	0	1	0	0	0	0	1
361:	0	1	0	2	0	0	0	0

369: 0 2 0 1 0 1 0 1

Sample Title: 04

Channel	1	2	3	4	5	6	7	8	9
377:	1	1	0	2	0	0	1	0	
385:	0	1	1	0	2	2	2	0	
393:	0	2	2	0	2	1	1	1	
401:	2	2	2	3	3	2	1	4	
409:	3	0	0	3	1	1	7	4	
417:	3	3	4	2	2	2	8	4	
425:	7	2	5	5	6	5	4	3	
433:	3	6	4	5	8	0	2	2	
441:	2	0	1	0	0	0	0	0	
449:	0	0	0	0	1	0	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:	1	0	0	0	0	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	0	0	1	0	
513:	0	0	0	0	0	0	0	0	
521:	0	0	0	1	0	0	0	0	
529:	0	0	1	0	0	0	0	0	
537:	0	0	0	0	0	0	0	0	
545:	0	1	0	1	0	0	0	1	
553:	0	0	0	0	1	1	0	1	
561:	0	0	0	2	0	0	1	2	
569:	0	3	1	0	0	1	1	1	
577:	1	0	1	1	3	0	0	0	
585:	1	1	0	2	1	0	3	4	
593:	0	2	2	2	1	4	5	1	
601:	1	2	7	4	3	5	5	4	
609:	5	3	5	8	5	9	2	5	
617:	4	7	8	5	11	5	8	9	
625:	14	3	15	8	12	5	7	10	
633:	7	9	11	14	12	13	17	7	
641:	13	9	14	12	13	6	7	4	
649:	2	4	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	1	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	1	
769:	0	0	0	0	0	0	0	0	
777:	0	0	0	0	0	0	1	0	
785:	0	0	0	0	0	0	0	0	
793:	0	0	0	0	0	0	0	0	

801: 0 0 0 0 0 0 0 0 0

Sample Title: 04

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	1	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	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:	1	0	0	0	0	0	0	0
1009:	0	0	0	1	0	0	1	0
1017:	0	0	0	0	1	0	0	0

20
10/29/15

Apex-Alpha™

Sample Description: CP4104S08-09
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001325
 Batch Identification: 1510088A-UU
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_012
 Chamber Serial Number:
 Detector Serial Number: 12
 Env. Background: System Bkgd 132575
 Reagent Blank: <not performed>

Sample Size: 1.508E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:40 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: 0.2053 +/- 0.0111
 Counting Efficiency: 0.1936 +/- 0.0034 on 10/25/2014 6:44:33 PM
 Chem. Recovery Factor: 1.0601 +/- 0.0601

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	421.15	9.56	0.85	0.00E+000	25.1
U-234	4.728	135.66	16.85	0.34	0.00E+000	4.2
U-235	4.391	16.32	49.69	0.68	0.00E+000	4.5
U-238	4.151	146.66	16.21	0.34	0.00E+000	6.2

T = Tracer Peak used for Effective Efficiency

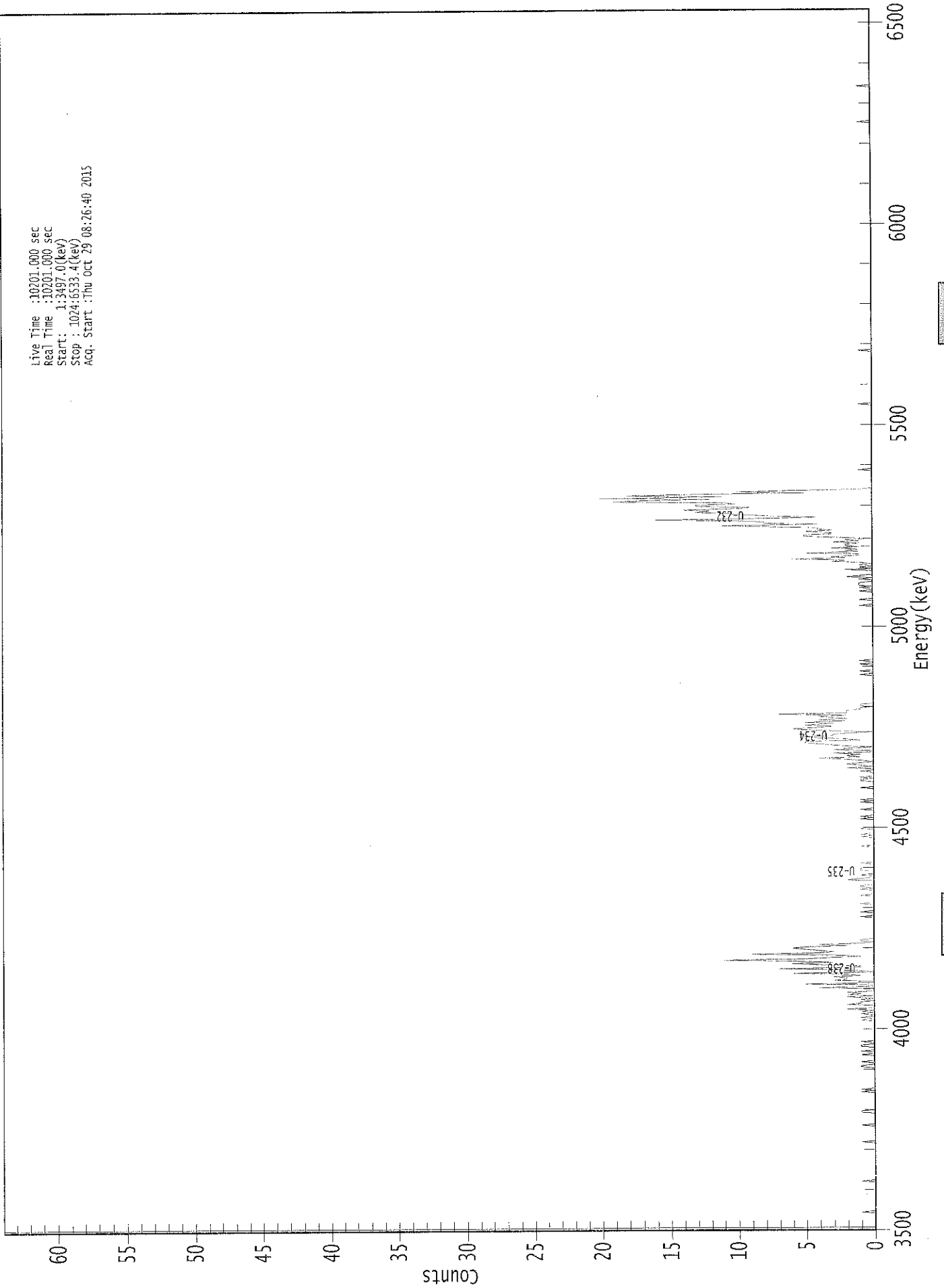
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	3.61E+000 +/- 3.82E-001	5.14E-002 +/- 5.43E-003
U-234	0.992	4761.50*	1.16E+000 +/- 2.31E-001	4.10E-002 +/- 4.34E-003
U-235	1.000	4385.50*	1.73E-001 +/- 8.77E-002	5.97E-002 +/- 6.31E-003
U-238	0.992	4184.40*	1.25E+000 +/- 2.42E-001	4.08E-002 +/- 4.32E-003

AG
 10/29/15

0000132592.CNF

Live Time :10201.000 sec
Real Time :10201.000 sec
Start : 1:3497.0(keV)
Stop : 1024:6533.4(keV)
Acq. Start :Thu Oct 29 08:26:40 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: 05

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

369: 0 0 1 0 0 0 0 0 0

Sample Title: 05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	1	1	0	1	0	0	0	0
385:	1	0	0	2	0	1	2	1
393:	0	1	2	4	1	2	1	3
401:	0	0	3	2	0	2	3	4
409:	5	5	1	2	4	5	3	3
417:	2	0	3	5	6	4	3	5
425:	3	5	2	4	2	3	4	2
433:	7	2	2	2	1	1	0	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	1	0	0	1	0	0	0
473:	0	0	1	0	0	1	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	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	1	0	0	0	0
529:	1	0	0	0	0	0	0	1
537:	0	0	1	0	1	1	1	0
545:	0	1	0	2	1	0	0	0
553:	0	2	0	1	0	1	0	1
561:	3	2	6	2	3	1	1	5
569:	1	2	1	3	1	2	2	1
577:	3	1	2	0	3	5	5	3
585:	3	5	3	4	4	8	11	4
593:	8	8	10	16	8	4	8	9
601:	11	13	12	14	10	9	13	13
609:	10	11	19	17	12	20	11	18
617:	14	5	10	6	1	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	1	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	1	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:	1	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 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:	1	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	1	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
10/29/15

Sample Description: CP4104S11-12
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001325
 Batch Identification: 1510088A-UU
 Sample Identification: 06
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_014
 Chamber Serial Number:
 Detector Serial Number: 14
 Env. Background: System Bkgd 132576
 Reagent Blank: <not performed>

Sample Size: 1.578E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:41 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: 0.1738 +/- 0.0101
 Counting Efficiency: 0.1840 +/- 0.0032 on 10/25/2014 6:45:28 PM
 Chem. Recovery Factor: 0.9441 +/- 0.0572

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	356.28	10.43	2.72	0.00E+000	12.7
U-234	4.730	113.47	18.54	1.53	0.00E+000	4.3
U-235	4.398	8.66	68.12	0.34	0.00E+000	2.9
U-238	4.149	99.81	19.76	1.19	0.00E+000	3.4

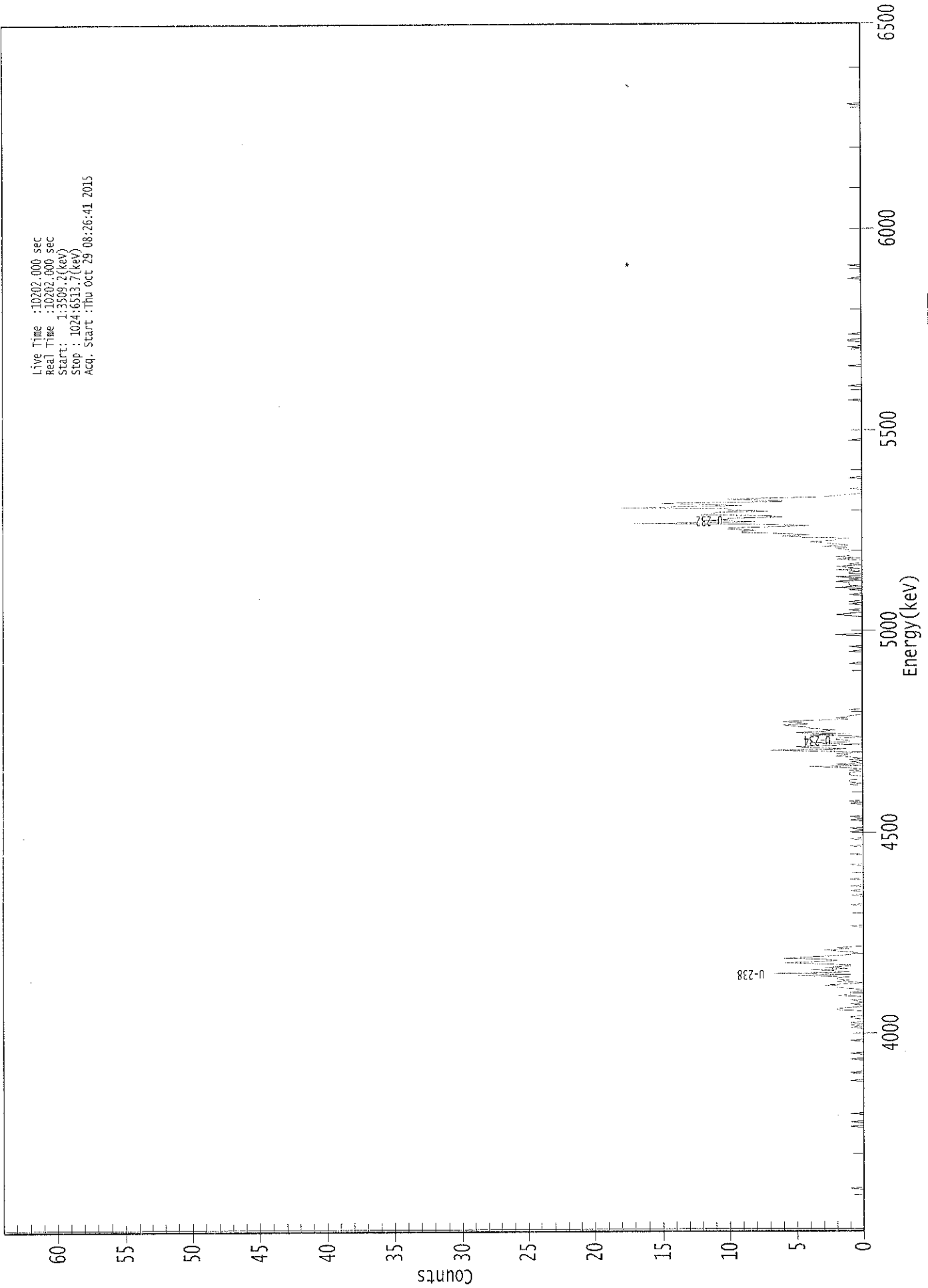
T = Tracer Peak used for Effective Efficiency

 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.45E+000 +/- 3.92E-001	8.31E-002 +/- 9.44E-003
U-234	0.993	4761.50*	1.10E+000 +/- 2.39E-001	6.88E-002 +/- 7.82E-003
U-235	0.999	4385.50*	1.03E-001 +/- 7.14E-002	5.71E-002 +/- 6.49E-003
U-238	0.991	4184.40*	9.62E-001 +/- 2.19E-001	6.35E-002 +/- 7.22E-003

AG
 10/29/15

0000132593.CNF



Live Time :10202.000 sec
Real Time :10202.000 sec
Start : 1:3509.2(kev)
Stop : 1024.6513.7(kev)
Acq. Start :Thu Oct 29 08:26:41 2015

01100

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: 06

Elapsed Live time: 10202

Elapsed Real Time: 10202

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10202	10202	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	1	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:	1	0	0	0	1	0	0	0
97:	0	0	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:	0	0	0	0	0	0	0	1
129:	0	0	0	0	0	0	1	0
137:	0	0	0	0	0	0	0	0
145:	0	1	0	0	0	0	1	0
153:	0	0	0	0	0	0	0	0
161:	0	1	0	0	0	0	0	0
169:	0	0	0	0	1	0	1	0
177:	1	0	0	0	1	1	0	0
185:	0	0	0	2	2	1	0	0
193:	1	0	0	1	0	0	0	2
201:	1	1	1	0	0	1	2	2
209:	3	1	0	2	1	2	2	1
217:	5	1	7	1	2	4	1	3
225:	1	1	4	6	3	2	3	6
233:	4	2	1	0	1	2	3	1
241:	2	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	0	0	1	0	0	0
281:	0	0	0	0	1	0	0	0
289:	1	0	0	0	1	0	0	0
297:	0	0	1	0	0	0	0	0
305:	0	0	0	0	0	0	1	0
313:	0	0	0	0	0	0	0	1
321:	0	0	0	0	0	0	1	0
329:	0	0	0	0	1	0	0	0
337:	0	0	1	0	0	1	0	0
345:	0	0	0	0	1	0	0	1
353:	0	0	0	0	0	0	0	0
361:	0	0	1	0	1	0	0	0

369: 0 0 0 0 0 0 0 0 0

Sample Title: 06

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

801: 0 0 0 0 0 0 0 1 0

Sample Title: 06

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	1	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	1	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

16
10/29/15

Apex-Alpha™

Sample Description: CP4104S17-18
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001325
 Batch Identification: 1510088A-UU
 Sample Identification: 07
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_015
 Chamber Serial Number:
 Detector Serial Number: 15
 Env. Background: System Bkgd 132577
 Reagent Blank: <not performed>

Sample Size: 1.576E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:42 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.649 mL
 Effective Efficiency: 0.2442 +/- 0.0123
 Counting Efficiency: 0.2348 +/- 0.0040 on 5/1/2015 2:28:00 PM
 Chem. Recovery Factor: 1.0399 +/- 0.0553

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	498.83	8.78	0.17	0.00E+000	24.6
U-234	4.736	139.49	16.63	0.51	0.00E+000	13.2
U-235	4.422	9.83	63.14	0.17	0.00E+000	3.0
U-238	4.149	168.66	15.11	0.34	0.00E+000	5.2

T = Tracer Peak used for Effective Efficiency

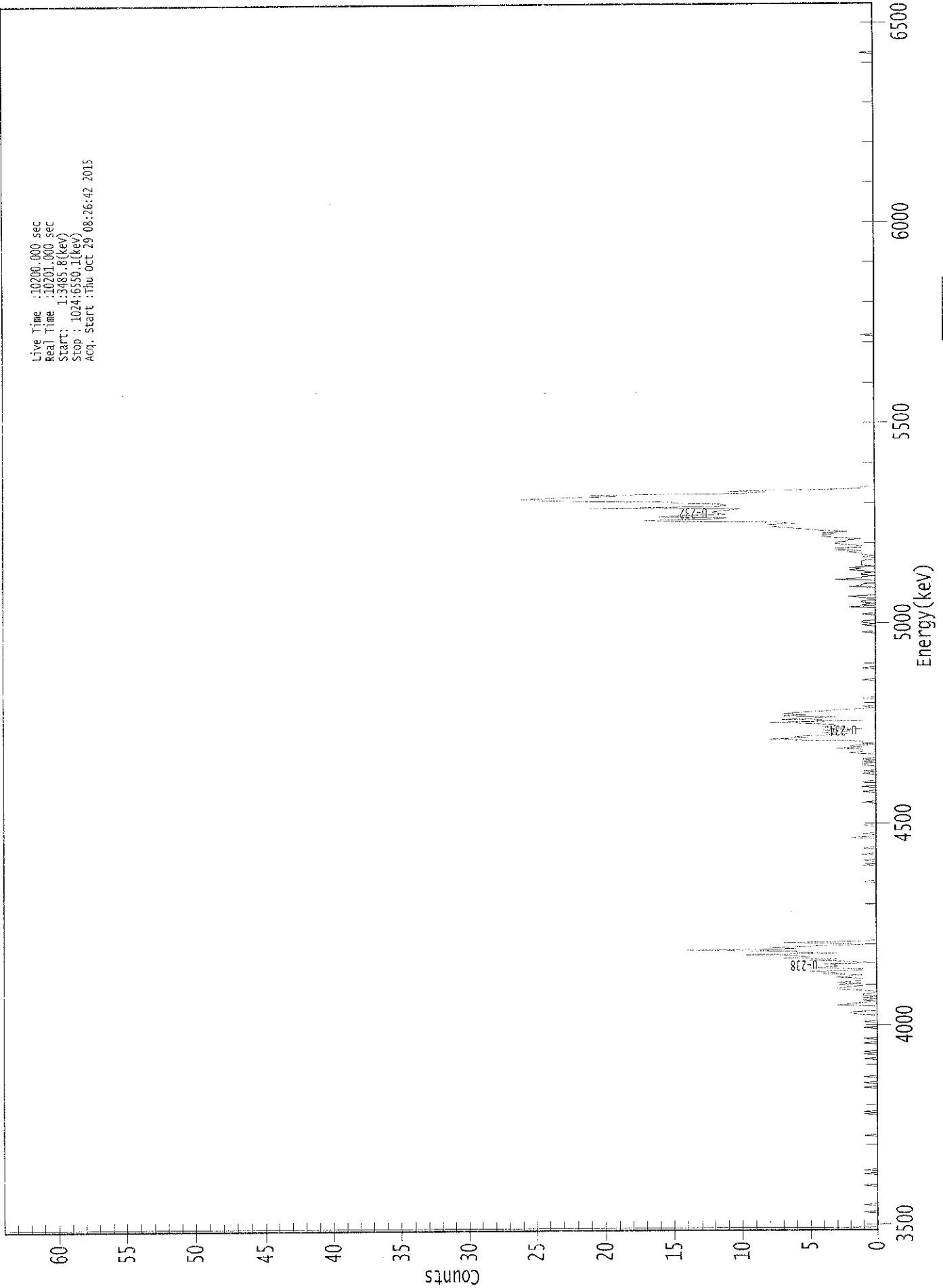
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	3.44E+000 +/- 3.40E-001	2.88E-002 +/- 2.84E-003
U-234	0.995	4761.50*	9.63E-001 +/- 1.86E-001	3.62E-002 +/- 3.57E-003
U-235	0.990	4385.50*	8.37E-002 +/- 5.35E-002	3.55E-002 +/- 3.51E-003
U-238	0.991	4184.40*	1.16E+000 +/- 2.09E-001	3.28E-002 +/- 3.24E-003

AG
 10/29/15

0000132594.CNF

Live Time :10200.000 sec
Real Time :10201.000 sec
Start : 1:3485.8(kev)
Stop : 1024:6550.1(kev)
Acq. Start :Thu Oct 29 08:26:42 2015



: 00121

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: 10201

Channel	10201	10200	0	0	0	0	0	0
1:	10201	10200	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	1
17:	0	0	0	0	0	1	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	1
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	1
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	1
121:	0	0	0	1	0	0	0	0
129:	1	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	1
145:	0	0	0	1	0	1	0	0
153:	0	0	0	0	1	0	0	0
161:	1	0	0	0	0	0	0	0
169:	0	1	0	0	0	0	1	0
177:	0	0	0	0	1	2	2	0
185:	0	0	0	0	3	2	1	0
193:	1	0	1	0	1	1	0	0
201:	1	3	3	2	1	3	1	3
209:	1	1	1	3	2	1	4	3
217:	5	1	1	5	3	3	4	0
225:	2	5	3	7	5	6	10	3
233:	6	6	14	6	8	5	1	3
241:	7	1	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	1	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	1	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	1	0	0	0	1	0	0	0
313:	0	1	0	0	0	0	1	0
321:	0	0	0	0	0	0	0	2
329:	0	0	1	0	0	0	0	0
337:	0	1	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	1	0	0	0
361:	0	0	0	0	0	1	0	0

369: 0 1 0 0 0 1 0 0

Sample Title: 07

Channel	1	2	3	4	5	6	7	8
377:	0	0	0	0	1	0	1	0
385:	0	0	0	1	1	0	1	0
393:	1	0	0	0	0	2	1	1
401:	1	3	1	2	0	1	1	1
409:	6	8	5	6	4	2	4	2
417:	4	1	3	4	3	3	5	8
425:	1	7	5	3	7	5	7	6
433:	4	3	1	0	1	0	0	0
441:	0	0	0	1	0	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	1	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	0	0	0	0	0
505:	1	0	1	1	0	0	0	0
513:	0	1	0	0	0	0	0	2
521:	0	1	0	1	1	0	0	1
529:	2	0	0	0	0	0	0	0
537:	2	1	1	0	0	0	3	1
545:	1	0	1	1	0	1	2	1
553:	2	0	1	1	1	1	1	0
561:	0	1	0	1	1	2	1	3
569:	3	1	1	2	3	3	2	2
577:	1	3	4	4	3	4	2	4
585:	5	6	7	8	8	6	7	15
593:	17	12	11	16	14	11	12	12
601:	11	10	21	12	11	11	15	15
609:	22	25	26	23	19	21	10	8
617:	11	4	1	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	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	1	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	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	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



*UB
10/28/15*

Sample Description: CP1804S03-04
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-UU
 Sample Identification: 08
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.526E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:44 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: 0.2036 +/- 0.0110
 Counting Efficiency: 0.1805 +/- 0.0032 on 10/25/2014 2:26:39 PM
 Chem. Recovery Factor: 1.1279 +/- 0.0642

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.272	417.49	9.60	0.51	0.00E+000	35.5
U-234	4.732	123.49	17.68	0.51	0.00E+000	12.6
U-235	4.402	10.83	60.10	0.17	0.00E+000	3.0
U-238	4.156	138.83	16.65	0.17	0.00E+000	7.8

T = Tracer Peak used for Effective Efficiency

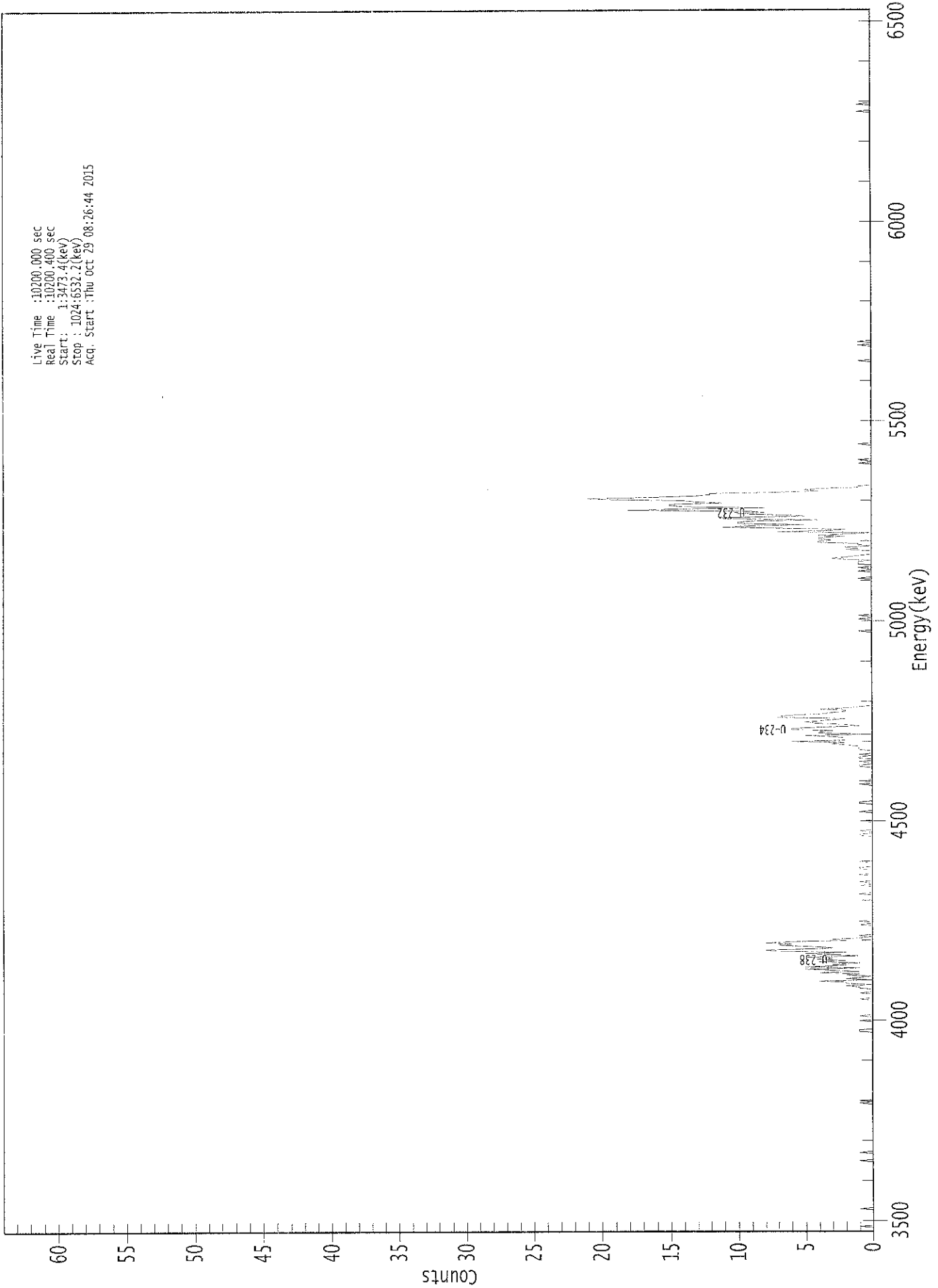
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	3.57E+000 +/- 3.79E-001	4.49E-002 +/- 4.76E-003
U-234	0.994	4761.50*	1.06E+000 +/- 2.18E-001	4.49E-002 +/- 4.76E-003
U-235	0.998	4385.50*	1.14E-001 +/- 6.97E-002	4.40E-002 +/- 4.67E-003
U-238	0.994	4184.40*	1.18E+000 +/- 2.33E-001	3.55E-002 +/- 3.77E-003

*AG
10/29/15*

0000132615.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3473.4(keV)
Stop : 1024:6532.2(keV)
Acq. Start :Thu Oct 29 08:26:44 2015



00126

ROI Type: 1

ROI Type: 3

***** SPECTRAL DATA REPORT *****

Sample Title: 08

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	1	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	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	1	0	0	0	0	0
65:	0	0	1	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	1	0	1	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	1
169:	1	0	0	0	0	0	0	0	0
177:	1	0	0	0	1	0	0	0	0
185:	0	0	0	0	0	0	0	0	0
193:	0	0	1	0	0	0	0	0	1
201:	0	0	0	1	1	2	0	0	2
209:	2	4	0	2	1	0	2	1	1
217:	4	1	3	5	1	5	2	3	3
225:	1	4	2	4	3	5	1	3	3
233:	5	2	7	8	4	3	5	7	7
241:	6	8	6	2	3	1	0	1	1
249:	0	0	0	0	0	0	0	0	0
257:	1	0	0	1	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	1	0	0	0	0	0	0
289:	0	1	0	0	1	0	0	0	0
297:	0	0	1	0	0	0	0	1	1
305:	1	0	0	0	0	1	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	1	1	0	0	1	1
337:	0	0	0	0	0	0	0	1	1
345:	0	0	0	0	0	0	0	1	1
353:	0	0	0	0	0	0	1	1	1
361:	0	0	0	0	0	0	0	0	0

369: 0 0 0 0 0 0 0 1 0

Sample Title: 08

Channel	1	2	3	4	5	6	7	8	9
377:	0	1	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	1	1	0
393:	0	1	0	0	1	1	1	0	1
401:	0	0	0	1	1	1	1	1	2
409:	3	2	6	2	2	2	2	3	5
417:	0	4	4	3	6	6	4	4	1
425:	2	4	5	4	3	2	7	7	7
433:	6	4	3	2	2	4	2	2	1
441:	0	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	1	0	0
505:	0	0	0	0	0	0	0	0	0
513:	1	0	0	1	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	0	0	0	0	0	0	0	0
545:	0	0	1	0	0	0	0	0	0
553:	1	0	0	1	0	0	1	1	1
561:	1	0	2	3	2	1	0	0	0
569:	0	0	2	1	2	0	1	1	1
577:	4	4	3	4	4	2	4	2	2
585:	0	7	3	2	7	11	9	5	5
593:	10	10	9	4	11	11	5	6	6
601:	10	8	9	18	15	8	14	15	15
609:	15	11	13	14	19	21	16	13	13
617:	12	12	7	4	5	4	1	1	1
625:	0	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0	0
641:	0	0	1	0	0	1	0	0	0
649:	0	0	0	0	0	0	0	0	0
657:	0	0	1	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:	1	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	1	0	0	0
745:	1	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: 08

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	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	1	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
10/29/15

Sample Description: CP1804S05-06
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-UU
 Sample Identification: 09
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.522E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:45 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: 0.2219 +/- 0.0116
 Counting Efficiency: 0.1789 +/- 0.0031 on 10/25/2014 2:30:05 PM
 Chem. Recovery Factor: 1.2406 +/- 0.0684

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	454.49	9.20	0.51	0.00E+000	16.9
U-234	4.737	153.49	15.85	0.51	0.00E+000	26.9
U-235	4.392	8.83	66.70	0.17	0.00E+000	3.0
U-238	4.160	156.32	15.72	0.68	0.00E+000	4.7

T = Tracer Peak used for Effective Efficiency

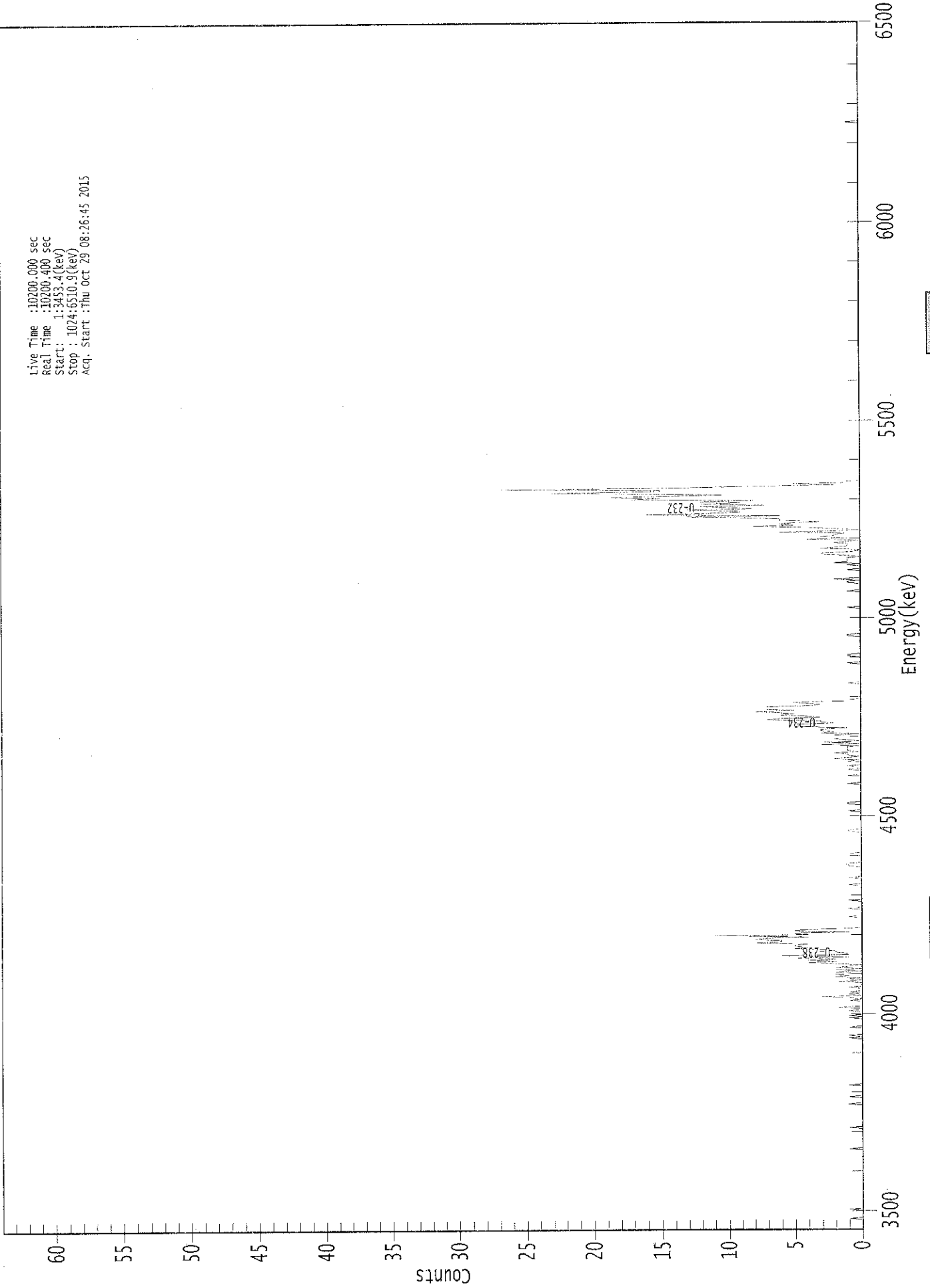
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	3.58E+000 +/- 3.66E-001	4.13E-002 +/- 4.23E-003
U-234	0.996	4761.50*	1.21E+000 +/- 2.28E-001	4.13E-002 +/- 4.23E-003
U-235	1.000	4385.50*	8.57E-002 +/- 5.78E-002	4.05E-002 +/- 4.15E-003
U-238	0.996	4184.40*	1.22E+000 +/- 2.30E-001	4.42E-002 +/- 4.53E-003

AG
10/29/15

0000132616.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:3453.4(keV)
Stop : 1024:6510.9(keV)
Acq. Start : Thu Oct 29 08:26:45 2015



ROI Type: 1

ROI Type: 3

10100

 ***** 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	1	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	1	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	1	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	1	0	0	0	0	0	0
113:	1	0	0	0	0	0	0	0	0
121:	0	0	1	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	1	0	1	0	0	0	0
169:	0	0	0	1	0	0	0	0	0
177:	0	0	0	1	0	1	0	0	0
185:	0	1	0	0	2	0	0	0	0
193:	0	0	1	0	1	3	0	1	1
201:	0	1	0	0	0	1	0	0	0
209:	0	0	2	0	1	0	2	1	1
217:	2	0	2	0	2	0	2	1	1
225:	0	2	4	2	4	2	5	1	1
233:	6	1	1	2	2	3	5	4	4
241:	5	5	4	8	6	6	8	7	7
249:	4	11	4	5	1	5	5	1	1
257:	0	0	0	0	0	0	0	0	0
265:	0	1	0	0	0	0	0	0	0
273:	1	0	0	0	0	0	0	1	1
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	1	0	0	0	0
297:	0	0	1	0	0	0	0	0	0
305:	0	0	0	0	1	1	1	0	0
313:	0	0	0	0	0	1	1	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	1	1	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0	0
353:	0	0	1	0	0	0	0	0	0
361:	1	1	0	0	0	0	0	0	0

369: 0 0 0 0 0 0 0 0 0

Sample Title: 09

Channel	1	2	3	4	5	6	7	8	9
377:	0	1	0	0	0	0	0	0	0
385:	1	0	0	0	0	1	0	0	0
393:	1	0	0	0	1	0	2	1	1
401:	0	1	1	2	0	1	1	1	1
409:	1	0	3	0	3	0	1	2	2
417:	2	2	2	0	3	2	3	3	3
425:	1	4	5	5	2	3	3	7	7
433:	6	3	4	6	5	6	8	5	5
441:	7	7	7	4	3	4	5	1	1
449:	1	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	1	0	0
465:	0	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	1	1
481:	0	0	0	0	0	1	1	0	0
489:	0	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	1	1	1
505:	0	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	1	0	0
529:	0	0	0	0	0	0	0	0	0
537:	0	0	0	0	1	0	0	0	0
545:	0	0	0	1	1	0	2	0	0
553:	0	0	0	0	0	0	1	0	0
561:	0	0	1	0	2	1	1	1	1
569:	1	0	1	3	3	1	0	0	0
577:	3	2	1	1	1	2	1	0	0
585:	4	1	3	2	2	1	6	2	2
593:	0	2	4	8	5	6	5	3	3
601:	6	6	8	13	6	16	12	9	9
609:	9	13	8	10	12	7	12	9	9
617:	12	8	17	15	19	14	10	18	18
625:	23	15	15	27	14	8	2	5	5
633:	1	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	0	0	0
665:	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	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: 09

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	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	1	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

VB
10/29/15

Sample Description: CP1804908-09
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001325
 Batch Identification: 1510088A-UU
 Sample Identification: 10
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.514E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:46 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: 0.1978 +/- 0.0108
 Counting Efficiency: 0.1647 +/- 0.0029 on 10/25/2014 2:34:10 PM
 Chem. Recovery Factor: 1.2008 +/- 0.0691

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 5.286	405.49	9.74	0.51	0.00E+000	19.4
U-234	4.742	125.83	17.49	0.17	0.00E+000	4.0
U-235	4.392	9.83	63.14	0.17	0.00E+000	3.0
U-238	4.165	121.00	17.89	0.00	0.00E+000	10.5

T = Tracer Peak used for Effective Efficiency

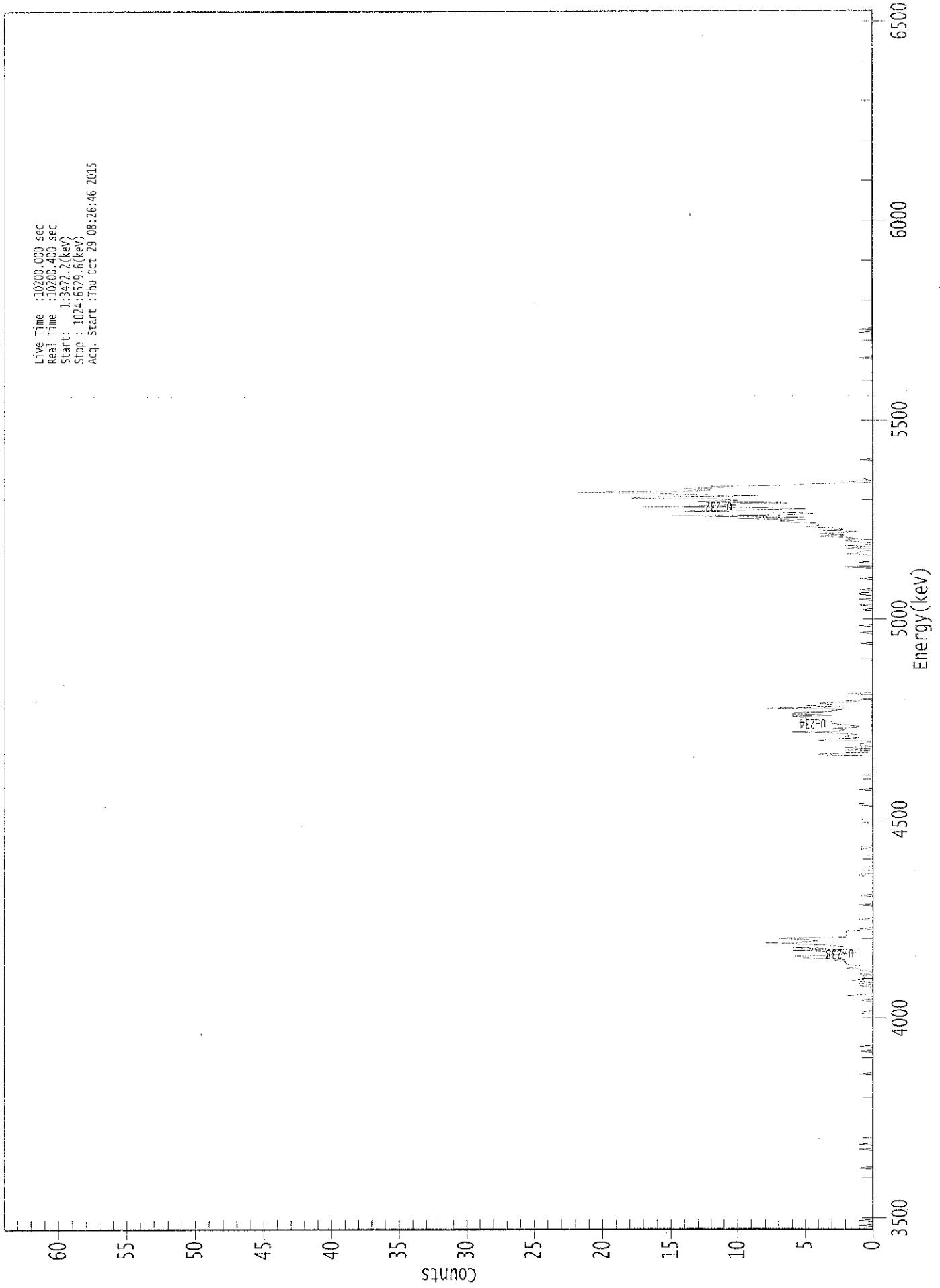
 ----- NUCLIDE ANALYSIS RESULTS -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.998	5302.50*	3.60E+000 +/- 3.86E-001	4.65E-002 +/- 5.00E-003
U-234	0.997	4761.50*	1.12E+000 +/- 2.29E-001	3.70E-002 +/- 3.97E-003
U-235	1.000	4385.50*	1.08E-001 +/- 6.89E-002	4.56E-002 +/- 4.90E-003
U-238	0.997	4184.40*	1.07E+000 +/- 2.23E-001	5.29E-002 +/- 5.68E-003

AG
10/29/15

0000132597.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:34:2.2(keV)
Stop : 1024:6529.6(keV)
Acq. Start :Thu Oct 29 08:26:46 2015



ROI Type: 3

ROI Type: 1

00136

 ***** 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	1	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	1	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	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	1	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	1	0	0
153:	0	1	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	1	1	0
185:	0	0	0	0	0	0	0	0
193:	1	0	0	0	2	0	0	0
201:	0	0	0	0	1	0	1	0
209:	2	1	0	1	1	0	1	0
217:	0	1	1	2	1	1	2	2
225:	2	3	2	4	6	6	3	2
233:	1	3	6	1	6	2	3	5
241:	8	5	4	5	7	2	2	2
249:	2	2	2	0	1	0	0	0
257:	0	0	0	0	1	0	0	0
265:	0	0	0	0	0	0	0	0
273:	1	0	0	0	0	0	0	0
281:	1	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	1	1	0	0	0	1	1
305:	1	0	0	0	0	0	0	0
313:	0	0	1	0	0	0	0	1
321:	0	1	0	0	0	0	0	0
329:	0	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	1	1	0	0
361:	0	0	0	0	0	0	0	0

369: 0 1 0 0 0 0 0 0 0

Sample Title: 10

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	0	0	0	1	0	0	0
385:	0	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	4	4	0
401:	0	0	2	0	2	0	1	1	0
409:	0	0	4	3	1	2	2	1	0
417:	2	6	2	2	3	1	1	2	0
425:	3	3	3	4	5	5	6	3	0
433:	6	6	3	3	2	8	2	5	0
441:	3	4	1	2	0	0	0	0	0
449:	0	2	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	1	0	0	0	0	0
497:	0	0	0	0	1	0	0	0	0
505:	0	0	1	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	1	0
521:	0	0	0	1	0	0	0	0	0
529:	1	0	0	0	1	1	0	0	0
537:	1	0	0	0	0	0	0	0	0
545:	0	1	0	0	0	0	0	0	0
553:	0	0	0	2	0	0	0	1	0
561:	0	0	0	0	0	0	2	1	0
569:	1	0	0	2	0	2	0	0	0
577:	1	2	2	1	2	4	2	4	0
585:	2	1	4	2	3	5	4	4	0
593:	4	6	7	5	10	5	15	7	0
601:	4	7	14	9	5	8	17	10	0
609:	11	6	13	10	11	18	17	8	0
617:	14	16	22	13	12	14	11	12	0
625:	6	5	0	2	0	1	0	0	0
633:	0	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	1	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	1	0	0	0	0	0
737:	0	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	1	0	0	1	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	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

KB
10/29/15

Apex-Alpha™

Sample Description: CP1804S10-11
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001325
 Batch Identification: 1510088A-UU
 Sample Identification: 11
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.582E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:48 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: 0.1902 +/- 0.0106
 Counting Efficiency: 0.1806 +/- 0.0032 on 10/25/2014 2:38:17 PM
 Chem. Recovery Factor: 1.0531 +/- 0.0614

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.282	389.83	9.93	0.17	0.00E+000	4.2
U-234	4.735	120.00	17.97	0.00	0.00E+000	4.7
U-235	4.386	6.66	78.18	0.34	0.00E+000	3.0
U-238	4.154	112.00	18.60	0.00	0.00E+000	9.0

T = Tracer Peak used for Effective Efficiency

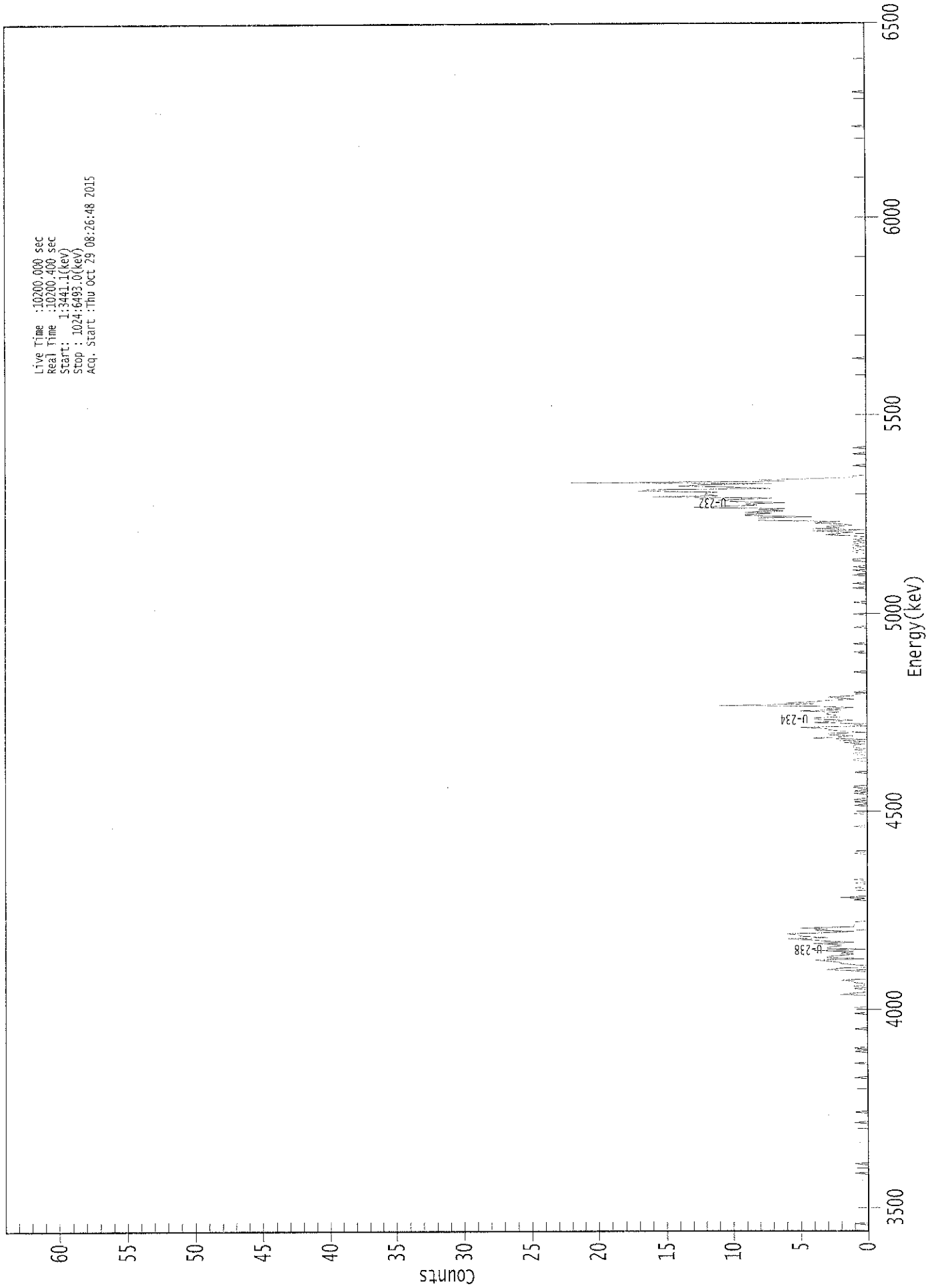
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	3.44E+000 +/- 3.75E-001	3.68E-002 +/- 4.02E-003
U-234	0.995	4761.50*	1.06E+000 +/- 2.23E-001	5.29E-002 +/- 5.77E-003
U-235	1.000	4385.50*	7.25E-002 +/- 5.72E-002	5.20E-002 +/- 5.68E-003
U-238	0.994	4184.40*	9.84E-001 +/- 2.12E-001	5.27E-002 +/- 5.75E-003

AG
10/29/15

0000132598.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:3441.1(kev)
Stop : 1024:6493.0(kev)
Acq. Start : Thu Oct 29 08:26:48 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: 11

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	1	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	1	0	0	0	0	0	0
57:	0	1	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	1	0	0	0
97:	0	0	0	0	0	1	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	1	0	0	0	0	0
137:	0	0	0	0	0	0	1	0
145:	0	0	0	0	0	0	0	0
153:	1	0	0	1	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	1	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	1	0	0	0	0	1	0	0
193:	0	0	0	0	0	0	0	0
201:	2	1	0	0	0	1	0	1
209:	0	0	1	1	2	0	0	0
217:	0	0	0	0	1	3	2	0
225:	0	1	2	2	3	4	0	3
233:	3	2	1	2	1	4	0	3
241:	3	2	2	4	1	3	4	6
249:	3	5	5	6	3	1	4	3
257:	5	1	1	1	1	1	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	1	0	2	0	0	0	0	0
289:	0	0	1	0	0	0	1	0
297:	0	1	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	1
321:	0	1	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	0	0	0	0	0	0	0
353:	0	1	0	0	0	0	0	0
361:	1	0	0	1	0	1	0	0

369: 0 0 1 0 1 0 0 0 1

Sample Title: 11

Channel	1	2	3	4	5	6	7	8	9
377:	1	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	1	0	0	0
393:	0	0	0	0	0	0	0	1	1
401:	0	0	0	1	1	0	0	0	1
409:	0	1	1	1	0	2	0	0	2
417:	0	4	2	1	3	3	0	0	2
425:	3	3	5	0	1	0	4	0	3
433:	1	4	4	2	2	3	3	0	2
441:	5	2	3	1	4	11	4	0	6
449:	4	3	1	2	3	1	1	0	0
457:	1	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	1	0	0	0	0	0	0
497:	0	1	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	1
513:	0	0	0	0	0	0	0	0	0
521:	0	0	1	0	0	0	0	0	0
529:	0	0	0	0	1	0	0	0	0
537:	0	0	0	0	0	0	0	0	0
545:	1	0	0	0	1	0	0	0	0
553:	0	0	0	1	0	0	0	0	1
561:	0	0	1	0	0	0	0	0	1
569:	1	0	0	0	0	0	1	0	1
577:	0	1	1	0	1	1	0	0	1
585:	0	1	0	0	1	3	2	0	1
593:	4	0	4	2	3	1	2	0	4
601:	2	8	8	8	4	9	9	0	7
609:	9	6	8	6	13	11	8	0	9
617:	6	10	11	9	7	16	11	0	12
625:	12	11	17	16	7	10	14	0	12
633:	7	22	6	8	4	1	1	0	0
641:	0	0	0	0	0	0	0	0	1
649:	0	0	0	0	0	0	0	0	0
657:	0	1	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	1	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: 11

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	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	1	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

KCB
10/29/15

Sample Description: CP1804S12-13
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001325
 Batch Identification: 1510088A-UU
 Sample Identification: 12
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.515E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:49 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: 0.1934 +/- 0.0107
 Counting Efficiency: 0.1709 +/- 0.0030 on 10/25/2014 2:46:09 PM
 Chem. Recovery Factor: 1.1317 +/- 0.0657

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	5.276	396.15	9.86	0.85	0.00E+000	13.4
U-234	4.730	94.49	20.23	0.51	0.00E+000	6.3
U-235	4.415	8.66	68.12	0.34	0.00E+000	3.0
U-238	4.154	114.00	18.44	0.00	0.00E+000	5.0

T = Tracer Peak used for Effective Efficiency

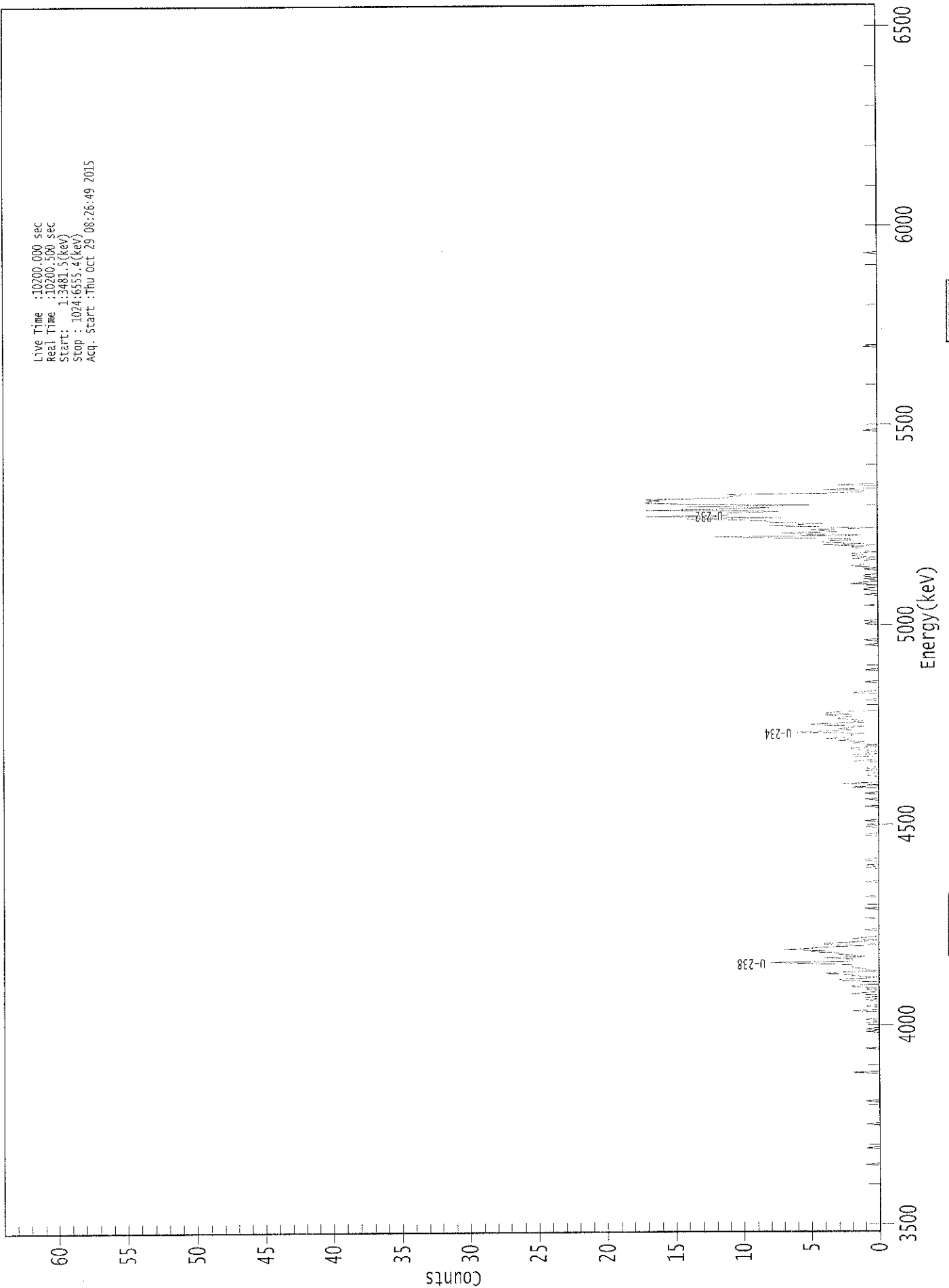
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	3.59E+000 +/- 3.89E-001	5.43E-002 +/- 5.89E-003
U-234	0.993	4761.50*	8.56E-001 +/- 1.96E-001	4.75E-002 +/- 5.16E-003
U-235	0.994	4385.50*	9.68E-002 +/- 6.68E-002	5.34E-002 +/- 5.79E-003
U-238	0.994	4184.40*	1.03E+000 +/- 2.20E-001	5.41E-002 +/- 5.87E-003

AG
10/29/15

0000132595.CNF

Live Time : 10200.000 sec
Real Time : 10280.500 sec
Start : 1:3481.5(keV)
Stop : 1024:6555.4(keV)
Acq. Start : Thu Oct 29 08:26:49 2015



ROI Type: 3

ROI Type: 1

: 00146

 ***** 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: 10201

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

369: 0 0 2 0 0 3 0 0

Sample Title: 12

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	1	1	0	0
385:	1	0	1	0	0	0	0	0
393:	2	0	0	0	2	2	0	1
401:	0	1	2	2	0	1	0	2
409:	1	3	2	4	2	2	2	1
417:	6	4	2	3	2	1	4	5
425:	1	2	1	3	3	2	4	2
433:	4	3	0	0	0	0	0	0
441:	0	0	0	1	0	0	0	0
449:	0	2	1	0	0	0	0	0
457:	0	0	1	0	0	0	0	0
465:	0	0	0	0	1	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	1	0	0	0	1	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	1	0	1	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	1	0	0	0	0	0
529:	0	0	0	1	0	0	0	1
537:	1	0	0	0	2	1	0	0
545:	1	0	1	1	0	0	0	0
553:	1	0	1	2	1	1	1	1
561:	0	2	0	2	1	2	0	1
569:	1	1	2	1	4	1	4	4
577:	2	2	8	12	1	5	7	3
585:	4	5	0	3	8	6	4	8
593:	8	10	14	7	17	11	11	11
601:	7	17	11	8	14	5	14	17
609:	17	16	17	11	11	10	11	3
617:	1	1	4	0	0	0	3	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	1	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	1	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 12

Channel								
809:	0	0	0	0	0	0	0	1
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

10/29/15

Apex-Alpha™

Sample Description: CP1804S15-16
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001325
 Batch Identification: 1510088A-UU
 Sample Identification: 13
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.553E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:51 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: 0.1805 +/- 0.0103
 Counting Efficiency: 0.1615 +/- 0.0029 on 10/25/2014 2:50:18 PM
 Chem. Recovery Factor: 1.1175 +/- 0.0666

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.290	369.49	10.20	0.51	0.00E+000	12.1
U-234	4.737	112.32	18.56	0.68	0.00E+000	4.8
U-235	4.389	5.00	96.02	0.00	0.00E+000	3.0
U-238	4.160	119.00	18.04	0.00	0.00E+000	10.2

T = Tracer Peak used for Effective Efficiency

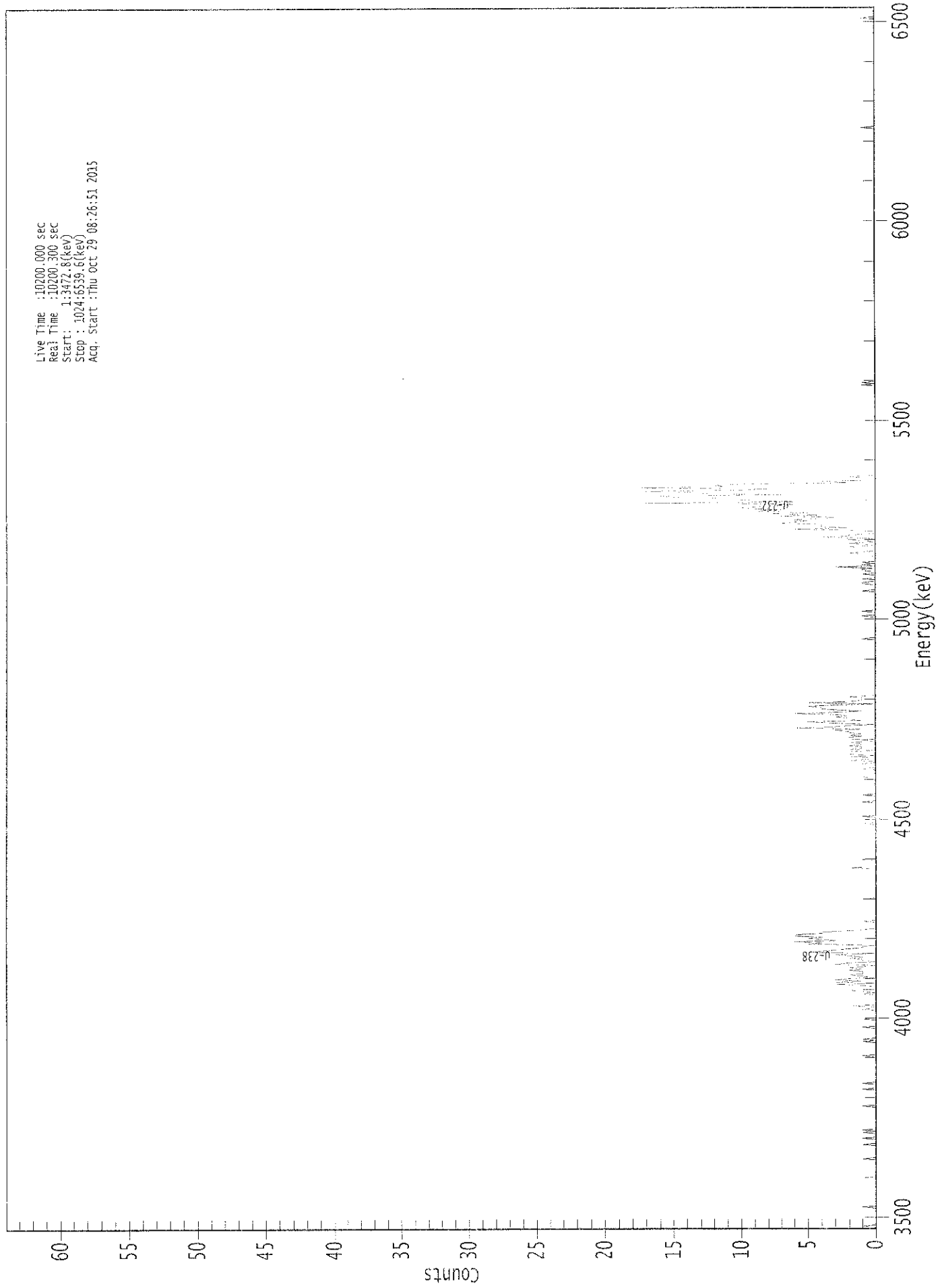
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	3.50E+000 +/- 3.91E-001	4.97E-002 +/- 5.55E-003
U-234	0.996	4761.50*	1.06E+000 +/- 2.30E-001	5.34E-002 +/- 5.96E-003
U-235	1.000	4385.50*	5.84E-002 +/- 5.65E-002	7.00E-002 +/- 7.81E-003
U-238	0.996	4184.40*	1.12E+000 +/- 2.38E-001	5.65E-002 +/- 6.31E-003

AG
 10/29/15

0000132596.CNF

Live Time : 10200.000 Sec
Rea: Time : 10200.300 Sec
Start : 1:3472.8(keV)
Stop : 1024:5539.6(keV)
Acq. Start : Thu Oct 29 08:26:51 2015



: 00151

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	1	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	1	0	0	0	0	0	0
25:	0	0	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	1	0	0	0	0	0	0
65:	0	0	0	0	0	0	1	0	0
73:	0	0	0	1	0	0	0	0	0
81:	1	0	1	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	1	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	1	0	0	0	0
121:	0	1	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:	1	0	0	0	0	0	0	0	0
153:	0	0	0	0	1	0	1	0	0
161:	0	0	0	0	0	0	0	0	0
169:	1	0	0	0	0	0	0	0	1
177:	0	0	0	0	0	0	0	0	1
185:	0	0	2	0	0	0	0	0	0
193:	0	0	0	0	1	0	1	2	0
201:	0	0	0	1	3	0	3	1	0
209:	3	2	0	1	2	1	1	1	0
217:	2	1	2	1	0	3	2	0	0
225:	1	1	2	1	2	3	0	5	0
233:	4	3	2	1	1	0	5	4	0
241:	6	3	4	5	4	6	6	4	0
249:	4	2	1	0	0	0	0	0	0
257:	0	1	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	1	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	2	0	0
305:	0	0	0	0	0	1	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	1	0	0	0	0	0
345:	0	1	0	0	0	0	0	0	0
353:	0	0	0	0	0	1	0	0	0
361:	0	0	0	1	0	0	0	0	0

369: 0 0 0 0 0 0 0 0 0

Sample Title: 13

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	1	0	0	0	0	0	0
385:	0	1	0	0	0	1	0	0	0
393:	2	0	0	2	0	2	2	2	2
401:	0	2	1	1	2	1	1	2	2
409:	0	1	2	2	1	2	1	2	2
417:	2	3	1	6	3	2	0	3	3
425:	5	1	2	2	3	2	3	6	6
433:	3	1	3	4	4	5	3	0	0
441:	5	2	1	1	1	2	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	1	0	0	0
497:	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0
513:	1	0	0	0	1	0	0	0	0
521:	0	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	1	0	0	0
537:	0	0	0	1	1	0	0	1	1
545:	0	0	0	1	0	0	1	1	1
553:	0	3	0	1	0	1	0	0	0
561:	0	0	0	1	1	2	0	1	1
569:	1	1	2	0	1	2	0	1	1
577:	2	0	4	2	2	0	0	0	0
585:	2	6	2	4	4	4	7	6	6
593:	5	6	4	3	7	4	8	5	5
601:	9	7	9	10	8	7	6	17	17
609:	6	8	11	11	15	16	7	13	13
617:	13	17	10	8	18	11	12	10	10
625:	2	4	1	1	1	2	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	1	0	1	0	0	0	0
713:	0	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	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: 13

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	1	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	1	0	0
1017:	0	0	0	0	0	0	0	0

10/29/15

Apex-Alpha™

Sample Description: CP1804S17-18
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-UU
 Sample Identification: 14
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.562E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:53 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: 0.1692 +/- 0.0099
 Counting Efficiency: 0.1934 +/- 0.0034 on 10/25/2014 2:53:34 PM
 Chem. Recovery Factor: 0.8749 +/- 0.0535

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	346.45	10.58	2.55	0.00E+000	4.8
U-234	4.735	111.47	18.71	1.53	0.00E+000	4.1
U-235	4.413	8.62	76.79	2.38	0.00E+000	3.0
U-238	4.157	103.96	19.44	2.04	0.00E+000	18.0

T = Tracer Peak used for Effective Efficiency

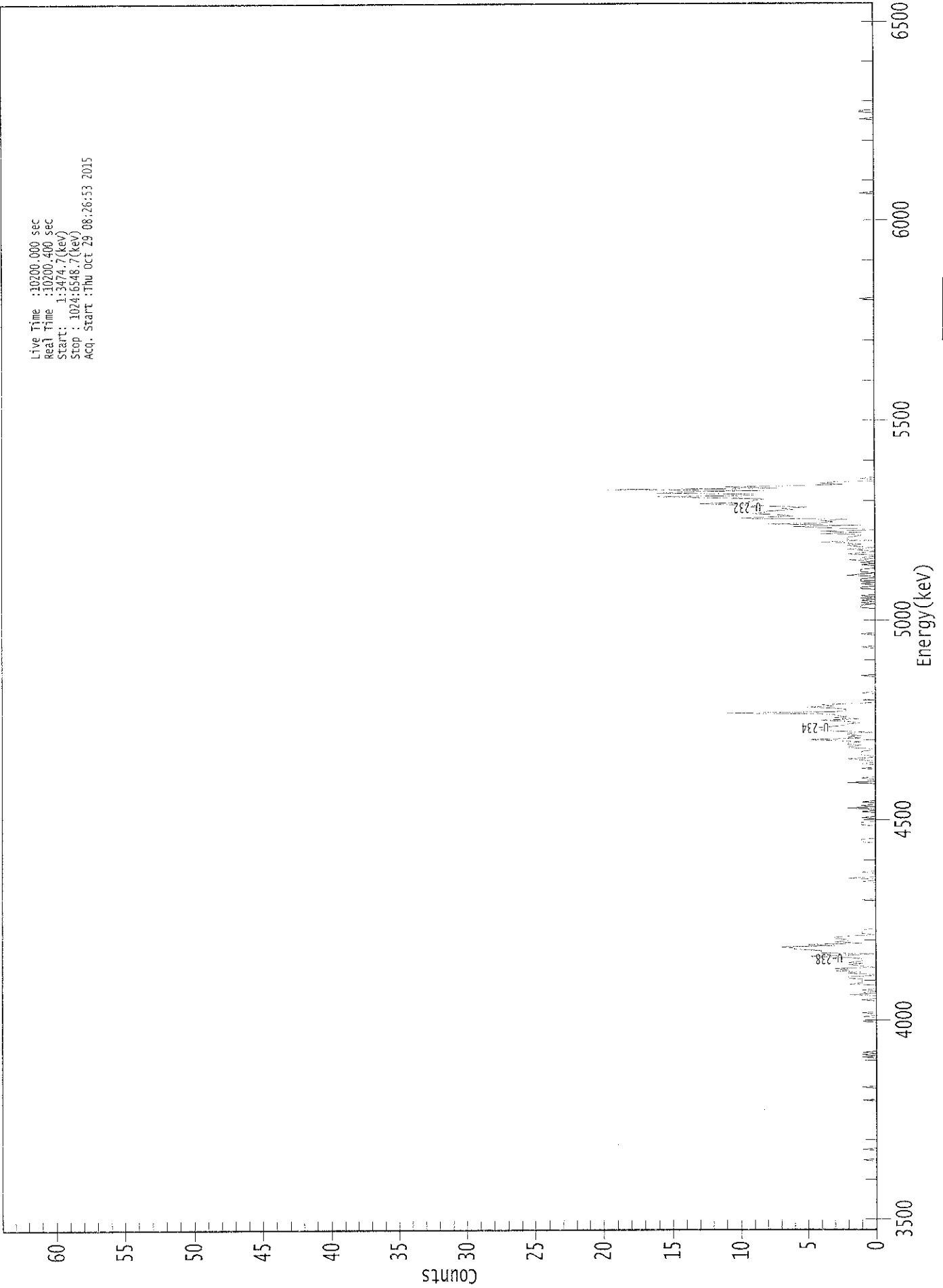
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.998	5302.50*	3.48E+000 +/- 4.00E-001	8.43E-002 +/- 9.69E-003
U-234	0.995	4761.50*	1.12E+000 +/- 2.46E-001	7.14E-002 +/- 8.21E-003
U-235	0.995	4385.50*	1.07E-001 +/- 8.29E-002	1.02E-001 +/- 1.17E-002
U-238	0.995	4184.40*	1.04E+000 +/- 2.35E-001	7.79E-002 +/- 8.96E-003

AG
 10/29/15

0000132617.CNF

Live Time :10200.000 Sec
Real Time :10200.600 Sec
Start : 1:3474.7(keV)
Stop : 1024:6548.7(keV)
Acq. Start :Thu Oct 29 08:26:53 2015



:: 00150

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: 14

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	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	1	0	0	0	0	0	0
65:	0	0	0	1	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	1	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:	0	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	1	0	1	0	1	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	1	0	0
177:	0	0	1	0	0	1	0	0	0
185:	0	0	0	0	0	0	0	0	0
193:	1	0	0	0	2	0	1	0	0
201:	1	0	0	0	0	2	1	1	1
209:	1	1	2	2	0	0	2	1	1
217:	3	2	3	0	1	2	1	2	2
225:	1	1	1	2	5	2	0	4	4
233:	4	4	6	6	7	3	5	1	1
241:	3	2	2	3	3	2	0	1	1
249:	1	1	1	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	0	0	0	0	0
289:	0	0	1	0	0	2	0	0	0
297:	0	0	1	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	1	1	1	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	1	1	1	0	0	0	1	1
345:	0	0	0	0	1	0	0	2	2
353:	0	1	0	0	1	0	0	0	0
361:	0	0	0	0	0	0	0	0	0

369: 0 0 0 0 2 0 0 0

Sample Title: 14

Channel	1	2	3	4	5	6	7	8	9
377:	1	0	0	0	0	0	0	0	0
385:	1	0	0	0	1	0	0	0	1
393:	2	0	0	1	1	1	1	1	0
401:	0	2	2	1	2	2	1	3	
409:	5	1	2	1	2	2	0	3	
417:	4	4	4	3	2	2	1	2	
425:	4	1	3	2	3	3	11	3	
433:	2	2	3	5	3	4	1	0	
441:	0	1	0	0	0	0	0	1	
449:	0	0	0	0	0	0	0	0	
457:	0	0	0	0	0	1	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	1	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	1	1	
521:	1	0	1	0	1	0	1	0	
529:	1	0	0	0	0	0	1	1	
537:	0	0	1	0	1	1	1	0	
545:	0	2	1	0	1	1	1	0	
553:	0	0	1	0	1	0	2	0	
561:	1	0	0	2	1	0	1	2	
569:	0	1	2	1	2	4	1	2	
577:	2	2	1	1	4	1	4	0	
585:	1	4	6	1	8	4	3	4	
593:	2	10	8	6	7	9	8	8	
601:	6	7	5	8	10	13	10	9	
609:	9	8	12	16	9	9	16	14	
617:	8	20	7	11	6	2	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	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	1	
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: 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	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	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	1	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™

KB
10/29/15

Sample Description: CP5008S03-04
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-UU
 Sample Identification: 15
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.532E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:55 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: 0.1910 +/- 0.0106
 Counting Efficiency: 0.1856 +/- 0.0032 on 10/25/2014 2:57:14 PM
 Chem. Recovery Factor: 1.0294 +/- 0.0600

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.276	390.66	9.92	0.34	0.00E+000	10.0
U-234	4.734	141.83	16.47	0.17	0.00E+000	13.4
U-235	4.393	5.83	82.55	0.17	0.00E+000	3.0
U-238	4.157	136.83	16.77	0.17	0.00E+000	6.4

T = Tracer Peak used for Effective Efficiency

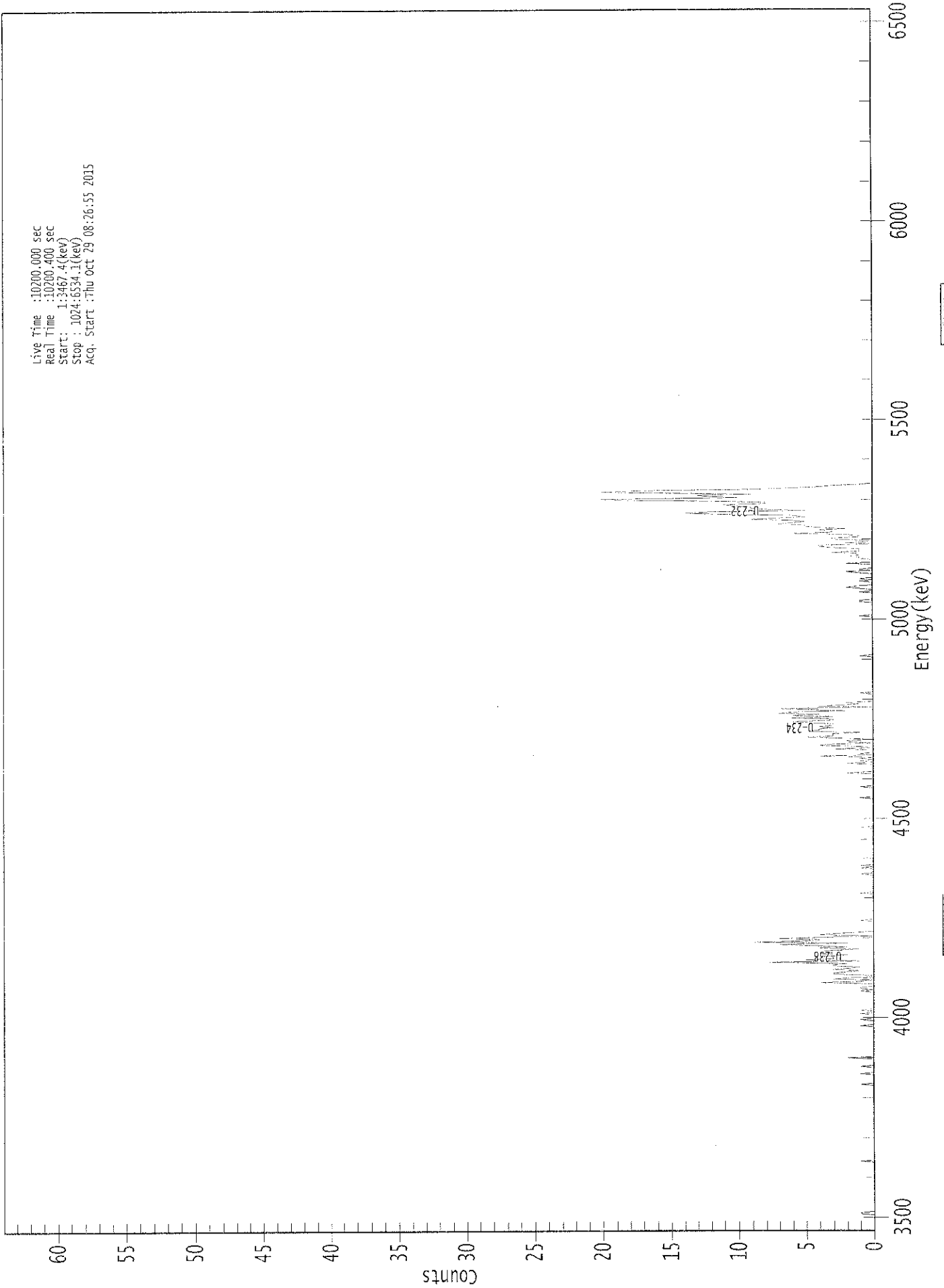
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	3.55E+000 +/- 3.86E-001	4.34E-002 +/- 4.73E-003
U-234	0.994	4761.50*	1.29E+000 +/- 2.54E-001	3.79E-002 +/- 4.13E-003
U-235	1.000	4385.50*	6.52E-002 +/- 5.43E-002	4.67E-002 +/- 5.09E-003
U-238	0.995	4184.40*	1.24E+000 +/- 2.47E-001	3.77E-002 +/- 4.11E-003

AG
10/29/15

0000132618.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3467.4(keV)
Stop : 1024:6534.1(keV)
Acq. Start :Thu Oct 29 08:26:55 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	1	1
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	1	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	1	0	0	0	0	0	0
129:	0	0	0	1	0	0	0	0	0
137:	0	1	0	0	0	0	0	0	0
145:	2	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	1	0	0	0	0	0
177:	1	0	0	0	0	1	0	0	0
185:	1	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0	0
201:	1	0	1	1	0	0	0	4	4
209:	1	0	3	2	0	0	3	3	3
217:	2	1	3	2	1	3	3	2	2
225:	8	1	5	3	3	4	2	4	4
233:	3	4	3	1	4	2	5	7	7
241:	2	9	5	4	7	4	0	4	4
249:	3	1	0	0	0	0	0	0	0
257:	0	0	0	1	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	1	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	1	0	0	0	0	1	1
305:	0	1	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	1	1
329:	0	0	0	0	0	0	0	0	0
337:	0	1	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	1	0	0	0	0	0	0

369: 0 0 0 1 0 0 0 0

Sample Title: 15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	0	2
385:	0	0	0	0	0	0	0	2
393:	0	1	0	1	0	4	0	1
401:	0	0	0	3	0	1	4	3
409:	0	2	2	0	2	5	3	3
417:	3	1	5	4	4	3	4	3
425:	3	5	6	3	3	6	3	6
433:	4	7	6	2	5	7	0	4
441:	2	1	2	0	0	0	0	0
449:	0	0	1	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	1	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	1	0	0	0	0	0
521:	0	0	0	0	0	0	1	1
529:	0	0	0	0	0	0	1	0
537:	0	1	2	1	0	0	0	1
545:	0	1	0	0	0	0	1	2
553:	0	1	0	0	0	0	2	0
561:	0	0	1	1	2	1	1	3
569:	1	1	1	3	4	4	0	2
577:	0	0	3	3	1	1	2	6
585:	3	3	4	2	4	5	5	7
593:	6	5	6	9	7	5	6	10
601:	14	12	5	8	9	9	10	11
609:	8	8	11	18	20	10	12	13
617:	9	16	20	17	9	6	4	3
625:	1	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	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

KD
10/29/15

Apex-Alpha™

Sample Description: CP5008S06-07
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001325
 Batch Identification: 1510088A-UU
 Sample Identification: 16
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_041
 Chamber Serial Number: 05026930A
 Detector Serial Number: 91087
 Env. Background: System Bkgd 132586
 Reagent Blank: <not performed>

Sample Size: 1.540E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:56 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: 0.2088 +/- 0.0112
 Counting Efficiency: 0.1873 +/- 0.0033 on 10/25/2014 3:00:28 PM
 Chem. Recovery Factor: 1.1147 +/- 0.0628

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	427.81	9.49	1.19	0.00E+000	32.0
U-234	4.732	124.32	17.63	0.68	0.00E+000	8.1
U-235	4.438	2.32	149.12	0.68	0.00E+000	3.0
U-238	4.155	124.77	17.81	3.23	0.00E+000	7.0

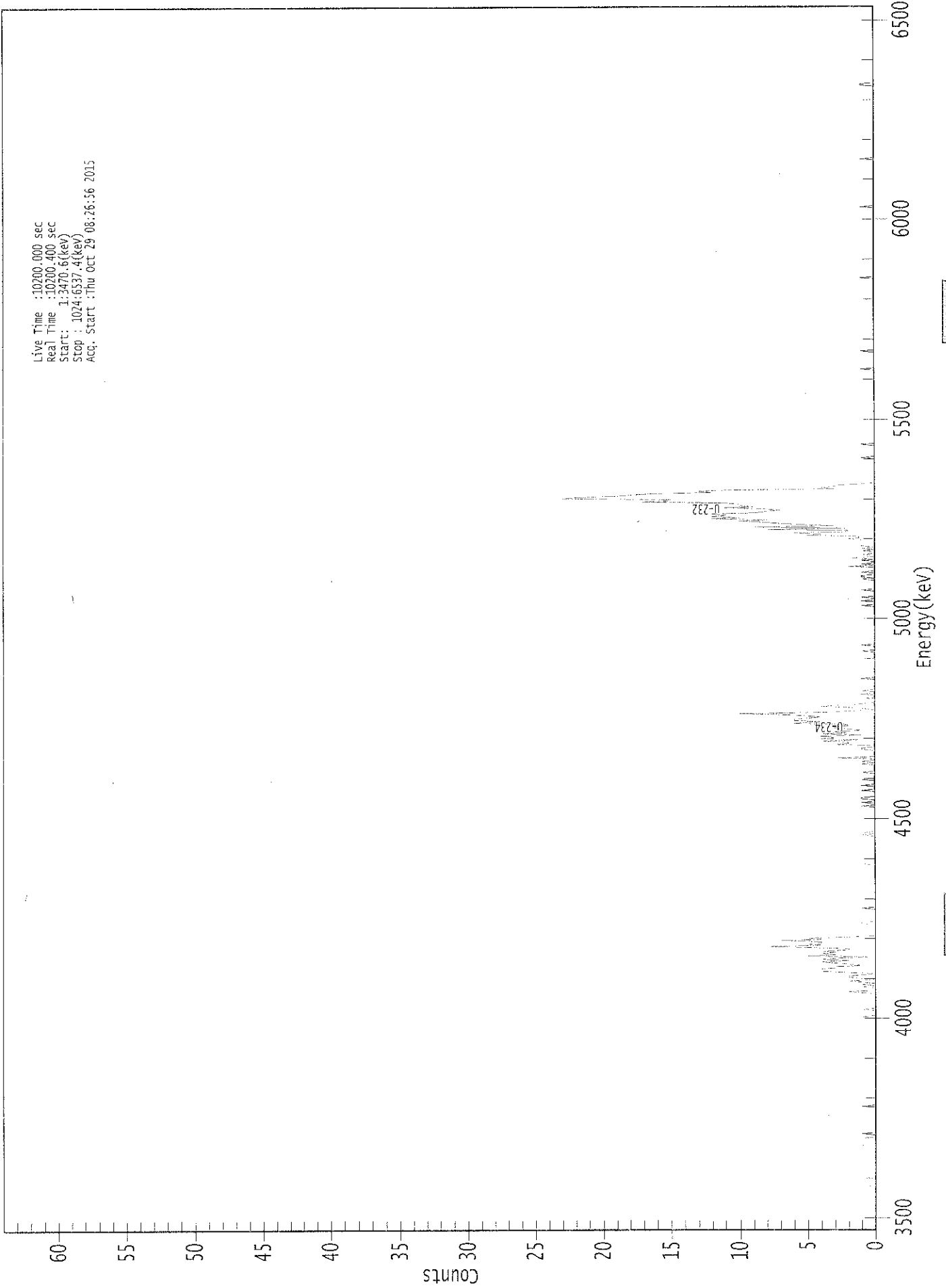
T = Tracer Peak used for Effective Efficiency

 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.53E+000 +/- 3.71E-001	5.44E-002 +/- 5.72E-003
U-234	0.994	4761.50*	1.03E+000 +/- 2.11E-001	4.66E-002 +/- 4.89E-003
U-235	0.981	4385.50*	2.36E-002 +/- 3.53E-002	5.74E-002 +/- 6.04E-003
U-238	0.994	4184.40*	1.03E+000 +/- 2.12E-001	7.48E-002 +/- 7.86E-003

AG
 10/29/15

0000132599.CNF



Live Time :10200.000 sec
Real Time :10200.400 sec
Start: 1:3470.6(kev)
Stop : 1024.6537.4(kev)
Acq. Start :Thu OCT 29 08:26:56 2015

: 00160

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: 16

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	1	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	1
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	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	0	0
177:	0	0	1	0	0	0	0	0	0
185:	1	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	1	2
201:	0	0	0	1	0	1	0	0	1
209:	2	0	1	2	2	1	0	0	2
217:	4	4	4	3	3	1	2	0	3
225:	4	2	4	3	0	5	3	0	4
233:	3	4	2	2	5	8	4	0	5
241:	4	4	7	4	5	2	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	1	1	0	0	0	0	0	0	0
265:	0	0	0	0	0	1	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	1	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	1	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	1	0	0	1	0	0	0
361:	1	1	0	0	0	0	0	0	1

369: 0 0 0 1 0 0 0 0

Sample Title: 16

Channel	1	2	3	4	5	6	7	8	9
377:	1	0	0	0	0	0	0	1	0
385:	0	0	0	0	0	0	1	0	1
393:	0	0	3	0	0	0	0	0	0
401:	0	1	1	0	0	3	2	2	2
409:	4	1	4	3	4	1	4	4	2
417:	3	1	2	3	3	2	2	2	6
425:	4	6	6	5	4	5	7	7	10
433:	3	2	0	1	2	4	2	2	1
441:	0	0	0	0	0	0	0	0	1
449:	0	0	1	0	0	0	0	0	0
457:	0	0	0	0	1	0	0	0	0
465:	0	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0	0
481:	0	0	0	1	0	0	0	0	0
489:	1	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0	0
521:	0	1	0	0	0	0	1	0	0
529:	1	0	0	0	0	0	0	1	0
537:	0	0	0	0	0	0	0	0	1
545:	0	1	1	0	0	1	0	0	0
553:	0	0	2	0	1	0	0	0	1
561:	0	2	0	0	1	0	0	0	1
569:	0	1	0	1	1	1	1	1	1
577:	1	2	1	1	5	4	6	6	2
585:	2	8	2	9	3	5	7	7	8
593:	10	8	12	10	12	11	12	12	9
601:	8	7	8	11	9	10	10	10	11
609:	17	15	15	23	22	19	18	18	16
617:	12	13	11	3	4	3	3	3	1
625:	0	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	1	0	0	0
649:	0	0	0	0	0	0	0	0	0
657:	1	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	1
721:	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	1	0	0
737:	0	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	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	1	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 16

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
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	1	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	1	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	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



1CB
10/29/15

Sample Description: CP5008S09-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-UU
 Sample Identification: 17
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_042
 Chamber Serial Number: 05026930B
 Detector Serial Number: 84185
 Env. Background: System Bkgd 132587
 Reagent Blank: <not performed>

Sample Size: 1.555E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:26:58 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: 0.1691 +/- 0.0099
 Counting Efficiency: 0.1737 +/- 0.0030 on 10/25/2014 3:04:21 PM
 Chem. Recovery Factor: 0.9734 +/- 0.0594

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.271	346.49	10.54	0.51	0.00E+000	5.6
U-234	4.726	112.49	18.53	0.51	0.00E+000	4.7
U-235	4.371	11.83	57.46	0.17	0.00E+000	3.0
U-238	4.140	120.32	17.93	0.68	0.00E+000	4.1

T = Tracer Peak used for Effective Efficiency

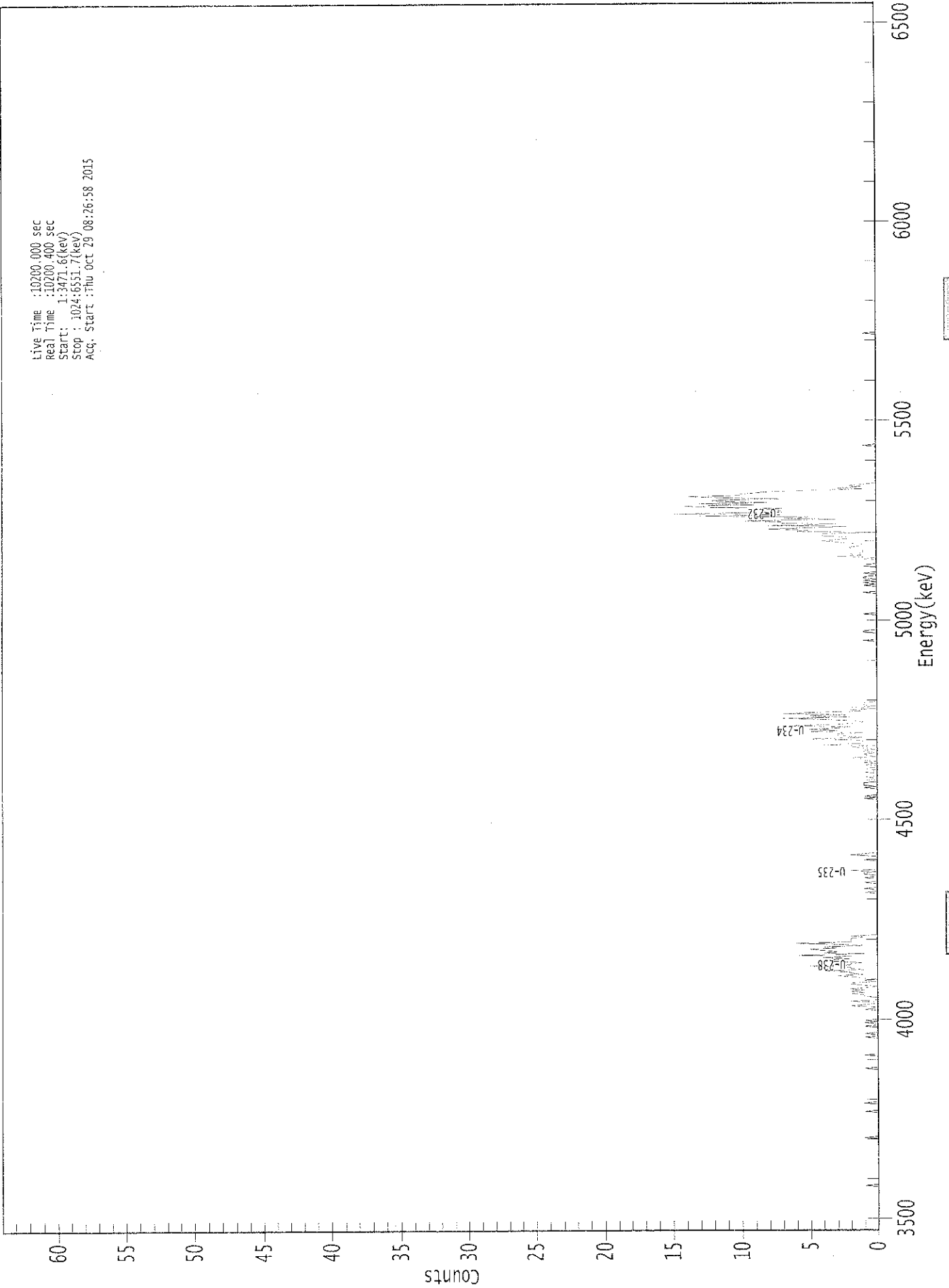
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.993	5302.50*	3.50E+000 +/- 4.01E-001	5.30E-002 +/- 6.08E-003
U-234	0.991	4761.50*	1.14E+000 +/- 2.47E-001	5.30E-002 +/- 6.07E-003
U-235	0.998	4385.50*	1.47E-001 +/- 8.63E-002	5.20E-002 +/- 5.96E-003
U-238	0.986	4184.40*	1.21E+000 +/- 2.57E-001	5.67E-002 +/- 6.50E-003

AG
10/29/15

0000132600.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3471.6(kev)
Stop : 1024:6551.7(kev)
Acq. Start :Thu Oct 29 08:26:58 2015



: 00171

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: 17

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	1	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	1	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	1	0	0	0	0	0
105:	0	0	1	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	1
137:	0	0	0	0	0	0	0	0	0
145:	0	0	1	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	1	0	0	1	0	0	0	0
169:	0	0	1	0	0	1	0	0	1
177:	0	0	0	0	0	0	0	0	0
185:	1	0	0	2	1	0	0	0	2
193:	0	0	0	1	1	2	1	2	2
201:	1	2	1	0	1	2	2	0	0
209:	1	0	1	2	3	1	2	2	2
217:	4	1	2	2	5	2	2	1	1
225:	4	4	2	4	2	6	1	4	4
233:	3	4	5	3	4	1	3	6	6
241:	2	2	2	2	1	2	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	1	0	0	1	0	0	0	0
289:	0	1	0	0	0	1	0	0	0
297:	1	1	0	2	0	0	0	0	0
305:	0	0	0	0	1	0	0	0	0
313:	2	1	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	1
361:	0	1	0	0	0	0	0	0	0

369: 1 0 1 1 1 0 0 0

Sample Title: 17

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

10/29/15

Apex-Alpha™

Sample Description: CP5008S12-13
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-UU
 Sample Identification: 18
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_043
 Chamber Serial Number: 04026481A
 Detector Serial Number: 91088
 Env. Background: System Bkgd 132588
 Reagent Blank: <not performed>

Sample Size: 1.501E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:27:00 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: 0.1837 +/- 0.0104
 Counting Efficiency: 0.1998 +/- 0.0035 on 10/25/2014 3:08:45 PM
 Chem. Recovery Factor: 0.9192 +/- 0.0543

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	376.15	10.12	0.85	0.00E+000	23.5
U-234	4.727	123.49	17.68	0.51	0.00E+000	4.4
U-235	4.404	6.49	80.40	0.51	0.00E+000	3.0
U-238	4.146	121.49	17.83	0.51	0.00E+000	4.4

T = Tracer Peak used for Effective Efficiency

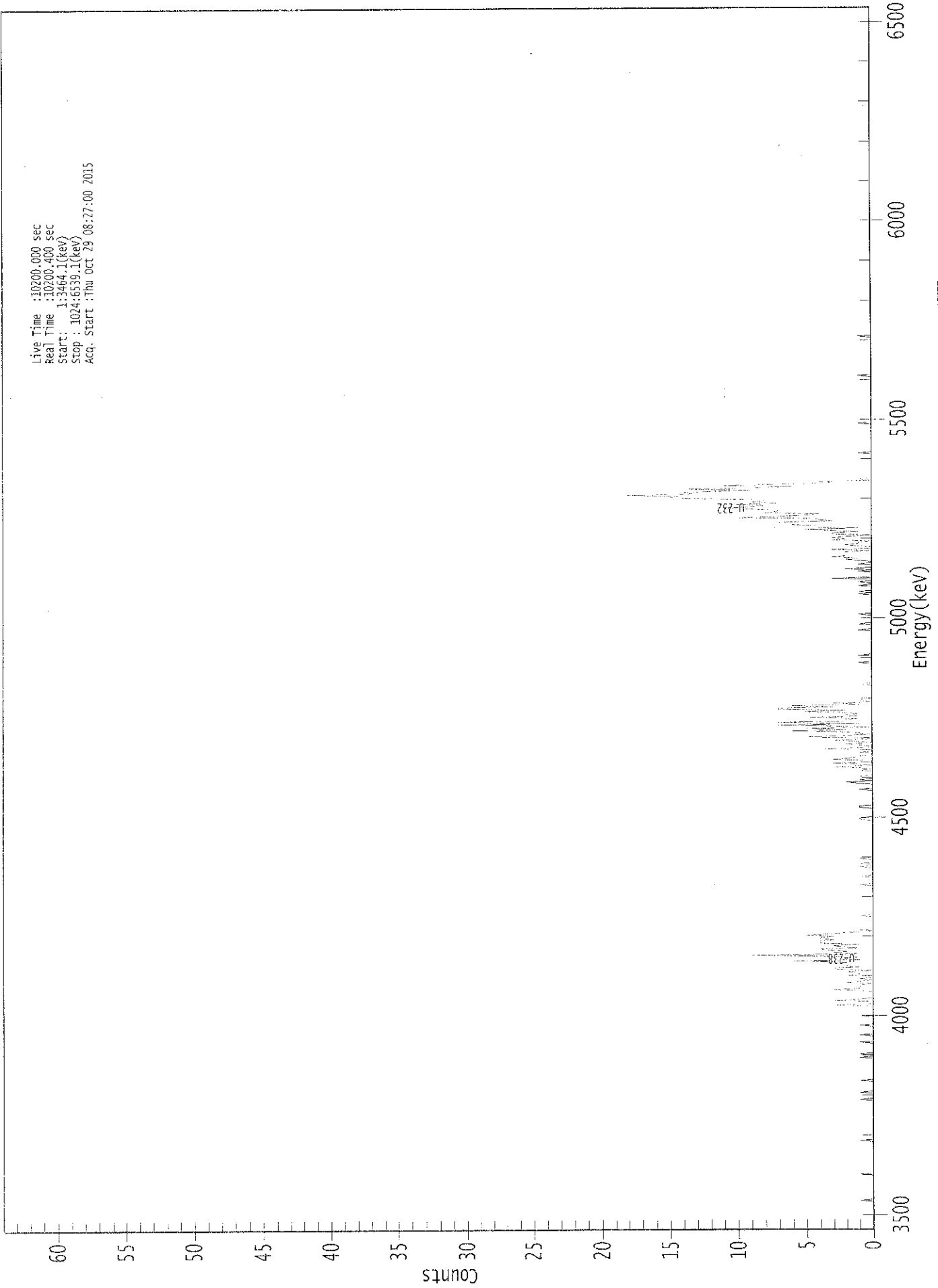
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.62E+000 +/- 4.02E-001	5.77E-002 +/- 6.39E-003
U-234	0.992	4761.50*	1.19E+000 +/- 2.48E-001	5.05E-002 +/- 5.60E-003
U-235	0.998	4385.50*	7.71E-002 +/- 6.26E-002	6.23E-002 +/- 6.91E-003
U-238	0.990	4184.40*	1.16E+000 +/- 2.44E-001	5.03E-002 +/- 5.57E-003

AG
 10/29/15

0000132619.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:3464.1(keV)
Stop : 1024:6539.1(keV)
Acq. Start : Thu Oct 29 08:27:00 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: 18

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:	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	1	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	0	1	0	0	0	0
113:	0	0	1	0	0	0	0	0	0
121:	0	0	0	0	1	0	0	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	1
145:	0	0	1	0	0	0	0	0	0
153:	0	0	0	0	1	0	0	0	0
161:	0	0	1	0	0	0	0	0	0
169:	0	0	1	0	0	0	0	0	0
177:	0	0	1	0	0	0	0	0	0
185:	0	0	0	3	0	0	0	0	3
193:	1	0	0	0	0	0	0	0	1
201:	3	1	1	1	1	0	2	1	1
209:	0	1	0	0	2	1	1	1	2
217:	0	3	3	1	2	2	2	2	2
225:	6	1	1	1	4	9	1	1	3
233:	2	3	4	1	3	3	1	1	4
241:	4	4	3	4	4	3	5	1	3
249:	2	0	1	0	0	0	0	0	0
257:	0	0	0	0	0	0	1	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	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	1
297:	0	0	0	0	0	0	0	0	1
305:	0	0	1	0	0	0	1	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	1
345:	1	0	0	0	0	0	0	0	0
353:	0	1	1	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0	0

369: 1 0 0 0 0 1 2 0

Sample Title: 18

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

KS
10/29/15

Sample Description: CP5008S14-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-UU
 Sample Identification: 19
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_044
 Chamber Serial Number: 04026481B
 Detector Serial Number: 84168
 Env. Background: System Bkgd 132589
 Reagent Blank: <not performed>

Sample Size: 1.501E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:27:01 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: 0.1847 +/- 0.0104
 Counting Efficiency: 0.1837 +/- 0.0032 on 10/25/2014 3:13:11 PM
 Chem. Recovery Factor: 1.0056 +/- 0.0593

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	378.66	10.08	0.34	0.00E+000	38.9
U-234	4.736	140.49	16.57	0.51	0.00E+000	10.1
U-235	4.407	11.00	61.72	0.00	0.00E+000	4.5
U-238	4.171	141.83	16.47	0.17	0.00E+000	7.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS						

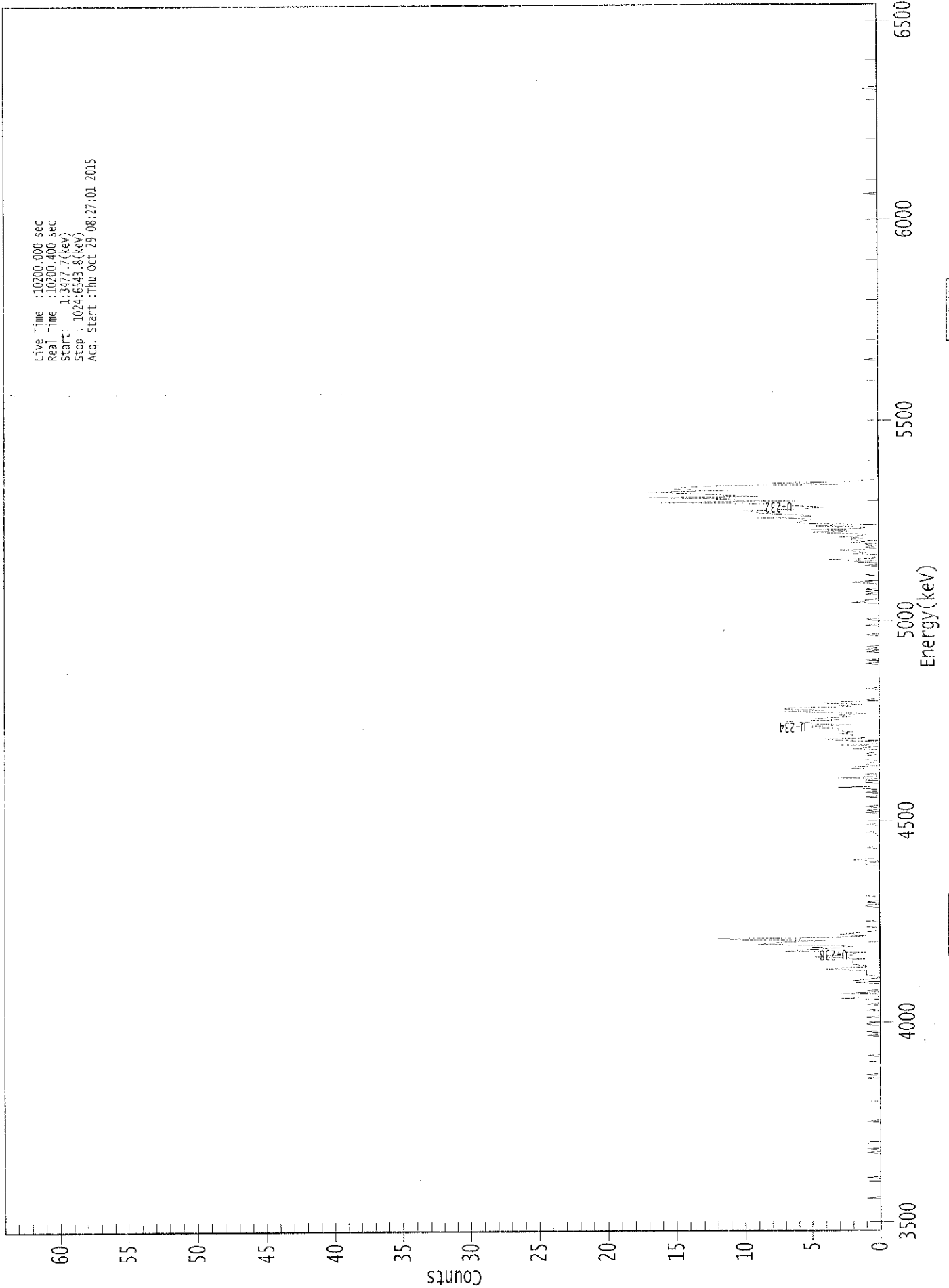
Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)		

U-232	0.999	5302.50*	3.63E+000 +/- 4.01E-001	4.58E-002	+/-	5.06E-003
U-234	0.995	4761.50*	1.35E+000 +/- 2.68E-001	5.03E-002	+/-	5.55E-003
U-235	0.997	4385.50*	1.30E-001 +/- 8.15E-002	7.08E-002	+/-	7.82E-003
U-238	0.999	4184.40*	1.35E+000 +/- 2.68E-001	3.98E-002	+/-	4.39E-003

AG
10/29/15

0000132620.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start: 1:3477.7(keV)
Stop : 1024:6543.8(keV)
Acq. Start :Thu Oct 29 08:27:01 2015



ROI Type: 1

ROI Type: 3

10101

 ***** 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	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	1	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	1	0	0	1	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	1	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	1
129:	0	0	1	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	0	0	1	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	1	0	0	1	0	0
169:	0	0	0	0	1	1	0	0	0
177:	0	0	1	0	0	0	0	0	0
185:	1	0	0	0	0	1	0	0	0
193:	0	0	3	0	0	0	3	0	0
201:	1	0	0	0	0	0	0	0	2
209:	0	2	1	0	0	1	1	1	1
217:	1	1	4	3	1	1	2	2	2
225:	2	2	2	1	4	5	2	2	2
233:	1	7	6	3	5	2	3	9	
241:	8	7	4	10	12	3	1	3	
249:	2	1	0	0	0	1	0	0	
257:	0	0	1	0	0	0	0	0	
265:	0	0	0	0	0	0	1	1	
273:	0	0	1	0	0	0	0	1	
281:	0	0	0	0	0	0	0	0	
289:	0	0	0	0	0	0	0	0	
297:	0	0	0	0	0	0	0	0	
305:	0	1	1	0	1	2	0	0	
313:	0	0	0	0	0	0	0	1	
321:	0	0	0	0	0	0	0	0	
329:	0	0	1	0	1	0	0	0	
337:	0	0	1	0	0	0	0	0	
345:	0	0	0	0	1	0	1	0	
353:	0	1	0	0	0	0	0	0	
361:	0	1	0	0	0	1	0	0	

369: 1 3 0 0 0 1 1 1

Sample Title: 19

Channel	1	3	0	0	0	1	1	1
377:	0	3	0	0	1	0	0	0
385:	0	2	2	0	1	1	0	0
393:	1	1	1	1	0	1	0	0
401:	0	2	1	0	3	0	0	0
409:	3	4	1	2	2	2	3	2
417:	3	3	3	5	5	2	5	5
425:	7	3	5	3	2	3	1	3
433:	7	4	7	7	2	3	1	4
441:	4	0	1	0	0	0	0	0
449:	0	0	0	1	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	1	0	0	0	0
481:	0	0	1	0	1	0	1	0
489:	0	0	0	0	0	0	0	0
497:	1	0	0	0	0	0	0	0
505:	1	0	0	0	0	1	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	2	1	1	0	0
529:	0	0	1	0	1	0	1	0
537:	0	0	0	1	2	0	0	0
545:	0	0	1	0	0	0	0	0
553:	0	0	1	0	0	2	0	4
561:	0	1	0	0	2	1	2	3
569:	0	1	0	1	0	2	1	2
577:	2	1	3	1	1	3	5	2
585:	5	1	1	5	0	5	6	6
593:	5	5	9	5	5	7	9	9
601:	10	6	5	4	6	8	9	16
609:	6	12	11	17	9	11	13	15
617:	17	11	15	15	14	12	3	8
625:	2	1	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	1	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 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	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	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	1
953:	1	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



Apex-Alpha™

10/29/15

Sample Description: CP5008S17-18
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-UU
 Sample Identification: 20
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_045
 Chamber Serial Number: 04026482A
 Detector Serial Number: 91131
 Env. Background: System Bkgd 132590
 Reagent Blank: <not performed>

Sample Size: 1.536E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 5:31:33 AM
 Acquisition Date/Time: 10/29/2015 8:27:03 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.658 mL
 Effective Efficiency: 0.1485 +/- 0.0091
 Counting Efficiency: 0.1760 +/- 0.0031 on 10/25/2014 3:16:42 PM
 Chem. Recovery Factor: 0.8435 +/- 0.0540

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 5.307	307.32	11.19	0.68	0.00E+000	20.7
U-234	4.753	121.32	17.85	0.68	0.00E+000	8.5
U-235	4.393	8.66	68.12	0.34	0.00E+000	3.0
U-238	4.175	132.64	17.12	1.36	0.00E+000	18.0

T = Tracer Peak used for Effective Efficiency

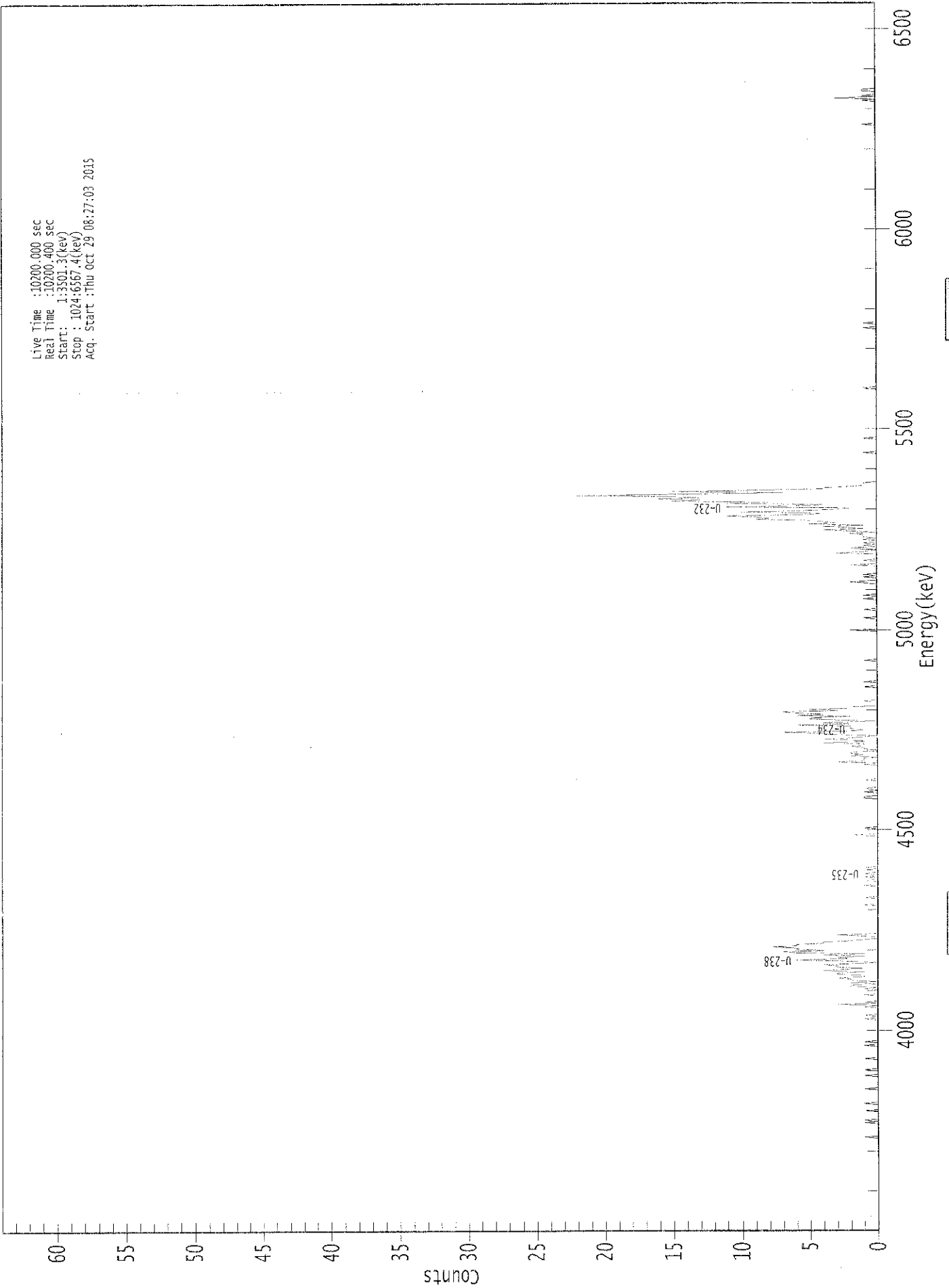
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	1.000	5302.50*	3.58E+000 +/- 4.32E-001	6.57E-002 +/- 7.93E-003
U-234	1.000	4761.50*	1.41E+000 +/- 3.04E-001	6.57E-002 +/- 7.92E-003
U-235	1.000	4385.50*	1.24E-001 +/- 8.60E-002	6.86E-002 +/- 8.29E-003
U-238	0.999	4184.40*	1.54E+000 +/- 3.22E-001	7.95E-002 +/- 9.59E-003

AG
 10/29/15

0000132601.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:3501.3(kev)
Stop : 1024:6567.4(kev)
Acq. Start : Thu Oct 29 08:27:03 2015



ROI Type: 3

ROI Type: 1

00180

***** 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	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	1	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	1	0	1	0	0	0	0
97:	0	0	0	0	1	0	0	0	0
105:	0	0	1	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	1	0	0	0	0	0	1	0
137:	0	0	0	0	0	0	0	0	1
145:	0	0	0	0	0	0	0	0	0
153:	0	0	1	0	0	1	0	0	0
161:	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	0
177:	1	0	0	1	0	0	0	0	0
185:	0	0	1	0	3	0	1	0	0
193:	0	0	0	0	1	0	0	0	0
201:	0	1	0	2	2	0	2	0	0
209:	2	2	3	1	1	3	3	1	1
217:	4	3	1	3	3	4	1	0	0
225:	3	6	2	3	1	4	1	6	0
233:	7	4	6	6	8	6	6	4	0
241:	4	2	1	0	0	1	3	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	0
273:	0	0	0	0	0	1	0	0	0
281:	0	0	0	0	0	0	0	1	0
289:	0	0	0	1	0	0	1	0	0
297:	0	1	0	0	0	0	1	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	2	0	0	0	0	0	1	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:	1	1	0	0	0	1	0	0	0

369: 1 0 0 0 0 0 0 0 1

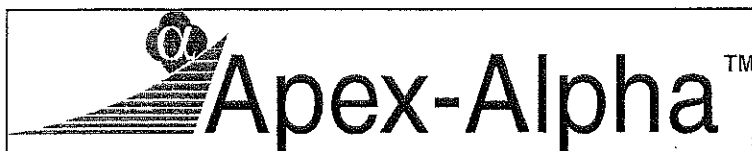
Sample Title: 20

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	1	0	3	1
393:	1	1	0	2	1	2	2	0
401:	0	1	1	2	1	1	4	1
409:	1	4	2	1	0	4	4	7
417:	2	1	2	2	2	6	2	4
425:	0	3	5	5	2	6	4	6
433:	7	3	5	2	2	0	0	0
441:	0	1	0	0	0	0	0	0
449:	0	0	0	0	0	1	0	0
457:	0	1	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	2	0	0	0
505:	0	0	0	0	0	0	1	0
513:	0	0	0	0	0	1	0	0
521:	0	0	0	0	0	0	1	0
529:	0	1	0	0	0	0	0	0
537:	0	0	0	1	2	0	0	0
545:	1	0	1	0	0	0	0	0
553:	0	0	2	0	0	0	1	0
561:	0	0	0	0	3	1	0	1
569:	2	0	1	0	1	0	0	1
577:	0	1	1	1	2	0	2	4
585:	1	2	4	1	5	3	4	5
593:	9	8	9	11	5	4	10	6
601:	3	2	11	5	4	11	8	15
609:	13	16	13	16	22	13	7	15
617:	10	4	4	2	1	1	1	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	1
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	1	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	1
753:	0	0	0	1	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: 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	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	1	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	1	0	3
945:	0	1	0	0	0	1	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



QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 10/29/2015
Time : 5:47:16 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	10/29/2015 5:15:43 AM
Alpha 004	21f	ALL	Passed	10/29/2015 5:15:44 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	10/29/2015 5:15:45 AM
Alpha 011	21f	ALL	Passed	10/29/2015 5:15:46 AM
Alpha 012	21f	ALL	Passed	10/29/2015 5:15:47 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Passed	10/29/2015 5:15:48 AM
Alpha 015	21f	ALL	Passed	10/29/2015 5:15:48 AM
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:15:50 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:15:51 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:15:52 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:15:54 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:15:56 AM
Alpha 038	Alpha Analyst100DC	Peak Energy	Action	10/29/2015 5:15:58 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:00 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:02 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:04 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:06 AM
Alpha 043	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:09 AM
Alpha 044	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:11 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:13 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:16 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:18 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:21 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:23 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:26 AM
Alpha 051	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:28 AM
Alpha 052	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:31 AM
Alpha 053	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:34 AM
Alpha 054	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:36 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:39 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:41 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:44 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:47 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 059	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:50 AM
Alpha 060	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:53 AM

APPROVED BY: _____

APPROVAL DATE: 10/29

***** 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	15-10088
Analysis Code	ThISO
Run	1
Date Received	10/14/2015
Lab Deadline	11/5/2015
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		10/15/15 00:00	1.0000E+00
02	MBL	BLANK		10/15/15 00:00	1.5000E+00
03	DUP	CP4104S03-04	42	10/08/15 09:30	1.5038E+00
04	DO	CP4104S03-04	42	10/08/15 09:30	1.5131E+00
05	TRG	CP4104S08-09	40	10/08/15 09:40	1.5665E+00
06	TRG	CP4104S11-12	32	10/08/15 09:50	1.5076E+00
07	TRG	CP4104S17-18	36	10/08/15 10:00	1.5363E+00
08	TRG	CP1804S03-04	35	10/08/15 10:30	1.5400E+00
09	TRG	CP1804S05-06	35	10/08/15 10:40	1.5230E+00
10	TRG	CP1804S08-09	32	10/08/15 10:50	1.5124E+00
11	TRG	CP1804S10-11	36	10/08/15 11:00	1.5189E+00
12	TRG	CP1804S12-13	33	10/08/15 11:20	1.5190E+00
13	TRG	CP1804S15-16	34	10/08/15 11:30	1.5170E+00
14	TRG	CP1804S17-18	36	10/08/15 11:40	1.5139E+00
15	TRG	CP5008S03-04	33	10/08/15 13:30	1.5212E+00
16	TRG	CP5008S06-07	41	10/08/15 13:40	1.5056E+00
17	TRG	CP5008S09-10	34	10/08/15 13:50	1.5578E+00
18	TRG	CP5008S12-13	34	10/08/15 14:00	1.5207E+00
19	TRG	CP5008S14-15	38	10/08/15 14:10	1.5303E+00
20	TRG	CP5008S17-18	20	10/08/15 14:20	1.5489E+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	0.4544	10.2		0.00								
02	MBL	0.2293	5.2		0.00								
03	DUP	0.2227	5.0		0.00								
04	DO	0.2248	5.0		0.00								
05	TRG	0.2228	5.0		0.00								
06	TRG	0.2245	5.0		0.00								
07	TRG	0.2239	5.0		0.00								
08	TRG	0.2242	5.0		0.00								
09	TRG	0.2240	5.0		0.00								
10	TRG	0.2235	5.0		0.00								
11	TRG	0.2245	5.0		0.00								
12	TRG	0.2241	5.0		0.00								
13	TRG	0.2239	5.0		0.00								
14	TRG	0.2239	5.0		0.00								
15	TRG	0.2247	5.0		0.00								
16	TRG	0.2234	5.0		0.00								
17	TRG	0.2244	5.0		0.00								
18	TRG	0.2243	5.0		0.00								
19	TRG	0.2243	5.0		0.00								
20	TRG	0.2244	5.0		0.00								

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.

** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.


Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			10/19/15 11:52	JPACHELLA				
02	MBL			10/19/15 11:52	JPACHELLA				
03	DUP			10/19/15 11:52	JPACHELLA				
04	DO	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
05	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
06	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
07	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
08	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
09	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
10	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
11	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
12	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
13	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
14	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
15	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
16	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
17	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
18	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
19	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	JPACHELLA				
20	TRG	10/19/15 08:59	KSALLINGS	10/19/15 11:52	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.

	1 Run	THISO Analysis Code	15-10088 Eberline Services Work Order	Auxier & Associates, Inc. Client
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Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %/R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	TH-228	LCS	LCS	pCi/g	5.62E+00	9.35E-01	1.12E-01	4.73E+00	118.86	OK		OK	
02	TH-228	MBL	BLANK	pCi/g	-1.08E-02	2.66E-02	7.58E-02					OK	OK
03	TH-228	DUP	CP4104S03-04	pCi/g	1.36E+00	3.24E-01	5.92E-02				OK		
04	TH-228	DO	CP4104S03-04	pCi/g	1.08E+00	2.89E-01	6.66E-02					OK	
05	TH-228	TRG	CP4104S08-09	pCi/g	1.62E+00	3.92E-01	8.27E-02					OK	
06	TH-228	TRG	CP4104S11-12	pCi/g	1.01E+00	2.54E-01	9.86E-02					OK	
07	TH-228	TRG	CP4104S17-18	pCi/g	1.17E+00	2.91E-01	6.24E-02					OK	
08	TH-228	TRG	CP1804S03-04	pCi/g	1.08E+00	2.57E-01	6.07E-02					OK	
09	TH-228	TRG	CP1804S05-06	pCi/g	1.30E+00	3.29E-01	8.01E-02					OK	
10	TH-228	TRG	CP1804S08-09	pCi/g	1.05E+00	2.62E-01	5.91E-02					OK	
11	TH-228	TRG	CP1804S10-11	pCi/g	1.04E+00	2.61E-01	7.30E-02					OK	
12	TH-228	TRG	CP1804S12-13	pCi/g	1.42E+00	3.27E-01	4.49E-02					OK	
13	TH-228	TRG	CP1804S15-16	pCi/g	1.20E+00	2.90E-01	5.00E-02					OK	
14	TH-228	TRG	CP1804S17-18	pCi/g	1.30E+00	3.17E-01	4.84E-02					OK	
15	TH-228	TRG	CP5008S03-04	pCi/g	1.41E+00	3.74E-01	9.47E-02					OK	
16	TH-228	TRG	CP5008S06-07	pCi/g	1.08E+00	2.63E-01	5.51E-02					OK	
17	TH-228	TRG	CP5008S09-10	pCi/g	1.30E+00	3.02E-01	5.11E-02					OK	
18	TH-228	TRG	CP5008S12-13	pCi/g	1.63E+00	3.94E-01	9.60E-02					OK	
19	TH-228	TRG	CP5008S14-15	pCi/g	1.33E+00	3.05E-01	5.37E-02					OK	
20	TH-228	TRG	CP5008S17-18	pCi/g	1.23E+00	2.89E-01	6.33E-02					OK	

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	10/15/15 00:00	1.00E+00	95.01	0.00	0.00			
02	TH-228	MBL	10/15/15 00:00	1.50E+00	84.65	0.00	0.00			
03	TH-228	DUP	10/08/15 09:30	1.50E+00	107.05	0.00	0.00			
04	TH-228	DO	10/08/15 09:30	1.51E+00	105.40	0.00	0.00			
05	TH-228	TRG	10/08/15 09:40	1.57E+00	110.88	0.00	0.00			
06	TH-228	TRG	10/08/15 09:50	1.51E+00	129.98	0.00	0.00			
07	TH-228	TRG	10/08/15 10:00	1.54E+00	110.77	0.00	0.00			
08	TH-228	TRG	10/08/15 10:30	1.54E+00	141.42	0.00	0.00			
09	TH-228	TRG	10/08/15 10:40	1.52E+00	112.33	0.00	0.00			
10	TH-228	TRG	10/08/15 10:50	1.51E+00	121.98	0.00	0.00			
11	TH-228	TRG	10/08/15 11:00	1.52E+00	118.78	0.00	0.00			
12	TH-228	TRG	10/08/15 11:20	1.52E+00	120.41	0.00	0.00			
13	TH-228	TRG	10/08/15 11:30	1.52E+00	114.11	0.00	0.00			
14	TH-228	TRG	10/08/15 11:40	1.51E+00	102.97	0.00	0.00			
15	TH-228	TRG	10/08/15 13:30	1.52E+00	92.28	0.00	0.00			
16	TH-228	TRG	10/08/15 13:40	1.51E+00	114.45	0.00	0.00			
17	TH-228	TRG	10/08/15 13:50	1.56E+00	118.85	0.00	0.00			
18	TH-228	TRG	10/08/15 14:00	1.52E+00	83.98	0.00	0.00			
19	TH-228	TRG	10/08/15 14:10	1.53E+00	106.23	0.00	0.00			
20	TH-228	TRG	10/08/15 14:20	1.55E+00	104.77	0.00	0.00			

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

00100

	Run
THISO	Analysis Code
15-10088	Eberline Services Work Order
Auxier & Associates, Inc.	Client

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-228	LCS	10/29/15 08:27		A_Spec	Alpha_046	170	3.57 E+02	9.00 E-03	17.8
02	TH-228	MIBL	10/29/15 08:27		A_Spec	Alpha_047	170	8.50 E-01	5.00 E-03	16.5
03	TH-228	DUP	10/29/15 08:27		A_Spec	Alpha_048	170	1.37 E+02	5.00 E-03	17
04	TH-228	DO	10/29/15 08:27		A_Spec	Alpha_049	170	9.72 E+01	5.00 E-03	15.3
05	TH-228	TRG	10/29/15 08:27		A_Spec	Alpha_050	170	1.48 E+02	1.10 E-02	14.3
06	TH-228	TRG	10/29/15 08:27		A_Spec	Alpha_051	170	1.12 E+02	3.10 E-02	15.2
07	TH-228	TRG	10/29/15 08:27		A_Spec	Alpha_052	170	1.18 E+02	6.00 E-03	16.1
08	TH-228	TRG	10/29/15 08:27		A_Spec	Alpha_053	170	1.26 E+02	9.00 E-03	14.6
09	TH-228	TRG	10/29/15 08:27		A_Spec	Alpha_054	170	1.19 E+02	1.00 E-02	14.5
10	TH-228	TRG	10/29/15 08:27		A_Spec	Alpha_055	170	1.12 E+02	6.00 E-03	15.6
11	TH-228	TRG	10/29/15 08:27		A_Spec	Alpha_056	170	1.11 E+02	1.20 E-02	16
12	TH-228	TRG	10/29/15 08:27		A_Spec	Alpha_057	170	1.52 E+02	2.00 E-03	15.8
13	TH-228	TRG	10/29/15 08:27		A_Spec	Alpha_058	170	1.25 E+02	3.00 E-03	16.4
14	TH-228	TRG	10/29/15 08:27		A_Spec	Alpha_059	170	1.29 E+02	2.00 E-03	17.2
15	TH-228	TRG	10/29/15 08:27		A_Spec	Alpha_060	170	1.13 E+02	1.10 E-02	15.4
16	TH-228	TRG	10/29/15 11:23		A_Spec	Alpha_037	170	1.17 E+02	5.00 E-03	17.1
17	TH-228	TRG	10/29/15 11:23		A_Spec	Alpha_038	170	1.43 E+02	4.00 E-03	16.2
18	TH-228	TRG	10/29/15 11:23		A_Spec	Alpha_039	170	1.49 E+02	1.70 E-02	19.3
19	TH-228	TRG	10/29/15 11:23		A_Spec	Alpha_040	170	1.48 E+02	5.00 E-03	18.6
20	TH-228	TRG	10/29/15 11:23		A_Spec	Alpha_041	170	1.38 E+02	9.00 E-03	18.7

551202

	1 Run	THISO Analysis Code	15-10088 Eberline Services Work Order	Auxier & Associates, Inc. Client
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Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	TH-230	LCS	LCS	pCi/g	6.45E+00	1.05E+00	8.87E-02	5.32E+00	121.41	OK		OK	
02	TH-230	MBL	BLANK	pCi/g	2.39E-01	1.17E-01	5.29E-02					OK	OK
03	TH-230	DUP	CP4104S03-04	pCi/g	1.36E+00	3.23E-01	5.09E-02				OK	OK	
04	TH-230	DO	CP4104S03-04	pCi/g	1.08E+00	2.88E-01	6.54E-02					OK	
05	TH-230	TRG	CP4104S08-09	pCi/g	1.52E+00	3.71E-01	6.04E-02					OK	
06	TH-230	TRG	CP4104S11-12	pCi/g	1.38E+00	3.15E-01	7.11E-02					OK	
07	TH-230	TRG	CP4104S17-18	pCi/g	1.27E+00	3.07E-01	5.48E-02					OK	
08	TH-230	TRG	CP1804S03-04	pCi/g	1.62E+00	3.47E-01	5.28E-02					OK	
09	TH-230	TRG	CP1804S05-06	pCi/g	1.77E+00	4.14E-01	4.46E-02					OK	
10	TH-230	TRG	CP1804S08-09	pCi/g	1.37E+00	3.17E-01	6.06E-02					OK	
11	TH-230	TRG	CP1804S10-11	pCi/g	1.37E+00	3.17E-01	5.79E-02					OK	
12	TH-230	TRG	CP1804S12-13	pCi/g	8.07E-01	2.16E-01	4.40E-02					OK	
13	TH-230	TRG	CP1804S15-16	pCi/g	1.01E+00	2.54E-01	3.90E-02					OK	
14	TH-230	TRG	CP1804S17-18	pCi/g	1.31E+00	3.18E-01	5.20E-02					OK	
15	TH-230	TRG	CP5008S03-04	pCi/g	1.62E+00	4.12E-01	7.72E-02					OK	
16	TH-230	TRG	CP5008S06-07	pCi/g	1.29E+00	3.00E-01	4.73E-02					OK	
17	TH-230	TRG	CP5008S09-10	pCi/g	1.31E+00	3.02E-01	5.01E-02					OK	
18	TH-230	TRG	CP5008S12-13	pCi/g	1.57E+00	3.80E-01	9.78E-02					OK	
19	TH-230	TRG	CP5008S14-15	pCi/g	1.26E+00	2.92E-01	4.62E-02					OK	
20	TH-230	TRG	CP5008S17-18	pCi/g	1.22E+00	2.84E-01	4.93E-02					OK	

00200

	Run	1
Eberline Services Work Order	Analysis Code	THISO
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	10/15/15 00:00	1.00E+00	95.01	0.00	0.00			
02	TH-230	MBL	10/15/15 00:00	1.50E+00	84.65	0.00	0.00			
03	TH-230	DUP	10/08/15 09:30	1.50E+00	107.05	0.00	0.00			
04	TH-230	DO	10/08/15 09:30	1.51E+00	105.40	0.00	0.00			
05	TH-230	TRG	10/08/15 09:40	1.57E+00	110.88	0.00	0.00			
06	TH-230	TRG	10/08/15 09:50	1.51E+00	129.98	0.00	0.00			
07	TH-230	TRG	10/08/15 10:00	1.54E+00	110.77	0.00	0.00			
08	TH-230	TRG	10/08/15 10:30	1.54E+00	141.42	0.00	0.00			
09	TH-230	TRG	10/08/15 10:40	1.52E+00	112.33	0.00	0.00			
10	TH-230	TRG	10/08/15 10:50	1.51E+00	121.98	0.00	0.00			
11	TH-230	TRG	10/08/15 11:00	1.52E+00	118.78	0.00	0.00			
12	TH-230	TRG	10/08/15 11:20	1.52E+00	120.41	0.00	0.00			
13	TH-230	TRG	10/08/15 11:30	1.52E+00	114.11	0.00	0.00			
14	TH-230	TRG	10/08/15 11:40	1.51E+00	102.97	0.00	0.00			
15	TH-230	TRG	10/08/15 13:30	1.52E+00	92.28	0.00	0.00			
16	TH-230	TRG	10/08/15 13:40	1.51E+00	114.45	0.00	0.00			
17	TH-230	TRG	10/08/15 13:50	1.56E+00	118.85	0.00	0.00			
18	TH-230	TRG	10/08/15 14:00	1.52E+00	83.98	0.00	0.00			
19	TH-230	TRG	10/08/15 14:10	1.53E+00	106.23	0.00	0.00			
20	TH-230	TRG	10/08/15 14:20	1.55E+00	104.77	0.00	0.00			

	Run	1
Eberline Services Work Order	Analysis Code	THISO
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	10/29/15 08:27		A_Spec	Alpha_046	170	4.10 E+02	4.00 E-03	17.8
02	TH-230	MBL	10/29/15 08:27		A_Spec	Alpha_047	170	1.88 E+01	1.00 E-03	16.5
03	TH-230	DUP	10/29/15 08:27		A_Spec	Alpha_048	170	1.40 E+02	3.00 E-03	17
04	TH-230	DO	10/29/15 08:27		A_Spec	Alpha_049	170	9.90 E+01	0.00 E+00	15.3
05	TH-230	TRG	10/29/15 08:27		A_Spec	Alpha_050	170	1.42 E+02	4.00 E-03	14.3
06	TH-230	TRG	10/29/15 08:27		A_Spec	Alpha_051	170	1.56 E+02	1.30 E-02	15.2
07	TH-230	TRG	10/29/15 08:27		A_Spec	Alpha_052	170	1.30 E+02	4.00 E-03	16.1
08	TH-230	TRG	10/29/15 08:27		A_Spec	Alpha_053	170	1.94 E+02	6.00 E-03	14.6
09	TH-230	TRG	10/29/15 08:27		A_Spec	Alpha_054	170	1.66 E+02	1.00 E-03	14.5
10	TH-230	TRG	10/29/15 08:27		A_Spec	Alpha_055	170	1.49 E+02	7.00 E-03	15.6
11	TH-230	TRG	10/29/15 08:27		A_Spec	Alpha_056	170	1.49 E+02	6.00 E-03	16
12	TH-230	TRG	10/29/15 08:27		A_Spec	Alpha_057	170	8.77 E+01	2.00 E-03	15.8
13	TH-230	TRG	10/29/15 08:27		A_Spec	Alpha_058	170	1.08 E+02	1.00 E-03	16.4
14	TH-230	TRG	10/29/15 08:27		A_Spec	Alpha_059	170	1.32 E+02	3.00 E-03	17.2
15	TH-230	TRG	10/29/15 08:27		A_Spec	Alpha_060	170	1.32 E+02	6.00 E-03	15.4
16	TH-230	TRG	10/29/15 11:23		A_Spec	Alpha_037	170	1.43 E+02	3.00 E-03	17.1
17	TH-230	TRG	10/29/15 11:23		A_Spec	Alpha_038	170	1.47 E+02	4.00 E-03	16.2
18	TH-230	TRG	10/29/15 11:23		A_Spec	Alpha_039	170	1.46 E+02	1.90 E-02	19.3
19	TH-230	TRG	10/29/15 11:23		A_Spec	Alpha_040	170	1.43 E+02	3.00 E-03	18.6
20	TH-230	TRG	10/29/15 11:23		A_Spec	Alpha_041	170	1.39 E+02	4.00 E-03	18.7

20250

	Run	1
	Analysis Code	THISO
Eberline Services Work Order	15-10088	
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-232	LCS	LCS	pCi/g	5.20E+00	8.80E-01	1.12E-01	4.73E+00	110.14	OK		OK	
02	TH-232	MBL	BLANK	pCi/g	1.45E-02	3.64E-02	7.57E-02					OK	OK
03	TH-232	DUP	CP4104S03-04	pCi/g	9.87E-01	2.56E-01	6.10E-02				INV	OK	
04	TH-232	DO	CP4104S03-04	pCi/g	1.28E+00	3.25E-01	6.52E-02					OK	
05	TH-232	TRG	CP4104S08-09	pCi/g	1.56E+00	3.77E-01	5.11E-02					OK	
06	TH-232	TRG	CP4104S11-12	pCi/g	1.20E+00	2.82E-01	4.24E-02					OK	
07	TH-232	TRG	CP4104S17-18	pCi/g	1.14E+00	2.84E-01	4.63E-02					OK	
08	TH-232	TRG	CP1804S03-04	pCi/g	1.28E+00	2.88E-01	4.00E-02					OK	
09	TH-232	TRG	CP1804S05-06	pCi/g	1.28E+00	3.23E-01	6.40E-02					OK	
10	TH-232	TRG	CP1804S08-09	pCi/g	1.27E+00	2.99E-01	5.79E-02					OK	
11	TH-232	TRG	CP1804S10-11	pCi/g	1.29E+00	3.04E-01	5.78E-02					OK	
12	TH-232	TRG	CP1804S12-13	pCi/g	1.29E+00	3.03E-01	4.39E-02					OK	
13	TH-232	TRG	CP1804S15-16	pCi/g	1.02E+00	2.56E-01	5.59E-02					OK	
14	TH-232	TRG	CP1804S17-18	pCi/g	1.41E+00	3.35E-01	5.19E-02					OK	
15	TH-232	TRG	CP5008S03-04	pCi/g	1.31E+00	3.50E-01	7.34E-02					OK	
16	TH-232	TRG	CP5008S06-07	pCi/g	9.81E-01	2.45E-01	5.40E-02					OK	
17	TH-232	TRG	CP5008S09-10	pCi/g	1.21E+00	2.85E-01	4.65E-02					OK	
18	TH-232	TRG	CP5008S12-13	pCi/g	1.64E+00	3.92E-01	9.00E-02					OK	
19	TH-232	TRG	CP5008S14-15	pCi/g	1.34E+00	3.05E-01	4.95E-02					OK	
20	TH-232	TRG	CP5008S17-18	pCi/g	1.24E+00	2.90E-01	7.93E-02					OK	

0200

	Run	1
	Analysis Code	THISO
Eberline Services Work Order	15-10088	
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-232	LCS	10/15/15 00:00	1.00E+00	95.01	0.00	0.00			
02	TH-232	MBL	10/15/15 00:00	1.50E+00	84.65	0.00	0.00			
03	TH-232	DUP	10/08/15 09:30	1.50E+00	107.05	0.00	0.00			
04	TH-232	DO	10/08/15 09:30	1.51E+00	105.40	0.00	0.00			
05	TH-232	TRG	10/08/15 09:40	1.57E+00	110.88	0.00	0.00			
06	TH-232	TRG	10/08/15 09:50	1.51E+00	129.98	0.00	0.00			
07	TH-232	TRG	10/08/15 10:00	1.54E+00	110.77	0.00	0.00			
08	TH-232	TRG	10/08/15 10:30	1.54E+00	141.42	0.00	0.00			
09	TH-232	TRG	10/08/15 10:40	1.52E+00	112.33	0.00	0.00			
10	TH-232	TRG	10/08/15 10:50	1.51E+00	121.98	0.00	0.00			
11	TH-232	TRG	10/08/15 11:00	1.52E+00	118.78	0.00	0.00			
12	TH-232	TRG	10/08/15 11:20	1.52E+00	120.41	0.00	0.00			
13	TH-232	TRG	10/08/15 11:30	1.52E+00	114.11	0.00	0.00			
14	TH-232	TRG	10/08/15 11:40	1.51E+00	102.97	0.00	0.00			
15	TH-232	TRG	10/08/15 13:30	1.52E+00	92.28	0.00	0.00			
16	TH-232	TRG	10/08/15 13:40	1.51E+00	114.45	0.00	0.00			
17	TH-232	TRG	10/08/15 13:50	1.56E+00	118.85	0.00	0.00			
18	TH-232	TRG	10/08/15 14:00	1.52E+00	83.98	0.00	0.00			
19	TH-232	TRG	10/08/15 14:10	1.53E+00	106.23	0.00	0.00			
20	TH-232	TRG	10/08/15 14:20	1.55E+00	104.77	0.00	0.00			

10200

	Run	1
Eberline Services Work Order	Analysis Code	THISO
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-232	LCS	10/29/15 08:27		A_Spec	Alpha_046	170	3.31 E+02	9.00 E-03	17.8
02	TH-232	MBL	10/29/15 08:27		A_Spec	Alpha_047	170	1.15 E+00	5.00 E-03	16.5
03	TH-232	DUP	10/29/15 08:27		A_Spec	Alpha_048	170	1.02 E+02	6.00 E-03	17
04	TH-232	DO	10/29/15 08:27		A_Spec	Alpha_049	170	1.17 E+02	5.00 E-03	15.3
05	TH-232	TRG	10/29/15 08:27		A_Spec	Alpha_050	170	1.46 E+02	2.00 E-03	14.3
06	TH-232	TRG	10/29/15 08:27		A_Spec	Alpha_051	170	1.36 E+02	2.00 E-03	15.2
07	TH-232	TRG	10/29/15 08:27		A_Spec	Alpha_052	170	1.18 E+02	2.00 E-03	16.1
08	TH-232	TRG	10/29/15 08:27		A_Spec	Alpha_053	170	1.53 E+02	2.00 E-03	14.6
09	TH-232	TRG	10/29/15 08:27		A_Spec	Alpha_054	170	1.20 E+02	0.00 E+00	14.5
10	TH-232	TRG	10/29/15 08:27		A_Spec	Alpha_055	170	1.38 E+02	6.00 E-03	15.6
11	TH-232	TRG	10/29/15 08:27		A_Spec	Alpha_056	170	1.41 E+02	6.00 E-03	16
12	TH-232	TRG	10/29/15 08:27		A_Spec	Alpha_057	170	1.41 E+02	2.00 E-03	15.8
13	TH-232	TRG	10/29/15 08:27		A_Spec	Alpha_058	170	1.09 E+02	5.00 E-03	16.4
14	TH-232	TRG	10/29/15 08:27		A_Spec	Alpha_059	170	1.42 E+02	3.00 E-03	17.2
15	TH-232	TRG	10/29/15 08:27		A_Spec	Alpha_060	170	1.07 E+02	0.00 E+00	15.4
16	TH-232	TRG	10/29/15 11:23		A_Spec	Alpha_037	170	1.09 E+02	0.00 E+00	17.1
17	TH-232	TRG	10/29/15 11:23		A_Spec	Alpha_038	170	1.36 E+02	3.00 E-03	16.2
18	TH-232	TRG	10/29/15 11:23		A_Spec	Alpha_039	170	1.52 E+02	1.50 E-02	19.3
19	TH-232	TRG	10/29/15 11:23		A_Spec	Alpha_040	170	1.52 E+02	4.00 E-03	18.6
20	TH-232	TRG	10/29/15 11:23		A_Spec	Alpha_041	170	1.43 E+02	1.90 E-02	18.7

50200

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	10/15/15 00:00	1.0000	0.4544	10.2058		0.00		
02	MBL	BLANK	10/15/15 00:00	1.5000	0.2293	5.1501		0.00		
03	DUP	CP4104S03-04	10/08/15 09:30	1.5038	0.2227	5.0018		0.00		
04	DO	CP4104S03-04	10/08/15 09:30	1.5131	0.2248	5.0490		0.00		
05	TRG	CP4104S08-09	10/08/15 09:40	1.5665	0.2228	5.0041		0.00		
06	TRG	CP4104S11-12	10/08/15 09:50	1.5076	0.2245	5.0423		0.00		
07	TRG	CP4104S17-18	10/08/15 10:00	1.5363	0.2239	5.0288		0.00		
08	TRG	CP1804S03-04	10/08/15 10:30	1.5400	0.2242	5.0355		0.00		
09	TRG	CP1804S05-06	10/08/15 10:40	1.5230	0.2240	5.0310		0.00		
10	TRG	CP1804S08-09	10/08/15 10:50	1.5124	0.2235	5.0198		0.00		
11	TRG	CP1804S10-11	10/08/15 11:00	1.5189	0.2245	5.0423		0.00		
12	TRG	CP1804S12-13	10/08/15 11:20	1.5190	0.2241	5.0333		0.00		
13	TRG	CP1804S15-16	10/08/15 11:30	1.5170	0.2239	5.0288		0.00		
14	TRG	CP1804S17-18	10/08/15 11:40	1.5139	0.2239	5.0288		0.00		
15	TRG	CP5008S03-04	10/08/15 13:30	1.5212	0.2247	5.0468		0.00		
16	TRG	CP5008S06-07	10/08/15 13:40	1.5056	0.2234	5.0176		0.00		
17	TRG	CP5008S09-10	10/08/15 13:50	1.5578	0.2244	5.0400		0.00		
18	TRG	CP5008S12-13	10/08/15 14:00	1.5207	0.2243	5.0378		0.00		
19	TRG	CP5008S14-15	10/08/15 14:10	1.5303	0.2243	5.0378		0.00		
20	TRG	CP5008S17-18	10/08/15 14:20	1.5489	0.2244	5.0400		0.00		

Handwritten notes and numbers: 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

Spike and Tracer Worksheet

Internal Work Order		Run	Analysis Code		Date		Technician		Technician Initials		Witness Initials		
15-10088		1	ThISO		10/19/2015 11:38		JPACHELLA		<i>[Signature]</i>		<i>[Signature]</i>		
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS	MS	LCS	MS	LCS	MS	LCS	MS	
					Volume Used (g)	Volume Used (g)	Known pCi	Added pCi	Error Estimate	Known pCi	Added pCi	Error Estimate	Known pCi	Added pCi	Error Estimate
Th-228	Th-8b	103.560	10/19/2015	0.100	0.1013		4.73	0.170	0.00	0.000	0.00	0.000	
Th-230	Th-1b	23.520	10/19/2015	0.500	0.5018		5.32	0.144	0.00	0.000	0.00	0.000	
Th-232	Th-8b	103.560	10/19/2015	0.100	0.1013		4.73	0.170	0.00	0.000	0.00	0.000	
Tracers C-99 MS 1C-2a 22043.636 7/5/2014 0.1													
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Tracer						LCS
01	Th-229	Th-18a	22.460	10/19/2015	0.4544	0.2200							
02	Th-229	Th-18a	22.460	10/19/2015	0.2293	0.2200							
03	Th-229	Th-18a	22.460	10/19/2015	0.2227	0.2200							
04	Th-229	Th-18a	22.460	10/19/2015	0.2248	0.2200							
05	Th-229	Th-18a	22.460	10/19/2015	0.2228	0.2200							
06	Th-229	Th-18a	22.460	10/19/2015	0.2245	0.2200							
07	Th-229	Th-18a	22.460	10/19/2015	0.2239	0.2200							
08	Th-229	Th-18a	22.460	10/19/2015	0.2242	0.2200							
09	Th-229	Th-18a	22.460	10/19/2015	0.2240	0.2200							
10	Th-229	Th-18a	22.460	10/19/2015	0.2235	0.2200							
11	Th-229	Th-18a	22.460	10/19/2015	0.2245	0.2200							
12	Th-229	Th-18a	22.460	10/19/2015	0.2241	0.2200							
13	Th-229	Th-18a	22.460	10/19/2015	0.2239	0.2200							
14	Th-229	Th-18a	22.460	10/19/2015	0.2239	0.2200							
15	Th-229	Th-18a	22.460	10/19/2015	0.2247	0.2200							
16	Th-229	Th-18a	22.460	10/19/2015	0.2234	0.2200							
17	Th-229	Th-18a	22.460	10/19/2015	0.2244	0.2200							
18	Th-229	Th-18a	22.460	10/19/2015	0.2243	0.2200							
19	Th-229	Th-18a	22.460	10/19/2015	0.2243	0.2200							
20	Th-229	Th-18a	22.460	10/19/2015	0.2244	0.2200							
Matrix Spike													

Aliquot Worksheet

Work Order		Run	Analysis Code	Rpt Units	Lab Deadline	Technician	
15-10088		1	THISO	grams	11/5/2015	JPACHELLA	

Lab Fraction	Auxier & Associates, Inc. Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No. of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS	LCS						1.0000E+00	1.0000E+00				
02	BLANK	MBL						1.5000E+00	1.5000E+00				
03	CP4104S03-04	DUP						1.5038E+00	1.5038E+00				
04	CP4104S03-04	DO						1.5131E+00	1.5131E+00				
05	CP4104S08-09	TRG						1.5665E+00	1.5665E+00				
06	CP4104S11-12	TRG						1.5078E+00	1.5078E+00				
07	CP4104S17-18	TRG						1.5363E+00	1.5363E+00				
08	CP1804S03-04	TRG						1.5400E+00	1.5400E+00				
09	CP1804S05-06	TRG						1.5230E+00	1.5230E+00				
10	CP1804S08-09	TRG						1.5124E+00	1.5124E+00				
11	CP1804S10-11	TRG						1.5189E+00	1.5189E+00				
12	CP1804S12-13	TRG						1.5190E+00	1.5190E+00				
13	CP1804S15-16	TRG						1.5170E+00	1.5170E+00				
14	CP1804S17-18	TRG						1.5139E+00	1.5139E+00				
15	CP5008S03-04	TRG						1.5212E+00	1.5212E+00				
16	CP5008S06-07	TRG						1.5056E+00	1.5056E+00				
17	CP5008S09-10	TRG						1.5578E+00	1.5578E+00				
18	CP5008S12-13	TRG						1.5207E+00	1.5207E+00				
19	CP5008S14-15	TRG						1.5303E+00	1.5303E+00				
20	CP5008S17-18	TRG						1.5489E+00	1.5489E+00				

Comments	
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Technician: *J. Pachella* Date: 10/19/15

**Rough Sample Preparation
 Log Book**

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
15-10088	11/5/2015	10/18/2015	10/19/2015	10/20/2015	KSALLINGS

Eberline Fraction	Auxier & Associates, Inc. Client ID	Tare (g)		Gross (g)		Net (g)		Percent		Gamma		Special Info
		Pan Wt	Dry Wt	Wet Wt	Dry Wt	Wet Wt	Dry Wt	Liquid	Solid	Dry Wt	LEPS Wt	
04	CP4104S03-04	14.2700	1002.0800	1225.3000	1002.0800	1211.0300	987.8100	18.43%	81.57%	0.0000	0.0000	
05	CP4104S08-09	14.3000	814.0400	990.5000	814.0400	976.2000	799.7400	18.08%	81.92%	0.0000	0.0000	
06	CP4104S11-12	14.3100	809.9000	1017.1200	809.9000	1002.8100	795.5900	20.66%	79.34%	0.0000	0.0000	
07	CP4104S17-18	14.3200	848.9800	1055.6400	848.9800	1041.3200	834.6600	19.85%	80.15%	0.0000	0.0000	
08	CP1804S03-04	14.3100	821.0000	1045.0400	821.0000	1030.7300	806.6900	21.74%	78.26%	0.0000	0.0000	
09	CP1804S05-06	14.2700	771.7800	943.3400	771.7800	929.0700	757.5100	18.47%	81.53%	0.0000	0.0000	
10	CP1804S08-09	14.2900	777.1700	937.8800	777.1700	923.5900	762.8800	17.40%	82.60%	0.0000	0.0000	
11	CP1804S10-11	14.3000	785.4100	958.8600	785.4100	944.5600	771.1100	18.36%	81.64%	0.0000	0.0000	
12	CP1804S12-13	14.3100	829.9000	1007.3400	829.9000	993.0300	815.5900	17.87%	82.13%	0.0000	0.0000	
13	CP1804S15-16	14.4500	701.2900	852.8800	701.2900	838.4300	686.8400	18.08%	81.92%	0.0000	0.0000	
14	CP1804S17-18	14.4600	899.7600	1083.6200	899.7600	1069.1600	885.3000	17.20%	82.80%	0.0000	0.0000	
15	CP5008S03-04	28.5000	1139.1800	1382.7800	1139.1800	1354.2800	1110.6800	17.99%	82.01%	0.0000	0.0000	
16	CP5008S06-07	14.1900	930.4400	1161.7200	930.4400	1147.5300	916.2500	20.15%	79.85%	0.0000	0.0000	
17	CP5008S09-10	14.4500	851.5400	1052.7600	851.5400	1038.3100	837.0900	19.38%	80.62%	0.0000	0.0000	
18	CP5008S12-13	14.2700	755.7800	969.2600	755.7800	954.9900	741.5100	22.35%	77.65%	0.0000	0.0000	
19	CP5008S14-15	14.1700	874.1200	1139.5600	874.1200	1125.3900	889.9500	23.59%	76.41%	0.0000	0.0000	
20	CP5008S17-18	14.1100	1060.0000	1347.4000	1060.0000	1333.2900	1045.8900	21.56%	78.44%	0.0000	0.0000	

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

00200



Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_046
 Chamber Serial Number: 04026482B
 Detector Serial Number: 58762
 Env. Background: System Bkgd 132591
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/29/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 8:27:39 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.454 mL
 Effective Efficiency: 0.1688 +/- 0.0112
 Counting Efficiency: 0.1776 +/- 0.0031 on 10/25/2014 3:20:08 PM
 Chem. Recovery Factor: 0.9501 +/- 0.0652

Control Certificate Name: NatTh_Th-8
 Chem. Recov. of Control: TH-232 1.101410 +/- 0.100583
 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	5.793	11.47	62.23	1.53	0.00E+000	3.0
TH-228	5.340	357.47	10.39	1.53	0.00E+000	8.4
TH-229 T	4.865	292.79	11.51	2.21	0.00E+000	5.8
TH-230	4.633	410.32	9.69	0.68	0.00E+000	12.6
TH-232	3.931	331.47	10.79	1.53	0.00E+000	4.2

T = Tracer Peak used for Effective Efficiency

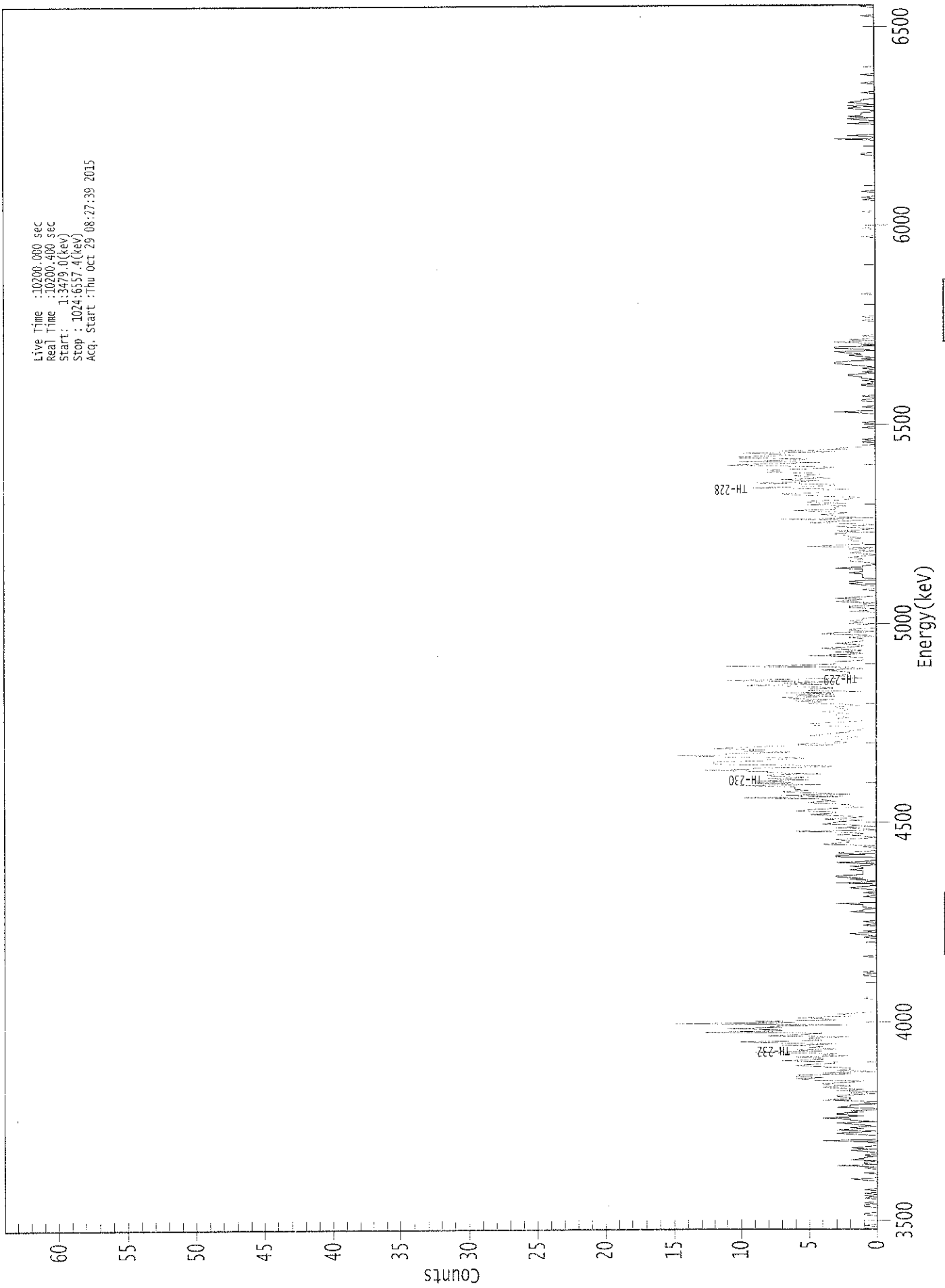
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.983	5850.00*	1.85E-001 +/- 1.17E-001	1.14E-001 +/- 1.49E-002
TH-228	0.982	5400.00*	5.62E+000 +/- 9.35E-001	1.12E-001 +/- 1.45E-002
TH-229	1.000	4872.00*	4.62E+000 +/- 6.01E-001	1.26E-001 +/- 1.64E-002
TH-230	0.992	4672.00*	6.45E+000 +/- 1.05E+000	8.87E-002 +/- 1.15E-002
TH-232	0.978	3997.00*	5.20E+000 +/- 8.80E-001	1.12E-001 +/- 1.45E-002

AG
 10/30/15

0000132602.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3479.0(keV)
Stop : 1024:6557.4(keV)
Acq. Start :Thu Oct 29 08:27:39 2015



ROI Type: 3

ROI Type: 1

11200

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

369: 6 6 10 4 9 6 9 5

Sample Title: 01

Channel	1	2	3	4	5	6	7	8
377:	8	5	8	8	4	8	8	13
385:	9	9	3	4	12	12	12	8
393:	8	5	10	15	11	11	6	10
401:	8	12	10	8	3	6	2	3
409:	3	2	2	1	5	4	3	2
417:	2	1	1	1	3	5	5	3
425:	1	1	3	2	3	3	2	3
433:	4	2	2	3	3	1	2	5
441:	4	6	3	6	7	3	6	3
449:	7	1	5	5	3	5	10	4
457:	7	3	11	7	1	2	3	2
465:	2	2	3	4	1	2	11	5
473:	3	3	3	1	1	1	2	5
481:	2	1	3	1	2	4	2	1
489:	1	3	2	1	1	1	2	0
497:	1	4	3	0	2	2	0	0
505:	0	1	2	1	2	1	1	0
513:	0	0	0	0	2	0	0	2
521:	2	0	1	0	3	2	1	3
529:	1	0	0	0	0	0	1	0
537:	0	0	1	2	1	2	0	0
545:	1	1	1	1	2	1	1	1
553:	3	1	1	0	0	1	2	1
561:	1	2	1	0	1	2	0	1
569:	2	0	5	3	1	1	1	2
577:	2	1	2	2	3	3	0	3
585:	1	0	2	3	0	1	5	3
593:	1	7	0	3	3	4	2	3
601:	6	3	3	3	2	5	2	5
609:	5	2	2	1	4	6	7	4
617:	4	4	2	9	5	3	3	9
625:	6	4	7	3	5	6	4	4
633:	8	7	8	4	3	6	11	8
641:	4	10	6	5	10	10	6	7
649:	10	3	7	2	3	1	1	0
657:	0	1	0	1	0	0	0	0
665:	0	0	0	0	0	1	0	0
673:	0	1	0	0	0	0	0	0
681:	0	1	3	0	0	0	1	0
689:	0	0	0	1	1	0	0	1
697:	0	0	0	0	0	0	0	0
705:	1	1	0	0	1	0	1	1
713:	2	2	0	1	0	0	1	0
721:	1	2	3	3	2	0	1	0
729:	1	2	1	2	3	0	1	3
737:	3	0	1	0	3	0	2	0
745:	0	1	0	0	0	0	0	0
753:	0	0	0	0	0	0	1	0
761:	0	1	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	1	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	1	0	0	0
833:	0	0	0	1	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	1	0	0	0	0	0	0
857:	0	0	0	1	0	1	0	0
865:	0	0	1	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	1	1	0	0	0	0	0
905:	0	0	0	0	0	0	3	0
913:	0	2	0	0	0	0	0	0
921:	0	0	0	2	0	0	1	2
929:	0	2	1	1	1	0	0	1
937:	2	1	2	0	1	2	1	1
945:	0	0	0	0	0	1	0	0
953:	0	0	0	0	0	1	0	0
961:	0	0	0	0	1	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	1	0	0
1017:	0	0	0	0	0	1	0	0

KB
10/29/15

Apex-Alpha™

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_047
 Chamber Serial Number: 02030596A
 Detector Serial Number: 91086
 Env. Background: System Bkgd 132592
 Reagent Blank: <not performed>

Sample Size: 1.500E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/29/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 8:27:36 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: 0.1397 +/- 0.0134
 Counting Efficiency: 0.1650 +/- 0.0029 on 10/25/2014 3:23:35 PM
 Chem. Recovery Factor: 0.8465 +/- 0.0825

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	5.803	7.83	70.93	0.17	0.00E+000	3.0
TH-228	5.299	-0.85	246.69	0.85	0.00E+000	0.0
TH-229 T	4.860	122.32	17.78	0.68	0.00E+000	8.9
TH-230	4.661	18.83	45.41	0.17	0.00E+000	4.5
TH-232	3.913	1.15	249.59	0.85	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

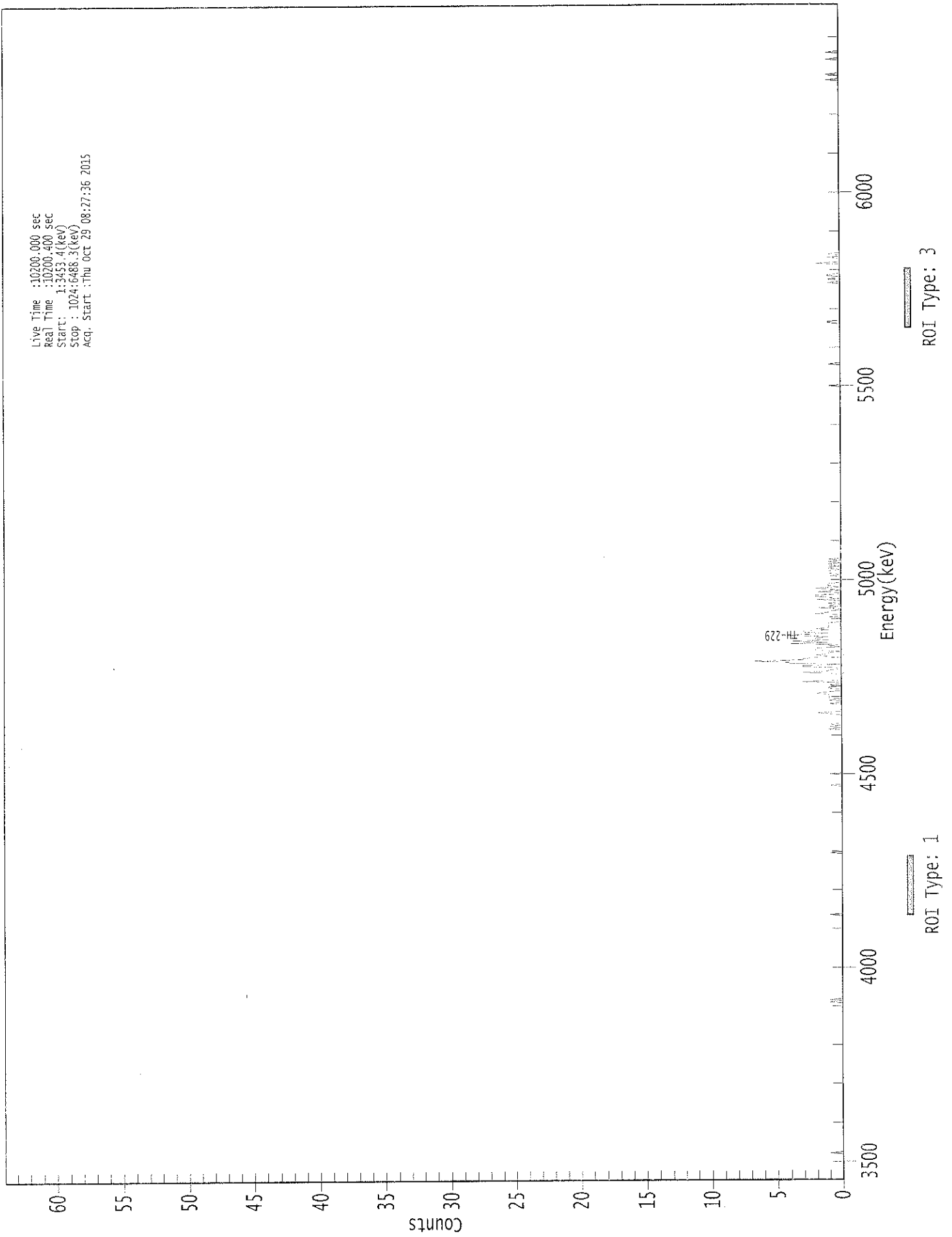
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.989	5850.00*	1.02E-001 +/- 7.45E-002	5.41E-002 +/- 1.02E-002
TH-228	0.948	5400.00*	-1.08E-002 +/- 2.66E-002	7.58E-002 +/- 1.42E-002
TH-229	0.999	4872.00*	1.55E+000 +/- 2.92E-001	7.17E-002 +/- 1.35E-002
TH-230	0.999	4672.00*	2.39E-001 +/- 1.17E-001	5.29E-002 +/- 9.93E-003
TH-232	0.964	3997.00*	1.45E-002 +/- 3.64E-002	7.57E-002 +/- 1.42E-002

AG
 10/30/15

0000132621.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start: 1:3453.4(keV)
Stop : 1024:0488.3(keV)
Acq. Start :Thu Oct 29 08:27:36 2015



00216

ROI Type: 3

ROI Type: 1

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

Sample Title: 02

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	1
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	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	1	0	1	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	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	0	0	0	0	0
225:	0	0	0	0	0	0	0	1	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	1	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	1
345:	0	0	0	0	0	0	0	0	0
353:	0	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	0	0
385:	0	0	0	0	0	0	0	0
393:	1	0	1	0	1	0	0	0
401:	0	0	0	0	0	1	2	0
409:	0	0	0	0	0	0	1	0
417:	0	1	0	1	1	1	1	2
425:	1	0	0	1	1	0	1	0
433:	0	3	0	0	0	0	0	0
441:	1	3	1	1	0	0	3	3
449:	0	4	4	7	3	3	2	1
457:	2	1	1	0	2	2	2	0
465:	1	0	4	1	4	1	2	2
473:	1	4	3	1	3	3	1	2
481:	1	1	1	1	1	0	0	0
489:	0	1	0	0	2	1	1	0
497:	0	2	0	1	0	1	0	0
505:	2	0	1	2	2	0	0	2
513:	0	1	2	0	1	1	1	0
521:	0	0	0	0	0	1	0	1
529:	1	1	0	1	1	0	1	1
537:	0	1	0	1	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	1	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	0	0	0	0
745:	0	1	1	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	1	0	0	1
785:	0	0	1	1	0	0	0	0
793:	0	0	0	0	0	2	0	0

801: 0 0 1 0 0 1 0 0

Sample Title: 02

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

Apex-Alpha™

KB
10/29/15

Sample Description: CP4104S03-04-DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_048
 Chamber Serial Number: 02030596B
 Detector Serial Number: 83111
 Env. Background: System Bkgd 132593
 Reagent Blank: <not performed>

Sample Size: 1.504E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 8:27:38 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.223 mL
 Effective Efficiency: 0.1820 +/- 0.0158
 Counting Efficiency: 0.1700 +/- 0.0030 on 10/25/2014 3:27:02 PM
 Chem. Recovery Factor: 1.0705 +/- 0.0948

Peak Match Tolerance: 0.175 MeV

----- PEAK AREA REPORT -----						
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.835	15.49	50.75	0.51	0.00E+000	5.9
TH-228	5.354	137.15	16.80	0.85	0.00E+000	7.6
TH-229 T	4.862	154.79	15.88	2.21	0.00E+000	4.5
TH-230	4.616	140.49	16.57	0.51	0.00E+000	8.8
TH-232	3.936	101.98	19.52	1.02	0.00E+000	6.3

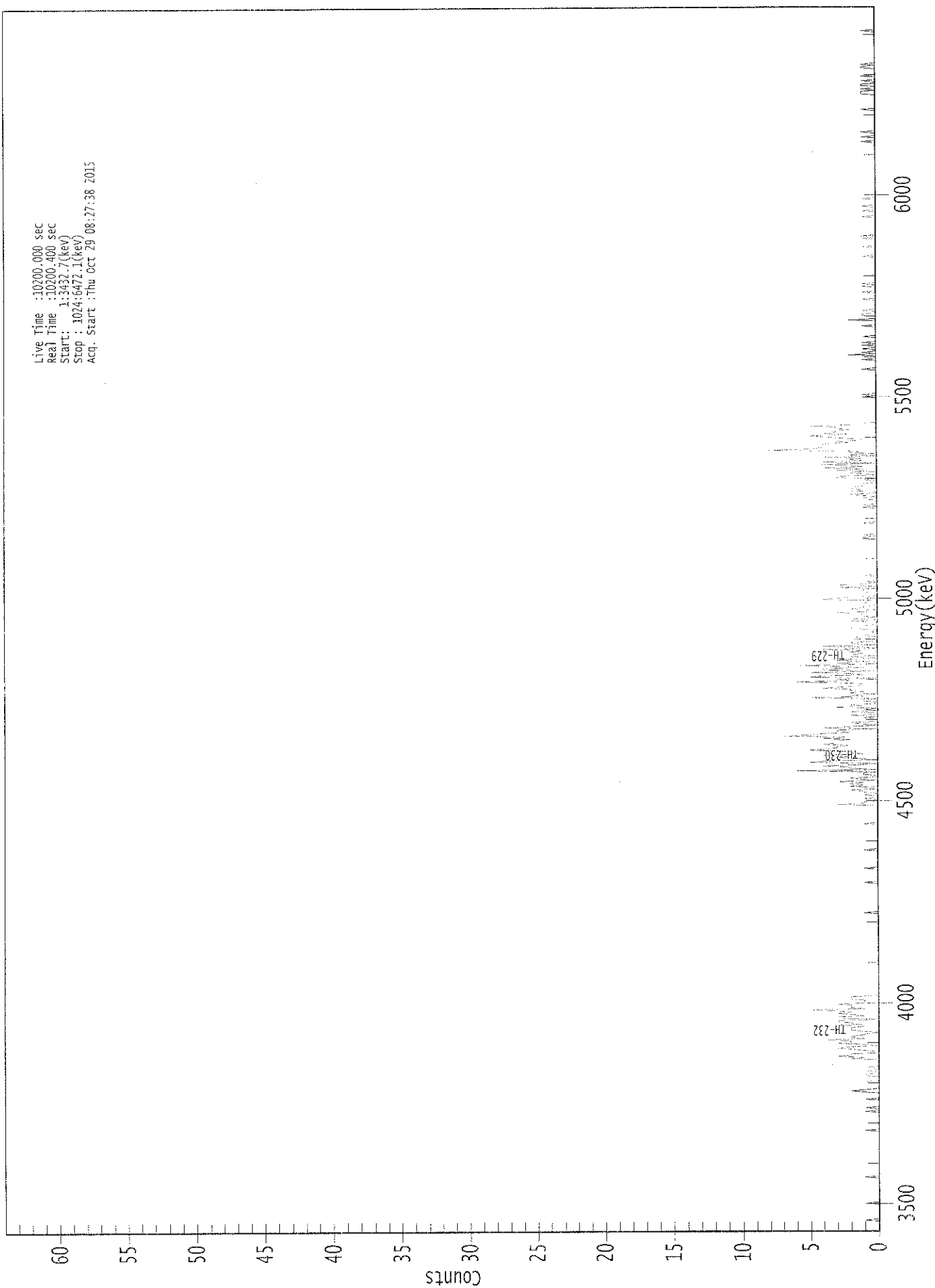
T = Tracer Peak used for Effective Efficiency

----- NUCLIDE ANALYSIS RESULTS -----						
Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)		MDA (pCi/gram)	
TH-227	0.999	5850.00*	1.54E-001 +/-	8.25E-002	5.22E-002 +/-	8.88E-003
TH-228	0.989	5400.00*	1.36E+000 +/-	3.24E-001	5.92E-002 +/-	1.01E-002
TH-229	0.999	4872.00*	1.51E+000 +/-	2.56E-001	7.78E-002 +/-	1.32E-002
TH-230	0.984	4672.00*	1.36E+000 +/-	3.23E-001	5.09E-002 +/-	8.65E-003
TH-232	0.981	3997.00*	9.87E-001 +/-	2.56E-001	6.10E-002 +/-	1.04E-002

AG
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0000132622.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start: 1:33:32.7(keV)
Stop : 1024:0472.1(keV)
Acq. Start :Thu Oct 29 08:27:38 2015



: 00221

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

Sample Title: 03

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	1	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	1
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	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	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	1	0	0	1
105:	0	0	0	0	0	0	0	1	0
113:	0	0	0	0	0	1	2	1	0
121:	0	0	0	0	0	0	1	0	0
129:	0	0	1	1	0	0	0	1	0
137:	0	1	0	0	0	0	0	0	0
145:	2	1	3	2	2	2	0	0	1
153:	2	3	2	0	1	3	3	2	2
161:	4	1	2	2	2	1	1	0	1
169:	2	2	2	1	3	1	1	2	3
177:	3	0	3	3	1	2	2	3	2
185:	3	5	1	2	2	2	2	3	1
193:	1	1	2	2	2	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	1	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	1	0	0	0	0	0
297:	0	0	0	0	0	0	0	0	1
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	1	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	1	0	0	0
345:	0	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	3	1	1	0
361:	0	1	0	0	0	1	0	1	1

369: 2 0 0 2 1 2 1 3

Sample Title: 03

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 03

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	1	0	0
817:	0	0	0	0	0	1	0	0
825:	0	0	0	0	1	0	1	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	1	0
849:	0	0	0	1	0	0	0	1
857:	0	0	0	0	0	1	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	1	0	0	0	1	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	0	0
945:	0	0	0	0	0	1	1	1
953:	0	1	0	0	1	1	0	0
961:	1	0	0	0	1	0	0	0
969:	0	0	0	1	1	0	1	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	1	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KB
10/29/15

Apex-Alpha™

Sample Description: CP4104S03-04
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 04
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_049
 Chamber Serial Number: 10006121A
 Detector Serial Number: 49
 Env. Background: System Bkgd 132594
 Reagent Blank: <not performed>

Sample Size: 1.513E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 8:27:41 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: 0.1608 +/- 0.0146
 Counting Efficiency: 0.1525 +/- 0.0027 on 12/13/2014 2:45:02 PM
 Chem. Recovery Factor: 1.0540 +/- 0.0977

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	5.807	21.83	42.14	0.17	0.00E+000	0.0
TH-228	5.372	97.15	19.99	0.85	0.00E+000	8.9
TH-229 T	4.876	138.00	16.74	0.00	0.00E+000	11.7
TH-230	4.634	99.00	19.80	0.00	0.00E+000	8.5
TH-232	3.961	117.15	18.19	0.85	0.00E+000	7.4

T = Tracer Peak used for Effective Efficiency

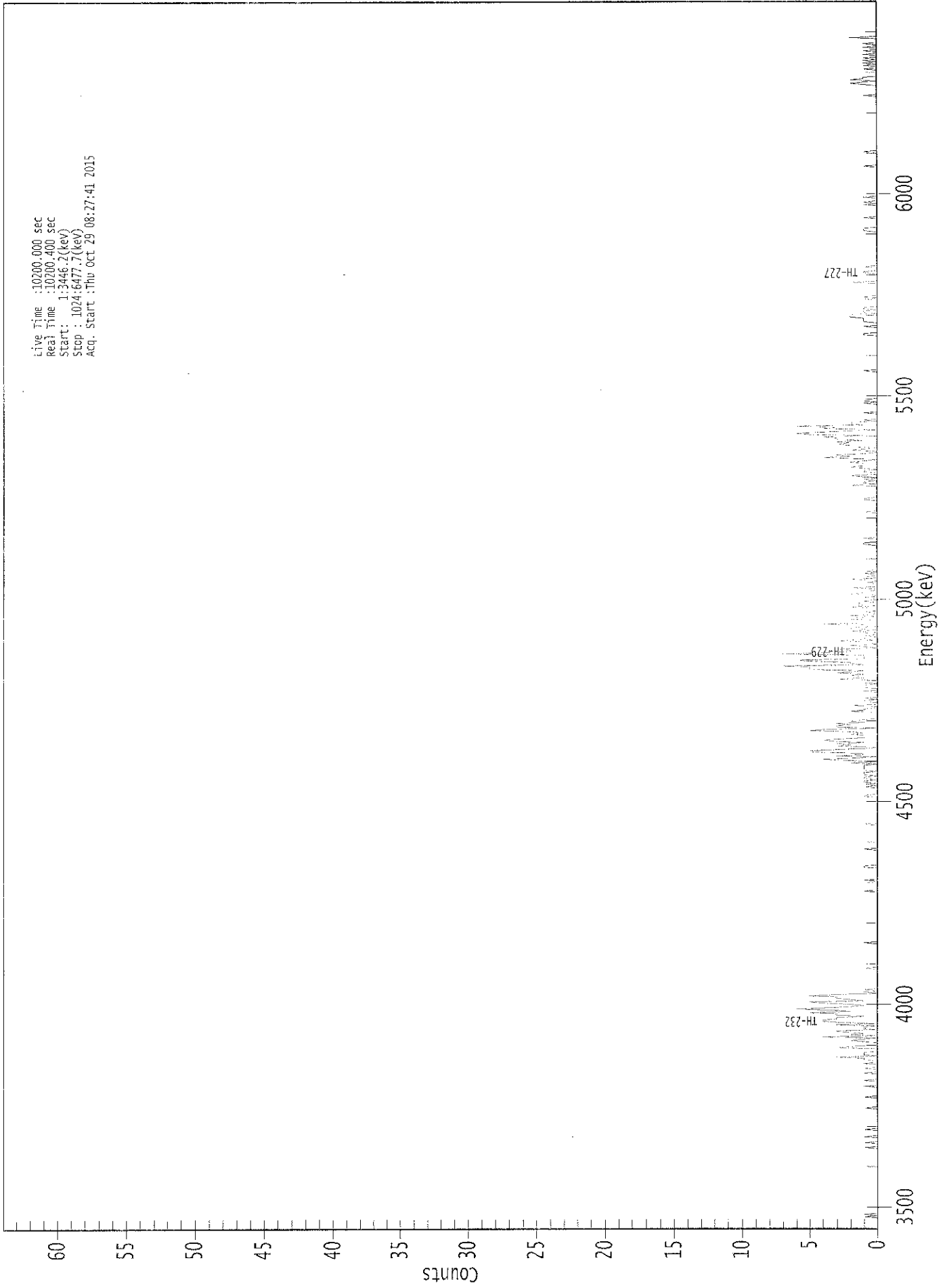
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.990	5850.00*	2.44E-001 +/- 1.12E-001	4.67E-002 +/- 8.32E-003
TH-228	0.996	5400.00*	1.08E+000 +/- 2.89E-001	6.66E-002 +/- 1.19E-002
TH-229	1.000	4872.00*	1.51E+000 +/- 2.69E-001	6.56E-002 +/- 1.17E-002
TH-230	0.993	4672.00*	1.08E+000 +/- 2.88E-001	6.54E-002 +/- 1.17E-002
TH-232	0.993	3997.00*	1.28E+000 +/- 3.25E-001	6.52E-002 +/- 1.16E-002

AG
 10/30/15

0000132603.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:34:46.2 (keV)
Stop : 1024:6477.7 (keV)
Acq. Start : Thu Oct 29 08:27:41 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: 04

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	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	1	0	0	0	0
73:	1	0	0	0	0	1	0	0	0
81:	0	0	0	1	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	1	0	0	0
105:	0	0	0	0	0	0	1	0	0
113:	0	0	0	0	0	0	0	1	0
121:	0	0	0	0	1	0	0	0	0
129:	0	0	1	0	0	0	1	0	0
137:	0	0	1	0	0	1	1	3	0
145:	0	1	1	1	0	0	0	3	0
153:	2	0	0	0	1	2	1	0	0
161:	4	0	2	1	3	3	0	1	0
169:	1	0	3	0	3	4	4	3	0
177:	3	1	3	3	5	2	3	6	0
185:	4	2	1	2	4	5	1	2	0
193:	3	3	5	3	0	1	0	1	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	1	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	1	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	1	0	0	0	0	0	0	0
289:	0	0	1	0	0	0	0	0	0
297:	0	0	0	0	0	1	1	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	1	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	1	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:	1	1	0	0	0	0	0	0	0

369: 1 0 1 0 1 1 0 1

Sample Title: 04

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

801: 0 1 0 0 0 0 0 0 0

Sample Title: 04

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	1
833:	1	1	0	0	0	0	0	0
841:	0	0	1	0	0	0	0	0
849:	0	0	0	0	0	1	0	1
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	1	0	0
889:	0	0	0	0	0	0	0	0
897:	0	1	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:	1	0	0	0	0	0	0	0
953:	0	1	2	1	0	2	1	1
961:	0	0	0	0	0	0	1	0
969:	0	1	0	1	0	1	0	1
977:	0	0	1	0	0	1	0	0
985:	1	0	0	1	0	0	0	0
993:	2	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™

ICB
10/29/15

Sample Description: CP4104S08-09
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_050
 Chamber Serial Number: 10006121B
 Detector Serial Number: 50
 Env. Background: System Bkgd 132595
 Reagent Blank: <not performed>

Sample Size: 1.566E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 8:27:42 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.223 mL
 Effective Efficiency: 0.1583 +/- 0.0145
 Counting Efficiency: 0.1428 +/- 0.0026 on 12/13/2014 2:43:59 PM
 Chem. Recovery Factor: 1.1088 +/- 0.1036

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	5.871	6.98	80.28	1.02	0.00E+000	3.0
TH-228	5.374	148.13	16.22	1.87	0.00E+000	7.3
TH-229 T	4.877	134.66	16.92	0.34	0.00E+000	4.4
TH-230	4.631	142.32	16.48	0.68	0.00E+000	4.3
TH-232	3.967	145.66	16.26	0.34	0.00E+000	6.7

T = Tracer Peak used for Effective Efficiency

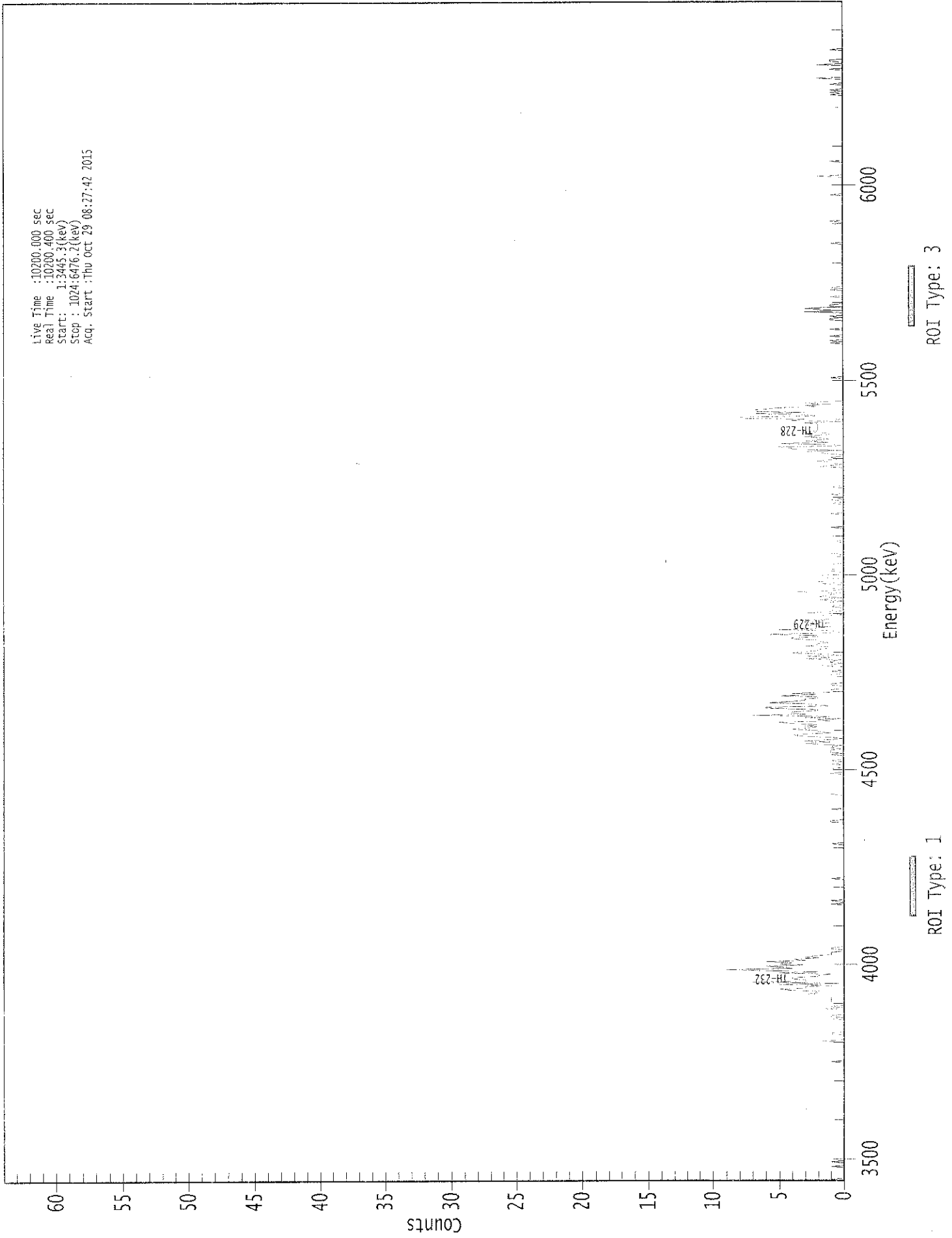
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.998	5850.00*	7.66E-002 +/- 6.31E-002	6.92E-002 +/- 1.24E-002
TH-228	0.997	5400.00*	1.62E+000 +/- 3.92E-001	8.27E-002 +/- 1.49E-002
TH-229	1.000	4872.00*	1.45E+000 +/- 2.60E-001	5.13E-002 +/- 9.23E-003
TH-230	0.991	4672.00*	1.52E+000 +/- 3.71E-001	6.04E-002 +/- 1.09E-002
TH-232	0.995	3997.00*	1.56E+000 +/- 3.77E-001	5.11E-002 +/- 9.18E-003

AG
10/30/15

0000132604.CNF

Live Time : 10200.000 sec
Real Time : 10300.400 sec
Start : 1:3445.3{kev}
Stop : 1024:6476.2{kev}
Acq. Start : Thu Oct 29 08:27:42 2015



00231

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

Sample Title: 05

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	1	0	0	0	0	0	0	0
9:	0	0	0	0	0	1	0	0	0
17:	1	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	1
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	2	0	0	0	0	0	0	1
129:	1	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	1	0	1	1
145:	0	0	0	0	0	0	2	0	1
153:	0	0	1	1	1	1	1	1	1
161:	1	1	3	2	2	4	5	3	3
169:	3	1	5	0	7	3	3	3	4
177:	4	2	2	1	5	2	6	6	9
185:	4	5	6	3	5	4	6	6	3
193:	4	2	3	2	1	1	1	1	0
201:	0	1	1	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	1	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	1	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	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:	1	0	0	0	0	0	0	0	0
321:	0	0	1	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	1
337:	0	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0	0
353:	0	1	0	0	0	0	1	0	0
361:	0	1	0	0	0	1	0	0	0

369: 0 1 0 1 1 1 0 1

Sample Title: 05

Channel	1	2	3	4	5	6	7	8
377:	1	0	2	3	1	3	1	0
385:	1	3	4	3	1	2	2	4
393:	3	2	3	2	4	5	1	2
401:	0	3	1	7	3	4	4	2
409:	2	6	6	1	2	3	6	4
417:	3	3	2	2	5	2	4	1
425:	1	1	0	0	0	1	1	0
433:	0	0	0	0	0	1	1	0
441:	0	1	0	0	0	0	2	1
449:	0	1	1	0	3	1	3	0
457:	2	4	3	2	2	1	1	3
465:	2	2	1	2	2	4	4	2
473:	2	6	2	0	0	5	2	2
481:	1	3	2	1	3	3	1	2
489:	2	2	0	1	3	0	1	1
497:	0	1	0	2	1	1	0	2
505:	1	0	2	1	1	0	4	1
513:	0	1	1	0	0	2	0	2
521:	0	0	1	2	2	1	0	0
529:	1	0	1	0	0	0	1	0
537:	0	1	1	1	1	0	0	1
545:	0	0	0	0	0	0	0	0
553:	0	0	1	0	0	0	0	0
561:	0	0	0	0	0	0	1	0
569:	0	0	0	0	0	0	0	0
577:	0	0	1	0	0	0	0	0
585:	0	0	0	1	0	0	1	0
593:	1	0	0	1	0	0	0	0
601:	0	1	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	2	1	0	1	1
625:	2	1	0	1	0	0	1	2
633:	3	0	4	4	5	0	1	5
641:	1	3	2	1	2	3	2	1
649:	1	3	2	2	2	2	2	2
657:	2	3	0	4	3	8	8	2
665:	3	7	3	7	7	6	5	2
673:	3	1	3	2	0	0	0	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	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	1	0
729:	1	0	0	0	1	0	0	0
737:	0	0	1	0	0	0	0	0
745:	0	0	1	1	0	1	0	0
753:	0	3	0	2	3	0	1	1
761:	0	0	0	0	0	0	1	0
769:	0	0	0	0	1	0	1	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	1	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	1
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	1	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	2	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	1	0	1
945:	0	1	0	0	0	0	1	0
953:	0	0	0	2	0	0	0	0
961:	0	0	0	1	0	0	0	2
969:	0	0	1	1	0	0	0	0
977:	0	0	0	0	1	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
10/29/15

Apex-Alpha™

Sample Description: CP4104S11-12
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 06
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_051
 Chamber Serial Number: 10006123A
 Detector Serial Number: 51
 Env. Background: System Bkgd 132596
 Reagent Blank: <not performed>

Sample Size: 1.508E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 8:27:44 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: 0.1981 +/- 0.0165
 Counting Efficiency: 0.1524 +/- 0.0027 on 12/13/2014 2:42:37 PM
 Chem. Recovery Factor: 1.2998 +/- 0.1108

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	5.819	5.28	107.99	2.72	0.00E+000	3.0
TH-228	5.380	111.73	19.05	5.27	0.00E+000	12.4
TH-229 T	4.885	169.79	15.16	2.21	0.00E+000	4.0
TH-230	4.638	155.79	15.83	2.21	0.00E+000	12.2
TH-232	3.968	135.66	16.85	0.34	0.00E+000	4.7

T = Tracer Peak used for Effective Efficiency

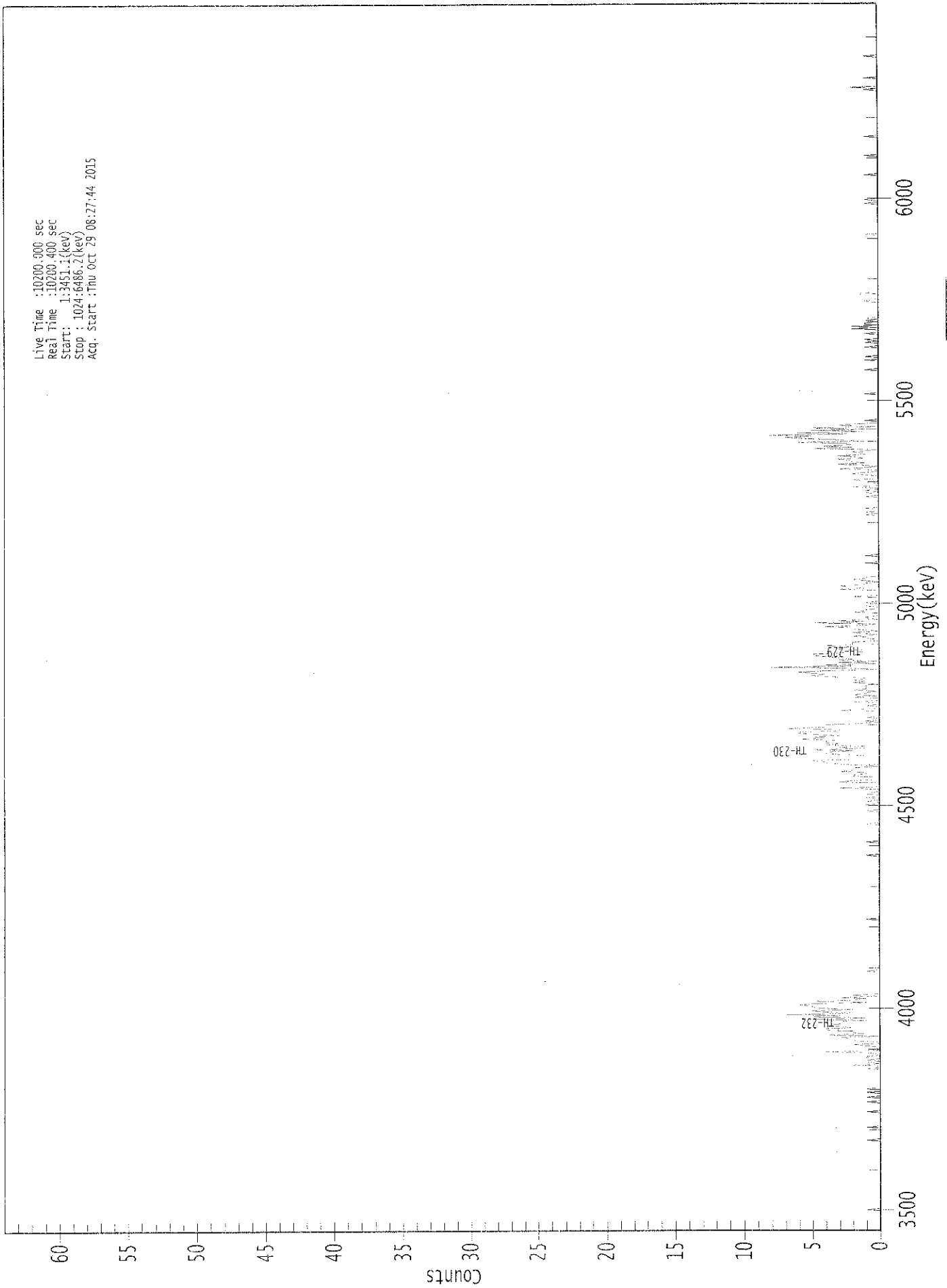
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.995	5850.00*	4.81E-002 +/- 5.26E-002	7.82E-002 +/- 1.28E-002
TH-228	0.998	5400.00*	1.01E+000 +/- 2.54E-001	9.86E-002 +/- 1.61E-002
TH-229	0.999	4872.00*	1.51E+000 +/- 2.47E-001	7.13E-002 +/- 1.16E-002
TH-230	0.994	4672.00*	1.38E+000 +/- 3.15E-001	7.11E-002 +/- 1.16E-002
TH-232	0.996	3997.00*	1.20E+000 +/- 2.82E-001	4.24E-002 +/- 6.93E-003

AG
10/30/15

0000132605.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3451.1(kev)
Stop : 1024:6486.2(kev)
Acq. Start :Thu Oct 29 08:27:44 2015



ROI Type: 3

ROI Type: 1

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

Sample Title: 06

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	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	1	0	0	0	0	0
81:	0	0	0	0	0	0	0	1	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	1	0	0	0	0	0
105:	0	0	0	1	0	0	0	0	1
113:	0	0	0	1	0	0	0	1	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	1
137:	0	0	2	0	1	0	0	1	0
145:	1	1	0	0	1	4	0	0	1
153:	0	0	1	2	0	0	0	2	2
161:	2	3	0	4	1	2	2	2	4
169:	4	2	3	4	3	3	3	3	1
177:	5	1	5	3	7	2	4	4	5
185:	2	4	5	5	6	5	1	5	5
193:	2	1	3	0	2	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:	1	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	1	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:	1	0	0	0	0	0	0	0	0
321:	0	0	0	1	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	1	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:	1	0	0	1	1	0	0	0	0

369: 3 0 0 0 0 3 2 0

Sample Title: 06

Channel	1	2	3	4	5	6	7	8
377:	0	0	2	2	1	1	3	2
385:	2	2	0	1	3	4	4	5
393:	2	2	1	1	3	4	4	2
401:	5	1	3	1	4	3	4	4
409:	3	6	4	5	3	5	6	6
417:	3	3	7	4	4	4	2	0
425:	1	0	0	1	0	0	0	0
433:	0	3	1	0	0	1	0	0
441:	2	0	0	0	2	0	2	1
449:	1	0	2	1	1	1	1	0
457:	2	1	2	1	1	4	5	4
465:	5	6	4	0	2	8	2	4
473:	0	3	0	3	2	3	4	5
481:	5	3	1	1	3	3	2	4
489:	2	2	2	0	0	1	1	2
497:	0	1	2	0	1	2	2	4
505:	1	0	5	1	3	0	1	1
513:	0	0	0	2	1	1	0	0
521:	1	1	1	1	0	0	0	0
529:	2	0	0	0	0	0	3	1
537:	2	3	1	1	0	1	2	1
545:	1	0	0	0	0	0	0	0
553:	0	0	0	0	1	0	0	0
561:	0	0	1	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	1	0	1	0
601:	0	1	0	0	0	0	0	0
609:	0	0	0	1	0	0	1	0
617:	1	0	0	2	0	0	0	1
625:	1	2	0	0	0	1	2	1
633:	0	0	3	1	0	1	3	1
641:	2	2	3	1	2	3	1	1
649:	2	1	0	5	2	4	2	2
657:	6	1	3	5	7	5	8	2
665:	6	1	5	0	5	0	3	2
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:	1	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	1	0	0	0
721:	0	0	0	0	1	0	0	1
729:	0	0	0	0	0	0	0	1
737:	0	0	0	1	0	1	0	0
745:	0	0	1	0	0	0	2	0
753:	2	0	1	1	0	1	0	1
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	1	1	0
777:	0	0	0	0	1	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	1	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	1	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	1
881:	0	0	0	0	0	0	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	0	0	0	1
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:	2	0	0	0	0	0	0	0
961:	1	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	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™

LCB
10/29/15

Sample Description: CP4104S17-18
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 07
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

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

Sample Size: 1.536E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 8:27:46 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: 0.1780 +/- 0.0155
 Counting Efficiency: 0.1607 +/- 0.0029 on 12/13/2014 2:40:57 PM
 Chem. Recovery Factor: 1.1077 +/- 0.0984

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	7.15	78.23	0.85	0.00E+000	2.9
TH-228	5.367	117.98	18.14	1.02	0.00E+000	12.5
TH-229 T	4.861	152.15	15.94	0.85	0.00E+000	8.8
TH-230	4.624	130.32	17.22	0.68	0.00E+000	4.0
TH-232	3.948	117.66	18.10	0.34	0.00E+000	5.2

T = Tracer Peak used for Effective Efficiency

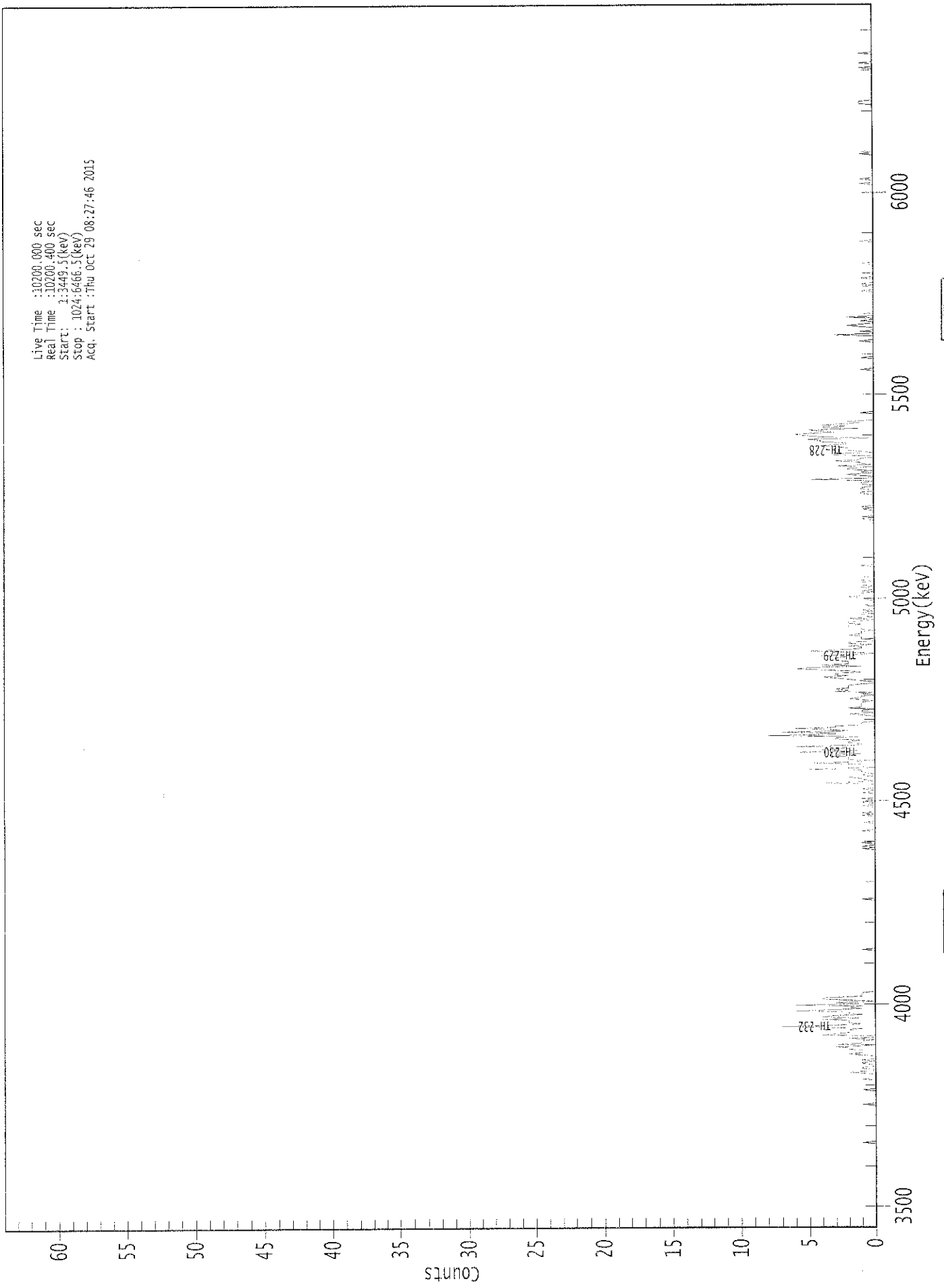
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	7.12E-002 +/- 5.70E-002	5.96E-002 +/- 1.02E-002
TH-228	0.994	5400.00*	1.17E+000 +/- 2.91E-001	6.24E-002 +/- 1.06E-002
TH-229	0.999	4872.00*	1.48E+000 +/- 2.53E-001	5.83E-002 +/- 9.95E-003
TH-230	0.988	4672.00*	1.27E+000 +/- 3.07E-001	5.48E-002 +/- 9.34E-003
TH-232	0.988	3997.00*	1.14E+000 +/- 2.84E-001	4.63E-002 +/- 7.90E-003

AG
10/30/15

0000132606.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:3449.5 (keV)
Stop : 1024.6466.5 (keV)
Acq. Start : Thu Oct 29 08:27:46 2015



: 00241

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:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	1
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	1
105:	0	0	0	0	0	0	0	0
113:	0	0	0	1	0	0	0	0
121:	0	0	0	0	1	0	0	0
129:	0	1	2	0	0	1	1	0
137:	0	1	1	0	1	0	0	0
145:	1	2	1	1	1	2	2	3
153:	0	3	1	1	1	0	2	0
161:	0	4	3	2	2	2	1	3
169:	7	3	1	2	2	2	4	1
177:	4	3	1	2	2	6	3	1
185:	2	1	6	1	3	0	2	4
193:	4	1	1	1	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:	1	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	1	0	1	0
321:	0	1	0	0	0	0	0	0
329:	0	0	0	1	0	0	0	0
337:	0	0	1	0	0	0	0	0
345:	1	0	1	0	0	0	0	0
353:	1	0	0	1	0	0	1	0
361:	0	0	0	1	0	0	1	0

369: 0 0 0 4 1 0 1 1

Sample Title: 07

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

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

KB
10/29/15

Apex-Alpha™

Sample Description: CP1804S03-04
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 08
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

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

Sample Size: 1.540E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 8:27:48 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: 0.2058 +/- 0.0168
 Counting Efficiency: 0.1455 +/- 0.0026 on 12/13/2014 2:39:33 PM
 Chem. Recovery Factor: 1.4142 +/- 0.1183

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	5.829	11.32	60.27	0.68	0.00E+000	4.5
TH-228	5.349	126.47	17.55	1.53	0.00E+000	3.3
TH-229 T	4.869	176.15	14.81	0.85	0.00E+000	4.0
TH-230	4.617	193.98	14.12	1.02	0.00E+000	3.9
TH-232	3.953	152.66	15.88	0.34	0.00E+000	6.4

T = Tracer Peak used for Effective Efficiency

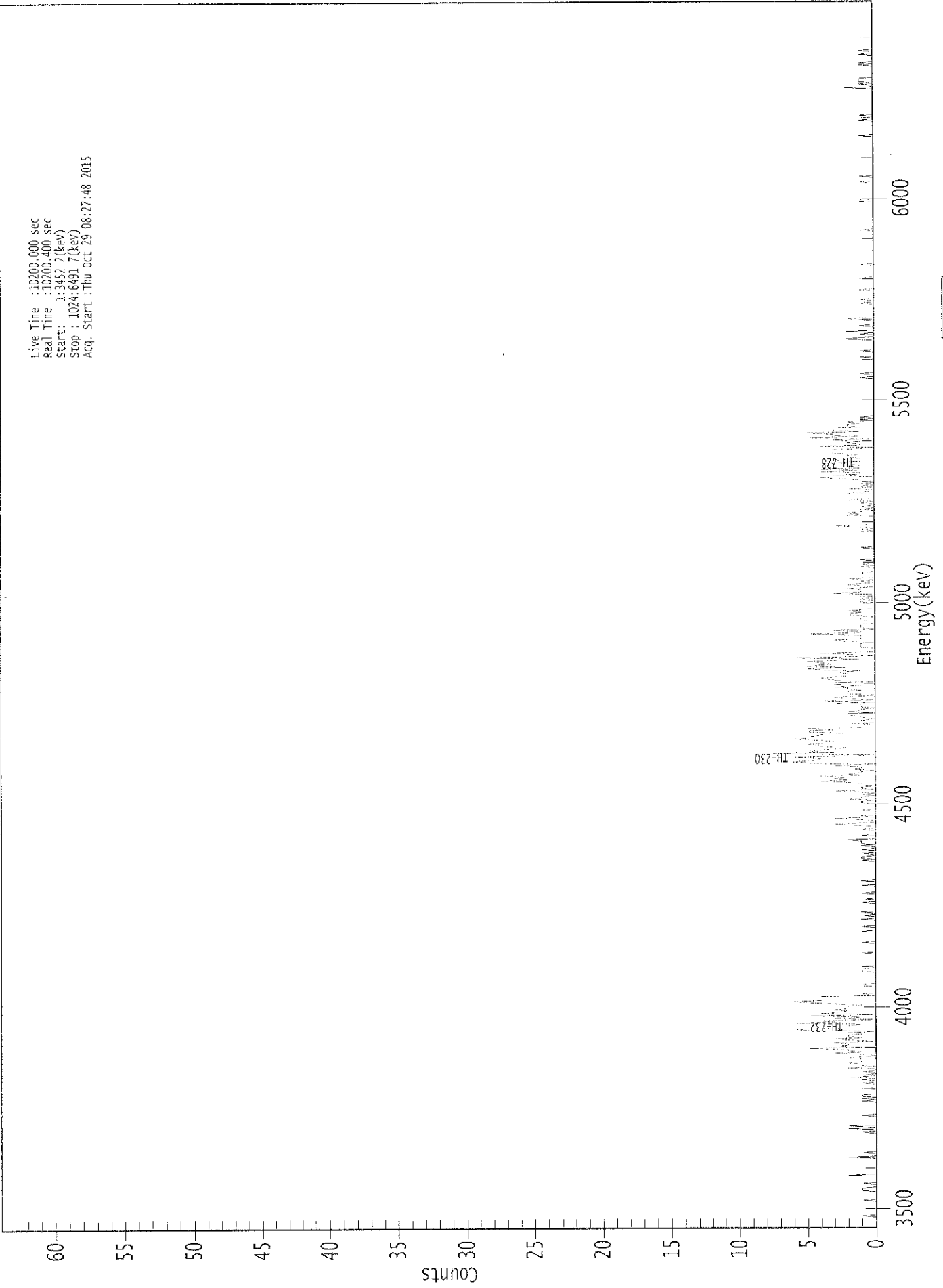
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.998	5850.00*	9.73E-002 +/- 6.06E-002	4.85E-002 +/- 7.76E-003
TH-228	0.986	5400.00*	1.08E+000 +/- 2.57E-001	6.07E-002 +/- 9.72E-003
TH-229	1.000	4872.00*	1.48E+000 +/- 2.37E-001	5.03E-002 +/- 8.05E-003
TH-230	0.984	4672.00*	1.62E+000 +/- 3.47E-001	5.28E-002 +/- 8.45E-003
TH-232	0.990	3997.00*	1.28E+000 +/- 2.88E-001	4.00E-002 +/- 6.40E-003

AG
 10/30/15

0000132607.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:34:52.2(keV)
Stop : 1024:5491.7(keV)
Acq. Start :Thu Oct 29 08:27:48 2015



: 00246

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

369: 0 1 1 2 4 2 3 2

Sample Title: 08

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

801: 0 0 1 0 0 0 0 0

Sample Title: 08

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	1
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	1
857:	1	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	1
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	1	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	1	0	0	0	1
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	2	0
953:	0	1	0	1	1	1	1	0
961:	0	0	0	0	0	0	0	0
969:	0	1	0	1	0	0	0	0
977:	0	0	1	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™

10/29/15

Sample Description: CP1804S05-06
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 09
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

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

Sample Size: 1.523E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 8:27:49 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: 0.1631 +/- 0.0147
 Counting Efficiency: 0.1452 +/- 0.0026 on 12/13/2014 2:38:19 PM
 Chem. Recovery Factor: 1.1233 +/- 0.1035

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	5.949	16.81	49.75	1.19	0.00E+000	4.5
TH-228	5.377	119.30	18.09	1.70	0.00E+000	15.6
TH-229	T 4.884	139.49	16.63	0.51	0.00E+000	5.2
TH-230	4.635	165.83	15.23	0.17	0.00E+000	5.4
TH-232	3.964	120.00	17.97	0.00	0.00E+000	5.2

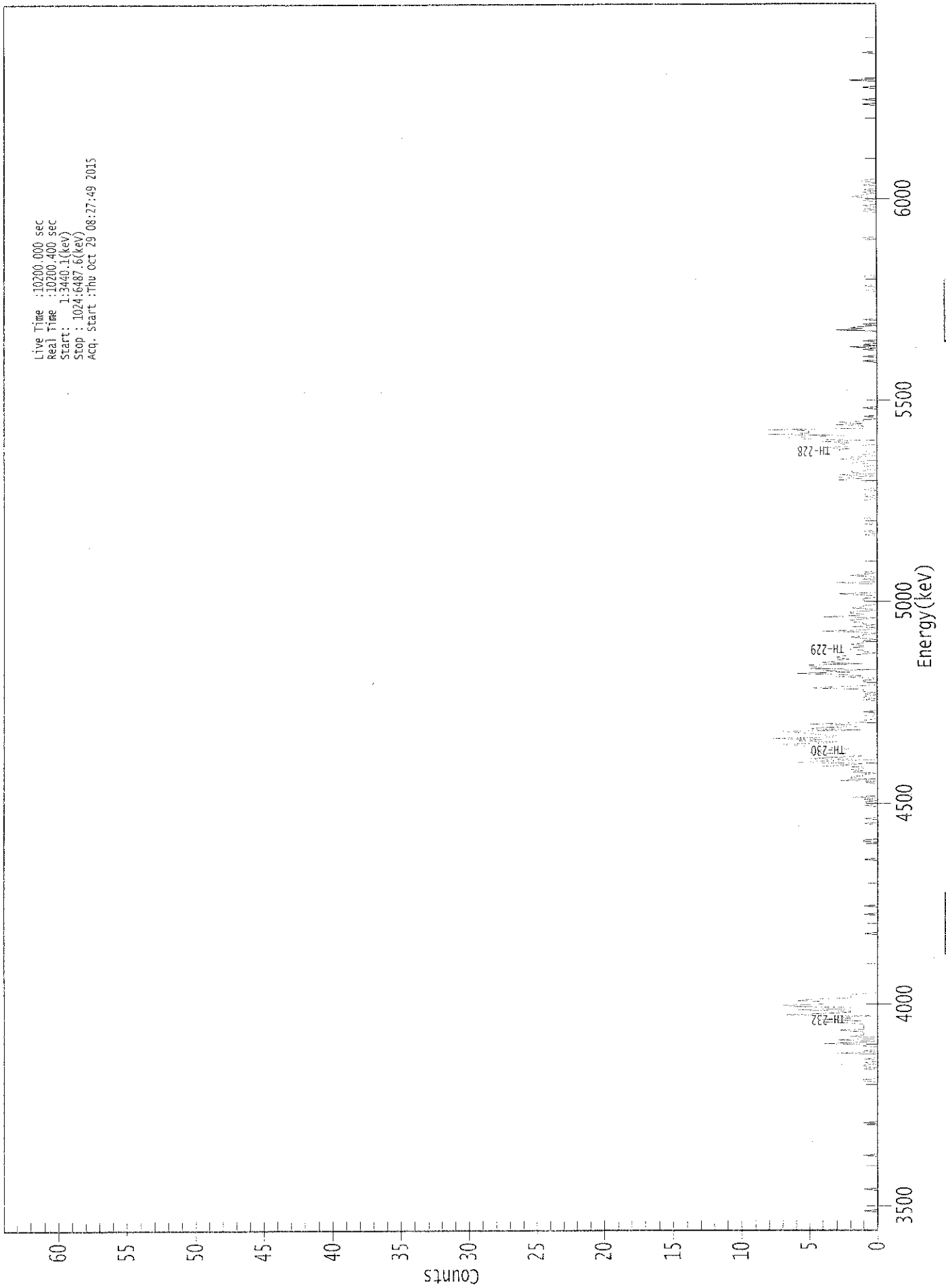
T = Tracer Peak used for Effective Efficiency

----- ----- NUCLIDE ANALYSIS RESULTS ----- -----						
Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)		
TH-227	0.950	5850.00*	1.84E-001 +/- 9.73E-002	7.22E-002	+/-	1.28E-002
TH-228	0.997	5400.00*	1.30E+000 +/- 3.29E-001	8.01E-002	+/-	1.42E-002
TH-229	0.999	4872.00*	1.50E+000 +/- 2.65E-001	5.62E-002	+/-	9.96E-003
TH-230	0.993	4672.00*	1.77E+000 +/- 4.14E-001	4.46E-002	+/-	7.90E-003
TH-232	0.994	3997.00*	1.28E+000 +/- 3.23E-001	6.40E-002	+/-	1.13E-002

AG
10/30/15

0000132608.CNF

Live Time :10200.000 sec
Real Time :10200.400 Sec
Start : 1:3440.1(kev)
Stop : 1024:6487.6(kev)
Acq. Start :Thu Oct 29 08:27:49 2015



152051

 ***** 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:	1	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	1	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	1	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	1	0	0	0	0	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	1	1	0	0	0
129:	0	0	0	0	0	0	1	0	0
137:	1	1	0	1	0	0	1	0	0
145:	0	0	0	3	0	1	0	0	0
153:	0	1	1	4	1	0	3	0	0
161:	0	2	1	1	1	1	3	1	1
169:	1	1	1	1	2	4	1	4	4
177:	2	3	0	7	4	2	2	6	6
185:	2	2	6	7	4	4	4	6	6
193:	5	2	2	2	2	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	1	1
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	1	1
265:	0	0	0	0	0	0	1	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	1	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	0	1	1	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	1	0	0	0	1	1
345:	0	0	0	0	0	0	0	0	0
353:	0	0	1	0	0	1	0	1	1
361:	0	2	0	0	0	0	0	0	0

369: 0 0 0 0 0 1 0 3

Sample Title: 09

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 09

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	1	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	1	0	1	0	0	1	0
857:	0	0	1	0	0	2	1	1
865:	0	1	0	1	0	0	0	1
873:	0	0	1	1	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	1	0	0	0	1	0
945:	0	0	0	0	0	0	0	0
953:	1	0	0	0	0	0	2	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	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

KB
10/29/15

Apex-Alpha™

Sample Description: CP1804S08-09
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 10
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

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

Sample Size: 1.512E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 8:27:51 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.223 mL
 Effective Efficiency: 0.1908 +/- 0.0161
 Counting Efficiency: 0.1564 +/- 0.0028 on 12/13/2014 2:35:48 PM
 Chem. Recovery Factor: 1.2198 +/- 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	5.833	12.32	57.62	0.68	0.00E+000	3.0
TH-228	5.365	111.98	18.62	1.02	0.00E+000	4.3
TH-229 T	4.879	162.81	15.43	1.19	0.00E+000	5.2
TH-230	4.629	148.81	16.14	1.19	0.00E+000	8.2
TH-232	3.960	137.98	16.76	1.02	0.00E+000	13.4

T = Tracer Peak used for Effective Efficiency

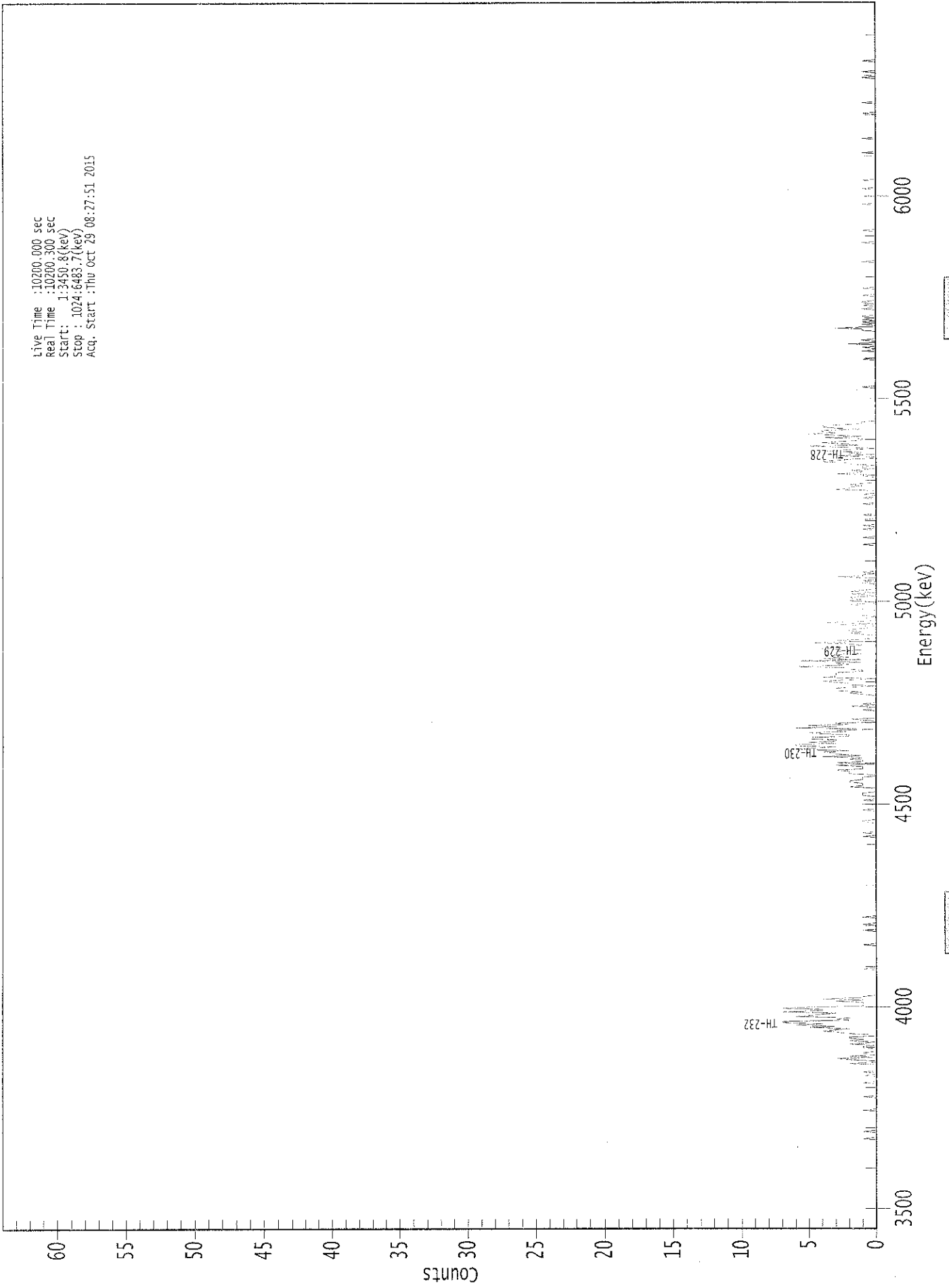
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	1.16E-001 +/- 6.97E-002	5.32E-002 +/- 8.82E-003
TH-228	0.993	5400.00*	1.05E+000 +/- 2.62E-001	5.91E-002 +/- 9.80E-003
TH-229	1.000	4872.00*	1.50E+000 +/- 2.49E-001	6.08E-002 +/- 1.01E-002
TH-230	0.990	4672.00*	1.37E+000 +/- 3.17E-001	6.06E-002 +/- 1.00E-002
TH-232	0.993	3997.00*	1.27E+000 +/- 2.99E-001	5.79E-002 +/- 9.59E-003

AG
10/30/15

0000132609.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:34:50.8(kev)
Stop : 1024:6483.7(kev)
Acq. Start :Thu Oct 29 08:27:51 2015



00250

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

Sample Title: 10

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 2 1 1 1 2 2 1 1

Sample Title: 10

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

801: 0 0 0 0 0 1 0 0

Sample Title: 10

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	1	0	0
825:	0	0	0	0	0	0	0	1
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	1	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	1	0	0	0	0	0
873:	0	1	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	1	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	1	0	0	0	0	0	0
937:	0	0	1	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	1
961:	0	0	0	0	1	0	0	0
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

Apex-Alpha™

105
10/29/15

Sample Description: CP1804S10-11
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 11
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

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

Sample Size: 1.519E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 8:27:53 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: 0.1901 +/- 0.0161
 Counting Efficiency: 0.1600 +/- 0.0028 on 12/13/2014 2:30:22 PM
 Chem. Recovery Factor: 1.1878 +/- 0.1029

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	5.865	12.13	61.14	1.87	0.00E+000	3.0
TH-228	5.366	110.96	18.81	2.04	0.00E+000	8.9
TH-229	T 4.869	162.96	15.47	2.04	0.00E+000	4.7
TH-230	4.626	148.98	16.12	1.02	0.00E+000	4.4
TH-232	3.959	140.98	16.58	1.02	0.00E+000	7.4

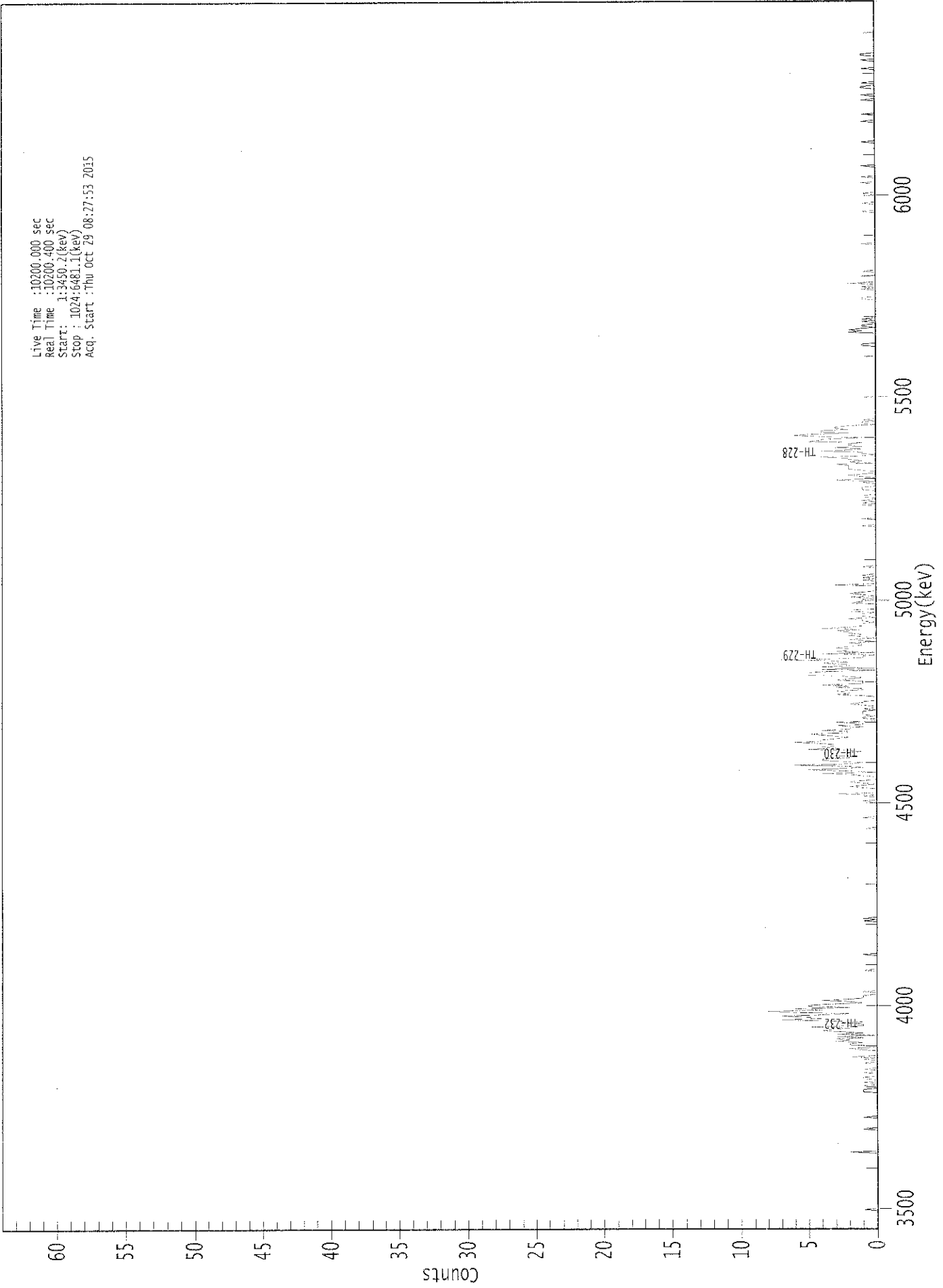
T = Tracer Peak used for Effective Efficiency

----- NUCLIDE ANALYSIS RESULTS -----						
Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)		
TH-227	0.999	5850.00*	1.14E-001 +/- 7.25E-002	7.14E-002 +/- 1.19E-002		
TH-228	0.994	5400.00*	1.04E+000 +/- 2.61E-001	7.30E-002 +/- 1.21E-002		
TH-229	1.000	4872.00*	1.50E+000 +/- 2.50E-001	7.18E-002 +/- 1.19E-002		
TH-230	0.989	4672.00*	1.37E+000 +/- 3.17E-001	5.79E-002 +/- 9.62E-003		
TH-232	0.993	3997.00*	1.29E+000 +/- 3.04E-001	5.78E-002 +/- 9.61E-003		

AG
10/30/15

0000132610.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:34:50.2 (keV)
Stop : 1024:6481.1 (keV)
Acq. Start : Thu Oct 29 08:27:53 2015



ROI Type: 3

ROI Type: 1

192061 : 00261

 ***** 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	0	0	0
17:	1	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:	2	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	1	0	0	0	0	0
89:	0	0	0	0	0	0	1	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	1	1	1	0	0	0	1
121:	0	0	1	0	0	1	1	0	0
129:	0	0	1	0	0	1	0	0	0
137:	0	0	1	0	0	1	0	2	0
145:	0	0	0	0	0	1	2	0	0
153:	0	2	2	1	3	2	3	1	0
161:	3	0	3	1	3	4	3	2	0
169:	5	1	1	2	1	4	7	4	0
177:	5	7	4	2	6	8	4	6	0
185:	2	5	5	3	1	2	4	2	0
193:	1	1	1	0	0	1	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	1	0
217:	0	0	0	0	0	0	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:	1	0	1	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	1	0	0	0
337:	0	0	0	0	0	0	1	0	0
345:	0	0	0	0	0	0	0	0	0
353:	0	0	0	0	1	0	0	0	0
361:	1	0	3	0	0	0	0	1	0

369: 2 1 0 1 2 1 0 0

Sample Title: 11

Channel	1	2	3	4	5	6	7	8
377:	0	1	2	4	0	2	5	3
385:	1	2	6	2	1	3	4	4
393:	2	2	3	3	3	1	2	5
401:	3	4	3	3	4	6	4	4
409:	3	2	3	4	5	2	2	4
417:	2	2	1	3	1	1	3	0
425:	0	1	1	0	1	1	1	1
433:	0	1	0	0	1	2	1	1
441:	0	0	0	0	1	3	2	2
449:	3	1	1	3	2	4	1	1
457:	1	3	2	1	2	5	5	5
465:	4	0	4	0	4	2	2	4
473:	2	3	7	2	1	1	0	4
481:	0	3	2	2	3	2	1	1
489:	2	0	1	2	0	1	2	1
497:	2	2	3	1	4	2	1	1
505:	1	0	1	1	2	0	1	1
513:	1	0	2	2	0	0	0	0
521:	0	2	1	1	1	0	2	0
529:	1	2	1	0	0	0	0	0
537:	3	0	0	0	1	0	1	0
545:	1	0	0	0	0	0	0	1
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	1	0	0	0	0	0	1
593:	0	0	0	0	0	0	0	0
601:	0	0	1	0	1	0	1	0
609:	0	1	1	0	0	0	0	1
617:	1	1	0	0	0	1	0	3
625:	1	0	1	2	1	0	0	1
633:	2	2	2	2	3	0	2	1
641:	2	2	4	1	0	1	1	4
649:	2	1	3	1	2	2	1	5
657:	4	4	1	4	6	5	2	4
665:	4	2	3	3	2	0	1	1
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	0	0	0	0	0	1
737:	1	0	0	0	0	0	0	0
745:	0	0	2	1	2	1	0	1
753:	1	0	0	1	0	1	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	1	1
777:	0	0	0	0	0	0	1	0
785:	1	0	0	2	0	0	0	0
793:	0	1	0	0	0	1	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	1	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	1	0
857:	0	0	0	0	0	0	1	0
865:	0	0	0	0	0	0	0	1
873:	0	0	0	0	1	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	1	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:	1	0	0	0	0	0	0	0
937:	0	0	0	0	1	0	0	0
945:	1	0	0	0	0	0	1	1
953:	0	0	1	0	0	0	0	0
961:	0	0	0	0	0	0	1	0
969:	0	0	0	0	0	1	0	0
977:	0	1	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

KB
10/29/15

Apex-Alpha™

Sample Description: CP1804S12-13
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 12
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

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

Sample Size: 1.519E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 8:27:32 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: 0.1899 +/- 0.0160
 Counting Efficiency: 0.1577 +/- 0.0028 on 12/13/2014 2:27:38 PM
 Chem. Recovery Factor: 1.2041 +/- 0.1040

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	5.809	4.83	91.00	0.17	0.00E+000	3.0
TH-228	5.369	151.66	15.94	0.34	0.00E+000	7.1
TH-229 T	4.855	162.49	15.40	0.51	0.00E+000	5.0
TH-230	4.623	87.66	20.98	0.34	0.00E+000	5.0
TH-232	3.943	140.66	16.55	0.34	0.00E+000	6.0

T = Tracer Peak used for Effective Efficiency

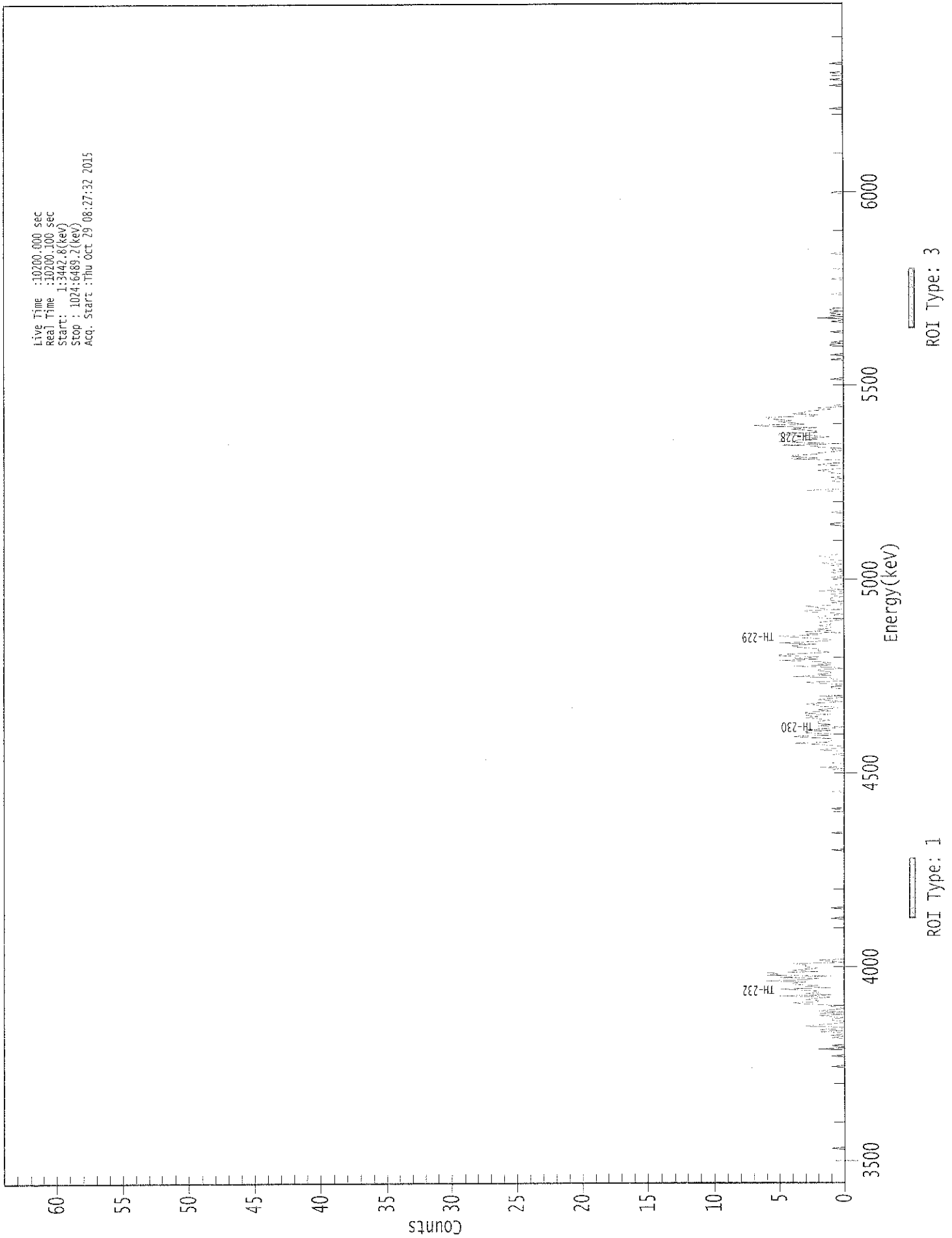
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.991	5850.00*	4.56E-002 +/- 4.22E-002	3.94E-002 +/- 6.52E-003
TH-228	0.995	5400.00*	1.42E+000 +/- 3.27E-001	4.49E-002 +/- 7.43E-003
TH-229	0.998	4872.00*	1.50E+000 +/- 2.48E-001	4.84E-002 +/- 8.02E-003
TH-230	0.988	4672.00*	8.07E-001 +/- 2.16E-001	4.40E-002 +/- 7.29E-003
TH-232	0.985	3997.00*	1.29E+000 +/- 3.03E-001	4.39E-002 +/- 7.27E-003

AG
 10/30/15

0000132611.CNF

Live Time :10200.000 sec
Real Time :10200.100 sec
Start : 1:3442.8(Rev)
Stop : 1024:6489.2(kev)
Acq. Start :Thu Oct 29 08:27:32 2015



00266

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

Sample Title: 12

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	1	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	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	1	0	0
105:	0	0	0	0	0	0	1	0
113:	0	0	0	0	2	0	0	1
121:	0	0	0	0	0	0	1	0
129:	1	0	0	2	0	2	0	0
137:	3	2	1	0	0	1	1	0
145:	1	2	0	2	0	2	1	0
153:	0	1	1	3	4	2	2	3
161:	2	1	5	1	3	2	2	3
169:	5	1	3	2	4	4	3	6
177:	3	2	5	1	6	5	6	2
185:	4	3	2	3	3	3	4	0
193:	1	2	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	1	0	0
233:	0	0	0	0	0	0	1	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	0	0
289:	1	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	1
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	1	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	1	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	1	0
361:	2	0	0	0	1	0	0	0

369: 0 0 0 1 0 0 0 2

Sample Title: 12

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

801: 0 0 0 0 0 1 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	1	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	1	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	1
953:	0	0	0	0	1	0	0	0
961:	0	0	1	0	0	0	0	0
969:	0	0	1	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB
10/29/15

Sample Description: CP1804S15-16
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 13
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

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

Sample Size: 1.517E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 8:27:34 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: 0.1872 +/- 0.0159
 Counting Efficiency: 0.1640 +/- 0.0029 on 12/13/2014 2:26:06 PM
 Chem. Recovery Factor: 1.1411 +/- 0.0992

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	5.781	11.49	59.30	0.51	0.00E+000	3.0
TH-228	5.349	125.49	17.54	0.51	0.00E+000	6.8
TH-229 T	4.850	160.00	15.54	0.00	0.00E+000	4.3
TH-230	4.607	107.83	18.89	0.17	0.00E+000	4.3
TH-232	3.942	109.15	18.85	0.85	0.00E+000	3.5

T = Tracer Peak used for Effective Efficiency

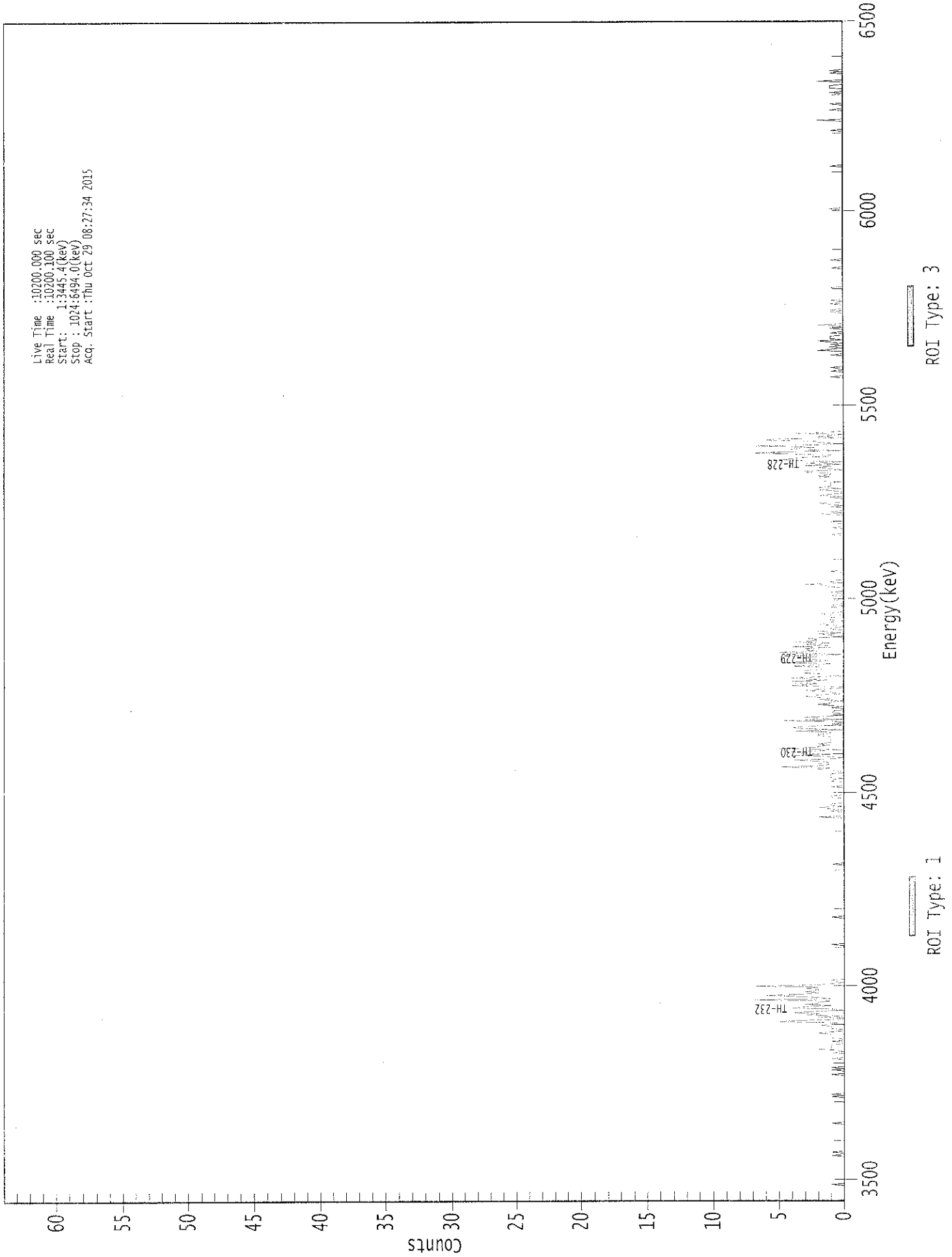
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.975	5850.00*	1.10E-001 +/- 6.79E-002	5.03E-002 +/- 8.40E-003
TH-228	0.986	5400.00*	1.20E+000 +/- 2.90E-001	5.00E-002 +/- 8.35E-003
TH-229	0.998	4872.00*	1.50E+000 +/- 2.50E-001	5.62E-002 +/- 9.38E-003
TH-230	0.978	4672.00*	1.01E+000 +/- 2.54E-001	3.90E-002 +/- 6.51E-003
TH-232	0.984	3997.00*	1.02E+000 +/- 2.56E-001	5.59E-002 +/- 9.33E-003

AG
10/30/15

0000132612.CNF

Live Time :10200.000 sec
Real Time :10200.100 sec
Start : 1:3445.4(keV)
Stop : 1024:6494.0(keV)
Acq. Start :Thu Oct 29 08:27:34 2015



: 00271

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

Sample Title: 13

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	0	0	0	0	0	0	0	0
1:	1	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	1	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	1
41:	0	0	1	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	1	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	1	0	1	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	1	0	0	0
113:	0	1	0	1	0	0	0	0	0
121:	0	0	0	1	0	0	0	0	0
129:	1	0	0	2	1	1	1	1	1
137:	0	0	1	0	0	1	1	1	1
145:	1	2	1	0	0	1	1	1	1
153:	2	0	1	5	4	0	0	0	2
161:	0	3	2	4	2	0	1	4	4
169:	3	1	3	2	2	1	7	1	1
177:	2	4	6	3	2	3	2	2	2
185:	3	2	7	2	1	0	1	1	1
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	1	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	1	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	1	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	2	0	0	0
337:	0	0	1	0	1	2	0	1	1
345:	1	0	0	0	0	0	1	1	1
353:	0	0	0	0	0	0	0	1	1
361:	0	0	0	0	1	1	0	1	1

369: 1 1 1 0 0 1 2 1

Sample Title: 13

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 13

Channel								
809:	1	0	0	0	0	0	0	1
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:	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	1
929:	0	0	0	0	0	0	0	0
937:	2	0	0	0	0	0	0	0
945:	0	1	0	0	0	0	1	0
953:	0	0	0	0	0	0	0	0
961:	1	0	0	0	1	1	1	0
969:	0	0	2	0	0	0	0	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:	0	0	0	0	0	0	0	0

10/29/15

Apex-Alpha™

Sample Description: CP1804S17-18
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 14
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

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

Sample Size: 1.514E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 8:27:55 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.224 mL
 Effective Efficiency: 0.1768 +/- 0.0154
 Counting Efficiency: 0.1717 +/- 0.0030 on 12/13/2014 2:24:23 PM
 Chem. Recovery Factor: 1.0297 +/- 0.0917

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	5.800	12.66	55.94	0.34	0.00E+000	3.0
TH-228	5.344	128.66	17.31	0.34	0.00E+000	4.0
TH-229	T 4.844	151.15	15.99	0.85	0.00E+000	4.2
TH-230	4.614	132.49	17.07	0.51	0.00E+000	6.0
TH-232	3.929	142.49	16.45	0.51	0.00E+000	8.8

T = Tracer Peak used for Effective Efficiency

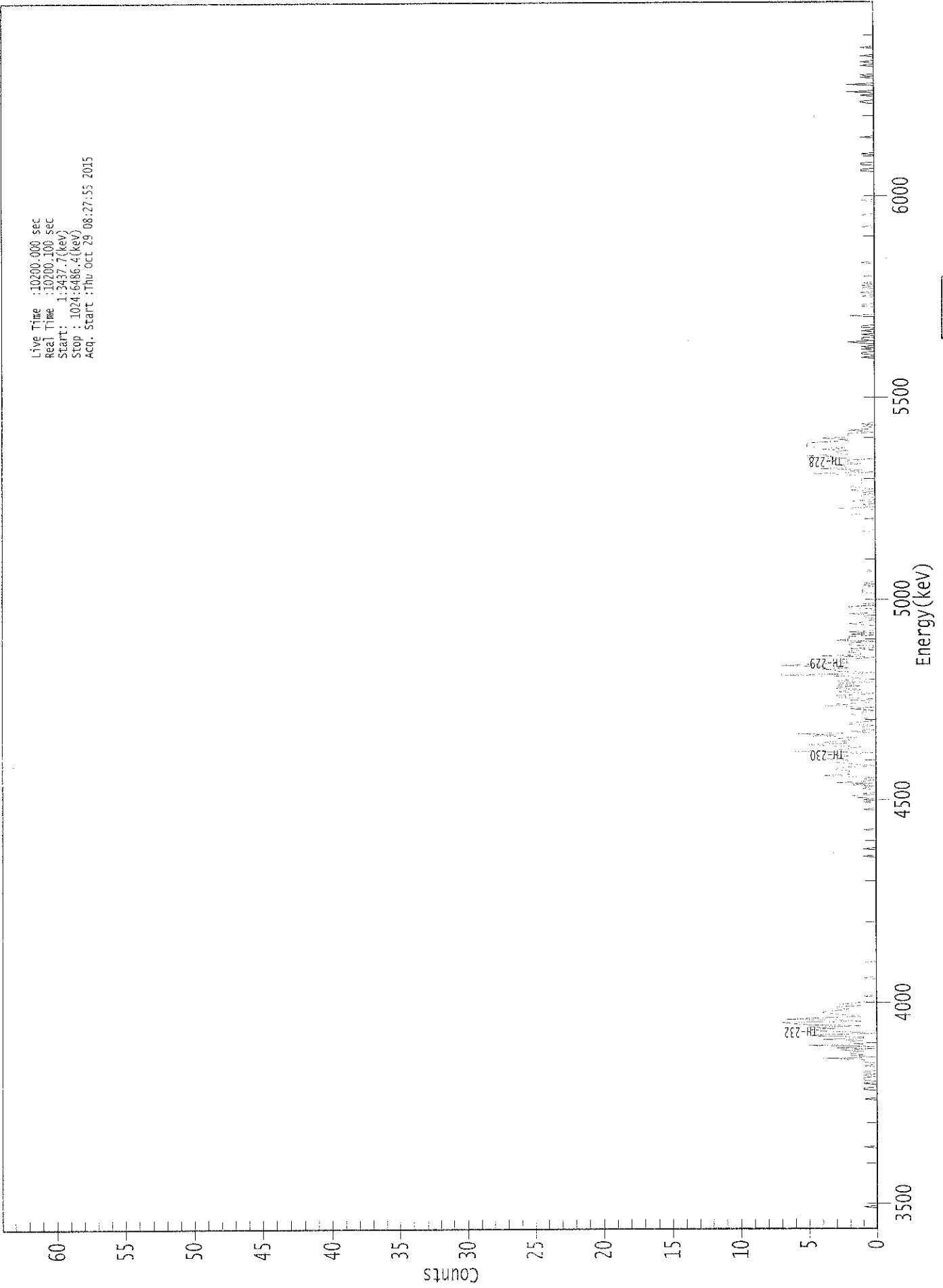
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.987	5850.00*	1.29E-001 +/- 7.53E-002	4.86E-002 +/- 8.32E-003
TH-228	0.984	5400.00*	1.30E+000 +/- 3.17E-001	4.84E-002 +/- 8.27E-003
TH-229	0.996	4872.00*	1.50E+000 +/- 2.57E-001	5.96E-002 +/- 1.02E-002
TH-230	0.982	4672.00*	1.31E+000 +/- 3.18E-001	5.20E-002 +/- 8.90E-003
TH-232	0.976	3997.00*	1.41E+000 +/- 3.35E-001	5.19E-002 +/- 8.89E-003

AG
 10/30/15

0000132613.CNF

Live Time :10200.000 sec
Real Time :10200.100 Sec
Start : 1:3437.7{(keV)}
Stop : 1024:6486.4{(keV)}
Acq. Start :Thu Oct 29 08:27:55 2015



: 00276

 ***** 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	1	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	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	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	1	0	0	0	0
113:	0	0	0	0	1	1	0	0	0
121:	0	1	1	0	1	1	1	0	0
129:	1	0	1	1	0	0	0	0	0
137:	1	0	0	1	1	1	4	0	0
145:	2	1	2	2	1	3	0	3	0
153:	0	5	1	2	2	1	4	1	0
161:	1	5	4	0	2	4	5	3	0
169:	5	1	5	6	7	1	3	7	0
177:	4	1	2	3	4	4	3	2	0
185:	3	3	1	3	2	1	0	0	0
193:	0	0	1	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	1	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	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	1	0	0
313:	0	0	0	0	1	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	1	0	0	0	0
337:	0	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	1	0	0	0
353:	0	0	0	1	0	1	0	2	0
361:	2	0	1	0	0	0	1	1	0

369: 0 2 0 3 1 0 1 0

Sample Title: 14

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

801: 0 0 0 0 1 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	1	0	0	0	0	0
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	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	1	1	0	0	0	1	1
889:	0	0	0	0	0	0	0	1
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	1	1	0	0	0	0
945:	1	0	0	2	0	0	0	0
953:	0	2	0	0	0	0	0	1
961:	0	1	0	0	0	0	0	0
969:	0	1	0	0	1	0	0	0
977:	0	1	0	0	0	0	0	0
985:	1	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KP
10/29/15

Sample Description: CP5008S03-04
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 15
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

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

Sample Size: 1.521E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 8:27:56 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: 0.1424 +/- 0.0137
 Counting Efficiency: 0.1543 +/- 0.0028 on 12/13/2014 2:22:05 PM
 Chem. Recovery Factor: 0.9228 +/- 0.0901

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	5.801	17.49	47.66	0.51	0.00E+000	3.0
TH-228	5.356	113.13	18.60	1.87	0.00E+000	4.0
TH-229 T	4.866	122.15	17.81	0.85	0.00E+000	5.2
TH-230	4.620	131.98	17.14	1.02	0.00E+000	4.5
TH-232	3.944	107.00	19.04	0.00	0.00E+000	4.1

T = Tracer Peak used for Effective Efficiency

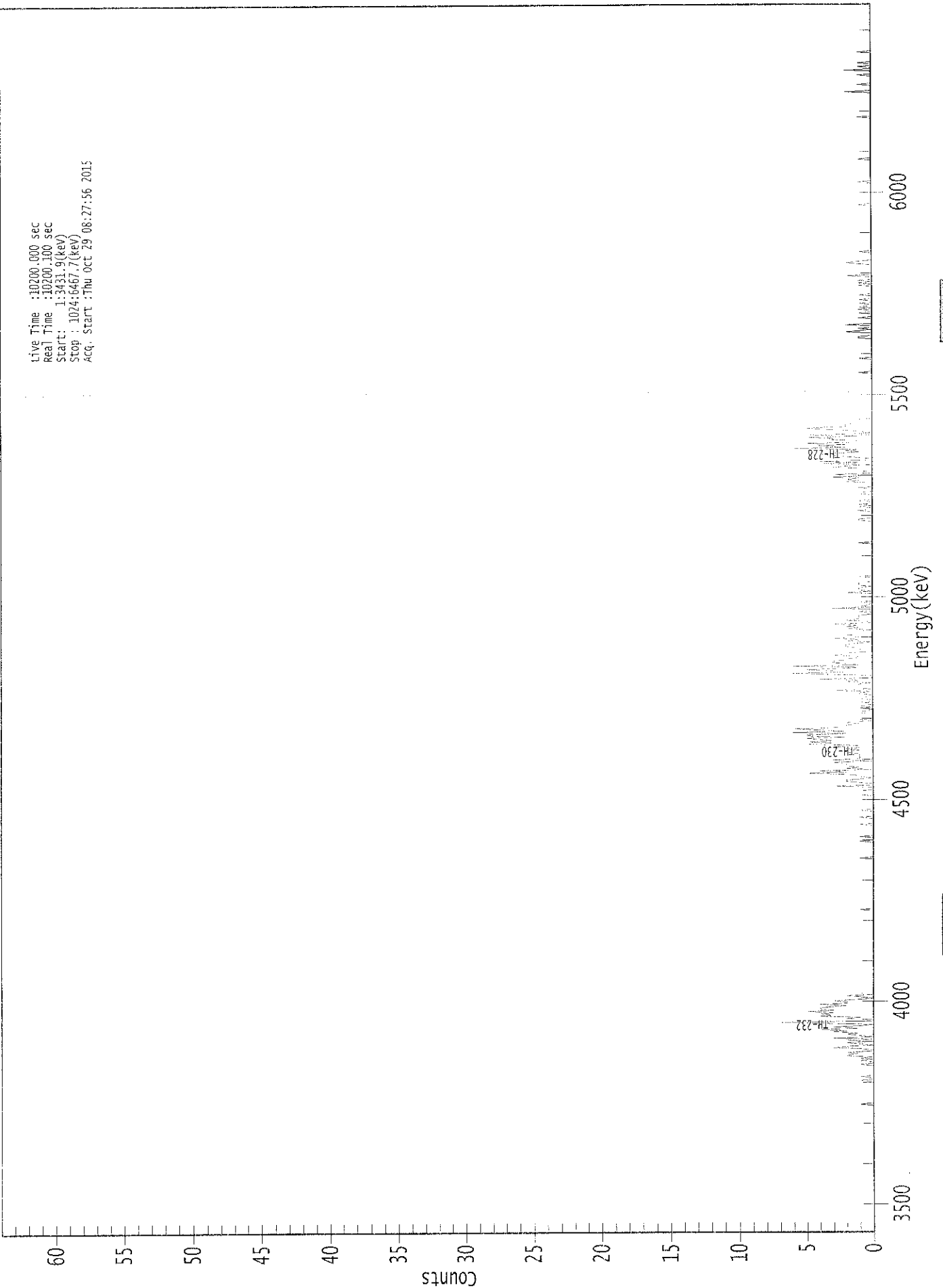
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.987	5850.00*	2.20E-001 +/- 1.13E-001	6.60E-002 +/- 1.24E-002
TH-228	0.990	5400.00*	1.41E+000 +/- 3.74E-001	9.47E-002 +/- 1.78E-002
TH-229	1.000	4872.00*	1.50E+000 +/- 2.83E-001	7.36E-002 +/- 1.38E-002
TH-230	0.986	4672.00*	1.62E+000 +/- 4.12E-001	7.72E-002 +/- 1.45E-002
TH-232	0.985	3997.00*	1.31E+000 +/- 3.50E-001	7.34E-002 +/- 1.38E-002

AG
 10/30/15

0000132614.CNF

live Time :10200.000 sec
Real Time :10200.100 sec
Start: 1:3431.9(keV)
Stop : 1024:5467.7(keV)
ACQ. Start :Thu Oct 29 08:27:56 2015



00281

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	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	1	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	1	0	0
129:	0	1	0	0	0	0	0	0	0
137:	0	0	0	1	0	0	1	0	0
145:	1	0	2	2	1	2	0	0	0
153:	1	3	2	0	1	2	0	2	2
161:	0	3	0	1	2	1	3	2	2
169:	4	1	3	1	0	3	7	0	0
177:	0	2	1	4	3	4	3	5	5
185:	3	4	4	3	2	4	2	2	2
193:	3	1	0	1	2	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	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	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	1
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	1	0	0	0
329:	0	1	0	0	0	0	0	0	0
337:	0	0	0	1	0	0	0	0	0
345:	0	1	0	0	0	0	0	0	1
353:	0	0	0	0	0	0	0	0	0
361:	0	0	0	0	1	1	1	1	1

369: 0 0 0 3 0 0 1 2

Sample Title: 15

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

801: 0 0 0 0 0 0 0 1 2

Sample Title: 15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	1	0	0	0	0	0	0	0
817:	1	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	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	1	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	1	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:	1	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	1	0	0	0	0
961:	0	0	0	1	0	0	0	2
969:	0	0	1	0	0	1	0	0
977:	0	0	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

166
10/29/15

Apex-Alpha™

Sample Description: CP5008S06-07
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 16
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

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

Sample Size: 1.506E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 11:23:30 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.223 mL
 Effective Efficiency: 0.1956 +/- 0.0163
 Counting Efficiency: 0.1709 +/- 0.0030 on 10/25/2014 2:46:09 PM
 Chem. Recovery Factor: 1.1445 +/- 0.0976

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	5.870	10.83	60.10	0.17	0.00E+000	3.0
TH-228	5.358	117.15	18.19	0.85	0.00E+000	7.7
TH-229 T	4.862	166.83	15.18	0.17	0.00E+000	7.5
TH-230	4.617	143.49	16.40	0.51	0.00E+000	4.6
TH-232	3.943	109.00	18.86	0.00	0.00E+000	4.0

T = Tracer Peak used for Effective Efficiency

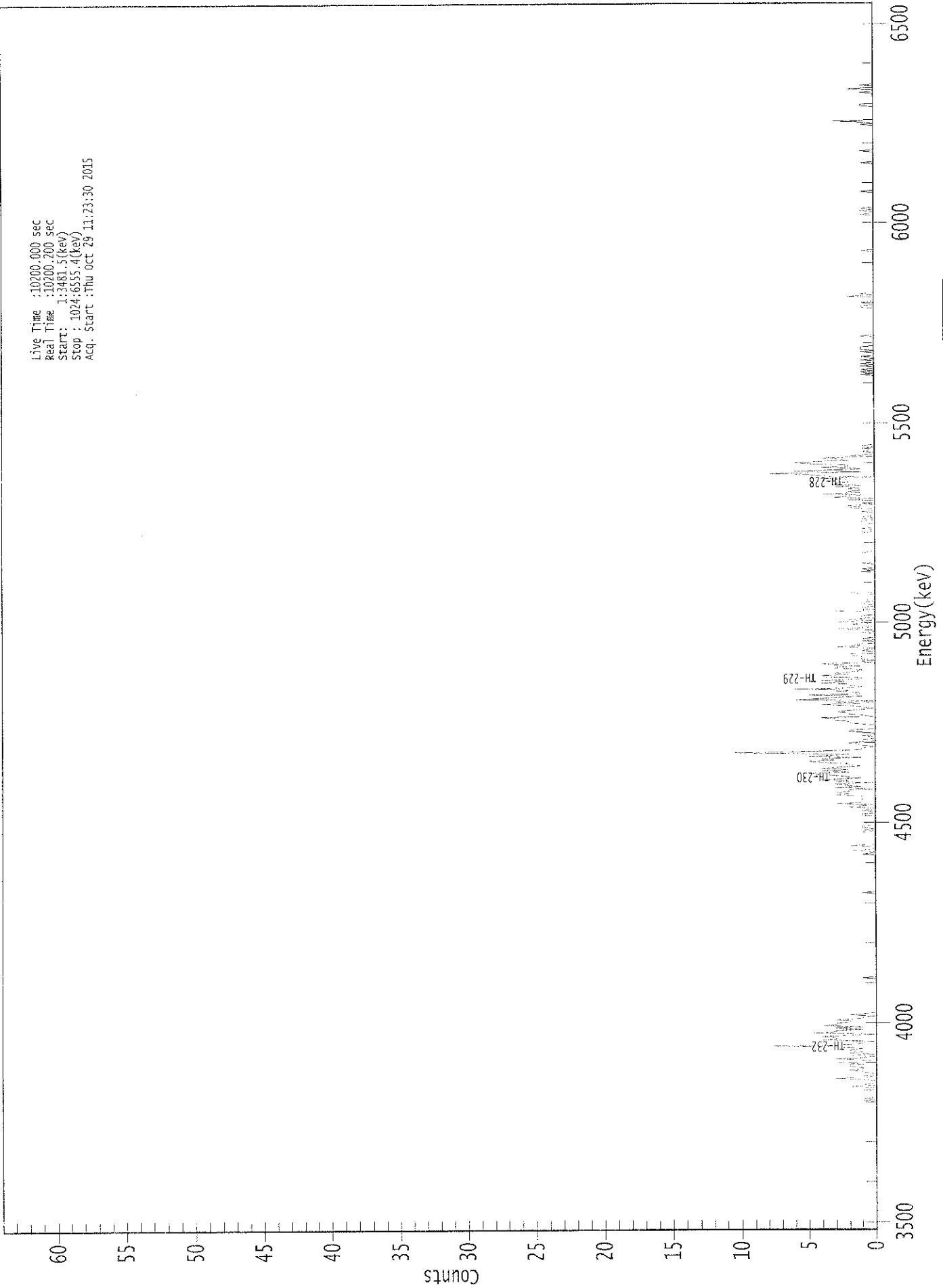
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.998	5850.00*	1.00E-001 +/- 6.24E-002	3.86E-002 +/- 6.31E-003
TH-228	0.991	5400.00*	1.08E+000 +/- 2.63E-001	5.51E-002 +/- 9.00E-003
TH-229	0.999	4872.00*	1.51E+000 +/- 2.47E-001	3.77E-002 +/- 6.17E-003
TH-230	0.985	4672.00*	1.29E+000 +/- 3.00E-001	4.73E-002 +/- 7.74E-003
TH-232	0.985	3997.00*	9.81E-001 +/- 2.45E-001	5.40E-002 +/- 8.82E-003

AG
 10/30/15

0000132627.CNF

Live Time :10200.000 sec
Real Time :10200.200 sec
Start : 1:3481.5(kev)
Stop : 1024:6555.4(kev)
Acq. Start :Thu Oct 29 11:23:30 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	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	1	0	1	0	0
113:	0	0	0	0	1	0	0	2
121:	0	1	0	0	0	1	3	0
129:	1	0	0	1	1	2	1	1
137:	2	2	1	3	0	1	3	1
145:	0	2	0	2	1	2	2	1
153:	2	8	2	1	2	0	4	3
161:	3	4	2	0	5	3	3	1
169:	3	1	4	3	3	2	2	3
177:	1	1	0	2	1	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	1	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	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:	0	0	0	0	0	0	0	0
313:	0	1	0	0	2	0	0	0
321:	2	0	0	0	0	0	0	0
329:	0	0	0	1	0	1	0	1
337:	1	0	0	1	0	0	0	0
345:	0	1	1	0	0	1	0	0
353:	2	1	0	3	1	1	1	1
361:	1	1	3	2	3	2	2	0

369: 3 1 2 3 1 3 2 4

Sample Title: 16

Channel	1	2	3	4	5	6	7	8
377:	1	2	3	4	5	2	4	2
385:	4	3	1	2	2	4	5	3
393:	4	1	5	3	2	11	5	2
401:	1	1	0	1	1	2	1	0
409:	1	0	0	1	0	0	1	2
417:	2	0	0	0	0	1	2	2
425:	3	3	4	0	1	2	2	3
433:	2	1	0	1	2	4	1	3
441:	0	6	4	3	1	5	1	1
449:	3	2	6	2	1	2	2	4
457:	2	4	1	1	4	4	2	3
465:	2	1	1	3	3	1	3	4
473:	1	1	0	1	1	1	2	2
481:	0	0	1	0	0	3	1	2
489:	0	0	1	0	1	0	0	0
497:	0	1	0	0	3	1	0	1
505:	2	0	3	0	2	0	1	1
513:	0	0	0	3	0	1	1	0
521:	0	1	1	0	1	0	0	0
529:	0	0	2	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	1	0	1	0
553:	0	0	0	1	0	0	0	0
561:	0	0	0	0	1	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	1	0	0
585:	1	0	0	0	0	1	1	0
593:	1	0	1	0	0	0	1	0
601:	0	2	1	2	0	1	0	0
609:	2	0	3	2	1	4	1	2
617:	1	2	1	3	1	3	3	2
625:	2	2	4	0	4	5	8	1
633:	6	2	1	4	2	2	5	6
641:	4	2	3	4	0	2	0	0
649:	1	0	0	1	0	1	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:	1	0	1	0	1	0	0	1
721:	0	1	0	0	1	0	0	1
729:	0	0	0	1	0	1	1	1
737:	0	0	0	0	0	0	0	0
745:	1	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:	1	1	0	0	1	0	0	0
777:	0	2	0	1	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 16

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



10/29/15

Sample Description: CP5008S09-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 17
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

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

Sample Size: 1.558E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 11:23:32 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: 0.1920 +/- 0.0161
 Counting Efficiency: 0.1615 +/- 0.0029 on 10/25/2014 2:50:18 PM
 Chem. Recovery Factor: 1.1885 +/- 0.1021

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	11.83	57.46	0.17	0.00E+000	9.0
TH-228	5.391	143.32	16.42	0.68	0.00E+000	12.0
TH-229 T	4.898	164.49	15.31	0.51	0.00E+000	5.2
TH-230	4.653	147.32	16.19	0.68	0.00E+000	6.4
TH-232	3.978	136.49	16.81	0.51	0.00E+000	5.0

T = Tracer Peak used for Effective Efficiency

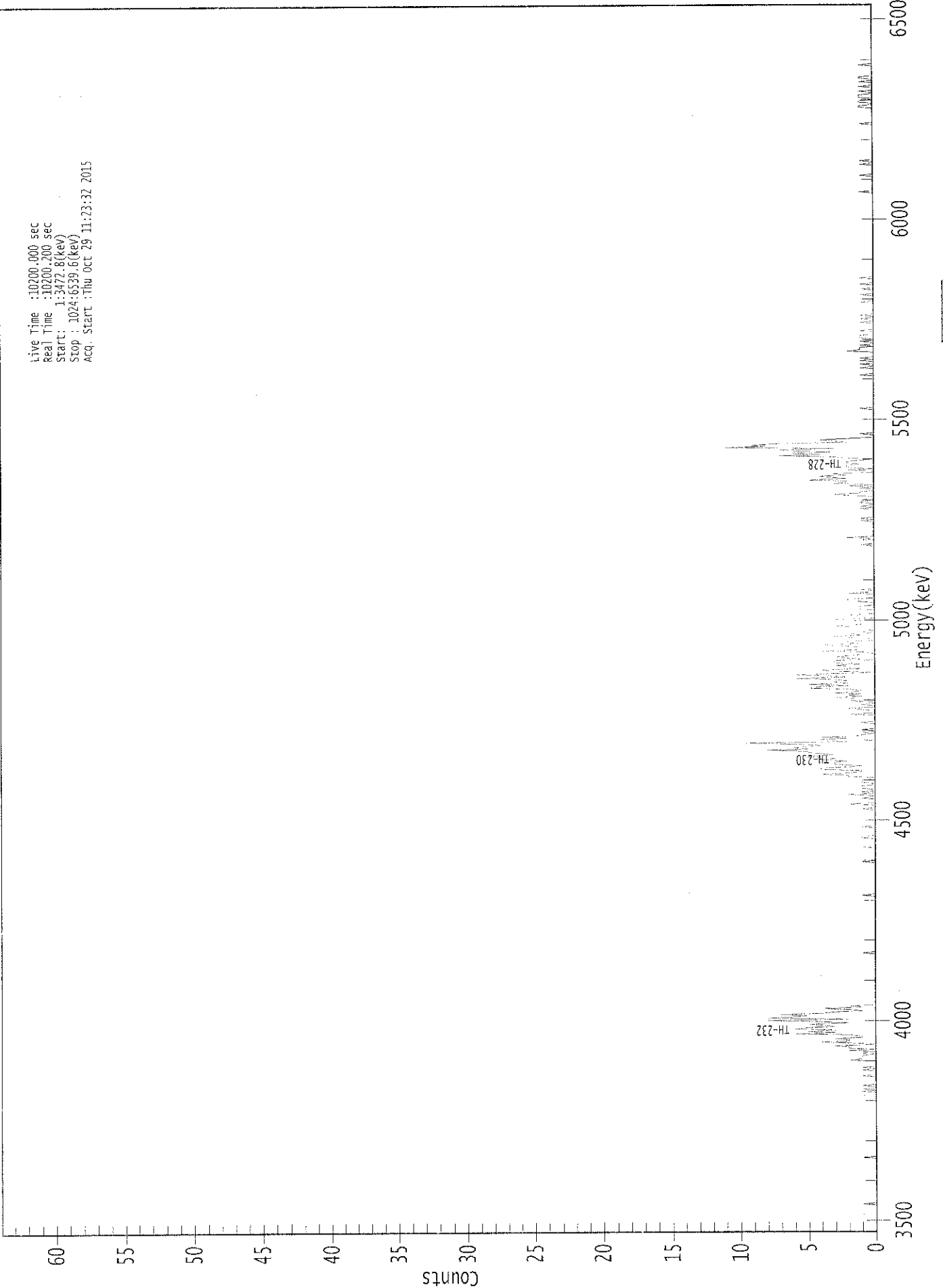
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.965	5850.00*	1.08E-001 +/- 6.44E-002	3.80E-002 +/- 6.26E-003
TH-228	1.000	5400.00*	1.30E+000 +/- 3.02E-001	5.11E-002 +/- 8.41E-003
TH-229	0.997	4872.00*	1.46E+000 +/- 2.41E-001	4.67E-002 +/- 7.70E-003
TH-230	0.998	4672.00*	1.31E+000 +/- 3.02E-001	5.01E-002 +/- 8.25E-003
TH-232	0.998	3997.00*	1.21E+000 +/- 2.85E-001	4.65E-002 +/- 7.66E-003

AG
 10/30/15

0000132628.CNF

Live Time : 10200.000 sec
Real Time : 10200.200 sec
Start : 1:3472.8(keV)
Stop : 1024:6539.6(keV)
Acq. Start : Thu Oct 29 11:23:32 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: 17

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	1
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	1	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	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	1	0	1
121:	0	0	1	0	0	0	0	0	0
129:	0	0	1	0	0	0	0	0	1
137:	0	1	0	0	0	0	0	0	2
145:	1	1	1	1	0	1	0	0	2
153:	0	2	2	3	0	1	4	2	2
161:	2	3	1	1	2	6	3	5	5
169:	3	6	5	3	4	5	2	4	4
177:	8	2	8	6	5	7	4	3	3
185:	1	2	4	1	2	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:	0	0	0	0	0	0	0	0	0
233:	1	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:	1	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	1	0	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	1	0	0	0	0	0	0	0	0
329:	1	1	0	0	0	0	0	0	0
337:	0	1	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0	0
353:	1	0	0	0	2	0	0	0	0
361:	0	1	0	0	2	0	1	0	0

369: 0 1 1 1 0 0 1 1

Sample Title: 17

Channel	1	2	3	4	5	6	7	8	9
377:	1	0	0	2	2	4	2	1	
385:	1	4	4	2	1	3	3	3	
393:	2	4	3	5	5	3	4	5	
401:	5	8	5	6	5	4	6	10	
409:	2	4	4	2	4	1	1	0	
417:	1	0	1	0	0	0	0	0	
425:	1	0	0	0	0	0	0	2	
433:	0	0	0	1	2	0	0	1	
441:	0	0	2	0	2	3	1	2	
449:	1	3	1	1	2	5	4	2	
457:	5	2	3	2	3	6	2	3	
465:	6	3	0	3	4	1	2	2	
473:	3	1	3	3	3	1	2	3	
481:	2	1	0	1	4	1	1	1	
489:	2	4	1	2	2	0	0	2	
497:	3	1	2	0	1	0	1	1	
505:	2	3	1	1	1	1	3	0	
513:	1	1	2	0	0	0	0	2	
521:	2	1	0	0	0	1	2	2	
529:	0	0	0	0	2	0	0	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	0	
561:	0	0	0	0	0	0	0	0	
569:	0	0	0	0	1	0	0	0	
577:	0	0	2	0	0	0	0	0	
585:	0	0	0	0	0	0	0	0	
593:	1	0	1	0	0	0	0	0	
601:	0	0	1	0	1	0	0	1	
609:	1	0	0	0	0	2	3	1	
617:	1	0	0	1	0	2	0	3	
625:	2	2	5	2	3	4	2	3	
633:	0	0	2	0	2	2	2	1	
641:	2	2	1	0	2	3	7	4	
649:	6	3	6	7	3	11	8	9	
657:	7	2	3	4	2	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	1	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	1	0	0	0	0	0	1	
721:	0	0	1	0	0	1	0	1	
729:	0	0	0	0	0	2	1	1	
737:	1	0	1	0	0	1	0	0	
745:	1	1	1	0	0	0	1	0	
753:	0	0	0	0	0	1	0	0	
761:	1	0	0	1	0	0	0	0	
769:	0	0	0	0	0	0	1	0	
777:	0	0	0	0	1	0	0	0	
785:	0	1	0	0	0	1	0	0	
793:	0	0	1	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	1	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	1	0	0	0	0	0	0	0
889:	0	1	0	0	1	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	1	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	1	1	0	0	1	1	0
945:	0	1	1	1	0	0	1	0
953:	0	0	1	0	0	0	1	0
961:	0	1	1	0	0	0	0	0
969:	0	0	0	0	1	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
10/29/15

Apex-Alpha™

Sample Description: CP5008S12-13
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 18
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

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

Sample Size: 1.521E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 11:23:37 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: 0.1624 +/- 0.0148
 Counting Efficiency: 0.1934 +/- 0.0034 on 10/25/2014 2:53:34 PM
 Chem. Recovery Factor: 0.8398 +/- 0.0777

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	5.853	14.77	57.15	3.23	0.00E+000	0.0
TH-228	5.364	149.11	16.23	2.89	0.00E+000	6.0
TH-229 T	4.874	139.13	16.75	1.87	0.00E+000	3.9
TH-230	4.620	145.77	16.44	3.23	0.00E+000	16.9
TH-232	3.952	152.45	16.03	2.55	0.00E+000	10.4

T = Tracer Peak used for Effective Efficiency

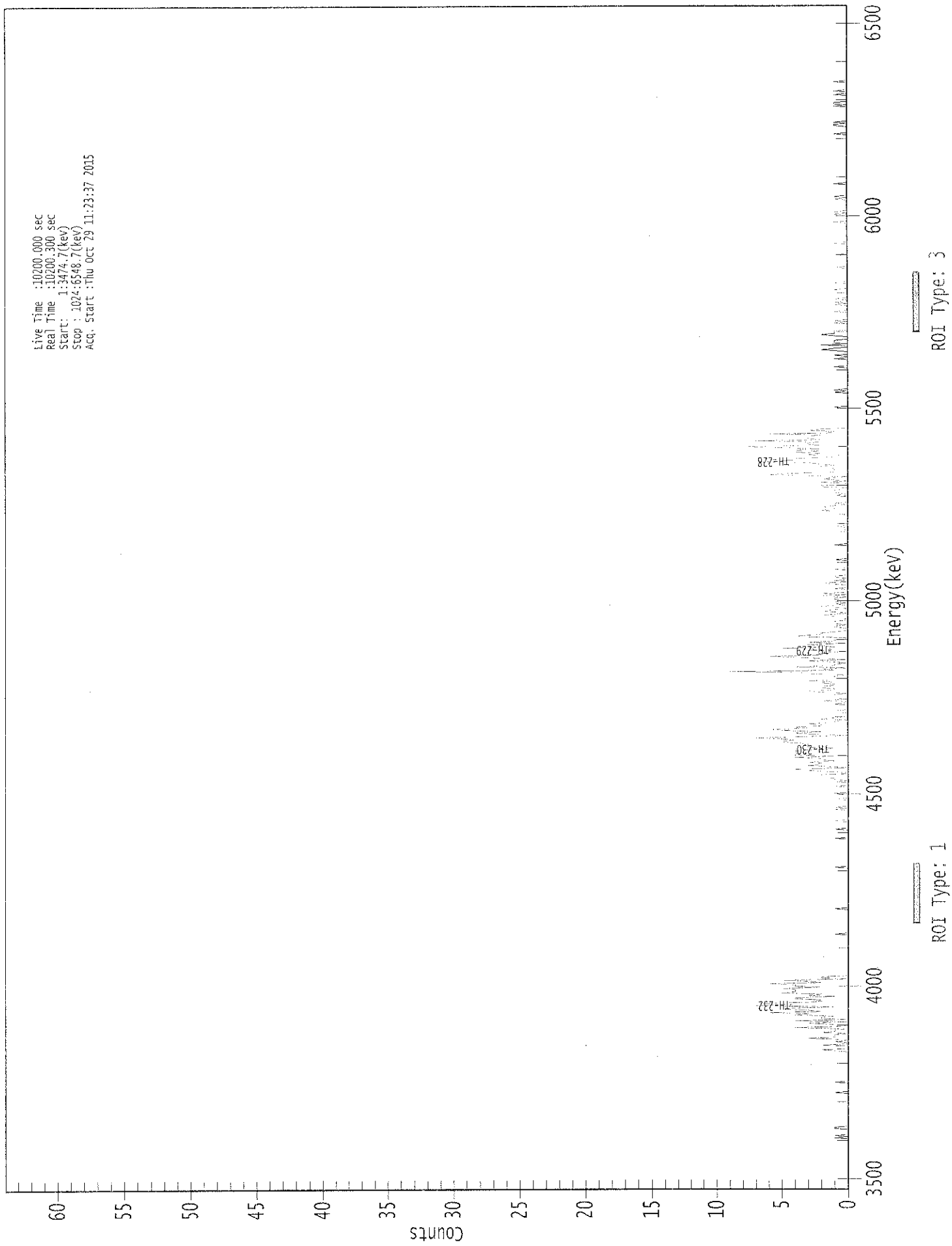
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.63E-001 +/- 9.75E-002	1.00E-001 +/- 1.79E-002
TH-228	0.993	5400.00*	1.63E+000 +/- 3.94E-001	9.60E-002 +/- 1.71E-002
TH-229	1.000	4872.00*	1.50E+000 +/- 2.67E-001	8.16E-002 +/- 1.45E-002
TH-230	0.986	4672.00*	1.57E+000 +/- 3.80E-001	9.78E-002 +/- 1.74E-002
TH-232	0.989	3997.00*	1.64E+000 +/- 3.92E-001	9.00E-002 +/- 1.60E-002

AG
10/30/15

0000132629.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3474.7(keV)
Stop : 1024:6548.7(keV)
Acq. Start :Thu Oct 29 11:23:37 2015



0000132629

 ***** 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:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	1	0	1	0	0
49:	0	0	0	0	1	1	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	1	0	0	0	0	0
89:	0	0	0	0	1	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:	2	0	0	0	2	0	0	0	1
129:	0	1	3	1	1	1	0	0	2
137:	1	1	0	4	1	0	2	0	3
145:	0	4	0	2	2	1	4	0	3
153:	6	2	3	5	4	1	7	0	4
161:	7	3	2	2	4	4	1	0	3
169:	2	5	4	4	4	5	2	0	4
177:	4	6	2	3	5	0	2	0	2
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	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	1	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	1
305:	0	0	0	0	0	0	0	0	1
313:	0	0	0	0	0	0	1	0	0
321:	0	0	0	0	0	0	0	0	0
329:	1	0	1	0	0	0	0	0	0
337:	0	1	0	0	0	0	1	0	0
345:	0	0	0	0	1	0	0	0	0
353:	1	0	1	1	2	2	2	0	0
361:	0	2	3	4	0	1	3	0	2

369: 2 3 1 2 2 4 1 4

Sample Title: 18

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

Sample Title: 18

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



WB
10/29/15

Sample Description: CP5008S14-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 19
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

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

Sample Size: 1.530E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 11:23:39 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: 0.1971 +/- 0.0164
 Counting Efficiency: 0.1856 +/- 0.0032 on 10/25/2014 2:57:14 PM
 Chem. Recovery Factor: 1.0623 +/- 0.0901

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	5.838	14.66	51.88	0.34	0.00E+000	6.0
TH-228	5.364	148.15	16.16	0.85	0.00E+000	5.5
TH-229 T	4.861	168.83	15.09	0.17	0.00E+000	3.8
TH-230	4.626	143.49	16.40	0.51	0.00E+000	3.9
TH-232	3.948	152.32	15.92	0.68	0.00E+000	5.0

T = Tracer Peak used for Effective Efficiency

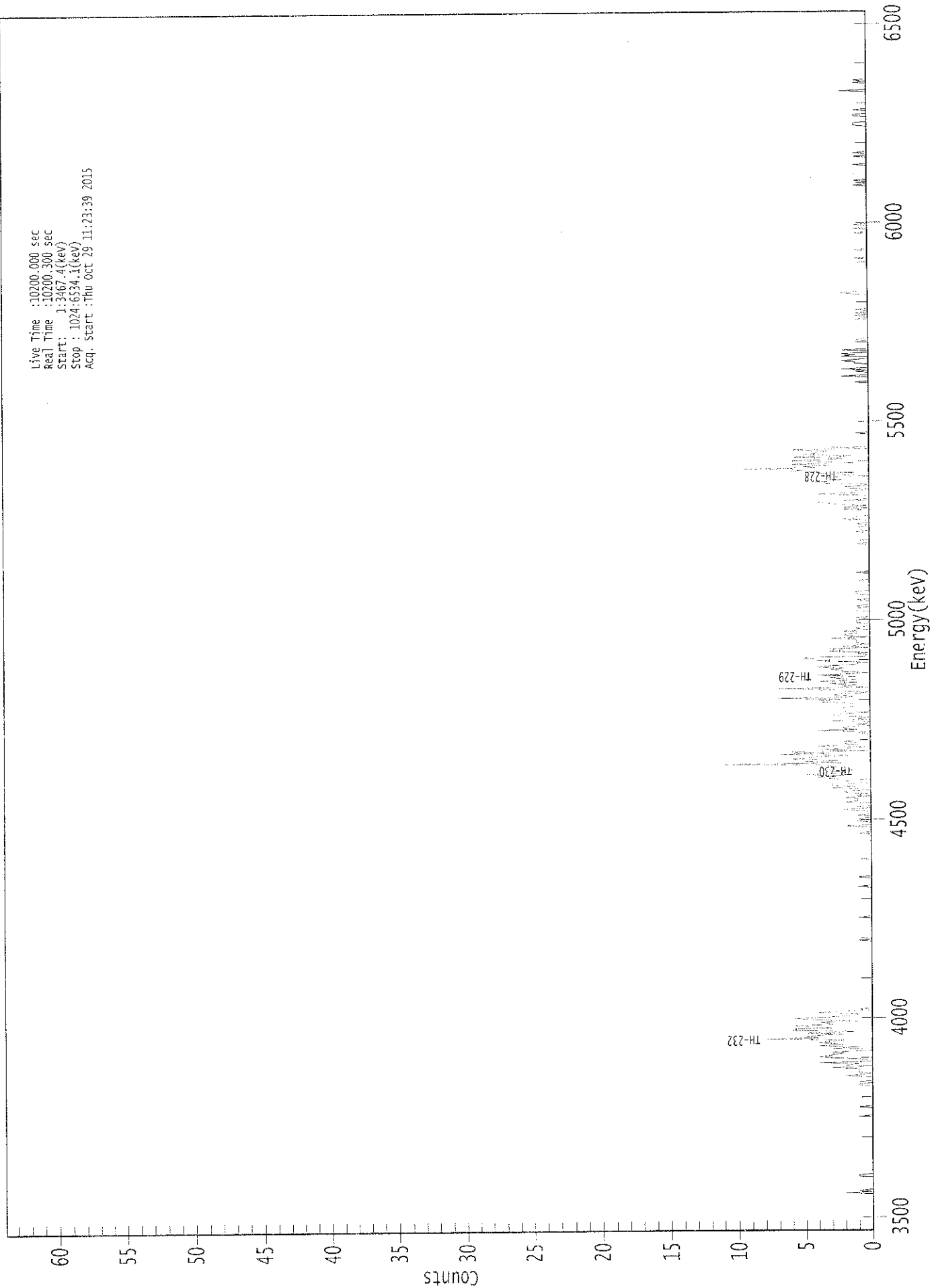
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	1.32E-001 +/- 7.19E-002	4.32E-002 +/- 7.02E-003
TH-228	0.993	5400.00*	1.33E+000 +/- 3.05E-001	5.37E-002 +/- 8.74E-003
TH-229	0.999	4872.00*	1.49E+000 +/- 2.42E-001	3.68E-002 +/- 5.99E-003
TH-230	0.989	4672.00*	1.26E+000 +/- 2.92E-001	4.62E-002 +/- 7.51E-003
TH-232	0.988	3997.00*	1.34E+000 +/- 3.05E-001	4.95E-002 +/- 8.06E-003

AG
10/30/15

0000132630.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:34:67.4(keV)
Stop : 1024:6534.1(keV)
Acq. Start : Thu Oct 29 11:23:39 2015



ROI Type: 3

ROI Type: 1

00001

 ***** 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	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	2
33:	0	1	0	0	0	0	0	0	0
41:	0	0	0	0	0	1	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	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	1
97:	0	0	0	0	0	0	0	0	1
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	1	1	0	1	0	0	0	0
129:	0	2	1	0	1	1	1	1	1
137:	3	0	2	1	4	0	0	0	1
145:	3	4	3	3	2	3	0	0	0
153:	3	1	4	2	3	4	3	2	2
161:	8	4	5	4	2	5	1	6	6
169:	6	3	5	6	3	3	4	1	1
177:	4	6	4	2	1	1	4	3	3
185:	0	1	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	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	1	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	1	0	0	0	0	0	0	0	0
297:	1	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	1	0	0	0
337:	0	0	0	2	0	0	0	0	1
345:	0	1	0	0	1	0	0	0	0
353:	1	2	0	1	0	0	0	0	2
361:	1	1	1	2	0	1	0	0	2

369: 2 0 1 3 1 3 3 0

Sample Title: 19

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 19

Channel								
809:	0	0	0	0	0	0	0	1
817:	0	0	0	0	0	0	1	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	1	0	0	0
841:	1	0	0	1	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	1	0	0	0
881:	1	0	0	0	0	0	0	0
889:	0	0	0	0	0	1	0	0
897:	0	0	0	0	1	0	0	1
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	1
929:	1	0	0	0	0	0	1	1
937:	0	0	0	1	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	2	0	0	0	0
961:	0	0	1	0	1	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
10/29/15

Apex-Alpha™

Sample Description: CP5008S17-18
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001326
 Batch Identification: 1510088A-TH
 Sample Identification: 20
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_041
 Chamber Serial Number: 05026930A
 Detector Serial Number: 91087
 Env. Background: System Bkgd 132586
 Reagent Blank: <not performed>

Sample Size: 1.549E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/8/2015 6:16:28 AM
 Acquisition Date/Time: 10/29/2015 11:23:34 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: 0.1962 +/- 0.0164
 Counting Efficiency: 0.1873 +/- 0.0033 on 10/25/2014 3:00:28 PM
 Chem. Recovery Factor: 1.0477 +/- 0.0892

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.808	10.15	64.46	0.85	0.00E+000	6.0
TH-228	5.364	138.47	16.76	1.53	0.00E+000	5.0
TH-229 T	4.867	168.15	15.16	0.85	0.00E+000	4.7
TH-230	4.633	139.32	16.65	0.68	0.00E+000	6.2
TH-232	3.955	142.77	16.62	3.23	0.00E+000	18.2

T = Tracer Peak used for Effective Efficiency

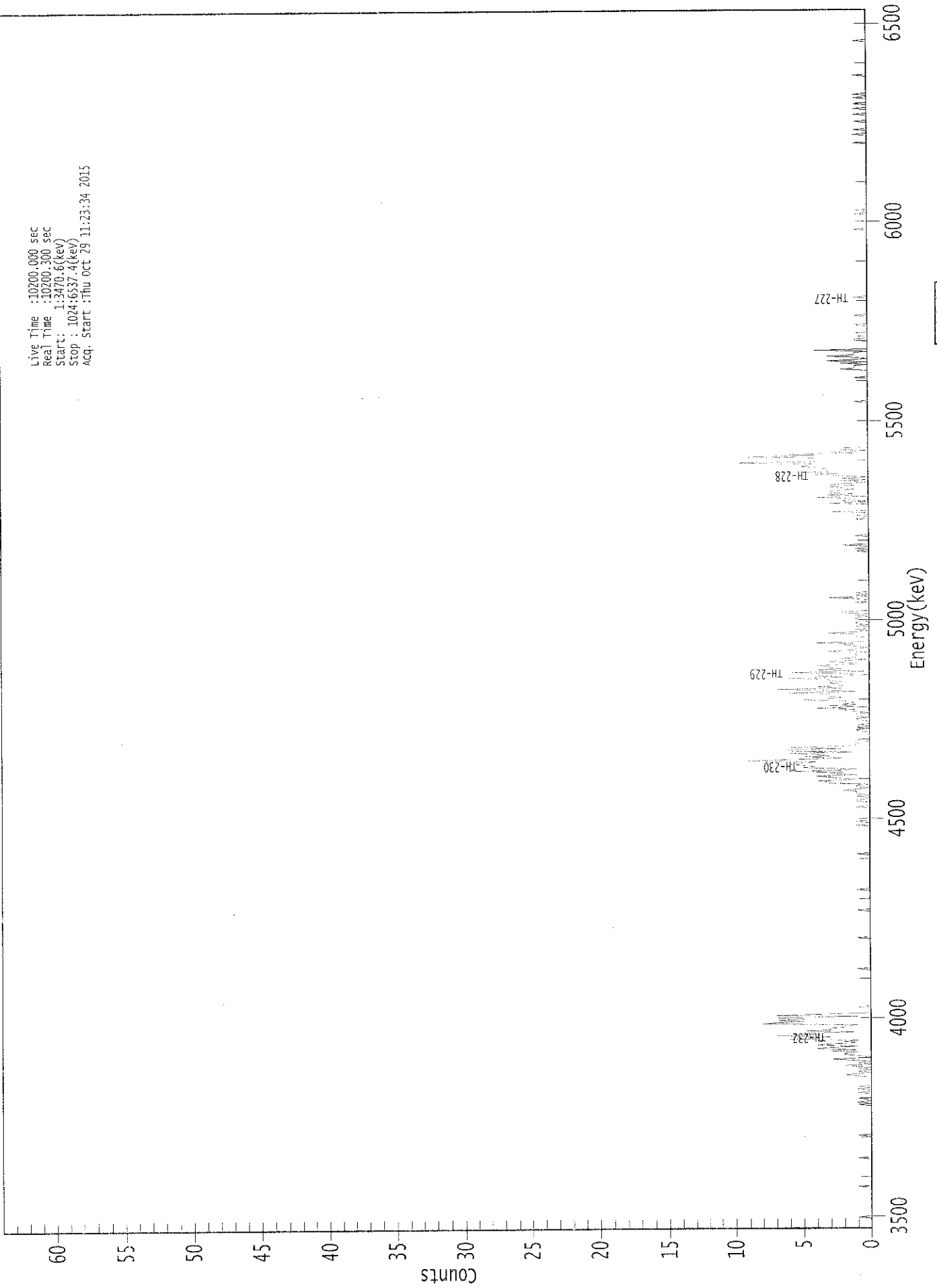
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.991	5850.00*	9.09E-002 +/- 6.05E-002	5.36E-002 +/- 8.76E-003
TH-228	0.993	5400.00*	1.23E+000 +/- 2.89E-001	6.33E-002 +/- 1.03E-002
TH-229	1.000	4872.00*	1.47E+000 +/- 2.41E-001	5.24E-002 +/- 8.56E-003
TH-230	0.992	4672.00*	1.22E+000 +/- 2.84E-001	4.93E-002 +/- 8.04E-003
TH-232	0.991	3997.00*	1.24E+000 +/- 2.90E-001	7.93E-002 +/- 1.30E-002

AG
10/30/15

0000132631.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3470.6(keV)
Stop : 1024:6537.4(keV)
Acq. Start : Thu Oct 29 11:23:34 2015



ROI Type: 3

ROI Type: 1

00300

 ***** 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	0	0	0	0	0	0	0	0
9:	0	1	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	1	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	1	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	1	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	1	0	0	1	0	0	0
113:	0	0	1	0	0	1	0	1	1
121:	0	0	0	0	0	0	0	0	0
129:	1	2	1	0	1	0	1	0	0
137:	1	2	0	1	0	1	3	1	1
145:	0	1	2	2	1	3	1	1	4
153:	3	1	4	3	1	2	1	1	6
161:	4	3	7	4	5	1	5	3	3
169:	3	2	2	1	8	7	5	7	7
177:	5	7	1	7	4	0	0	0	0
185:	0	0	1	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	1	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	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	1	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	1	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	1	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	1	0	0	1	0	0	0
345:	0	0	0	0	0	0	0	0	0
353:	0	1	0	0	0	0	1	1	1
361:	0	0	1	0	1	1	1	2	2

369: 1 0 1 1 0 3 3 4

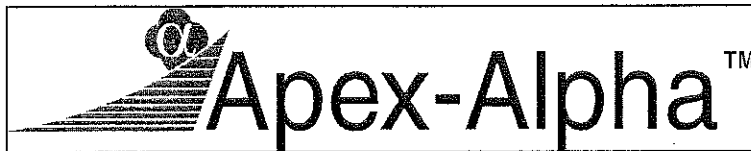
Sample Title: 20

Channel	1	2	3	4	5	6	7	8
377:	1	2	3	4	1	3	2	6
385:	2	1	5	4	5	6	5	4
393:	9	5	2	5	3	4	6	1
401:	6	6	2	6	2	1	1	0
409:	0	1	0	0	0	0	0	0
417:	0	1	1	0	1	0	1	0
425:	0	0	1	1	0	1	1	1
433:	0	1	2	1	4	0	3	1
441:	2	1	2	5	3	2	3	3
449:	3	6	1	3	7	2	4	2
457:	2	3	2	3	3	6	2	4
465:	0	2	6	0	4	2	3	3
473:	4	1	1	3	2	0	2	1
481:	1	1	1	0	3	1	1	0
489:	1	2	1	4	0	0	0	0
497:	1	1	1	3	1	0	1	0
505:	0	1	0	1	1	0	0	1
513:	1	0	1	0	2	2	0	0
521:	0	0	0	0	0	1	0	0
529:	1	3	0	1	0	1	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	1	0	1	0	0	2	0	0
577:	0	0	0	0	0	1	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	1	0	0	1	0
601:	0	3	0	0	0	0	0	0
609:	3	0	2	1	1	4	0	3
617:	1	3	3	2	1	2	3	1
625:	3	1	0	2	0	2	0	2
633:	4	2	5	3	3	3	4	5
641:	4	4	10	4	4	4	4	9
649:	4	6	1	3	0	2	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	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	1	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	1	0	0	0	0	0	0
721:	2	1	1	1	0	2	0	3
729:	1	0	1	3	1	1	1	0
737:	4	0	0	0	0	0	0	0
745:	1	1	0	0	1	1	1	0
753:	0	0	0	0	0	1	0	0
761:	0	0	0	0	0	1	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	1	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: 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	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	1	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:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	1	0
913:	0	0	0	0	0	1	0	0
921:	0	1	0	0	0	0	0	0
929:	1	0	0	0	0	0	1	0
937:	0	0	0	1	0	0	0	1
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	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	1	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 : 10/29/2015
Time : 5:47:16 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	10/29/2015 5:15:43 AM
Alpha 004	21f	ALL	Passed	10/29/2015 5:15:44 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	10/29/2015 5:15:45 AM
Alpha 011	21f	ALL	Passed	10/29/2015 5:15:46 AM
Alpha 012	21f	ALL	Passed	10/29/2015 5:15:47 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Passed	10/29/2015 5:15:48 AM
Alpha 015	21f	ALL	Passed	10/29/2015 5:15:48 AM
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:15:50 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:15:51 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:15:52 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:15:54 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:15:56 AM
Alpha 038	Alpha Analyst100DC	Peak Energy	Action	10/29/2015 5:15:58 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:00 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:02 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:04 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:06 AM
Alpha 043	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:09 AM
Alpha 044	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:11 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:13 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:16 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:18 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:21 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:23 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:26 AM
Alpha 051	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:28 AM
Alpha 052	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:31 AM
Alpha 053	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:34 AM
Alpha 054	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:36 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:39 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:41 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:44 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:47 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 059	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:50 AM
Alpha 060	Alpha Analyst100DC	ALL	Passed	10/29/2015 5:16:53 AM

APPROVED BY: _____ 

APPROVAL DATE: 10/29

***** 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	15-10088
Analysis Code	Gamma
Run	1
Date Received	10/14/2015
Lab Deadline	11/5/2015
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	Cifent ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		10/15/15 00:00	1.0000E+00
02	MBL	BLANK		10/15/15 00:00	1.0000E+00
03	DUP	CP4104S03-04	42	10/08/15 09:30	5.6866E+02
04	DO	CP4104S03-04	42	10/08/15 09:30	5.6866E+02
05	TRG	CP4104S08-09	40	10/08/15 09:40	5.3532E+02
06	TRG	CP4104S11-12	32	10/08/15 09:50	5.4388E+02
07	TRG	CP4104S17-18	36	10/08/15 10:00	5.5502E+02
08	TRG	CP1804S03-04	35	10/08/15 10:30	5.1969E+02
09	TRG	CP1804S05-06	35	10/08/15 10:40	5.6771E+02
10	TRG	CP1804S08-09	32	10/08/15 10:50	6.0294E+02
11	TRG	CP1804S10-11	36	10/08/15 11:00	5.9272E+02
12	TRG	CP1804S12-13	33	10/08/15 11:20	6.1040E+02
13	TRG	CP1804S15-16	34	10/08/15 11:30	5.9909E+02
14	TRG	CP1804S17-18	36	10/08/15 11:40	6.4543E+02
15	TRG	CP5008S03-04	33	10/08/15 13:30	5.8505E+02
16	TRG	CP5008S06-07	41	10/08/15 13:40	5.3843E+02
17	TRG	CP5008S09-10	34	10/08/15 13:50	5.5404E+02
18	TRG	CP5008S12-13	34	10/08/15 14:00	5.3448E+02
19	TRG	CP5008S14-15	38	10/08/15 14:10	5.7267E+02
20	TRG	CP5008S17-18	20	10/08/15 14:20	5.8343E+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.

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	10/19/15 08:59	KSALLINGS						
05	TRG	10/19/15 08:59	KSALLINGS						
06	TRG	10/19/15 08:59	KSALLINGS						
07	TRG	10/19/15 08:59	KSALLINGS						
08	TRG	10/19/15 08:59	KSALLINGS						
09	TRG	10/19/15 08:59	KSALLINGS						
10	TRG	10/19/15 08:59	KSALLINGS						
11	TRG	10/19/15 08:59	KSALLINGS						
12	TRG	10/19/15 08:59	KSALLINGS						
13	TRG	10/19/15 08:59	KSALLINGS						
14	TRG	10/19/15 08:59	KSALLINGS						
15	TRG	10/19/15 08:59	KSALLINGS						
16	TRG	10/19/15 08:59	KSALLINGS						
17	TRG	10/19/15 08:59	KSALLINGS						
18	TRG	10/19/15 08:59	KSALLINGS						
19	TRG	10/19/15 08:59	KSALLINGS						
20	TRG	10/19/15 08:59	KSALLINGS						

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.

** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Preliminary Data Report & Analytical Calculations
Work Order: 15-10088-Gamma-1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
01	CO-60	LCS	LCS	pCi/g	1.34E+02	9.31E+00	1.54E+00	1.37E+02	98.06	OK		10/15/15 00:00	1.00E+00	11/09/15 15:30	YES
01	CS-137	LCS	LCS	pCi/g	8.15E+01	7.85E+00	1.88E+00	8.69E+01	93.81	OK		10/15/15 00:00	1.00E+00	11/09/15 15:30	YES
02	AC-228	MBL	BLANK	pCi/g	2.15E-02	1.69E-01	2.82E-01					10/15/15 00:00	1.00E+00	11/09/15 14:29	NO
02	BI-214	MBL	BLANK	pCi/g	2.35E-02	9.11E-02	1.51E-01					10/15/15 00:00	1.00E+00	11/09/15 14:29	NO
02	K-40	MBL	BLANK	pCi/g	3.38E-01	3.84E-01	8.89E-01					10/15/15 00:00	1.00E+00	11/09/15 14:29	NO
02	PB-212	MBL	BLANK	pCi/g	6.62E-02	5.91E-02	1.05E-01					10/15/15 00:00	1.00E+00	11/09/15 14:29	NO
02	PB-214	MBL	BLANK	pCi/g	2.33E-02	7.89E-02	1.29E-01					10/15/15 00:00	1.00E+00	11/09/15 14:29	NO
02	RA-226	MBL	BLANK	pCi/g	2.36E-02	9.11E-02	1.51E-01					10/15/15 00:00	1.00E+00	11/09/15 14:29	NO
02	RA-228	MBL	BLANK	pCi/g	2.15E-02	1.69E-01	2.82E-01					10/15/15 00:00	1.00E+00	11/09/15 14:29	NO
02	TH-234	MBL	BLANK	pCi/g	5.34E-01	4.15E-01	7.04E-01					10/15/15 00:00	1.00E+00	11/09/15 14:29	NO
02	TL-208	MBL	BLANK	pCi/g	1.02E-01	1.09E-01	2.11E-01					10/15/15 00:00	1.00E+00	11/09/15 14:29	NO
03	AC-228	DUP	CP4104S03-04	pCi/g	1.51E+00	1.83E-01	3.45E-01				OK	10/08/15 09:30	5.89E+02	11/09/15 13:33	YES
03	BI-214	DUP	CP4104S03-04	pCi/g	1.23E+00	1.48E-01	2.35E-01				OK	10/08/15 09:30	5.89E+02	11/09/15 13:33	YES
03	K-40	DUP	CP4104S03-04	pCi/g	1.95E+01	2.22E+00	1.02E+00				OK	10/08/15 09:30	5.89E+02	11/09/15 13:33	YES
03	PB-212	DUP	CP4104S03-04	pCi/g	1.51E+00	1.68E-01	2.26E-01					10/08/15 09:30	5.89E+02	11/09/15 13:33	YES
03	PB-214	DUP	CP4104S03-04	pCi/g	1.20E+00	1.31E-01	5.36E-01					10/08/15 09:30	5.89E+02	11/09/15 13:33	YES
03	RA-226	DUP	CP4104S03-04	pCi/g	1.23E+00	1.48E-01	2.35E-01					10/08/15 09:30	5.89E+02	11/09/15 13:33	YES
03	RA-228	DUP	CP4104S03-04	pCi/g	1.51E+00	1.83E-01	3.45E-01					10/08/15 09:30	5.89E+02	11/09/15 13:33	YES
03	TH-234	DUP	CP4104S03-04	pCi/g	1.26E+00	1.45E+00	2.43E+00					10/08/15 09:30	5.89E+02	11/09/15 13:33	YES
03	TL-208	DUP	CP4104S03-04	pCi/g	1.22E+00	1.63E-01	1.33E-01					10/08/15 09:30	5.89E+02	11/09/15 13:33	YES
04	AC-228	DO	CP4104S03-04	pCi/g	1.64E+00	2.26E-01	4.21E-01					10/08/15 09:30	5.89E+02	11/09/15 14:34	YES
04	BI-214	DO	CP4104S03-04	pCi/g	1.16E+00	1.58E-01	1.91E-01					10/08/15 09:30	5.89E+02	11/09/15 14:34	YES
04	K-40	DO	CP4104S03-04	pCi/g	1.98E+01	2.21E+00	6.99E-01					10/08/15 09:30	5.89E+02	11/09/15 14:34	YES
04	PB-212	DO	CP4104S03-04	pCi/g	1.56E+00	1.77E-01	2.04E-01					10/08/15 09:30	5.89E+02	11/09/15 14:34	YES
04	PB-214	DO	CP4104S03-04	pCi/g	1.25E+00	1.52E-01	2.44E-01					10/08/15 09:30	5.89E+02	11/09/15 14:34	YES
04	RA-226	DO	CP4104S03-04	pCi/g	1.16E+00	1.58E-01	1.91E-01					10/08/15 09:30	5.89E+02	11/09/15 14:34	YES
04	RA-228	DO	CP4104S03-04	pCi/g	1.64E+00	2.26E-01	4.21E-01					10/08/15 09:30	5.89E+02	11/09/15 14:34	YES
04	TH-234	DO	CP4104S03-04	pCi/g	1.48E+00	1.68E+00	2.64E+00					10/08/15 09:30	5.89E+02	11/09/15 14:34	YES
04	TL-208	DO	CP4104S03-04	pCi/g	1.13E+00	1.69E-01	9.03E-02					10/08/15 09:30	5.89E+02	11/09/15 14:34	YES
05	AC-228	TRG	CP4104S08-09	pCi/g	1.29E+00	2.81E-01	5.31E-01					10/08/15 09:40	5.35E+02	11/09/15 13:26	YES
05	BI-214	TRG	CP4104S08-09	pCi/g	1.18E+00	1.94E-01	2.63E-01					10/08/15 09:40	5.35E+02	11/09/15 13:26	YES
05	K-40	TRG	CP4104S08-09	pCi/g	1.99E+01	2.45E+00	9.85E-01					10/08/15 09:40	5.35E+02	11/09/15 13:26	YES
05	PB-212	TRG	CP4104S08-09	pCi/g	1.69E+00	1.92E-01	3.08E-01					10/08/15 09:40	5.35E+02	11/09/15 13:26	YES
05	PB-214	TRG	CP4104S08-09	pCi/g	1.45E+00	2.03E-01	2.94E-01					10/08/15 09:40	5.35E+02	11/09/15 13:26	YES
05	RA-226	TRG	CP4104S08-09	pCi/g	1.18E+00	1.94E-01	2.63E-01					10/08/15 09:40	5.35E+02	11/09/15 13:26	YES
05	RA-228	TRG	CP4104S08-09	pCi/g	1.29E+00	2.81E-01	5.31E-01					10/08/15 09:40	5.35E+02	11/09/15 13:26	YES
05	TH-234	TRG	CP4104S08-09	pCi/g	1.59E+00	1.75E+00	2.92E+00					10/08/15 09:40	5.35E+02	11/09/15 13:26	YES
05	TL-208	TRG	CP4104S08-09	pCi/g	1.08E+00	1.95E-01	4.73E-02					10/08/15 09:40	5.35E+02	11/09/15 13:26	YES

00015

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	CP4104S11-12	pCi/g	1.34E+00	2.06E-01	3.76E-01					10/08/15 09:50	5.44E+02	11/09/15 14:24	YES
06	BI-214	TRG	CP4104S11-12	pCi/g	1.22E+00	1.79E-01	2.17E-01					10/08/15 09:50	5.44E+02	11/09/15 14:24	YES
06	K-40	TRG	CP4104S11-12	pCi/g	1.93E+01	2.54E+00	1.34E+00					10/08/15 09:50	5.44E+02	11/09/15 14:24	YES
06	PB-212	TRG	CP4104S11-12	pCi/g	1.56E+00	2.19E-01	2.40E-01					10/08/15 09:50	5.44E+02	11/09/15 14:24	YES
06	PB-214	TRG	CP4104S11-12	pCi/g	1.33E+00	1.54E-01	2.35E-01					10/08/15 09:50	5.44E+02	11/09/15 14:24	YES
06	RA-226	TRG	CP4104S11-12	pCi/g	1.22E+00	1.79E-01	2.17E-01					10/08/15 09:50	5.44E+02	11/09/15 14:24	YES
06	RA-228	TRG	CP4104S11-12	pCi/g	1.34E+00	2.06E-01	3.76E-01					10/08/15 09:50	5.44E+02	11/09/15 14:24	YES
06	TH-234	TRG	CP4104S11-12	pCi/g	1.35E+00	9.22E-01	1.49E+00					10/08/15 09:50	5.44E+02	11/09/15 14:24	NO
06	TL-208	TRG	CP4104S11-12	pCi/g	1.09E+00	1.52E-01	1.14E-01					10/08/15 09:50	5.44E+02	11/09/15 14:24	YES
07	AC-228	TRG	CP4104S17-18	pCi/g	1.41E+00	2.51E-01	4.67E-01					10/08/15 10:00	5.55E+02	11/09/15 14:27	YES
07	BI-214	TRG	CP4104S17-18	pCi/g	1.03E+00	1.93E-01	2.60E-01					10/08/15 10:00	5.55E+02	11/09/15 14:27	YES
07	K-40	TRG	CP4104S17-18	pCi/g	1.94E+01	2.41E+00	1.10E+00					10/08/15 10:00	5.55E+02	11/09/15 14:27	YES
07	PB-212	TRG	CP4104S17-18	pCi/g	1.40E+00	1.69E-01	2.94E-01					10/08/15 10:00	5.55E+02	11/09/15 14:27	YES
07	PB-214	TRG	CP4104S17-18	pCi/g	9.85E-01	1.57E-01	2.39E-01					10/08/15 10:00	5.55E+02	11/09/15 14:27	YES
07	RA-226	TRG	CP4104S17-18	pCi/g	1.03E+00	1.93E-01	2.60E-01					10/08/15 10:00	5.55E+02	11/09/15 14:27	YES
07	RA-228	TRG	CP4104S17-18	pCi/g	1.41E+00	2.51E-01	4.67E-01					10/08/15 10:00	5.55E+02	11/09/15 14:27	YES
07	TH-234	TRG	CP4104S17-18	pCi/g	1.96E+00	1.53E+00	2.70E+00					10/08/15 10:00	5.55E+02	11/09/15 14:27	YES
07	TL-208	TRG	CP4104S17-18	pCi/g	1.11E+00	2.09E-01	4.56E-02					10/08/15 10:00	5.55E+02	11/09/15 14:27	YES
08	AC-228	TRG	CP1804S03-04	pCi/g	1.38E+00	2.46E-01	3.89E-01					10/08/15 10:30	5.20E+02	11/09/15 15:25	YES
08	BI-214	TRG	CP1804S03-04	pCi/g	1.36E+00	1.87E-01	2.47E-01					10/08/15 10:30	5.20E+02	11/09/15 15:25	YES
08	K-40	TRG	CP1804S03-04	pCi/g	1.99E+01	2.55E+00	8.88E-01					10/08/15 10:30	5.20E+02	11/09/15 15:25	YES
08	PB-212	TRG	CP1804S03-04	pCi/g	1.55E+00	1.93E-01	2.35E-01					10/08/15 10:30	5.20E+02	11/09/15 15:25	YES
08	PB-214	TRG	CP1804S03-04	pCi/g	1.52E+00	1.86E-01	2.58E-01					10/08/15 10:30	5.20E+02	11/09/15 15:25	YES
08	RA-226	TRG	CP1804S03-04	pCi/g	1.36E+00	1.87E-01	2.47E-01					10/08/15 10:30	5.20E+02	11/09/15 15:25	YES
08	RA-228	TRG	CP1804S03-04	pCi/g	1.38E+00	2.46E-01	3.89E-01					10/08/15 10:30	5.20E+02	11/09/15 15:25	YES
08	TH-234	TRG	CP1804S03-04	pCi/g	1.91E+00	1.35E+00	2.22E+00					10/08/15 10:30	5.20E+02	11/09/15 15:25	YES
08	TL-208	TRG	CP1804S03-04	pCi/g	1.26E+00	1.75E-01	1.19E-01					10/08/15 10:30	5.20E+02	11/09/15 15:25	YES
09	AC-228	TRG	CP1804S05-06	pCi/g	1.40E+00	2.76E-01	4.44E-01					10/08/15 10:40	5.68E+02	11/09/15 15:28	YES
09	BI-214	TRG	CP1804S05-06	pCi/g	1.51E+00	2.16E-01	2.82E-01					10/08/15 10:40	5.68E+02	11/09/15 15:28	YES
09	K-40	TRG	CP1804S05-06	pCi/g	1.86E+01	2.34E+00	1.20E+00					10/08/15 10:40	5.68E+02	11/09/15 15:28	YES
09	PB-212	TRG	CP1804S05-06	pCi/g	1.66E+00	1.84E-01	2.80E-01					10/08/15 10:40	5.68E+02	11/09/15 15:28	YES
09	PB-214	TRG	CP1804S05-06	pCi/g	1.59E+00	1.90E-01	2.44E-01					10/08/15 10:40	5.68E+02	11/09/15 15:28	YES
09	RA-226	TRG	CP1804S05-06	pCi/g	1.51E+00	2.16E-01	2.82E-01					10/08/15 10:40	5.68E+02	11/09/15 15:28	YES
09	RA-228	TRG	CP1804S05-06	pCi/g	1.40E+00	2.76E-01	4.44E-01					10/08/15 10:40	5.68E+02	11/09/15 15:28	YES
09	TH-234	TRG	CP1804S05-06	pCi/g	1.41E+00	1.52E+00	2.54E+00					10/08/15 10:40	5.68E+02	11/09/15 15:28	YES
09	TL-208	TRG	CP1804S05-06	pCi/g	1.19E+00	2.01E-01	1.94E-01					10/08/15 10:40	5.68E+02	11/09/15 15:28	YES
10	AC-228	TRG	CP1804S08-09	pCi/g	1.49E+00	2.14E-01	3.66E-01					10/08/15 10:50	6.03E+02	11/09/15 15:35	YES
10	BI-214	TRG	CP1804S08-09	pCi/g	1.42E+00	1.71E-01	2.03E-01					10/08/15 10:50	6.03E+02	11/09/15 15:35	YES

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	RDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
10	K-40	TRG	CP1804S08-09	pCi/g	1.79E+01	2.02E+00	9.67E-01					10/08/15 10:50	6.03E+02	11/09/15 15:35	YES
10	PB-212	TRG	CP1804S08-09	pCi/g	1.59E+00	1.77E-01	2.50E-01					10/08/15 10:50	6.03E+02	11/09/15 15:35	YES
10	PB-214	TRG	CP1804S08-09	pCi/g	1.62E+00	1.71E-01	2.57E-01					10/08/15 10:50	6.03E+02	11/09/15 15:35	YES
10	RA-226	TRG	CP1804S08-09	pCi/g	1.42E+00	1.71E-01	2.03E-01					10/08/15 10:50	6.03E+02	11/09/15 15:35	YES
10	RA-228	TRG	CP1804S08-09	pCi/g	1.49E+00	2.14E-01	3.66E-01					10/08/15 10:50	6.03E+02	11/09/15 15:35	YES
10	TH-234	TRG	CP1804S08-09	pCi/g	1.62E+00	1.68E+00	2.64E+00					10/08/15 10:50	6.03E+02	11/09/15 15:35	YES
10	TL-208	TRG	CP1804S08-09	pCi/g	1.50E+00	1.93E-01	1.77E-01					10/08/15 10:50	6.03E+02	11/09/15 15:35	YES
11	AC-228	TRG	CP1804S10-11	pCi/g	1.56E+00	3.79E-01	1.04E+00					10/08/15 11:00	5.93E+02	11/09/15 16:02	YES
11	BI-214	TRG	CP1804S10-11	pCi/g	1.56E+00	3.03E-01	3.74E-01					10/08/15 11:00	5.93E+02	11/09/15 16:02	YES
11	K-40	TRG	CP1804S10-11	pCi/g	1.59E+01	3.06E+00	2.51E+00					10/08/15 11:00	5.93E+02	11/09/15 16:02	YES
11	PB-212	TRG	CP1804S10-11	pCi/g	1.88E+00	3.72E-01	4.81E-01					10/08/15 11:00	5.93E+02	11/09/15 16:02	YES
11	PB-214	TRG	CP1804S10-11	pCi/g	1.29E+00	3.04E-01	5.18E-01					10/08/15 11:00	5.93E+02	11/09/15 16:02	YES
11	RA-226	TRG	CP1804S10-11	pCi/g	1.56E+00	3.03E-01	3.74E-01					10/08/15 11:00	5.93E+02	11/09/15 16:02	YES
11	RA-228	TRG	CP1804S10-11	pCi/g	1.56E+00	3.79E-01	1.04E+00					10/08/15 11:00	5.93E+02	11/09/15 16:02	YES
11	TH-234	TRG	CP1804S10-11	pCi/g	2.45E+00	1.54E+00	2.52E+00					10/08/15 11:00	5.93E+02	11/09/15 16:02	YES
11	TL-208	TRG	CP1804S10-11	pCi/g	1.13E+00	3.00E-01	4.28E-01					10/08/15 11:00	5.93E+02	11/09/15 16:02	YES
12	AC-228	TRG	CP1804S12-13	pCi/g	1.37E+00	2.10E-01	4.13E-01					10/08/15 11:20	6.10E+02	11/09/15 16:25	YES
12	BI-214	TRG	CP1804S12-13	pCi/g	1.09E+00	1.49E-01	1.77E-01					10/08/15 11:20	6.10E+02	11/09/15 16:25	YES
12	K-40	TRG	CP1804S12-13	pCi/g	1.49E+01	1.97E+00	7.28E-01					10/08/15 11:20	6.10E+02	11/09/15 16:25	YES
12	PB-212	TRG	CP1804S12-13	pCi/g	1.47E+00	1.69E-01	2.24E-01					10/08/15 11:20	6.10E+02	11/09/15 16:25	YES
12	PB-214	TRG	CP1804S12-13	pCi/g	1.15E+00	1.40E-01	1.93E-01					10/08/15 11:20	6.10E+02	11/09/15 16:25	YES
12	RA-226	TRG	CP1804S12-13	pCi/g	1.09E+00	1.49E-01	1.77E-01					10/08/15 11:20	6.10E+02	11/09/15 16:25	YES
12	RA-228	TRG	CP1804S12-13	pCi/g	1.37E+00	2.10E-01	4.13E-01					10/08/15 11:20	6.10E+02	11/09/15 16:25	YES
12	TH-234	TRG	CP1804S12-13	pCi/g	1.03E+00	1.03E+00	1.71E+00					10/08/15 11:20	6.10E+02	11/09/15 16:25	YES
12	TL-208	TRG	CP1804S12-13	pCi/g	1.07E+00	1.49E-01	1.02E-01					10/08/15 11:20	6.10E+02	11/09/15 16:25	YES
13	AC-228	TRG	CP1804S15-16	pCi/g	1.53E+00	2.53E-01	5.60E-01					10/08/15 11:30	5.99E+02	11/09/15 16:28	YES
13	BI-214	TRG	CP1804S15-16	pCi/g	1.08E+00	1.86E-01	2.72E-01					10/08/15 11:30	5.99E+02	11/09/15 16:28	YES
13	K-40	TRG	CP1804S15-16	pCi/g	1.60E+01	2.16E+00	1.51E+00					10/08/15 11:30	5.99E+02	11/09/15 16:28	YES
13	PB-212	TRG	CP1804S15-16	pCi/g	1.65E+00	1.84E-01	2.31E-01					10/08/15 11:30	5.99E+02	11/09/15 16:28	YES
13	PB-214	TRG	CP1804S15-16	pCi/g	1.11E+00	1.92E-01	3.05E-01					10/08/15 11:30	5.99E+02	11/09/15 16:28	YES
13	RA-226	TRG	CP1804S15-16	pCi/g	1.08E+00	1.86E-01	2.72E-01					10/08/15 11:30	5.99E+02	11/09/15 16:28	YES
13	RA-228	TRG	CP1804S15-16	pCi/g	1.53E+00	2.53E-01	5.60E-01					10/08/15 11:30	5.99E+02	11/09/15 16:28	YES
13	TH-234	TRG	CP1804S15-16	pCi/g	1.57E+00	1.54E+00	2.03E+00					10/08/15 11:30	5.99E+02	11/09/15 16:28	NO
13	TL-208	TRG	CP1804S15-16	pCi/g	1.27E+00	2.03E-01	4.22E-02					10/08/15 11:30	5.99E+02	11/09/15 16:28	YES
14	AC-228	TRG	CP1804S17-18	pCi/g	1.39E+00	2.11E-01	3.33E-01					10/08/15 11:40	6.45E+02	11/09/15 16:35	YES
14	BI-214	TRG	CP1804S17-18	pCi/g	1.16E+00	1.41E-01	1.51E-01					10/08/15 11:40	6.45E+02	11/09/15 16:35	YES
14	K-40	TRG	CP1804S17-18	pCi/g	1.54E+01	1.79E+00	7.95E-01					10/08/15 11:40	6.45E+02	11/09/15 16:35	YES
14	PB-212	TRG	CP1804S17-18	pCi/g	1.39E+00	1.68E-01	1.96E-01					10/08/15 11:40	6.45E+02	11/09/15 16:35	YES

Preliminary Data Report & Analytical Calculations
Work Order: 15-10088-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
14	PB-214	TRG	CP1804S17-18	pCi/g	1.23E+00	1.29E-01	1.62E-01					10/08/15 11:40	6.45E+02	11/09/15 16:35	YES
14	RA-226	TRG	CP1804S17-18	pCi/g	1.16E+00	1.41E-01	1.51E-01					10/08/15 11:40	6.45E+02	11/09/15 16:35	YES
14	RA-228	TRG	CP1804S17-18	pCi/g	1.39E+00	2.11E-01	3.33E-01					10/08/15 11:40	6.45E+02	11/09/15 16:35	YES
14	TH-234	TRG	CP1804S17-18	pCi/g	1.97E+00	1.45E+00	2.40E+00					10/08/15 11:40	6.45E+02	11/09/15 16:35	YES
14	TL-208	TRG	CP1804S17-18	pCi/g	1.22E+00	1.67E-01	1.77E-01					10/08/15 11:40	6.45E+02	11/09/15 16:35	YES
15	AC-228	TRG	CP5008S03-04	pCi/g	1.16E+00	4.78E-01	9.22E-01					10/08/15 13:30	5.85E+02	11/09/15 17:03	NO
15	BI-214	TRG	CP5008S03-04	pCi/g	1.38E+00	3.09E-01	4.82E-01					10/08/15 13:30	5.85E+02	11/09/15 17:03	YES
15	K-40	TRG	CP5008S03-04	pCi/g	1.71E+01	3.39E+00	3.17E+00					10/08/15 13:30	5.85E+02	11/09/15 17:03	YES
15	PB-212	TRG	CP5008S03-04	pCi/g	1.82E+00	3.67E-01	4.79E-01					10/08/15 13:30	5.85E+02	11/09/15 17:03	YES
15	PB-214	TRG	CP5008S03-04	pCi/g	1.31E+00	2.90E-01	4.39E-01					10/08/15 13:30	5.85E+02	11/09/15 17:03	YES
15	RA-226	TRG	CP5008S03-04	pCi/g	1.38E+00	3.09E-01	4.82E-01					10/08/15 13:30	5.85E+02	11/09/15 17:03	YES
15	RA-228	TRG	CP5008S03-04	pCi/g	1.16E+00	4.78E-01	9.22E-01					10/08/15 13:30	5.85E+02	11/09/15 17:03	YES
15	TH-234	TRG	CP5008S03-04	pCi/g	1.53E+00	1.48E+00	2.47E+00					10/08/15 13:30	5.85E+02	11/09/15 17:03	NO
15	TL-208	TRG	CP5008S03-04	pCi/g	1.39E+00	3.14E-01	9.04E-02					10/08/15 13:30	5.85E+02	11/09/15 17:03	YES
16	AC-228	TRG	CP5008S06-07	pCi/g	1.30E+00	2.16E-01	3.33E-01					10/08/15 13:40	5.38E+02	11/09/15 17:26	YES
16	BI-214	TRG	CP5008S06-07	pCi/g	1.52E+00	2.02E-01	3.15E-01					10/08/15 13:40	5.38E+02	11/09/15 17:26	YES
16	K-40	TRG	CP5008S06-07	pCi/g	1.72E+01	2.28E+00	1.03E+00					10/08/15 13:40	5.38E+02	11/09/15 17:26	YES
16	PB-212	TRG	CP5008S06-07	pCi/g	1.03E+00	1.42E-01	2.65E-01					10/08/15 13:40	5.38E+02	11/09/15 17:26	YES
16	PB-214	TRG	CP5008S06-07	pCi/g	1.51E+00	1.72E-01	2.27E-01					10/08/15 13:40	5.38E+02	11/09/15 17:26	YES
16	RA-226	TRG	CP5008S06-07	pCi/g	1.52E+00	2.02E-01	3.15E-01					10/08/15 13:40	5.38E+02	11/09/15 17:26	YES
16	RA-228	TRG	CP5008S06-07	pCi/g	1.30E+00	2.16E-01	3.33E-01					10/08/15 13:40	5.38E+02	11/09/15 17:26	YES
16	TH-234	TRG	CP5008S06-07	pCi/g	1.52E+00	9.44E-01	1.52E+00					10/08/15 13:40	5.38E+02	11/09/15 17:26	NO
16	TL-208	TRG	CP5008S06-07	pCi/g	8.98E-01	1.44E-01	1.15E-01					10/08/15 13:40	5.38E+02	11/09/15 17:26	YES
17	AC-228	TRG	CP5008S09-10	pCi/g	1.49E+00	2.96E-01	5.86E-01					10/08/15 13:50	5.54E+02	11/09/15 17:29	YES
17	BI-214	TRG	CP5008S09-10	pCi/g	1.58E+00	2.12E-01	2.65E-01					10/08/15 13:50	5.54E+02	11/09/15 17:29	YES
17	K-40	TRG	CP5008S09-10	pCi/g	2.00E+01	2.58E+00	1.75E+00					10/08/15 13:50	5.54E+02	11/09/15 17:29	YES
17	PB-212	TRG	CP5008S09-10	pCi/g	1.58E+00	1.83E-01	3.46E-01					10/08/15 13:50	5.54E+02	11/09/15 17:29	YES
17	PB-214	TRG	CP5008S09-10	pCi/g	1.38E+00	2.09E-01	3.03E-01					10/08/15 13:50	5.54E+02	11/09/15 17:29	YES
17	RA-226	TRG	CP5008S09-10	pCi/g	1.58E+00	2.12E-01	2.65E-01					10/08/15 13:50	5.54E+02	11/09/15 17:29	YES
17	RA-228	TRG	CP5008S09-10	pCi/g	1.49E+00	2.96E-01	5.86E-01					10/08/15 13:50	5.54E+02	11/09/15 17:29	YES
17	TH-234	TRG	CP5008S09-10	pCi/g	4.52E-01	1.67E+00	2.15E+00					10/08/15 13:50	5.54E+02	11/09/15 17:29	NO
17	TL-208	TRG	CP5008S09-10	pCi/g	1.36E+00	2.37E-01	1.42E-01					10/08/15 13:50	5.54E+02	11/09/15 17:29	YES
18	AC-228	TRG	CP5008S12-13	pCi/g	1.65E+00	4.36E-01	7.94E-01					10/08/15 14:00	5.34E+02	11/09/15 18:05	YES
18	BI-214	TRG	CP5008S12-13	pCi/g	1.15E+00	3.54E-01	5.46E-01					10/08/15 14:00	5.34E+02	11/09/15 18:05	YES
18	K-40	TRG	CP5008S12-13	pCi/g	1.93E+01	3.46E+00	2.26E+00					10/08/15 14:00	5.34E+02	11/09/15 18:05	YES
18	PB-212	TRG	CP5008S12-13	pCi/g	2.03E+00	3.62E-01	4.25E-01					10/08/15 14:00	5.34E+02	11/09/15 18:05	YES
18	PB-214	TRG	CP5008S12-13	pCi/g	1.41E+00	3.59E-01	4.64E-01					10/08/15 14:00	5.34E+02	11/09/15 18:05	YES
18	RA-226	TRG	CP5008S12-13	pCi/g	1.15E+00	3.54E-01	5.46E-01					10/08/15 14:00	5.34E+02	11/09/15 18:05	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	CP5008S12-13	pCi/g	1.68E+00	4.36E-01	7.94E-01					10/08/15 14:00	5.34E+02	11/09/15 18:05	YES
18	TH-234	TRG	CP5008S12-13	pCi/g	1.70E+00	1.49E+00	2.48E+00					10/08/15 14:00	5.34E+02	11/09/15 18:05	YES
18	TL-208	TRG	CP5008S12-13	pCi/g	1.49E+00	3.58E-01	2.44E-01					10/08/15 14:00	5.34E+02	11/09/15 18:05	YES
19	AC-228	TRG	CP5008S14-15	pCi/g	1.58E+00	2.41E-01	5.73E-01					10/08/15 14:10	5.73E+02	11/09/15 18:26	YES
19	BI-214	TRG	CP5008S14-15	pCi/g	1.04E+00	1.48E-01	1.66E-01					10/08/15 14:10	5.73E+02	11/09/15 18:26	YES
19	K-40	TRG	CP5008S14-15	pCi/g	1.99E+01	2.49E+00	6.28E-01					10/08/15 14:10	5.73E+02	11/09/15 18:26	YES
19	PB-212	TRG	CP5008S14-15	pCi/g	1.30E+00	1.62E-01	2.55E-01					10/08/15 14:10	5.73E+02	11/09/15 18:26	YES
19	PB-214	TRG	CP5008S14-15	pCi/g	1.11E+00	1.41E-01	1.92E-01					10/08/15 14:10	5.73E+02	11/09/15 18:26	YES
19	RA-226	TRG	CP5008S14-15	pCi/g	1.04E+00	1.48E-01	1.66E-01					10/08/15 14:10	5.73E+02	11/09/15 18:26	YES
19	RA-228	TRG	CP5008S14-15	pCi/g	1.58E+00	2.41E-01	5.73E-01					10/08/15 14:10	5.73E+02	11/09/15 18:26	YES
19	TH-234	TRG	CP5008S14-15	pCi/g	2.49E+00	1.66E+00	2.73E+00					10/08/15 14:10	5.73E+02	11/09/15 18:26	YES
19	TL-208	TRG	CP5008S14-15	pCi/g	1.12E+00	1.61E-01	1.47E-01					10/08/15 14:10	5.73E+02	11/09/15 18:26	YES
20	AC-228	TRG	CP5008S17-18	pCi/g	1.34E+00	2.59E-01	5.55E-01					10/08/15 14:20	5.83E+02	11/09/15 18:30	YES
20	BI-214	TRG	CP5008S17-18	pCi/g	1.03E+00	1.61E-01	2.60E-01					10/08/15 14:20	5.83E+02	11/09/15 18:30	YES
20	K-40	TRG	CP5008S17-18	pCi/g	1.94E+01	2.40E+00	1.22E+00					10/08/15 14:20	5.83E+02	11/09/15 18:30	YES
20	PB-212	TRG	CP5008S17-18	pCi/g	1.57E+00	1.80E-01	2.43E-01					10/08/15 14:20	5.83E+02	11/09/15 18:30	YES
20	PB-214	TRG	CP5008S17-18	pCi/g	1.26E+00	1.81E-01	2.54E-01					10/08/15 14:20	5.83E+02	11/09/15 18:30	YES
20	RA-226	TRG	CP5008S17-18	pCi/g	1.03E+00	1.61E-01	2.60E-01					10/08/15 14:20	5.83E+02	11/09/15 18:30	YES
20	RA-228	TRG	CP5008S17-18	pCi/g	1.34E+00	2.59E-01	5.55E-01					10/08/15 14:20	5.83E+02	11/09/15 18:30	YES
20	TH-234	TRG	CP5008S17-18	pCi/g	2.49E+00	1.74E+00	2.87E+00					10/08/15 14:20	5.83E+02	11/09/15 18:30	YES
20	TL-208	TRG	CP5008S17-18	pCi/g	1.29E+00	1.98E-01	2.49E-01					10/08/15 14:20	5.83E+02	11/09/15 18:30	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	10/15/15 00:00	1.0000				0.00		
02	MBL	BLANK	10/15/15 00:00	1.0000				0.00		
03	DUP	CP4104S03-04	10/08/15 09:30	568.6600				0.00		
04	DO	CP4104S03-04	10/08/15 09:30	568.6600				0.00		
05	TRG	CP4104S08-09	10/08/15 09:40	535.3200				0.00		
06	TRG	CP4104S11-12	10/08/15 09:50	543.8800				0.00		
07	TRG	CP4104S17-18	10/08/15 10:00	555.0200				0.00		
08	TRG	CP1804S03-04	10/08/15 10:30	519.6900				0.00		
09	TRG	CP1804S05-06	10/08/15 10:40	567.7100				0.00		
10	TRG	CP1804S08-09	10/08/15 10:50	602.9400				0.00		
11	TRG	CP1804S10-11	10/08/15 11:00	592.7200				0.00		
12	TRG	CP1804S12-13	10/08/15 11:20	610.4000				0.00		
13	TRG	CP1804S15-16	10/08/15 11:30	599.0900				0.00		
14	TRG	CP1804S17-18	10/08/15 11:40	645.4300				0.00		
15	TRG	CP5008S03-04	10/08/15 13:30	585.0500				0.00		
16	TRG	CP5008S06-07	10/08/15 13:40	538.4300				0.00		
17	TRG	CP5008S09-10	10/08/15 13:50	554.0400				0.00		
18	TRG	CP5008S12-13	10/08/15 14:00	534.4800				0.00		
19	TRG	CP5008S14-15	10/08/15 14:10	572.6700				0.00		
20	TRG	CP5008S17-18	10/08/15 14:20	583.4300				0.00		

CE1

Aliquot Worksheet

Work Order		Run	Analysis Code	Rpt Units	Lab Deadline	Technician	
15-10088		1	Gamma	grams	11/5/2015	KSALLINGS	

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 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					1.0000E+00	1.0000E+00					
03	CP4104S03-04	DUP					5.6866E+02	5.6866E+02					
04	CP4104S03-04	DO					5.6866E+02	5.6866E+02					
05	CP4104S08-09	TRG					5.3532E+02	5.3532E+02					
06	CP4104S11-12	TRG					5.4388E+02	5.4388E+02					
07	CP4104S17-18	TRG					5.5022E+02	5.5022E+02					
08	CP1804S03-04	TRG					5.1969E+02	5.1969E+02					
09	CP1804S05-06	TRG					5.6771E+02	5.6771E+02					
10	CP1804S08-09	TRG					6.0294E+02	6.0294E+02					
11	CP1804S10-11	TRG					5.9272E+02	5.9272E+02					
12	CP1804S12-13	TRG					6.1040E+02	6.1040E+02					
13	CP1804S15-16	TRG					5.9909E+02	5.9909E+02					
14	CP1804S17-18	TRG					6.4543E+02	6.4543E+02					
15	CP5008S03-04	TRG					5.8505E+02	5.8505E+02					
16	CP5008S06-07	TRG					5.3843E+02	5.3843E+02					
17	CP5008S09-10	TRG					5.5404E+02	5.5404E+02					
18	CP5008S12-13	TRG					5.3448E+02	5.3448E+02					
19	CP5008S14-15	TRG					5.7267E+02	5.7267E+02					
20	CP5008S17-18	TRG					5.8343E+02	5.8343E+02					

Comments

Technician: Kenny Sais Date: 10/19/15

**Rough Sample Preparation
 Log Book**

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
15-10088	11/5/2015	10/18/2015	10/19/2015	10/20/2015	KSALLINGS

Eberline Fraction	Auxier & Associates, Inc. Client ID	Tare (g)		Gross (g)		Net (g)		Percent		Gamma		Special Info
		Pan Wt	Dry Wt.	Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	
04	CP4104S03-04	14.2700	1002.0800	1225.3000	987.8100	1211.0300	987.8100	18.43%	81.57%	0.0000	0.0000	
05	CP4104S08-09	14.3000	814.0400	990.5000	799.7400	976.2000	799.7400	18.08%	81.92%	0.0000	0.0000	
06	CP4104S11-12	14.3100	809.9000	1017.1200	795.5900	1002.8100	795.5900	20.66%	79.34%	0.0000	0.0000	
07	CP4104S17-18	14.3200	848.9800	1055.6400	834.6600	1041.3200	834.6600	19.85%	80.15%	0.0000	0.0000	
08	CP1804S03-04	14.3100	821.0000	1045.0400	806.6900	1030.7300	806.6900	21.74%	78.26%	0.0000	0.0000	
09	CP1804S05-06	14.2700	771.7800	943.3400	757.5100	929.0700	757.5100	18.47%	81.53%	0.0000	0.0000	
10	CP1804S08-09	14.2900	777.1700	937.8800	762.8800	923.5900	762.8800	17.40%	82.60%	0.0000	0.0000	
11	CP1804S10-11	14.3000	785.4100	958.8600	771.1100	944.5600	771.1100	18.36%	81.64%	0.0000	0.0000	
12	CP1804S12-13	14.3100	829.9000	1007.3400	815.5900	993.0300	815.5900	17.87%	82.13%	0.0000	0.0000	
13	CP1804S15-16	14.4500	701.2900	852.8800	686.8400	838.4300	686.8400	18.08%	81.92%	0.0000	0.0000	
14	CP1804S17-18	14.4600	899.7600	1083.6200	885.3000	1069.1600	885.3000	17.20%	82.80%	0.0000	0.0000	
15	CP5008S03-04	28.5000	1139.1800	1382.7800	1110.6800	1354.2800	1110.6800	17.99%	82.01%	0.0000	0.0000	
16	CP5008S06-07	14.1900	930.4400	1161.7200	916.2500	1147.5300	916.2500	20.15%	79.85%	0.0000	0.0000	
17	CP5008S09-10	14.4500	851.5400	1052.7600	837.0900	1038.3100	837.0900	19.38%	80.62%	0.0000	0.0000	
18	CP5008S12-13	14.2700	755.7800	969.2600	741.5100	954.9900	741.5100	22.35%	77.65%	0.0000	0.0000	
19	CP5008S14-15	14.1700	874.1200	1139.5600	859.9500	1125.3900	859.9500	23.59%	76.41%	0.0000	0.0000	
20	CP5008S17-18	14.1100	1060.0000	1347.4000	1045.8900	1333.2900	1045.8900	21.56%	78.44%	0.0000	0.0000	

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

Technician: Kenny Goss

00327

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

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

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

(Certificate continued on reverse side)



KB
11/9/15Analysis Report for 1510088-01
GAS-1302

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-01
Sample Description : GAS-1302
Sample Type : SOIL

Sample Size : 7.360E+02 grams
Facility : Countroom

Sample Taken On : 7/1/2013 8:55:39AM
Acquisition Started : 11/9/2015 3:30:53PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 1800.0 seconds
Real Time : 1843.6 seconds

Dead Time : 2.37 %

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 : 29350

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

Analysis Report for 1510088-01

GAS-1302

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 4:01:41PM
 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	22.33	21.57	0.0000	0.00
2	31.92	31.17	0.0000	0.00
3	53.81	53.07	0.0000	0.00
4	59.42	58.68	0.0000	0.00
5	67.81	67.07	0.0000	0.00
6	87.79	87.06	0.0000	0.00
7	122.03	121.32	0.0000	0.00
8	136.57	135.86	0.0000	0.00
9	165.93	165.24	0.0000	0.00
10	276.66	276.01	0.0000	0.00
11	317.47	316.84	0.0000	0.00
12	391.59	391.00	0.0000	0.00
13	661.83	661.36	0.0000	0.00
14	1173.54	1173.35	0.0000	0.00
15	1332.83	1332.73	0.0000	0.00
16	1653.11	1653.20	0.0000	0.00
17	1661.21	1661.31	0.0000	0.00
18	1696.59	1696.71	0.0000	0.00
19	1836.59	1836.80	0.0000	0.00
20	1998.27	1998.59	0.0000	0.00
21	2004.36	2004.69	0.0000	0.00
22	2067.13	2067.50	0.0000	0.00
23	2083.70	2084.08	0.0000	0.00
24	2092.77	2093.16	0.0000	0.00
25	2164.28	2164.72	0.0000	0.00
26	2252.75	2253.25	0.0000	0.00
27	2259.81	2260.32	0.0000	0.00
28	2266.82	2267.33	0.0000	0.00
29	2303.96	2304.50	0.0000	0.00
30	2506.09	2506.78	0.0000	0.00

? = Adjacent peak noted
 Errors quoted at 2.000sigma

Analysis Report for 1510088-01

GAS-1302

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 4:01:41PM

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	22.33	19 - 25	21.57	7.08E+04	777.34	5.96E+04	2.59
	2	31.92	29 - 34	31.17	1.10E+03	236.19	1.03E+04	2.52
M	3	53.81	43 - 62	53.07	1.83E+04	997.75	5.74E+04	6.63
m	4	59.42	43 - 62	58.68	5.52E+04	600.31	1.86E+04	2.36
	5	67.81	64 - 70	67.07	7.10E+02	331.53	1.96E+04	3.57
	6	87.79	80 - 91	87.06	2.60E+04	573.86	2.84E+04	2.46
	7	122.03	117 - 126	121.32	4.96E+03	350.87	1.47E+04	2.44
	8	136.57	133 - 140	135.86	7.35E+02	254.20	1.03E+04	2.73
	9	165.93	162 - 168	165.24	4.84E+02	218.63	8.31E+03	2.26
	10	276.66	273 - 279	276.01	2.31E+02	177.32	5.53E+03	2.04
	11	317.47	314 - 319	316.84	1.66E+02	144.00	4.01E+03	1.88
	12	391.59	388 - 395	391.00	2.11E+02	175.05	4.96E+03	2.24
	13	661.83	656 - 666	661.36	1.15E+04	267.46	3.40E+03	2.61
	14	1173.54	1166 - 1179	1173.35	9.89E+03	235.21	1.76E+03	2.89
	15	1332.83	1325 - 1339	1332.73	8.87E+03	197.64	3.79E+02	2.87
M	16	1653.11	1649 - 1665	1653.20	1.01E+01	14.20	3.15E+01	3.61
m	17	1661.21	1649 - 1665	1661.31	1.48E+01	15.02	2.26E+01	3.61
	18	1696.59	1689 - 1704	1696.71	2.83E+01	22.63	3.95E+01	8.56
	19	1836.59	1831 - 1843	1836.80	1.04E+02	27.23	3.53E+01	2.49
	20	1998.27	1996 - 2001	1998.59	7.25E+00	8.66	9.50E+00	3.16
	21	2004.36	2002 - 2007	2004.69	8.55E+00	7.87	4.91E+00	1.55
	22	2067.13	2064 - 2070	2067.50	5.67E+00	7.78	6.67E+00	2.46
	23	2083.70	2081 - 2088	2084.08	7.61E+00	10.20	1.28E+01	2.98
	24	2092.77	2089 - 2096	2093.16	7.23E+00	10.00	1.15E+01	2.87
	25	2164.28	2160 - 2168	2164.72	1.29E+01	8.96	4.20E+00	2.69
	26	2252.75	2249 - 2257	2253.25	9.00E+00	12.37	1.80E+01	6.77
	27	2259.81	2258 - 2263	2260.32	5.95E+00	8.19	8.10E+00	2.68
	28	2266.82	2264 - 2270	2267.33	6.50E+00	8.03	7.00E+00	3.53
	29	2303.96	2297 - 2311	2304.50	1.25E+01	10.97	7.06E+00	6.52
	30	2506.09	2502 - 2511	2506.78	4.14E+01	14.18	5.16E+00	3.87

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 1510088-01

GAS-1302

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 4:01:41PM

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	22.33	19 - 25	7.08E+04	777.34	5.96E+04	4.66E+02
	2	31.92	29 - 34	1.10E+03	236.19	1.03E+04	1.86E+02
M	3	53.81	43 - 62	1.83E+04	997.75	5.74E+04	3.94E+02
m	4	59.42	43 - 62	5.52E+04	600.31	1.86E+04	2.24E+02
	5	67.81	64 - 70	7.10E+02	331.53	1.96E+04	2.69E+02
	6	87.79	80 - 91	2.60E+04	573.86	2.84E+04	3.90E+02
	7	122.03	117 - 126	4.96E+03	350.87	1.47E+04	2.64E+02
	8	136.57	133 - 140	7.35E+02	254.20	1.03E+04	2.04E+02
	9	165.93	162 - 168	4.84E+02	218.63	8.31E+03	1.76E+02
	10	276.66	273 - 279	2.31E+02	177.32	5.53E+03	1.44E+02
	11	317.47	314 - 319	1.66E+02	144.00	4.01E+03	1.16E+02
	12	391.59	388 - 395	2.11E+02	175.05	4.96E+03	1.42E+02
	13	661.83	656 - 666	1.15E+04	267.46	3.40E+03	1.31E+02
	14	1173.54	1166 - 1179	9.89E+03	235.21	1.76E+03	1.03E+02
	15	1332.83	1325 - 1339	8.87E+03	197.64	3.79E+02	4.91E+01
M	16	1653.11	1649 - 1665	1.01E+01	14.20	3.15E+01	9.22E+00
m	17	1661.21	1649 - 1665	1.48E+01	15.02	2.26E+01	7.81E+00
	18	1696.59	1689 - 1704	2.83E+01	22.63	3.95E+01	1.64E+01
	19	1836.59	1831 - 1843	1.04E+02	27.23	3.53E+01	1.48E+01
	20	1998.27	1996 - 2001	7.25E+00	8.66	9.50E+00	5.58E+00
	21	2004.36	2002 - 2007	8.55E+00	7.87	4.91E+00	4.34E+00
	22	2067.13	2064 - 2070	5.67E+00	7.78	6.67E+00	5.06E+00
	23	2083.70	2081 - 2088	7.61E+00	10.20	1.28E+01	7.05E+00
	24	2092.77	2089 - 2096	7.23E+00	10.00	1.15E+01	6.93E+00
	25	2164.28	2160 - 2168	1.29E+01	8.96	4.20E+00	4.40E+00
	26	2252.75	2249 - 2257	9.00E+00	12.37	1.80E+01	8.89E+00
	27	2259.81	2258 - 2263	5.95E+00	8.19	8.10E+00	5.40E+00
	28	2266.82	2264 - 2270	6.50E+00	8.03	7.00E+00	5.10E+00
	29	2303.96	2297 - 2311	1.25E+01	10.97	7.06E+00	6.90E+00
	30	2506.09	2502 - 2511	4.14E+01	14.18	5.16E+00	4.89E+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 1510088-01

GAS-1302

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 4:01:41PM

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	22.33	19 -	25	21.57	7.08E+04	777.34	5.96E+04	.....
2	31.92	29 -	34	31.17	1.10E+03	236.19	1.03E+04	.....
M 3	53.81	43 -	62	53.07	1.83E+04	997.75	5.74E+04	.....
m 4	59.42	43 -	62	58.68	5.52E+04	600.31	1.86E+04	AM-241
5	67.81	64 -	70	67.07	7.10E+02	331.53	1.96E+04	TA-182 TI-44 TH-230
6	87.79	80 -	91	87.06	2.60E+04	573.86	2.84E+04	SN-126 CD-109 LU-176
7	122.03	117 -	126	121.32	4.96E+03	350.87	1.47E+04	CO-57 EU-152 SE-75
8	136.57	133 -	140	135.86	7.35E+02	254.20	1.03E+04	CO-57 SE-75
9	165.93	162 -	168	165.24	4.84E+02	218.63	8.31E+03	CE-139
10	276.66	273 -	279	276.01	2.31E+02	177.32	5.53E+03	CM-243 NP-239
11	317.47	314 -	319	316.84	1.66E+02	144.00	4.01E+03	.....
12	391.59	388 -	395	391.00	2.11E+02	175.05	4.96E+03	SN-113
13	661.83	656 -	666	661.36	1.15E+04	267.46	3.40E+03	CS-137
14	1173.54	1166 -	1179	1173.35	9.89E+03	235.21	1.76E+03	CO-60
15	1332.83	1325 -	1339	1332.73	8.87E+03	197.64	3.79E+02	CO-60
M 16	1653.11	1649 -	1665	1653.20	1.01E+01	14.20	3.15E+01	.....
m 17	1661.21	1649 -	1665	1661.31	1.48E+01	15.02	2.26E+01	.....
18	1696.59	1689 -	1704	1696.71	2.83E+01	22.63	3.95E+01	.....
19	1836.59	1831 -	1843	1836.80	1.04E+02	27.23	3.53E+01	Y-88
20	1998.27	1996 -	2001	1998.59	7.25E+00	8.66	9.50E+00	.....
21	2004.36	2002 -	2007	2004.69	8.55E+00	7.87	4.91E+00	.....
22	2067.13	2064 -	2070	2067.50	5.67E+00	7.78	6.67E+00	.....
23	2083.70	2081 -	2088	2084.08	7.61E+00	10.20	1.28E+01	.....
24	2092.77	2089 -	2096	2093.16	7.23E+00	10.00	1.15E+01	.....
25	2164.28	2160 -	2168	2164.72	1.29E+01	8.96	4.20E+00	.....
26	2252.75	2249 -	2257	2253.25	9.00E+00	12.37	1.80E+01	.....
27	2259.81	2258 -	2263	2260.32	5.95E+00	8.19	8.10E+00	.....
28	2266.82	2264 -	2270	2267.33	6.50E+00	8.03	7.00E+00	.....
29	2303.96	2297 -	2311	2304.50	1.25E+01	10.97	7.06E+00	.....
30	2506.09	2502 -	2511	2506.78	4.14E+01	14.18	5.16E+00	.....

Analysis Report for 1510088-01

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 EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 4:01:41PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	22.33	7.08E+04	777.34	3.04E-02	1.78E-03
	2	31.92	1.10E+03	236.19	2.91E-02	1.78E-03
M	3	53.81	1.83E+04	997.75	2.49E-02	1.78E-03
m	4	59.42	5.52E+04	600.31	2.39E-02	1.78E-03
	5	67.81	7.10E+02	331.53	2.25E-02	1.74E-03
	6	87.79	2.60E+04	573.86	1.96E-02	1.63E-03
	7	122.03	4.96E+03	350.87	1.60E-02	1.53E-03
	8	136.57	7.35E+02	254.20	1.47E-02	1.42E-03
	9	165.93	4.84E+02	218.63	1.27E-02	1.21E-03
	10	276.66	2.31E+02	177.32	8.26E-03	8.69E-04
	11	317.47	1.66E+02	144.00	7.28E-03	8.18E-04
	12	391.59	2.11E+02	175.05	5.97E-03	7.36E-04
	13	661.83	1.15E+04	267.46	3.57E-03	3.40E-04
	14	1173.54	9.89E+03	235.21	2.05E-03	1.73E-04
	15	1332.83	8.87E+03	197.64	1.83E-03	2.16E-04
M	16	1653.11	1.01E+01	14.20	1.51E-03	1.49E-04
m	17	1661.21	1.48E+01	15.02	1.51E-03	1.47E-04
	18	1696.59	2.83E+01	22.63	1.48E-03	1.40E-04
	19	1836.59	1.04E+02	27.23	1.39E-03	1.11E-04
	20	1998.27	7.25E+00	8.66	1.30E-03	1.11E-04
	21	2004.36	8.55E+00	7.87	1.30E-03	1.11E-04
	22	2067.13	5.67E+00	7.78	1.27E-03	1.11E-04
	23	2083.70	7.61E+00	10.20	1.26E-03	1.11E-04
	24	2092.77	7.23E+00	10.00	1.25E-03	1.11E-04
	25	2164.28	1.29E+01	8.96	1.22E-03	1.11E-04
	26	2252.75	9.00E+00	12.37	1.19E-03	1.11E-04
	27	2259.81	5.95E+00	8.19	1.18E-03	1.11E-04
	28	2266.82	6.50E+00	8.03	1.18E-03	1.11E-04
	29	2303.96	1.25E+01	10.97	1.17E-03	1.11E-04
	30	2506.09	4.14E+01	14.18	1.10E-03	1.11E-04

Analysis Report for 1510088-01

GAS-1302

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 4:01:41PM

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	22.33	7.08E+04	777.34		7.08E+04	7.77E+02
	2	31.92	1.10E+03	236.19		1.10E+03	2.36E+02
M	3	53.81	1.83E+04	997.75		1.83E+04	9.98E+02
m	4	59.42	5.52E+04	600.31		5.52E+04	6.00E+02
	5	67.81	7.10E+02	331.53		7.10E+02	3.32E+02
	6	87.79	2.60E+04	573.86		2.60E+04	5.74E+02
	7	122.03	4.96E+03	350.87		4.96E+03	3.51E+02
	8	136.57	7.35E+02	254.20		7.35E+02	2.54E+02
	9	165.93	4.84E+02	218.63		4.84E+02	2.19E+02
	10	276.66	2.31E+02	177.32		2.31E+02	1.77E+02
	11	317.47	1.66E+02	144.00		1.66E+02	1.44E+02
	12	391.59	2.11E+02	175.05		2.11E+02	1.75E+02
	13	661.83	1.15E+04	267.46		1.15E+04	2.67E+02
	14	1173.54	9.89E+03	235.21		9.89E+03	2.35E+02
	15	1332.83	8.87E+03	197.64		8.87E+03	1.98E+02
M	16	1653.11	1.01E+01	14.20		1.01E+01	1.42E+01
m	17	1661.21	1.48E+01	15.02		1.48E+01	1.50E+01
	18	1696.59	2.83E+01	22.63		2.83E+01	2.26E+01
	19	1836.59	1.04E+02	27.23		1.04E+02	2.72E+01
	20	1998.27	7.25E+00	8.66		7.25E+00	8.66E+00
	21	2004.36	8.55E+00	7.87		8.55E+00	7.87E+00
	22	2067.13	5.67E+00	7.78		5.67E+00	7.78E+00
	23	2083.70	7.61E+00	10.20		7.61E+00	1.02E+01
	24	2092.77	7.23E+00	10.00		7.23E+00	1.00E+01
	25	2164.28	1.29E+01	8.96		1.29E+01	8.96E+00
	26	2252.75	9.00E+00	12.37		9.00E+00	1.24E+01
	27	2259.81	5.95E+00	8.19		5.95E+00	8.19E+00
	28	2266.82	6.50E+00	8.03		6.50E+00	8.03E+00
	29	2303.96	1.25E+01	10.97		1.25E+01	1.10E+01
	30	2506.09	4.14E+01	14.18		4.14E+01	1.42E+01

Analysis Report for 1510088-01

GAS-1302

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 4:01:41PM
 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	22.33	7.08E+04	777.34		7.08E+04	7.77E+02
	2	31.92	1.10E+03	236.19		1.10E+03	2.36E+02
M	3	53.81	1.83E+04	997.75		1.83E+04	9.98E+02
m	4	59.42	5.52E+04	600.31		5.52E+04	6.00E+02
	5	67.81	7.10E+02	331.53		7.10E+02	3.32E+02
	6	87.79	2.60E+04	573.86		2.60E+04	5.74E+02
	7	122.03	4.96E+03	350.87		4.96E+03	3.51E+02
	8	136.57	7.35E+02	254.20		7.35E+02	2.54E+02
	9	165.93	4.84E+02	218.63		4.84E+02	2.19E+02
	10	276.66	2.31E+02	177.32		2.31E+02	1.77E+02
	11	317.47	1.66E+02	144.00		1.66E+02	1.44E+02
	12	391.59	2.11E+02	175.05		2.11E+02	1.75E+02
	13	661.83	1.15E+04	267.46		1.15E+04	2.67E+02
	14	1173.54	9.89E+03	235.21		9.89E+03	2.35E+02
	15	1332.83	8.87E+03	197.64		8.87E+03	1.98E+02
M	16	1653.11	1.01E+01	14.20		1.01E+01	1.42E+01
m	17	1661.21	1.48E+01	15.02		1.48E+01	1.50E+01
	18	1696.59	2.83E+01	22.63		2.83E+01	2.26E+01
	19	1836.59	1.04E+02	27.23		1.04E+02	2.72E+01
	20	1998.27	7.25E+00	8.66		7.25E+00	8.66E+00
	21	2004.36	8.55E+00	7.87		8.55E+00	7.87E+00
	22	2067.13	5.67E+00	7.78		5.67E+00	7.78E+00
	23	2083.70	7.61E+00	10.20		7.61E+00	1.02E+01
	24	2092.77	7.23E+00	10.00		7.23E+00	1.00E+01
	25	2164.28	1.29E+01	8.96		1.29E+01	8.96E+00
	26	2252.75	9.00E+00	12.37		9.00E+00	1.24E+01
	27	2259.81	5.95E+00	8.19		5.95E+00	8.19E+00
	28	2266.82	6.50E+00	8.03		6.50E+00	8.03E+00
	29	2303.96	1.25E+01	10.97		1.25E+01	1.10E+01
	30	2506.09	4.14E+01	14.18		4.14E+01	1.42E+01

: 00331

Analysis Report for 1510088-01

GAS-1302

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

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	0.950	122.06 *	85.51	6.72E+01	8.03E+00
		136.48 *	10.60	8.70E+01	3.14E+01
CO-60	0.981	1173.22 *	100.00	1.34E+02	1.17E+01
		1332.49 *	100.00	1.35E+02	1.62E+01
CD-109	0.973	88.03 *	3.72	2.63E+03	2.75E+02
SN-113	0.712	255.12	1.93		
		391.69 *	64.90	1.98E+02	1.67E+02
SN-126	0.993	87.57 *	37.00	7.31E+01	6.29E+00
CS-137	0.995	661.65 *	85.12	8.15E+01	8.01E+00
CE-139	0.821	165.85 *	80.35	7.38E+01	3.41E+01
AM-241	0.998	59.54 *	35.90	1.32E+02	9.90E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 4:01:41PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

: 00332

Analysis Report for 1510088-01

GAS-1302

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	22.33	3.93125E+01	0.55	
	2	31.92	6.09713E-01	10.76	
M	3	53.81	1.01636E+01	2.73	
	5	67.81	3.94247E-01	23.36	Tol. TA-182 TH-230
	10	276.66	1.28579E-01	38.31	Tol. NP-239 CM-243
	11	317.47	9.22240E-02	43.37	
M	16	1653.11	5.58966E-03	70.54	
m	17	1661.21	8.19651E-03	50.89	
	18	1696.59	1.56944E-02	40.05	
	19	1836.59	5.79827E-02	13.05	Tol. Y-88
	20	1998.27	4.02778E-03	59.73	
	21	2004.36	4.74748E-03	46.07	
	22	2067.13	3.14815E-03	68.63	
	23	2083.70	4.22619E-03	67.03	
	24	2092.77	4.01709E-03	69.15	
	25	2164.28	7.16667E-03	34.72	
	26	2252.75	5.00000E-03	68.72	
	27	2259.81	3.30556E-03	68.78	
	28	2266.82	3.61111E-03	61.78	
	29	2303.96	6.92708E-03	43.97	
	30	2506.09	2.30114E-02	17.11	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
CO-57	0.95	122.06 *	85.51	6.72E+01	8.03E+00
		136.48 *	10.60	8.70E+01	3.14E+01
CO-60	0.98	1173.22 *	100.00	1.34E+02	1.17E+01
		1332.49 *	100.00	1.35E+02	1.62E+01

: 00333

Analysis Report for 1510088-01
GAS-1302

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CD-109	0.97	88.03	*	3.72	2.63E+03	2.75E+02
SN-113	0.71	255.12		1.93		
		391.69	*	64.90	1.98E+02	1.67E+02
SN-126	0.99	87.57	*	37.00	7.31E+01	6.29E+00
CS-137	0.99	661.65	*	85.12	8.15E+01	8.01E+00
CE-139	0.82	165.85	*	80.35	7.38E+01	3.41E+01
AM-241	0.99	59.54	*	35.90	1.32E+02	9.90E+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
CO-57	0.950	6.84E+01	7.78E+00	
CO-60	0.981	1.34E+02	9.50E+00	
? CD-109	0.973	2.63E+03	2.75E+02	
SN-113	0.712	1.98E+02	1.67E+02	
? SN-126	0.993	7.31E+01	6.29E+00	
CS-137	0.995	8.15E+01	8.01E+00	
CE-139	0.821	7.38E+01	3.41E+01	
AM-241	0.998	1.32E+02	9.90E+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 1510088-01
GAS-1302

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 4:01:41PM
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	22.33	3.93125E+01	0.55		
2	31.92	6.09713E-01	10.76		
M 3	53.81	1.01636E+01	2.73		
5	67.81	3.94247E-01	23.36	Tol.	TA-182 TH-230
10	276.66	1.28579E-01	38.31	Tol.	NP-239 CM-243
11	317.47	9.22240E-02	43.37		
M 16	1653.11	5.58966E-03	70.54		
m 17	1661.21	8.19651E-03	50.89		
18	1696.59	1.56944E-02	40.05		
19	1836.59	5.79827E-02	13.05	Tol.	Y-88
20	1998.27	4.02778E-03	59.73		
21	2004.36	4.74748E-03	46.07		
22	2067.13	3.14815E-03	68.63		
23	2083.70	4.22619E-03	67.03		
24	2092.77	4.01709E-03	69.15		
25	2164.28	7.16667E-03	34.72		
26	2252.75	5.00000E-03	68.72		
27	2259.81	3.30556E-03	68.78		
28	2266.82	3.61111E-03	61.78		
29	2303.96	6.92708E-03	43.97		
30	2506.09	2.30114E-02	17.11	Sum	

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 1510088-01

GAS-1302

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	1.66E+04	6.72E+05	6.72E+05
+	NA-22	1274.54	99.94	-3.60E-01	1.22E+00	1.22E+00
+	@ NA-24	1368.53	99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09	99.86	0.00E+00		1.00E+26
+	AL-26	1808.65	99.76	4.36E-02	3.78E-01	3.78E-01
+	K-40	1460.81	10.67	1.24E+00	3.81E+00	3.81E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.44E+01	5.29E-01	5.29E-01
		78.34	96.00	-1.62E-01		5.76E-01
+	SC-46	889.25	99.98	-1.23E+03	1.78E+03	1.78E+03
		1120.51	99.99	-1.96E+02		1.81E+03
+	V-48	983.52	99.98	7.49E+15	1.21E+16	2.63E+16
		1312.10	97.50	3.48E+15		1.21E+16
+	CR-51	320.08	9.83	-2.96E+09	1.75E+10	1.75E+10
+	MN-54	834.83	99.97	2.13E+00	8.78E+00	8.78E+00
+	CO-56	846.75	99.96	8.78E+02	2.04E+03	2.62E+03
		1037.75	14.03	-9.72E+03		2.08E+04
		1238.25	67.00	-7.34E+02		2.17E+03
		1771.40	15.51	-9.29E+02		4.76E+03
		2598.48	16.90	4.39E+02		2.04E+03
+	CO-57	122.06	* 85.51	6.72E+01	7.20E+00	7.20E+00
		136.48	* 10.60	8.70E+01		4.87E+01
+	CO-58	810.76	99.40	2.35E+03	5.76E+03	5.76E+03
+	FE-59	1099.22	56.50	-2.20E+05	1.04E+06	1.81E+06
		1291.56	43.20	1.05E+05		1.04E+06
+	CO-60	1173.22	* 100.00	1.34E+02	1.54E+00	2.84E+00
		1332.49	* 100.00	1.35E+02		1.54E+00
+	ZN-65	1115.52	50.75	1.99E+01	3.57E+01	3.57E+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	5.41E+03	1.29E+02	5.64E+02
		136.00	59.20	-4.69E+01		1.29E+02
		264.65	59.80	-7.06E+01		1.70E+02
		279.53	25.20	3.06E+01		4.19E+02
		400.65	11.40	-7.93E+01		1.11E+03
+	RB-82	776.52	13.00	2.57E+09	1.25E+11	1.25E+11
+	RB-83	520.41	46.00	-2.48E+02	2.08E+03	2.08E+03
		529.64	30.30	-3.31E+02		3.15E+03
		552.65	16.40	-8.36E+02		5.74E+03
+	KR-85	513.99	0.43	2.16E+02	2.63E+02	2.63E+02
+	SR-85	513.99	99.27	8.10E+03	9.85E+03	9.85E+03

Analysis Report for 1510088-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	93.40	3.29E+02	2.15E+02	4.50E+02
		1836.01	99.38	3.99E+02		2.15E+02
+	NB-93M	16.57	9.43	-2.34E+02	6.14E+00	6.14E+00
+	NB-94	702.63	100.00	-3.85E-01	1.01E+00	1.01E+00
		871.10	100.00	-1.58E-01		1.39E+00
+	NB-95	765.79	99.81	-1.73E+06	2.83E+07	2.83E+07
+	@ NB-95M	235.69	25.00	1.00E+26	1.00E+26	1.00E+26
+	ZR-95	724.18	43.70	9.22E+03	2.31E+04	2.74E+04
		756.72	55.30	4.65E+03		2.31E+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	-2.47E+06	4.07E+06	4.07E+06
+	RU-106	621.84	9.80	3.73E+00	5.13E+01	5.13E+01
+	AG-108M	433.93	89.90	-2.00E-01	1.07E+00	1.07E+00
		614.37	90.40	-2.54E-01		1.09E+00
		722.95	90.50	-8.12E-02		1.18E+00
+	CD-109	88.03	* 3.72	2.63E+03	7.92E+01	7.92E+01
+	AG-110M	657.75	93.14	-1.10E+00	1.69E+01	2.75E+01
		677.61	10.53	-1.74E+01		1.02E+02
		706.67	16.46	1.88E+01		6.90E+01
		763.93	21.98	-4.79E+00		5.62E+01
		884.67	71.63	3.59E+00		2.19E+01
		1384.27	23.94	-8.54E+00		1.69E+01
+	CD-113M	263.70	0.02	-1.78E+03	3.39E+03	3.39E+03
+	SN-113	255.12	1.93	-2.72E+03	2.70E+02	6.42E+03
		391.69	* 64.90	1.98E+02		2.70E+02
+	TE123M	159.00	84.10	-4.04E+01	9.47E+01	9.47E+01
+	SB-124	602.71	97.87	-4.65E+02	1.53E+04	2.01E+04
		645.85	7.26	6.04E+04		2.87E+05
		722.78	11.10	3.24E+04		1.93E+05
		1691.02	49.00	2.65E+02		1.53E+04
+	I-125	35.49	6.49	-2.48E+05	1.02E+05	1.02E+05
+	SB-125	176.33	6.89	-8.29E+00	5.78E+00	1.49E+01
		427.89	29.33	1.84E+00		5.78E+00
		463.38	10.35	-4.81E+00		1.75E+01
		600.56	17.80	3.96E+00		9.86E+00
		635.90	11.32	-5.00E+00		1.57E+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	7.31E+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	-4.80E+00	7.33E-01	7.33E-01
		33.60	13.20	-1.26E+00		2.41E+00

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GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	-2.13E+01	7.33E-01	4.73E+00
+	@ I-131	284.30	6.05	1.00E+26	1.00E+26	1.00E+26
	@	364.48	81.20	1.00E+26		1.00E+26
	@	636.97	7.26	1.00E+26		1.00E+26
	@	722.89	1.80	1.00E+26		1.00E+26
+	@ TE-132	49.72	13.10	1.00E+26	1.00E+26	1.00E+26
	@	228.16	88.00	1.00E+26		1.00E+26
+	BA-133	81.00	33.00	-7.83E-01	1.59E+00	1.96E+00
		302.84	17.80	2.88E+00		4.82E+00
		356.01	60.00	3.65E-01		1.59E+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	6.96E+00	2.20E+00	2.51E+01
		569.32	15.43	2.42E+00		1.37E+01
		604.70	97.60	-7.91E-01		2.20E+00
		795.84	85.40	5.62E-01		3.20E+00
		801.93	8.73	-1.17E+01		3.13E+01
+	CS-135	268.24	16.00	-1.99E+00	4.36E+00	4.36E+00
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	-1.17E+20	6.36E+19	3.57E+20
		163.89	4.61	-3.41E+19		6.27E+20
		176.55	13.56	-1.18E+20		2.11E+20
		273.65	12.66	-1.62E+18		2.85E+20
		340.57	48.50	-3.79E+18		8.09E+19
		818.50	99.70	2.29E+17		6.36E+19
		1048.07	79.60	-2.05E+19		9.47E+19
		1235.34	19.70	-6.65E+19		1.94E+20
+	CS-137	661.65	* 85.12	8.15E+01	1.88E+00	1.88E+00
+	LA-138	788.74	34.00	-9.08E-01	5.74E-01	3.49E+00
		1435.80	66.00	6.47E-02		5.74E-01
+	CE-139	165.85	* 80.35	7.38E+01	5.42E+01	5.42E+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	-2.20E+07	1.01E+08	1.01E+08
+	@ 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	-1.27E+01	3.92E+01	3.92E+01
+	PM-144	476.78	42.00	1.35E+00	5.15E+00	1.22E+01

Analysis Report for 1510088-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-144	618.01	98.60	-6.98E-01	5.15E+00	5.17E+00
		696.49	99.49	-1.91E+00		5.15E+00
+	PM-145	36.85	21.70	-5.46E+00	9.07E-01	1.64E+00
		37.36	39.70	-3.86E+00		9.07E-01
		42.30	15.10	-5.33E+00		2.98E+00
		72.40	2.31	-6.31E+00		2.43E+01
+	PM-146	453.90	39.94	7.87E-01	3.35E+00	3.35E+00
		735.90	14.01	-3.63E+00		1.04E+01
		747.13	13.10	-3.53E+00		1.14E+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	3.46E+01	3.12E+00	3.54E+00
		244.69	5.40	-9.09E-01		1.45E+01
		344.27	19.13	2.43E+00		4.69E+00
		778.89	9.20	-7.66E-01		1.42E+01
		964.01	10.40	4.68E+00		1.77E+01
		1085.78	7.22	1.06E+01		2.39E+01
		1112.02	9.60	-1.94E+00		1.87E+01
		1407.95	14.94	1.77E-01		3.12E+00
+	GD-153	97.43	31.30	-2.45E+00	1.67E+01	1.67E+01
		103.18	22.20	-1.03E+01		2.40E+01
+	EU-154	123.07	40.50	1.89E+01	1.92E+00	1.92E+00
		723.30	19.70	-4.44E-01		6.46E+00
		873.19	11.50	-5.03E+00		1.45E+01
		996.32	10.30	-2.72E+00		1.75E+01
		1004.76	17.90	6.41E-01		1.01E+01
		1274.45	35.50	-6.51E-01		2.20E+00
+	EU-155	86.50	30.90	1.18E+02	3.06E+00	4.12E+00
		105.30	20.70	-2.19E+00		3.06E+00
+	EU-156	811.77	10.40	7.97E+17	1.10E+18	1.41E+18
		1153.47	7.20	-2.39E+17		2.03E+18
		1230.71	8.90	7.09E+17		1.10E+18
+	HO-166M	184.41	72.60	6.31E-01	8.35E-01	8.35E-01
		280.45	29.60	2.38E-01		2.43E+00
		410.94	11.10	1.36E+00		8.11E+00
		711.69	54.10	5.50E-01		1.95E+00
+	TM-171	66.72	0.14	-6.72E+04	8.00E+02	8.00E+02
+	HF-172	81.75	4.52	-6.72E+00	1.32E+01	3.04E+01
		125.81	11.30	3.40E-01		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	-9.59E+00	1.10E+01	2.79E+01
		272.11	21.20	2.63E-01		1.10E+01
+	HF-175	343.40	84.00	2.98E+03	4.79E+03	4.79E+03
+	LU-176	88.34	13.30	1.92E+02	7.42E-01	6.80E+00
		201.83	86.00	2.96E-02		7.42E-01

Analysis Report for 1510088-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-176	306.78	94.00	-3.86E-01	7.42E-01	7.76E-01
+	TA-182	67.75	41.20	-5.92E+03	2.17E+02	2.17E+02
		1121.30	34.90	-7.45E+00		7.64E+02
		1189.05	16.23	2.05E+02		1.18E+03
		1221.41	26.98	-2.69E+02		5.53E+02
		1231.02	11.44	8.69E+02		1.34E+03
+	IR-192	308.46	29.68	1.98E+03	6.73E+03	7.88E+03
		468.07	48.10	7.49E+02		6.73E+03
+	HG-203	279.19	77.30	2.50E+04	3.42E+05	3.42E+05
+	BI-207	569.67	97.72	1.82E-01	1.03E+00	1.03E+00
		1063.62	74.90	-7.05E-01		2.09E+00
+	TL-208	583.14	30.22	8.09E-01	9.25E-01	3.22E+00
		860.37	4.48	7.66E+00		3.03E+01
		2614.66	35.85	5.31E-01		9.25E-01
+	BI-210M	262.00	45.00	4.33E-01	1.56E+00	1.56E+00
		300.00	23.00	3.78E-01		3.18E+00
+	PB-210	46.50	4.25	2.18E+01	1.36E+01	1.36E+01
+	PB-211	404.84	2.90	-1.94E+01	3.01E+01	3.01E+01
		831.96	2.90	-4.64E+00		4.44E+01
+	BI-212	727.17	11.80	-2.96E+00	9.08E+00	9.08E+00
		1620.62	2.75	3.44E+00		1.46E+01
+	PB-212	238.63	44.60	7.56E-01	1.58E+00	1.58E+00
		300.09	3.41	2.55E+00		2.15E+01
+	BI-214	609.31	46.30	-4.14E-01	2.10E+00	2.10E+00
		1120.29	15.10	-1.05E+00		9.68E+00
		1764.49	15.80	1.59E+00		2.69E+00
		2204.22	4.98	2.24E+00		7.24E+00
+	PB-214	295.21	19.19	1.24E+00	2.17E+00	3.80E+00
		351.92	37.19	-7.22E-02		2.17E+00
+	RN-219	401.80	6.50	-4.59E-02	1.34E+01	1.34E+01
+	RA-223	323.87	3.88	9.54E-01	1.95E+01	1.95E+01
+	RA-224	240.98	3.95	3.94E+00	1.78E+01	1.78E+01
+	RA-225	40.00	31.00	-1.71E+18	3.80E+17	3.80E+17
+	RA-226	186.21	3.28	2.68E+00	1.86E+01	1.86E+01
+	TH-227	50.10	8.40	1.61E+01	6.15E+00	7.43E+00
		236.00	11.50	1.75E+00		6.15E+00
		256.20	6.30	-1.42E-01		1.10E+01
+	AC-228	338.32	11.40	-1.00E+00	5.58E+00	6.79E+00
		911.07	27.70	-1.17E-01		5.58E+00
		969.11	16.60	1.15E+00		9.43E+00
+	TH-230	48.44	16.90	9.63E+00	3.51E+00	3.51E+00
		62.85	4.60	7.87E+02		2.21E+01
		67.67	0.37	-3.57E+03		1.31E+02
+	PA-231	283.67	1.60	7.01E+00	3.19E+01	4.47E+01
		302.67	2.30	1.91E+01		3.19E+01
+	TH-231	25.64	14.70	-1.82E+01	6.23E+00	6.23E+00
		84.21	6.40	1.00E+02		1.25E+01
+	PA-233	311.98	38.60	-2.98E+08	7.64E+09	7.64E+09

Analysis Report for 1510088-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PA-234	131.20	20.40	-1.58E+00	2.42E+00	2.42E+00
		733.99	8.80	-9.16E-01		1.23E+01
		946.00	12.00	-7.65E-01		1.41E+01
+	PA-234M	1001.03	0.92	-1.89E+01	1.63E+02	1.63E+02
+	TH-234	63.29	3.80	3.84E+02	2.26E+01	2.26E+01
+	U-235	143.76	10.50	-9.72E-02	4.89E+00	4.89E+00
		163.35	4.70	-6.64E-01		1.22E+01
		205.31	4.70	-8.54E+00		1.37E+01
+	NP-237	86.50	12.60	2.09E+02	7.27E+00	7.27E+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	3.03E+00	3.03E+00
+	AM-243	74.67	66.00	-3.65E-01	7.89E-01	7.89E-01
+	CM-243	209.75	3.29	3.21E+00	5.43E+00	2.14E+01
		228.14	10.60	2.53E+00		7.03E+00
		277.60	14.00	-2.17E-01		5.43E+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	6.72E+05	6.72E+05	1.66E+04	3.32E+05
NA-22	1274.54	99.94	1.22E+00	1.22E+00	-3.60E-01	5.80E-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		0.00E+00	1.00E+20
AL-26	1808.65	99.76	3.78E-01	3.78E-01	4.36E-02	1.69E-01

: 00341

Analysis Report for 1510088-01

GAS-1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
K-40	1460.81	10.67	3.81E+00	3.81E+00	1.24E+00	1.75E+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	5.29E-01	5.29E-01	-1.44E+01	2.63E-01
	78.34	96.00	5.76E-01		-1.62E-01	2.86E-01
SC-46	889.25	99.98	1.78E+03	1.78E+03	-1.23E+03	8.77E+02
	1120.51	99.99	1.81E+03		-1.96E+02	8.89E+02
V-48	983.52	99.98	2.63E+16	1.21E+16	7.49E+15	1.29E+16
	1312.10	97.50	1.21E+16		3.48E+15	5.80E+15
CR-51	320.08	9.83	1.75E+10	1.75E+10	-2.96E+09	8.67E+09
MN-54	834.83	99.97	8.78E+00	8.78E+00	2.13E+00	4.32E+00
CO-56	846.75	99.96	2.62E+03	2.04E+03	8.78E+02	1.29E+03
	1037.75	14.03	2.08E+04		-9.72E+03	1.02E+04
	1238.25	67.00	2.17E+03		-7.34E+02	1.05E+03
	1771.40	15.51	4.76E+03		-9.29E+02	2.14E+03
	2598.48	16.90	2.04E+03		4.39E+02	7.23E+02
+ CO-57	122.06	* 85.51	7.20E+00	7.20E+00	6.72E+01	3.58E+00
	136.48	* 10.60	4.87E+01		8.70E+01	2.42E+01
CO-58	810.76	99.40	5.76E+03	5.76E+03	2.35E+03	2.84E+03
FE-59	1099.22	56.50	1.81E+06	1.04E+06	-2.20E+05	8.92E+05
	1291.56	43.20	1.04E+06		1.05E+05	4.96E+05
+ CO-60	1173.22	* 100.00	2.84E+00	1.54E+00	1.34E+02	1.40E+00
	1332.49	* 100.00	1.54E+00		1.35E+02	7.48E-01
ZN-65	1115.52	50.75	3.57E+01	3.57E+01	1.99E+01	1.75E+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	5.64E+02	1.29E+02	5.41E+03	2.80E+02
	136.00	59.20	1.29E+02		-4.69E+01	6.40E+01
	264.65	59.80	1.70E+02		-7.06E+01	8.42E+01
	279.53	25.20	4.19E+02		3.06E+01	2.08E+02
	400.65	11.40	1.11E+03		-7.93E+01	5.49E+02
RB-82	776.52	13.00	1.25E+11	1.25E+11	2.57E+09	6.13E+10
RB-83	520.41	46.00	2.08E+03	2.08E+03	-2.48E+02	1.03E+03
	529.64	30.30	3.15E+03		-3.31E+02	1.55E+03
	552.65	16.40	5.74E+03		-8.36E+02	2.83E+03
KR-85	513.99	0.43	2.63E+02	2.63E+02	2.16E+02	1.30E+02
SR-85	513.99	99.27	9.85E+03	9.85E+03	8.10E+03	4.86E+03
Y-88	898.02	93.40	4.50E+02	2.15E+02	3.29E+02	2.22E+02
	1836.01	99.38	2.15E+02		3.99E+02	1.02E+02
NB-93M	16.57	9.43	6.14E+00	6.14E+00	-2.34E+02	3.06E+00
NB-94	702.63	100.00	1.01E+00	1.01E+00	-3.85E-01	4.98E-01
	871.10	100.00	1.39E+00		-1.58E-01	6.83E-01
NB-95	765.79	99.81	2.83E+07	2.83E+07	-1.73E+06	1.39E+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	2.74E+04	2.31E+04	9.22E+03	1.35E+04
	756.72	55.30	2.31E+04		4.65E+03	1.14E+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	4.07E+06	4.07E+06	-2.47E+06	2.01E+06
RU-106	621.84	9.80	5.13E+01	5.13E+01	3.73E+00	2.53E+01
AG-108M	433.93	89.90	1.07E+00	1.07E+00	-2.00E-01	5.31E-01
	614.37	90.40	1.09E+00		-2.54E-01	5.37E-01

Analysis Report for 1510088-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	AG-108M	722.95	90.50	1.18E+00	1.07E+00	-8.12E-02	5.82E-01
+	CD-109	88.03	*	3.72	7.92E+01	7.92E+01	2.63E+03
	AG-110M	657.75	93.14	2.75E+01	1.69E+01	-1.10E+00	1.37E+01
		677.61	10.53	1.02E+02		-1.74E+01	5.04E+01
		706.67	16.46	6.90E+01		1.88E+01	3.40E+01
		763.93	21.98	5.62E+01		-4.79E+00	2.77E+01
		884.67	71.63	2.19E+01		3.59E+00	1.08E+01
		1384.27	23.94	1.69E+01		-8.54E+00	7.74E+00
	CD-113M	263.70	0.02	3.39E+03	3.39E+03	-1.78E+03	1.68E+03
+	SN-113	255.12	1.93	6.42E+03	2.70E+02	-2.72E+03	3.18E+03
		391.69	*	64.90	2.70E+02	1.98E+02	1.34E+02
	TE123M	159.00	84.10	9.47E+01	9.47E+01	-4.04E+01	4.70E+01
	SB-124	602.71	97.87	2.01E+04	1.53E+04	-4.65E+02	9.91E+03
		645.85	7.26	2.87E+05		6.04E+04	1.41E+05
		722.78	11.10	1.93E+05		3.24E+04	9.52E+04
		1691.02	49.00	1.53E+04		2.65E+02	6.87E+03
	I-125	35.49	6.49	1.02E+05	1.02E+05	-2.48E+05	5.08E+04
	SB-125	176.33	6.89	1.49E+01	5.78E+00	-8.29E+00	7.38E+00
		427.89	29.33	5.78E+00		1.84E+00	2.86E+00
		463.38	10.35	1.75E+01		-4.81E+00	8.66E+00
		600.56	17.80	9.86E+00		3.96E+00	4.86E+00
		635.90	11.32	1.57E+01		-5.00E+00	7.76E+00
	@ SB-126	414.70	83.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	666.33	99.60	1.00E+26		1.00E+26	1.00E+20
	@	695.00	99.60	1.00E+26		1.00E+26	1.00E+20
	@	720.50	53.80	1.00E+26		1.00E+26	1.00E+20
+	SN-126	87.57	*	37.00	2.20E+00	7.31E+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	7.33E-01	7.33E-01	-4.80E+00	3.65E-01
		33.60	13.20	2.41E+00		-1.26E+00	1.20E+00
		39.58	7.52	4.73E+00		-2.13E+01	2.35E+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	1.96E+00	1.59E+00	-7.83E-01	9.77E-01
		302.84	17.80	4.82E+00		2.88E+00	2.39E+00
		356.01	60.00	1.59E+00		3.65E-01	7.86E-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	2.51E+01	2.20E+00	6.96E+00	1.24E+01
		569.32	15.43	1.37E+01		2.42E+00	6.78E+00
		604.70	97.60	2.20E+00		-7.91E-01	1.08E+00
		795.84	85.40	3.20E+00		5.62E-01	1.58E+00
		801.93	8.73	3.13E+01		-1.17E+01	1.54E+01
	CS-135	268.24	16.00	4.36E+00	4.36E+00	-1.99E+00	2.16E+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

Analysis Report for 1510088-01

GAS-1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)		
CS-136	153.22	7.46	3.57E+20	6.36E+19	-1.17E+20	1.77E+20		
	163.89	4.61	6.27E+20		-3.41E+19	3.11E+20		
	176.55	13.56	2.11E+20		-1.18E+20	1.05E+20		
	273.65	12.66	2.85E+20		-1.62E+18	1.41E+20		
	340.57	48.50	8.09E+19		-3.79E+18	4.00E+19		
	818.50	99.70	6.36E+19		2.29E+17	3.13E+19		
	1048.07	79.60	9.47E+19		-2.05E+19	4.66E+19		
	1235.34	19.70	1.94E+20		-6.65E+19	9.33E+19		
	+ CS-137	661.65	*		1.88E+00	1.88E+00	8.15E+01	9.30E-01
		LA-138	788.74		34.00	3.49E+00	5.74E-01	-9.08E-01	1.72E+00
+ CE-139	1435.80	*	66.00	5.74E-01	6.47E-02	2.63E-01		
	165.85	*	80.35	5.42E+01	5.42E+01	7.38E+01	2.69E+01	
	@ BA-140	162.64	6.70	1.00E+26	1.00E+26	1.00E+26	1.00E+20	
	@	304.84	4.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20	
	@	423.70	3.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20	
	@	437.55	2.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20	
	@	537.32	25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20	
	@ LA-140	328.77	20.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20	
	@	487.03	45.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20	
	@	815.85	23.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20	
@	1596.49	95.49	1.00E+26	1.00E+26	1.00E+26	1.00E+20		
CE-141	145.44	48.40	1.01E+08	1.01E+08	-2.20E+07	4.99E+07		
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20		
@	293.26	42.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20		
@	664.55	5.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20		
CE-144	133.54	10.80	3.92E+01	3.92E+01	-1.27E+01	1.95E+01		
PM-144	476.78	42.00	1.22E+01	5.15E+00	1.35E+00	6.04E+00		
	618.01	98.60	5.17E+00		-6.98E-01	2.54E+00		
	696.49	99.49	5.15E+00		-1.91E+00	2.53E+00		
PM-145	36.85	21.70	1.64E+00	9.07E-01	-5.46E+00	8.17E-01		
	37.36	39.70	9.07E-01		-3.86E+00	4.51E-01		
	42.30	15.10	2.98E+00		-5.33E+00	1.48E+00		
	72.40	2.31	2.43E+01		-6.31E+00	1.21E+01		
PM-146	453.90	39.94	3.35E+00	3.35E+00	7.87E-01	1.66E+00		
	735.90	14.01	1.04E+01		-3.63E+00	5.12E+00		
	747.13	13.10	1.14E+01		-3.53E+00	5.60E+00		
@ ND-147	91.11	28.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20		
@	531.02	13.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20		
@ PM-149	285.90	3.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20		
EU-152	121.78	20.50	3.54E+00	3.12E+00	3.46E+01	1.76E+00		
	244.69	5.40	1.45E+01		-9.09E-01	7.21E+00		
	344.27	19.13	4.69E+00		2.43E+00	2.32E+00		
	778.89	9.20	1.42E+01		-7.66E-01	6.99E+00		
	964.01	10.40	1.77E+01		4.68E+00	8.71E+00		
	1085.78	7.22	2.39E+01		1.06E+01	1.18E+01		
	1112.02	9.60	1.87E+01		-1.94E+00	9.21E+00		
	1407.95	14.94	3.12E+00		1.77E-01	1.44E+00		
	GD-153	97.43	31.30	1.67E+01	1.67E+01	-2.45E+00	8.27E+00	
		103.18	22.20	2.40E+01		-1.03E+01	1.19E+01	
EU-154	123.07	40.50	1.92E+00	1.92E+00	1.89E+01	9.56E-01		
	723.30	19.70	6.46E+00		-4.44E-01	3.18E+00		
	873.19	11.50	1.45E+01		-5.03E+00	7.14E+00		
	996.32	10.30	1.75E+01		-2.72E+00	8.59E+00		

Analysis Report for 1510088-01

GAS-1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-154	1004.76	17.90	1.01E+01	1.92E+00	6.41E-01	4.99E+00
	1274.45	35.50	2.20E+00		-6.51E-01	1.05E+00
EU-155	86.50	30.90	4.12E+00	3.06E+00	1.18E+02	2.05E+00
	105.30	20.70	3.06E+00		-2.19E+00	1.52E+00
EU-156	811.77	10.40	1.41E+18	1.10E+18	7.97E+17	6.95E+17
	1153.47	7.20	2.03E+18		-2.39E+17	9.95E+17
	1230.71	8.90	1.10E+18		7.09E+17	5.29E+17
HO-166M	184.41	72.60	8.35E-01	8.35E-01	6.31E-01	4.14E-01
	280.45	29.60	2.43E+00		2.38E-01	1.20E+00
	410.94	11.10	8.11E+00		1.36E+00	4.01E+00
	711.69	54.10	1.95E+00		5.50E-01	9.58E-01
TM-171	66.72	0.14	8.00E+02	8.00E+02	-6.72E+04	3.98E+02
HF-172	81.75	4.52	3.04E+01	1.32E+01	-6.72E+00	1.51E+01
	125.81	11.30	1.32E+01		3.40E-01	6.56E+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	2.79E+01	1.10E+01	-9.59E+00	1.39E+01
	272.11	21.20	1.10E+01		2.63E-01	5.47E+00
HF-175	343.40	84.00	4.79E+03	4.79E+03	2.98E+03	2.37E+03
LU-176	88.34	13.30	6.80E+00	7.42E-01	1.92E+02	3.39E+00
	201.83	86.00	7.42E-01		2.96E-02	3.68E-01
	306.78	94.00	7.76E-01		-3.86E-01	3.84E-01
TA-182	67.75	41.20	2.17E+02	2.17E+02	-5.92E+03	1.08E+02
	1121.30	34.90	7.64E+02		-7.45E+00	3.75E+02
	1189.05	16.23	1.18E+03		2.05E+02	5.72E+02
	1221.41	26.98	5.53E+02		-2.69E+02	2.67E+02
	1231.02	11.44	1.34E+03		8.69E+02	6.48E+02
IR-192	308.46	29.68	7.88E+03	6.73E+03	1.98E+03	3.90E+03
	468.07	48.10	6.73E+03		7.49E+02	3.33E+03
HG-203	279.19	77.30	3.42E+05	3.42E+05	2.50E+04	1.70E+05
BI-207	569.67	97.72	1.03E+00	1.03E+00	1.82E-01	5.09E-01
	1063.62	74.90	2.09E+00		-7.05E-01	1.03E+00
TL-208	583.14	30.22	3.22E+00	9.25E-01	8.09E-01	1.59E+00
	860.37	4.48	3.03E+01		7.66E+00	1.49E+01
	2614.66	35.85	9.25E-01		5.31E-01	3.91E-01
BI-210M	262.00	45.00	1.56E+00	1.56E+00	4.33E-01	7.71E-01
	300.00	23.00	3.18E+00		3.78E-01	1.57E+00
PB-210	46.50	4.25	1.36E+01	1.36E+01	2.18E+01	6.79E+00
PB-211	404.84	2.90	3.01E+01	3.01E+01	-1.94E+01	1.49E+01
	831.96	2.90	4.44E+01		-4.64E+00	2.19E+01
BI-212	727.17	11.80	9.08E+00	9.08E+00	-2.96E+00	4.47E+00
	1620.62	2.75	1.46E+01		3.44E+00	6.63E+00
PB-212	238.63	44.60	1.58E+00	1.58E+00	7.56E-01	7.85E-01
	300.09	3.41	2.15E+01		2.55E+00	1.06E+01
BI-214	609.31	46.30	2.10E+00	2.10E+00	-4.14E-01	1.04E+00
	1120.29	15.10	9.68E+00		-1.05E+00	4.76E+00
	1764.49	15.80	2.69E+00		1.59E+00	1.22E+00
	2204.22	4.98	7.24E+00		2.24E+00	3.16E+00
PB-214	295.21	19.19	3.80E+00	2.17E+00	1.24E+00	1.88E+00
	351.92	37.19	2.17E+00		-7.22E-02	1.07E+00
RN-219	401.80	6.50	1.34E+01	1.34E+01	-4.59E-02	6.62E+00

Analysis Report for 1510088-01

GAS-1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RA-223	323.87	3.88	1.95E+01	1.95E+01	9.54E-01	9.65E+00
RA-224	240.98	3.95	1.78E+01	1.78E+01	3.94E+00	8.82E+00
RA-225	40.00	31.00	3.80E+17	3.80E+17	-1.71E+18	1.89E+17
RA-226	186.21	3.28	1.86E+01	1.86E+01	2.68E+00	9.23E+00
TH-227	50.10	8.40	7.43E+00	6.15E+00	1.61E+01	3.70E+00
	236.00	11.50	6.15E+00		1.75E+00	3.05E+00
	256.20	6.30	1.10E+01		-1.42E-01	5.46E+00
AC-228	338.32	11.40	6.79E+00	5.58E+00	-1.00E+00	3.36E+00
	911.07	27.70	5.58E+00		-1.17E-01	2.75E+00
	969.11	16.60	9.43E+00		1.15E+00	4.65E+00
TH-230	48.44	16.90	3.51E+00	3.51E+00	9.63E+00	1.75E+00
	62.85	4.60	2.21E+01		7.87E+02	1.10E+01
	67.67	0.37	1.31E+02		-3.57E+03	6.53E+01
PA-231	283.67	1.60	4.47E+01	3.19E+01	7.01E+00	2.21E+01
	302.67	2.30	3.19E+01		1.91E+01	1.58E+01
TH-231	25.64	14.70	6.23E+00	6.23E+00	-1.82E+01	3.11E+00
	84.21	6.40	1.25E+01		1.00E+02	6.22E+00
PA-233	311.98	38.60	7.64E+09	7.64E+09	-2.98E+08	3.78E+09
PA-234	131.20	20.40	2.42E+00	2.42E+00	-1.58E+00	1.20E+00
	733.99	8.80	1.23E+01		-9.16E-01	6.08E+00
	946.00	12.00	1.41E+01		-7.65E-01	6.95E+00
PA-234M	1001.03	0.92	1.63E+02	1.63E+02	-1.89E+01	8.01E+01
TH-234	63.29	3.80	2.26E+01	2.26E+01	3.84E+02	1.13E+01
U-235	143.76	10.50	4.89E+00	4.89E+00	-9.72E-02	2.43E+00
	163.35	4.70	1.22E+01		-6.64E-01	6.05E+00
	205.31	4.70	1.37E+01		-8.54E+00	6.80E+00
NP-237	86.50	12.60	7.27E+00	7.27E+00	2.09E+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	3.03E+00	3.03E+00	1.32E+02	1.51E+00
AM-243	74.67	66.00	7.89E-01	7.89E-01	-3.65E-01	3.92E-01
CM-243	209.75	3.29	2.14E+01	5.43E+00	3.21E+00	1.06E+01
	228.14	10.60	7.03E+00		2.53E+00	3.49E+00
	277.60	14.00	5.43E+00		-2.17E-01	2.69E+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 1510088-01
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: 1844

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																																																																																																																																																																																																																																																																																																																										
9:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																								
17:	1622	1936	5048	16809	28257	21879	11535	10044	6987	2520	965	769	826	1094	1316	1205	1206	1315	1525	1604	1745	1918	2221	2616	3213	3522	3708	3564	3628	3767	3930	4109	4723	8946	19420	22329	10889	2626	1199	1240	1317	1422	1538	1576	1581	1511	1555	1432	1529	1540	1565	1531	1490	1571	1500	1520	1529	1611	1643	1674	1747	2344	5859	10569	8439	3053	976	802	825	835	797	854	793	777	843	789	778	774	739	800	761	784	770	772	782	831	840	818	791	782	833	839	792	760	820	905	1539	2570	2344	1213	774	711	667	737	640	695	723	683	609	642	734	795	901	814	657	693	651	665	646	624	627	579	662	653	628	605	614	623	623	677	610	621	611	617	625	657	593	619	624	590	692	811	749	617	554	591	596	585	616	568	591	571	578	566	569	543	593	613	597	602	608	600	660	634	577	593	598	600	600	605	596	599	599	587	613	552	603	605	596	562	545	568	620	602	554	598	552	602	610	578	602	599	588	618	628	600	610	578	646	610	598	605	614	584	610	557	612	564	562	559	570	547	606	556	511	531	561	541	522	579	530	532	532	532	502	501	464	503	500	496	460	474	477	454	459	438	443	472	462	469	450	462	448	497	444	399	431	415	406	410	444	482	410	414	404	415	403	479	475	413	432	380	389	421	407	416	412	398	389	413	410	417	354	403	402	387	375	398	360	374	379	419	391	366	342	397	366	399	340	319	344	374	383	368	394	336	348	363	356	382	399	321	335	335	331	407	374	348	360	367	347	362	329	371	350	350	309	332	357	310	321	338	390	349	356	319	334	345	349	356	354	326	331	341	350	362	343	328	345	360	351	311	341	330	353	343	328	345	360	351	311	341	330	361	370	320	326	324	343	332	306	305

369: 308 316 306 295 303 348 341 304

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	325	335	321	305	290	310	288	306
385:	327	293	311	313	311	369	412	368
393:	306	304	310	308	298	317	347	314
401:	315	291	291	295	324	330	286	322
409:	328	309	350	313	302	314	307	320
417:	332	299	296	337	299	298	319	307
425:	307	293	342	340	315	308	353	307
433:	333	295	321	326	325	360	291	327
441:	314	325	343	344	351	312	328	304
449:	321	321	347	307	324	325	330	279
457:	334	300	303	339	330	296	331	302
465:	323	306	292	308	334	361	313	297
473:	300	309	310	286	280	299	223	285
481:	263	221	254	284	259	247	252	234
489:	259	268	259	257	229	247	233	235
497:	230	241	249	228	223	225	252	244
505:	235	255	208	226	243	250	249	267
513:	253	242	239	230	214	223	216	214
521:	198	220	242	206	204	201	201	199
529:	209	217	227	224	195	187	197	220
537:	182	219	211	186	211	208	163	192
545:	204	183	198	213	180	181	218	217
553:	170	172	159	172	196	182	181	184
561:	189	172	195	192	199	184	218	174
569:	197	185	179	195	177	179	192	186
577:	170	181	177	166	201	189	196	186
585:	186	163	212	177	203	167	153	192
593:	173	189	161	173	168	172	188	179
601:	179	170	179	168	161	165	156	192
609:	189	188	170	141	171	204	160	164
617:	176	133	177	153	171	184	171	171
625:	200	162	175	153	164	169	165	162
633:	147	165	168	161	177	154	152	175
641:	171	170	165	176	159	155	158	159
649:	210	161	174	171	167	184	160	152
657:	179	207	513	2068	4163	3720	1543	366
665:	159	140	166	150	139	155	149	138
673:	130	124	139	145	148	163	144	131
681:	157	145	138	149	128	132	137	138
689:	140	133	140	138	134	129	136	145
697:	163	104	136	125	151	152	129	167
705:	148	134	120	163	147	146	158	130
713:	138	172	139	136	128	135	135	137
721:	147	155	132	149	143	160	127	161
729:	149	149	136	141	152	173	142	149
737:	137	141	138	159	153	142	147	152
745:	158	134	154	154	140	155	133	146
753:	167	152	152	150	140	156	168	140
761:	158	138	163	132	125	164	161	145
769:	142	135	156	141	152	145	151	158
777:	165	131	144	144	165	133	152	142
785:	154	163	135	162	171	142	153	149
793:	167	165	158	173	162	152	181	153

801: 163 161 159 184 143 143 171 164

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	174	148	154	146	170	161	156	120
817:	150	160	160	209	167	152	167	176
825:	142	184	158	157	149	150	177	166
833:	166	170	150	168	166	158	172	156
841:	157	157	181	157	154	150	187	188
849:	173	163	157	169	155	150	163	173
857:	155	184	154	193	164	154	154	178
865:	158	180	165	172	173	148	172	180
873:	158	184	188	170	157	197	172	174
881:	193	187	202	168	164	163	162	191
889:	177	169	177	187	201	186	194	208
897:	219	195	219	215	182	206	176	185
905:	193	190	210	179	171	191	199	199
913:	195	213	202	208	213	183	206	217
921:	204	187	197	181	200	185	209	186
929:	209	210	205	216	210	223	210	180
937:	213	185	204	237	217	211	231	211
945:	213	243	197	202	223	225	231	213
953:	210	209	238	211	207	194	203	225
961:	204	197	191	196	185	194	177	182
969:	182	187	169	158	165	156	176	149
977:	139	167	177	143	160	154	190	142
985:	159	175	181	162	185	147	164	164
993:	153	152	168	134	171	144	147	143
1001:	139	156	151	175	144	166	159	146
1009:	153	169	129	143	134	157	150	151
1017:	155	148	158	149	144	153	155	173
1025:	147	136	142	150	158	152	142	162
1033:	129	139	140	147	129	145	157	138
1041:	139	154	139	147	120	142	136	137
1049:	138	131	166	141	149	137	145	145
1057:	135	140	136	151	137	135	125	150
1065:	123	148	108	147	136	142	143	129
1073:	135	149	155	158	138	152	126	141
1081:	138	144	154	145	123	107	147	137
1089:	148	124	106	149	115	141	149	152
1097:	148	156	132	140	152	124	140	164
1105:	158	141	163	149	163	132	148	134
1113:	140	147	136	122	130	144	131	114
1121:	105	111	96	97	99	98	111	91
1129:	93	85	93	74	80	89	94	96
1137:	67	88	81	83	77	95	91	75
1145:	80	70	97	88	98	65	73	80
1153:	74	106	81	83	63	86	82	71
1161:	79	70	62	77	86	59	80	96
1169:	79	141	486	1812	3199	2983	1347	301
1177:	89	52	45	60	47	54	54	47
1185:	54	48	65	43	38	51	57	51
1193:	56	40	59	44	45	50	51	41
1201:	54	44	43	39	34	38	35	45
1209:	50	39	28	34	39	42	38	31
1217:	29	29	29	32	25	33	32	23
1225:	33	26	34	33	40	33	27	27

1233: 24 24 35 27 23 20 20 26

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	21	21	27	33	22	18	16	13
1249:	16	16	24	19	16	21	13	24
1257:	15	19	27	17	19	19	25	14
1265:	20	22	17	20	17	18	15	16
1273:	12	19	23	24	10	17	19	23
1281:	18	19	15	21	19	19	27	16
1289:	16	27	16	18	21	14	18	14
1297:	20	19	18	17	11	23	18	12
1305:	18	13	15	17	29	16	21	24
1313:	19	12	16	11	11	18	22	14
1321:	20	22	15	12	25	18	28	25
1329:	49	236	998	2424	2930	1758	483	70
1337:	6	7	5	8	8	1	4	8
1345:	2	3	7	9	5	8	2	7
1353:	9	5	3	7	7	9	5	3
1361:	2	5	3	7	7	4	8	4
1369:	4	4	2	7	4	5	5	3
1377:	3	5	5	5	3	6	2	3
1385:	3	5	10	3	11	8	5	8
1393:	0	4	5	3	4	5	7	1
1401:	3	4	2	4	2	7	10	5
1409:	7	7	3	4	9	6	6	2
1417:	3	5	5	3	8	4	2	5
1425:	5	5	4	2	6	8	2	5
1433:	1	3	6	8	3	2	5	6
1441:	2	4	2	3	2	3	4	4
1449:	7	4	1	3	4	3	2	5
1457:	6	3	1	7	3	7	5	7
1465:	5	4	7	1	6	4	3	8
1473:	7	2	3	7	2	4	2	7
1481:	2	7	6	2	2	2	3	0
1489:	7	5	9	5	7	4	2	4
1497:	7	2	6	3	3	3	3	5
1505:	2	6	4	6	5	6	2	4
1513:	6	3	4	4	5	2	7	4
1521:	6	3	3	2	2	7	6	2
1529:	4	6	4	4	2	3	4	8
1537:	3	6	1	3	4	2	3	3
1545:	5	5	5	4	5	4	1	3
1553:	6	4	3	4	3	6	6	4
1561:	3	4	4	3	6	4	4	0
1569:	2	5	5	5	4	5	2	3
1577:	2	5	2	3	4	4	6	8
1585:	2	2	2	3	0	3	6	4
1593:	6	5	6	2	2	3	4	4
1601:	2	6	3	7	5	3	5	2
1609:	2	2	4	3	1	5	4	4
1617:	0	6	2	6	7	5	1	3
1625:	5	2	2	2	2	2	2	3
1633:	2	2	5	3	2	3	2	3
1641:	4	4	3	1	1	4	1	1
1649:	3	1	1	1	5	6	0	2
1657:	1	3	1	4	6	6	3	2

1665: 0 2 1 4 3 2 2 1

Sample Title: GAS-1302

Channel	1	2	3	4	5	6	7	8
1673:	4	0	2	5	3	0	3	2
1681:	2	3	2	0	3	3	3	2
1689:	1	3	3	1	9	2	3	3
1697:	1	3	5	2	5	4	1	2
1705:	0	4	2	2	1	2	1	2
1713:	3	3	1	4	3	4	3	5
1721:	5	1	4	0	3	2	4	4
1729:	1	4	2	5	2	4	1	1
1737:	2	3	2	4	5	3	4	1
1745:	3	2	3	5	2	2	1	1
1753:	2	2	5	3	4	1	0	3
1761:	2	2	2	6	4	3	3	3
1769:	2	4	1	1	2	3	1	4
1777:	2	1	2	2	5	3	1	2
1785:	2	1	4	0	1	1	0	1
1793:	3	1	3	0	2	3	1	1
1801:	1	2	3	1	4	3	3	2
1809:	2	2	4	1	3	0	2	2
1817:	2	3	1	1	0	1	9	3
1825:	0	7	2	2	4	3	2	2
1833:	4	6	14	31	33	13	10	2
1841:	3	1	1	0	2	5	1	2
1849:	3	0	4	0	0	1	1	3
1857:	1	0	5	3	1	3	2	5
1865:	3	2	2	0	4	5	1	3
1873:	4	2	1	4	2	1	2	1
1881:	4	1	2	2	1	4	1	1
1889:	1	1	4	1	3	3	3	3
1897:	2	1	1	0	2	3	2	1
1905:	2	0	0	2	2	2	1	1
1913:	1	3	0	3	2	0	3	3
1921:	0	3	0	2	2	3	3	3
1929:	4	1	1	4	1	3	0	3
1937:	2	2	5	2	0	2	0	3
1945:	1	0	2	1	1	2	2	2
1953:	0	5	2	2	0	1	0	0
1961:	0	2	2	3	4	3	2	1
1969:	3	3	2	4	1	3	2	1
1977:	2	0	1	1	0	1	1	1
1985:	3	2	3	1	5	2	1	1
1993:	3	2	0	1	2	3	2	4
2001:	0	2	0	2	5	2	0	0
2009:	0	2	1	1	3	1	0	2
2017:	0	4	4	4	1	0	2	2
2025:	2	1	0	2	0	2	1	1
2033:	2	2	0	2	3	1	1	0
2041:	2	0	3	1	0	2	0	2
2049:	3	0	1	2	1	0	1	1
2057:	1	1	0	3	1	0	0	0
2065:	0	1	3	3	2	0	2	0
2073:	2	0	1	2	1	3	3	0
2081:	1	1	3	3	3	1	2	0
2089:	2	1	1	1	3	2	3	0

2097: 1 1 0 3 1 3 1 0

Sample Title: GAS-1302

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

2529: 1 0 0 0 0 0 0 0 0

Sample Title: GAS-1302

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

2961: 0 0 0 0 0 0 0 0 0

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2969:	0	1	0	0	0	0	0	0
2977:	0	0	0	0	0	0	0	0
2985:	0	0	0	0	1	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	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	1	0	0	0	0	0
3041:	0	0	0	0	1	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	0	0	1
3065:	1	0	0	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	1	0	0	0	0
3097:	0	0	0	0	0	1	0	0
3105:	0	0	0	0	0	1	0	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	0	1	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	0
3153:	0	1	0	0	0	1	0	0
3161:	0	1	0	0	1	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	1	0	1	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	1	0	0
3201:	0	0	0	0	0	0	1	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	1	0	0	0	0	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	0	0	1	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	0	1	0	0	0
3265:	0	1	0	0	0	0	0	0
3273:	0	0	0	0	0	1	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	1	0	1	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0
3321:	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	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	1	0	0	0	0	0
3369:	0	0	0	0	0	0	1	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0 0

Sample Title: GAS-1302

Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	1	0	0
3417:	0	0	0	0	0	0	1	0
3425:	0	0	0	0	1	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	0	0
3465:	0	0	0	0	0	0	1	0
3473:	0	0	0	2	0	0	0	0
3481:	0	0	0	0	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	1	0	1	1	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	1	0	0	0	0	0	0	0
3537:	0	0	0	0	1	0	0	0
3545:	0	1	0	0	0	1	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	1
3577:	0	0	0	0	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	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	1	1	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	1	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	1
3713:	0	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	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	1	0	0	0
3777:	0	0	0	0	0	0	0	1
3785:	1	0	0	0	0	0	0	0
3793:	0	0	1	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	1	0	0	1	0	0	0
3817:	0	1	0	0	0	0	0	0

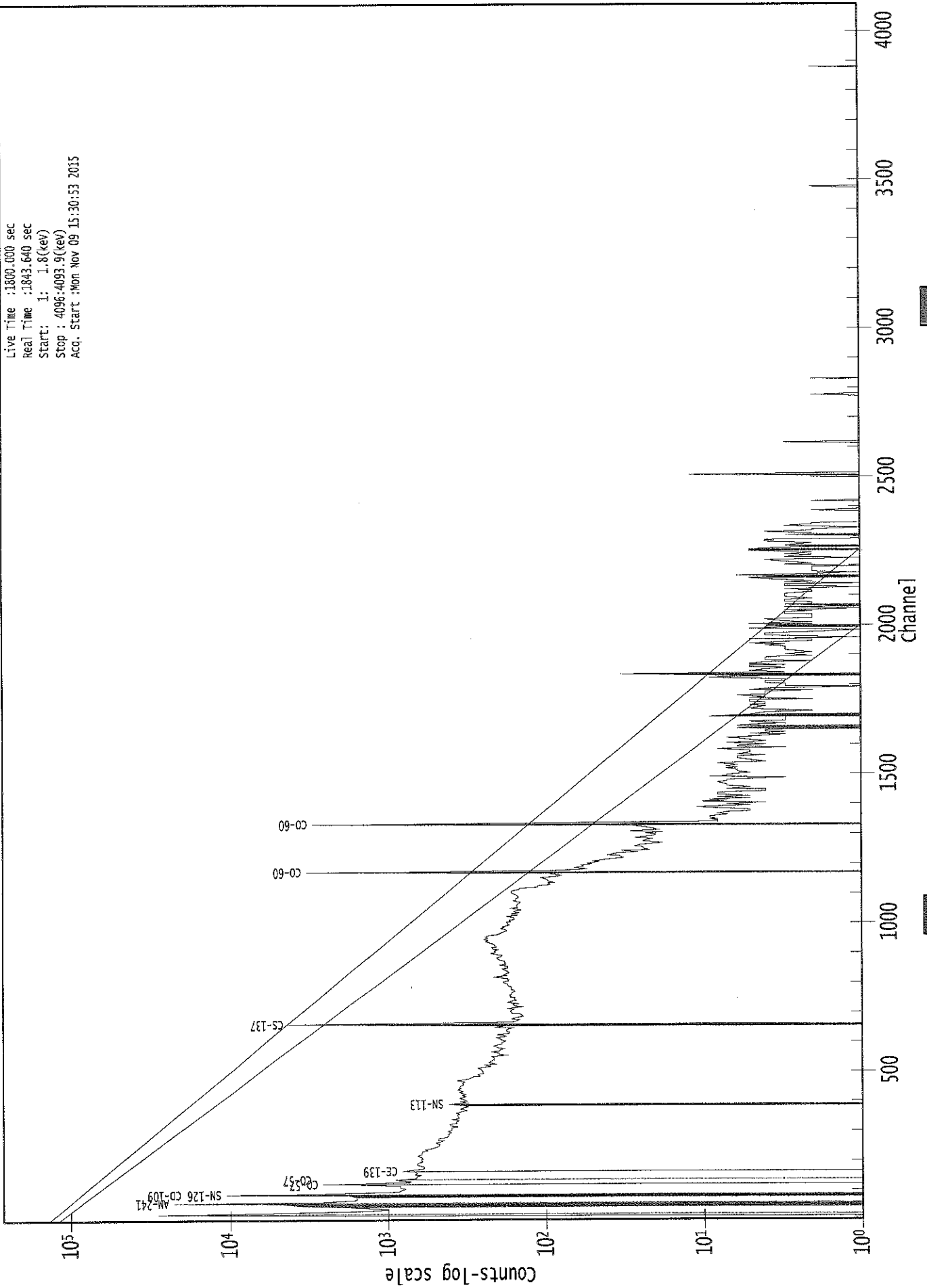
3825: 0 0 0 0 0 1 0 0

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	1	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	2	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	0
3905:	0	0	0	0	0	0	0	0
3913:	0	1	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	1	0	0	0	0	0	0
3937:	0	0	1	0	0	0	0	0
3945:	0	0	0	1	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	0	0	0	0
3977:	0	0	0	0	0	1	0	0
3985:	0	0	0	0	0	0	1	0
3993:	0	0	0	0	1	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	1
4025:	0	0	0	1	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	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	1

0000029350.CNF

Live Time :1800.000 sec
Real Time :1843.640 sec
Start: 1: 1.8(keV)
Stop : 4096.4093.9(keV)
Acq. Start :Mon Nov 09 15:30:53 2015



KB
11/9/15



Analysis Report for 1510088-02
BLANK

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-02
Sample Description : BLANK
Sample Type : SOIL

Sample Size : 7.834E+02 grams
Facility : Countroom

Sample Taken On : 11/9/2015 8:56:01AM
Acquisition Started : 11/9/2015 2:29:22PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3653.2 seconds

Dead Time : 1.46 %

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 : 29346

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

Analysis Report for 1510088-02

BLANK

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 3:30:17PM
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	86.64	85.91	0.0000	0.00
2	146.90	146.19	0.0000	0.00
3	184.52	183.83	0.0000	0.00
4	455.09	454.52	0.0000	0.00
5	496.39	495.85	0.0000	0.00
6	720.15	719.71	0.0000	0.00
7	738.50	738.07	0.0000	0.00
8	936.12	935.79	0.0000	0.00
9	1299.22	1299.09	0.0000	0.00
10	1350.59	1350.50	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1510088-02

BLANK

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 3:30:17PM

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	86.64	84 -	98	85.91	1.78E+01	17.12	6.87E+01	2.42
2	146.90	140 -	151	146.19	4.60E+01	40.79	1.82E+02	4.95
3	184.52	180 -	189	183.83	5.43E+01	34.64	1.41E+02	5.13
4	455.09	449 -	460	454.52	2.00E+01	21.54	4.80E+01	9.24
5	496.39	493 -	498	495.85	1.34E+01	9.06	5.13E+00	3.07
6	720.15	716 -	723	719.71	1.07E+01	13.71	2.46E+01	1.69
7	738.50	734 -	741	738.07	1.11E+01	10.77	1.18E+01	1.06
8	936.12	928 -	944	935.79	1.78E+01	18.35	2.45E+01	8.78
9	1299.22	1295 -	1301	1299.09	6.40E+00	8.03	7.20E+00	1.32
10	1350.59	1346 -	1354	1350.50	8.00E+00	5.66	0.00E+00	6.83

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 3:30:17PM

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	86.64	84 -	98	1.78E+01	17.12	6.87E+01	1.36E+01
2	146.90	140 -	151	4.60E+01	40.79	1.82E+02	3.16E+01
3	184.52	180 -	189	5.43E+01	34.64	1.41E+02	2.58E+01
4	455.09	449 -	460	2.00E+01	21.54	4.80E+01	1.61E+01
5	496.39	493 -	498	1.34E+01	9.06	5.13E+00	4.37E+00

: 00361

Analysis Report for 1510088-02

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Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
6	720.15	716 -	723	1.07E+01	13.71	2.46E+01	9.91E+00
7	738.50	734 -	741	1.11E+01	10.77	1.18E+01	6.96E+00
8	936.12	928 -	944	1.78E+01	18.35	2.45E+01	1.34E+01
9	1299.22	1295 -	1301	6.40E+00	8.03	7.20E+00	5.13E+00
10	1350.59	1346 -	1354	8.00E+00	5.66	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 3:30:17PM

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	86.64	84 -	98	85.91	1.78E+01	17.12	6.87E+01	NP-237 EU-155 SN-126
2	146.90	140 -	151	146.19	4.60E+01	40.79	1.82E+02	.....
3	184.52	180 -	189	183.83	5.43E+01	34.64	1.41E+02	HO-166M
4	455.09	449 -	460	454.52	2.00E+01	21.54	4.80E+01	.....
5	496.39	493 -	498	495.85	1.34E+01	9.06	5.13E+00	RU-103
6	720.15	716 -	723	719.71	1.07E+01	13.71	2.46E+01	SB-126
7	738.50	734 -	741	738.07	1.11E+01	10.77	1.18E+01	.....
8	936.12	928 -	944	935.79	1.78E+01	18.35	2.45E+01	.....
9	1299.22	1295 -	1301	1299.09	6.40E+00	8.03	7.20E+00	.....
10	1350.59	1346 -	1354	1350.50	8.00E+00	5.66	0.00E+00

Analysis Report for 1510088-02

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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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 3:30:17PM

	<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Net Peak Area</i>	<i>Net Area Uncertainty</i>	<i>Peak Efficiency</i>	<i>Efficiency Uncertainty</i>
M	1	86.64	1.78E+01	17.12	1.98E-02	1.64E-03
	2	146.90	4.60E+01	40.79	1.40E-02	1.35E-03
	3	184.52	5.43E+01	34.64	1.17E-02	1.16E-03
	4	455.09	2.00E+01	21.54	5.16E-03	6.43E-04
	5	496.39	1.34E+01	9.06	4.74E-03	5.83E-04
	6	720.15	1.07E+01	13.71	3.29E-03	3.08E-04
	7	738.50	1.11E+01	10.77	3.21E-03	2.97E-04
	8	936.12	1.78E+01	18.35	2.54E-03	2.03E-04
	9	1299.22	6.40E+00	8.03	1.87E-03	2.07E-04
	10	1350.59	8.00E+00	5.66	1.81E-03	2.12E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 3:30:17PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

	<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Original Area</i>	<i>Orig. Area Uncertainty</i>	<i>Ambient Background</i>	<i>Backgr. Uncert.</i>	<i>Subtracted Area</i>	<i>Subtracted Uncert.</i>
M	1	86.64	1.78E+01	17.12			1.78E+01	1.71E+01

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Analysis Report for 1510088-02

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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
2	146.90	4.60E+01	40.79			4.60E+01	4.08E+01
3	184.52	5.43E+01	34.64			5.43E+01	3.46E+01
4	455.09	2.00E+01	21.54			2.00E+01	2.15E+01
5	496.39	1.34E+01	9.06			1.34E+01	9.06E+00
6	720.15	1.07E+01	13.71			1.07E+01	1.37E+01
7	738.50	1.11E+01	10.77			1.11E+01	1.08E+01
8	936.12	1.78E+01	18.35			1.78E+01	1.84E+01
9	1299.22	6.40E+00	8.03			6.40E+00	8.03E+00
10	1350.59	8.00E+00	5.66			8.00E+00	5.66E+00

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 3:30:17PM
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	86.64	1.78E+01	17.12			1.78E+01	1.71E+01
2	146.90	4.60E+01	40.79			4.60E+01	4.08E+01
3	184.52	5.43E+01	34.64			5.43E+01	3.46E+01
4	455.09	2.00E+01	21.54			2.00E+01	2.15E+01
5	496.39	1.34E+01	9.06			1.34E+01	9.06E+00
6	720.15	1.07E+01	13.71			1.07E+01	1.37E+01
7	738.50	1.11E+01	10.77			1.11E+01	1.08E+01
8	936.12	1.78E+01	18.35			1.78E+01	1.84E+01
9	1299.22	6.40E+00	8.03			6.40E+00	8.03E+00
10	1350.59	8.00E+00	5.66			8.00E+00	5.66E+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 1510088-02

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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
RU-103	0.927	497.08 *	89.00	3.06E-02	2.13E-02
SN-126	0.871	87.57 *	37.00	2.33E-02	2.25E-02
EU-155	0.379	86.50 *	30.90	2.79E-02	2.69E-02
		105.30	20.70		
NP-237	0.997	86.50 *	12.60	6.85E-02	6.60E-02

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 3:30:17PM

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	146.90	1.27899E-02	44.30		
3	184.52	1.50822E-02	31.90	Tol.	HO-166M
4	455.09	5.55556E-03	53.85		
6	720.15	2.97101E-03	64.10	Tol.	SB-126
7	738.50	3.08007E-03	48.57		
8	936.12	4.93518E-03	51.64		
9	1299.22	1.77778E-03	62.74		
10	1350.59	2.22222E-03	35.36		

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Analysis Report for 1510088-02

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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

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
RU-103	0.92	497.08 *	89.00	3.06E-02	2.13E-02
SN-126	0.87	87.57 *	37.00	2.33E-02	2.25E-02
EU-155	0.37	86.50 *	30.90	2.79E-02	2.69E-02
		105.30	20.70		
NP-237	0.99	86.50 *	12.60	6.85E-02	6.60E-02

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
RU-103	0.927	3.06E-02	2.13E-02	

: 00366

Analysis Report for 1510088-02

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<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>
? SN-126	0.871	2.33E-02	2.25E-02	
? EU-155	0.379	2.79E-02	2.69E-02	
? NP-237	0.997	6.85E-02	6.60E-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 1510088-02

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 3:30:17PM
 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	146.90	1.27899E-02	44.30		
3	184.52	1.50822E-02	31.90	Tol.	HO-166M
4	455.09	5.55556E-03	53.85		
6	720.15	2.97101E-03	64.10	Tol.	SB-126
7	738.50	3.08007E-03	48.57		
8	936.12	4.93518E-03	51.64		
9	1299.22	1.77778E-03	62.74		
10	1350.59	2.22222E-03	35.36		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-5.26E-02	4.78E-01	4.78E-01
+	NA-22	1274.54	99.94	1.46E-02	7.11E-02	7.11E-02
+	NA-24	1368.53	99.99	1.18E-02	7.65E-02	7.65E-02
		2754.09	99.86	2.55E-02		1.47E-01
+	AL-26	1808.65	99.76	2.05E-02	7.36E-02	7.36E-02
+	K-40	1460.81	10.67	3.38E-01	8.89E-01	8.89E-01
+	AR-41	1293.64	99.16	7.66E-02	8.10E-01	8.10E-01
+	TI-44	67.88	94.40	7.38E-03	2.62E-02	2.76E-02
		78.34	96.00	5.65E-04		2.62E-02

Analysis Report for 1510088-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SC-46	889.25	99.98	2.16E-02	6.73E-02	8.07E-02
		1120.51	99.99	-7.89E-03		6.73E-02
+	V-48	983.52	99.98	3.48E-02	7.03E-02	7.52E-02
		1312.10	97.50	4.29E-03		7.03E-02
+	CR-51	320.08	9.83	-3.28E-02	4.41E-01	4.41E-01
+	MN-54	834.83	99.97	7.52E-03	7.19E-02	7.19E-02
+	CO-56	846.75	99.96	-1.68E-02	6.45E-02	6.45E-02
		1037.75	14.03	-6.54E-02		5.17E-01
		1238.25	67.00	-2.69E-02		6.81E-02
		1771.40	15.51	5.77E-02		5.68E-01
		2598.48	16.90	0.00E+00		3.89E-01
+	CO-57	122.06	85.51	4.95E-03	3.28E-02	3.28E-02
		136.48	10.60	-7.96E-02		2.70E-01
+	CO-58	810.76	99.40	-1.57E-04	6.65E-02	6.65E-02
+	FE-59	1099.22	56.50	0.00E+00	1.36E-01	1.36E-01
		1291.56	43.20	-3.95E-03		1.42E-01
+	CO-60	1173.22	100.00	1.93E-02	8.74E-02	9.39E-02
		1332.49	100.00	3.05E-02		8.74E-02
+	ZN-65	1115.52	50.75	5.77E-02	1.59E-01	1.59E-01
+	GA-67	93.31	35.70	7.75E-02	9.42E-02	9.42E-02
		208.95	2.24	-5.35E-01		1.79E+00
		300.22	16.00	-4.79E-02		3.02E-01
+	SE-75	121.11	16.70	-7.37E-03	4.97E-02	1.65E-01
		136.00	59.20	-3.80E-03		4.97E-02
		264.65	59.80	1.10E-02		7.01E-02
		279.53	25.20	3.45E-02		1.73E-01
		400.65	11.40	-8.39E-02		4.41E-01
+	RB-82	776.52	13.00	1.80E-01	5.72E-01	5.72E-01
+	RB-83	520.41	46.00	-4.15E-02	1.22E-01	1.22E-01
		529.64	30.30	1.32E-03		1.91E-01
		552.65	16.40	3.22E-02		3.63E-01
+	KR-85	513.99	0.43	1.96E+01	1.95E+01	1.95E+01
+	SR-85	513.99	99.27	8.61E-02	8.55E-02	8.55E-02
+	Y-88	898.02	93.40	-5.82E-03	8.71E-02	8.71E-02
		1836.01	99.38	1.25E-02		9.12E-02
+	NB-93M	16.57	9.43	3.93E-01	2.26E-01	2.26E-01
+	NB-94	702.63	100.00	4.10E-03	7.39E-02	7.39E-02
		871.10	100.00	4.22E-02		7.89E-02
+	NB-95	765.79	99.81	3.43E-02	7.81E-02	7.81E-02
+	NB-95M	235.69	25.00	1.72E-02	1.86E-01	1.86E-01
+	ZR-95	724.18	43.70	1.48E-02	1.18E-01	1.68E-01
		756.72	55.30	-2.35E-02		1.18E-01
+	MO-99	181.06	6.20	-1.33E-01	5.86E-01	6.86E-01
		739.58	12.80	3.32E-02		5.86E-01
		778.00	4.50	5.58E-01		1.67E+00
+	RU-103	497.08	* 89.00	3.06E-02	2.61E-02	2.61E-02
+	RU-106	621.84	9.80	-7.11E-02	6.69E-01	6.69E-01

Analysis Report for 1510088-02

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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	-2.10E-02	5.03E-02	5.03E-02
		614.37	90.40	-1.10E-02		7.66E-02
		722.95	90.50	1.43E-02		8.70E-02
+	CD-109	88.03	3.72	-6.11E-01	7.59E-01	7.59E-01
+	AG-110M	657.75	93.14	-4.97E-02	6.59E-02	6.59E-02
		677.61	10.53	2.66E-02		5.71E-01
		706.67	16.46	1.32E-03		4.27E-01
		763.93	21.98	4.22E-02		3.38E-01
		884.67	71.63	-6.90E-03		9.71E-02
		1384.27	23.94	2.77E-02		3.20E-01
+	CD-113M	263.70	0.02	6.77E+01	1.86E+02	1.86E+02
+	SN-113	255.12	1.93	-4.22E-01	6.77E-02	2.17E+00
		391.69	64.90	-1.54E-02		6.77E-02
+	TE123M	159.00	84.10	2.69E-02	3.98E-02	3.98E-02
+	SB-124	602.71	97.87	-4.36E-02	5.89E-02	5.89E-02
		645.85	7.26	-1.64E-01		8.32E-01
		722.78	11.10	4.11E-02		6.99E-01
		1691.02	49.00	-1.76E-02		1.59E-01
+	I-125	35.49	6.49	-7.26E-02	3.08E-01	3.08E-01
+	SB-125	176.33	6.89	-3.25E-02	1.66E-01	5.17E-01
		427.89	29.33	-6.85E-04		1.66E-01
		463.38	10.35	-4.58E-02		4.74E-01
		600.56	17.80	-1.50E-01		3.29E-01
		635.90	11.32	-2.19E-01		4.44E-01
+	SB-126	414.70	83.30	-9.87E-03	5.55E-02	5.55E-02
		666.33	99.60	1.04E-02		6.61E-02
		695.00	99.60	-2.05E-02		6.89E-02
		720.50	53.80	5.17E-02		1.45E-01
+	SN-126	87.57	* 37.00	2.33E-02	1.15E-01	1.15E-01
+	SB-127	473.00	25.00	6.45E-02	1.64E-01	2.24E-01
		685.20	35.70	-6.82E-02		1.64E-01
		783.80	14.70	-1.69E-01		4.25E-01
+	I-129	29.78	57.00	1.50E-02	3.80E-02	3.80E-02
		33.60	13.20	1.05E-01		1.58E-01
		39.58	7.52	-1.68E-01		2.67E-01
+	I-131	284.30	6.05	1.31E-01	5.40E-02	7.09E-01
		364.48	81.20	-5.11E-03		5.40E-02
		636.97	7.26	-3.65E-01		7.32E-01
		722.89	1.80	2.59E-01		4.39E+00
+	TE-132	49.72	13.10	3.73E-02	4.79E-02	1.79E-01
		228.16	88.00	-8.76E-05		4.79E-02
+	BA-133	81.00	33.00	-1.40E-02	7.19E-02	7.61E-02
		302.84	17.80	6.37E-02		2.74E-01
		356.01	60.00	-2.44E-02		7.19E-02
+	I-133	529.87	86.30	5.66E-04	8.21E-02	8.21E-02
+	XE-133	81.00	38.00	-1.26E-02	6.84E-02	6.84E-02
+	CS-134	563.23	8.38	1.46E-01	5.91E-02	7.09E-01
		569.32	15.43	1.23E-01		3.60E-01
		604.70	97.60	-3.53E-02		5.91E-02

Analysis Report for 1510088-02

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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	1.91E-02	5.91E-02	8.25E-02
		801.93	8.73	0.00E+00		8.34E-01
+	CS-135	268.24	16.00	-5.08E-02	2.58E-01	2.58E-01
+	I-135	1131.51	22.50	-7.57E-02	3.54E-01	5.68E-01
		1260.41	28.60	3.29E-02		3.54E-01
		1678.03	9.54	7.61E-01		1.79E+00
+	CS-136	153.22	7.46	4.79E-02	5.86E-02	4.29E-01
		163.89	4.61	-4.20E-01		6.55E-01
		176.55	13.56	-1.67E-02		2.67E-01
		273.65	12.66	1.42E-01		3.45E-01
		340.57	48.50	2.96E-02		1.05E-01
		818.50	99.70	-1.45E-02		5.86E-02
		1048.07	79.60	3.05E-03		8.03E-02
		1235.34	19.70	2.52E-02		3.30E-01
+	CS-137	661.65	85.12	3.95E-02	8.33E-02	8.33E-02
+	LA-138	788.74	34.00	1.43E-02	1.20E-01	1.89E-01
		1435.80	66.00	2.55E-02		1.20E-01
+	CE-139	165.85	80.35	-1.15E-02	3.75E-02	3.75E-02
+	BA-140	162.64	6.70	-9.66E-02	2.30E-01	4.64E-01
		304.84	4.50	3.42E-01		1.12E+00
		423.70	3.20	6.34E-01		1.64E+00
		437.55	2.00	4.06E-01		2.55E+00
		537.32	25.00	6.45E-02		2.30E-01
+	LA-140	328.77	20.50	4.22E-02	7.84E-02	2.39E-01
		487.03	45.50	3.00E-02		1.21E-01
		815.85	23.50	-7.43E-02		2.37E-01
		1596.49	95.49	6.52E-03		7.84E-02
+	CE-141	145.44	48.40	5.04E-02	7.38E-02	7.38E-02
+	CE-143	57.36	11.80	-3.19E-01	1.06E-01	2.11E-01
		293.26	42.00	-5.13E-02		1.06E-01
		664.55	5.20	3.53E-01		1.50E+00
+	CE-144	133.54	10.80	3.76E-02	2.72E-01	2.72E-01
+	PM-144	476.78	42.00	1.16E-02	7.06E-02	1.22E-01
		618.01	98.60	1.71E-02		7.06E-02
		696.49	99.49	5.04E-03		7.24E-02
+	PM-145	36.85	21.70	-7.15E-02	5.03E-02	8.93E-02
		37.36	39.70	-5.85E-03		5.03E-02
		42.30	15.10	5.01E-02		1.43E-01
		72.40	2.31	4.32E-01		1.06E+00
+	PM-146	453.90	39.94	2.83E-02	1.42E-01	1.42E-01
		735.90	14.01	7.09E-03		4.66E-01
		747.13	13.10	2.31E-02		4.50E-01
+	ND-147	91.11	28.90	1.24E-01	1.14E-01	1.14E-01
		531.02	13.10	2.92E-02		4.50E-01
+	PM-149	285.90	3.10	4.05E-01	1.46E+00	1.46E+00
+	EU-152	121.78	20.50	2.06E-02	1.36E-01	1.36E-01
		244.69	5.40	-3.01E-01		7.91E-01
		344.27	19.13	5.74E-02		2.67E-01
		778.89	9.20	2.56E-01		7.69E-01

Analysis Report for 1510088-02

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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	-3.34E-02	1.36E-01	7.26E-01
		1085.78	7.22	-3.01E-01		7.22E-01
		1112.02	9.60	-2.12E-01		7.71E-01
		1407.95	14.94	-1.11E-01		3.97E-01
+	GD-153	97.43	31.30	1.09E-02	9.08E-02	9.08E-02
		103.18	22.20	2.91E-02		1.18E-01
+	EU-154	123.07	40.50	-1.89E-02	6.54E-02	6.54E-02
		723.30	19.70	6.55E-02		4.00E-01
		873.19	11.50	2.46E-01		6.88E-01
		996.32	10.30	1.94E-01		7.57E-01
		1004.76	17.90	0.00E+00		4.24E-01
		1274.45	35.50	4.10E-02		2.00E-01
+	EU-155	86.50	* 30.90	2.79E-02	1.26E-01	1.37E-01
		105.30	20.70	-5.50E-02		1.26E-01
+	EU-156	811.77	10.40	-8.18E-04	6.22E-01	6.22E-01
		1153.47	7.20	7.53E-02		1.02E+00
		1230.71	8.90	1.66E-01		7.82E-01
+	HO-166M	184.41	72.60	4.85E-02	5.93E-02	5.93E-02
		280.45	29.60	1.59E-02		1.48E-01
		410.94	11.10	8.46E-02		4.52E-01
		711.69	54.10	4.07E-03		1.17E-01
+	TM-171	66.72	0.14	8.10E+00	1.91E+01	1.91E+01
+	HF-172	81.75	4.52	-1.24E-01	2.41E-01	5.59E-01
		125.81	11.30	-3.54E-02		2.41E-01
+	LU-172	181.53	20.60	-4.16E-02	1.01E-01	2.08E-01
		810.06	16.63	-9.62E-04		4.06E-01
		912.12	15.25	6.27E-02		5.13E-01
		1093.66	62.50	-3.39E-02		1.01E-01
+	LU-173	100.72	5.24	7.56E-02	1.94E-01	4.98E-01
		272.11	21.20	-6.75E-02		1.94E-01
+	HF-175	343.40	84.00	-1.75E-02	5.85E-02	5.85E-02
+	LU-176	88.34	13.30	2.86E-02	5.00E-02	2.27E-01
		201.83	86.00	1.79E-02		5.00E-02
		306.78	94.00	-2.71E-03		5.17E-02
+	TA-182	67.75	41.20	1.69E-02	6.33E-02	6.33E-02
		1121.30	34.90	-3.91E-02		1.93E-01
		1189.05	16.23	4.21E-02		4.86E-01
		1221.41	26.98	-3.60E-02		2.36E-01
		1231.02	11.44	1.28E-01		6.02E-01
+	IR-192	308.46	29.68	4.27E-02	1.07E-01	1.68E-01
		468.07	48.10	-7.22E-03		1.07E-01
+	HG-203	279.19	77.30	1.13E-02	5.65E-02	5.65E-02
+	BI-207	569.67	97.72	1.94E-02	5.69E-02	5.69E-02
		1063.62	74.90	-2.84E-02		1.11E-01
+	TL-208	583.14	30.22	1.02E-01	2.11E-01	2.11E-01
		860.37	4.48	5.20E-01		1.70E+00
		2614.66	35.85	9.14E-02		3.75E-01
+	BI-210M	262.00	45.00	-3.61E-03	9.37E-02	9.37E-02
		300.00	23.00	2.15E-02		2.04E-01

Analysis Report for 1510088-02

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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	5.59E-02	5.12E-01	5.12E-01
+	PB-211	404.84	2.90	9.67E-01	1.94E+00	1.94E+00
		831.96	2.90	-1.54E-01		2.33E+00
+	BI-212	727.17	11.80	1.12E-01	5.17E-01	5.17E-01
		1620.62	2.75	1.51E-01		2.72E+00
+	PB-212	238.63	44.60	6.62E-02	1.05E-01	1.05E-01
		300.09	3.41	1.45E-01		1.38E+00
+	BI-214	609.31	46.30	2.35E-02	1.51E-01	1.51E-01
		1120.29	15.10	-5.22E-02		4.45E-01
		1764.49	15.80	1.41E-02		5.08E-01
		2204.22	4.98	5.32E-02		1.17E+00
+	PB-214	295.21	19.19	1.82E-02	1.29E-01	2.22E-01
		351.92	37.19	2.33E-02		1.29E-01
+	RN-219	401.80	6.50	7.87E-02	8.04E-01	8.04E-01
+	RA-223	323.87	3.88	-2.62E-01	1.12E+00	1.12E+00
+	RA-224	240.98	3.95	2.92E-01	1.17E+00	1.17E+00
+	RA-225	40.00	31.00	-4.14E-02	6.58E-02	6.58E-02
+	RA-226	186.21	3.28	4.69E-01	1.27E+00	1.27E+00
+	TH-227	50.10	8.40	5.53E-02	2.66E-01	2.66E-01
		236.00	11.50	3.58E-02		3.86E-01
		256.20	6.30	-2.00E-01		6.56E-01
+	AC-228	338.32	11.40	1.61E-02	2.82E-01	4.28E-01
		911.07	27.70	2.15E-02		2.82E-01
		969.11	16.60	2.78E-02		3.91E-01
+	TH-230	48.44	16.90	5.85E-02	1.33E-01	1.33E-01
		62.85	4.60	4.01E-01		5.75E-01
		67.67	0.37	1.88E+00		7.03E+00
+	PA-231	283.67	1.60	2.12E-01	2.12E+00	2.62E+00
		302.67	2.30	4.93E-01		2.12E+00
+	TH-231	25.64	14.70	-7.11E-02	1.47E-01	1.47E-01
		84.21	6.40	-7.10E-02		4.12E-01
+	PA-233	311.98	38.60	2.51E-02	1.24E-01	1.24E-01
+	PA-234	131.20	20.40	1.24E-03	1.41E-01	1.41E-01
		733.99	8.80	-1.13E-02		7.58E-01
		946.00	12.00	-1.00E-01		4.76E-01
+	PA-234M	1001.03	0.92	2.78E+00	9.31E+00	9.31E+00
+	TH-234	63.29	3.80	5.34E-01	7.04E-01	7.04E-01
+	U-235	143.76	10.50	8.87E-02	3.27E-01	3.27E-01
		163.35	4.70	-4.05E-01		6.32E-01
		205.31	4.70	-1.52E-02		8.44E-01
+	NP-237	86.50	* 12.60	6.85E-02	3.37E-01	3.37E-01
+	NP-239	106.10	22.70	-5.43E-02	1.25E-01	1.25E-01
		228.18	10.70	-1.03E-01		4.05E-01
		277.60	14.10	-6.01E-02		3.22E-01
+	AM-241	59.54	35.90	6.14E-02	7.25E-02	7.25E-02
+	AM-243	74.67	66.00	4.45E-03	3.81E-02	3.81E-02
+	CM-243	209.75	3.29	-5.54E-02	3.01E-01	1.18E+00

Analysis Report for 1510088-02

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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	-6.89E-04	3.01E-01	3.77E-01
	277.60	14.00	-5.62E-02		3.01E-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	4.78E-01	4.78E-01	-5.26E-02	2.14E-01
NA-22	1274.54	99.94	7.11E-02	7.11E-02	1.46E-02	2.87E-02
NA-24	1368.53	99.99	7.65E-02	7.65E-02	1.18E-02	2.86E-02
	2754.09	99.86	1.47E-01		2.55E-02	5.70E-02
AL-26	1808.65	99.76	7.36E-02	7.36E-02	2.05E-02	2.75E-02
K-40	1460.81	10.67	8.89E-01	8.89E-01	3.38E-01	3.72E-01
AR-41	1293.64	99.16	8.10E-01	8.10E-01	7.66E-02	3.36E-01
TI-44	67.88	94.40	2.76E-02	2.62E-02	7.38E-03	1.32E-02
	78.34	96.00	2.62E-02		5.65E-04	1.25E-02
SC-46	889.25	99.98	8.07E-02	6.73E-02	2.16E-02	3.55E-02
	1120.51	99.99	6.73E-02		-7.89E-03	2.76E-02
V-48	983.52	99.98	7.52E-02	7.03E-02	3.48E-02	3.22E-02
	1312.10	97.50	7.03E-02		4.29E-03	2.79E-02
CR-51	320.08	9.83	4.41E-01	4.41E-01	-3.28E-02	2.02E-01
MN-54	834.83	99.97	7.19E-02	7.19E-02	7.52E-03	3.14E-02
CO-56	846.75	99.96	6.45E-02	6.45E-02	-1.68E-02	2.76E-02
	1037.75	14.03	5.17E-01		-6.54E-02	2.19E-01
	1238.25	67.00	6.81E-02		-2.69E-02	2.41E-02
	1771.40	15.51	5.68E-01		5.77E-02	2.25E-01
	2598.48	16.90	3.89E-01		0.00E+00	1.23E-01
CO-57	122.06	85.51	3.28E-02	3.28E-02	4.95E-03	1.54E-02
	136.48	10.60	2.70E-01		-7.96E-02	1.27E-01

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Analysis Report for 1510088-02

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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	6.65E-02	6.65E-02	-1.57E-04	2.88E-02
FE-59	1099.22	56.50	1.36E-01	1.36E-01	0.00E+00	5.74E-02
	1291.56	43.20	1.42E-01		-3.95E-03	5.51E-02
CO-60	1173.22	100.00	9.39E-02	8.74E-02	1.93E-02	4.06E-02
	1332.49	100.00	8.74E-02		3.05E-02	3.66E-02
ZN-65	1115.52	50.75	1.59E-01	1.59E-01	5.77E-02	6.77E-02
GA-67	93.31	35.70	9.42E-02	9.42E-02	7.75E-02	4.51E-02
	208.95	2.24	1.79E+00		-5.35E-01	8.39E-01
	300.22	16.00	3.02E-01		-4.79E-02	1.40E-01
SE-75	121.11	16.70	1.65E-01	4.97E-02	-7.37E-03	7.78E-02
	136.00	59.20	4.97E-02		-3.80E-03	2.34E-02
	264.65	59.80	7.01E-02		1.10E-02	3.25E-02
	279.53	25.20	1.73E-01		3.45E-02	8.03E-02
	400.65	11.40	4.41E-01		-8.39E-02	2.01E-01
RB-82	776.52	13.00	5.72E-01	5.72E-01	1.80E-01	2.53E-01
RB-83	520.41	46.00	1.22E-01	1.22E-01	-4.15E-02	5.47E-02
	529.64	30.30	1.91E-01		1.32E-03	8.61E-02
	552.65	16.40	3.63E-01		3.22E-02	1.63E-01
KR-85	513.99	0.43	1.95E+01	1.95E+01	1.96E+01	9.11E+00
SR-85	513.99	99.27	8.55E-02	8.55E-02	8.61E-02	3.99E-02
Y-88	898.02	93.40	8.71E-02	8.71E-02	-5.82E-03	3.83E-02
	1836.01	99.38	9.12E-02		1.25E-02	3.62E-02
NB-93M	16.57	9.43	2.26E-01	2.26E-01	3.93E-01	1.08E-01
NB-94	702.63	100.00	7.39E-02	7.39E-02	4.10E-03	3.31E-02
	871.10	100.00	7.89E-02		4.22E-02	3.47E-02
NB-95	765.79	99.81	7.81E-02	7.81E-02	3.43E-02	3.48E-02
NB-95M	235.69	25.00	1.86E-01	1.86E-01	1.72E-02	8.74E-02
ZR-95	724.18	43.70	1.68E-01	1.18E-01	1.48E-02	7.51E-02
	756.72	55.30	1.18E-01		-2.35E-02	5.17E-02
MO-99	181.06	6.20	6.86E-01	5.86E-01	-1.33E-01	3.24E-01
	739.58	12.80	5.86E-01		3.32E-02	2.59E-01
	778.00	4.50	1.67E+00		5.58E-01	7.36E-01
+ RU-103	497.08	* 89.00	2.61E-02	2.61E-02	3.06E-02	9.97E-03
RU-106	621.84	9.80	6.69E-01	6.69E-01	-7.11E-02	3.00E-01
AG-108M	433.93	89.90	5.03E-02	5.03E-02	-2.10E-02	2.25E-02
	614.37	90.40	7.66E-02		-1.10E-02	3.46E-02
	722.95	90.50	8.70E-02		1.43E-02	3.91E-02
CD-109	88.03	3.72	7.59E-01	7.59E-01	-6.11E-01	3.62E-01
AG-110M	657.75	93.14	6.59E-02	6.59E-02	-4.97E-02	2.91E-02
	677.61	10.53	5.71E-01		2.66E-02	2.50E-01
	706.67	16.46	4.27E-01		1.32E-03	1.90E-01
	763.93	21.98	3.38E-01		4.22E-02	1.50E-01
	884.67	71.63	9.71E-02		-6.90E-03	4.18E-02
	1384.27	23.94	3.20E-01		2.77E-02	1.29E-01
CD-113M	263.70	0.02	1.86E+02	1.86E+02	6.77E+01	8.64E+01
SN-113	255.12	1.93	2.17E+00	6.77E-02	-4.22E-01	1.01E+00
	391.69	64.90	6.77E-02		-1.54E-02	3.05E-02
TE123M	159.00	84.10	3.98E-02	3.98E-02	2.69E-02	1.87E-02
SB-124	602.71	97.87	5.89E-02	5.89E-02	-4.36E-02	2.61E-02
	645.85	7.26	8.32E-01		-1.64E-01	3.67E-01
	722.78	11.10	6.99E-01		4.11E-02	3.14E-01
	1691.02	49.00	1.59E-01		-1.76E-02	6.14E-02
I-125	35.49	6.49	3.08E-01	3.08E-01	-7.26E-02	1.47E-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	5.17E-01	1.66E-01	-3.25E-02	2.43E-01
	427.89	29.33	1.66E-01		-6.85E-04	7.47E-02
	463.38	10.35	4.74E-01		-4.58E-02	2.12E-01
	600.56	17.80	3.29E-01		-1.50E-01	1.46E-01
	635.90	11.32	4.44E-01		-2.19E-01	1.91E-01
SB-126	414.70	83.30	5.55E-02	5.55E-02	-9.87E-03	2.50E-02
	666.33	99.60	6.61E-02		1.04E-02	2.93E-02
	695.00	99.60	6.89E-02		-2.05E-02	3.06E-02
	720.50	53.80	1.45E-01		5.17E-02	6.53E-02
+ SN-126	87.57	*	1.15E-01	1.15E-01	2.33E-02	5.56E-02
SB-127	473.00	25.00	2.24E-01	1.64E-01	6.45E-02	1.01E-01
	685.20	35.70	1.64E-01		-6.82E-02	7.09E-02
	783.80	14.70	4.25E-01		-1.69E-01	1.82E-01
I-129	29.78	57.00	3.80E-02	3.80E-02	1.50E-02	1.82E-02
	33.60	13.20	1.58E-01		1.05E-01	7.56E-02
	39.58	7.52	2.67E-01		-1.68E-01	1.27E-01
I-131	284.30	6.05	7.09E-01	5.40E-02	1.31E-01	3.27E-01
	364.48	81.20	5.40E-02		-5.11E-03	2.44E-02
	636.97	7.26	7.32E-01		-3.65E-01	3.17E-01
	722.89	1.80	4.39E+00		2.59E-01	1.97E+00
TE-132	49.72	13.10	1.79E-01	4.79E-02	3.73E-02	8.56E-02
	228.16	88.00	4.79E-02		-8.76E-05	2.23E-02
BA-133	81.00	33.00	7.61E-02	7.19E-02	-1.40E-02	3.62E-02
	302.84	17.80	2.74E-01		6.37E-02	1.28E-01
	356.01	60.00	7.19E-02		-2.44E-02	3.27E-02
I-133	529.87	86.30	8.21E-02	8.21E-02	5.66E-04	3.69E-02
XE-133	81.00	38.00	6.84E-02	6.84E-02	-1.26E-02	3.25E-02
CS-134	563.23	8.38	7.09E-01	5.91E-02	1.46E-01	3.18E-01
	569.32	15.43	3.60E-01		1.23E-01	1.60E-01
	604.70	97.60	5.91E-02		-3.53E-02	2.62E-02
	795.84	85.40	8.25E-02		1.91E-02	3.61E-02
	801.93	8.73	8.34E-01		0.00E+00	3.67E-01
	268.24	16.00	2.58E-01		2.58E-01	-5.08E-02	1.19E-01
I-135	1131.51	22.50	5.68E-01	3.54E-01	-7.57E-02	2.33E-01
	1260.41	28.60	3.54E-01		3.29E-02	1.33E-01
	1678.03	9.54	1.79E+00		7.61E-01	7.23E-01
CS-136	153.22	7.46	4.29E-01	5.86E-02	4.79E-02	2.01E-01
	163.89	4.61	6.55E-01		-4.20E-01	3.05E-01
	176.55	13.56	2.67E-01		-1.67E-02	1.25E-01
	273.65	12.66	3.45E-01		1.42E-01	1.60E-01
	340.57	48.50	1.05E-01		2.96E-02	4.83E-02
	818.50	99.70	5.86E-02		-1.45E-02	2.47E-02
	1048.07	79.60	8.03E-02		3.05E-03	3.29E-02
	1235.34	19.70	3.30E-01		2.52E-02	1.31E-01
	661.65	85.12	8.33E-02		8.33E-02	3.95E-02	3.74E-02
LA-138	788.74	34.00	1.89E-01	1.20E-01	1.43E-02	8.17E-02
	1435.80	66.00	1.20E-01		2.55E-02	4.84E-02
CE-139	165.85	80.35	3.75E-02	3.75E-02	-1.15E-02	1.75E-02
BA-140	162.64	6.70	4.64E-01	2.30E-01	-9.66E-02	2.17E-01
	304.84	4.50	1.12E+00		3.42E-01	5.23E-01
	423.70	3.20	1.64E+00		6.34E-01	7.44E-01
	437.55	2.00	2.55E+00		4.06E-01	1.15E+00
	537.32	25.00	2.30E-01		6.45E-02	1.03E-01

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Analysis Report for 1510088-02

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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	2.39E-01	7.84E-02	4.22E-02	1.11E-01		
	487.03	45.50	1.21E-01		3.00E-02	5.44E-02		
	815.85	23.50	2.37E-01		-7.43E-02	9.93E-02		
	1596.49	95.49	7.84E-02		6.52E-03	3.04E-02		
CE-141	145.44	48.40	7.38E-02	7.38E-02	5.04E-02	3.50E-02		
	CE-143	57.36	11.80		2.11E-01	1.06E-01	-3.19E-01	1.00E-01
		293.26	42.00		1.06E-01	-5.13E-02	4.87E-02	
	664.55	5.20	1.50E+00		3.53E-01	6.71E-01		
CE-144	133.54	10.80	2.72E-01	2.72E-01	3.76E-02	1.28E-01		
PM-144	476.78	42.00	1.22E-01	7.06E-02	1.16E-02	5.49E-02		
	618.01	98.60	7.06E-02		1.71E-02	3.19E-02		
	696.49	99.49	7.24E-02		5.04E-03	3.23E-02		
PM-145	36.85	21.70	8.93E-02	5.03E-02	-7.15E-02	4.25E-02		
	37.36	39.70	5.03E-02		-5.85E-03	2.40E-02		
	42.30	15.10	1.43E-01		5.01E-02	6.85E-02		
	72.40	2.31	1.06E+00		4.32E-01	5.07E-01		
PM-146	453.90	39.94	1.42E-01	1.42E-01	2.83E-02	6.47E-02		
	735.90	14.01	4.66E-01		7.09E-03	2.04E-01		
	747.13	13.10	4.50E-01		2.31E-02	1.94E-01		
ND-147	91.11	28.90	1.14E-01	1.14E-01	1.24E-01	5.47E-02		
	531.02	13.10	4.50E-01		2.92E-02	2.02E-01		
PM-149	285.90	3.10	1.46E+00	1.46E+00	4.05E-01	6.73E-01		
EU-152	121.78	20.50	1.36E-01	1.36E-01	2.06E-02	6.42E-02		
	244.69	5.40	7.91E-01		-3.01E-01	3.70E-01		
	344.27	19.13	2.67E-01		5.74E-02	1.23E-01		
	778.89	9.20	7.69E-01		2.56E-01	3.38E-01		
	964.01	10.40	7.26E-01		-3.34E-02	3.13E-01		
	1085.78	7.22	7.22E-01		-3.01E-01	2.80E-01		
	1112.02	9.60	7.71E-01		-2.12E-01	3.23E-01		
	1407.95	14.94	3.97E-01		-1.11E-01	1.49E-01		
	GD-153	97.43	31.30		9.08E-02	9.08E-02	1.09E-02	4.32E-02
		103.18	22.20		1.18E-01		2.91E-02	5.58E-02
EU-154	123.07	40.50	6.54E-02	6.54E-02	-1.89E-02	3.07E-02		
	723.30	19.70	4.00E-01		6.55E-02	1.80E-01		
	873.19	11.50	6.88E-01		2.46E-01	3.02E-01		
	996.32	10.30	7.57E-01		1.94E-01	3.26E-01		
	1004.76	17.90	4.24E-01		0.00E+00	1.82E-01		
	1274.45	35.50	2.00E-01		4.10E-02	8.08E-02		
+ EU-155	86.50	* 30.90	1.37E-01	1.26E-01	2.79E-02	6.66E-02		
	105.30	20.70	1.26E-01		-5.50E-02	5.97E-02		
EU-156	811.77	10.40	6.22E-01	6.22E-01	-8.18E-04	2.68E-01		
	1153.47	7.20	1.02E+00		7.53E-02	4.25E-01		
	1230.71	8.90	7.82E-01		1.66E-01	3.16E-01		
HO-166M	184.41	72.60	5.93E-02	5.93E-02	4.85E-02	2.81E-02		
	280.45	29.60	1.48E-01		1.59E-02	6.85E-02		
	410.94	11.10	4.52E-01		8.46E-02	2.05E-01		
	711.69	54.10	1.17E-01		4.07E-03	5.11E-02		
TM-171	66.72	0.14	1.91E+01	1.91E+01	8.10E+00	9.15E+00		
HF-172	81.75	4.52	5.59E-01	2.41E-01	-1.24E-01	2.65E-01		
	125.81	11.30	2.41E-01		-3.54E-02	1.13E-01		
LU-172	181.53	20.60	2.08E-01	1.01E-01	-4.16E-02	9.83E-02		
	810.06	16.63	4.06E-01		-9.62E-04	1.76E-01		
	912.12	15.25	5.13E-01		6.27E-02	2.23E-01		

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Analysis Report for 1510088-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
LU-172	1093.66	62.50	1.01E-01	1.01E-01	-3.39E-02	4.09E-02
LU-173	100.72	5.24	4.98E-01	1.94E-01	7.56E-02	2.35E-01
	272.11	21.20	1.94E-01		-6.75E-02	8.96E-02
HF-175	343.40	84.00	5.85E-02	5.85E-02	-1.75E-02	2.70E-02
LU-176	88.34	13.30	2.27E-01	5.00E-02	2.86E-02	1.08E-01
	201.83	86.00	5.00E-02		1.79E-02	2.36E-02
	306.78	94.00	5.17E-02		-2.71E-03	2.40E-02
TA-182	67.75	41.20	6.33E-02	6.33E-02	1.69E-02	3.02E-02
	1121.30	34.90	1.93E-01		-3.91E-02	7.90E-02
	1189.05	16.23	4.86E-01		4.21E-02	2.04E-01
	1221.41	26.98	2.36E-01		-3.60E-02	9.35E-02
	1231.02	11.44	6.02E-01		1.28E-01	2.43E-01
IR-192	308.46	29.68	1.68E-01	1.07E-01	4.27E-02	7.80E-02
	468.07	48.10	1.07E-01		-7.22E-03	4.81E-02
HG-203	279.19	77.30	5.65E-02	5.65E-02	1.13E-02	2.62E-02
BI-207	569.67	97.72	5.69E-02	5.69E-02	1.94E-02	2.52E-02
	1063.62	74.90	1.11E-01		-2.84E-02	4.77E-02
TL-208	583.14	30.22	2.11E-01	2.11E-01	1.02E-01	9.47E-02
	860.37	4.48	1.70E+00		5.20E-01	7.43E-01
	2614.66	35.85	3.75E-01		9.14E-02	1.54E-01
BI-210M	262.00	45.00	9.37E-02	9.37E-02	-3.61E-03	4.35E-02
	300.00	23.00	2.04E-01		2.15E-02	9.46E-02
PB-210	46.50	4.25	5.12E-01	5.12E-01	5.59E-02	2.44E-01
PB-211	404.84	2.90	1.94E+00	1.94E+00	9.67E-01	8.92E-01
	831.96	2.90	2.33E+00		-1.54E-01	1.01E+00
BI-212	727.17	11.80	5.17E-01	5.17E-01	1.12E-01	2.25E-01
	1620.62	2.75	2.72E+00		1.51E-01	1.05E+00
PB-212	238.63	44.60	1.05E-01	1.05E-01	6.62E-02	4.92E-02
	300.09	3.41	1.38E+00		1.45E-01	6.38E-01
BI-214	609.31	46.30	1.51E-01	1.51E-01	2.35E-02	6.81E-02
	1120.29	15.10	4.45E-01		-5.22E-02	1.82E-01
	1764.49	15.80	5.08E-01		1.41E-02	1.97E-01
	2204.22	4.98	1.17E+00		5.32E-02	3.71E-01
PB-214	295.21	19.19	2.22E-01	1.29E-01	1.82E-02	1.02E-01
	351.92	37.19	1.29E-01		2.33E-02	5.95E-02
RN-219	401.80	6.50	8.04E-01	8.04E-01	7.87E-02	3.68E-01
RA-223	323.87	3.88	1.12E+00	1.12E+00	-2.62E-01	5.15E-01
RA-224	240.98	3.95	1.17E+00	1.17E+00	2.92E-01	5.47E-01
RA-225	40.00	31.00	6.58E-02	6.58E-02	-4.14E-02	3.14E-02
RA-226	186.21	3.28	1.27E+00	1.27E+00	4.69E-01	6.03E-01
TH-227	50.10	8.40	2.66E-01	2.66E-01	5.53E-02	1.27E-01
	236.00	11.50	3.86E-01		3.58E-02	1.81E-01
	256.20	6.30	6.56E-01		-2.00E-01	3.05E-01
AC-228	338.32	11.40	4.28E-01	2.82E-01	1.61E-02	1.98E-01
	911.07	27.70	2.82E-01		2.15E-02	1.23E-01
	969.11	16.60	3.91E-01		2.78E-02	1.64E-01
TH-230	48.44	16.90	1.33E-01	1.33E-01	5.85E-02	6.35E-02
	62.85	4.60	5.75E-01		4.01E-01	2.76E-01
	67.67	0.37	7.03E+00		1.88E+00	3.36E+00
PA-231	283.67	1.60	2.62E+00	2.12E+00	2.12E-01	1.21E+00
	302.67	2.30	2.12E+00		4.93E-01	9.87E-01
TH-231	25.64	14.70	1.47E-01	1.47E-01	-7.11E-02	7.06E-02
	84.21	6.40	4.12E-01		-7.10E-02	1.96E-01

Analysis Report for 1510088-02

BLANK

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	1.24E-01	1.24E-01	2.51E-02	5.72E-02
PA-234	131.20	20.40	1.41E-01	1.41E-01	1.24E-03	6.64E-02
	733.99	8.80	7.58E-01		-1.13E-02	3.33E-01
	946.00	12.00	4.76E-01		-1.00E-01	1.95E-01
PA-234M	1001.03	0.92	9.31E+00	9.31E+00	2.78E+00	4.06E+00
TH-234	63.29	3.80	7.04E-01	7.04E-01	5.34E-01	3.37E-01
U-235	143.76	10.50	3.27E-01	3.27E-01	8.87E-02	1.55E-01
	163.35	4.70	6.32E-01		-4.05E-01	2.95E-01
	205.31	4.70	8.44E-01		-1.52E-02	3.96E-01
+ NP-237	86.50 *	12.60	3.37E-01	3.37E-01	6.85E-02	1.63E-01
NP-239	106.10	22.70	1.25E-01	1.25E-01	-5.43E-02	5.89E-02
	228.18	10.70	4.05E-01		-1.03E-01	1.89E-01
	277.60	14.10	3.22E-01		-6.01E-02	1.49E-01
AM-241	59.54	35.90	7.25E-02	7.25E-02	6.14E-02	3.48E-02
AM-243	74.67	66.00	3.81E-02	3.81E-02	4.45E-03	1.81E-02
CM-243	209.75	3.29	1.18E+00	3.01E-01	-5.54E-02	5.50E-01
	228.14	10.60	3.77E-01		-6.89E-04	1.76E-01
	277.60	14.00	3.01E-01		-5.62E-02	1.39E-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.

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Analysis Report for 1510088-02
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: 3653

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	7	44
17:	43	33	27	41	28	23	21	14	14
25:	33	19	18	13	27	19	20	19	19
33:	20	13	18	20	10	10	17	9	9
41:	27	14	16	14	25	26	15	16	16
49:	12	12	16	20	8	11	14	22	22
57:	11	12	18	13	20	31	38	24	24
65:	11	9	15	15	11	16	19	14	14
73:	13	10	18	15	15	13	9	13	13
81:	21	12	12	11	15	22	13	12	12
89:	9	18	28	32	31	15	11	11	11
97:	13	6	16	11	11	13	12	7	7
105:	7	15	10	8	12	13	18	12	12
113:	13	16	10	7	17	4	12	9	9
121:	7	7	12	12	9	6	7	10	10
129:	10	12	14	6	14	6	8	4	4
137:	12	10	10	9	7	11	10	21	21
145:	12	14	13	15	10	11	4	8	8
153:	4	11	8	10	15	8	10	8	8
161:	7	9	11	5	4	7	3	11	11
169:	7	10	4	11	12	5	13	12	12
177:	11	6	7	6	18	12	16	13	13
185:	21	12	8	9	10	5	9	11	11
193:	8	13	12	12	15	12	9	15	15
201:	8	12	9	9	9	11	3	6	6
209:	13	6	11	3	11	8	8	5	5
217:	4	9	4	4	13	7	5	6	6
225:	8	11	7	9	8	7	6	6	6
233:	7	8	12	4	11	13	12	12	12
241:	6	8	8	8	3	2	16	5	5
249:	9	6	7	4	10	7	11	8	8
257:	3	4	8	3	6	8	10	7	7
265:	9	3	5	5	5	5	8	6	6
273:	7	4	6	8	7	8	4	2	2
281:	6	7	7	6	3	6	8	4	4
289:	1	3	6	3	9	1	8	5	5
297:	4	7	4	8	8	4	8	5	5
305:	9	7	5	8	4	8	6	8	8
313:	6	4	4	3	7	1	3	5	5
321:	6	6	6	3	6	2	4	11	11
329:	4	5	6	9	5	2	4	7	7
337:	5	6	5	4	7	8	4	4	4
345:	3	4	8	9	3	8	2	5	5
353:	3	2	3	5	6	2	5	4	4
361:	1	4	4	5	6	5	2	0	0

369: 3 5 2 3 3 3 5 4

Sample Title: BLANK

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

801: 1 2 3 2 2 1 2 2

Sample Title: BLANK

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

1233: 3 0 0 0 1 0 1 0

Sample Title: BLANK

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

1665: 0 2 1 1 2 1 0 0

Sample Title: BLANK

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

2097: 0 0 0 2 1 1 0 0

Sample Title: BLANK

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

2529: 0 1 0 0 0 0 0 0 0

Sample Title: BLANK

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	0	1	0	0	2	2
2545:	0	0	0	0	1	0	0	0
2553:	0	0	0	0	0	0	0	1
2561:	0	1	0	0	0	0	0	1
2569:	0	0	0	1	0	0	0	0
2577:	0	0	0	0	0	0	0	0
2585:	0	0	0	0	0	0	0	1
2593:	0	0	0	0	1	0	0	0
2601:	0	0	0	0	0	0	0	1
2609:	1	0	0	0	0	2	4	0
2617:	1	0	0	0	0	0	0	0
2625:	0	1	0	0	0	0	1	0
2633:	0	0	0	0	0	0	0	0
2641:	0	0	0	1	0	0	0	0
2649:	0	0	1	0	0	0	0	0
2657:	0	1	0	1	1	0	0	0
2665:	0	1	0	0	0	0	0	0
2673:	0	0	0	0	1	0	0	0
2681:	0	0	1	1	0	0	0	0
2689:	0	0	0	0	0	0	0	1
2697:	1	0	0	1	0	1	1	0
2705:	0	0	0	1	0	0	0	0
2713:	0	0	0	0	0	0	1	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	0	0	0	0
2753:	1	1	0	1	0	1	0	0
2761:	1	0	0	0	0	0	0	0
2769:	0	1	0	0	1	0	1	1
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	1	0	0	0	0
2793:	0	0	0	0	0	0	0	0
2801:	1	0	0	0	0	0	1	0
2809:	1	0	1	0	0	0	0	0
2817:	0	0	1	0	0	1	0	0
2825:	0	0	0	0	0	0	0	0
2833:	0	1	0	1	0	0	0	0
2841:	0	0	0	0	0	1	0	0
2849:	0	1	0	0	0	0	1	0
2857:	0	1	0	0	0	0	0	1
2865:	0	0	0	1	1	0	0	0
2873:	0	0	0	0	0	0	1	0
2881:	0	0	0	0	1	0	0	0
2889:	0	0	0	0	0	0	1	0
2897:	0	2	0	0	0	0	0	0
2905:	0	0	0	1	0	0	1	0
2913:	0	0	0	0	0	0	0	1
2921:	0	0	0	0	0	1	0	0
2929:	0	0	0	0	0	0	1	1
2937:	0	0	0	0	1	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	1	0	0	0	0	0	1

2961: 1 0 1 0 0 0 0 0

Sample Title: BLANK

Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	0	0	0	0	0
2977:	0	1	0	1	0	0	0	0
2985:	0	0	0	0	0	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	0	0	0	0	0	0	0
3009:	0	1	0	0	1	0	0	0
3017:	0	0	0	0	0	0	0	2
3025:	0	0	0	0	0	0	1	0
3033:	0	0	0	0	1	0	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	1	0	0	0	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	1	0	0	1	0	0	0
3073:	0	1	0	0	0	0	0	0
3081:	0	0	0	1	0	0	1	0
3089:	0	0	0	0	1	0	0	1
3097:	1	1	0	0	0	0	0	0
3105:	0	0	0	0	0	0	0	0
3113:	1	0	0	0	0	0	0	0
3121:	0	0	0	0	0	0	0	0
3129:	0	1	0	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	0	0	1	0	1	0	0	0
3153:	0	1	0	0	0	0	1	0
3161:	0	0	0	0	1	0	1	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	1	1	0	0	0	1	0
3193:	0	1	0	0	0	0	0	0
3201:	0	0	0	0	0	1	0	0
3209:	0	1	1	0	1	0	0	0
3217:	1	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	0	1	0	0
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	1	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	1	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	1
3297:	0	0	0	0	1	0	0	0
3305:	0	0	1	0	1	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	0	0	1	0	0
3345:	0	0	0	0	0	0	0	1
3353:	0	0	1	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	1	0	0	0	0	1	0	0
3377:	1	0	0	0	0	0	0	0
3385:	0	1	0	0	0	0	0	0

3393: 1 0 1 0 0 0 0 0

Sample Title: BLANK

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	2	0	0
3417:	0	0	0	0	0	1	0	0	0
3425:	0	0	1	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	1	0
3441:	0	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0	0
3457:	0	0	1	0	0	0	0	0	0
3465:	0	0	0	1	0	0	0	0	0
3473:	0	1	0	0	0	0	0	1	0
3481:	0	0	0	0	0	0	0	1	0
3489:	0	0	0	0	0	1	0	0	1
3497:	0	0	0	0	0	0	1	0	0
3505:	0	0	0	0	0	0	1	0	0
3513:	0	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0	1
3529:	0	1	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	1	0
3545:	0	0	0	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	1	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0	0
3609:	0	0	0	2	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	1	0
3633:	1	0	0	0	0	0	0	1	0
3641:	0	1	0	0	0	0	1	0	0
3649:	0	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	1	0	0
3665:	1	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	1	0	0
3681:	0	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0	0
3705:	0	1	0	0	0	0	0	0	1
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	1
3737:	0	0	0	0	0	1	0	1	0
3745:	0	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	1	0	0	0
3761:	0	0	0	0	0	0	0	1	0
3769:	0	0	0	0	0	0	0	1	0
3777:	0	1	0	0	0	0	0	0	0
3785:	1	1	0	1	0	0	0	0	0
3793:	0	0	1	0	0	0	0	1	0
3801:	0	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0	1
3817:	0	0	0	1	0	0	0	0	0

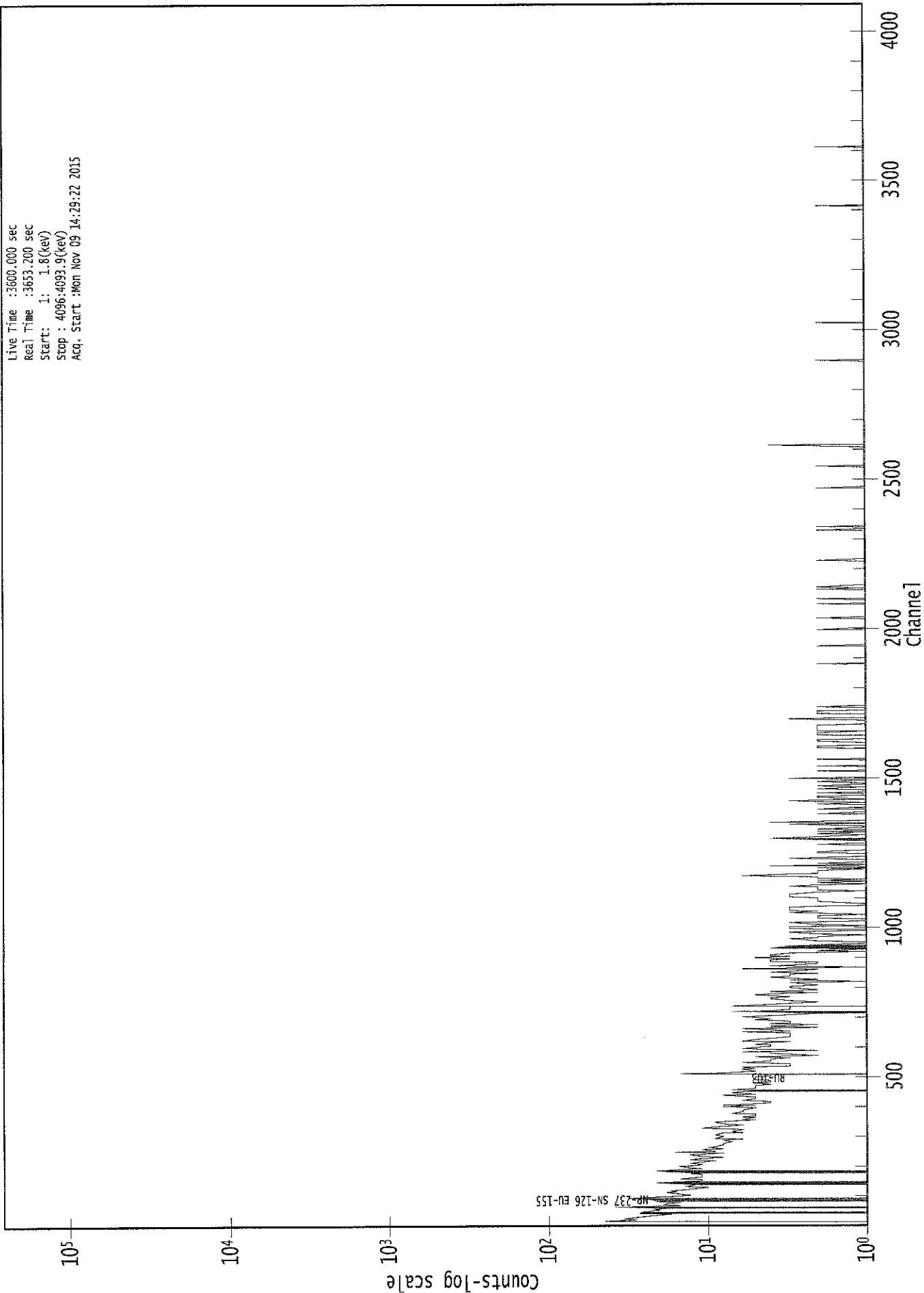
3825: 0 0 0 1 0 0 0 0

Sample Title: BLANK

Channel	1	2	3	4	5	6	7	8	9
3833:	0	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0	0
3873:	0	0	0	0	1	0	0	0	0
3881:	0	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	1	0	0
3897:	1	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	1	1	1
3913:	0	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	0	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	0	0	0	0	0	0	0
3969:	0	0	0	0	0	1	0	0	0
3977:	0	0	0	0	0	1	0	0	0
3985:	0	1	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	1	0	0	0
4009:	0	0	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	1	0	1	1	0	0
4041:	0	0	1	0	0	0	0	0	0
4049:	0	1	0	0	1	1	0	0	0
4057:	0	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	1	1	1
4073:	0	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0	0
4089:	0	1	0	0	0	0	0	1	1

0000029346.CNF

Live Time : 3600.000 sec
Real Time : 3653.200 sec
Start : 1: 1.8(keV)
Stop : 4096.4093.9(keV)
Acq. Start : Mon Nov 09 14:29:22 2015



100000 :

V.S.
11/9/15Analysis Report for 1510088-03
CP4104S03-04

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-03
Sample Description : CP4104S03-04
Sample Type : SOIL

Sample Size : 5.687E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 8:56:40AM
Acquisition Started : 11/9/2015 1:33:59PM

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 : 29342

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

ACG
11/10/15

: 00392

Analysis Report for 1510088-03
CP4104S03-04

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 2:34:03PM
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	46.78	47.13	0.0000	0.00
2	63.39	63.74	0.0000	0.00
3	74.94	75.28	0.0000	0.00
4	77.47	77.81	0.0000	0.00
5	88.15	88.48	0.0000	0.00
6	120.74	121.06	0.0000	0.00
7	127.96	128.28	0.0000	0.00
8	152.62	152.93	0.0000	0.00
9	185.99	186.29	0.0000	0.00
10	209.65	209.95	0.0000	0.00
11	238.87	239.15	0.0000	0.00
12	242.56	242.85	0.0000	0.00
13	270.54	270.82	0.0000	0.00
14	277.92	278.19	0.0000	0.00
15	295.57	295.84	0.0000	0.00
16	300.58	300.84	0.0000	0.00
17	328.51	328.77	0.0000	0.00
18	338.53	338.78	0.0000	0.00
19	352.05	352.30	0.0000	0.00
20	402.46	402.69	0.0000	0.00
21	409.07	409.30	0.0000	0.00
22	433.39	433.61	0.0000	0.00
23	463.19	463.40	0.0000	0.00
24	492.49	492.69	0.0000	0.00
25	511.42	511.61	0.0000	0.00
26	563.19	563.37	0.0000	0.00
27	570.20	570.37	0.0000	0.00
28	579.83	580.00	0.0000	0.00
29	583.48	583.65	0.0000	0.00
30	606.02	606.18	0.0000	0.00
31	609.71	609.87	0.0000	0.00
32	727.57	727.69	0.0000	0.00
33	768.48	768.58	0.0000	0.00
34	785.12	785.22	0.0000	0.00
35	795.05	795.15	0.0000	0.00
36	842.26	842.34	0.0000	0.00
37	850.10	850.18	0.0000	0.00
38	861.14	861.21	0.0000	0.00
39	884.22	884.28	0.0000	0.00
40	911.75	911.80	0.0000	0.00
41	915.14	915.20	0.0000	0.00
42	932.89	932.94	0.0000	0.00

Analysis Report for 1510088-03
CP4104S03-04

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	964.68	964.71	0.0000	0.00
44	969.53	969.57	0.0000	0.00
45	972.97	973.00	0.0000	0.00
46	1000.44	1000.46	0.0000	0.00
47	1120.81	1120.79	0.0000	0.00
48	1197.34	1197.30	0.0000	0.00
49	1235.10	1235.04	0.0000	0.00
50	1238.70	1238.64	0.0000	0.00
51	1252.22	1252.16	0.0000	0.00
52	1315.77	1315.68	0.0000	0.00
53	1378.40	1378.29	0.0000	0.00
54	1461.48	1461.33	0.0000	0.00
55	1505.76	1505.60	0.0000	0.00
56	1569.68	1569.50	0.0000	0.00
57	1589.06	1588.87	0.0000	0.00
58	1592.97	1592.78	0.0000	0.00
59	1622.54	1622.34	0.0000	0.00
60	1631.15	1630.94	0.0000	0.00
61	1714.59	1714.35	0.0000	0.00
62	1730.06	1729.82	0.0000	0.00
63	1748.31	1748.06	0.0000	0.00
64	1764.79	1764.53	0.0000	0.00
65	1869.58	1869.29	0.0000	0.00
66	1909.97	1909.66	0.0000	0.00
67	1939.15	1938.83	0.0000	0.00
68	2005.60	2005.25	0.0000	0.00
69	2104.34	2103.95	0.0000	0.00
70	2204.44	2204.01	0.0000	0.00
71	2347.85	2347.38	0.0000	0.00
72	2374.22	2373.73	0.0000	0.00
73	2382.49	2382.00	0.0000	0.00
74	2448.20	2447.68	0.0000	0.00
75	2457.04	2456.52	0.0000	0.00
76	2615.28	2614.70	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510088-03
CP4104S03-04

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 2:34:03PM

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	46.78	44 -	49	47.13	1.20E+02	70.87	9.12E+02	1.17
2	63.39	60 -	66	63.74	1.69E+02	105.37	1.90E+03	1.37
M 3	74.94	72 -	83	75.28	4.29E+02	96.36	1.39E+03	1.60
m 4	77.47	72 -	83	77.81	7.34E+02	103.39	1.34E+03	1.61
5	88.15	86 -	91	88.48	1.68E+02	98.15	1.79E+03	1.24
6	120.74	119 -	124	121.06	7.97E+01	65.25	7.95E+02	2.66
7	127.96	125 -	132	128.28	1.26E+02	88.27	1.22E+03	3.88
8	152.62	148 -	157	152.93	8.78E+01	99.98	1.37E+03	5.02
9	185.99	182 -	190	186.29	2.58E+02	88.24	1.04E+03	1.98
10	209.65	207 -	213	209.95	5.90E+01	69.57	8.32E+02	1.46
M 11	238.87	235 -	246	239.15	9.84E+02	78.20	4.57E+02	1.68
m 12	242.56	235 -	246	242.85	1.54E+02	61.74	4.63E+02	1.68
13	270.54	268 -	275	270.82	8.04E+01	59.60	5.43E+02	1.90
14	277.92	275 -	281	278.19	5.06E+01	53.81	4.83E+02	1.44
M 15	295.57	292 -	306	295.84	2.95E+02	48.17	2.66E+02	1.74
m 16	300.58	292 -	306	300.84	9.67E+01	39.75	2.10E+02	1.74
17	328.51	326 -	331	328.77	4.13E+01	45.18	3.75E+02	1.02
M 18	338.53	334 -	359	338.78	2.05E+02	45.33	3.05E+02	1.56
m 19	352.05	334 -	359	352.30	5.08E+02	56.52	2.47E+02	1.53
20	402.46	400 -	406	402.69	4.56E+01	37.41	2.23E+02	2.32
21	409.07	407 -	413	409.30	3.44E+01	39.88	2.67E+02	2.11
22	433.39	431 -	436	433.61	2.72E+01	30.58	1.66E+02	1.59
23	463.19	459 -	467	463.40	1.08E+02	42.52	2.12E+02	2.26
24	492.49	491 -	495	492.69	2.42E+01	22.25	8.37E+01	2.33
25	511.42	507 -	518	511.61	2.17E+02	57.86	3.03E+02	2.27
M 26	563.19	559 -	576	563.37	2.48E+01	27.53	1.26E+02	2.14
m 27	570.20	559 -	576	570.37	2.12E+01	27.17	1.26E+02	2.15
M 28	579.83	578 -	586	580.00	2.11E+01	16.89	7.14E+01	1.78
m 29	583.48	578 -	586	583.65	3.06E+02	41.58	1.12E+02	1.71
M 30	606.02	605 -	617	606.18	2.11E+01	13.19	5.15E+01	1.98
m 31	609.71	605 -	617	609.87	4.06E+02	47.22	1.37E+02	1.98
32	727.57	723 -	732	727.69	9.43E+01	39.15	1.65E+02	1.69
33	768.48	765 -	773	768.58	3.15E+01	36.80	1.89E+02	1.81
34	785.12	781 -	789	785.22	4.20E+01	31.35	1.24E+02	2.43
35	795.05	791 -	799	795.15	5.60E+01	34.06	1.44E+02	2.06
36	842.26	839 -	846	842.34	3.09E+01	24.98	7.42E+01	3.51
M 37	850.10	847 -	871	850.18	2.14E+01	19.07	3.82E+01	3.11
m 38	861.14	847 -	871	861.21	5.13E+01	26.82	6.63E+01	3.12
39	884.22	882 -	887	884.28	1.58E+01	17.55	5.03E+01	2.57
M 40	911.75	907 -	919	911.80	2.42E+02	35.13	5.40E+01	2.16

Analysis Report for 1510088-03

CP4104S03-04

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
m	41	915.14	907 -	919	915.20	2.33E+01	30.43	5.40E+01	2.16
	42	932.89	929 -	937	932.94	4.10E+01	30.44	1.18E+02	5.08
M	43	964.68	959 -	975	964.71	4.86E+01	40.94	1.37E+02	4.68
m	44	969.53	959 -	975	969.57	1.14E+02	29.09	6.48E+01	2.11
m	45	972.97	959 -	975	973.00	1.47E+01	23.96	6.07E+01	1.99
	46	1000.44	997 -	1006	1000.46	3.40E+01	31.24	1.20E+02	4.00
	47	1120.81	1117 -	1126	1120.79	9.30E+01	37.16	1.42E+02	1.84
	48	1197.34	1195 -	1200	1197.30	1.73E+01	18.63	5.35E+01	3.05
M	49	1235.10	1233 -	1243	1235.04	1.50E+01	15.10	5.15E+01	2.77
m	50	1238.70	1233 -	1243	1238.64	4.64E+01	25.48	7.10E+01	2.47
	51	1252.22	1250 -	1255	1252.16	1.79E+01	17.20	4.02E+01	3.30
	52	1315.77	1311 -	1321	1315.68	1.90E+01	23.90	6.60E+01	8.18
	53	1378.40	1374 -	1384	1378.29	2.00E+01	23.98	6.60E+01	2.21
	54	1461.48	1454 -	1467	1461.33	7.89E+02	60.53	5.70E+01	2.21
	55	1505.76	1496 -	1513	1505.60	2.44E+01	26.27	5.33E+01	8.61
	56	1569.68	1567 -	1571	1569.50	6.89E+00	6.96	4.22E+00	1.05
M	57	1589.06	1586 -	1599	1588.87	2.85E+01	10.63	7.00E+00	2.47
m	58	1592.97	1586 -	1599	1592.78	1.59E+01	13.89	1.57E+01	2.47
	59	1622.54	1617 -	1628	1622.34	2.45E+01	15.49	1.71E+01	7.69
	60	1631.15	1629 -	1633	1630.94	1.31E+01	7.89	1.86E+00	3.00
	61	1714.59	1709 -	1718	1714.35	1.47E+01	9.64	4.59E+00	1.22
	62	1730.06	1726 -	1732	1729.82	1.68E+01	11.17	1.05E+01	2.75
	63	1748.31	1744 -	1752	1748.06	9.06E+00	11.17	1.39E+01	2.72
	64	1764.79	1759 -	1769	1764.53	8.16E+01	20.21	1.08E+01	2.66
	65	1869.58	1867 -	1872	1869.29	7.00E+00	5.29	0.00E+00	3.41
	66	1909.97	1906 -	1912	1909.66	6.90E+00	8.03	6.20E+00	2.46
	67	1939.15	1936 -	1940	1938.83	4.92E+00	5.50	2.17E+00	1.07
	68	2005.60	2002 -	2008	2005.25	8.00E+00	5.66	0.00E+00	2.75
	69	2104.34	2099 -	2109	2103.95	2.10E+01	9.17	0.00E+00	3.98
	70	2204.44	2200 -	2209	2204.01	1.63E+01	15.52	2.54E+01	1.74
	71	2347.85	2344 -	2350	2347.38	8.00E+00	5.66	0.00E+00	2.15
	72	2374.22	2369 -	2377	2373.73	8.77E+00	9.62	8.46E+00	1.01
	73	2382.49	2378 -	2385	2382.00	1.30E+01	7.21	0.00E+00	4.33
	74	2448.20	2444 -	2451	2447.68	1.23E+01	8.49	3.43E+00	3.35
	75	2457.04	2454 -	2459	2456.52	5.79E+00	6.08	2.43E+00	2.84
	76	2615.28	2610 -	2618	2614.70	1.16E+02	22.19	4.29E+00	2.85

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 1510088-03

CP4104S03-04

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 2:34:03PM

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	46.78	44 - 49	1.20E+02	70.87	9.12E+02	5.54E+01
	2	63.39	60 - 66	1.69E+02	105.37	1.90E+03	8.39E+01
M	3	74.94	72 - 83	4.29E+02	96.36	1.39E+03	6.12E+01
m	4	77.47	72 - 83	7.34E+02	103.39	1.34E+03	6.02E+01
	5	88.15	86 - 91	1.68E+02	98.15	1.79E+03	7.78E+01
	6	120.74	119 - 124	7.97E+01	65.25	7.95E+02	5.16E+01
	7	127.96	125 - 132	1.26E+02	88.27	1.22E+03	7.02E+01
	8	152.62	148 - 157	8.78E+01	99.98	1.37E+03	4.77E+01
	9	185.99	182 - 190	2.58E+02	88.24	1.04E+03	6.75E+01
	10	209.65	207 - 213	5.90E+01	69.57	8.32E+02	5.58E+01
M	11	238.87	235 - 246	9.84E+02	78.20	4.57E+02	3.51E+01
m	12	242.56	235 - 246	1.54E+02	61.74	4.63E+02	3.54E+01
	13	270.54	268 - 275	8.04E+01	59.60	5.43E+02	4.67E+01
	14	277.92	275 - 281	5.06E+01	53.81	4.83E+02	4.27E+01
M	15	295.57	292 - 306	2.95E+02	48.17	2.66E+02	2.68E+01
m	16	300.58	292 - 306	9.67E+01	39.75	2.10E+02	2.38E+01
	17	328.51	326 - 331	4.13E+01	45.18	3.75E+02	3.56E+01
M	18	338.53	334 - 359	2.05E+02	45.33	3.05E+02	2.87E+01
m	19	352.05	334 - 359	5.08E+02	56.52	2.47E+02	2.58E+01
	20	402.46	400 - 406	4.56E+01	37.41	2.23E+02	2.87E+01
	21	409.07	407 - 413	3.44E+01	39.88	2.67E+02	3.13E+01
	22	433.39	431 - 436	2.72E+01	30.58	1.66E+02	2.36E+01
	23	463.19	459 - 467	1.08E+02	42.52	2.12E+02	3.05E+01
	24	492.49	491 - 495	2.42E+01	22.25	8.37E+01	1.64E+01
	25	511.42	507 - 518	2.17E+02	57.86	3.03E+02	4.09E+01
M	26	563.19	559 - 576	2.48E+01	27.53	1.26E+02	1.85E+01
m	27	570.20	559 - 576	2.12E+01	27.17	1.26E+02	1.85E+01
M	28	579.83	578 - 586	2.11E+01	16.89	7.14E+01	1.39E+01
m	29	583.48	578 - 586	3.06E+02	41.58	1.12E+02	1.74E+01
M	30	606.02	605 - 617	2.11E+01	13.19	5.15E+01	1.18E+01
m	31	609.71	605 - 617	4.06E+02	47.22	1.37E+02	1.93E+01
	32	727.57	723 - 732	9.43E+01	39.15	1.65E+02	2.79E+01
	33	768.48	765 - 773	3.15E+01	36.80	1.89E+02	2.88E+01
	34	785.12	781 - 789	4.20E+01	31.35	1.24E+02	2.35E+01
	35	795.05	791 - 799	5.60E+01	34.06	1.44E+02	2.51E+01
	36	842.26	839 - 846	3.09E+01	24.98	7.42E+01	1.84E+01
M	37	850.10	847 - 871	2.14E+01	19.07	3.82E+01	1.02E+01
m	38	861.14	847 - 871	5.13E+01	26.82	6.63E+01	1.34E+01
	39	884.22	882 - 887	1.58E+01	17.55	5.03E+01	1.29E+01
M	40	911.75	907 - 919	2.42E+02	35.13	5.40E+01	1.21E+01
m	41	915.14	907 - 919	2.33E+01	30.43	5.40E+01	1.21E+01

Analysis Report for 1510088-03

CP4104S03-04

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	42	932.89	929 -	937	4.10E+01	30.44	1.18E+02	2.27E+01
M	43	964.68	959 -	975	4.86E+01	40.94	1.37E+02	1.92E+01
m	44	969.53	959 -	975	1.14E+02	29.09	6.48E+01	1.32E+01
m	45	972.97	959 -	975	1.47E+01	23.96	6.07E+01	1.28E+01
	46	1000.44	997 -	1006	3.40E+01	31.24	1.20E+02	2.38E+01
	47	1120.81	1117 -	1126	9.30E+01	37.16	1.42E+02	2.61E+01
	48	1197.34	1195 -	1200	1.73E+01	18.63	5.35E+01	1.37E+01
M	49	1235.10	1233 -	1243	1.50E+01	15.10	5.15E+01	1.18E+01
m	50	1238.70	1233 -	1243	4.64E+01	25.48	7.10E+01	1.39E+01
	51	1252.22	1250 -	1255	1.79E+01	17.20	4.02E+01	1.23E+01
	52	1315.77	1311 -	1321	1.90E+01	23.90	6.60E+01	1.83E+01
	53	1378.40	1374 -	1384	2.00E+01	23.98	6.60E+01	1.83E+01
	54	1461.48	1454 -	1467	7.89E+02	60.53	5.70E+01	1.85E+01
	55	1505.76	1496 -	1513	2.44E+01	26.27	5.33E+01	2.00E+01
	56	1569.68	1567 -	1571	6.89E+00	6.96	4.22E+00	3.76E+00
M	57	1589.06	1586 -	1599	2.85E+01	10.63	7.00E+00	4.35E+00
m	58	1592.97	1586 -	1599	1.59E+01	13.89	1.57E+01	6.52E+00
	59	1622.54	1617 -	1628	2.45E+01	15.49	1.71E+01	9.80E+00
	60	1631.15	1629 -	1633	1.31E+01	7.89	1.86E+00	2.59E+00
	61	1714.59	1709 -	1718	1.47E+01	9.64	4.59E+00	4.81E+00
	62	1730.06	1726 -	1732	1.68E+01	11.17	1.05E+01	6.24E+00
	63	1748.31	1744 -	1752	9.06E+00	11.17	1.39E+01	7.73E+00
	64	1764.79	1759 -	1769	8.16E+01	20.21	1.08E+01	7.45E+00
	65	1869.58	1867 -	1872	7.00E+00	5.29	0.00E+00	0.00E+00
	66	1909.97	1906 -	1912	6.90E+00	8.03	6.20E+00	4.99E+00
	67	1939.15	1936 -	1940	4.92E+00	5.50	2.17E+00	2.67E+00
	68	2005.60	2002 -	2008	8.00E+00	5.66	0.00E+00	0.00E+00
	69	2104.34	2099 -	2109	2.10E+01	9.17	0.00E+00	0.00E+00
	70	2204.44	2200 -	2209	1.63E+01	15.52	2.54E+01	1.09E+01
	71	2347.85	2344 -	2350	8.00E+00	5.66	0.00E+00	0.00E+00
	72	2374.22	2369 -	2377	8.77E+00	9.62	8.46E+00	6.23E+00
	73	2382.49	2378 -	2385	1.30E+01	7.21	0.00E+00	0.00E+00
	74	2448.20	2444 -	2451	1.23E+01	8.49	3.43E+00	3.93E+00
	75	2457.04	2454 -	2459	5.79E+00	6.08	2.43E+00	3.06E+00
	76	2615.28	2610 -	2618	1.16E+02	22.19	4.29E+00	4.41E+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 1510088-03
 CP4104S03-04

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 2:34:03PM

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	46.78	44 -	49	47.13	1.20E+02	70.87	9.12E+02	PB-210
2	63.39	60 -	66	63.74	1.69E+02	105.37	1.90E+03	TH-234 TH-230
M 3	74.94	72 -	83	75.28	4.29E+02	96.36	1.39E+03	AM-243
m 4	77.47	72 -	83	77.81	7.34E+02	103.39	1.34E+03	TI-44
5	88.15	86 -	91	88.48	1.68E+02	98.15	1.79E+03	CD-109 LU-176 SN-126
6	120.74	119 -	124	121.06	7.97E+01	65.25	7.95E+02	SE-75
7	127.96	125 -	132	128.28	1.26E+02	88.27	1.22E+03	.....
8	152.62	148 -	157	152.93	8.78E+01	99.98	1.37E+03	CS-136
9	185.99	182 -	190	186.29	2.58E+02	88.24	1.04E+03	RA-226
10	209.65	207 -	213	209.95	5.90E+01	69.57	8.32E+02	CM-243 GA-67
M 11	238.87	235 -	246	239.15	9.84E+02	78.20	4.57E+02	PB-212
m 12	242.56	235 -	246	242.85	1.54E+02	61.74	4.63E+02	.....
13	270.54	268 -	275	270.82	8.04E+01	59.60	5.43E+02	.....
14	277.92	275 -	281	278.19	5.06E+01	53.81	4.83E+02	CM-243 NP-239
M 15	295.57	292 -	306	295.84	2.95E+02	48.17	2.66E+02	PB-214
m 16	300.58	292 -	306	300.84	9.67E+01	39.75	2.10E+02	GA-67 PB-212 BI-210M
17	328.51	326 -	331	328.77	4.13E+01	45.18	3.75E+02	LA-140
M 18	338.53	334 -	359	338.78	2.05E+02	45.33	3.05E+02	AC-228
m 19	352.05	334 -	359	352.30	5.08E+02	56.52	2.47E+02	PB-214
20	402.46	400 -	406	402.69	4.56E+01	37.41	2.23E+02	RN-219
21	409.07	407 -	413	409.30	3.44E+01	39.88	2.67E+02	.....
22	433.39	431 -	436	433.61	2.72E+01	30.58	1.66E+02	AG-108M
23	463.19	459 -	467	463.40	1.08E+02	42.52	2.12E+02	SB-125
24	492.49	491 -	495	492.69	2.42E+01	22.25	8.37E+01	.....
25	511.42	507 -	518	511.61	2.17E+02	57.86	3.03E+02	.....
M 26	563.19	559 -	576	563.37	2.48E+01	27.53	1.26E+02	CS-134
m 27	570.20	559 -	576	570.37	2.12E+01	27.17	1.26E+02	BI-207 CS-134
M 28	579.83	578 -	586	580.00	2.11E+01	16.89	7.14E+01	.....
m 29	583.48	578 -	586	583.65	3.06E+02	41.58	1.12E+02	TL-208
M 30	606.02	605 -	617	606.18	2.11E+01	13.19	5.15E+01	.....
m 31	609.71	605 -	617	609.87	4.06E+02	47.22	1.37E+02	BI-214
32	727.57	723 -	732	727.69	9.43E+01	39.15	1.65E+02	BI-212
33	768.48	765 -	773	768.58	3.15E+01	36.80	1.89E+02	.....

Analysis Report for 1510088-03

CP4104S03-04

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	34	785.12	781 -	789	785.22	4.20E+01	31.35	1.24E+02	.....
	35	795.05	791 -	799	795.15	5.60E+01	34.06	1.44E+02	CS-134
	36	842.26	839 -	846	842.34	3.09E+01	24.98	7.42E+01	.....
M	37	850.10	847 -	871	850.18	2.14E+01	19.07	3.82E+01	.....
m	38	861.14	847 -	871	861.21	5.13E+01	26.82	6.63E+01	TL-208
	39	884.22	882 -	887	884.28	1.58E+01	17.55	5.03E+01	AG-110M
M	40	911.75	907 -	919	911.80	2.42E+02	35.13	5.40E+01	LU-172 AC-228
m	41	915.14	907 -	919	915.20	2.33E+01	30.43	5.40E+01	.....
	42	932.89	929 -	937	932.94	4.10E+01	30.44	1.18E+02	.....
M	43	964.68	959 -	975	964.71	4.86E+01	40.94	1.37E+02	EU-152
m	44	969.53	959 -	975	969.57	1.14E+02	29.09	6.48E+01	AC-228
m	45	972.97	959 -	975	973.00	1.47E+01	23.96	6.07E+01	.....
	46	1000.44	997 -	1006	1000.46	3.40E+01	31.24	1.20E+02	PA-234M
	47	1120.81	1117 -	1126	1120.79	9.30E+01	37.16	1.42E+02	SC-46 TA-182 BI-214
M	48	1197.34	1195 -	1200	1197.30	1.73E+01	18.63	5.35E+01	.....
m	49	1235.10	1233 -	1243	1235.04	1.50E+01	15.10	5.15E+01	CS-136
	50	1238.70	1233 -	1243	1238.64	4.64E+01	25.48	7.10E+01	CO-56
	51	1252.22	1250 -	1255	1252.16	1.79E+01	17.20	4.02E+01	.....
	52	1315.77	1311 -	1321	1315.68	1.90E+01	23.90	6.60E+01	.....
	53	1378.40	1374 -	1384	1378.29	2.00E+01	23.98	6.60E+01	.....
	54	1461.48	1454 -	1467	1461.33	7.89E+02	60.53	5.70E+01	K-40
	55	1505.76	1496 -	1513	1505.60	2.44E+01	26.27	5.33E+01	.....
M	56	1569.68	1567 -	1571	1569.50	6.89E+00	6.96	4.22E+00	.....
m	57	1589.06	1586 -	1599	1588.87	2.85E+01	10.63	7.00E+00	.....
	58	1592.97	1586 -	1599	1592.78	1.59E+01	13.89	1.57E+01	.....
	59	1622.54	1617 -	1628	1622.34	2.45E+01	15.49	1.71E+01	.....
	60	1631.15	1629 -	1633	1630.94	1.31E+01	7.89	1.86E+00	.....
	61	1714.59	1709 -	1718	1714.35	1.47E+01	9.64	4.59E+00	.....
	62	1730.06	1726 -	1732	1729.82	1.68E+01	11.17	1.05E+01	.....
	63	1748.31	1744 -	1752	1748.06	9.06E+00	11.17	1.39E+01	.....
	64	1764.79	1759 -	1769	1764.53	8.16E+01	20.21	1.08E+01	BI-214
	65	1869.58	1867 -	1872	1869.29	7.00E+00	5.29	0.00E+00	.....
	66	1909.97	1906 -	1912	1909.66	6.90E+00	8.03	6.20E+00	.....
	67	1939.15	1936 -	1940	1938.83	4.92E+00	5.50	2.17E+00	.....
	68	2005.60	2002 -	2008	2005.25	8.00E+00	5.66	0.00E+00	.....
	69	2104.34	2099 -	2109	2103.95	2.10E+01	9.17	0.00E+00	.....
	70	2204.44	2200 -	2209	2204.01	1.63E+01	15.52	2.54E+01	BI-214
	71	2347.85	2344 -	2350	2347.38	8.00E+00	5.66	0.00E+00	.....
	72	2374.22	2369 -	2377	2373.73	8.77E+00	9.62	8.46E+00	.....
	73	2382.49	2378 -	2385	2382.00	1.30E+01	7.21	0.00E+00	.....
	74	2448.20	2444 -	2451	2447.68	1.23E+01	8.49	3.43E+00	.....
	75	2457.04	2454 -	2459	2456.52	5.79E+00	6.08	2.43E+00	.....
	76	2615.28	2610 -	2618	2614.70	1.16E+02	22.19	4.29E+00	TL-208

Analysis Report for 1510088-03
CP4104S03-04

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 2:34:03PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.78	1.20E+02	70.87	1.70E-02	1.78E-03
	2	63.39	1.69E+02	105.37	2.49E-02	1.91E-03
M	3	74.94	4.29E+02	96.36	2.75E-02	2.30E-03
m	4	77.47	7.34E+02	103.39	2.78E-02	2.39E-03
	5	88.15	1.68E+02	98.15	2.85E-02	2.74E-03
	6	120.74	7.97E+01	65.25	2.73E-02	2.09E-03
	7	127.96	1.26E+02	88.27	2.68E-02	2.08E-03
	8	152.62	8.78E+01	99.98	2.49E-02	2.14E-03
	9	185.99	2.58E+02	88.24	2.24E-02	2.03E-03
	10	209.65	5.90E+01	69.57	2.09E-02	1.85E-03
M	11	238.87	9.84E+02	78.20	1.92E-02	1.64E-03
m	12	242.56	1.54E+02	61.74	1.90E-02	1.61E-03
	13	270.54	8.04E+01	59.60	1.77E-02	1.40E-03
	14	277.92	5.06E+01	53.81	1.74E-02	1.35E-03
M	15	295.57	2.95E+02	48.17	1.67E-02	1.31E-03
m	16	300.58	9.67E+01	39.75	1.65E-02	1.30E-03
	17	328.51	4.13E+01	45.18	1.55E-02	1.24E-03
M	18	338.53	2.05E+02	45.33	1.52E-02	1.22E-03
m	19	352.05	5.08E+02	56.52	1.48E-02	1.19E-03
	20	402.46	4.56E+01	37.41	1.34E-02	1.10E-03
	21	409.07	3.44E+01	39.88	1.33E-02	1.10E-03
	22	433.39	2.72E+01	30.58	1.27E-02	1.07E-03
	23	463.19	1.08E+02	42.52	1.21E-02	1.04E-03
	24	492.49	2.42E+01	22.25	1.16E-02	1.01E-03
	25	511.42	2.17E+02	57.86	1.12E-02	9.90E-04
M	26	563.19	2.48E+01	27.53	1.04E-02	9.36E-04
m	27	570.20	2.12E+01	27.17	1.03E-02	9.29E-04
M	28	579.83	2.11E+01	16.89	1.02E-02	9.19E-04
m	29	583.48	3.06E+02	41.58	1.02E-02	9.15E-04
M	30	606.02	2.11E+01	13.19	9.87E-03	8.92E-04
m	31	609.71	4.06E+02	47.22	9.82E-03	8.88E-04
	32	727.57	9.43E+01	39.15	8.55E-03	7.75E-04
	33	768.48	3.15E+01	36.80	8.19E-03	7.38E-04
	34	785.12	4.20E+01	31.35	8.05E-03	7.24E-04

Analysis Report for 1510088-03
CP4104S03-04

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	35	795.05	5.60E+01	34.06	7.97E-03	7.15E-04
	36	842.26	3.09E+01	24.98	7.61E-03	6.72E-04
M	37	850.10	2.14E+01	19.07	7.56E-03	6.65E-04
m	38	861.14	5.13E+01	26.82	7.48E-03	6.55E-04
	39	884.22	1.58E+01	17.55	7.32E-03	6.35E-04
M	40	911.75	2.42E+02	35.13	7.14E-03	6.15E-04
m	41	915.14	2.33E+01	30.43	7.12E-03	6.13E-04
	42	932.89	4.10E+01	30.44	7.01E-03	6.04E-04
M	43	964.68	4.86E+01	40.94	6.83E-03	5.88E-04
m	44	969.53	1.14E+02	29.09	6.80E-03	5.85E-04
m	45	972.97	1.47E+01	23.96	6.78E-03	5.83E-04
	46	1000.44	3.40E+01	31.24	6.63E-03	5.69E-04
	47	1120.81	9.30E+01	37.16	6.06E-03	5.06E-04
	48	1197.34	1.73E+01	18.63	5.76E-03	4.75E-04
M	49	1235.10	1.50E+01	15.10	5.63E-03	4.68E-04
m	50	1238.70	4.64E+01	25.48	5.61E-03	4.68E-04
	51	1252.22	1.79E+01	17.20	5.57E-03	4.65E-04
	52	1315.77	1.90E+01	23.90	5.36E-03	4.54E-04
	53	1378.40	2.00E+01	23.98	5.18E-03	4.40E-04
	54	1461.48	7.89E+02	60.53	4.97E-03	4.19E-04
	55	1505.76	2.44E+01	26.27	4.87E-03	4.08E-04
	56	1569.68	6.89E+00	6.96	4.73E-03	3.92E-04
M	57	1589.06	2.85E+01	10.63	4.69E-03	3.87E-04
m	58	1592.97	1.59E+01	13.89	4.69E-03	3.86E-04
	59	1622.54	2.45E+01	15.49	4.63E-03	3.79E-04
	60	1631.15	1.31E+01	7.89	4.61E-03	3.77E-04
	61	1714.59	1.47E+01	9.64	4.47E-03	3.56E-04
	62	1730.06	1.68E+01	11.17	4.45E-03	3.52E-04
	63	1748.31	9.06E+00	11.17	4.42E-03	3.48E-04
	64	1764.79	8.16E+01	20.21	4.40E-03	3.44E-04
	65	1869.58	7.00E+00	5.29	4.25E-03	3.26E-04
	66	1909.97	6.90E+00	8.03	4.21E-03	3.26E-04
	67	1939.15	4.92E+00	5.50	4.17E-03	3.26E-04
	68	2005.60	8.00E+00	5.66	4.11E-03	3.26E-04
	69	2104.34	2.10E+01	9.17	4.02E-03	3.26E-04
	70	2204.44	1.63E+01	15.52	3.95E-03	3.26E-04
	71	2347.85	8.00E+00	5.66	3.87E-03	3.26E-04
	72	2374.22	8.77E+00	9.62	3.86E-03	3.26E-04
	73	2382.49	1.30E+01	7.21	3.86E-03	3.26E-04
	74	2448.20	1.23E+01	8.49	3.83E-03	3.26E-04
	75	2457.04	5.79E+00	6.08	3.83E-03	3.26E-04
	76	2615.28	1.16E+02	22.19	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 1510088-03

CP4104S03-04

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 2:34:03PM

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

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	1.20E+02	70.87	4.50E+01	8.46E+00	7.50E+01	7.14E+01
	2	1.69E+02	105.37	7.80E+01	1.33E+01	9.06E+01	1.06E+02
M	3	4.29E+02	96.36	5.09E+00	4.37E+00	4.24E+02	9.65E+01
m	4	7.34E+02	103.39	9.75E+00	8.28E+00	7.25E+02	1.04E+02
	5	1.68E+02	98.15			1.68E+02	9.81E+01
	6	7.97E+01	65.25			7.97E+01	6.52E+01
	7	1.26E+02	88.27			1.26E+02	8.83E+01
	8	8.78E+01	99.98			8.78E+01	1.00E+02
	9	2.58E+02	88.24	6.41E+01	7.38E+00	1.94E+02	8.85E+01
	10	5.90E+01	69.57			5.90E+01	6.96E+01
M	11	9.84E+02	78.20	2.34E+01	6.34E+00	9.61E+02	7.85E+01
m	12	1.54E+02	61.74			1.54E+02	6.17E+01
	13	8.04E+01	59.60			8.04E+01	5.96E+01
	14	5.06E+01	53.81			5.06E+01	5.38E+01
M	15	2.95E+02	48.17	4.17E+00	5.50E+00	2.91E+02	4.85E+01
m	16	9.67E+01	39.75			9.67E+01	3.97E+01
	17	4.13E+01	45.18			4.13E+01	4.52E+01
M	18	2.05E+02	45.33	2.22E-01	4.54E+00	2.05E+02	4.56E+01
m	19	5.08E+02	56.52	8.83E+00	4.91E+00	4.99E+02	5.67E+01
	20	4.56E+01	37.41			4.56E+01	3.74E+01
	21	3.44E+01	39.88			3.44E+01	3.99E+01
	22	2.72E+01	30.58			2.72E+01	3.06E+01
	23	1.08E+02	42.52			1.08E+02	4.25E+01
	24	2.42E+01	22.25			2.42E+01	2.23E+01
	25	2.17E+02	57.86	8.12E+01	5.49E+00	1.36E+02	5.81E+01
M	26	2.48E+01	27.53			2.48E+01	2.75E+01
m	27	2.12E+01	27.17			2.12E+01	2.72E+01
M	28	2.11E+01	16.89			2.11E+01	1.69E+01
m	29	3.06E+02	41.58	6.34E+00	3.74E+00	3.00E+02	4.18E+01
M	30	2.11E+01	13.19			2.11E+01	1.32E+01
m	31	4.06E+02	47.22	5.20E+00	3.69E+00	4.01E+02	4.74E+01
	32	9.43E+01	39.15			9.43E+01	3.92E+01
	33	3.15E+01	36.80			3.15E+01	3.68E+01
	34	4.20E+01	31.35			4.20E+01	3.14E+01
	35	5.60E+01	34.06			5.60E+01	3.41E+01
	36	3.09E+01	24.98			3.09E+01	2.50E+01
M	37	2.14E+01	19.07			2.14E+01	1.91E+01
m	38	5.13E+01	26.82			5.13E+01	2.68E+01
	39	1.58E+01	17.55			1.58E+01	1.75E+01
M	40	2.42E+02	35.13	3.28E+00	2.53E+00	2.38E+02	3.52E+01
m	41	2.33E+01	30.43			2.33E+01	3.04E+01
	42	4.10E+01	30.44			4.10E+01	3.04E+01
M	43	4.86E+01	40.94			4.86E+01	4.09E+01
m	44	1.14E+02	29.09			1.14E+02	2.91E+01

Analysis Report for 1510088-03

CP4104S03-04

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	45	972.97	1.47E+01	23.96			1.47E+01	2.40E+01
	46	1000.44	3.40E+01	31.24	4.17E+00	2.83E+00	2.98E+01	3.14E+01
	47	1120.81	9.30E+01	37.16	2.28E+00	2.55E+00	9.07E+01	3.72E+01
	48	1197.34	1.73E+01	18.63			1.73E+01	1.86E+01
M	49	1235.10	1.50E+01	15.10			1.50E+01	1.51E+01
m	50	1238.70	4.64E+01	25.48			4.64E+01	2.55E+01
	51	1252.22	1.79E+01	17.20			1.79E+01	1.72E+01
	52	1315.77	1.90E+01	23.90			1.90E+01	2.39E+01
	53	1378.40	2.00E+01	23.98			2.00E+01	2.40E+01
	54	1461.48	7.89E+02	60.53	6.46E+00	2.33E+00	7.83E+02	6.06E+01
	55	1505.76	2.44E+01	26.27			2.44E+01	2.63E+01
	56	1569.68	6.89E+00	6.96			6.89E+00	6.96E+00
M	57	1589.06	2.85E+01	10.63			2.85E+01	1.06E+01
m	58	1592.97	1.59E+01	13.89			1.59E+01	1.39E+01
	59	1622.54	2.45E+01	15.49			2.45E+01	1.55E+01
	60	1631.15	1.31E+01	7.89			1.31E+01	7.89E+00
	61	1714.59	1.47E+01	9.64			1.47E+01	9.64E+00
	62	1730.06	1.68E+01	11.17			1.68E+01	1.12E+01
	63	1748.31	9.06E+00	11.17			9.06E+00	1.12E+01
	64	1764.79	8.16E+01	20.21			8.16E+01	2.02E+01
	65	1869.58	7.00E+00	5.29			7.00E+00	5.29E+00
	66	1909.97	6.90E+00	8.03			6.90E+00	8.03E+00
	67	1939.15	4.92E+00	5.50			4.92E+00	5.50E+00
	68	2005.60	8.00E+00	5.66			8.00E+00	5.66E+00
	69	2104.34	2.10E+01	9.17			2.10E+01	9.17E+00
	70	2204.44	1.63E+01	15.52			1.63E+01	1.55E+01
	71	2347.85	8.00E+00	5.66			8.00E+00	5.66E+00
	72	2374.22	8.77E+00	9.62			8.77E+00	9.62E+00
	73	2382.49	1.30E+01	7.21			1.30E+01	7.21E+00
	74	2448.20	1.23E+01	8.49			1.23E+01	8.49E+00
	75	2457.04	5.79E+00	6.08			5.79E+00	6.08E+00
	76	2615.28	1.16E+02	22.19	3.47E+00	1.48E+00	1.12E+02	2.22E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 2:34:03PM
 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 1510088-03

CP4104S03-04

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.78	1.20E+02	70.87	4.50E+01	8.46E+00	7.50E+01	7.14E+01
	2	63.39	1.69E+02	105.37	7.80E+01	1.33E+01	9.06E+01	1.06E+02
M	3	74.94	4.29E+02	96.36	5.09E+00	4.37E+00	4.24E+02	9.65E+01
m	4	77.47	7.34E+02	103.39	9.75E+00	8.28E+00	7.25E+02	1.04E+02
	5	88.15	1.68E+02	98.15			1.68E+02	9.81E+01
	6	120.74	7.97E+01	65.25			7.97E+01	6.52E+01
	7	127.96	1.26E+02	88.27			1.26E+02	8.83E+01
	8	152.62	8.78E+01	99.98			8.78E+01	1.00E+02
	9	185.99	2.58E+02	88.24	6.41E+01	7.38E+00	1.94E+02	8.85E+01
	10	209.65	5.90E+01	69.57			5.90E+01	6.96E+01
M	11	238.87	9.84E+02	78.20	2.34E+01	6.34E+00	9.61E+02	7.85E+01
m	12	242.56	1.54E+02	61.74			1.54E+02	6.17E+01
	13	270.54	8.04E+01	59.60			8.04E+01	5.96E+01
	14	277.92	5.06E+01	53.81			5.06E+01	5.38E+01
M	15	295.57	2.95E+02	48.17	4.17E+00	5.50E+00	2.91E+02	4.85E+01
m	16	300.58	9.67E+01	39.75			9.67E+01	3.97E+01
	17	328.51	4.13E+01	45.18			4.13E+01	4.52E+01
M	18	338.53	2.05E+02	45.33	2.22E-01	4.54E+00	2.05E+02	4.56E+01
m	19	352.05	5.08E+02	56.52	8.83E+00	4.91E+00	4.99E+02	5.67E+01
	20	402.46	4.56E+01	37.41			4.56E+01	3.74E+01
	21	409.07	3.44E+01	39.88			3.44E+01	3.99E+01
	22	433.39	2.72E+01	30.58			2.72E+01	3.06E+01
	23	463.19	1.08E+02	42.52			1.08E+02	4.25E+01
	24	492.49	2.42E+01	22.25			2.42E+01	2.23E+01
	25	511.42	2.17E+02	57.86	8.12E+01	5.49E+00	1.36E+02	5.81E+01
M	26	563.19	2.48E+01	27.53			2.48E+01	2.75E+01
m	27	570.20	2.12E+01	27.17			2.12E+01	2.72E+01
M	28	579.83	2.11E+01	16.89			2.11E+01	1.69E+01
m	29	583.48	3.06E+02	41.58	6.34E+00	3.74E+00	3.00E+02	4.18E+01
M	30	606.02	2.11E+01	13.19			2.11E+01	1.32E+01
m	31	609.71	4.06E+02	47.22	5.20E+00	3.69E+00	4.01E+02	4.74E+01
	32	727.57	9.43E+01	39.15			9.43E+01	3.92E+01
	33	768.48	3.15E+01	36.80			3.15E+01	3.68E+01
	34	785.12	4.20E+01	31.35			4.20E+01	3.14E+01
	35	795.05	5.60E+01	34.06			5.60E+01	3.41E+01
	36	842.26	3.09E+01	24.98			3.09E+01	2.50E+01
M	37	850.10	2.14E+01	19.07			2.14E+01	1.91E+01
m	38	861.14	5.13E+01	26.82			5.13E+01	2.68E+01
	39	884.22	1.58E+01	17.55			1.58E+01	1.75E+01
M	40	911.75	2.42E+02	35.13	3.28E+00	2.53E+00	2.38E+02	3.52E+01
m	41	915.14	2.33E+01	30.43			2.33E+01	3.04E+01
	42	932.89	4.10E+01	30.44			4.10E+01	3.04E+01
M	43	964.68	4.86E+01	40.94			4.86E+01	4.09E+01
m	44	969.53	1.14E+02	29.09			1.14E+02	2.91E+01
m	45	972.97	1.47E+01	23.96			1.47E+01	2.40E+01
	46	1000.44	3.40E+01	31.24	4.17E+00	2.83E+00	2.98E+01	3.14E+01
	47	1120.81	9.30E+01	37.16	2.28E+00	2.55E+00	9.07E+01	3.72E+01
	48	1197.34	1.73E+01	18.63			1.73E+01	1.86E+01
M	49	1235.10	1.50E+01	15.10			1.50E+01	1.51E+01
m	50	1238.70	4.64E+01	25.48			4.64E+01	2.55E+01
	51	1252.22	1.79E+01	17.20			1.79E+01	1.72E+01
	52	1315.77	1.90E+01	23.90			1.90E+01	2.39E+01
	53	1378.40	2.00E+01	23.98			2.00E+01	2.40E+01
	54	1461.48	7.89E+02	60.53	6.46E+00	2.33E+00	7.83E+02	6.06E+01

Analysis Report for 1510088-03
 CP4104S03-04

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
	55	1505.76	2.44E+01	26.27		2.44E+01	2.63E+01	
	56	1569.68	6.89E+00	6.96		6.89E+00	6.96E+00	
M	57	1589.06	2.85E+01	10.63		2.85E+01	1.06E+01	
m	58	1592.97	1.59E+01	13.89		1.59E+01	1.39E+01	
	59	1622.54	2.45E+01	15.49		2.45E+01	1.55E+01	
	60	1631.15	1.31E+01	7.89		1.31E+01	7.89E+00	
	61	1714.59	1.47E+01	9.64		1.47E+01	9.64E+00	
	62	1730.06	1.68E+01	11.17		1.68E+01	1.12E+01	
	63	1748.31	9.06E+00	11.17		9.06E+00	1.12E+01	
	64	1764.79	8.16E+01	20.21		8.16E+01	2.02E+01	
	65	1869.58	7.00E+00	5.29		7.00E+00	5.29E+00	
	66	1909.97	6.90E+00	8.03		6.90E+00	8.03E+00	
	67	1939.15	4.92E+00	5.50		4.92E+00	5.50E+00	
	68	2005.60	8.00E+00	5.66		8.00E+00	5.66E+00	
	69	2104.34	2.10E+01	9.17		2.10E+01	9.17E+00	
	70	2204.44	1.63E+01	15.52		1.63E+01	1.55E+01	
	71	2347.85	8.00E+00	5.66		8.00E+00	5.66E+00	
	72	2374.22	8.77E+00	9.62		8.77E+00	9.62E+00	
	73	2382.49	1.30E+01	7.21		1.30E+01	7.21E+00	
	74	2448.20	1.23E+01	8.49		1.23E+01	8.49E+00	
	75	2457.04	5.79E+00	6.08		5.79E+00	6.08E+00	
	76	2615.28	1.16E+02	22.19	3.47E+00	1.48E+00	1.12E+02	2.22E+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	0.931	1460.81 *	10.67	1.95E+01	2.27E+00
CD-109	0.998	88.03 *	3.72	2.20E+00	1.31E+00
SN-126	0.948	87.57 *	37.00	2.10E-01	1.25E-01
BI-207	0.376	569.67 *	97.72	2.77E-02	3.56E-02
		1063.62	74.90		
TL-208	0.955	583.14 *	30.22	1.29E+00	2.14E-01
		860.37 *	4.48	2.02E+00	1.07E+00
		2614.66 *	35.85	1.09E+00	2.35E-01
PB-210	0.988	46.50 *	4.25	1.38E+00	1.32E+00

Analysis Report for 1510088-03
CP4104S03-04

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-212	0.745	727.17 *	11.80	1.23E+00	5.24E-01
		1620.62	2.75		
PB-212	0.989	238.63 *	44.60	1.48E+00	1.75E-01
		300.09 *	3.41	2.27E+00	9.51E-01
BI-214	0.975	609.31 *	46.30	1.16E+00	1.73E-01
		1120.29 *	15.10	1.31E+00	5.48E-01
		1764.49 *	15.80	1.55E+00	4.03E-01
		2204.22 *	4.98	1.09E+00	1.05E+00
PB-214	0.991	295.21 *	19.19	1.20E+00	2.21E-01
		351.92 *	37.19	1.20E+00	1.67E-01
RN-219	0.932	401.80 *	6.50	6.91E-01	5.69E-01
RA-226	0.992	186.21 *	3.28	3.49E+00	6.59E+00
AC-228	0.955	338.32 *	11.40	1.56E+00	3.70E-01
		911.07 *	27.70	1.59E+00	2.72E-01
		969.11 *	16.60	1.33E+00	3.59E-01
PA-234M	0.945	1001.03 *	0.92	6.45E+00	6.81E+00
TH-234	0.998	63.29 *	3.80	1.26E+00	1.48E+00
AM-243	0.989	74.67 *	66.00	3.09E-01	7.48E-02
CM-243	0.366	209.75 *	3.29	1.14E+00	1.35E+00
		228.14	10.60		
		277.60 *	14.00	2.75E-01	2.93E-01

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 2:34:03PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
m	4	77.47	2.01259E-01	7.16	Tol. Sum	TI-44
	6	120.74	2.21340E-02	40.94		
	7	127.96	3.48889E-02	35.14		
	8	152.62	2.43784E-02	56.96		
m	12	242.56	4.28445E-02	20.01	Tol.	LA-140
	13	270.54	2.23445E-02	37.05		
	17	328.51	1.14811E-02	54.65		
	21	409.07	9.56597E-03	57.91		

Analysis Report for 1510088-03
CP4104S03-04

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
22	433.39	7.56313E-03	56.15	Tol.	AG-108M
23	463.19	2.99838E-02	19.69	Sum	
24	492.49	6.71296E-03	46.04		
25	511.42	3.78494E-02	21.33		
M 26	563.19	6.89240E-03	55.48	Tol.	CS-134
M 28	579.83	5.85119E-03	40.09		
M 30	606.02	5.86873E-03	31.22		
33	768.48	8.75000E-03	58.42	Sum	
34	785.12	1.16560E-02	37.36		
35	795.05	1.55556E-02	30.41	Sum	
36	842.26	8.57843E-03	40.44		
M 37	850.10	5.93714E-03	44.60		
39	884.22	4.39702E-03	55.44	Sum	
m 41	915.14	6.47580E-03	65.26		
42	932.89	1.13806E-02	37.15		
M 43	964.68	1.35085E-02	42.09	Tol.	EU-152
m 45	972.97	4.08759E-03	81.41	Sum	
48	1197.34	4.79482E-03	53.96		
M 49	1235.10	4.17805E-03	50.20		
m 50	1238.70	1.28814E-02	27.47	Sum	
51	1252.22	4.97076E-03	48.07		
52	1315.77	5.27778E-03	62.88		
53	1378.40	5.55556E-03	59.95		
55	1505.76	6.76471E-03	53.93		
56	1569.68	1.91358E-03	50.55	Sum	
M 57	1589.06	7.92396E-03	18.63	Sum	
m 58	1592.97	4.41974E-03	43.66	D-Esc	
59	1622.54	6.79293E-03	31.67		
60	1631.15	3.63095E-03	30.18		
61	1714.59	4.08497E-03	32.79		
62	1730.06	4.65909E-03	33.30	Sum	
63	1748.31	2.51736E-03	61.62		
65	1869.58	1.94444E-03	37.80		
66	1909.97	1.91667E-03	58.20		
67	1939.15	1.36574E-03	55.93	Sum	
68	2005.60	2.22222E-03	35.36		
69	2104.34	5.83333E-03	21.82	S-Esc	
71	2347.85	2.22222E-03	35.36	Sum	
72	2374.22	2.43590E-03	54.84	Sum	
73	2382.49	3.61111E-03	27.74		
74	2448.20	3.41270E-03	34.53		
75	2457.04	1.60714E-03	52.57		

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 1510088-03

CP4104S03-04

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	0.93	1460.81 *	10.67	1.95E+01	2.27E+00
CD-109	0.99	88.03 *	3.72	2.20E+00	1.31E+00
SN-126	0.94	87.57 *	37.00	2.10E-01	1.25E-01
BI-207	0.37	569.67 *	97.72	2.77E-02	3.56E-02
		1063.62	74.90		
TL-208	0.95	583.14 *	30.22	1.29E+00	2.14E-01
		860.37 *	4.48	2.02E+00	1.07E+00
		2614.66 *	35.85	1.09E+00	2.35E-01
PB-210	0.98	46.50 *	4.25	1.38E+00	1.32E+00
BI-212	0.74	727.17 *	11.80	1.23E+00	5.24E-01
		1620.62	2.75		
PB-212	0.98	238.63 *	44.60	1.48E+00	1.75E-01
		300.09 *	3.41	2.27E+00	9.51E-01
BI-214	0.97	609.31 *	46.30	1.16E+00	1.73E-01
		1120.29 *	15.10	1.31E+00	5.48E-01
		1764.49 *	15.80	1.55E+00	4.03E-01
		2204.22 *	4.98	1.09E+00	1.05E+00
PB-214	0.99	295.21 *	19.19	1.20E+00	2.21E-01
		351.92 *	37.19	1.20E+00	1.67E-01
RN-219	0.93	401.80 *	6.50	6.91E-01	5.69E-01
RA-226	0.99	186.21 *	3.28	3.49E+00	6.59E+00
AC-228	0.95	338.32 *	11.40	1.56E+00	3.70E-01
		911.07 *	27.70	1.59E+00	2.72E-01
		969.11 *	16.60	1.33E+00	3.59E-01
PA-234M	0.94	1001.03 *	0.92	6.45E+00	6.81E+00
TH-234	0.99	63.29 *	3.80	1.26E+00	1.48E+00
AM-243	0.98	74.67 *	66.00	3.09E-01	7.48E-02
CM-243	0.36	209.75 *	3.29	1.14E+00	1.35E+00
		228.14	10.60		
		277.60 *	14.00	2.75E-01	2.93E-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 1510088-03
CP4104S03-04

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	0.931	1.95E+01	2.27E+00	
?	CD-109	0.998	2.20E+00	1.31E+00	
?	SN-126	0.948	2.10E-01	1.25E-01	
	BI-207	0.376	2.77E-02	3.56E-02	
	TL-208	0.955	1.22E+00	1.57E-01	
	PB-210	0.988	1.38E+00	1.32E+00	
	BI-212	0.745	1.23E+00	5.24E-01	
	PB-212	0.989	1.51E+00	1.72E-01	
	BI-214	0.975	1.23E+00	1.51E-01	
	PB-214	0.991	1.20E+00	1.33E-01	
	RN-219	0.932	6.91E-01	5.69E-01	
	RA-226	0.992	3.49E+00	6.59E+00	
	AC-228	0.955	1.51E+00	1.87E-01	
	PA-234M	0.945	6.45E+00	6.81E+00	
	TH-234	0.998	1.26E+00	1.48E+00	
	AM-243	0.989	3.09E-01	7.48E-02	
	CM-243	0.366	3.14E-01	2.87E-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 1510088-03
CP4104S03-04

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 2:34:03PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 4	77.47	2.01259E-01	7.16	Tol.	TI-44
6	120.74	2.21340E-02	40.94	Sum	
7	127.96	3.48889E-02	35.14		
8	152.62	2.43784E-02	56.96		
m 12	242.56	4.28445E-02	20.01		
13	270.54	2.23445E-02	37.05		
17	328.51	1.14811E-02	54.65	Tol.	LA-140
21	409.07	9.56597E-03	57.91		
22	433.39	7.56313E-03	56.15	Tol.	AG-108M
23	463.19	2.99838E-02	19.69	Sum	
24	492.49	6.71296E-03	46.04		
25	511.42	3.78494E-02	21.33		
M 26	563.19	6.89240E-03	55.48	Tol.	CS-134
M 28	579.83	5.85119E-03	40.09		
M 30	606.02	5.86873E-03	31.22		
33	768.48	8.75000E-03	58.42	Sum	
34	785.12	1.16560E-02	37.36		
35	795.05	1.55556E-02	30.41	Sum	
36	842.26	8.57843E-03	40.44		
M 37	850.10	5.93714E-03	44.60		
39	884.22	4.39702E-03	55.44	Sum	
m 41	915.14	6.47580E-03	65.26		
42	932.89	1.13806E-02	37.15		
M 43	964.68	1.35085E-02	42.09	Tol.	EU-152
m 45	972.97	4.08759E-03	81.41	Sum	
48	1197.34	4.79482E-03	53.96		
M 49	1235.10	4.17805E-03	50.20		
m 50	1238.70	1.28814E-02	27.47	Sum	
51	1252.22	4.97076E-03	48.07		
52	1315.77	5.27778E-03	62.88		
53	1378.40	5.55556E-03	59.95		
55	1505.76	6.76471E-03	53.93		
56	1569.68	1.91358E-03	50.55	Sum	
M 57	1589.06	7.92396E-03	18.63	Sum	
m 58	1592.97	4.41974E-03	43.66	D-Esc	

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
59	1622.54	6.79293E-03	31.67		
60	1631.15	3.63095E-03	30.18		
61	1714.59	4.08497E-03	32.79		
62	1730.06	4.65909E-03	33.30	Sum	
63	1748.31	2.51736E-03	61.62		
65	1869.58	1.94444E-03	37.80		
66	1909.97	1.91667E-03	58.20		
67	1939.15	1.36574E-03	55.93	Sum	
68	2005.60	2.22222E-03	35.36		
69	2104.34	5.83333E-03	21.82	S-Esc	
71	2347.85	2.22222E-03	35.36	Sum	
72	2374.22	2.43590E-03	54.84	Sum	
73	2382.49	3.61111E-03	27.74		
74	2448.20	3.41270E-03	34.53		
75	2457.04	1.60714E-03	52.57		

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	5.53E-01	9.37E-01	9.37E-01
+	NA-22	1274.54	99.94	-3.07E-02	6.73E-02	6.73E-02
+	NA-24	1368.53	99.99	-6.23E+12	1.23E+14	2.04E+14
		2754.09	99.86	-1.78E+13		1.23E+14
+	AL-26	1808.65	99.76	3.36E-03	5.32E-02	5.32E-02
+	K-40	1460.81	* 10.67	1.95E+01	1.02E+00	1.02E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	1.25E-02	6.73E-02	6.73E-02
		78.34	96.00	2.73E-01		8.59E-02
+	SC-46	889.25	99.98	-3.22E-04	8.80E-02	8.80E-02
		1120.51	99.99	2.23E-01		1.66E-01
+	V-48	983.52	99.98	6.03E-02	3.08E-01	3.10E-01
		1312.10	97.50	1.27E-02		3.08E-01

Analysis Report for 1510088-03
CP4104S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CR-51	320.08	9.83	-2.71E-01	1.10E+00	1.10E+00
+	MN-54	834.83	99.97	7.00E-03	7.39E-02	7.39E-02
+	CO-56	846.75	99.96	-6.81E-02	7.43E-02	7.43E-02
		1037.75	14.03	-9.39E-02		6.97E-01
		1238.25	67.00	2.49E-01		2.27E-01
		1771.40	15.51	1.42E-01		4.49E-01
		2598.48	16.90	0.00E+00		3.58E-01
+	CO-57	122.06	85.51	6.24E-02	6.08E-02	6.08E-02
		136.48	10.60	2.59E-01		4.88E-01
+	CO-58	810.76	99.40	-2.55E-02	9.06E-02	9.06E-02
+	FE-59	1099.22	56.50	-5.48E-02	2.39E-01	2.39E-01
		1291.56	43.20	3.20E-02		2.91E-01
+	CO-60	1173.22	100.00	1.68E-02	6.87E-02	8.05E-02
		1332.49	100.00	-2.65E-03		6.87E-02
+	ZN-65	1115.52	50.75	8.13E-03	1.87E-01	1.87E-01
+	GA-67	93.31	35.70	3.23E+02	1.68E+02	1.68E+02
		208.95	2.24	1.19E+03		2.42E+03
		300.22	16.00	-4.42E+02		3.56E+02
+	SE-75	121.11	16.70	2.21E-01	9.49E-02	3.37E-01
		136.00	59.20	-1.25E-02		9.62E-02
		264.65	59.80	-1.71E-03		9.49E-02
		279.53	25.20	8.36E-02		2.56E-01
		400.65	11.40	6.59E-02		5.39E-01
+	RB-82	776.52	13.00	5.22E-02	1.26E+00	1.26E+00
+	RB-83	520.41	46.00	1.43E-02	1.55E-01	1.55E-01
		529.64	30.30	1.04E-01		2.54E-01
		552.65	16.40	-6.11E-02		4.59E-01
+	KR-85	513.99	0.43	4.21E+01	2.15E+01	2.15E+01
+	SR-85	513.99	99.27	2.58E-01	1.32E-01	1.32E-01
+	Y-88	898.02	93.40	-8.36E-03	5.00E-02	9.48E-02
		1836.01	99.38	-2.29E-03		5.00E-02
+	NB-93M	16.57	9.43	-8.13E+01	6.22E+01	6.22E+01
+	NB-94	702.63	100.00	-5.26E-03	6.17E-02	6.73E-02
		871.10	100.00	5.99E-03		6.17E-02
+	NB-95	765.79	99.81	-6.51E-03	1.50E-01	1.50E-01
+	NB-95M	235.69	25.00	-1.05E+03	1.24E+02	1.24E+02
+	ZR-95	724.18	43.70	-4.22E-02	1.70E-01	2.31E-01
		756.72	55.30	1.47E-02		1.70E-01
+	MO-99	181.06	6.20	9.41E+02	1.81E+03	2.73E+03
		739.58	12.80	-3.89E+01		1.81E+03
		778.00	4.50	5.39E+02		4.98E+03
+	RU-103	497.08	89.00	-3.53E-02	8.90E-02	8.90E-02
+	RU-106	621.84	9.80	1.11E-01	6.97E-01	6.97E-01
+	AG-108M	433.93	89.90	8.52E-03	6.40E-02	6.40E-02
		614.37	90.40	-5.31E-01		6.86E-02
		722.95	90.50	-1.44E-02		6.88E-02
+	CD-109	88.03	* 3.72	2.20E+00	2.07E+00	2.07E+00

Analysis Report for 1510088-03
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	AG-110M	657.75	93.14	-6.70E-03	7.11E-02	7.11E-02
		677.61	10.53	1.32E-01		6.60E-01
		706.67	16.46	-2.93E-02		4.26E-01
		763.93	21.98	-7.64E-02		3.37E-01
		884.67	71.63	7.89E-03		9.62E-02
		1384.27	23.94	5.25E-02		2.86E-01
+	CD-113M	263.70	0.02	4.92E+01	2.06E+02	2.06E+02
+	SN-113	255.12	1.93	1.73E+00	1.01E-01	3.09E+00
		391.69	64.90	3.43E-02		1.01E-01
+	TE123M	159.00	84.10	2.26E-03	6.75E-02	6.75E-02
+	SB-124	602.71	97.87	-7.55E-03	9.80E-02	9.80E-02
		645.85	7.26	4.61E-01		1.27E+00
		722.78	11.10	-1.70E-01		8.12E-01
		1691.02	49.00	-9.89E-02		1.30E-01
+	I-125	35.49	6.49	1.48E+00	3.09E+00	3.09E+00
+	SB-125	176.33	6.89	-4.61E-01	1.85E-01	7.03E-01
		427.89	29.33	-5.21E-02		1.85E-01
		463.38	10.35	7.63E-01		7.10E-01
		600.56	17.80	-2.70E-02		3.68E-01
		635.90	11.32	-1.91E-02		5.39E-01
+	SB-126	414.70	83.30	2.40E-01	4.04E-01	4.34E-01
		666.33	99.60	7.96E-02		4.04E-01
		695.00	99.60	1.46E-01		4.48E-01
		720.50	53.80	6.91E-02		7.27E-01
+	SN-126	87.57	* 37.00	2.10E-01	1.98E-01	1.98E-01
+	SB-127	473.00	25.00	-3.27E+01	5.74E+01	7.54E+01
		685.20	35.70	2.01E+01		5.74E+01
		783.80	14.70	1.05E+02		1.71E+02
+	I-129	29.78	57.00	-8.37E-03	4.32E-01	4.32E-01
		33.60	13.20	-1.47E-01		1.21E+00
		39.58	7.52	-3.72E-01		1.31E+00
+	I-131	284.30	6.05	2.89E-01	9.22E-01	1.29E+01
		364.48	81.20	-5.43E-01		9.22E-01
		636.97	7.26	-3.51E+00		1.30E+01
		722.89	1.80	-1.16E+01		5.56E+01
+	TE-132	49.72	13.10	3.82E+01	5.61E+01	5.10E+02
		228.16	88.00	1.16E+01		5.61E+01
+	BA-133	81.00	33.00	-1.31E+00	8.64E-02	1.66E-01
		302.84	17.80	3.31E-01		3.18E-01
		356.01	60.00	-5.78E-01		8.64E-02
+	I-133	529.87	86.30	4.37E+09	1.06E+10	1.06E+10
+	XE-133	81.00	38.00	-8.01E+01	1.02E+01	1.02E+01
+	CS-134	563.23	8.38	4.29E-01	7.41E-02	7.97E-01
		569.32	15.43	5.58E-02		4.27E-01
		604.70	97.60	-5.37E-03		7.41E-02
		795.84	85.40	8.94E-02		1.03E-01
		801.93	8.73	2.51E-01		7.91E-01
+	CS-135	268.24	16.00	2.27E-01	3.38E-01	3.38E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 1510088-03
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	I-135	1260.41	28.60	1.00E+26	1.00E+26	1.00E+26
@		1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	-3.32E-03	3.81E-01	3.72E+00
		163.89	4.61	9.12E-01		5.73E+00
		176.55	13.56	-1.25E+00		1.91E+00
		273.65	12.66	-3.27E+00		2.19E+00
		340.57	48.50	1.09E+00		7.72E-01
		818.50	99.70	1.04E-02		3.81E-01
		1048.07	79.60	2.12E-02		4.55E-01
		1235.34	19.70	-6.28E-01		2.85E+00
+	CS-137	661.65	85.12	-5.26E-03	7.56E-02	7.56E-02
+	LA-138	788.74	34.00	-7.99E-02	9.14E-02	2.03E-01
		1435.80	66.00	2.34E-02		9.14E-02
+	CE-139	165.85	80.35	-1.23E-02	7.22E-02	7.22E-02
+	BA-140	162.64	6.70	-1.17E+00	1.36E+00	4.11E+00
		304.84	4.50	-4.98E+00		5.74E+00
		423.70	3.20	3.30E+00		1.01E+01
		437.55	2.00	3.91E+00		1.62E+01
		537.32	25.00	6.89E-01		1.36E+00
+	LA-140	328.77	20.50	1.29E+00	3.98E-01	1.64E+00
		487.03	45.50	6.88E-02		7.47E-01
		815.85	23.50	1.03E-01		1.65E+00
		1596.49	95.49	8.89E-02		3.98E-01
+	CE-141	145.44	48.40	8.06E-02	2.01E-01	2.01E-01
+	CE-143	57.36	11.80	-1.12E+06	2.03E+06	6.24E+06
		293.26	42.00	4.24E+06		2.03E+06
		664.55	5.20	3.90E+06		1.43E+07
+	CE-144	133.54	10.80	6.38E-03	4.71E-01	4.71E-01
+	PM-144	476.78	42.00	5.29E-02	6.57E-02	1.60E-01
		618.01	98.60	1.47E-02		6.57E-02
		696.49	99.49	3.22E-03		7.92E-02
+	PM-145	36.85	21.70	-1.39E-01	3.04E-01	5.69E-01
		37.36	39.70	1.23E-01		3.04E-01
		42.30	15.10	-1.30E-01		5.51E-01
		72.40	2.31	-1.05E+00		3.25E+00
+	PM-146	453.90	39.94	1.07E-01	1.50E-01	1.50E-01
		735.90	14.01	-1.70E-01		4.59E-01
		747.13	13.10	-1.48E-01		5.07E-01
+	ND-147	91.11	28.90	5.89E-01	1.78E+00	1.78E+00
		531.02	13.10	9.17E-01		3.41E+00
+	PM-149	285.90	3.10	3.56E+02	3.85E+04	3.85E+04
+	EU-152	121.78	20.50	2.41E-01	2.34E-01	2.34E-01
		244.69	5.40	-3.17E-01		1.09E+00
		344.27	19.13	-9.01E-02		2.41E-01
		778.89	9.20	5.65E-02		7.36E-01
		964.01	10.40	-1.13E+00		8.74E-01
		1085.78	7.22	-2.11E-01		9.92E-01
		1112.02	9.60	3.54E-02		8.50E-01
		1407.95	14.94	-8.70E-03		4.90E-01

Analysis Report for 1510088-03
CP4104S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	GD-153	97.43	31.30	1.33E-01	1.74E-01	1.74E-01
		103.18	22.20	7.97E-02		2.33E-01
+	EU-154	123.07	40.50	-5.73E-02	1.17E-01	1.17E-01
		723.30	19.70	-6.64E-02		3.18E-01
		873.19	11.50	1.49E-01		5.36E-01
		996.32	10.30	6.04E-02		7.28E-01
		1004.76	17.90	2.51E-02		4.04E-01
		1274.45	35.50	-8.51E-02		1.86E-01
+	EU-155	86.50	30.90	-5.91E-02	2.14E-01	2.14E-01
		105.30	20.70	1.33E-01		2.35E-01
+	EU-156	811.77	10.40	2.27E-03	2.77E+00	2.77E+00
		1153.47	7.20	1.28E-01		5.00E+00
		1230.71	8.90	2.35E+00		4.43E+00
+	HO-166M	184.41	72.60	1.87E-01	8.94E-02	8.94E-02
		280.45	29.60	7.38E-03		1.66E-01
		410.94	11.10	3.49E-01		5.79E-01
		711.69	54.10	9.11E-03		1.24E-01
+	TM-171	66.72	0.14	1.19E+01	4.79E+01	4.79E+01
+	HF-172	81.75	4.52	-2.17E+00	4.44E-01	1.26E+00
		125.81	11.30	-2.27E-01		4.44E-01
+	LU-172	181.53	20.60	2.12E+00	3.21E+00	6.90E+00
		810.06	16.63	-5.22E-01		1.13E+01
		912.12	15.25	7.85E+01		2.75E+01
		1093.66	62.50	-1.61E+00		3.21E+00
+	LU-173	100.72	5.24	-1.43E-03	2.81E-01	9.31E-01
		272.11	21.20	2.55E-01		2.81E-01
+	HF-175	343.40	84.00	-4.85E-02	7.63E-02	7.63E-02
+	LU-176	88.34	13.30	9.73E-01	4.62E-02	5.08E-01
		201.83	86.00	1.42E-02		6.08E-02
		306.78	94.00	-1.47E-02		4.62E-02
+	TA-182	67.75	41.20	3.47E-02	1.87E-01	1.87E-01
		1121.30	34.90	7.00E-01		4.44E-01
		1189.05	16.23	2.73E-01		6.87E-01
		1221.41	26.98	2.80E-01		4.31E-01
		1231.02	11.44	5.10E-01		9.64E-01
+	IR-192	308.46	29.68	-7.55E-02	1.67E-01	2.03E-01
		468.07	48.10	3.48E-02		1.67E-01
+	HG-203	279.19	77.30	6.31E-02	1.14E-01	1.14E-01
+	BI-207	569.67	* 97.72	2.77E-02	1.00E-01	1.34E-01
		1063.62	74.90	5.59E-03		1.00E-01
+	TL-208	583.14	* 30.22	1.29E+00	1.33E-01	2.54E-01
		860.37	* 4.48	2.02E+00		3.23E+00
		2614.66	* 35.85	1.09E+00		1.33E-01
+	BI-210M	262.00	45.00	4.43E-02	1.06E-01	1.06E-01
		300.00	23.00	-3.26E-01		2.63E-01
+	PB-210	46.50	* 4.25	1.38E+00	2.14E+00	2.14E+00
+	PB-211	404.84	2.90	-1.46E+00	1.73E+00	1.73E+00
		831.96	2.90	-7.92E-01		2.28E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BI-212	727.17	*	11.80	1.23E+00	7.67E-01	7.67E-01
		1620.62		2.75	4.47E-01		2.54E+00
+	PB-212	238.63	*	44.60	1.48E+00	2.26E-01	2.26E-01
		300.09	*	3.41	2.27E+00		3.01E+00
+	BI-214	609.31	*	46.30	1.16E+00	2.35E-01	2.35E-01
		1120.29	*	15.10	1.31E+00		7.98E-01
		1764.49	*	15.80	1.55E+00		3.35E-01
		2204.22	*	4.98	1.09E+00		1.65E+00
+	PB-214	295.21	*	19.19	1.20E+00	5.36E-01	5.36E-01
		351.92	*	37.19	1.20E+00		5.49E-01
+	RN-219	401.80	*	6.50	6.91E-01	9.10E-01	9.10E-01
+	RA-223	323.87		3.88	4.68E-01	1.32E+00	1.32E+00
+	RA-224	240.98		3.95	1.69E+01	2.94E+00	2.94E+00
+	RA-225	40.00		31.00	-3.97E-01	1.40E+00	1.40E+00
+	RA-226	186.21	*	3.28	3.49E+00	2.53E+00	2.53E+00
+	TH-227	50.10		8.40	6.22E-02	5.54E-01	8.30E-01
		236.00		11.50	-4.71E+00		5.54E-01
		256.20		6.30	-5.37E-02		7.38E-01
+	AC-228	338.32	*	11.40	1.56E+00	3.45E-01	1.75E+00
		911.07	*	27.70	1.59E+00		3.45E-01
		969.11	*	16.60	1.33E+00		8.29E-01
+	TH-230	48.44		16.90	-5.39E-02	4.78E-01	4.78E-01
		62.85		4.60	2.58E+00		1.61E+00
		67.67		0.37	3.18E+00		1.72E+01
+	PA-231	283.67		1.60	1.57E+00	2.45E+00	3.13E+00
		302.67		2.30	2.55E+00		2.45E+00
+	TH-231	25.64		14.70	8.15E-01	9.35E-01	3.61E+00
		84.21		6.40	8.16E-01		9.35E-01
+	PA-233	311.98		38.60	1.37E-01	2.94E-01	2.94E-01
+	PA-234	131.20		20.40	1.88E-02	2.37E-01	2.37E-01
		733.99		8.80	1.61E-01		7.31E-01
		946.00		12.00	-8.65E-02		5.32E-01
+	PA-234M	1001.03	*	0.92	6.45E+00	1.10E+01	1.10E+01
+	TH-234	63.29	*	3.80	1.26E+00	2.43E+00	2.43E+00
+	U-235	143.76		10.50	1.05E-01	4.68E-01	4.68E-01
		163.35		4.70	1.64E-01		1.03E+00
		205.31		4.70	3.46E-01		1.11E+00
+	NP-237	86.50		12.60	-1.43E-01	5.19E-01	5.19E-01
+	NP-239	106.10		22.70	1.57E+03	2.78E+03	2.78E+03
		228.18		10.70	1.32E+03		6.39E+03
		277.60		14.10	3.91E+03		5.14E+03
+	AM-241	59.54		35.90	6.59E-03	1.87E-01	1.87E-01
+	AM-243	74.67	*	66.00	3.09E-01	1.81E-01	1.81E-01
+	CM-243	209.75	*	3.29	1.14E+00	4.79E-01	2.20E+00
		228.14		10.60	1.02E-01		4.93E-01
		277.60	*	14.00	2.75E-01		4.79E-01

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- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	9.37E-01	9.37E-01	5.53E-01	4.46E-01
NA-22	1274.54	99.94	6.73E-02	6.73E-02	-3.07E-02	3.03E-02
NA-24	1368.53	99.99	2.04E+14	1.23E+14	-6.23E+12	9.06E+13
	2754.09	99.86	1.23E+14		-1.78E+13	4.61E+13
AL-26	1808.65	99.76	5.32E-02	5.32E-02	3.36E-03	2.25E-02
+ K-40	1460.81	* 10.67	1.02E+00	1.02E+00	1.95E+01	4.75E-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	6.73E-02	6.73E-02	1.25E-02	3.29E-02
	78.34	96.00	8.59E-02		2.73E-01	4.23E-02
SC-46	889.25	99.98	8.80E-02	8.80E-02	-3.22E-04	4.08E-02
	1120.51	99.99	1.66E-01		2.23E-01	7.90E-02
V-48	983.52	99.98	3.10E-01	3.08E-01	6.03E-02	1.44E-01
	1312.10	97.50	3.08E-01		1.27E-02	1.40E-01
CR-51	320.08	9.83	1.10E+00	1.10E+00	-2.71E-01	5.26E-01
MN-54	834.83	99.97	7.39E-02	7.39E-02	7.00E-03	3.44E-02
CO-56	846.75	99.96	7.43E-02	7.43E-02	-6.81E-02	3.40E-02
	1037.75	14.03	6.97E-01		-9.39E-02	3.22E-01
	1238.25	67.00	2.27E-01		2.49E-01	1.07E-01
	1771.40	15.51	4.49E-01		1.42E-01	1.90E-01
	2598.48	16.90	3.58E-01		0.00E+00	1.42E-01
CO-57	122.06	85.51	6.08E-02	6.08E-02	6.24E-02	2.96E-02
	136.48	10.60	4.88E-01		2.59E-01	2.37E-01
CO-58	810.76	99.40	9.06E-02	9.06E-02	-2.55E-02	4.22E-02
FE-59	1099.22	56.50	2.39E-01	2.39E-01	-5.48E-02	1.11E-01
	1291.56	43.20	2.91E-01		3.20E-02	1.33E-01
CO-60	1173.22	100.00	8.05E-02	6.87E-02	1.68E-02	3.72E-02
	1332.49	100.00	6.87E-02		-2.65E-03	3.09E-02
ZN-65	1115.52	50.75	1.87E-01	1.87E-01	8.13E-03	8.72E-02
GA-67	93.31	35.70	1.68E+02	1.68E+02	3.23E+02	8.23E+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)
GA-67	208.95	2.24	2.42E+03	1.68E+02	1.19E+03	1.17E+03
	300.22	16.00	3.56E+02		-4.42E+02	1.71E+02
SE-75	121.11	16.70	3.37E-01	9.49E-02	2.21E-01	1.64E-01
	136.00	59.20	9.62E-02		-1.25E-02	4.67E-02
	264.65	59.80	9.49E-02		-1.71E-03	4.54E-02
	279.53	25.20	2.56E-01		8.36E-02	1.23E-01
	400.65	11.40	5.39E-01		6.59E-02	2.55E-01
RB-82	776.52	13.00	1.26E+00	1.26E+00	5.22E-02	5.91E-01
RB-83	520.41	46.00	1.55E-01	1.55E-01	1.43E-02	7.32E-02
	529.64	30.30	2.54E-01		1.04E-01	1.20E-01
	552.65	16.40	4.59E-01		-6.11E-02	2.16E-01
KR-85	513.99	0.43	2.15E+01	2.15E+01	4.21E+01	1.04E+01
SR-85	513.99	99.27	1.32E-01	1.32E-01	2.58E-01	6.37E-02
Y-88	898.02	93.40	9.48E-02	5.00E-02	-8.36E-03	4.41E-02
	1836.01	99.38	5.00E-02		-2.29E-03	1.98E-02
NB-93M	16.57	9.43	6.22E+01	6.22E+01	-8.13E+01	2.87E+01
NB-94	702.63	100.00	6.73E-02	6.17E-02	-5.26E-03	3.16E-02
	871.10	100.00	6.17E-02		5.99E-03	2.84E-02
NB-95	765.79	99.81	1.50E-01	1.50E-01	-6.51E-03	7.08E-02
NB-95M	235.69	25.00	1.24E+02	1.24E+02	-1.05E+03	6.00E+01
ZR-95	724.18	43.70	2.31E-01	1.70E-01	-4.22E-02	1.09E-01
	756.72	55.30	1.70E-01		1.47E-02	7.94E-02
MO-99	181.06	6.20	2.73E+03	1.81E+03	9.41E+02	1.32E+03
	739.58	12.80	1.81E+03		-3.89E+01	8.52E+02
	778.00	4.50	4.98E+03		5.39E+02	2.33E+03
RU-103	497.08	89.00	8.90E-02	8.90E-02	-3.53E-02	4.14E-02
RU-106	621.84	9.80	6.97E-01	6.97E-01	1.11E-01	3.28E-01
AG-108M	433.93	89.90	6.40E-02	6.40E-02	8.52E-03	3.05E-02
	614.37	90.40	6.86E-02		-5.31E-01	3.23E-02
	722.95	90.50	6.88E-02		-1.44E-02	3.21E-02
+ CD-109	88.03	* 3.72	2.07E+00	2.07E+00	2.20E+00	1.02E+00
AG-110M	657.75	93.14	7.11E-02	7.11E-02	-6.70E-03	3.33E-02
	677.61	10.53	6.60E-01		1.32E-01	3.09E-01
	706.67	16.46	4.26E-01		-2.93E-02	1.99E-01
	763.93	21.98	3.37E-01		-7.64E-02	1.58E-01
	884.67	71.63	9.62E-02		7.89E-03	4.44E-02
	1384.27	23.94	2.86E-01		5.25E-02	1.27E-01
CD-113M	263.70	0.02	2.06E+02	2.06E+02	4.92E+01	9.85E+01
SN-113	255.12	1.93	3.09E+00	1.01E-01	1.73E+00	1.48E+00
	391.69	64.90	1.01E-01		3.43E-02	4.81E-02
TE123M	159.00	84.10	6.75E-02	6.75E-02	2.26E-03	3.27E-02
SB-124	602.71	97.87	9.80E-02	9.80E-02	-7.55E-03	4.63E-02
	645.85	7.26	1.27E+00		4.61E-01	5.98E-01
	722.78	11.10	8.12E-01		-1.70E-01	3.79E-01
	1691.02	49.00	1.30E-01		-9.89E-02	5.33E-02
	I-125	35.49	6.49	3.09E+00	3.09E+00	1.48E+00	1.50E+00
SB-125	176.33	6.89	7.03E-01	1.85E-01	-4.61E-01	3.40E-01
	427.89	29.33	1.85E-01		-5.21E-02	8.75E-02
	463.38	10.35	7.10E-01		7.63E-01	3.40E-01
	600.56	17.80	3.68E-01		-2.70E-02	1.74E-01
	635.90	11.32	5.39E-01		-1.91E-02	2.53E-01
	SB-126	414.70	83.30	4.34E-01	4.04E-01	2.40E-01
	666.33	99.60	4.04E-01		7.96E-02	1.90E-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-126	695.00	99.60	4.48E-01	4.04E-01	1.46E-01	2.12E-01
	720.50	53.80	7.27E-01		6.91E-02	3.40E-01
+ SN-126	87.57 *	37.00	1.98E-01	1.98E-01	2.10E-01	9.75E-02
SB-127	473.00	25.00	7.54E+01	5.74E+01	-3.27E+01	3.57E+01
	685.20	35.70	5.74E+01		2.01E+01	2.69E+01
	783.80	14.70	1.71E+02		1.05E+02	8.03E+01
I-129	29.78	57.00	4.32E-01	4.32E-01	-8.37E-03	2.09E-01
	33.60	13.20	1.21E+00		-1.47E-01	5.86E-01
	39.58	7.52	1.31E+00		-3.72E-01	6.37E-01
I-131	284.30	6.05	1.29E+01	9.22E-01	2.89E-01	6.20E+00
	364.48	81.20	9.22E-01		-5.43E-01	4.37E-01
	636.97	7.26	1.30E+01		-3.51E+00	6.08E+00
	722.89	1.80	5.56E+01		-1.16E+01	2.59E+01
TE-132	49.72	13.10	5.10E+02	5.61E+01	3.82E+01	2.48E+02
	228.16	88.00	5.61E+01		1.16E+01	2.71E+01
BA-133	81.00	33.00	1.66E-01	8.64E-02	-1.31E+00	8.12E-02
	302.84	17.80	3.18E-01		3.31E-01	1.53E-01
	356.01	60.00	8.64E-02		-5.78E-01	4.11E-02
I-133	529.87	86.30	1.06E+10	1.06E+10	4.37E+09	5.03E+09
XE-133	81.00	38.00	1.02E+01	1.02E+01	-8.01E+01	4.96E+00
CS-134	563.23	8.38	7.97E-01	7.41E-02	4.29E-01	3.78E-01
	569.32	15.43	4.27E-01		5.58E-02	2.02E-01
	604.70	97.60	7.41E-02		-5.37E-03	3.52E-02
	795.84	85.40	1.03E-01		8.94E-02	4.90E-02
	801.93	8.73	7.91E-01		2.51E-01	3.69E-01
CS-135	268.24	16.00	3.38E-01	3.38E-01	2.27E-01	1.63E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.72E+00	3.81E-01	-3.32E-03	1.81E+00
	163.89	4.61	5.73E+00		9.12E-01	2.78E+00
	176.55	13.56	1.91E+00		-1.25E+00	9.22E-01
	273.65	12.66	2.19E+00		-3.27E+00	1.05E+00
	340.57	48.50	7.72E-01		1.09E+00	3.73E-01
	818.50	99.70	3.81E-01		1.04E-02	1.78E-01
	1048.07	79.60	4.55E-01		2.12E-02	2.08E-01
	1235.34	19.70	2.85E+00		-6.28E-01	1.34E+00
CS-137	661.65	85.12	7.56E-02	7.56E-02	-5.26E-03	3.55E-02
LA-138	788.74	34.00	2.03E-01	9.14E-02	-7.99E-02	9.49E-02
	1435.80	66.00	9.14E-02		2.34E-02	4.03E-02
CE-139	165.85	80.35	7.22E-02	7.22E-02	-1.23E-02	3.50E-02
BA-140	162.64	6.70	4.11E+00	1.36E+00	-1.17E+00	1.99E+00
	304.84	4.50	5.74E+00		-4.98E+00	2.73E+00
	423.70	3.20	1.01E+01		3.30E+00	4.80E+00
	437.55	2.00	1.62E+01		3.91E+00	7.67E+00
	537.32	25.00	1.36E+00		6.89E-01	6.44E-01
LA-140	328.77	20.50	1.64E+00	3.98E-01	1.29E+00	7.90E-01
	487.03	45.50	7.47E-01		6.88E-02	3.54E-01
	815.85	23.50	1.65E+00		1.03E-01	7.67E-01
	1596.49	95.49	3.98E-01		8.89E-02	1.76E-01
CE-141	145.44	48.40	2.01E-01	2.01E-01	8.06E-02	9.77E-02
CE-143	57.36	11.80	6.24E+06	2.03E+06	-1.12E+06	3.05E+06
	293.26	42.00	2.03E+06		4.24E+06	9.85E+05

Analysis Report for 1510088-03
CP4104S03-04

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CE-143	664.55	5.20	1.43E+07	2.03E+06	3.90E+06	6.73E+06
CE-144	133.54	10.80	4.71E-01	4.71E-01	6.38E-03	2.29E-01
PM-144	476.78	42.00	1.60E-01	6.57E-02	5.29E-02	7.63E-02
	618.01	98.60	6.57E-02		1.47E-02	3.09E-02
	696.49	99.49	7.92E-02		3.22E-03	3.75E-02
PM-145	36.85	21.70	5.69E-01	3.04E-01	-1.39E-01	2.76E-01
	37.36	39.70	3.04E-01		1.23E-01	1.47E-01
	42.30	15.10	5.51E-01		-1.30E-01	2.67E-01
	72.40	2.31	3.25E+00		-1.05E+00	1.59E+00
PM-146	453.90	39.94	1.50E-01	1.50E-01	1.07E-01	7.13E-02
	735.90	14.01	4.59E-01		-1.70E-01	2.14E-01
	747.13	13.10	5.07E-01		-1.48E-01	2.37E-01
ND-147	91.11	28.90	1.78E+00	1.78E+00	5.89E-01	8.71E-01
	531.02	13.10	3.41E+00		9.17E-01	1.61E+00
PM-149	285.90	3.10	3.85E+04	3.85E+04	3.56E+02	1.84E+04
EU-152	121.78	20.50	2.34E-01	2.34E-01	2.41E-01	1.14E-01
	244.69	5.40	1.09E+00		-3.17E-01	5.28E-01
	344.27	19.13	2.41E-01		-9.01E-02	1.14E-01
	778.89	9.20	7.36E-01		5.65E-02	3.44E-01
	964.01	10.40	8.74E-01		-1.13E+00	4.12E-01
	1085.78	7.22	9.92E-01		-2.11E-01	4.56E-01
	1112.02	9.60	8.50E-01		3.54E-02	3.94E-01
	1407.95	14.94	4.90E-01		-8.70E-03	2.22E-01
GD-153	97.43	31.30	1.74E-01	1.74E-01	1.33E-01	8.46E-02
	103.18	22.20	2.33E-01		7.97E-02	1.13E-01
EU-154	123.07	40.50	1.17E-01	1.17E-01	-5.73E-02	5.68E-02
	723.30	19.70	3.18E-01		-6.64E-02	1.48E-01
	873.19	11.50	5.36E-01		1.49E-01	2.47E-01
	996.32	10.30	7.28E-01		6.04E-02	3.38E-01
	1004.76	17.90	4.04E-01		2.51E-02	1.87E-01
	1274.45	35.50	1.86E-01		-8.51E-02	8.39E-02
EU-155	86.50	30.90	2.14E-01	2.14E-01	-5.91E-02	1.05E-01
	105.30	20.70	2.35E-01		1.33E-01	1.14E-01
EU-156	811.77	10.40	2.77E+00	2.77E+00	2.27E-03	1.29E+00
	1153.47	7.20	5.00E+00		1.28E-01	2.32E+00
	1230.71	8.90	4.43E+00		2.35E+00	2.06E+00
HO-166M	184.41	72.60	8.94E-02	8.94E-02	1.87E-01	4.36E-02
	280.45	29.60	1.66E-01		7.38E-03	7.94E-02
	410.94	11.10	5.79E-01		3.49E-01	2.77E-01
	711.69	54.10	1.24E-01		9.11E-03	5.84E-02
TM-171	66.72	0.14	4.79E+01	4.79E+01	1.19E+01	2.34E+01
HF-172	81.75	4.52	1.26E+00	4.44E-01	-2.17E+00	6.16E-01
	125.81	11.30	4.44E-01		-2.27E-01	2.16E-01
LU-172	181.53	20.60	6.90E+00	3.21E+00	2.12E+00	3.34E+00
	810.06	16.63	1.13E+01		-5.22E-01	5.27E+00
	912.12	15.25	2.75E+01		7.85E+01	1.33E+01
	1093.66	62.50	3.21E+00		-1.61E+00	1.48E+00
LU-173	100.72	5.24	9.31E-01	2.81E-01	-1.43E-03	4.53E-01
	272.11	21.20	2.81E-01		2.55E-01	1.35E-01
HF-175	343.40	84.00	7.63E-02	7.63E-02	-4.85E-02	3.62E-02
LU-176	88.34	13.30	5.08E-01	4.62E-02	9.73E-01	2.49E-01
	201.83	86.00	6.08E-02		1.42E-02	2.94E-02
	306.78	94.00	4.62E-02		-1.47E-02	2.19E-02

Analysis Report for 1510088-03
CP4104S03-04

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TA-182	67.75	41.20	1.87E-01	1.87E-01	3.47E-02	9.17E-02
	1121.30	34.90	4.44E-01		7.00E-01	2.12E-01
	1189.05	16.23	6.87E-01		2.73E-01	3.20E-01
	1221.41	26.98	4.31E-01		2.80E-01	2.01E-01
	1231.02	11.44	9.64E-01		5.10E-01	4.48E-01
IR-192	308.46	29.68	2.03E-01	1.67E-01	-7.55E-02	9.66E-02
	468.07	48.10	1.67E-01		3.48E-02	7.91E-02
HG-203	279.19	77.30	1.14E-01	1.14E-01	6.31E-02	5.47E-02
+ BI-207	569.67	*	97.72	1.34E-01	1.00E-01	2.77E-02
	1063.62		74.90	1.00E-01	5.59E-03	4.64E-02
+ TL-208	583.14	*	30.22	2.54E-01	1.33E-01	1.29E+00
	860.37	*	4.48	3.23E+00		2.02E+00
	2614.66	*	35.85	1.33E-01		1.09E+00
BI-210M	262.00		45.00	1.06E-01	1.06E-01	4.43E-02
	300.00		23.00	2.63E-01		-3.26E-01
+ PB-210	46.50	*	4.25	2.14E+00	2.14E+00	1.38E+00
	404.84		2.90	1.73E+00	1.73E+00	-1.46E+00
+ PB-211	831.96		2.90	2.28E+00		-7.92E-01
	727.17	*	11.80	7.67E-01	7.67E-01	1.23E+00
+ BI-212	1620.62		2.75	2.54E+00		4.47E-01
	238.63	*	44.60	2.26E-01	2.26E-01	1.48E+00
+ PB-212	300.09	*	3.41	3.01E+00		2.27E+00
	609.31	*	46.30	2.35E-01	2.35E-01	1.16E+00
+ BI-214	1120.29	*	15.10	7.98E-01		1.31E+00
	1764.49	*	15.80	3.35E-01		1.55E+00
	2204.22	*	4.98	1.65E+00		1.09E+00
	295.21	*	19.19	5.36E-01	5.36E-01	1.20E+00
+ PB-214	351.92	*	37.19	5.49E-01		1.20E+00
	401.80	*	6.50	9.10E-01	9.10E-01	6.91E-01
+ RN-219	323.87		3.88	1.32E+00	1.32E+00	4.68E-01
RA-223	240.98		3.95	2.94E+00	2.94E+00	1.69E+01
RA-224	40.00		31.00	1.40E+00	1.40E+00	-3.97E-01
+ RA-225	186.21	*	3.28	2.53E+00	2.53E+00	3.49E+00
+ RA-226	50.10		8.40	8.30E-01	5.54E-01	6.22E-02
	236.00		11.50	5.54E-01		-4.71E+00
	256.20		6.30	7.38E-01		-5.37E-02
	338.32	*	11.40	1.75E+00	3.45E-01	1.56E+00
+ AC-228	911.07	*	27.70	3.45E-01		1.59E+00
	969.11	*	16.60	8.29E-01		1.33E+00
	48.44		16.90	4.78E-01	4.78E-01	-5.39E-02
TH-230	62.85		4.60	1.61E+00		2.58E+00
	67.67		0.37	1.72E+01		3.18E+00
	283.67		1.60	3.13E+00	2.45E+00	1.57E+00
PA-231	302.67		2.30	2.45E+00		2.55E+00
	25.64		14.70	3.61E+00	9.35E-01	8.15E-01
TH-231	84.21		6.40	9.35E-01		8.16E-01
	311.98		38.60	2.94E-01	2.94E-01	1.37E-01
PA-233	131.20		20.40	2.37E-01	2.37E-01	1.88E-02
PA-234	733.99		8.80	7.31E-01		1.61E-01
	946.00		12.00	5.32E-01		-8.65E-02
	1001.03	*	0.92	1.10E+01	1.10E+01	6.45E+00
+ PA-234M	63.29	*	3.80	2.43E+00	2.43E+00	1.26E+00
+ TH-234	143.76		10.50	4.68E-01	4.68E-01	1.05E-01
U-235						2.27E-01

Analysis Report for 1510088-03
CP4104S03-04

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
U-235	163.35	4.70	1.03E+00	4.68E-01	1.64E-01	4.98E-01
	205.31	4.70	1.11E+00		3.46E-01	5.38E-01
NP-237	86.50	12.60	5.19E-01	5.19E-01	-1.43E-01	2.54E-01
NP-239	106.10	22.70	2.78E+03	2.78E+03	1.57E+03	1.35E+03
	228.18	10.70	6.39E+03		1.32E+03	3.09E+03
	277.60	14.10	5.14E+03		3.91E+03	2.47E+03
AM-241	59.54	35.90	1.87E-01	1.87E-01	6.59E-03	9.16E-02
+ AM-243	74.67	* 66.00	1.81E-01	1.81E-01	3.09E-01	8.95E-02
+ CM-243	209.75	* 3.29	2.20E+00	4.79E-01	1.14E+00	1.08E+00
	228.14	10.60	4.93E-01		1.02E-01	2.38E-01
	277.60	* 14.00	4.79E-01		2.75E-01	2.32E-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: CP4104S03-04

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	0																																																																																																																																																																																																																																																																																																																																												
17:	0	0	51	98	85	72	67	77	70	53	64	66	59	64	60	54	59	65	68	80	73	67	64	81	64	61	72	68	62	80	188	104	74	88	81	96	92	109	90	86	98	112	132	128	139	128	181	260	155	128	153	145	136	137	142	147	168	181	410	305	409	557	143	132	114	112	95	159	177	118	182	252	152	202	159	143	282	203	116	98	93	96	95	120	61	90	76	84	94	103	98	83	84	99	82	96	82	88	79	83	72	67	51	90	121	97	101	68	70	73	92	98	97	129	118	107	80	71	89	67	75	82	137	82	77	72	68	65	67	78	100	89	145	77	66	81	65	67	78	100	89	153	58	90	85	76	66	64	56	77	161	65	64	66	83	55	68	64	75	169	76	48	67	56	80	60	48	77	177	47	62	62	77	63	55	72	63	185	72	171	160	68	62	54	59	65	193	58	60	52	64	54	87	70	54	201	61	65	56	73	49	72	56	52	209	81	106	65	56	59	53	51	60	217	52	53	50	67	39	44	52	56	225	53	60	51	44	51	57	51	41	233	56	48	42	57	64	169	647	258	241	105	128	125	51	36	42	51	40	249	49	43	35	40	47	36	36	41	257	40	24	34	30	40	35	35	41	265	36	28	34	26	41	55	72	44	273	35	42	37	37	41	72	49	28	281	28	34	36	38	33	39	23	38	289	32	35	41	20	38	26	134	182	297	50	36	33	62	71	43	25	34	305	36	16	19	29	19	22	36	33	313	30	33	23	29	29	30	23	23	321	36	29	28	37	36	26	25	64	329	37	39	38	25	33	32	40	26	337	31	98	145	45	27	26	23	26	345	19	23	22	31	22	28	66	306	353	198	32	34	27	19	25	15	28	361	29	27	22	26	17	21	21	29

369: 25 22 19 19 23 23 18 24

Sample Title: CP4104S03-04

Channel	1	2	3	4	5	6	7	8
377:	21	28	20	17	19	29	23	23
385:	25	18	26	18	29	17	29	23
393:	28	34	16	27	21	17	18	11
401:	24	33	26	22	24	17	17	24
409:	37	33	22	18	17	24	21	21
417:	20	27	17	13	17	18	18	23
425:	15	17	19	14	18	13	14	20
433:	18	28	20	10	18	16	21	16
441:	20	17	15	13	22	16	17	15
449:	18	11	14	19	21	20	17	20
457:	16	10	12	18	8	22	51	48
465:	24	17	14	11	23	15	17	12
473:	13	17	14	22	15	26	26	15
481:	21	19	11	19	17	15	17	18
489:	16	12	12	20	16	12	6	7
497:	6	7	13	10	16	12	14	16
505:	12	22	8	17	20	47	94	78
513:	23	24	22	12	14	10	12	12
521:	16	10	17	11	13	12	14	8
529:	19	12	15	20	12	10	11	11
537:	13	14	13	19	17	9	11	20
545:	17	14	9	19	15	17	18	9
553:	11	12	11	11	10	13	8	15
561:	10	16	24	16	14	14	13	12
569:	10	22	18	15	16	10	20	9
577:	12	12	11	23	11	26	122	164
585:	39	6	15	21	14	16	11	9
593:	10	10	13	11	13	11	15	14
601:	14	12	14	16	10	22	15	26
609:	121	226	53	13	16	14	13	10
617:	8	12	11	17	11	8	14	13
625:	17	14	13	18	17	12	10	13
633:	9	13	10	13	8	9	13	6
641:	15	10	12	11	12	13	12	13
649:	11	10	5	19	14	8	8	12
657:	7	13	12	8	13	11	11	9
665:	18	18	10	9	12	9	12	17
673:	6	8	16	7	11	13	13	13
681:	4	16	7	17	8	9	10	5
689:	8	8	10	19	9	14	11	18
697:	17	13	14	15	11	18	10	16
705:	8	4	11	12	11	11	6	11
713:	15	12	14	9	12	17	12	12
721:	5	7	9	10	8	15	34	56
729:	17	10	12	6	11	10	15	5
737:	10	7	9	17	10	10	17	11
745:	15	6	8	10	9	11	9	12
753:	16	9	14	10	12	9	7	9
761:	6	7	13	9	12	15	10	17
769:	24	16	9	12	11	10	11	10
777:	14	9	8	10	6	12	13	11
785:	14	19	13	10	6	6	10	7
793:	8	17	36	28	11	7	4	12

801: 8 9 7 13 12 8 12 8

Sample Title: CP4104S03-04

Channel	1	2	3	4	5	6	7	8
809:	11	7	8	9	9	9	9	12
817:	4	14	7	9	9	13	14	6
825:	5	12	10	9	10	5	10	8
833:	7	9	10	12	10	8	9	10
841:	11	12	9	13	3	1	4	2
849:	10	7	13	6	6	3	7	11
857:	6	7	8	19	28	15	11	8
865:	7	7	7	6	9	7	3	6
873:	6	10	7	7	4	7	8	6
881:	3	2	7	11	10	7	4	7
889:	10	6	8	13	10	13	6	9
897:	6	12	10	10	9	7	8	8
905:	7	7	2	4	15	16	83	117
913:	29	8	16	12	9	6	6	3
921:	7	12	12	6	6	5	8	7
929:	5	11	13	11	16	16	17	7
937:	4	10	8	4	6	7	5	7
945:	8	4	8	5	7	5	10	7
953:	7	4	6	12	3	4	8	6
961:	6	12	10	8	31	14	9	18
969:	52	47	22	8	12	3	2	8
977:	11	5	9	3	10	6	7	9
985:	7	12	10	8	10	11	9	5
993:	3	10	8	9	3	10	13	16
1001:	14	13	7	8	5	5	7	6
1009:	4	7	7	8	11	10	6	4
1017:	8	15	4	5	7	4	5	6
1025:	9	7	7	6	6	9	5	4
1033:	10	12	4	7	1	10	8	6
1041:	15	4	5	7	3	4	6	5
1049:	7	9	6	5	5	10	6	5
1057:	6	4	9	5	6	4	7	7
1065:	10	10	7	6	8	6	9	5
1073:	11	6	7	8	7	12	12	7
1081:	5	9	8	8	6	5	6	7
1089:	4	8	7	7	5	8	8	3
1097:	6	10	11	11	7	10	10	12
1105:	9	9	8	7	4	13	8	7
1113:	6	7	11	10	6	11	13	36
1121:	51	14	12	7	9	5	8	5
1129:	6	9	5	6	4	8	5	6
1137:	9	7	11	9	5	10	2	6
1145:	3	7	3	7	7	7	5	4
1153:	8	4	15	12	11	6	10	3
1161:	9	5	11	7	8	5	7	10
1169:	6	11	4	6	7	7	7	7
1177:	5	4	9	8	3	6	8	6
1185:	8	6	10	7	12	14	4	12
1193:	6	8	4	11	9	11	6	3
1201:	4	6	6	12	5	8	5	15
1209:	12	12	9	13	10	15	8	9
1217:	4	13	12	7	9	8	11	8
1225:	6	5	7	8	15	7	9	10

1233: 4 7 17 8 7 25 19 16

Sample Title: CP4104S03-04

Channel	1	2	3	4	5	6	7	8	9
1241:	6	11	3	4	8	6	9	7	
1249:	6	6	11	6	8	5	2	2	
1257:	3	6	4	5	4	4	5	8	
1265:	3	10	6	5	8	3	5	5	
1273:	0	4	6	4	4	3	9	9	
1281:	9	7	10	2	10	7	4	4	
1289:	6	4	9	4	7	4	3	6	
1297:	3	1	3	3	3	4	6	4	
1305:	6	4	3	8	5	5	1	7	
1313:	7	8	2	4	1	10	3	7	
1321:	2	4	3	1	5	2	6	4	
1329:	3	2	9	3	2	6	3	2	
1337:	5	4	3	2	4	4	4	5	
1345:	2	4	4	4	3	3	2	8	
1353:	3	7	7	5	3	4	2	3	
1361:	4	4	4	2	2	5	1	2	
1369:	1	6	5	4	3	3	5	3	
1377:	4	11	10	6	3	3	2	3	
1385:	3	5	3	2	2	2	1	5	
1393:	2	4	5	1	1	3	0	7	
1401:	7	3	7	4	5	3	3	7	
1409:	5	2	5	3	4	3	8	1	
1417:	6	2	5	1	4	1	4	0	
1425:	0	1	3	1	2	3	5	1	
1433:	6	6	2	1	1	2	1	2	
1441:	1	4	9	1	6	2	1	5	
1449:	1	2	3	3	3	3	2	2	
1457:	4	7	17	130	328	241	58	13	
1465:	6	5	2	0	1	3	0	0	
1473:	2	2	0	2	1	3	1	4	
1481:	4	2	3	1	1	1	2	1	
1489:	2	2	2	2	1	4	0	2	
1497:	2	2	0	1	2	4	6	4	
1505:	2	2	1	5	7	7	3	1	
1513:	0	4	1	2	2	4	1	1	
1521:	2	0	2	2	1	3	3	3	
1529:	3	1	2	5	2	2	3	1	
1537:	2	3	2	3	1	1	1	4	
1545:	4	2	1	3	2	2	1	0	
1553:	3	1	2	1	2	0	1	5	
1561:	1	3	1	3	1	1	1	2	
1569:	1	5	0	0	1	1	0	3	
1577:	1	1	1	3	1	1	0	3	
1585:	0	1	0	4	13	4	1	4	
1593:	8	4	2	3	2	1	0	3	
1601:	1	3	2	2	2	0	1	2	
1609:	4	4	0	2	1	2	3	1	
1617:	1	3	2	5	6	3	2	2	
1625:	4	1	4	0	1	5	3	5	
1633:	0	0	1	1	2	2	2	1	
1641:	0	1	1	1	0	1	0	1	
1649:	0	1	1	1	1	0	1	2	
1657:	2	0	0	2	7	5	2	1	

1665: 0 3 1 3 1 0 2 0

Sample Title: CP4104S03-04

Channel	1	2	3	4	5	6	7	8
1673:	1	2	0	0	2	0	0	0
1681:	3	1	2	1	1	4	2	2
1689:	1	1	2	1	0	0	3	2
1697:	1	2	0	1	1	0	1	3
1705:	0	0	3	0	0	1	2	1
1713:	2	2	2	2	5	0	1	1
1721:	0	1	2	1	1	1	1	2
1729:	6	7	5	0	1	0	0	0
1737:	1	1	0	1	1	1	0	1
1745:	1	0	3	4	4	1	2	0
1753:	2	0	1	2	0	0	0	2
1761:	2	1	9	24	28	15	4	2
1769:	0	2	0	0	4	2	0	0
1777:	1	3	0	0	0	2	0	1
1785:	0	2	0	1	0	0	0	1
1793:	1	2	0	2	3	0	3	0
1801:	1	2	3	2	2	1	2	2
1809:	0	2	1	1	0	0	1	0
1817:	1	2	3	2	3	0	2	1
1825:	1	1	6	1	2	1	0	2
1833:	0	1	0	0	0	4	0	1
1841:	0	2	0	1	1	3	1	3
1849:	5	3	3	4	1	2	0	0
1857:	0	1	1	0	1	0	1	2
1865:	0	0	0	2	2	2	1	0
1873:	0	2	4	0	0	2	1	0
1881:	0	1	2	0	3	3	1	0
1889:	0	2	1	2	0	1	0	3
1897:	0	2	1	0	1	0	0	2
1905:	1	1	1	0	4	2	2	0
1913:	0	0	0	4	0	0	0	1
1921:	2	0	1	0	2	1	0	0
1929:	2	0	1	2	0	1	0	0
1937:	0	1	5	0	1	0	1	2
1945:	0	0	2	0	1	2	1	3
1953:	0	0	1	1	0	1	1	1
1961:	0	1	1	3	0	1	4	3
1969:	2	1	2	0	3	3	0	1
1977:	1	1	1	1	0	2	0	1
1985:	0	2	1	2	2	0	1	3
1993:	2	0	0	0	0	0	1	0
2001:	0	0	0	2	3	2	1	0
2009:	0	0	1	1	0	0	0	2
2017:	0	1	0	1	1	2	1	2
2025:	0	1	1	0	0	1	3	1
2033:	0	1	1	1	0	1	2	0
2041:	1	1	3	1	0	2	2	0
2049:	0	1	0	3	1	2	1	1
2057:	0	1	1	1	2	0	1	0
2065:	1	1	0	1	2	1	2	1
2073:	1	4	1	2	1	2	0	2
2081:	1	0	0	1	0	2	1	1
2089:	2	0	2	1	2	2	0	1

2097: 1 0 0 1 2 1 5 5

Sample Title: CP4104S03-04

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

2529: 0 2 1 0 0 0 1 0

Sample Title: CP4104S03-04

Channel	1	0	1	0	0	2	0	0
2537:	1	0	1	0	0	2	0	0
2545:	0	0	1	0	1	0	1	1
2553:	0	0	0	0	2	0	0	1
2561:	1	0	0	0	1	1	0	0
2569:	0	0	1	0	0	0	1	0
2577:	1	0	0	0	1	1	0	1
2585:	1	0	1	0	1	0	0	2
2593:	1	1	0	1	1	0	2	0
2601:	0	0	0	0	1	0	0	0
2609:	0	0	2	3	9	33	40	28
2617:	3	0	1	0	0	0	1	0
2625:	0	1	1	0	0	0	0	0
2633:	0	0	1	1	0	0	0	1
2641:	1	1	0	1	1	1	0	0
2649:	0	0	0	0	0	0	0	2
2657:	1	0	0	0	0	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	0	1	0	0	0	1	1
2681:	0	0	0	0	0	1	0	0
2689:	0	0	0	0	0	0	1	0
2697:	0	0	0	1	0	0	1	0
2705:	0	0	1	0	0	0	1	1
2713:	0	1	0	0	1	2	0	1
2721:	0	0	0	0	0	0	0	0
2729:	0	0	1	2	0	0	0	0
2737:	0	0	1	2	0	0	0	2
2745:	0	1	1	1	1	0	0	1
2753:	1	0	0	0	0	0	0	1
2761:	1	0	0	1	1	1	0	0
2769:	0	0	0	1	1	0	0	0
2777:	0	0	0	0	1	1	0	1
2785:	0	1	0	0	1	0	0	0
2793:	0	2	0	0	1	0	1	0
2801:	0	1	0	0	0	0	0	0
2809:	0	0	0	0	0	0	1	0
2817:	0	0	0	1	0	0	0	1
2825:	0	0	0	1	1	0	0	0
2833:	0	1	0	0	1	0	0	0
2841:	1	0	0	0	0	1	0	0
2849:	0	1	0	1	0	0	0	0
2857:	0	1	0	0	1	0	0	0
2865:	0	0	1	0	0	0	0	1
2873:	0	0	1	1	0	1	0	0
2881:	0	1	0	0	0	0	0	0
2889:	1	0	1	2	0	0	0	0
2897:	0	0	0	1	1	0	0	0
2905:	0	1	0	0	1	0	1	0
2913:	1	0	0	1	0	2	0	1
2921:	0	0	0	0	0	0	0	0
2929:	0	2	0	1	0	0	0	0
2937:	0	0	0	0	0	0	1	1
2945:	1	0	0	0	0	0	0	1
2953:	1	0	0	1	2	0	0	1

2961: 0 0 0 0 0 0 0 0

Sample Title: CP4104S03-04

Channel	1	2	3	4	5	6	7	8	9
2969:	0	1	0	1	0	1	0	0	0
2977:	0	0	1	0	0	0	0	0	0
2985:	0	0	0	0	1	0	0	0	0
2993:	0	0	0	0	0	0	0	0	0
3001:	0	1	0	0	0	0	0	0	0
3009:	0	0	0	0	1	1	0	0	0
3017:	1	0	0	0	0	0	0	0	1
3025:	0	1	0	0	0	0	1	0	0
3033:	0	0	0	0	0	0	0	0	0
3041:	0	0	0	0	0	0	0	0	0
3049:	0	1	0	0	0	0	0	0	1
3057:	0	0	0	1	1	0	0	0	0
3065:	0	0	1	0	0	0	0	0	0
3073:	0	0	1	0	1	0	0	0	0
3081:	0	1	0	1	0	1	1	0	0
3089:	0	0	0	0	1	0	0	0	1
3097:	0	0	1	0	0	0	0	0	0
3105:	0	0	0	0	0	1	0	0	1
3113:	1	0	0	1	0	0	0	0	0
3121:	1	0	1	0	0	0	1	1	1
3129:	0	0	0	0	0	0	0	0	1
3137:	0	0	0	0	0	1	0	1	1
3145:	0	1	0	0	0	1	0	0	0
3153:	0	1	0	0	0	0	0	0	0
3161:	0	0	0	1	0	0	0	0	0
3169:	0	0	0	0	0	0	1	1	1
3177:	0	0	0	0	1	0	0	0	1
3185:	0	0	0	0	0	1	0	0	0
3193:	0	0	0	0	2	0	1	1	1
3201:	0	1	0	0	0	0	0	0	0
3209:	0	1	0	0	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0	0
3225:	0	0	0	0	0	0	0	0	0
3233:	0	0	1	0	0	0	0	0	0
3241:	0	0	0	0	0	1	0	1	1
3249:	1	0	0	0	0	0	0	0	1
3257:	0	0	1	0	0	0	0	0	0
3265:	0	0	0	0	1	0	0	0	0
3273:	0	0	1	0	0	0	1	1	1
3281:	0	0	0	0	0	0	0	0	0
3289:	0	0	0	0	1	0	0	0	0
3297:	0	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	1	0	0
3313:	0	0	0	0	0	1	0	0	0
3321:	0	0	1	1	0	0	1	0	0
3329:	0	0	1	0	1	0	0	0	0
3337:	0	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0	1
3377:	0	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	1	1	1

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP4104S03-04

Channel	1	2	3	4	5	6	7	8	9
3401:	1	0	1	1	0	1	0	0	
3409:	0	1	1	0	0	1	1	0	
3417:	0	1	0	0	0	0	0	1	
3425:	0	1	0	0	0	0	1	0	
3433:	1	0	0	0	0	0	0	0	
3441:	0	1	0	0	0	0	0	0	
3449:	1	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	1	0	0	0	0	0	0	
3481:	0	0	0	1	0	0	0	0	
3489:	0	0	0	0	0	0	0	0	
3497:	0	0	0	0	0	0	0	0	
3505:	0	1	0	0	0	0	0	0	
3513:	0	0	0	0	0	0	0	0	
3521:	0	1	1	1	0	0	0	0	
3529:	0	0	0	0	0	0	0	0	
3537:	0	0	0	0	1	1	0	0	
3545:	0	0	0	0	0	0	0	0	
3553:	0	0	0	0	0	0	0	0	
3561:	0	0	0	1	0	0	0	0	
3569:	0	0	0	0	1	3	0	0	
3577:	0	0	0	0	0	0	0	0	
3585:	1	0	1	0	0	0	1	0	
3593:	0	1	0	0	0	0	0	0	
3601:	0	0	0	1	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	0	
3641:	0	1	0	0	0	0	0	0	
3649:	0	1	0	0	0	1	0	0	
3657:	0	0	1	0	1	0	0	0	
3665:	0	0	2	0	0	0	0	0	
3673:	0	0	0	1	0	0	0	1	
3681:	0	0	0	0	0	0	0	0	
3689:	0	0	0	0	0	0	0	1	
3697:	0	0	0	0	1	0	0	2	
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	0	0	0	0	0	0	
3737:	0	0	0	1	0	0	1	1	
3745:	0	0	1	0	0	0	0	0	
3753:	0	0	0	0	0	0	1	0	
3761:	0	0	1	0	0	0	0	0	
3769:	0	0	0	0	0	0	0	0	
3777:	0	0	1	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:	1	0	0	0	0	0	0	1	
3817:	0	0	0	0	0	0	0	0	

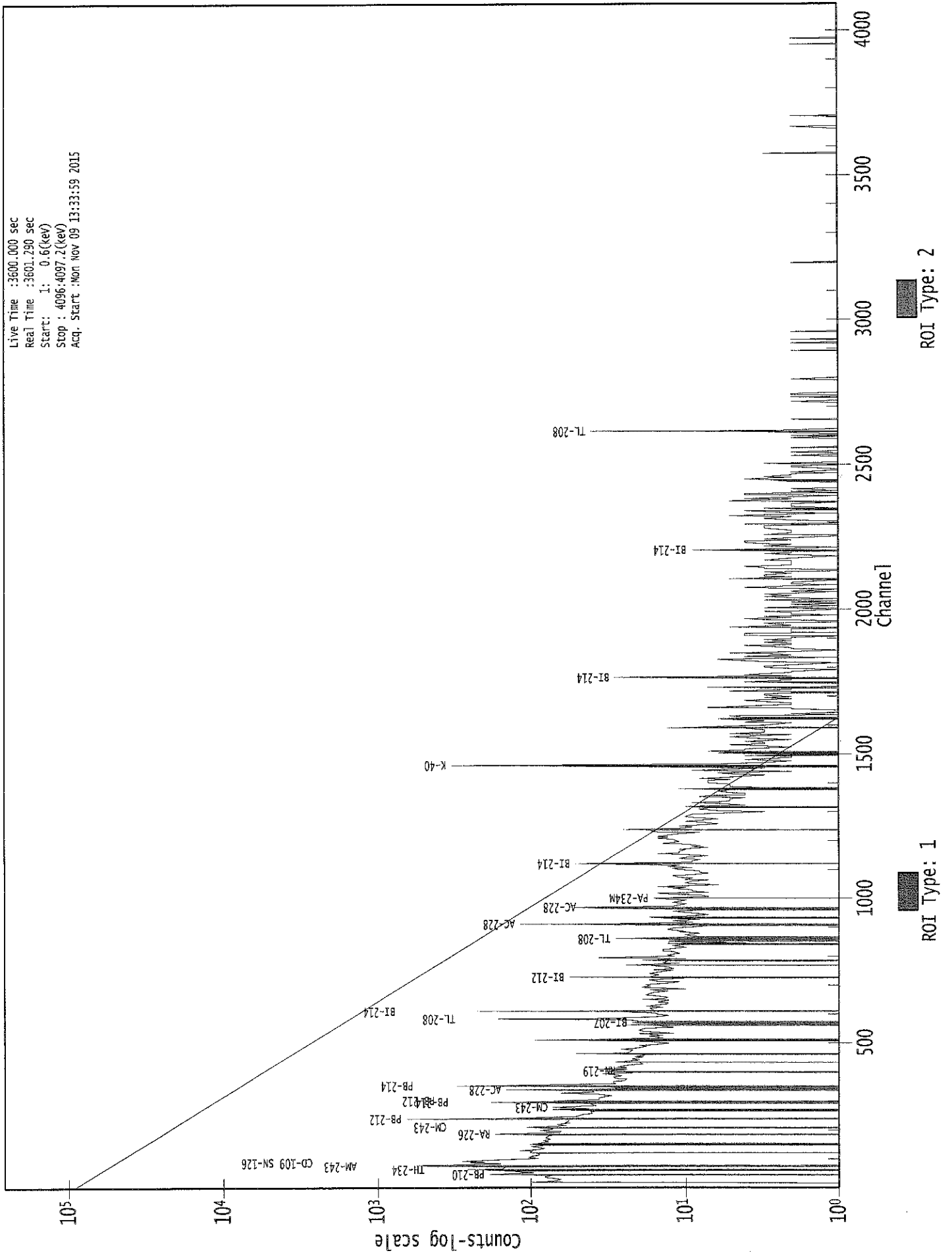
3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP4104S03-04

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	0
3841:	0	1	0	0	0	0	1	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	1	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	1	0	0
3913:	1	0	1	0	0	1	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	1	0	0	0	0	0
3945:	0	0	0	0	1	0	0	2
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	2	1	0	1	0
3977:	0	1	0	0	0	0	0	0
3985:	0	0	1	0	1	0	0	0
3993:	0	0	0	0	0	0	1	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	1	0	0
4017:	1	0	0	0	1	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	1	0	1
4049:	0	0	0	0	0	0	0	0
4057:	0	0	1	0	0	0	0	0
4065:	1	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	0	0	0	1

0000029342.CNF

Live Time :3600.000 sec
Real Time :3601.290 sec
Start : 1: 0.6(kev)
Stop : 4096.4097.2(kev)
Acq. Start :Mon Nov 09 13:33:59 2015



KCB
11/9/15Analysis Report for 1510088-04
CP4104S03-04

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-04
Sample Description : CP4104S03-04
Sample Type : SOIL

Sample Size : 5.687E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 8:57:25AM
Acquisition Started : 11/9/2015 2:34:44PM

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) : 18 - 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 : 29347

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AGP
11/10/15

Analysis Report for 1510088-04
CP4104S03-04

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 3:34:48PM
 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	36.99	37.35	0.0000	0.00
2	46.25	46.60	0.0000	0.00
3	63.53	63.87	0.0000	0.00
4	74.94	75.28	0.0000	0.00
5	77.54	77.88	0.0000	0.00
6	87.90	88.23	0.0000	0.00
7	93.34	93.68	0.0000	0.00
8	99.21	99.55	0.0000	0.00
9	104.68	105.01	0.0000	0.00
10	129.25	129.58	0.0000	0.00
11	186.03	186.34	0.0000	0.00
12	209.84	210.14	0.0000	0.00
13	238.84	239.13	0.0000	0.00
14	241.86	242.15	0.0000	0.00
15	272.23	272.51	0.0000	0.00
16	287.83	288.10	0.0000	0.00
17	295.44	295.71	0.0000	0.00
18	300.07	300.33	0.0000	0.00
19	338.49	338.74	0.0000	0.00
20	352.02	352.27	0.0000	0.00
21	365.89	366.14	0.0000	0.00
22	510.69	510.88	0.0000	0.00
23	552.30	552.48	0.0000	0.00
24	583.57	583.74	0.0000	0.00
25	609.70	609.86	0.0000	0.00
26	727.93	728.05	0.0000	0.00
27	744.31	744.42	0.0000	0.00
28	755.09	755.20	0.0000	0.00
29	794.73	794.82	0.0000	0.00
30	841.86	841.94	0.0000	0.00
31	860.66	860.74	0.0000	0.00
32	911.51	911.57	0.0000	0.00
33	934.23	934.28	0.0000	0.00
34	965.35	965.39	0.0000	0.00
35	969.40	969.44	0.0000	0.00
36	1018.47	1018.49	0.0000	0.00
37	1066.36	1066.36	0.0000	0.00
38	1120.37	1120.35	0.0000	0.00
39	1237.30	1237.24	0.0000	0.00
40	1377.59	1377.48	0.0000	0.00
41	1461.40	1461.25	0.0000	0.00
42	1589.36	1589.17	0.0000	0.00

Analysis Report for 1510088-04
CP4104S03-04

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1592.97	1592.78	0.0000	0.00
44	1685.51	1685.28	0.0000	0.00
45	1765.21	1764.95	0.0000	0.00
46	1848.85	1848.56	0.0000	0.00
47	1907.50	1907.19	0.0000	0.00
48	1936.88	1936.56	0.0000	0.00
49	2016.24	2015.89	0.0000	0.00
50	2081.38	2081.00	0.0000	0.00
51	2093.74	2093.36	0.0000	0.00
52	2103.78	2103.39	0.0000	0.00
53	2205.01	2204.59	0.0000	0.00
54	2248.82	2248.38	0.0000	0.00
55	2293.75	2293.29	0.0000	0.00
56	2297.71	2297.25	0.0000	0.00
57	2361.13	2360.64	0.0000	0.00
58	2368.98	2368.49	0.0000	0.00
59	2521.75	2521.20	0.0000	0.00
60	2615.19	2614.61	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1510088-04

CP4104S03-04

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 3:34:48PM

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	36.99	35 -	40	37.35	5.70E+01	64.67	7.98E+02	1.28
2	46.25	43 -	49	46.60	1.61E+02	79.51	1.04E+03	1.23
3	63.53	60 -	67	63.87	1.84E+02	114.98	2.09E+03	1.54
M 4	74.94	72 -	83	75.28	3.90E+02	96.03	1.35E+03	1.60
m 5	77.54	72 -	83	77.88	7.14E+02	103.56	1.38E+03	1.61
6	87.90	86 -	91	88.23	1.21E+02	100.24	1.92E+03	1.22
7	93.34	91 -	97	93.68	3.69E+02	104.00	1.56E+03	1.90
8	99.21	98 -	102	99.55	8.07E+01	60.77	7.51E+02	2.46
9	104.68	103 -	108	105.01	7.62E+01	69.86	9.16E+02	2.27
10	129.25	127 -	133	129.58	7.69E+01	81.62	1.16E+03	1.83
11	186.03	183 -	190	186.34	2.77E+02	79.65	8.66E+02	2.02
12	209.84	207 -	213	210.14	7.11E+01	67.13	7.70E+02	1.24
M 13	238.84	235 -	245	239.13	1.05E+03	79.28	4.35E+02	1.66
m 14	241.86	235 -	245	242.15	2.57E+02	88.22	5.35E+02	2.20
15	272.23	265 -	282	272.51	1.91E+02	115.93	1.15E+03	2.40
16	287.83	285 -	290	288.10	3.68E+01	44.29	3.58E+02	2.44
M 17	295.44	292 -	304	295.71	2.93E+02	50.61	3.24E+02	1.52
m 18	300.07	292 -	304	300.33	6.76E+01	47.19	3.66E+02	1.91
19	338.49	335 -	343	338.74	2.38E+02	60.89	4.26E+02	1.65
20	352.02	347 -	357	352.27	5.52E+02	75.88	4.74E+02	1.90
21	365.89	363 -	369	366.14	3.27E+01	38.75	2.51E+02	1.72
22	510.69	505 -	516	510.88	2.01E+02	58.28	3.25E+02	2.01
23	552.30	548 -	556	552.48	3.15E+01	37.78	1.95E+02	4.63
24	583.57	579 -	591	583.74	3.16E+02	59.99	2.81E+02	1.98
25	609.70	606 -	614	609.86	3.85E+02	54.63	2.15E+02	1.75
26	727.93	724 -	732	728.05	9.80E+01	36.05	1.40E+02	1.87
27	744.31	741 -	747	744.42	3.03E+01	25.99	9.94E+01	2.74
28	755.09	750 -	761	755.20	5.44E+01	37.68	1.51E+02	6.41
29	794.73	792 -	797	794.82	4.77E+01	22.76	6.46E+01	1.48
30	841.86	839 -	846	841.94	2.14E+01	25.77	9.73E+01	3.40
31	860.66	857 -	865	860.74	3.48E+01	33.11	1.44E+02	2.29
32	911.51	906 -	918	911.57	2.32E+02	47.48	1.56E+02	2.26
33	934.23	931 -	937	934.28	2.05E+01	22.03	7.30E+01	1.49
M 34	965.35	963 -	974	965.39	3.48E+01	20.10	5.79E+01	1.93
m 35	969.40	963 -	974	969.44	1.45E+02	32.25	9.98E+01	1.95
36	1018.47	1014 -	1023	1018.49	2.20E+01	26.80	9.00E+01	3.65
37	1066.36	1063 -	1070	1066.36	2.28E+01	20.10	5.25E+01	5.22
38	1120.37	1114 -	1124	1120.35	7.45E+01	39.13	1.63E+02	2.09
39	1237.30	1232 -	1241	1237.24	4.55E+01	35.01	1.47E+02	3.95
40	1377.59	1374 -	1380	1377.48	3.04E+01	17.15	3.13E+01	1.90

Analysis Report for 1510088-04

CP4104S03-04

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M 41	1461.40	1456 -	1466	1461.25	8.03E+02	58.47	2.77E+01	2.18
m 42	1589.36	1584 -	1599	1589.17	2.52E+01	15.01	2.11E+01	2.47
m 43	1592.97	1584 -	1599	1592.78	1.45E+01	14.74	1.36E+01	2.47
44	1685.51	1682 -	1690	1685.28	1.15E+01	10.22	9.00E+00	2.76
45	1765.21	1761 -	1770	1764.95	8.13E+01	20.86	1.75E+01	2.11
46	1848.85	1844 -	1852	1848.56	1.70E+01	11.16	8.10E+00	2.80
47	1907.50	1904 -	1909	1907.19	8.60E+00	7.00	2.80E+00	1.65
48	1936.88	1931 -	1942	1936.56	1.64E+01	10.58	5.21E+00	3.28
49	2016.24	2014 -	2018	2015.89	7.13E+00	6.18	1.75E+00	2.50
50	2081.38	2078 -	2083	2081.00	6.00E+00	4.90	0.00E+00	2.88
51	2093.74	2090 -	2096	2093.36	5.36E+00	6.34	3.29E+00	3.30
52	2103.78	2098 -	2109	2103.39	3.08E+01	13.11	6.44E+00	3.05
53	2205.01	2199 -	2208	2204.59	1.20E+01	13.71	2.01E+01	2.10
54	2248.82	2245 -	2251	2248.38	8.00E+00	5.66	0.00E+00	2.15
M 55	2293.75	2292 -	2303	2293.29	6.86E+00	4.12	2.11E-01	2.74
m 56	2297.71	2292 -	2303	2297.25	1.23E+01	8.94	3.74E+00	2.73
57	2361.13	2356 -	2364	2360.64	1.28E+01	8.96	4.40E+00	4.59
58	2368.98	2365 -	2371	2368.49	9.27E+00	7.50	3.45E+00	4.48
59	2521.75	2519 -	2523	2521.20	5.00E+00	4.47	0.00E+00	2.75
60	2615.19	2610 -	2619	2614.61	1.07E+02	20.69	0.00E+00	2.66

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 3:34:48PM

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	36.99	35 -	40	5.70E+01	64.67	7.98E+02	5.17E+01
2	46.25	43 -	49	1.61E+02	79.51	1.04E+03	6.19E+01
3	63.53	60 -	67	1.84E+02	114.98	2.09E+03	9.18E+01
M 4	74.94	72 -	83	3.90E+02	96.03	1.35E+03	6.04E+01
m 5	77.54	72 -	83	7.14E+02	103.56	1.38E+03	6.10E+01
6	87.90	86 -	91	1.21E+02	100.24	1.92E+03	8.04E+01
7	93.34	91 -	97	3.69E+02	104.00	1.56E+03	7.94E+01
8	99.21	98 -	102	8.07E+01	60.77	7.51E+02	4.77E+01

Analysis Report for 1510088-04

CP4104S03-04

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
9	104.68	103 -	108	7.62E+01	69.86	9.16E+02	5.56E+01
10	129.25	127 -	133	7.69E+01	81.62	1.16E+03	6.55E+01
11	186.03	183 -	190	2.77E+02	79.65	8.66E+02	5.95E+01
12	209.84	207 -	213	7.11E+01	67.13	7.70E+02	5.34E+01
M	13	235 -	245	1.05E+03	79.28	4.35E+02	3.43E+01
m	14	235 -	245	2.57E+02	88.22	5.35E+02	3.80E+01
15	272.23	265 -	282	1.91E+02	115.93	1.15E+03	3.46E+01
16	287.83	285 -	290	3.68E+01	44.29	3.58E+02	3.50E+01
M	17	292 -	304	2.93E+02	50.61	3.24E+02	2.96E+01
m	18	292 -	304	6.76E+01	47.19	3.66E+02	3.15E+01
19	338.49	335 -	343	2.38E+02	60.89	4.26E+02	4.31E+01
20	352.02	347 -	357	5.52E+02	75.88	4.74E+02	4.90E+01
21	365.89	363 -	369	3.27E+01	38.75	2.51E+02	3.04E+01
22	510.69	505 -	516	2.01E+02	58.28	3.25E+02	4.19E+01
23	552.30	548 -	556	3.15E+01	37.78	1.95E+02	2.97E+01
24	583.57	579 -	591	3.16E+02	59.99	2.81E+02	1.67E+01
25	609.70	606 -	614	3.85E+02	54.63	2.15E+02	3.12E+01
26	727.93	724 -	732	9.80E+01	36.05	1.40E+02	2.48E+01
27	744.31	741 -	747	3.03E+01	25.99	9.94E+01	1.93E+01
28	755.09	750 -	761	5.44E+01	37.68	1.51E+02	2.85E+01
29	794.73	792 -	797	4.77E+01	22.76	6.46E+01	1.49E+01
30	841.86	839 -	846	2.14E+01	25.77	9.73E+01	1.98E+01
31	860.66	857 -	865	3.48E+01	33.11	1.44E+02	2.54E+01
32	911.51	906 -	918	2.32E+02	47.48	1.56E+02	2.99E+01
33	934.23	931 -	937	2.05E+01	22.03	7.30E+01	1.65E+01
M	34	963 -	974	3.48E+01	20.10	5.79E+01	1.25E+01
m	35	963 -	974	1.45E+02	32.25	9.98E+01	1.64E+01
36	1018.47	1014 -	1023	2.20E+01	26.80	9.00E+01	2.06E+01
37	1066.36	1063 -	1070	2.28E+01	20.10	5.25E+01	1.45E+01
38	1120.37	1114 -	1124	7.45E+01	39.13	1.63E+02	2.89E+01
39	1237.30	1232 -	1241	4.55E+01	35.01	1.47E+02	2.66E+01
40	1377.59	1374 -	1380	3.04E+01	17.15	3.13E+01	1.08E+01
41	1461.40	1456 -	1466	8.03E+02	58.47	2.77E+01	1.18E+01
M	42	1584 -	1599	2.52E+01	15.01	2.11E+01	7.55E+00
m	43	1584 -	1599	1.45E+01	14.74	1.36E+01	6.07E+00
44	1685.51	1682 -	1690	1.15E+01	10.22	9.00E+00	6.29E+00
45	1765.21	1761 -	1770	8.13E+01	20.86	1.75E+01	8.62E+00
46	1848.85	1844 -	1852	1.70E+01	11.16	8.10E+00	6.19E+00
47	1907.50	1904 -	1909	8.60E+00	7.00	2.80E+00	3.14E+00
48	1936.88	1931 -	1942	1.64E+01	10.58	5.21E+00	5.60E+00
49	2016.24	2014 -	2018	7.13E+00	6.18	1.75E+00	2.57E+00
50	2081.38	2078 -	2083	6.00E+00	4.90	0.00E+00	0.00E+00
51	2093.74	2090 -	2096	5.36E+00	6.34	3.29E+00	3.57E+00
52	2103.78	2098 -	2109	3.08E+01	13.11	6.44E+00	5.75E+00
53	2205.01	2199 -	2208	1.20E+01	13.71	2.01E+01	9.73E+00
54	2248.82	2245 -	2251	8.00E+00	5.66	0.00E+00	0.00E+00
M	55	2292 -	2303	6.86E+00	4.12	2.11E-01	7.54E-01
m	56	2292 -	2303	1.23E+01	8.94	3.74E+00	3.18E+00
57	2361.13	2356 -	2364	1.28E+01	8.96	4.40E+00	4.43E+00
58	2368.98	2365 -	2371	9.27E+00	7.50	3.45E+00	3.60E+00
59	2521.75	2519 -	2523	5.00E+00	4.47	0.00E+00	0.00E+00

Analysis Report for 1510088-04

CP4104S03-04

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
60	2615.19	2610 -	2619	1.07E+02	20.69	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 3:34:48PM

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	36.99	35 -	40	37.35	5.70E+01	64.67	7.98E+02	PM-145	
2	46.25	43 -	49	46.60	1.61E+02	79.51	1.04E+03	PM-145	
3	63.53	60 -	67	63.87	1.84E+02	114.98	2.09E+03	PB-210	
								TH-234	
								TH-230	
M	4	74.94	72 -	83	75.28	3.90E+02	96.03	1.35E+03	AM-243
m	5	77.54	72 -	83	77.88	7.14E+02	103.56	1.38E+03	TI-44
	6	87.90	86 -	91	88.23	1.21E+02	100.24	1.92E+03	CD-109
								SN-126	
								LU-176	
	7	93.34	91 -	97	93.68	3.69E+02	104.00	1.56E+03	GA-67
	8	99.21	98 -	102	99.55	8.07E+01	60.77	7.51E+02	.....
	9	104.68	103 -	108	105.01	7.62E+01	69.86	9.16E+02	EU-155
	10	129.25	127 -	133	129.58	7.69E+01	81.62	1.16E+03	.....
	11	186.03	183 -	190	186.34	2.77E+02	79.65	8.66E+02	RA-226
	12	209.84	207 -	213	210.14	7.11E+01	67.13	7.70E+02	CM-243
								GA-67	
M	13	238.84	235 -	245	239.13	1.05E+03	79.28	4.35E+02	PB-212
m	14	241.86	235 -	245	242.15	2.57E+02	88.22	5.35E+02	RA-224
	15	272.23	265 -	282	272.51	1.91E+02	115.93	1.15E+03	LU-173
	16	287.83	285 -	290	288.10	3.68E+01	44.29	3.58E+02	.....
M	17	295.44	292 -	304	295.71	2.93E+02	50.61	3.24E+02	PB-214
m	18	300.07	292 -	304	300.33	6.76E+01	47.19	3.66E+02	PB-212
								BI-210M	
								GA-67	

Analysis Report for 1510088-04

CP4104S03-04

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
19	338.49	335 -	343	338.74	2.38E+02	60.89	4.26E+02	AC-228
20	352.02	347 -	357	352.27	5.52E+02	75.88	4.74E+02	PB-214
21	365.89	363 -	369	366.14	3.27E+01	38.75	2.51E+02	.....
22	510.69	505 -	516	510.88	2.01E+02	58.28	3.25E+02	.....
23	552.30	548 -	556	552.48	3.15E+01	37.78	1.95E+02	RB-83
24	583.57	579 -	591	583.74	3.16E+02	59.99	2.81E+02	TL-208
25	609.70	606 -	614	609.86	3.85E+02	54.63	2.15E+02	BI-214
26	727.93	724 -	732	728.05	9.80E+01	36.05	1.40E+02	BI-212
27	744.31	741 -	747	744.42	3.03E+01	25.99	9.94E+01	.....
28	755.09	750 -	761	755.20	5.44E+01	37.68	1.51E+02	.....
29	794.73	792 -	797	794.82	4.77E+01	22.76	6.46E+01	.....
30	841.86	839 -	846	841.94	2.14E+01	25.77	9.73E+01	.....
31	860.66	857 -	865	860.74	3.48E+01	33.11	1.44E+02	TL-208
32	911.51	906 -	918	911.57	2.32E+02	47.48	1.56E+02	AC-228 LU-172
33	934.23	931 -	937	934.28	2.05E+01	22.03	7.30E+01	.....
M 34	965.35	963 -	974	965.39	3.48E+01	20.10	5.79E+01	.....
m 35	969.40	963 -	974	969.44	1.45E+02	32.25	9.98E+01	AC-228
36	1018.47	1014 -	1023	1018.49	2.20E+01	26.80	9.00E+01	.....
37	1066.36	1063 -	1070	1066.36	2.28E+01	20.10	5.25E+01	.....
38	1120.37	1114 -	1124	1120.35	7.45E+01	39.13	1.63E+02	BI-214 SC-46 TA-182
39	1237.30	1232 -	1241	1237.24	4.55E+01	35.01	1.47E+02	CO-56
40	1377.59	1374 -	1380	1377.48	3.04E+01	17.15	3.13E+01	.....
41	1461.40	1456 -	1466	1461.25	8.03E+02	58.47	2.77E+01	K-40
M 42	1589.36	1584 -	1599	1589.17	2.52E+01	15.01	2.11E+01	.....
m 43	1592.97	1584 -	1599	1592.78	1.45E+01	14.74	1.36E+01	.....
44	1685.51	1682 -	1690	1685.28	1.15E+01	10.22	9.00E+00	.....
45	1765.21	1761 -	1770	1764.95	8.13E+01	20.86	1.75E+01	BI-214
46	1848.85	1844 -	1852	1848.56	1.70E+01	11.16	8.10E+00	.....
47	1907.50	1904 -	1909	1907.19	8.60E+00	7.00	2.80E+00	.....
48	1936.88	1931 -	1942	1936.56	1.64E+01	10.58	5.21E+00	.....
49	2016.24	2014 -	2018	2015.89	7.13E+00	6.18	1.75E+00	.....
50	2081.38	2078 -	2083	2081.00	6.00E+00	4.90	0.00E+00	.....
51	2093.74	2090 -	2096	2093.36	5.36E+00	6.34	3.29E+00	.....
52	2103.78	2098 -	2109	2103.39	3.08E+01	13.11	6.44E+00	.....
53	2205.01	2199 -	2208	2204.59	1.20E+01	13.71	2.01E+01	BI-214
54	2248.82	2245 -	2251	2248.38	8.00E+00	5.66	0.00E+00	.....
M 55	2293.75	2292 -	2303	2293.29	6.86E+00	4.12	2.11E-01	.....
m 56	2297.71	2292 -	2303	2297.25	1.23E+01	8.94	3.74E+00	.....
57	2361.13	2356 -	2364	2360.64	1.28E+01	8.96	4.40E+00	.....
58	2368.98	2365 -	2371	2368.49	9.27E+00	7.50	3.45E+00	.....
59	2521.75	2519 -	2523	2521.20	5.00E+00	4.47	0.00E+00	.....
60	2615.19	2610 -	2619	2614.61	1.07E+02	20.69	0.00E+00	TL-208

Analysis Report for 1510088-04
CP4104S03-04

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 3:34:48PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	36.99	5.70E+01	64.67	9.77E-03	1.78E-03
	2	46.25	1.61E+02	79.51	1.66E-02	1.78E-03
	3	63.53	1.84E+02	114.98	2.50E-02	1.92E-03
M	4	74.94	3.90E+02	96.03	2.75E-02	2.30E-03
m	5	77.54	7.14E+02	103.56	2.78E-02	2.39E-03
	6	87.90	1.21E+02	100.24	2.85E-02	2.74E-03
	7	93.34	3.69E+02	104.00	2.86E-02	2.64E-03
	8	99.21	8.07E+01	60.77	2.85E-02	2.52E-03
	9	104.68	7.62E+01	69.86	2.83E-02	2.41E-03
	10	129.25	7.69E+01	81.62	2.67E-02	2.09E-03
	11	186.03	2.77E+02	79.65	2.24E-02	2.03E-03
	12	209.84	7.11E+01	67.13	2.08E-02	1.85E-03
M	13	238.84	1.05E+03	79.28	1.92E-02	1.64E-03
m	14	241.86	2.57E+02	88.22	1.91E-02	1.61E-03
	15	272.23	1.91E+02	115.93	1.76E-02	1.39E-03
	16	287.83	3.68E+01	44.29	1.70E-02	1.32E-03
M	17	295.44	2.93E+02	50.61	1.67E-02	1.31E-03
m	18	300.07	6.76E+01	47.19	1.65E-02	1.30E-03
	19	338.49	2.38E+02	60.89	1.52E-02	1.22E-03
	20	352.02	5.52E+02	75.88	1.48E-02	1.19E-03
	21	365.89	3.27E+01	38.75	1.44E-02	1.17E-03
	22	510.69	2.01E+02	58.28	1.12E-02	9.91E-04
	23	552.30	3.15E+01	37.78	1.06E-02	9.47E-04
	24	583.57	3.16E+02	59.99	1.02E-02	9.15E-04
	25	609.70	3.85E+02	54.63	9.82E-03	8.88E-04
	26	727.93	9.80E+01	36.05	8.55E-03	7.75E-04
	27	744.31	3.03E+01	25.99	8.40E-03	7.60E-04
	28	755.09	5.44E+01	37.68	8.30E-03	7.50E-04
	29	794.73	4.77E+01	22.76	7.97E-03	7.15E-04
	30	841.86	2.14E+01	25.77	7.61E-03	6.73E-04
	31	860.66	3.48E+01	33.11	7.48E-03	6.56E-04
	32	911.51	2.32E+02	47.48	7.15E-03	6.15E-04
	33	934.23	2.05E+01	22.03	7.01E-03	6.03E-04
M	34	965.35	3.48E+01	20.10	6.83E-03	5.87E-04

Analysis Report for 1510088-04
 CP4104S03-04

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	35	969.40	1.45E+02	32.25	6.80E-03	5.85E-04
	36	1018.47	2.20E+01	26.80	6.54E-03	5.60E-04
	37	1066.36	2.28E+01	20.10	6.31E-03	5.35E-04
	38	1120.37	7.45E+01	39.13	6.07E-03	5.07E-04
	39	1237.30	4.55E+01	35.01	5.62E-03	4.68E-04
	40	1377.59	3.04E+01	17.15	5.18E-03	4.40E-04
	41	1461.40	8.03E+02	58.47	4.97E-03	4.19E-04
M	42	1589.36	2.52E+01	15.01	4.69E-03	3.87E-04
m	43	1592.97	1.45E+01	14.74	4.69E-03	3.86E-04
	44	1685.51	1.15E+01	10.22	4.52E-03	3.63E-04
	45	1765.21	8.13E+01	20.86	4.39E-03	3.43E-04
	46	1848.85	1.70E+01	11.16	4.28E-03	3.26E-04
	47	1907.50	8.60E+00	7.00	4.21E-03	3.26E-04
	48	1936.88	1.64E+01	10.58	4.18E-03	3.26E-04
	49	2016.24	7.13E+00	6.18	4.10E-03	3.26E-04
	50	2081.38	6.00E+00	4.90	4.04E-03	3.26E-04
	51	2093.74	5.36E+00	6.34	4.03E-03	3.26E-04
	52	2103.78	3.08E+01	13.11	4.02E-03	3.26E-04
	53	2205.01	1.20E+01	13.71	3.95E-03	3.26E-04
	54	2248.82	8.00E+00	5.66	3.92E-03	3.26E-04
M	55	2293.75	6.86E+00	4.12	3.90E-03	3.26E-04
m	56	2297.71	1.23E+01	8.94	3.89E-03	3.26E-04
	57	2361.13	1.28E+01	8.96	3.87E-03	3.26E-04
	58	2368.98	9.27E+00	7.50	3.86E-03	3.26E-04
	59	2521.75	5.00E+00	4.47	3.81E-03	3.26E-04
	60	2615.19	1.07E+02	20.69	3.79E-03	3.26E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 3:34:48PM
 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	36.99	5.70E+01	64.67			5.70E+01	6.47E+01
	2	46.25	1.61E+02	79.51	4.50E+01	8.46E+00	1.16E+02	8.00E+01
	3	63.53	1.84E+02	114.98	7.80E+01	1.33E+01	1.06E+02	1.16E+02
M	4	74.94	3.90E+02	96.03	5.09E+00	4.37E+00	3.85E+02	9.61E+01

Analysis Report for 1510088-04

CP4104S03-04

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	5	77.54	7.14E+02	103.56	9.75E+00	8.28E+00	7.05E+02	1.04E+02
	6	87.90	1.21E+02	100.24			1.21E+02	1.00E+02
	7	93.34	3.69E+02	104.00	1.34E+02	9.83E+00	2.35E+02	1.04E+02
	8	99.21	8.07E+01	60.77			8.07E+01	6.08E+01
	9	104.68	7.62E+01	69.86			7.62E+01	6.99E+01
	10	129.25	7.69E+01	81.62			7.69E+01	8.16E+01
	11	186.03	2.77E+02	79.65	6.41E+01	7.38E+00	2.13E+02	8.00E+01
	12	209.84	7.11E+01	67.13			7.11E+01	6.71E+01
M	13	238.84	1.05E+03	79.28	2.34E+01	6.34E+00	1.03E+03	7.95E+01
m	14	241.86	2.57E+02	88.22			2.57E+02	8.82E+01
	15	272.23	1.91E+02	115.93			1.91E+02	1.16E+02
	16	287.83	3.68E+01	44.29			3.68E+01	4.43E+01
M	17	295.44	2.93E+02	50.61	4.17E+00	5.50E+00	2.89E+02	5.09E+01
m	18	300.07	6.76E+01	47.19			6.76E+01	4.72E+01
	19	338.49	2.38E+02	60.89	2.22E-01	4.54E+00	2.38E+02	6.11E+01
	20	352.02	5.52E+02	75.88	8.83E+00	4.91E+00	5.43E+02	7.60E+01
	21	365.89	3.27E+01	38.75			3.27E+01	3.88E+01
	22	510.69	2.01E+02	58.28	8.12E+01	5.49E+00	1.19E+02	5.85E+01
	23	552.30	3.15E+01	37.78			3.15E+01	3.78E+01
	24	583.57	3.16E+02	59.99	6.34E+00	3.74E+00	3.09E+02	6.01E+01
	25	609.70	3.85E+02	54.63	5.20E+00	3.69E+00	3.80E+02	5.48E+01
	26	727.93	9.80E+01	36.05			9.80E+01	3.61E+01
	27	744.31	3.03E+01	25.99			3.03E+01	2.60E+01
	28	755.09	5.44E+01	37.68			5.44E+01	3.77E+01
	29	794.73	4.77E+01	22.76			4.77E+01	2.28E+01
	30	841.86	2.14E+01	25.77			2.14E+01	2.58E+01
	31	860.66	3.48E+01	33.11			3.48E+01	3.31E+01
	32	911.51	2.32E+02	47.48	3.28E+00	2.53E+00	2.29E+02	4.75E+01
	33	934.23	2.05E+01	22.03			2.05E+01	2.20E+01
M	34	965.35	3.48E+01	20.10			3.48E+01	2.01E+01
m	35	969.40	1.45E+02	32.25			1.45E+02	3.22E+01
	36	1018.47	2.20E+01	26.80			2.20E+01	2.68E+01
	37	1066.36	2.28E+01	20.10			2.28E+01	2.01E+01
	38	1120.37	7.45E+01	39.13	2.28E+00	2.55E+00	7.22E+01	3.92E+01
	39	1237.30	4.55E+01	35.01			4.55E+01	3.50E+01
	40	1377.59	3.04E+01	17.15			3.04E+01	1.72E+01
	41	1461.40	8.03E+02	58.47	6.46E+00	2.33E+00	7.97E+02	5.85E+01
M	42	1589.36	2.52E+01	15.01			2.52E+01	1.50E+01
m	43	1592.97	1.45E+01	14.74			1.45E+01	1.47E+01
	44	1685.51	1.15E+01	10.22			1.15E+01	1.02E+01
	45	1765.21	8.13E+01	20.86			8.13E+01	2.09E+01
	46	1848.85	1.70E+01	11.16			1.70E+01	1.12E+01
	47	1907.50	8.60E+00	7.00			8.60E+00	7.00E+00
	48	1936.88	1.64E+01	10.58			1.64E+01	1.06E+01
	49	2016.24	7.13E+00	6.18			7.13E+00	6.18E+00
	50	2081.38	6.00E+00	4.90			6.00E+00	4.90E+00
	51	2093.74	5.36E+00	6.34			5.36E+00	6.34E+00
	52	2103.78	3.08E+01	13.11			3.08E+01	1.31E+01
	53	2205.01	1.20E+01	13.71			1.20E+01	1.37E+01
	54	2248.82	8.00E+00	5.66			8.00E+00	5.66E+00
M	55	2293.75	6.86E+00	4.12			6.86E+00	4.12E+00
m	56	2297.71	1.23E+01	8.94			1.23E+01	8.94E+00
	57	2361.13	1.28E+01	8.96			1.28E+01	8.96E+00
	58	2368.98	9.27E+00	7.50			9.27E+00	7.50E+00

Analysis Report for 1510088-04

CP4104S03-04

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
59	2521.75	5.00E+00	4.47			5.00E+00	4.47E+00
60	2615.19	1.07E+02	20.69	3.47E+00	1.48E+00	1.04E+02	2.07E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 3:34:48PM
 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	36.99	5.70E+01	64.67			5.70E+01	6.47E+01	
2	46.25	1.61E+02	79.51	4.50E+01	8.46E+00	1.16E+02	8.00E+01	
3	63.53	1.84E+02	114.98	7.80E+01	1.33E+01	1.06E+02	1.16E+02	
M	4	74.94	3.90E+02	5.09E+00	4.37E+00	3.85E+02	9.61E+01	
m	5	77.54	7.14E+02	9.75E+00	8.28E+00	7.05E+02	1.04E+02	
6	87.90	1.21E+02	100.24			1.21E+02	1.00E+02	
7	93.34	3.69E+02	104.00	1.34E+02	9.83E+00	2.35E+02	1.04E+02	
8	99.21	8.07E+01	60.77			8.07E+01	6.08E+01	
9	104.68	7.62E+01	69.86			7.62E+01	6.99E+01	
10	129.25	7.69E+01	81.62			7.69E+01	8.16E+01	
11	186.03	2.77E+02	79.65	6.41E+01	7.38E+00	2.13E+02	8.00E+01	
12	209.84	7.11E+01	67.13			7.11E+01	6.71E+01	
M	13	238.84	1.05E+03	79.28	2.34E+01	6.34E+00	1.03E+03	7.95E+01
m	14	241.86	2.57E+02	88.22			2.57E+02	8.82E+01
15	272.23	1.91E+02	115.93			1.91E+02	1.16E+02	
16	287.83	3.68E+01	44.29			3.68E+01	4.43E+01	
M	17	295.44	2.93E+02	50.61	4.17E+00	5.50E+00	2.89E+02	5.09E+01
m	18	300.07	6.76E+01	47.19			6.76E+01	4.72E+01
19	338.49	2.38E+02	60.89	2.22E-01	4.54E+00	2.38E+02	6.11E+01	
20	352.02	5.52E+02	75.88	8.83E+00	4.91E+00	5.43E+02	7.60E+01	
21	365.89	3.27E+01	38.75			3.27E+01	3.88E+01	
22	510.69	2.01E+02	58.28	8.12E+01	5.49E+00	1.19E+02	5.85E+01	
23	552.30	3.15E+01	37.78			3.15E+01	3.78E+01	
24	583.57	3.16E+02	59.99	6.34E+00	3.74E+00	3.09E+02	6.01E+01	
25	609.70	3.85E+02	54.63	5.20E+00	3.69E+00	3.80E+02	5.48E+01	
26	727.93	9.80E+01	36.05			9.80E+01	3.61E+01	

Analysis Report for 1510088-04

CP4104S03-04

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
27	744.31	3.03E+01	25.99			3.03E+01	2.60E+01
28	755.09	5.44E+01	37.68			5.44E+01	3.77E+01
29	794.73	4.77E+01	22.76			4.77E+01	2.28E+01
30	841.86	2.14E+01	25.77			2.14E+01	2.58E+01
31	860.66	3.48E+01	33.11			3.48E+01	3.31E+01
32	911.51	2.32E+02	47.48	3.28E+00	2.53E+00	2.29E+02	4.75E+01
33	934.23	2.05E+01	22.03			2.05E+01	2.20E+01
M 34	965.35	3.48E+01	20.10			3.48E+01	2.01E+01
m 35	969.40	1.45E+02	32.25			1.45E+02	3.22E+01
36	1018.47	2.20E+01	26.80			2.20E+01	2.68E+01
37	1066.36	2.28E+01	20.10			2.28E+01	2.01E+01
38	1120.37	7.45E+01	39.13	2.28E+00	2.55E+00	7.22E+01	3.92E+01
39	1237.30	4.55E+01	35.01			4.55E+01	3.50E+01
40	1377.59	3.04E+01	17.15			3.04E+01	1.72E+01
41	1461.40	8.03E+02	58.47	6.46E+00	2.33E+00	7.97E+02	5.85E+01
M 42	1589.36	2.52E+01	15.01			2.52E+01	1.50E+01
m 43	1592.97	1.45E+01	14.74			1.45E+01	1.47E+01
44	1685.51	1.15E+01	10.22			1.15E+01	1.02E+01
45	1765.21	8.13E+01	20.86			8.13E+01	2.09E+01
46	1848.85	1.70E+01	11.16			1.70E+01	1.12E+01
47	1907.50	8.60E+00	7.00			8.60E+00	7.00E+00
48	1936.88	1.64E+01	10.58			1.64E+01	1.06E+01
49	2016.24	7.13E+00	6.18			7.13E+00	6.18E+00
50	2081.38	6.00E+00	4.90			6.00E+00	4.90E+00
51	2093.74	5.36E+00	6.34			5.36E+00	6.34E+00
52	2103.78	3.08E+01	13.11			3.08E+01	1.31E+01
53	2205.01	1.20E+01	13.71			1.20E+01	1.37E+01
54	2248.82	8.00E+00	5.66			8.00E+00	5.66E+00
M 55	2293.75	6.86E+00	4.12			6.86E+00	4.12E+00
m 56	2297.71	1.23E+01	8.94			1.23E+01	8.94E+00
57	2361.13	1.28E+01	8.96			1.28E+01	8.96E+00
58	2368.98	9.27E+00	7.50			9.27E+00	7.50E+00
59	2521.75	5.00E+00	4.47			5.00E+00	4.47E+00
60	2615.19	1.07E+02	20.69	3.47E+00	1.48E+00	1.04E+02	2.07E+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

: 00447

Analysis Report for 1510088-04
 CP4104S03-04

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.946	1460.81 *	10.67	1.98E+01	2.26E+00
GA-67	0.610	93.31 *	35.70	2.89E+02	1.26E+03
		208.95 *	2.24	1.91E+03	8.22E+03
		300.22 *	16.00	3.21E+02	1.41E+03
CD-109	0.997	88.03 *	3.72	1.58E+00	1.32E+00
SN-126	0.983	87.57 *	37.00	1.51E-01	1.26E-01
LU-173	0.616	100.72	5.24		
		272.11 *	21.20	7.07E-01	4.32E-01
		583.14 *	30.22	1.33E+00	2.85E-01
TL-208	0.964	860.37 *	4.48	1.37E+00	1.31E+00
		2614.66 *	35.85	1.00E+00	2.19E-01
		46.50 *	4.25	2.17E+00	1.52E+00
PB-210	0.990	727.17 *	11.80	1.28E+00	4.86E-01
BI-212	0.694	1620.62	2.75		
		238.63 *	44.60	1.59E+00	1.83E-01
		300.09 *	3.41	1.59E+00	1.11E+00
BI-214	0.965	609.31 *	46.30	1.10E+00	1.88E-01
		1120.29 *	15.10	1.04E+00	5.72E-01
		1764.49 *	15.80	1.55E+00	4.15E-01
PB-214	0.996	2204.22 *	4.98	8.03E-01	9.23E-01
		295.21 *	19.19	1.19E+00	2.30E-01
		351.92 *	37.19	1.31E+00	2.11E-01
RA-224	0.883	240.98 *	3.95	4.50E+00	1.59E+00
RA-226	0.995	186.21 *	3.28	3.83E+00	7.16E+00
AC-228	0.980	338.32 *	11.40	1.82E+00	4.88E-01
		911.07 *	27.70	1.53E+00	3.43E-01
		969.11 *	16.60	1.69E+00	4.04E-01
TH-234	0.991	63.29 *	3.80	1.48E+00	1.61E+00
AM-243	0.989	74.67 *	66.00	2.80E-01	7.38E-02

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 3:34:48PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
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Analysis Report for 1510088-04
CP4104S03-04

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
	1	36.99	1.58431E-02	56.69	Tol.	PM-145 PM-145
m	5	77.54	1.95739E-01	7.37		
	8	99.21	2.24223E-02	37.64	D-Esc	
	9	104.68	2.11652E-02	45.85	Tol.	EU-155
	10	129.25	2.13723E-02	53.04		
	16	287.83	1.02289E-02	60.14	Sum	
	21	365.89	9.09371E-03	59.19	Sum	
	22	510.69	3.31514E-02	24.52	Sum	
	23	552.30	8.73708E-03	60.06	Tol.	RB-83
	27	744.31	8.42014E-03	42.86		
	28	755.09	1.51239E-02	34.61		
	29	794.73	1.32569E-02	23.84		
	30	841.86	5.93651E-03	60.29		
M	33	934.23	5.69444E-03	53.73		
	34	965.35	9.67935E-03	28.84		
	36	1018.47	6.11111E-03	60.90		
	37	1066.36	6.32370E-03	44.15	Sum	
	39	1237.30	1.26494E-02	38.45		
	40	1377.59	8.43599E-03	28.24		
M	42	1589.36	7.00112E-03	29.77	Sum	
m	43	1592.97	4.03625E-03	50.72	D-Esc	
	44	1685.51	3.19444E-03	44.45		
	46	1848.85	4.70899E-03	32.91	Sum	
	47	1907.50	2.38889E-03	40.70		
	48	1936.88	4.55409E-03	32.28		
	49	2016.24	1.97917E-03	43.40		
	50	2081.38	1.66667E-03	40.82		
	51	2093.74	1.48810E-03	59.21		
	52	2103.78	8.54984E-03	21.30	S-Esc	
	54	2248.82	2.22222E-03	35.36		
M	55	2293.75	1.90550E-03	30.05	Sum	
m	56	2297.71	3.42328E-03	36.29	Sum	
	57	2361.13	3.55556E-03	34.99		
	58	2368.98	2.57576E-03	40.44		
	59	2521.75	1.38889E-03	44.72		

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

Analysis Report for 1510088-04
CP4104S03-04

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	0.94	1460.81	*	10.67	1.98E+01	2.26E+00
GA-67	0.61	93.31	*	35.70	2.89E+02	1.26E+03
		208.95	*	2.24	1.91E+03	8.22E+03
		300.22	*	16.00	3.21E+02	1.41E+03
CD-109	0.99	88.03	*	3.72	1.58E+00	1.32E+00
SN-126	0.98	87.57	*	37.00	1.51E-01	1.26E-01
LU-173	0.61	100.72		5.24		
		272.11	*	21.20	7.07E-01	4.32E-01
TL-208	0.96	583.14	*	30.22	1.33E+00	2.85E-01
		860.37	*	4.48	1.37E+00	1.31E+00
		2614.66	*	35.85	1.00E+00	2.19E-01
PB-210	0.99	46.50	*	4.25	2.17E+00	1.52E+00
BI-212	0.69	727.17	*	11.80	1.28E+00	4.86E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.59E+00	1.83E-01
		300.09	*	3.41	1.59E+00	1.11E+00
BI-214	0.96	609.31	*	46.30	1.10E+00	1.88E-01
		1120.29	*	15.10	1.04E+00	5.72E-01
		1764.49	*	15.80	1.55E+00	4.15E-01
		2204.22	*	4.98	8.03E-01	9.23E-01
PB-214	0.99	295.21	*	19.19	1.19E+00	2.30E-01
		351.92	*	37.19	1.31E+00	2.11E-01
RA-224	0.88	240.98	*	3.95	4.50E+00	1.59E+00
RA-226	0.99	186.21	*	3.28	3.83E+00	7.16E+00
AC-228	0.98	338.32	*	11.40	1.82E+00	4.88E-01
		911.07	*	27.70	1.53E+00	3.43E-01
		969.11	*	16.60	1.69E+00	4.04E-01
TH-234	0.99	63.29	*	3.80	1.48E+00	1.61E+00
AM-243	0.98	74.67	*	66.00	2.80E-01	7.38E-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

Analysis Report for 1510088-04

CP4104S03-04

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.946	1.98E+01	2.26E+00	
GA-67	0.610	2.24E+02	9.47E+02	
? CD-109	0.997	1.58E+00	1.32E+00	
? SN-126	0.983	1.51E-01	1.26E-01	
LU-173	0.616	7.07E-01	4.32E-01	
TL-208	0.964	1.13E+00	1.72E-01	
PB-210	0.990	2.17E+00	1.52E+00	
BI-212	0.694	1.28E+00	4.86E-01	
PB-212	0.994	1.56E+00	1.81E-01	
BI-214	0.965	1.16E+00	1.61E-01	
PB-214	0.996	1.25E+00	1.55E-01	
RA-224	0.883	4.50E+00	1.59E+00	
RA-226	0.995	3.83E+00	7.16E+00	
AC-228	0.980	1.64E+00	2.31E-01	
TH-234	0.991	1.48E+00	1.61E+00	
AM-243	0.989	2.80E-01	7.38E-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 1510088-04
CP4104S03-04

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 3:34:48PM
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	36.99	1.58431E-02	56.69	Tol.	PM-145 PM-145
m 5	77.54	1.95739E-01	7.37		
8	99.21	2.24223E-02	37.64	D-Esc	
9	104.68	2.11652E-02	45.85	Tol.	EU-155
10	129.25	2.13723E-02	53.04		
16	287.83	1.02289E-02	60.14	Sum	
21	365.89	9.09371E-03	59.19	Sum	
22	510.69	3.31514E-02	24.52	Sum	
23	552.30	8.73708E-03	60.06	Tol.	RB-83
27	744.31	8.42014E-03	42.86		
28	755.09	1.51239E-02	34.61		
29	794.73	1.32569E-02	23.84		
30	841.86	5.93651E-03	60.29		
33	934.23	5.69444E-03	53.73		
M 34	965.35	9.67935E-03	28.84		
36	1018.47	6.11111E-03	60.90		
37	1066.36	6.32370E-03	44.15	Sum	
39	1237.30	1.26494E-02	38.45		
40	1377.59	8.43599E-03	28.24		
M 42	1589.36	7.00112E-03	29.77	Sum	
m 43	1592.97	4.03625E-03	50.72	D-Esc	
44	1685.51	3.19444E-03	44.45		
46	1848.85	4.70899E-03	32.91	Sum	
47	1907.50	2.38889E-03	40.70		
48	1936.88	4.55409E-03	32.28		
49	2016.24	1.97917E-03	43.40		
50	2081.38	1.66667E-03	40.82		
51	2093.74	1.48810E-03	59.21		
52	2103.78	8.54984E-03	21.30	S-Esc	
54	2248.82	2.22222E-03	35.36		
M 55	2293.75	1.90550E-03	30.05	Sum	
m 56	2297.71	3.42328E-03	36.29	Sum	
57	2361.13	3.55556E-03	34.99		
58	2368.98	2.57576E-03	40.44		

Analysis Report for 1510088-04
 CP4104S03-04

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
59	2521.75	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	-1.98E-01	8.13E-01	8.13E-01
+	NA-22	1274.54	99.94	-5.76E-03	7.35E-02	7.35E-02
+	NA-24	1368.53	99.99	1.04E+14	1.69E+14	2.53E+14
		2754.09	99.86	0.00E+00		1.69E+14
+	AL-26	1808.65	99.76	7.63E-03	4.31E-02	4.31E-02
+	K-40	1460.81	* 10.67	1.98E+01	6.99E-01	6.99E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	1.53E-02	6.69E-02	6.69E-02
		78.34	96.00	2.67E-01		8.77E-02
+	SC-46	889.25	99.98	6.20E-03	9.02E-02	9.02E-02
		1120.51	99.99	1.90E-01		1.56E-01
+	V-48	983.52	99.98	-5.76E-02	2.73E-01	2.73E-01
		1312.10	97.50	-1.68E-02		3.05E-01
+	CR-51	320.08	9.83	-3.78E-01	1.10E+00	1.10E+00
+	MN-54	834.83	99.97	-1.18E-02	7.06E-02	7.06E-02
+	CO-56	846.75	99.96	-5.21E-02	7.85E-02	7.85E-02
		1037.75	14.03	-1.46E-01		6.09E-01
		1238.25	67.00	1.81E-01		2.18E-01
		1771.40	15.51	-2.06E-02		4.68E-01
		2598.48	16.90	5.16E-02		3.85E-01
+	CO-57	122.06	85.51	-3.30E-02	5.89E-02	5.89E-02
		136.48	10.60	-4.46E-02		4.68E-01
+	CO-58	810.76	99.40	1.36E-02	9.27E-02	9.27E-02
+	FE-59	1099.22	56.50	1.10E-01	2.50E-01	2.50E-01
		1291.56	43.20	-7.42E-02		2.77E-01
+	CO-60	1173.22	100.00	6.19E-03	6.53E-02	8.63E-02
		1332.49	100.00	-7.54E-03		6.53E-02
+	ZN-65	1115.52	50.75	-5.48E-01	1.70E-01	1.70E-01

Analysis Report for 1510088-04
CP4104S03-04

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	GA-67	93.31	*	35.70	2.89E+02	2.05E+02	2.05E+02
		208.95	*	2.24	1.91E+03		2.94E+03
		300.22	*	16.00	3.21E+02		6.23E+02
+	SE-75	121.11		16.70	-1.91E-01	9.01E-02	3.28E-01
		136.00		59.20	-4.50E-02		9.32E-02
		264.65		59.80	-1.37E-02		9.01E-02
		279.53		25.20	-2.70E-02		2.41E-01
		400.65		11.40	-2.81E-02		5.32E-01
+	RB-82	776.52		13.00	-1.07E-01	1.22E+00	1.22E+00
+	RB-83	520.41		46.00	-1.34E-02	1.71E-01	1.71E-01
		529.64		30.30	-6.24E-02		2.47E-01
		552.65		16.40	2.18E-01		4.90E-01
+	KR-85	513.99		0.43	3.67E+01	2.11E+01	2.11E+01
+	SR-85	513.99		99.27	2.25E-01	1.30E-01	1.30E-01
+	Y-88	898.02		93.40	-1.05E-02	6.92E-02	9.05E-02
		1836.01		99.38	7.80E-03		6.92E-02
+	NB-93M	16.57		9.43	-5.10E+01	6.65E+01	6.65E+01
+	NB-94	702.63		100.00	-3.98E-02	6.08E-02	6.08E-02
		871.10		100.00	-1.08E-02		6.74E-02
+	NB-95	765.79		99.81	6.41E-02	1.45E-01	1.45E-01
+	NB-95M	235.69		25.00	-1.22E+03	1.23E+02	1.23E+02
+	ZR-95	724.18		43.70	-1.08E-02	1.92E-01	2.28E-01
		756.72		55.30	1.61E-01		1.92E-01
+	MO-99	181.06		6.20	1.89E+03	1.71E+03	2.81E+03
		739.58		12.80	-5.00E+01		1.71E+03
		778.00		4.50	-2.34E+03		4.93E+03
+	RU-103	497.08		89.00	-2.21E-02	1.14E-01	1.14E-01
+	RU-106	621.84		9.80	5.32E-02	6.60E-01	6.60E-01
+	AG-108M	433.93		89.90	-3.76E-02	6.33E-02	6.33E-02
		614.37		90.40	-1.59E-05		6.86E-02
		722.95		90.50	1.14E-02		7.07E-02
+	CD-109	88.03	*	3.72	1.58E+00	2.14E+00	2.14E+00
+	AG-110M	657.75		93.14	5.32E-03	7.59E-02	7.59E-02
		677.61		10.53	3.49E-01		6.84E-01
		706.67		16.46	-2.60E-02		4.20E-01
		763.93		21.98	-3.12E-01		3.16E-01
		884.67		71.63	2.86E-02		1.08E-01
		1384.27		23.94	1.75E-02		2.81E-01
+	CD-113M	263.70		0.02	-1.07E+01	1.99E+02	1.99E+02
+	SN-113	255.12		1.93	-3.63E-01	9.06E-02	3.04E+00
		391.69		64.90	-1.85E-02		9.06E-02
+	TE123M	159.00		84.10	-6.21E-03	6.81E-02	6.81E-02
+	SB-124	602.71		97.87	-2.07E-02	9.81E-02	9.81E-02
		645.85		7.26	8.88E-01		1.26E+00
		722.78		11.10	1.35E-01		8.35E-01
		1691.02		49.00	1.47E-02		1.30E-01
+	I-125	35.49		6.49	3.48E-01	3.13E+00	3.13E+00
+	SB-125	176.33		6.89	-1.92E-01	2.10E-01	7.59E-01

Analysis Report for 1510088-04
CP4104S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	427.89	29.33	5.83E-02	2.10E-01	2.10E-01
		463.38	10.35	3.70E-01		6.70E-01
		600.56	17.80	9.19E-02		3.93E-01
		635.90	11.32	-1.46E-01		5.19E-01
+	SB-126	414.70	83.30	-1.77E-01	4.22E-01	4.35E-01
		666.33	99.60	-5.25E-02		4.22E-01
		695.00	99.60	2.13E-01		4.38E-01
		720.50	53.80	1.66E-01		7.29E-01
+	SN-126	87.57	* 37.00	1.51E-01	2.05E-01	2.05E-01
+	SB-127	473.00	25.00	2.03E+01	5.71E+01	7.79E+01
		685.20	35.70	-1.69E+01		5.71E+01
		783.80	14.70	7.88E+01		1.68E+02
+	I-129	29.78	57.00	-3.15E-02	4.52E-01	4.52E-01
		33.60	13.20	5.88E-01		1.19E+00
		39.58	7.52	-8.50E-02		1.37E+00
+	I-131	284.30	6.05	8.85E-01	9.66E-01	1.33E+01
		364.48	81.20	1.81E-01		9.66E-01
		636.97	7.26	5.72E-01		1.32E+01
		722.89	1.80	9.25E+00		5.73E+01
+	TE-132	49.72	13.10	8.18E+01	5.64E+01	5.12E+02
		228.16	88.00	-4.72E+00		5.64E+01
+	BA-133	81.00	33.00	-1.31E+00	8.01E-02	1.77E-01
		302.84	17.80	-4.70E-02		2.93E-01
		356.01	60.00	-6.59E-01		8.01E-02
+	I-133	529.87	86.30	-2.70E+09	1.07E+10	1.07E+10
+	XE-133	81.00	38.00	-8.05E+01	1.09E+01	1.09E+01
+	CS-134	563.23	8.38	2.25E-01	7.13E-02	7.76E-01
		569.32	15.43	-9.72E-02		4.17E-01
		604.70	97.60	1.13E-02		7.13E-02
		795.84	85.40	-7.33E-03		9.37E-02
		801.93	8.73	4.25E-01		8.30E-01
+	CS-135	268.24	16.00	2.33E-01	3.56E-01	3.56E-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	1.47E+00	3.43E-01	3.62E+00
		163.89	4.61	3.41E+00		5.89E+00
		176.55	13.56	-5.21E-01		2.06E+00
		273.65	12.66	-2.48E+00		2.28E+00
		340.57	48.50	9.53E-01		7.84E-01
		818.50	99.70	1.17E-01		3.43E-01
		1048.07	79.60	1.67E-01		5.14E-01
		1235.34	19.70	-1.27E-01		2.97E+00
+	CS-137	661.65	85.12	-3.08E-02	7.73E-02	7.73E-02
+	LA-138	788.74	34.00	-2.42E-02	7.48E-02	1.90E-01
		1435.80	66.00	-2.19E-02		7.48E-02
+	CE-139	165.85	80.35	2.26E-02	7.39E-02	7.39E-02
+	BA-140	162.64	6.70	-2.89E+00	1.29E+00	4.12E+00
		304.84	4.50	1.81E+00		6.06E+00

Analysis Report for 1510088-04

CP4104S03-04

	<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>
	BA-140	423.70	3.20	-1.59E+00	1.29E+00	1.03E+01
		437.55	2.00	3.08E-01		1.63E+01
		537.32	25.00	-2.51E-01		1.29E+00
+	LA-140	328.77	20.50	6.93E-01	4.16E-01	1.61E+00
		487.03	45.50	-2.66E-02		7.11E-01
		815.85	23.50	2.03E-01		1.56E+00
		1596.49	95.49	4.01E-02		4.16E-01
+	CE-141	145.44	48.40	-2.10E-02	1.98E-01	1.98E-01
+	CE-143	57.36	11.80	-1.56E+06	2.14E+06	6.39E+06
		293.26	42.00	5.79E+06		2.14E+06
		664.55	5.20	-4.68E+06		1.52E+07
+	CE-144	133.54	10.80	1.38E-01	4.84E-01	4.84E-01
+	PM-144	476.78	42.00	-8.57E-02	6.86E-02	1.38E-01
		618.01	98.60	2.30E-02		6.86E-02
		696.49	99.49	1.27E-02		7.35E-02
+	PM-145	36.85	21.70	1.52E-01	3.20E-01	5.91E-01
		37.36	39.70	3.06E-01		3.20E-01
		42.30	15.10	-3.62E-02		5.81E-01
		72.40	2.31	-3.23E+00		3.15E+00
+	PM-146	453.90	39.94	-1.79E-02	1.56E-01	1.56E-01
		735.90	14.01	9.27E-02		4.71E-01
		747.13	13.10	-5.52E-02		5.00E-01
+	ND-147	91.11	28.90	-4.15E+00	1.76E+00	1.76E+00
		531.02	13.10	-6.99E-01		3.41E+00
+	PM-149	285.90	3.10	1.05E+04	4.04E+04	4.04E+04
+	EU-152	121.78	20.50	-1.27E-01	2.27E-01	2.27E-01
		244.69	5.40	-8.09E-02		1.02E+00
		344.27	19.13	7.36E-03		2.47E-01
		778.89	9.20	-4.95E-01		7.05E-01
		964.01	10.40	-8.04E-02		8.79E-01
		1085.78	7.22	-3.68E-01		9.05E-01
		1112.02	9.60	1.19E-01		7.91E-01
		1407.95	14.94	2.42E-01		5.12E-01
+	GD-153	97.43	31.30	-6.33E-03	1.69E-01	1.69E-01
		103.18	22.20	1.54E-01		2.36E-01
+	EU-154	123.07	40.50	6.45E-02	1.20E-01	1.20E-01
		723.30	19.70	5.28E-02		3.27E-01
		873.19	11.50	5.30E-01		6.33E-01
		996.32	10.30	-2.83E-01		6.71E-01
		1004.76	17.90	-2.13E-01		3.61E-01
		1274.45	35.50	-1.59E-02		2.03E-01
+	EU-155	86.50	30.90	2.93E-02	2.15E-01	2.15E-01
		105.30	20.70	9.75E-02		2.32E-01
+	EU-156	811.77	10.40	-3.44E-01	2.78E+00	2.78E+00
		1153.47	7.20	1.98E+00		5.50E+00
		1230.71	8.90	4.30E-02		4.61E+00
+	HO-166M	184.41	72.60	1.84E-01	8.93E-02	8.93E-02
		280.45	29.60	-9.71E-02		1.62E-01
		410.94	11.10	2.33E-01		5.72E-01

Analysis Report for 1510088-04
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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	711.69	54.10	-3.99E-02	8.93E-02	1.13E-01
+ TM-171	66.72	0.14	-2.85E+00	4.74E+01	4.74E+01
+ HF-172	81.75	4.52	-1.33E+00	4.55E-01	1.34E+00
	125.81	11.30	1.69E-01		4.55E-01
+ LU-172	181.53	20.60	2.20E+00	3.55E+00	6.98E+00
	810.06	16.63	7.44E+00		1.21E+01
	912.12	15.25	7.51E+01		2.70E+01
	1093.66	62.50	3.77E-01		3.55E+00
+ LU-173	100.72	5.24	4.92E-02	6.94E-01	9.43E-01
	272.11	* 21.20	7.07E-01		6.94E-01
+ HF-175	343.40	84.00	2.29E-03	8.09E-02	8.09E-02
+ LU-176	88.34	13.30	3.42E-01	5.08E-02	5.08E-01
	201.83	86.00	-2.81E-02		5.83E-02
	306.78	94.00	1.91E-02		5.08E-02
+ TA-182	67.75	41.20	4.27E-02	1.86E-01	1.86E-01
	1121.30	34.90	4.86E-01		4.15E-01
	1189.05	16.23	-3.17E-01		5.85E-01
	1221.41	26.98	8.31E-02		3.80E-01
	1231.02	11.44	9.33E-03		1.00E+00
+ IR-192	308.46	29.68	-9.72E-02	1.71E-01	2.10E-01
	468.07	48.10	-1.11E-01		1.71E-01
+ HG-203	279.19	77.30	5.53E-02	1.10E-01	1.10E-01
+ BI-207	569.67	97.72	-9.15E-03	6.59E-02	6.59E-02
	1063.62	74.90	-5.59E-03		9.18E-02
+ TL-208	583.14	* 30.22	1.33E+00	9.03E-02	3.56E-01
	860.37	* 4.48	1.37E+00		2.11E+00
	2614.66	* 35.85	1.00E+00		9.03E-02
+ BI-210M	262.00	45.00	-4.35E-02	9.84E-02	9.84E-02
	300.00	23.00	-3.83E-01		2.51E-01
+ PB-210	46.50	* 4.25	2.17E+00	2.42E+00	2.42E+00
+ PB-211	404.84	2.90	-7.51E-01	1.63E+00	1.63E+00
	831.96	2.90	-7.76E-01		2.26E+00
+ BI-212	727.17	* 11.80	1.28E+00	6.84E-01	6.84E-01
	1620.62	2.75	9.25E-01		2.49E+00
+ PB-212	238.63	* 44.60	1.59E+00	2.04E-01	2.04E-01
	300.09	* 3.41	1.59E+00		3.08E+00
+ BI-214	609.31	* 46.30	1.10E+00	1.91E-01	1.91E-01
	1120.29	* 15.10	1.04E+00		8.77E-01
	1764.49	* 15.80	1.55E+00		3.79E-01
	2204.22	* 4.98	8.03E-01		1.49E+00
+ PB-214	295.21	* 19.19	1.19E+00	2.44E-01	5.39E-01
	351.92	* 37.19	1.31E+00		2.44E-01
+ RN-219	401.80	6.50	-2.20E-01	7.59E-01	7.59E-01
+ RA-223	323.87	3.88	-8.03E-01	1.30E+00	1.30E+00
+ RA-224	240.98	* 3.95	4.50E+00	2.34E+00	2.34E+00
+ RA-225	40.00	31.00	-9.09E-02	1.46E+00	1.46E+00
+ RA-226	186.21	* 3.28	3.83E+00	2.25E+00	2.25E+00
+ TH-227	50.10	8.40	1.32E-01	5.46E-01	8.26E-01

Analysis Report for 1510088-04
CP4104S03-04

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-227	236.00		11.50	-5.44E+00	5.46E-01	5.46E-01
		256.20		6.30	1.64E-01		7.78E-01
+	AC-228	338.32	*	11.40	1.82E+00	4.21E-01	6.82E-01
		911.07	*	27.70	1.53E+00		4.21E-01
		969.11	*	16.60	1.69E+00		7.39E-01
+	TH-230	48.44		16.90	3.95E-02	4.76E-01	4.76E-01
		62.85		4.60	2.00E+00		1.58E+00
		67.67		0.37	3.92E+00		1.71E+01
+	PA-231	283.67		1.60	2.07E-01	2.25E+00	3.02E+00
		302.67		2.30	-3.61E-01		2.25E+00
+	TH-231	25.64		14.70	1.46E+00	9.70E-01	3.92E+00
		84.21		6.40	6.33E-01		9.70E-01
+	PA-233	311.98		38.60	9.23E-02	2.93E-01	2.93E-01
+	PA-234	131.20		20.40	1.68E-02	2.47E-01	2.47E-01
		733.99		8.80	-1.85E-01		7.10E-01
		946.00		12.00	-1.59E-02		5.90E-01
+	PA-234M	1001.03		0.92	2.49E+00	7.71E+00	7.71E+00
+	TH-234	63.29	*	3.80	1.48E+00	2.64E+00	2.64E+00
+	U-235	143.76		10.50	2.05E-01	4.65E-01	4.65E-01
		163.35		4.70	6.12E-01		1.05E+00
		205.31		4.70	4.68E-02		1.03E+00
+	NP-237	86.50		12.60	7.10E-02	5.22E-01	5.22E-01
+	NP-239	106.10		22.70	1.17E+03	2.77E+03	2.77E+03
		228.18		10.70	-5.40E+02		6.45E+03
		277.60		14.10	3.60E+03		5.08E+03
+	AM-241	59.54		35.90	1.56E-02	1.83E-01	1.83E-01
+	AM-243	74.67	*	66.00	2.80E-01	1.81E-01	1.81E-01
+	CM-243	209.75		3.29	1.08E+00	3.86E-01	1.71E+00
		228.14		10.60	-4.12E-02		4.91E-01
		277.60		14.00	2.74E-01		3.86E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1510088-04
CP4104S03-04

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	8.13E-01	8.13E-01	-1.98E-01	3.84E-01
NA-22	1274.54	99.94	7.35E-02	7.35E-02	-5.76E-03	3.34E-02
NA-24	1368.53	99.99	2.53E+14	1.69E+14	1.04E+14	1.14E+14
	2754.09	99.86	1.69E+14		0.00E+00	6.83E+13
AL-26	1808.65	99.76	4.31E-02	4.31E-02	7.63E-03	1.74E-02
+ K-40	1460.81	*	10.67	6.99E-01	6.99E-01	1.98E+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	6.69E-02	6.69E-02	1.53E-02	3.27E-02
	78.34	96.00	8.77E-02		2.67E-01	4.32E-02
SC-46	889.25	99.98	9.02E-02	9.02E-02	6.20E-03	4.19E-02
	1120.51	99.99	1.56E-01		1.90E-01	7.39E-02
V-48	983.52	99.98	2.73E-01	2.73E-01	-5.76E-02	1.26E-01
	1312.10	97.50	3.05E-01		-1.68E-02	1.39E-01
CR-51	320.08	9.83	1.10E+00	1.10E+00	-3.78E-01	5.23E-01
MN-54	834.83	99.97	7.06E-02	7.06E-02	-1.18E-02	3.28E-02
CO-56	846.75	99.96	7.85E-02	7.85E-02	-5.21E-02	3.61E-02
	1037.75	14.03	6.09E-01		-1.46E-01	2.78E-01
	1238.25	67.00	2.18E-01		1.81E-01	1.03E-01
	1771.40	15.51	4.68E-01		-2.06E-02	1.99E-01
	2598.48	16.90	3.85E-01		5.16E-02	1.56E-01
CO-57	122.06	85.51	5.89E-02	5.89E-02	-3.30E-02	2.86E-02
	136.48	10.60	4.68E-01		-4.46E-02	2.27E-01
CO-58	810.76	99.40	9.27E-02	9.27E-02	1.36E-02	4.32E-02
FE-59	1099.22	56.50	2.50E-01	2.50E-01	1.10E-01	1.17E-01
	1291.56	43.20	2.77E-01		-7.42E-02	1.26E-01
CO-60	1173.22	100.00	8.63E-02	6.53E-02	6.19E-03	4.01E-02
	1332.49	100.00	6.53E-02		-7.54E-03	2.92E-02
ZN-65	1115.52	50.75	1.70E-01	1.70E-01	-5.48E-01	7.86E-02
+ GA-67	93.31	*	35.70	2.05E+02	2.89E+02	1.01E+02
	208.95	*	2.24	2.94E+03	1.91E+03	1.44E+03
	300.22	*	16.00	6.23E+02	3.21E+02	3.05E+02
SE-75	121.11	16.70	3.28E-01	9.01E-02	-1.91E-01	1.59E-01
	136.00	59.20	9.32E-02		-4.50E-02	4.52E-02
	264.65	59.80	9.01E-02		-1.37E-02	4.30E-02
	279.53	25.20	2.41E-01		-2.70E-02	1.15E-01
	400.65	11.40	5.32E-01		-2.81E-02	2.52E-01
RB-82	776.52	13.00	1.22E+00	1.22E+00	-1.07E-01	5.71E-01
RB-83	520.41	46.00	1.71E-01	1.71E-01	-1.34E-02	8.11E-02
	529.64	30.30	2.47E-01		-6.24E-02	1.16E-01
	552.65	16.40	4.90E-01		2.18E-01	2.31E-01
KR-85	513.99	0.43	2.11E+01	2.11E+01	3.67E+01	1.02E+01
SR-85	513.99	99.27	1.30E-01	1.30E-01	2.25E-01	6.26E-02
Y-88	898.02	93.40	9.05E-02	6.92E-02	-1.05E-02	4.20E-02
	1836.01	99.38	6.92E-02		7.80E-03	2.94E-02
NB-93M	16.57	9.43	6.65E+01	6.65E+01	-5.10E+01	3.09E+01

Analysis Report for 1510088-04
CP4104S03-04

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	6.08E-02	6.08E-02	-3.98E-02	2.84E-02
	871.10	100.00	6.74E-02		-1.08E-02	3.13E-02
NB-95	765.79	99.81	1.45E-01	1.45E-01	6.41E-02	6.84E-02
NB-95M	235.69	25.00	1.23E+02	1.23E+02	-1.22E+03	5.96E+01
ZR-95	724.18	43.70	2.28E-01	1.92E-01	-1.08E-02	1.07E-01
	756.72	55.30	1.92E-01		1.61E-01	9.06E-02
MO-99	181.06	6.20	2.81E+03	1.71E+03	1.89E+03	1.36E+03
	739.58	12.80	1.71E+03		-5.00E+01	8.00E+02
	778.00	4.50	4.93E+03		-2.34E+03	2.30E+03
RU-103	497.08	89.00	1.14E-01	1.14E-01	-2.21E-02	5.41E-02
RU-106	621.84	9.80	6.60E-01	6.60E-01	5.32E-02	3.10E-01
AG-108M	433.93	89.90	6.33E-02	6.33E-02	-3.76E-02	3.01E-02
	614.37	90.40	6.86E-02		-1.59E-05	3.23E-02
	722.95	90.50	7.07E-02		1.14E-02	3.31E-02
+ CD-109	88.03	*	3.72	2.14E+00	1.58E+00	1.05E+00
AG-110M	657.75	93.14	7.59E-02	7.59E-02	5.32E-03	3.57E-02
	677.61	10.53	6.84E-01		3.49E-01	3.21E-01
	706.67	16.46	4.20E-01		-2.60E-02	1.96E-01
	763.93	21.98	3.16E-01		-3.12E-01	1.47E-01
	884.67	71.63	1.08E-01		2.86E-02	5.00E-02
	1384.27	23.94	2.81E-01		1.75E-02	1.24E-01
CD-113M	263.70	0.02	1.99E+02	1.99E+02	-1.07E+01	9.51E+01
SN-113	255.12	1.93	3.04E+00	9.06E-02	-3.63E-01	1.46E+00
	391.69	64.90	9.06E-02		-1.85E-02	4.28E-02
TE123M	159.00	84.10	6.81E-02	6.81E-02	-6.21E-03	3.30E-02
SB-124	602.71	97.87	9.81E-02	9.81E-02	-2.07E-02	4.64E-02
	645.85	7.26	1.26E+00		8.88E-01	5.91E-01
	722.78	11.10	8.35E-01		1.35E-01	3.90E-01
	1691.02	49.00	1.30E-01		1.47E-02	5.33E-02
	I-125	35.49	6.49	3.13E+00	3.13E+00	3.48E-01	1.52E+00
SB-125	176.33	6.89	7.59E-01	2.10E-01	-1.92E-01	3.68E-01
	427.89	29.33	2.10E-01		5.83E-02	1.00E-01
	463.38	10.35	6.70E-01		3.70E-01	3.20E-01
	600.56	17.80	3.93E-01		9.19E-02	1.86E-01
	635.90	11.32	5.19E-01		-1.46E-01	2.42E-01
SB-126	414.70	83.30	4.35E-01	4.22E-01	-1.77E-01	2.07E-01
	666.33	99.60	4.22E-01		-5.25E-02	1.99E-01
	695.00	99.60	4.38E-01		2.13E-01	2.07E-01
	720.50	53.80	7.29E-01		1.66E-01	3.41E-01
+ SN-126	87.57	*	37.00	2.05E-01	1.51E-01	1.01E-01
SB-127	473.00	25.00	7.79E+01	5.71E+01	2.03E+01	3.70E+01
	685.20	35.70	5.71E+01		-1.69E+01	2.67E+01
	783.80	14.70	1.68E+02		7.88E+01	7.90E+01
I-129	29.78	57.00	4.52E-01	4.52E-01	-3.15E-02	2.19E-01
	33.60	13.20	1.19E+00		5.88E-01	5.75E-01
	39.58	7.52	1.37E+00		-8.50E-02	6.64E-01
I-131	284.30	6.05	1.33E+01	9.66E-01	8.85E-01	6.36E+00
	364.48	81.20	9.66E-01		1.81E-01	4.58E-01
	636.97	7.26	1.32E+01		5.72E-01	6.18E+00
	722.89	1.80	5.73E+01		9.25E+00	2.68E+01
TE-132	49.72	13.10	5.12E+02	5.64E+01	8.18E+01	2.49E+02
	228.16	88.00	5.64E+01		-4.72E+00	2.72E+01
BA-133	81.00	33.00	1.77E-01	8.01E-02	-1.31E+00	8.65E-02

Analysis Report for 1510088-04
CP4104S03-04

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	2.93E-01	8.01E-02	-4.70E-02	1.40E-01
	356.01	60.00	8.01E-02		-6.59E-01	3.80E-02
I-133	529.87	86.30	1.07E+10	1.07E+10	-2.70E+09	5.04E+09
XE-133	81.00	38.00	1.09E+01	1.09E+01	-8.05E+01	5.31E+00
CS-134	563.23	8.38	7.76E-01	7.13E-02	2.25E-01	3.67E-01
	569.32	15.43	4.17E-01		-9.72E-02	1.97E-01
	604.70	97.60	7.13E-02		1.13E-02	3.38E-02
	795.84	85.40	9.37E-02		-7.33E-03	4.41E-02
	801.93	8.73	8.30E-01		4.25E-01	3.88E-01
CS-135	268.24	16.00	3.56E-01	3.56E-01	2.33E-01	1.72E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.62E+00	3.43E-01	1.47E+00	1.76E+00
	163.89	4.61	5.89E+00		3.41E+00	2.86E+00
	176.55	13.56	2.06E+00		-5.21E-01	1.00E+00
	273.65	12.66	2.28E+00		-2.48E+00	1.09E+00
	340.57	48.50	7.84E-01		9.53E-01	3.79E-01
	818.50	99.70	3.43E-01		1.17E-01	1.59E-01
	1048.07	79.60	5.14E-01		1.67E-01	2.38E-01
	1235.34	19.70	2.97E+00		-1.27E-01	1.40E+00
CS-137	661.65	85.12	7.73E-02	7.73E-02	-3.08E-02	3.64E-02
LA-138	788.74	34.00	1.90E-01	7.48E-02	-2.42E-02	8.87E-02
	1435.80	66.00	7.48E-02		-2.19E-02	3.20E-02
CE-139	165.85	80.35	7.39E-02	7.39E-02	2.26E-02	3.59E-02
BA-140	162.64	6.70	4.12E+00	1.29E+00	-2.89E+00	1.99E+00
	304.84	4.50	6.06E+00		1.81E+00	2.89E+00
	423.70	3.20	1.03E+01		-1.59E+00	4.92E+00
	437.55	2.00	1.63E+01		3.08E-01	7.72E+00
	537.32	25.00	1.29E+00		-2.51E-01	6.08E-01
LA-140	328.77	20.50	1.61E+00	4.16E-01	6.93E-01	7.74E-01
	487.03	45.50	7.11E-01		-2.66E-02	3.36E-01
	815.85	23.50	1.56E+00		2.03E-01	7.26E-01
	1596.49	95.49	4.16E-01		4.01E-02	1.85E-01
CE-141	145.44	48.40	1.98E-01	1.98E-01	-2.10E-02	9.61E-02
CE-143	57.36	11.80	6.39E+06	2.14E+06	-1.56E+06	3.12E+06
	293.26	42.00	2.14E+06		5.79E+06	1.04E+06
	664.55	5.20	1.52E+07		-4.68E+06	7.15E+06
CE-144	133.54	10.80	4.84E-01	4.84E-01	1.38E-01	2.35E-01
PM-144	476.78	42.00	1.38E-01	6.86E-02	-8.57E-02	6.50E-02
	618.01	98.60	6.86E-02		2.30E-02	3.23E-02
	696.49	99.49	7.35E-02		1.27E-02	3.46E-02
PM-145	36.85	21.70	5.91E-01	3.20E-01	1.52E-01	2.87E-01
	37.36	39.70	3.20E-01		3.06E-01	1.56E-01
	42.30	15.10	5.81E-01		-3.62E-02	2.82E-01
	72.40	2.31	3.15E+00		-3.23E+00	1.55E+00
PM-146	453.90	39.94	1.56E-01	1.56E-01	-1.79E-02	7.44E-02
	735.90	14.01	4.71E-01		9.27E-02	2.20E-01
	747.13	13.10	5.00E-01		-5.52E-02	2.33E-01
ND-147	91.11	28.90	1.76E+00	1.76E+00	-4.15E+00	8.66E-01
	531.02	13.10	3.41E+00		-6.99E-01	1.61E+00
PM-149	285.90	3.10	4.04E+04	4.04E+04	1.05E+04	1.94E+04
EU-152	121.78	20.50	2.27E-01	2.27E-01	-1.27E-01	1.10E-01

Analysis Report for 1510088-04

CP4104S03-04

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	1.02E+00	2.27E-01	-8.09E-02	4.93E-01
	344.27	19.13	2.47E-01		7.36E-03	1.17E-01
	778.89	9.20	7.05E-01		-4.95E-01	3.29E-01
	964.01	10.40	8.79E-01		-8.04E-02	4.14E-01
	1085.78	7.22	9.05E-01		-3.68E-01	4.12E-01
	1112.02	9.60	7.91E-01		1.19E-01	3.65E-01
GD-153	1407.95	14.94	5.12E-01	1.69E-01	2.42E-01	2.32E-01
	97.43	31.30	1.69E-01		-6.33E-03	8.25E-02
EU-154	103.18	22.20	2.36E-01	1.20E-01	1.54E-01	1.15E-01
	123.07	40.50	1.20E-01		6.45E-02	5.86E-02
EU-155	723.30	19.70	3.27E-01	2.15E-01	5.28E-02	1.53E-01
	873.19	11.50	6.33E-01		5.30E-01	2.95E-01
	996.32	10.30	6.71E-01		-2.83E-01	3.09E-01
	1004.76	17.90	3.61E-01		-2.13E-01	1.65E-01
	1274.45	35.50	2.03E-01		-1.59E-02	9.25E-02
	86.50	30.90	2.15E-01		2.93E-02	1.06E-01
EU-156	105.30	20.70	2.32E-01	2.78E+00	9.75E-02	1.13E-01
	811.77	10.40	2.78E+00		-3.44E-01	1.29E+00
HO-166M	1153.47	7.20	5.50E+00	8.93E-02	1.98E+00	2.57E+00
	1230.71	8.90	4.61E+00		4.30E-02	2.15E+00
	184.41	72.60	8.93E-02		1.84E-01	4.35E-02
	280.45	29.60	1.62E-01		-9.71E-02	7.74E-02
TM-171	410.94	11.10	5.72E-01	4.74E+01	2.33E-01	2.74E-01
	711.69	54.10	1.13E-01		-3.99E-02	5.26E-02
HF-172	66.72	0.14	4.74E+01	4.55E-01	-2.85E+00	2.32E+01
	81.75	4.52	1.34E+00		-1.33E+00	6.57E-01
LU-172	125.81	11.30	4.55E-01	3.55E+00	1.69E-01	2.22E-01
	181.53	20.60	6.98E+00		2.20E+00	3.38E+00
	810.06	16.63	1.21E+01		7.44E+00	5.65E+00
	912.12	15.25	2.70E+01		7.51E+01	1.30E+01
+ LU-173	1093.66	62.50	3.55E+00	6.94E-01	3.77E-01	1.64E+00
	100.72	5.24	9.43E-01		4.92E-02	4.59E-01
HF-175	272.11	*	6.94E-01	8.09E-02	7.07E-01	3.42E-01
	343.40	84.00	8.09E-02		2.29E-03	3.85E-02
LU-176	88.34	13.30	5.08E-01	5.08E-02	3.42E-01	2.49E-01
	201.83	86.00	5.83E-02		-2.81E-02	2.82E-02
	306.78	94.00	5.08E-02		1.91E-02	2.42E-02
TA-182	67.75	41.20	1.86E-01	1.86E-01	4.27E-02	9.12E-02
	1121.30	34.90	4.15E-01		4.86E-01	1.97E-01
	1189.05	16.23	5.85E-01		-3.17E-01	2.69E-01
	1221.41	26.98	3.80E-01		8.31E-02	1.76E-01
	1231.02	11.44	1.00E+00		9.33E-03	4.67E-01
IR-192	308.46	29.68	2.10E-01	1.71E-01	-9.72E-02	1.00E-01
	468.07	48.10	1.71E-01		-1.11E-01	8.11E-02
HG-203	279.19	77.30	1.10E-01	1.10E-01	5.53E-02	5.29E-02
BI-207	569.67	97.72	6.59E-02	6.59E-02	-9.15E-03	3.12E-02
	1063.62	74.90	9.18E-02		-5.59E-03	4.21E-02
+ TL-208	583.14	*	3.56E-01	9.03E-02	1.33E+00	1.72E-01
	860.37	*	2.11E+00		1.37E+00	1.00E+00
	2614.66	*	9.03E-02		1.00E+00	3.20E-02
BI-210M	262.00	45.00	9.84E-02	9.84E-02	-4.35E-02	4.70E-02
	300.00	23.00	2.51E-01		-3.83E-01	1.21E-01
+ PB-210	46.50	*	2.42E+00	2.42E+00	2.17E+00	1.19E+00

Analysis Report for 1510088-04

CP4104S03-04

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	1.63E+00	1.63E+00	-7.51E-01	7.69E-01
	831.96	2.90	2.26E+00		-7.76E-01	1.05E+00
+ BI-212	727.17 *	11.80	6.84E-01	6.84E-01	1.28E+00	3.24E-01
	1620.62	2.75	2.49E+00		9.25E-01	1.10E+00
+ PB-212	238.63 *	44.60	2.04E-01	2.04E-01	1.59E+00	1.00E-01
	300.09 *	3.41	3.08E+00		1.59E+00	1.51E+00
+ BI-214	609.31 *	46.30	1.91E-01	1.91E-01	1.10E+00	9.18E-02
	1120.29 *	15.10	8.77E-01		1.04E+00	4.19E-01
	1764.49 *	15.80	3.79E-01		1.55E+00	1.64E-01
	2204.22 *	4.98	1.49E+00		8.03E-01	6.54E-01
+ PB-214	295.21 *	19.19	5.39E-01	2.44E-01	1.19E+00	2.64E-01
	351.92 *	37.19	2.44E-01		1.31E+00	1.19E-01
RN-219	401.80	6.50	7.59E-01	7.59E-01	-2.20E-01	3.59E-01
RA-223	323.87	3.88	1.30E+00	1.30E+00	-8.03E-01	6.19E-01
+ RA-224	240.98 *	3.95	2.34E+00	2.34E+00	4.50E+00	1.15E+00
RA-225	40.00	31.00	1.46E+00	1.46E+00	-9.09E-02	7.10E-01
+ RA-226	186.21 *	3.28	2.25E+00	2.25E+00	3.83E+00	1.10E+00
TH-227	50.10	8.40	8.26E-01	5.46E-01	1.32E-01	4.02E-01
	236.00	11.50	5.46E-01		-5.44E+00	2.65E-01
	256.20	6.30	7.78E-01		1.64E-01	3.74E-01
+ AC-228	338.32 *	11.40	6.82E-01	4.21E-01	1.82E+00	3.31E-01
	911.07 *	27.70	4.21E-01		1.53E+00	2.01E-01
	969.11 *	16.60	7.39E-01		1.69E+00	3.54E-01
TH-230	48.44	16.90	4.76E-01	4.76E-01	3.95E-02	2.32E-01
	62.85	4.60	1.58E+00		2.00E+00	7.74E-01
	67.67	0.37	1.71E+01		3.92E+00	8.36E+00
PA-231	283.67	1.60	3.02E+00	2.25E+00	2.07E-01	1.45E+00
	302.67	2.30	2.25E+00		-3.61E-01	1.08E+00
TH-231	25.64	14.70	3.92E+00	9.70E-01	1.46E+00	1.91E+00
	84.21	6.40	9.70E-01		6.33E-01	4.75E-01
PA-233	311.98	38.60	2.93E-01	2.93E-01	9.23E-02	1.40E-01
PA-234	131.20	20.40	2.47E-01	2.47E-01	1.68E-02	1.20E-01
	733.99	8.80	7.10E-01		-1.85E-01	3.31E-01
	946.00	12.00	5.90E-01		-1.59E-02	2.74E-01
PA-234M	1001.03	0.92	7.71E+00	7.71E+00	2.49E+00	3.56E+00
+ TH-234	63.29 *	3.80	2.64E+00	2.64E+00	1.48E+00	1.30E+00
U-235	143.76	10.50	4.65E-01	4.65E-01	2.05E-01	2.26E-01
	163.35	4.70	1.05E+00		6.12E-01	5.12E-01
	205.31	4.70	1.03E+00		4.68E-02	4.98E-01
NP-237	86.50	12.60	5.22E-01	5.22E-01	7.10E-02	2.56E-01
NP-239	106.10	22.70	2.77E+03	2.77E+03	1.17E+03	1.35E+03
	228.18	10.70	6.45E+03		-5.40E+02	3.11E+03
	277.60	14.10	5.08E+03		3.60E+03	2.44E+03
AM-241	59.54	35.90	1.83E-01	1.83E-01	1.56E-02	8.94E-02
+ AM-243	74.67 *	66.00	1.81E-01	1.81E-01	2.80E-01	8.98E-02
CM-243	209.75	3.29	1.71E+00	3.86E-01	1.08E+00	8.31E-01
	228.14	10.60	4.91E-01		-4.12E-02	2.37E-01
	277.60	14.00	3.86E-01		2.74E-01	1.86E-01

Analysis Report for 1510088-04
CP4104S03-04

- + = 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: CP4104S03-04

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																																																																																																																																																																																																																																																																																																																																																								
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17:	0	1	58	87	92	103	82	84	75	69	86	77	64	66	53	72	56	65	49	72	103	74	82	76	72	62	68	77	86	95	181	96	77	87	91	87	86	137	107	109	90	119	119	122	123	126	184	244	65	148	137	145	133	139	138	118	146	73	151	192	377	322	407	567	152	136	81	154	121	113	171	172	133	199	257	89	131	177	184	147	283	248	107	119	97	60	87	102	110	89	68	84	91	105	108	108	70	73	80	97	92	95	113	79	92	83	79	71	83	75	68	121	84	84	73	91	102	82	82	96	129	108	121	75	87	86	80	77	76	137	60	65	77	68	87	77	64	96	145	95	57	58	69	84	79	65	85	153	65	79	77	69	69	55	72	83	161	55	68	65	83	62	76	64	77	169	68	71	64	70	70	78	65	66	177	70	67	79	71	73	66	52	73	185	87	174	150	57	63	54	47	63	193	51	63	73	57	63	46	60	66	201	59	55	59	44	67	54	51	43	209	68	111	63	58	62	52	52	47	217	51	48	48	48	40	56	45	45	225	42	50	50	52	53	56	64	57	233	51	46	55	47	57	164	669	302	241	109	143	113	47	33	39	34	34	249	45	49	40	41	36	35	37	49	257	36	41	39	32	28	37	29	29	265	34	34	30	48	41	58	77	59	273	35	43	32	41	51	52	39	33	281	29	32	33	36	32	34	42	40	289	48	20	34	34	31	32	138	193	297	48	31	35	64	52	41	24	27	305	32	27	35	24	27	24	24	36	313	31	37	21	34	23	29	22	29	321	33	26	38	30	28	28	36	47	329	47	33	31	31	41	20	25	30	337	33	90	149	45	23	36	20	29	345	28	19	23	24	31	30	57	287	353	239	24	28	21	25	19	16	20	361	28	17	16	18	25	34	24	23

369: 18 20 21 23 21 18 21 23

Sample Title: CP4104S03-04

Channel	1	2	3	4	5	6	7	8
377:	10	20	22	21	28	20	25	20
385:	15	28	28	25	28	23	18	24
393:	18	21	16	25	20	29	21	25
401:	21	26	16	16	26	20	16	21
409:	25	48	19	14	27	17	24	21
417:	28	17	16	19	16	16	21	20
425:	19	19	22	18	27	18	21	17
433:	16	22	14	18	17	22	23	13
441:	15	13	19	12	22	16	27	16
449:	18	21	22	19	18	19	25	14
457:	21	18	25	13	23	28	30	31
465:	17	17	17	19	17	20	20	13
473:	22	17	13	11	9	16	14	18
481:	22	16	11	10	18	17	7	16
489:	9	25	16	16	11	17	15	17
497:	17	15	13	10	24	12	15	11
505:	11	16	13	17	23	43	100	71
513:	21	16	17	15	17	15	11	14
521:	17	17	17	17	13	19	14	18
529:	6	11	16	14	15	16	13	15
537:	13	13	12	9	12	16	9	19
545:	18	16	18	11	16	9	21	20
553:	15	13	15	9	7	13	9	8
561:	16	19	15	13	18	14	13	15
569:	11	11	17	18	20	12	20	10
577:	9	12	6	12	12	20	131	155
585:	36	17	11	20	14	11	11	13
593:	11	10	15	15	7	18	22	13
601:	13	13	16	15	16	16	10	20
609:	131	219	58	21	10	8	10	13
617:	12	12	13	14	16	10	14	5
625:	9	11	10	9	8	11	11	16
633:	9	10	13	6	9	12	10	14
641:	6	11	14	8	8	8	14	10
649:	20	5	7	14	10	12	16	5
657:	11	13	11	11	17	14	10	12
665:	11	18	16	12	16	17	10	10
673:	9	15	14	9	13	12	12	8
681:	15	11	1	14	11	9	11	13
689:	10	14	12	6	19	7	18	15
697:	15	16	11	5	15	6	11	12
705:	10	7	9	17	4	12	9	15
713:	9	7	9	11	9	11	10	16
721:	12	8	7	8	9	10	31	52
729:	25	14	10	9	7	9	13	11
737:	6	11	14	10	7	12	9	20
745:	11	14	7	5	8	3	13	10
753:	6	13	18	17	14	9	10	10
761:	7	7	7	14	8	6	14	22
769:	22	16	12	14	12	9	11	12
777:	9	7	9	10	7	9	17	13
785:	11	15	12	9	8	5	8	5
793:	14	10	31	16	4	5	10	5

801: 13 10 11 11 12 6 13 8

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	14	6	9	12	11	4	6	9
817:	9	10	8	5	5	8	5	8
825:	4	15	8	10	4	13	10	9
833:	8	5	9	13	9	5	6	9
841:	12	11	11	6	9	6	7	9
849:	3	5	14	13	7	13	6	11
857:	8	13	9	17	24	18	7	6
865:	5	9	10	4	4	12	5	9
873:	14	9	11	6	4	6	1	6
881:	9	10	5	7	10	6	13	10
889:	3	11	9	6	10	5	6	8
897:	10	8	5	14	5	8	11	8
905:	5	7	8	5	10	28	89	95
913:	33	9	6	5	10	5	7	4
921:	8	5	9	12	6	5	10	7
929:	6	7	4	6	11	11	17	6
937:	2	8	11	5	8	8	8	6
945:	6	7	8	13	7	7	9	8
953:	8	4	7	8	16	5	7	8
961:	7	6	8	10	20	31	9	17
969:	75	59	21	7	9	8	10	6
977:	7	9	8	5	3	7	7	10
985:	6	9	4	8	9	10	10	7
993:	11	7	4	7	4	5	9	4
1001:	14	8	3	7	4	7	6	5
1009:	9	7	7	5	5	4	6	6
1017:	10	10	5	15	6	4	1	8
1025:	9	7	6	3	6	9	7	4
1033:	7	9	7	5	5	6	6	4
1041:	5	7	4	8	4	8	8	4
1049:	7	12	9	5	6	8	6	2
1057:	12	2	9	7	6	4	2	9
1065:	4	9	8	8	6	3	4	5
1073:	8	5	3	4	6	6	10	11
1081:	7	5	8	4	5	5	6	4
1089:	4	8	7	6	10	10	5	12
1097:	4	13	3	14	12	6	5	7
1105:	7	11	6	4	8	7	9	5
1113:	6	6	7	8	10	5	10	39
1121:	39	17	5	10	8	9	5	4
1129:	5	6	8	7	11	11	6	7
1137:	10	11	13	7	10	5	6	7
1145:	9	8	6	6	10	10	7	9
1153:	9	8	9	15	9	5	4	8
1161:	4	5	10	8	6	9	7	13
1169:	4	5	6	8	7	9	10	12
1177:	7	7	6	9	7	13	8	8
1185:	11	5	9	4	7	8	5	8
1193:	8	10	12	5	4	8	12	7
1201:	14	12	9	9	6	7	10	9
1209:	6	10	10	6	4	10	8	7
1217:	5	13	4	5	9	6	7	8
1225:	5	8	8	6	11	11	8	10

1233: 9 10 13 16 15 12 21 9

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Channel	1	2	3	4	5	6	7	8
1241:	4	8	4	8	5	11	6	5
1249:	8	6	8	4	6	9	7	7
1257:	3	5	8	4	6	3	3	8
1265:	7	7	7	4	8	3	8	4
1273:	5	5	2	6	4	4	6	6
1281:	9	9	4	7	4	5	11	5
1289:	5	5	6	3	3	7	5	4
1297:	10	2	7	2	5	4	4	6
1305:	3	9	6	6	4	8	2	8
1313:	6	2	4	7	2	7	2	7
1321:	5	3	5	7	5	4	4	4
1329:	2	3	1	8	4	4	3	5
1337:	3	7	5	3	5	5	4	3
1345:	3	7	1	2	3	4	2	3
1353:	1	3	5	3	3	1	6	2
1361:	3	6	3	1	2	6	8	3
1369:	7	1	5	5	2	3	4	6
1377:	9	15	7	2	2	3	4	5
1385:	1	3	3	1	2	4	3	3
1393:	3	3	1	3	9	0	3	1
1401:	7	3	3	3	3	5	3	7
1409:	6	4	5	1	4	4	1	4
1417:	3	2	2	0	4	2	1	2
1425:	2	1	3	2	1	8	3	2
1433:	4	1	2	1	2	1	1	4
1441:	1	2	6	3	4	3	1	3
1449:	4	3	2	2	4	4	1	1
1457:	3	5	19	137	339	240	51	14
1465:	6	2	1	4	3	1	2	5
1473:	2	4	1	3	0	0	2	1
1481:	7	1	2	1	1	1	1	0
1489:	1	1	1	2	3	1	3	3
1497:	1	5	3	1	1	1	2	1
1505:	3	0	2	2	4	4	5	3
1513:	6	4	3	1	0	2	1	1
1521:	2	0	4	1	4	1	1	4
1529:	4	0	4	6	3	2	2	1
1537:	0	4	4	0	4	3	5	0
1545:	5	0	2	1	1	2	1	0
1553:	0	0	1	2	0	3	1	0
1561:	2	2	4	3	3	0	3	2
1569:	2	2	0	1	2	0	4	1
1577:	2	0	1	2	1	3	4	0
1585:	4	4	4	8	12	7	2	5
1593:	7	3	3	2	3	4	0	1
1601:	4	0	3	2	2	2	2	3
1609:	3	3	1	1	1	2	3	1
1617:	3	1	3	3	6	4	1	2
1625:	1	2	3	1	0	2	6	2
1633:	4	1	2	0	0	1	1	3
1641:	2	2	0	1	2	3	2	0
1649:	0	2	3	1	2	1	2	3
1657:	1	1	0	0	4	4	1	3

1665: 0 1 4 0 1 1 2 1

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Channel	1	2	3	4	5	6	7	8
1673:	0	1	1	0	0	2	0	3
1681:	1	0	2	3	3	5	1	1
1689:	1	0	1	2	1	1	1	1
1697:	1	1	0	0	2	0	1	0
1705:	1	1	0	0	2	1	1	1
1713:	3	1	1	0	2	1	0	1
1721:	0	1	0	0	1	2	1	2
1729:	4	2	2	2	0	1	0	1
1737:	1	3	1	2	0	2	0	0
1745:	2	0	1	3	0	1	2	0
1753:	1	1	2	1	1	1	0	0
1761:	0	1	3	23	37	17	3	1
1769:	3	2	1	2	2	0	1	1
1777:	2	0	1	0	1	0	2	0
1785:	2	1	3	2	1	1	1	0
1793:	1	2	1	1	3	0	3	1
1801:	1	1	0	1	2	0	1	1
1809:	1	1	0	0	1	1	0	2
1817:	0	0	2	1	2	0	1	0
1825:	1	0	2	0	0	2	2	1
1833:	2	0	1	1	2	0	5	0
1841:	2	1	1	1	1	1	5	3
1849:	7	1	2	0	0	2	0	1
1857:	0	2	0	0	1	1	2	0
1865:	2	1	1	0	1	2	1	2
1873:	1	2	0	0	2	2	0	0
1881:	1	1	1	2	1	0	2	3
1889:	0	0	0	2	1	0	0	0
1897:	3	2	1	0	2	1	0	0
1905:	1	1	3	5	0	1	1	1
1913:	1	0	1	0	2	2	0	2
1921:	1	0	1	1	1	2	0	1
1929:	2	0	1	1	1	3	0	5
1937:	3	1	1	1	2	0	0	1
1945:	1	1	1	0	0	3	0	1
1953:	1	0	3	1	1	1	1	2
1961:	1	2	0	0	0	0	0	1
1969:	0	1	2	0	0	1	1	1
1977:	2	0	1	1	0	2	1	2
1985:	0	1	0	0	0	2	1	2
1993:	2	1	0	3	3	2	2	0
2001:	3	1	1	1	2	0	0	0
2009:	1	1	1	3	0	1	2	3
2017:	2	0	0	0	0	2	2	1
2025:	1	1	3	1	0	0	0	1
2033:	1	1	2	0	2	2	1	0
2041:	1	1	0	2	2	3	2	1
2049:	0	1	0	0	2	2	0	0
2057:	2	1	2	0	2	0	1	0
2065:	1	0	4	0	1	3	1	1
2073:	1	2	2	0	0	0	0	2
2081:	2	2	0	0	1	0	0	1
2089:	1	0	0	2	2	2	1	0

2097: 0 0 1 2 0 6 8 8

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

2529: 0 1 1 0 0 1 0 0

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Channel	1	2	3	4	5	6	7	8	9
2537:	0	1	0	0	1	0	0	0	0
2545:	0	0	1	0	1	0	1	1	1
2553:	1	0	1	1	0	1	1	1	0
2561:	0	0	1	1	0	0	0	0	0
2569:	0	2	0	0	0	0	0	0	0
2577:	0	0	1	0	1	1	0	0	0
2585:	0	0	0	0	1	1	0	0	0
2593:	0	1	2	1	0	0	0	1	1
2601:	1	0	0	1	1	0	0	0	0
2609:	0	0	1	6	15	24	36	18	18
2617:	5	2	0	0	2	0	1	1	1
2625:	0	0	0	1	0	0	0	0	0
2633:	0	0	1	0	0	0	0	1	1
2641:	0	0	0	0	0	0	1	0	0
2649:	0	0	0	1	1	1	1	0	0
2657:	1	0	0	0	1	0	1	0	0
2665:	0	0	0	0	0	0	0	0	0
2673:	0	0	1	0	0	0	1	0	0
2681:	0	0	1	2	2	1	1	1	1
2689:	2	0	0	0	0	0	0	0	0
2697:	0	0	0	0	0	0	1	0	0
2705:	1	1	0	0	0	0	0	1	1
2713:	1	0	1	0	0	1	0	0	0
2721:	0	0	0	0	0	0	1	0	0
2729:	0	0	0	0	0	0	0	0	0
2737:	0	1	0	0	1	1	0	1	1
2745:	0	1	0	0	0	0	2	0	0
2753:	2	0	0	1	1	1	0	2	2
2761:	0	0	0	0	0	0	0	0	0
2769:	1	0	0	0	0	0	2	1	1
2777:	1	0	0	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0	0
2793:	0	1	1	1	1	0	0	1	1
2801:	0	0	0	2	0	0	1	0	0
2809:	1	0	0	0	0	1	0	1	1
2817:	1	0	0	0	1	0	0	0	0
2825:	0	0	0	0	1	0	1	1	1
2833:	0	0	1	0	0	0	0	0	0
2841:	0	0	0	0	1	1	0	1	1
2849:	0	0	0	1	0	0	0	0	0
2857:	1	0	1	0	1	0	0	0	0
2865:	0	0	1	0	0	1	0	0	0
2873:	0	0	0	0	0	0	0	0	0
2881:	0	0	1	1	0	0	0	0	0
2889:	0	0	0	0	1	1	0	0	0
2897:	0	0	0	0	0	0	0	0	0
2905:	0	1	0	0	0	0	0	1	1
2913:	0	1	0	0	0	0	0	0	0
2921:	0	0	1	0	0	2	1	0	0
2929:	1	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0	0
2945:	1	0	0	0	1	0	0	0	0
2953:	0	0	1	0	0	2	0	0	0

2961: 0 1 0 0 0 1 0 0

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Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	0	1	3	0	0
2977:	1	0	0	0	1	0	0	0
2985:	0	1	0	1	0	0	2	1
2993:	0	0	1	0	0	0	0	0
3001:	0	0	0	0	1	0	0	0
3009:	1	0	0	0	0	0	0	1
3017:	1	0	1	0	1	1	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	0
3049:	0	0	0	0	0	0	2	2
3057:	0	0	1	0	0	0	0	0
3065:	0	0	0	1	0	0	0	0
3073:	0	0	0	0	1	0	0	0
3081:	0	0	0	0	0	0	0	0
3089:	2	0	0	0	0	0	0	1
3097:	0	0	0	0	0	0	1	0
3105:	0	0	1	0	0	0	0	2
3113:	0	0	0	0	0	0	0	0
3121:	0	0	0	0	0	1	0	0
3129:	0	0	1	1	0	1	0	0
3137:	0	0	0	0	1	0	0	0
3145:	0	0	0	0	0	0	0	1
3153:	0	0	1	0	0	1	0	0
3161:	0	1	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	0	0	3	0	1	0	0
3193:	0	1	0	0	0	1	0	0
3201:	0	0	0	0	0	0	1	0
3209:	0	0	0	0	1	0	1	0
3217:	0	0	1	0	0	0	0	0
3225:	0	0	1	0	0	0	0	0
3233:	0	0	0	1	0	0	0	0
3241:	0	0	0	0	0	1	0	1
3249:	0	0	0	0	0	0	3	1
3257:	0	0	0	0	0	0	0	0
3265:	1	0	0	0	0	0	0	1
3273:	0	1	1	0	1	0	0	0
3281:	0	0	0	0	0	0	1	0
3289:	0	0	0	0	1	0	0	0
3297:	0	1	0	0	0	1	1	0
3305:	0	1	0	0	0	0	0	0
3313:	0	0	1	0	1	0	0	0
3321:	1	1	0	1	0	0	0	0
3329:	0	1	0	0	0	0	0	0
3337:	0	0	0	1	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	1	0	0	0
3361:	0	0	1	0	0	2	0	0
3369:	1	0	0	0	0	0	0	0
3377:	0	1	0	0	0	1	0	0
3385:	0	0	0	0	0	0	1	0

3393: 0 0 0 0 2 0 0 0

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	1	0	1
3409:	0	0	0	1	0	0	0	0
3417:	0	1	0	0	1	0	1	0
3425:	1	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	1	1	0	1	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	1	0	0	0	1	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	1	0	0	0	0	0	1	0
3481:	0	0	1	0	0	1	0	0
3489:	0	0	0	0	0	0	1	0
3497:	0	0	0	0	1	1	1	0
3505:	0	0	0	1	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	0
3537:	0	1	0	1	0	1	1	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	1	0	0	0	0	0
3561:	0	0	0	0	0	0	1	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	1	0	0	0	0
3593:	0	0	0	0	1	0	0	0
3601:	1	1	0	0	0	0	0	0
3609:	0	1	1	1	0	1	0	1
3617:	0	0	1	0	0	0	0	0
3625:	0	1	0	0	0	0	0	0
3633:	0	1	1	1	0	1	0	0
3641:	0	1	0	0	0	0	0	1
3649:	0	0	0	0	0	0	1	0
3657:	0	0	0	0	0	0	1	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	1	1	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	2	1
3705:	0	0	0	1	0	0	0	0
3713:	0	0	1	0	1	1	0	0
3721:	0	1	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	1	0	0	0	0	0	0	0
3745:	0	0	1	0	0	0	0	0
3753:	0	0	1	0	1	0	0	0
3761:	0	0	0	0	0	1	0	0
3769:	0	1	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	1
3785:	0	1	0	0	0	0	0	1
3793:	0	0	1	0	0	1	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	1	1	2

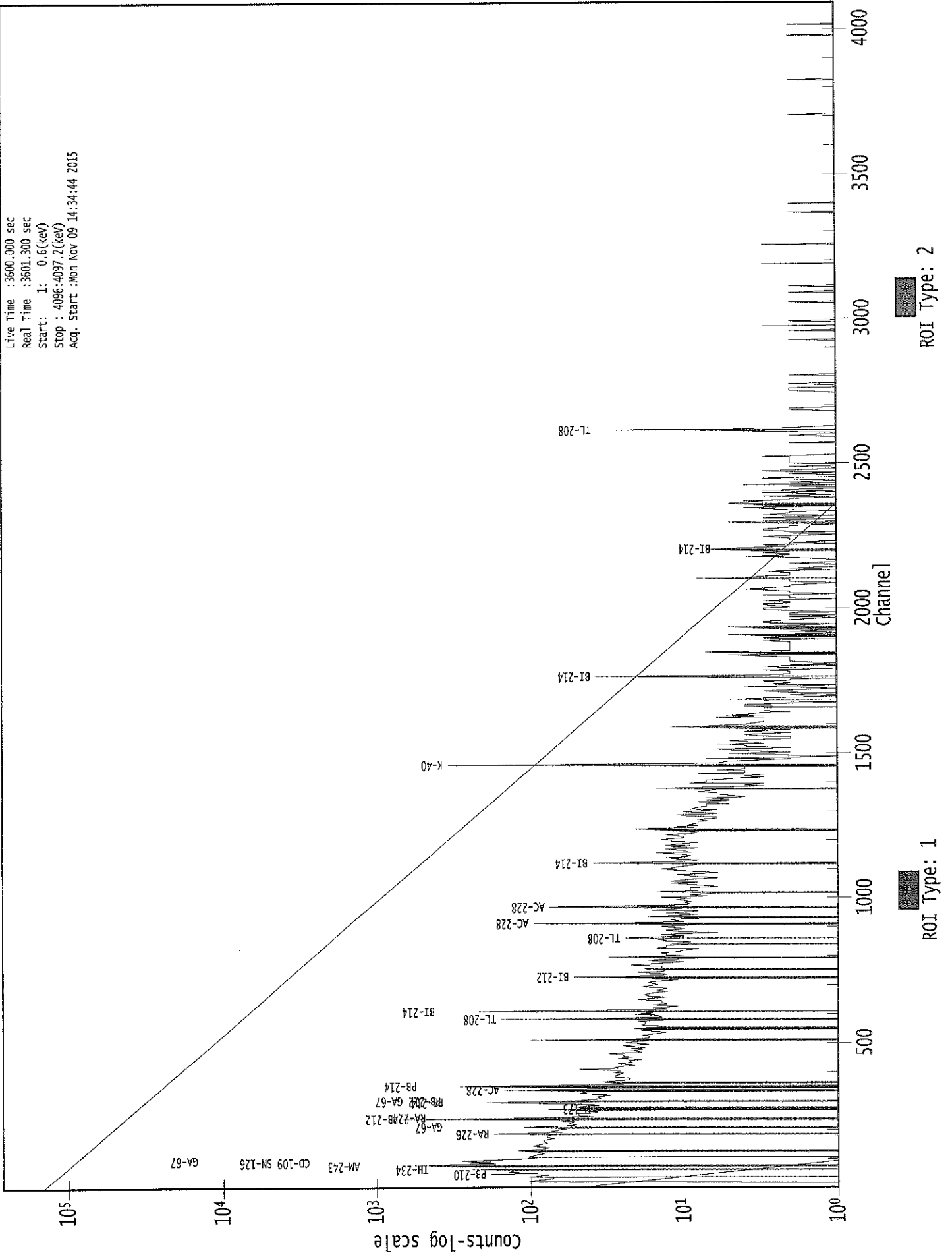
3825: 0 0 0 1 0 0 0 0

Sample Title: CP4104S03-04

Channel	1	2	3	4	5	6	7	8	9
3833:	0	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	1	0	0
3849:	0	0	0	0	1	0	0	0	0
3857:	0	0	1	0	0	0	0	0	0
3865:	0	1	0	1	0	0	0	0	0
3873:	1	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	1	0
3889:	0	0	0	0	1	0	0	0	0
3897:	0	1	0	0	0	0	0	0	1
3905:	0	0	0	0	0	0	0	0	1
3913:	0	0	0	0	0	0	0	1	0
3921:	0	0	0	0	0	0	0	1	0
3929:	1	0	0	0	0	0	0	1	0
3937:	0	0	0	0	1	0	0	0	0
3945:	1	0	0	0	0	0	0	0	0
3953:	0	0	1	0	1	0	0	0	0
3961:	0	0	0	1	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0	0
3977:	0	2	0	0	0	0	0	0	0
3985:	0	0	1	0	0	0	0	0	0
3993:	1	0	1	0	0	0	0	1	0
4001:	0	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	2	0	0
4017:	0	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0	1
4041:	0	0	0	0	1	0	0	1	0
4049:	0	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0	1
4065:	0	0	0	1	0	0	0	1	0
4073:	0	1	0	0	0	0	1	0	0
4081:	0	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0	0

0000029347.CNF

Live Time : 3600.000 sec
Real Time : 3601.300 sec
Start : 1: 0.6(keV)
Stop : 4096:4097.2(keV)
Acq. Start : Mon Nov 09 14:34:44 2015



*VCS
11/9/15*

Analysis Report for 1510088-05
CP4104S08-09

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-05
Sample Description : CP4104S08-09
Sample Type : SOIL

Sample Size : 5.353E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 8:57:52AM
Acquisition Started : 11/9/2015 1:26:39PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3617.1 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 : 29340

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

Analysis Report for 1510088-05
CP4104S08-09

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 2:26:57PM
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	17.79	18.04	0.0000	0.00
2	25.05	25.30	0.0000	0.00
3	46.29	46.52	0.0000	0.00
4	63.73	63.95	0.0000	0.00
5	76.53	76.74	0.0000	0.00
6	87.54	87.75	0.0000	0.00
7	92.86	93.06	0.0000	0.00
8	186.34	186.49	0.0000	0.00
9	210.00	210.15	0.0000	0.00
10	238.85	238.98	0.0000	0.00
11	242.04	242.17	0.0000	0.00
12	270.59	270.70	0.0000	0.00
13	278.11	278.22	0.0000	0.00
14	282.69	282.80	0.0000	0.00
15	295.24	295.34	0.0000	0.00
16	300.48	300.58	0.0000	0.00
17	328.34	328.42	0.0000	0.00
18	338.13	338.21	0.0000	0.00
19	352.21	352.28	0.0000	0.00
20	412.27	412.31	0.0000	0.00
21	448.02	448.04	0.0000	0.00
22	463.03	463.05	0.0000	0.00
23	511.72	511.71	0.0000	0.00
24	583.51	583.47	0.0000	0.00
25	609.58	609.53	0.0000	0.00
26	786.08	785.94	0.0000	0.00
27	795.25	795.11	0.0000	0.00
28	807.55	807.40	0.0000	0.00
29	835.76	835.60	0.0000	0.00
30	860.68	860.51	0.0000	0.00
31	865.99	865.82	0.0000	0.00
32	911.39	911.20	0.0000	0.00
33	922.38	922.17	0.0000	0.00
34	969.64	969.42	0.0000	0.00
35	1047.89	1047.63	0.0000	0.00
36	1120.90	1120.61	0.0000	0.00
37	1267.17	1266.82	0.0000	0.00
38	1336.88	1336.51	0.0000	0.00
39	1383.29	1382.90	0.0000	0.00
40	1461.10	1460.68	0.0000	0.00
41	1590.33	1589.86	0.0000	0.00
42	1597.48	1597.00	0.0000	0.00

Analysis Report for 1510088-05
CP4104S08-09

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1600.50	1600.02	0.0000	0.00
44	1621.59	1621.11	0.0000	0.00
45	1630.82	1630.34	0.0000	0.00
46	1702.29	1701.78	0.0000	0.00
47	1729.43	1728.91	0.0000	0.00
48	1765.05	1764.52	0.0000	0.00
49	1876.17	1875.60	0.0000	0.00
50	1901.31	1900.74	0.0000	0.00
51	1938.31	1937.72	0.0000	0.00
52	2104.12	2103.48	0.0000	0.00
53	2193.17	2192.50	0.0000	0.00
54	2204.48	2203.81	0.0000	0.00
55	2250.06	2249.38	0.0000	0.00
56	2614.72	2613.94	0.0000	0.00
57	2820.83	2820.00	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510088-05

CP4104S08-09

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 2:26:57PM

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)
1	17.79	16 -	21	18.04	8.11E+01	70.60	9.08E+02	4.04
2	25.05	22 -	29	25.30	1.34E+02	84.38	1.10E+03	2.27
3	46.29	43 -	49	46.52	1.62E+02	85.93	1.23E+03	1.59
4	63.73	61 -	67	63.95	1.49E+02	102.39	1.80E+03	1.79
5	76.53	72 -	81	76.74	1.17E+03	143.73	2.26E+03	3.80
M 6	87.54	82 -	97	87.75	4.08E+02	110.20	1.60E+03	2.98
m 7	92.86	82 -	97	93.06	4.39E+02	108.25	1.39E+03	3.00
8	186.34	182 -	190	186.49	1.85E+02	82.51	9.29E+02	1.84
9	210.00	207 -	213	210.15	8.32E+01	60.06	5.90E+02	1.52
M 10	238.85	234 -	247	238.98	8.45E+02	70.36	3.75E+02	1.80
m 11	242.04	234 -	247	242.17	1.82E+02	73.95	4.04E+02	1.89
12	270.59	267 -	275	270.70	9.00E+01	57.87	4.62E+02	2.15
13	278.11	276 -	280	278.22	3.05E+01	36.73	2.73E+02	1.88
14	282.69	281 -	286	282.80	4.06E+01	40.39	2.89E+02	3.37
15	295.24	290 -	298	295.34	2.42E+02	60.26	4.10E+02	1.89
16	300.48	299 -	305	300.58	6.51E+01	45.42	3.32E+02	1.56
17	328.34	326 -	330	328.42	2.87E+01	32.98	2.15E+02	1.61
18	338.13	334 -	341	338.21	1.19E+02	51.34	3.60E+02	1.89
19	352.21	348 -	356	352.28	4.38E+02	65.53	3.90E+02	1.73
20	412.27	407 -	418	412.31	5.13E+01	55.10	3.53E+02	6.29
21	448.02	445 -	451	448.04	2.66E+01	31.23	1.59E+02	1.25
22	463.03	459 -	467	463.05	4.86E+01	42.54	2.51E+02	1.74
23	511.72	507 -	516	511.71	1.15E+02	48.95	2.68E+02	2.22
24	583.51	579 -	588	583.47	2.25E+02	46.39	1.77E+02	2.11
25	609.58	604 -	613	609.53	2.60E+02	46.87	1.65E+02	1.98
26	786.08	780 -	791	785.94	4.37E+01	35.10	1.33E+02	5.14
27	795.25	792 -	798	795.11	2.55E+01	25.36	9.89E+01	1.19
28	807.55	805 -	811	807.40	2.12E+01	22.21	7.56E+01	2.46
29	835.76	833 -	838	835.60	2.71E+01	21.54	6.99E+01	2.35
M 30	860.68	857 -	868	860.51	3.38E+01	21.35	5.14E+01	3.80
m 31	865.99	857 -	868	865.82	1.33E+01	17.89	5.62E+01	2.52
32	911.39	906 -	915	911.20	1.40E+02	37.42	1.20E+02	1.72
33	922.38	917 -	929	922.17	3.02E+01	30.88	9.96E+01	8.39
34	969.64	966 -	973	969.42	5.40E+01	31.69	1.22E+02	1.79
35	1047.89	1042 -	1053	1047.63	2.52E+01	28.57	8.75E+01	7.35
36	1120.90	1117 -	1125	1120.61	4.74E+01	26.62	7.73E+01	2.44
37	1267.17	1264 -	1270	1266.82	1.44E+01	17.06	4.32E+01	1.31
38	1336.88	1325 -	1345	1336.51	4.18E+01	34.84	8.23E+01	11.97
39	1383.29	1375 -	1394	1382.90	3.86E+01	32.86	6.29E+01	9.92
40	1461.10	1455 -	1465	1460.68	5.00E+02	46.53	2.23E+01	2.16

: 00479

Analysis Report for 1510088-05

CP4104S08-09

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1590.33	1586 -	1594	1589.86	1.86E+01	12.68	1.28E+01	4.10
M	42	1597.48	1595 -	1606	1597.00	8.33E+00	6.84	5.85E+00	2.99
m	43	1600.50	1595 -	1606	1600.02	2.09E+01	12.36	1.36E+01	2.99
	44	1621.59	1618 -	1623	1621.11	9.17E+00	8.12	5.67E+00	1.84
	45	1630.82	1626 -	1633	1630.34	7.27E+00	8.72	7.45E+00	1.17
	46	1702.29	1699 -	1704	1701.78	9.00E+00	6.00	0.00E+00	2.36
	47	1729.43	1725 -	1732	1728.91	1.30E+01	8.72	4.00E+00	1.35
	48	1765.05	1760 -	1767	1764.52	4.67E+01	16.85	1.67E+01	2.51
	49	1876.17	1872 -	1877	1875.60	5.00E+00	4.47	0.00E+00	1.70
	50	1901.31	1897 -	1903	1900.74	6.25E+00	6.65	3.50E+00	1.20
	51	1938.31	1934 -	1941	1937.72	1.26E+01	9.80	6.75E+00	2.50
	52	2104.12	2100 -	2106	2103.48	1.23E+01	8.26	3.36E+00	2.94
	53	2193.17	2189 -	2195	2192.50	6.50E+00	8.03	7.00E+00	2.58
	54	2204.48	2198 -	2209	2203.81	2.62E+01	12.33	5.59E+00	1.88
	55	2250.06	2245 -	2254	2249.38	7.17E+00	9.90	9.67E+00	2.07
	56	2614.72	2607 -	2617	2613.94	4.80E+01	13.86	0.00E+00	2.54
	57	2820.83	2816 -	2822	2820.00	5.00E+00	4.47	0.00E+00	2.98

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 2:26:57PM

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
	1	17.79	16 -	21	8.11E+01	70.60	9.08E+02	5.61E+01
	2	25.05	22 -	29	1.34E+02	84.38	1.10E+03	6.67E+01
	3	46.29	43 -	49	1.62E+02	85.93	1.23E+03	6.75E+01
	4	63.73	61 -	67	1.49E+02	102.39	1.80E+03	8.17E+01
	5	76.53	72 -	81	1.17E+03	143.73	2.26E+03	1.04E+02
M	6	87.54	82 -	97	4.08E+02	110.20	1.60E+03	6.58E+01
m	7	92.86	82 -	97	4.39E+02	108.25	1.39E+03	6.12E+01
	8	186.34	182 -	190	1.85E+02	82.51	9.29E+02	6.40E+01
	9	210.00	207 -	213	8.32E+01	60.06	5.90E+02	4.70E+01
M	10	238.85	234 -	247	8.45E+02	70.36	3.75E+02	3.18E+01
m	11	242.04	234 -	247	1.82E+02	73.95	4.04E+02	3.31E+01

Analysis Report for 1510088-05

CP4104S08-09

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>ROI start</i>	<i>ROI end</i>	<i>Net Peak Area</i>	<i>Net Area Uncertainty</i>	<i>Continuum Counts</i>	<i>Critical Level</i>
12	270.59	267 -	275	9.00E+01	57.87	4.62E+02	4.49E+01
13	278.11	276 -	280	3.05E+01	36.73	2.73E+02	2.88E+01
14	282.69	281 -	286	4.06E+01	40.39	2.89E+02	3.15E+01
15	295.24	290 -	298	2.42E+02	60.26	4.10E+02	4.24E+01
16	300.48	299 -	305	6.51E+01	45.42	3.32E+02	3.49E+01
17	328.34	326 -	330	2.87E+01	32.98	2.15E+02	2.56E+01
18	338.13	334 -	341	1.19E+02	51.34	3.60E+02	3.82E+01
19	352.21	348 -	356	4.38E+02	65.53	3.90E+02	4.14E+01
20	412.27	407 -	418	5.13E+01	55.10	3.53E+02	4.37E+01
21	448.02	445 -	451	2.66E+01	31.23	1.59E+02	2.42E+01
22	463.03	459 -	467	4.86E+01	42.54	2.51E+02	3.30E+01
23	511.72	507 -	516	1.15E+02	48.95	2.68E+02	3.62E+01
24	583.51	579 -	588	2.25E+02	46.39	1.77E+02	2.91E+01
25	609.58	604 -	613	2.60E+02	46.87	1.65E+02	2.79E+01
26	786.08	780 -	791	4.37E+01	35.10	1.33E+02	2.67E+01
27	795.25	792 -	798	2.55E+01	25.36	9.89E+01	1.91E+01
28	807.55	805 -	811	2.12E+01	22.21	7.56E+01	1.66E+01
29	835.76	833 -	838	2.71E+01	21.54	6.99E+01	1.55E+01
M 30	860.68	857 -	868	3.38E+01	21.35	5.14E+01	1.18E+01
m 31	865.99	857 -	868	1.33E+01	17.89	5.62E+01	1.23E+01
32	911.39	906 -	915	1.40E+02	37.42	1.20E+02	2.38E+01
33	922.38	917 -	929	3.02E+01	30.88	9.96E+01	2.37E+01
34	969.64	966 -	973	5.40E+01	31.69	1.22E+02	2.31E+01
35	1047.89	1042 -	1053	2.52E+01	28.57	8.75E+01	2.20E+01
36	1120.90	1117 -	1125	4.74E+01	26.62	7.73E+01	1.87E+01
37	1267.17	1264 -	1270	1.44E+01	17.06	4.32E+01	1.26E+01
38	1336.88	1325 -	1345	4.18E+01	34.84	8.23E+01	2.66E+01
39	1383.29	1375 -	1394	3.86E+01	32.86	6.29E+01	2.50E+01
40	1461.10	1455 -	1465	5.00E+02	46.53	2.23E+01	1.06E+01
41	1590.33	1586 -	1594	1.86E+01	12.68	1.28E+01	7.64E+00
M 42	1597.48	1595 -	1606	8.33E+00	6.84	5.85E+00	3.98E+00
m 43	1600.50	1595 -	1606	2.09E+01	12.36	1.36E+01	6.07E+00
44	1621.59	1618 -	1623	9.17E+00	8.12	5.67E+00	4.45E+00
45	1630.82	1626 -	1633	7.27E+00	8.72	7.45E+00	5.63E+00
46	1702.29	1699 -	1704	9.00E+00	6.00	0.00E+00	0.00E+00
47	1729.43	1725 -	1732	1.30E+01	8.72	4.00E+00	4.03E+00
48	1765.05	1760 -	1767	4.67E+01	16.85	1.67E+01	8.11E+00
49	1876.17	1872 -	1877	5.00E+00	4.47	0.00E+00	0.00E+00
50	1901.31	1897 -	1903	6.25E+00	6.65	3.50E+00	3.61E+00
51	1938.31	1934 -	1941	1.26E+01	9.80	6.75E+00	5.54E+00
52	2104.12	2100 -	2106	1.23E+01	8.26	3.36E+00	3.58E+00
53	2193.17	2189 -	2195	6.50E+00	8.03	7.00E+00	5.10E+00
54	2204.48	2198 -	2209	2.62E+01	12.33	5.59E+00	5.65E+00
55	2250.06	2245 -	2254	7.17E+00	9.90	9.67E+00	6.84E+00
56	2614.72	2607 -	2617	4.80E+01	13.86	0.00E+00	0.00E+00
57	2820.83	2816 -	2822	5.00E+00	4.47	0.00E+00	0.00E+00

Analysis Report for 1510088-05
CP4104S08-09

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 2:26:57PM

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
1	17.79	16 -	21	18.04	8.11E+01	70.60	9.08E+02	.....
2	25.05	22 -	29	25.30	1.34E+02	84.38	1.10E+03	TH-231
3	46.29	43 -	49	46.52	1.62E+02	85.93	1.23E+03	PB-210
4	63.73	61 -	67	63.95	1.49E+02	102.39	1.80E+03	TH-234 TH-230
5	76.53	72 -	81	76.74	1.17E+03	143.73	2.26E+03	.....
M 6	87.54	82 -	97	87.75	4.08E+02	110.20	1.60E+03	SN-126 CD-109 LU-176
m 7	92.86	82 -	97	93.06	4.39E+02	108.25	1.39E+03	GA-67
8	186.34	182 -	190	186.49	1.85E+02	82.51	9.29E+02	RA-226
9	210.00	207 -	213	210.15	8.32E+01	60.06	5.90E+02	CM-243
M 10	238.85	234 -	247	238.98	8.45E+02	70.36	3.75E+02	PB-212
m 11	242.04	234 -	247	242.17	1.82E+02	73.95	4.04E+02	.....
12	270.59	267 -	275	270.70	9.00E+01	57.87	4.62E+02	.....
13	278.11	276 -	280	278.22	3.05E+01	36.73	2.73E+02	CM-243 NP-239
14	282.69	281 -	286	282.80	4.06E+01	40.39	2.89E+02	PA-231
15	295.24	290 -	298	295.34	2.42E+02	60.26	4.10E+02	PB-214
16	300.48	299 -	305	300.58	6.51E+01	45.42	3.32E+02	GA-67 PB-212 BI-210M
17	328.34	326 -	330	328.42	2.87E+01	32.98	2.15E+02	LA-140
18	338.13	334 -	341	338.21	1.19E+02	51.34	3.60E+02	AC-228
19	352.21	348 -	356	352.28	4.38E+02	65.53	3.90E+02	PB-214
20	412.27	407 -	418	412.31	5.13E+01	55.10	3.53E+02	.....
21	448.02	445 -	451	448.04	2.66E+01	31.23	1.59E+02	.....
22	463.03	459 -	467	463.05	4.86E+01	42.54	2.51E+02	SB-125
23	511.72	507 -	516	511.71	1.15E+02	48.95	2.68E+02	.....
24	583.51	579 -	588	583.47	2.25E+02	46.39	1.77E+02	TL-208

Analysis Report for 1510088-05

CP4104S08-09

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
25	609.58	604 -	613	609.53	2.60E+02	46.87	1.65E+02	BI-214
26	786.08	780 -	791	785.94	4.37E+01	35.10	1.33E+02	.....
27	795.25	792 -	798	795.11	2.55E+01	25.36	9.89E+01	CS-134
28	807.55	805 -	811	807.40	2.12E+01	22.21	7.56E+01	.....
29	835.76	833 -	838	835.60	2.71E+01	21.54	6.99E+01	MN-54
M 30	860.68	857 -	868	860.51	3.38E+01	21.35	5.14E+01	TL-208
m 31	865.99	857 -	868	865.82	1.33E+01	17.89	5.62E+01	.....
32	911.39	906 -	915	911.20	1.40E+02	37.42	1.20E+02	AC-228 LU-172
33	922.38	917 -	929	922.17	3.02E+01	30.88	9.96E+01	.....
34	969.64	966 -	973	969.42	5.40E+01	31.69	1.22E+02	AC-228
35	1047.89	1042 -	1053	1047.63	2.52E+01	28.57	8.75E+01	CS-136
36	1120.90	1117 -	1125	1120.61	4.74E+01	26.62	7.73E+01	SC-46 TA-182 BI-214
37	1267.17	1264 -	1270	1266.82	1.44E+01	17.06	4.32E+01	.....
38	1336.88	1325 -	1345	1336.51	4.18E+01	34.84	8.23E+01	.....
39	1383.29	1375 -	1394	1382.90	3.86E+01	32.86	6.29E+01	AG-110M
40	1461.10	1455 -	1465	1460.68	5.00E+02	46.53	2.23E+01	K-40
41	1590.33	1586 -	1594	1589.86	1.86E+01	12.68	1.28E+01	.....
M 42	1597.48	1595 -	1606	1597.00	8.33E+00	6.84	5.85E+00	LA-140
m 43	1600.50	1595 -	1606	1600.02	2.09E+01	12.36	1.36E+01	.....
44	1621.59	1618 -	1623	1621.11	9.17E+00	8.12	5.67E+00	BI-212
45	1630.82	1626 -	1633	1630.34	7.27E+00	8.72	7.45E+00	.....
46	1702.29	1699 -	1704	1701.78	9.00E+00	6.00	0.00E+00	.....
47	1729.43	1725 -	1732	1728.91	1.30E+01	8.72	4.00E+00	.....
48	1765.05	1760 -	1767	1764.52	4.67E+01	16.85	1.67E+01	BI-214
49	1876.17	1872 -	1877	1875.60	5.00E+00	4.47	0.00E+00	.....
50	1901.31	1897 -	1903	1900.74	6.25E+00	6.65	3.50E+00	.....
51	1938.31	1934 -	1941	1937.72	1.26E+01	9.80	6.75E+00	.....
52	2104.12	2100 -	2106	2103.48	1.23E+01	8.26	3.36E+00	.....
53	2193.17	2189 -	2195	2192.50	6.50E+00	8.03	7.00E+00	.....
54	2204.48	2198 -	2209	2203.81	2.62E+01	12.33	5.59E+00	BI-214
55	2250.06	2245 -	2254	2249.38	7.17E+00	9.90	9.67E+00	.....
56	2614.72	2607 -	2617	2613.94	4.80E+01	13.86	0.00E+00	TL-208
57	2820.83	2816 -	2822	2820.00	5.00E+00	4.47	0.00E+00	.....

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 2:26:57PM

Analysis Report for 1510088-05
CP4104S08-09

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	17.79	8.11E+01	70.60	2.94E-04	1.58E-03
	2	25.05	1.34E+02	84.38	2.27E-03	1.58E-03
	3	46.29	1.62E+02	85.93	1.49E-02	1.58E-03
	4	63.73	1.49E+02	102.39	2.17E-02	1.72E-03
	5	76.53	1.17E+03	143.73	2.38E-02	2.14E-03
M	6	87.54	4.08E+02	110.20	2.44E-02	2.51E-03
m	7	92.86	4.39E+02	108.25	2.44E-02	2.41E-03
	8	186.34	1.85E+02	82.51	1.83E-02	1.42E-03
	9	210.00	8.32E+01	60.06	1.68E-02	1.31E-03
M	10	238.85	8.45E+02	70.36	1.52E-02	1.18E-03
m	11	242.04	1.82E+02	73.95	1.51E-02	1.17E-03
	12	270.59	9.00E+01	57.87	1.38E-02	1.04E-03
	13	278.11	3.05E+01	36.73	1.35E-02	1.00E-03
	14	282.69	4.06E+01	40.39	1.33E-02	9.92E-04
	15	295.24	2.42E+02	60.26	1.28E-02	9.74E-04
	16	300.48	6.51E+01	45.42	1.26E-02	9.67E-04
	17	328.34	2.87E+01	32.98	1.17E-02	9.27E-04
	18	338.13	1.19E+02	51.34	1.14E-02	9.13E-04
	19	352.21	4.38E+02	65.53	1.11E-02	8.93E-04
	20	412.27	5.13E+01	55.10	9.65E-03	8.17E-04
	21	448.02	2.66E+01	31.23	8.98E-03	7.81E-04
	22	463.03	4.86E+01	42.54	8.73E-03	7.66E-04
	23	511.72	1.15E+02	48.95	8.00E-03	7.17E-04
	24	583.51	2.25E+02	46.39	7.14E-03	6.46E-04
	25	609.58	2.60E+02	46.87	6.87E-03	6.20E-04
	26	786.08	4.37E+01	35.10	5.51E-03	4.66E-04
	27	795.25	2.55E+01	25.36	5.45E-03	4.59E-04
	28	807.55	2.12E+01	22.21	5.38E-03	4.49E-04
	29	835.76	2.71E+01	21.54	5.22E-03	4.26E-04
M	30	860.68	3.38E+01	21.35	5.09E-03	4.05E-04
m	31	865.99	1.33E+01	17.89	5.07E-03	4.01E-04
	32	911.39	1.40E+02	37.42	4.85E-03	3.72E-04
	33	922.38	3.02E+01	30.88	4.80E-03	3.70E-04
	34	969.64	5.40E+01	31.69	4.60E-03	3.61E-04
	35	1047.89	2.52E+01	28.57	4.31E-03	3.47E-04
	36	1120.90	4.74E+01	26.62	4.08E-03	3.33E-04
	37	1267.17	1.44E+01	17.06	3.69E-03	3.03E-04
	38	1336.88	4.18E+01	34.84	3.53E-03	2.88E-04
	39	1383.29	3.86E+01	32.86	3.44E-03	2.81E-04
	40	1461.10	5.00E+02	46.53	3.29E-03	2.69E-04
	41	1590.33	1.86E+01	12.68	3.08E-03	2.50E-04
M	42	1597.48	8.33E+00	6.84	3.07E-03	2.49E-04
m	43	1600.50	2.09E+01	12.36	3.07E-03	2.48E-04
	44	1621.59	9.17E+00	8.12	3.04E-03	2.45E-04
	45	1630.82	7.27E+00	8.72	3.03E-03	2.44E-04
	46	1702.29	9.00E+00	6.00	2.93E-03	2.33E-04
	47	1729.43	1.30E+01	8.72	2.90E-03	2.29E-04
	48	1765.05	4.67E+01	16.85	2.86E-03	2.24E-04
	49	1876.17	5.00E+00	4.47	2.74E-03	2.13E-04
	50	1901.31	6.25E+00	6.65	2.71E-03	2.13E-04

Analysis Report for 1510088-05

CP4104S08-09

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
51	1938.31	1.26E+01	9.80	2.68E-03	2.13E-04
52	2104.12	1.23E+01	8.26	2.54E-03	2.13E-04
53	2193.17	6.50E+00	8.03	2.47E-03	2.13E-04
54	2204.48	2.62E+01	12.33	2.46E-03	2.13E-04
55	2250.06	7.17E+00	9.90	2.43E-03	2.13E-04
56	2614.72	4.80E+01	13.86	2.24E-03	2.13E-04
57	2820.83	5.00E+00	4.47	2.16E-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 : 11/9/2015 2:26:57PM

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	17.79	8.11E+01	70.60			8.11E+01	7.06E+01	
2	25.05	1.34E+02	84.38			1.34E+02	8.44E+01	
3	46.29	1.62E+02	85.93	5.28E+01	1.09E+01	1.09E+02	8.66E+01	
4	63.73	1.49E+02	102.39	5.52E+01	2.05E+01	9.34E+01	1.04E+02	
5	76.53	1.17E+03	143.73			1.17E+03	1.44E+02	
M	6	87.54	4.08E+02	110.20	1.52E+01	5.37E+00	3.93E+02	1.10E+02
m	7	92.86	4.39E+02	108.25	9.04E+01	2.62E+01	3.48E+02	1.11E+02
	8	186.34	1.85E+02	82.51	3.93E+01	6.56E+00	1.45E+02	8.28E+01
	9	210.00	8.32E+01	60.06			8.32E+01	6.01E+01
M	10	238.85	8.45E+02	70.36	1.34E+01	2.14E+00	8.32E+02	7.04E+01
m	11	242.04	1.82E+02	73.95	2.69E+00	1.46E+00	1.79E+02	7.40E+01
	12	270.59	9.00E+01	57.87			9.00E+01	5.79E+01
	13	278.11	3.05E+01	36.73			3.05E+01	3.67E+01
	14	282.69	4.06E+01	40.39			4.06E+01	4.04E+01
	15	295.24	2.42E+02	60.26			2.42E+02	6.03E+01
	16	300.48	6.51E+01	45.42			6.51E+01	4.54E+01
	17	328.34	2.87E+01	32.98			2.87E+01	3.30E+01
	18	338.13	1.19E+02	51.34			1.19E+02	5.13E+01
	19	352.21	4.38E+02	65.53	3.99E+00	4.73E+00	4.34E+02	6.57E+01
	20	412.27	5.13E+01	55.10			5.13E+01	5.51E+01
	21	448.02	2.66E+01	31.23			2.66E+01	3.12E+01
	22	463.03	4.86E+01	42.54			4.86E+01	4.25E+01
	23	511.72	1.15E+02	48.95	5.78E+01	4.60E+00	5.73E+01	4.92E+01

: 00485

Analysis Report for 1510088-05

CP4104S08-09

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
24	583.51	2.25E+02	46.39	5.96E+00	3.46E+00	2.19E+02	4.65E+01
25	609.58	2.60E+02	46.87	6.71E+00	3.44E+00	2.54E+02	4.70E+01
26	786.08	4.37E+01	35.10			4.37E+01	3.51E+01
27	795.25	2.55E+01	25.36			2.55E+01	2.54E+01
28	807.55	2.12E+01	22.21			2.12E+01	2.22E+01
29	835.76	2.71E+01	21.54			2.71E+01	2.15E+01
M 30	860.68	3.38E+01	21.35			3.38E+01	2.14E+01
m 31	865.99	1.33E+01	17.89			1.33E+01	1.79E+01
32	911.39	1.40E+02	37.42	2.32E+00	2.73E+00	1.38E+02	3.75E+01
33	922.38	3.02E+01	30.88			3.02E+01	3.09E+01
34	969.64	5.40E+01	31.69			5.40E+01	3.17E+01
35	1047.89	2.52E+01	28.57			2.52E+01	2.86E+01
36	1120.90	4.74E+01	26.62	2.00E+00	2.20E+00	4.54E+01	2.67E+01
37	1267.17	1.44E+01	17.06			1.44E+01	1.71E+01
38	1336.88	4.18E+01	34.84			4.18E+01	3.48E+01
39	1383.29	3.86E+01	32.86			3.86E+01	3.29E+01
40	1461.10	5.00E+02	46.53	2.36E+00	1.83E+00	4.98E+02	4.66E+01
41	1590.33	1.86E+01	12.68			1.86E+01	1.27E+01
M 42	1597.48	8.33E+00	6.84			8.33E+00	6.84E+00
m 43	1600.50	2.09E+01	12.36			2.09E+01	1.24E+01
44	1621.59	9.17E+00	8.12			9.17E+00	8.12E+00
45	1630.82	7.27E+00	8.72			7.27E+00	8.72E+00
46	1702.29	9.00E+00	6.00			9.00E+00	6.00E+00
47	1729.43	1.30E+01	8.72			1.30E+01	8.72E+00
48	1765.05	4.67E+01	16.85	1.45E+00	1.16E+00	4.52E+01	1.69E+01
49	1876.17	5.00E+00	4.47			5.00E+00	4.47E+00
50	1901.31	6.25E+00	6.65			6.25E+00	6.65E+00
51	1938.31	1.26E+01	9.80			1.26E+01	9.80E+00
52	2104.12	1.23E+01	8.26			1.23E+01	8.26E+00
53	2193.17	6.50E+00	8.03			6.50E+00	8.03E+00
54	2204.48	2.62E+01	12.33			2.62E+01	1.23E+01
55	2250.06	7.17E+00	9.90			7.17E+00	9.90E+00
56	2614.72	4.80E+01	13.86			4.80E+01	1.39E+01
57	2820.83	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 1510088-05

CP4104S08-09

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 2:26:57PM
 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	17.79	8.11E+01	70.60			8.11E+01	7.06E+01
2	25.05	1.34E+02	84.38			1.34E+02	8.44E+01
3	46.29	1.62E+02	85.93	5.28E+01	1.09E+01	1.09E+02	8.66E+01
4	63.73	1.49E+02	102.39	5.52E+01	2.05E+01	9.34E+01	1.04E+02
5	76.53	1.17E+03	143.73			1.17E+03	1.44E+02
M 6	87.54	4.08E+02	110.20	1.52E+01	5.37E+00	3.93E+02	1.10E+02
m 7	92.86	4.39E+02	108.25	9.04E+01	2.62E+01	3.48E+02	1.11E+02
8	186.34	1.85E+02	82.51	3.93E+01	6.56E+00	1.45E+02	8.28E+01
9	210.00	8.32E+01	60.06			8.32E+01	6.01E+01
M 10	238.85	8.45E+02	70.36	1.34E+01	2.14E+00	8.32E+02	7.04E+01
m 11	242.04	1.82E+02	73.95	2.69E+00	1.46E+00	1.79E+02	7.40E+01
12	270.59	9.00E+01	57.87			9.00E+01	5.79E+01
13	278.11	3.05E+01	36.73			3.05E+01	3.67E+01
14	282.69	4.06E+01	40.39			4.06E+01	4.04E+01
15	295.24	2.42E+02	60.26			2.42E+02	6.03E+01
16	300.48	6.51E+01	45.42			6.51E+01	4.54E+01
17	328.34	2.87E+01	32.98			2.87E+01	3.30E+01
18	338.13	1.19E+02	51.34			1.19E+02	5.13E+01
19	352.21	4.38E+02	65.53	3.99E+00	4.73E+00	4.34E+02	6.57E+01
20	412.27	5.13E+01	55.10			5.13E+01	5.51E+01
21	448.02	2.66E+01	31.23			2.66E+01	3.12E+01
22	463.03	4.86E+01	42.54			4.86E+01	4.25E+01
23	511.72	1.15E+02	48.95	5.78E+01	4.60E+00	5.73E+01	4.92E+01
24	583.51	2.25E+02	46.39	5.96E+00	3.46E+00	2.19E+02	4.65E+01
25	609.58	2.60E+02	46.87	6.71E+00	3.44E+00	2.54E+02	4.70E+01
26	786.08	4.37E+01	35.10			4.37E+01	3.51E+01
27	795.25	2.55E+01	25.36			2.55E+01	2.54E+01
28	807.55	2.12E+01	22.21			2.12E+01	2.22E+01
29	835.76	2.71E+01	21.54			2.71E+01	2.15E+01
M 30	860.68	3.38E+01	21.35			3.38E+01	2.14E+01
m 31	865.99	1.33E+01	17.89			1.33E+01	1.79E+01
32	911.39	1.40E+02	37.42	2.32E+00	2.73E+00	1.38E+02	3.75E+01
33	922.38	3.02E+01	30.88			3.02E+01	3.09E+01
34	969.64	5.40E+01	31.69			5.40E+01	3.17E+01
35	1047.89	2.52E+01	28.57			2.52E+01	2.86E+01
36	1120.90	4.74E+01	26.62	2.00E+00	2.20E+00	4.54E+01	2.67E+01
37	1267.17	1.44E+01	17.06			1.44E+01	1.71E+01
38	1336.88	4.18E+01	34.84			4.18E+01	3.48E+01
39	1383.29	3.86E+01	32.86			3.86E+01	3.29E+01
40	1461.10	5.00E+02	46.53	2.36E+00	1.83E+00	4.98E+02	4.66E+01
41	1590.33	1.86E+01	12.68			1.86E+01	1.27E+01

Analysis Report for 1510088-05

CP4104S08-09

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	42	1597.48	8.33E+00	6.84			8.33E+00	6.84E+00
m	43	1600.50	2.09E+01	12.36			2.09E+01	1.24E+01
	44	1621.59	9.17E+00	8.12			9.17E+00	8.12E+00
	45	1630.82	7.27E+00	8.72			7.27E+00	8.72E+00
	46	1702.29	9.00E+00	6.00			9.00E+00	6.00E+00
	47	1729.43	1.30E+01	8.72			1.30E+01	8.72E+00
	48	1765.05	4.67E+01	16.85	1.45E+00	1.16E+00	4.52E+01	1.69E+01
	49	1876.17	5.00E+00	4.47			5.00E+00	4.47E+00
	50	1901.31	6.25E+00	6.65			6.25E+00	6.65E+00
	51	1938.31	1.26E+01	9.80			1.26E+01	9.80E+00
	52	2104.12	1.23E+01	8.26			1.23E+01	8.26E+00
	53	2193.17	6.50E+00	8.03			6.50E+00	8.03E+00
	54	2204.48	2.62E+01	12.33			2.62E+01	1.23E+01
	55	2250.06	7.17E+00	9.90			7.17E+00	9.90E+00
	56	2614.72	4.80E+01	13.86			4.80E+01	1.39E+01
	57	2820.83	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	0.986	1460.81 *	10.67	1.99E+01	2.50E+00
MN-54	0.870	834.83 *	99.97	7.80E-02	6.24E-02
GA-67	0.562	93.31 *	35.70	5.27E+02	2.29E+03
		208.95	2.24		
		300.22 *	16.00	4.25E+02	1.87E+03
CD-109	0.962	88.03 *	3.72	6.37E+00	1.94E+00
SN-126	1.000	87.57 *	37.00	6.10E-01	1.83E-01
TL-208	0.989	583.14 *	30.22	1.42E+00	3.29E-01
		860.37 *	4.48	2.08E+00	1.32E+00
		2614.66 *	35.85	8.38E-01	2.55E-01
PB-210	0.993	46.50 *	4.25	2.42E+00	1.94E+00
PB-212	0.991	238.63 *	44.60	1.72E+00	1.97E-01
		300.09 *	3.41	2.12E+00	1.49E+00
BI-214	0.973	609.31 *	46.30	1.12E+00	2.31E-01
		1120.29 *	15.10	1.03E+00	6.15E-01

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Analysis Report for 1510088-05
CP4104S08-09

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.973	1764.49 *	15.80	1.40E+00	5.36E-01
		2204.22 *	4.98	3.00E+00	1.43E+00
PB-214	0.991	295.21 *	19.19	1.38E+00	3.59E-01
		351.92 *	37.19	1.48E+00	2.54E-01
RA-226	0.998	186.21 *	3.28	3.40E+00	6.52E+00
AC-228	0.977	338.32 *	11.40	1.28E+00	5.61E-01
		911.07 *	27.70	1.44E+00	4.07E-01
		969.11 *	16.60	9.92E-01	5.87E-01
		63.29 *	3.80	1.59E+00	1.78E+00
TH-234	0.969	63.29 *	3.80	1.59E+00	1.78E+00
CM-243	0.349	209.75 *	3.29	2.12E+00	1.54E+00
		228.14	10.60		
		277.60 *	14.00	2.27E-01	2.74E-01

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 2:26:57PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	17.79	2.25197E-02	43.54		
2	25.05	3.70833E-02	31.60	Tol.	TH-231
5	76.53	3.25476E-01	6.13		
m 11	242.04	4.96896E-02	20.67		
12	270.59	2.49948E-02	32.16		
14	282.69	1.12703E-02	49.77	Tol.	PA-231
17	328.34	7.96262E-03	57.53	Tol.	LA-140
20	412.27	1.42550E-02	53.68		
21	448.02	7.37683E-03	58.80	Sum	
22	463.03	1.34914E-02	43.79	Tol.	SB-125
23	511.72	1.59210E-02	42.89		
26	786.08	1.21414E-02	40.15		
27	795.25	7.09444E-03	49.64	Sum	
28	807.55	5.88748E-03	52.39		
m 31	865.99	3.68072E-03	67.50		
33	922.38	8.38889E-03	51.13	Sum	
35	1047.89	7.01087E-03	56.59	Sum	

Analysis Report for 1510088-05
CP4104S08-09

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
37	1267.17	3.99691E-03	59.28			
38	1336.88	1.16198E-02	41.65			
39	1383.29	1.07143E-02	42.60	Tol.	AG-110M	
41	1590.33	5.16667E-03	34.08			
M	42	1597.48	2.31408E-03	41.04	Tol.	LA-140
m	43	1600.50	5.79962E-03	29.60		
44	1621.59	2.54630E-03	44.31	Tol.	BI-212	
45	1630.82	2.02020E-03	59.93			
46	1702.29	2.50000E-03	33.33			
47	1729.43	3.61111E-03	33.53			
49	1876.17	1.38889E-03	44.72			
50	1901.31	1.73611E-03	53.22			
51	1938.31	3.50694E-03	38.80	Sum		
52	2104.12	3.42262E-03	33.52	S-Esc		
53	2193.17	1.80556E-03	61.78			
55	2250.06	1.99074E-03	69.07	Sum		
57	2820.83	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	0.98	1460.81 *	10.67	1.99E+01	2.50E+00
MN-54	0.87	834.83 *	99.97	7.80E-02	6.24E-02
GA-67	0.56	93.31 *	35.70	5.27E+02	2.29E+03
		208.95	2.24		
		300.22 *	16.00	4.25E+02	1.87E+03
CD-109	0.96	88.03 *	3.72	6.37E+00	1.94E+00
SN-126	1.00	87.57 *	37.00	6.10E-01	1.83E-01
TL-208	0.98	583.14 *	30.22	1.42E+00	3.29E-01
		860.37 *	4.48	2.08E+00	1.32E+00
		2614.66 *	35.85	8.38E-01	2.55E-01
PB-210	0.99	46.50 *	4.25	2.42E+00	1.94E+00

Analysis Report for 1510088-05

CP4104S08-09

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-212	0.99	238.63 *	44.60	1.72E+00	1.97E-01
		300.09 *	3.41	2.12E+00	1.49E+00
BI-214	0.97	609.31 *	46.30	1.12E+00	2.31E-01
		1120.29 *	15.10	1.03E+00	6.15E-01
		1764.49 *	15.80	1.40E+00	5.36E-01
		2204.22 *	4.98	3.00E+00	1.43E+00
PB-214	0.99	295.21 *	19.19	1.38E+00	3.59E-01
		351.92 *	37.19	1.48E+00	2.54E-01
RA-226	0.99	186.21 *	3.28	3.40E+00	6.52E+00
AC-228	0.97	338.32 *	11.40	1.28E+00	5.61E-01
		911.07 *	27.70	1.44E+00	4.07E-01
		969.11 *	16.60	9.92E-01	5.87E-01
TH-234	0.96	63.29 *	3.80	1.59E+00	1.78E+00
CM-243	0.34	209.75 *	3.29	2.12E+00	1.54E+00
		228.14 *	10.60		
		277.60 *	14.00	2.27E-01	2.74E-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	0.986	1.99E+01	2.50E+00	
MN-54	0.870	7.80E-02	6.24E-02	
GA-67	0.562	4.12E+02	1.74E+03	
? CD-109	0.962	6.37E+00	1.94E+00	
? SN-126	1.000	6.10E-01	1.83E-01	
TL-208	0.989	1.08E+00	1.99E-01	
PB-210	0.993	2.42E+00	1.94E+00	
PB-212	0.991	1.69E+00	1.96E-01	
BI-214	0.973	1.18E+00	1.98E-01	
PB-214	0.991	1.45E+00	2.07E-01	
RA-226	0.998	3.40E+00	6.52E+00	

Analysis Report for 1510088-05
CP4104S08-09

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
AC-228	0.977	1.29E+00	2.87E-01	
TH-234	0.969	1.59E+00	1.78E+00	
CM-243	0.349	2.86E-01	2.70E-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 1510088-05
CP4104S08-09

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 2:26:57PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	17.79	2.25197E-02	43.54		
2	25.05	3.70833E-02	31.60	Tol.	TH-231
5	76.53	3.25476E-01	6.13		
m 11	242.04	4.96896E-02	20.67		
12	270.59	2.49948E-02	32.16		
14	282.69	1.12703E-02	49.77	Tol.	PA-231
17	328.34	7.96262E-03	57.53	Tol.	LA-140
20	412.27	1.42550E-02	53.68		
21	448.02	7.37683E-03	58.80	Sum	
22	463.03	1.34914E-02	43.79	Tol.	SB-125
23	511.72	1.59210E-02	42.89		
26	786.08	1.21414E-02	40.15		
27	795.25	7.09444E-03	49.64	Sum	
28	807.55	5.88748E-03	52.39		
m 31	865.99	3.68072E-03	67.50		
33	922.38	8.38889E-03	51.13	Sum	
35	1047.89	7.01087E-03	56.59	Sum	
37	1267.17	3.99691E-03	59.28		
38	1336.88	1.16198E-02	41.65		
39	1383.29	1.07143E-02	42.60	Tol.	AG-110M
41	1590.33	5.16667E-03	34.08		
M 42	1597.48	2.31408E-03	41.04	Tol.	LA-140
m 43	1600.50	5.79962E-03	29.60		
44	1621.59	2.54630E-03	44.31	Tol.	BI-212
45	1630.82	2.02020E-03	59.93		
46	1702.29	2.50000E-03	33.33		
47	1729.43	3.61111E-03	33.53		
49	1876.17	1.38889E-03	44.72		
50	1901.31	1.73611E-03	53.22		
51	1938.31	3.50694E-03	38.80	Sum	
52	2104.12	3.42262E-03	33.52	S-Esc	
53	2193.17	1.80556E-03	61.78		
55	2250.06	1.99074E-03	69.07	Sum	
57	2820.83	1.38889E-03	44.72		

Analysis Report for 1510088-05
CP4104S08-09

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

NUCLIDE MDA REPORT

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

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
+	BE-7	477.59	10.42	3.29E-02	1.20E+00	1.20E+00
+	NA-22	1274.54	99.94	-3.57E-02	1.29E-01	1.29E-01
+	NA-24	1368.53	99.99	2.18E+13	2.95E+14	3.48E+14
		2754.09	99.86	1.26E+14		2.95E+14
+	AL-26	1808.65	99.76	-1.41E-02	7.52E-02	7.52E-02
+	K-40	1460.81	* 10.67	1.99E+01	9.85E-01	9.85E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	7.51E-04	7.98E-02	7.98E-02
		78.34	96.00	2.99E-01		1.02E-01
+	SC-46	889.25	99.98	-3.98E-02	1.25E-01	1.25E-01
		1120.51	99.99	1.79E-01		1.98E-01
+	V-48	983.52	99.98	-2.66E-01	3.36E-01	3.36E-01
		1312.10	97.50	-1.60E-01		5.22E-01
+	CR-51	320.08	9.83	6.01E-02	1.70E+00	1.70E+00
+	MN-54	834.83	* 99.97	7.80E-02	9.73E-02	9.73E-02
+	CO-56	846.75	99.96	-2.63E-02	1.32E-01	1.32E-01
		1037.75	14.03	1.97E-01		9.81E-01
		1238.25	67.00	1.22E-01		3.08E-01
		1771.40	15.51	-1.02E+00		6.33E-01
		2598.48	16.90	-3.68E-02		5.89E-01
+	CO-57	122.06	85.51	7.06E-03	6.80E-02	6.80E-02
		136.48	10.60	-1.33E-01		5.83E-01
+	CO-58	810.76	99.40	-6.36E-04	1.28E-01	1.28E-01
+	FE-59	1099.22	56.50	-6.18E-02	3.14E-01	3.14E-01
		1291.56	43.20	9.64E-02		4.74E-01
+	CO-60	1173.22	100.00	-4.53E-02	1.12E-01	1.12E-01
		1332.49	100.00	-2.21E-02		1.24E-01
+	ZN-65	1115.52	50.75	2.22E-02	2.29E-01	2.29E-01
+	GA-67	93.31	* 35.70	5.27E+02	4.02E+02	4.02E+02
		208.95	2.24	2.41E+03		3.27E+03
		300.22	* 16.00	4.25E+02		4.73E+02
+	SE-75	121.11	16.70	7.80E-02	1.17E-01	3.84E-01

Analysis Report for 1510088-05
CP4104S08-09

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	-8.41E-03	1.17E-01	1.17E-01
		264.65	59.80	-1.19E-02		1.38E-01
		279.53	25.20	1.93E-01		3.75E-01
		400.65	11.40	1.97E-01		8.62E-01
+	RB-82	776.52	13.00	3.62E-01	1.80E+00	1.80E+00
+	RB-83	520.41	46.00	1.68E-01	2.48E-01	2.48E-01
		529.64	30.30	-2.37E-02		3.48E-01
		552.65	16.40	-1.84E-01		6.41E-01
+	KR-85	513.99	0.43	2.70E+01	2.70E+01	2.70E+01
+	SR-85	513.99	99.27	1.66E-01	1.65E-01	1.65E-01
+	Y-88	898.02	93.40	1.85E-02	1.09E-01	1.29E-01
		1836.01	99.38	1.25E-02		1.09E-01
+	NB-93M	16.57	9.43	3.03E+01	9.18E+01	9.18E+01
+	NB-94	702.63	100.00	3.24E-02	8.73E-02	9.42E-02
		871.10	100.00	8.85E-03		8.73E-02
+	NB-95	765.79	99.81	2.03E-01	2.24E-01	2.24E-01
+	NB-95M	235.69	25.00	6.37E+02	2.57E+02	2.57E+02
+	ZR-95	724.18	43.70	2.61E-02	2.59E-01	3.66E-01
		756.72	55.30	1.64E-01		2.59E-01
+	MO-99	181.06	6.20	4.54E+02	2.45E+03	3.20E+03
		739.58	12.80	5.77E+02		2.45E+03
		778.00	4.50	-5.94E+02		6.56E+03
+	RU-103	497.08	89.00	-4.03E-02	1.58E-01	1.58E-01
+	RU-106	621.84	9.80	-9.33E-02	8.93E-01	8.93E-01
+	AG-108M	433.93	89.90	5.62E-02	9.11E-02	9.11E-02
		614.37	90.40	4.07E-02		1.05E-01
		722.95	90.50	-1.86E-01		1.10E-01
+	CD-109	88.03	* 3.72	6.37E+00	4.27E+00	4.27E+00
+	AG-110M	657.75	93.14	-5.65E-02	1.02E-01	1.02E-01
		677.61	10.53	-2.56E-01		8.94E-01
		706.67	16.46	-6.57E-02		6.11E-01
		763.93	21.98	-6.82E-01		4.71E-01
		884.67	71.63	2.28E-02		1.53E-01
		1384.27	23.94	-1.84E-01		5.34E-01
+	CD-113M	263.70	0.02	3.10E+01	3.05E+02	3.05E+02
+	SN-113	255.12	1.93	-8.25E-01	1.39E-01	4.45E+00
		391.69	64.90	1.30E-02		1.39E-01
+	TE123M	159.00	84.10	-1.13E-02	8.53E-02	8.53E-02
+	SB-124	602.71	97.87	-2.57E-03	1.27E-01	1.27E-01
		645.85	7.26	2.54E-01		1.92E+00
		722.78	11.10	-2.19E+00		1.30E+00
		1691.02	49.00	-6.75E-02		1.84E-01
+	I-125	35.49	6.49	7.93E-01	3.67E+00	3.67E+00
+	SB-125	176.33	6.89	3.01E-02	2.74E-01	8.85E-01
		427.89	29.33	-4.78E-02		2.74E-01
		463.38	10.35	7.31E-01		9.33E-01
		600.56	17.80	1.61E-01		5.16E-01
		635.90	11.32	1.04E-01		7.58E-01

Analysis Report for 1510088-05
CP4104S08-09

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-7.26E-02	5.67E-01	5.83E-01
		666.33	99.60	1.34E-01		6.11E-01
		695.00	99.60	2.02E-01		5.67E-01
		720.50	53.80	2.16E-01		1.13E+00
+	SN-126	87.57	* 37.00	6.10E-01	4.09E-01	4.09E-01
+	SB-127	473.00	25.00	-5.50E+00	8.40E+01	1.08E+02
		685.20	35.70	-3.25E+01		8.40E+01
		783.80	14.70	5.84E+01		2.34E+02
+	I-129	29.78	57.00	3.32E-02	4.99E-01	4.99E-01
		33.60	13.20	-6.17E-01		1.43E+00
		39.58	7.52	-6.02E-01		1.64E+00
+	I-131	284.30	6.05	4.79E-01	1.57E+00	1.96E+01
		364.48	81.20	2.33E-01		1.57E+00
		636.97	7.26	-2.11E+00		1.85E+01
		722.89	1.80	-1.50E+02		8.92E+01
+	TE-132	49.72	13.10	9.72E+01	8.10E+01	6.53E+02
		228.16	88.00	-2.72E+01		8.10E+01
+	BA-133	81.00	33.00	-1.21E+00	1.78E-01	1.99E-01
		302.84	17.80	4.20E-01		4.65E-01
		356.01	60.00	5.37E-03		1.78E-01
+	I-133	529.87	86.30	-9.89E+08	1.45E+10	1.45E+10
+	XE-133	81.00	38.00	-7.40E+01	1.21E+01	1.21E+01
+	CS-134	563.23	8.38	-1.78E-01	9.26E-02	1.07E+00
		569.32	15.43	1.39E-01		6.14E-01
		604.70	97.60	-1.47E-02		9.26E-02
		795.84	85.40	8.82E-02		1.34E-01
		801.93	8.73	7.64E-02		1.13E+00
+	CS-135	268.24	16.00	-6.80E-02	4.73E-01	4.73E-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	2.62E+00	5.32E-01	4.53E+00
		163.89	4.61	1.84E+00		6.88E+00
		176.55	13.56	-8.37E-01		2.34E+00
		273.65	12.66	-2.31E+00		3.34E+00
		340.57	48.50	2.66E-01		1.09E+00
		818.50	99.70	2.48E-01		5.32E-01
		1048.07	79.60	4.65E-01		7.79E-01
		1235.34	19.70	-1.42E+00		4.33E+00
+	CS-137	661.65	85.12	1.45E-02	1.14E-01	1.14E-01
+	LA-138	788.74	34.00	-7.13E-03	1.53E-01	3.11E-01
		1435.80	66.00	-2.14E-02		1.53E-01
+	CE-139	165.85	80.35	-1.27E-02	8.30E-02	8.30E-02
+	BA-140	162.64	6.70	1.63E+00	1.88E+00	5.00E+00
		304.84	4.50	1.80E+00		9.29E+00
		423.70	3.20	5.73E+00		1.44E+01
		437.55	2.00	3.51E+00		2.29E+01
		537.32	25.00	1.48E-01		1.88E+00
+	LA-140	328.77	20.50	-2.00E-01	6.71E-01	2.16E+00

Analysis Report for 1510088-05

CP4104S08-09

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	487.03	45.50	1.33E-01	6.71E-01	1.05E+00
		815.85	23.50	-8.27E-01		2.15E+00
		1596.49	95.49	-2.36E-02		6.71E-01
+	CE-141	145.44	48.40	3.13E-03	2.38E-01	2.38E-01
+	CE-143	57.36	11.80	-5.28E+05	2.77E+06	7.92E+06
		293.26	42.00	5.82E+06		2.77E+06
		664.55	5.20	-1.92E+06		2.12E+07
+	CE-144	133.54	10.80	5.50E-02	5.75E-01	5.75E-01
+	PM-144	476.78	42.00	-5.15E-02	8.57E-02	2.03E-01
		618.01	98.60	-3.24E-02		8.57E-02
		696.49	99.49	2.83E-02		9.79E-02
+	PM-145	36.85	21.70	2.16E-01	3.70E-01	6.93E-01
		37.36	39.70	2.19E-01		3.70E-01
		42.30	15.10	-9.99E-02		7.37E-01
		72.40	2.31	-5.74E+00		3.78E+00
+	PM-146	453.90	39.94	9.42E-02	1.95E-01	1.95E-01
		735.90	14.01	-2.60E-02		6.51E-01
		747.13	13.10	1.59E-01		7.23E-01
+	ND-147	91.11	28.90	-2.16E+00	1.98E+00	1.98E+00
		531.02	13.10	-1.03E+00		4.73E+00
+	PM-149	285.90	3.10	7.48E+03	5.59E+04	5.59E+04
+	EU-152	121.78	20.50	2.72E-02	2.62E-01	2.62E-01
		244.69	5.40	-1.15E+00		1.61E+00
		344.27	19.13	1.12E-01		4.01E-01
		778.89	9.20	-3.07E-03		9.26E-01
		964.01	10.40	2.68E-01		1.19E+00
		1085.78	7.22	2.80E-01		1.39E+00
		1112.02	9.60	5.37E-02		1.15E+00
		1407.95	14.94	4.22E-01		8.52E-01
+	GD-153	97.43	31.30	-7.76E-03	1.84E-01	1.84E-01
		103.18	22.20	-7.70E-02		2.57E-01
+	EU-154	123.07	40.50	-4.95E-03	1.35E-01	1.35E-01
		723.30	19.70	-8.59E-01		5.11E-01
		873.19	11.50	3.76E-01		7.93E-01
		996.32	10.30	-2.47E-01		9.68E-01
		1004.76	17.90	-8.42E-02		5.87E-01
		1274.45	35.50	-9.88E-02		3.56E-01
+	EU-155	86.50	30.90	2.85E-01	2.53E-01	2.53E-01
		105.30	20.70	4.38E-02		2.64E-01
+	EU-156	811.77	10.40	1.60E-01	3.64E+00	3.64E+00
		1153.47	7.20	2.34E+00		7.51E+00
		1230.71	8.90	1.81E+00		7.46E+00
+	HO-166M	184.41	72.60	1.92E-01	1.07E-01	1.07E-01
		280.45	29.60	2.38E-01		2.69E-01
		410.94	11.10	2.38E-01		7.67E-01
		711.69	54.10	-3.22E-02		1.61E-01
+	TM-171	66.72	0.14	1.71E+01	5.76E+01	5.76E+01
+	HF-172	81.75	4.52	-6.63E+00	5.03E-01	1.46E+00
		125.81	11.30	-2.27E-01		5.03E-01

Analysis Report for 1510088-05
CP4104S08-09

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	2.35E+00	4.74E+00	8.19E+00
		810.06	16.63	9.81E-01		1.68E+01
		912.12	15.25	8.69E+01		3.52E+01
		1093.66	62.50	-7.55E-02		4.74E+00
+	LU-173	100.72	5.24	-3.98E-01	3.99E-01	1.01E+00
		272.11	21.20	3.62E-01		3.99E-01
+	HF-175	343.40	84.00	1.31E-02	1.25E-01	1.25E-01
+	LU-176	88.34	13.30	9.48E-02	7.61E-02	5.89E-01
		201.83	86.00	2.37E-02		8.84E-02
		306.78	94.00	-2.03E-02		7.61E-02
+	TA-182	67.75	41.20	2.09E-03	2.22E-01	2.22E-01
		1121.30	34.90	6.26E-01		5.38E-01
		1189.05	16.23	-2.30E-01		9.45E-01
		1221.41	26.98	1.52E-01		6.40E-01
		1231.02	11.44	4.97E-01		1.63E+00
+	IR-192	308.46	29.68	1.32E-01	2.49E-01	3.30E-01
		468.07	48.10	1.16E-01		2.49E-01
+	HG-203	279.19	77.30	5.34E-02	1.63E-01	1.63E-01
+	BI-207	569.67	97.72	-1.35E-02	9.29E-02	9.29E-02
		1063.62	74.90	2.30E-03		1.52E-01
+	TL-208	583.14	* 30.22	1.42E+00	4.73E-02	4.02E-01
		860.37	* 4.48	2.08E+00		2.80E+00
		2614.66	* 35.85	8.38E-01		4.73E-02
+	BI-210M	262.00	45.00	7.02E-02	1.63E-01	1.63E-01
		300.00	23.00	-1.15E+00		3.55E-01
+	PB-210	46.50	* 4.25	2.42E+00	3.13E+00	3.13E+00
+	PB-211	404.84	2.90	4.00E-01	2.68E+00	2.68E+00
		831.96	2.90	6.15E-01		3.73E+00
+	BI-212	727.17	11.80	5.32E-01	9.93E-01	9.93E-01
		1620.62	2.75	1.58E+00		3.57E+00
+	PB-212	238.63	* 44.60	1.72E+00	3.08E-01	3.08E-01
		300.09	* 3.41	2.12E+00		2.36E+00
+	BI-214	609.31	* 46.30	1.12E+00	2.63E-01	2.63E-01
		1120.29	* 15.10	1.03E+00		9.26E-01
		1764.49	* 15.80	1.40E+00		6.07E-01
		2204.22	* 4.98	3.00E+00		1.60E+00
+	PB-214	295.21	* 19.19	1.38E+00	2.94E-01	4.99E-01
		351.92	* 37.19	1.48E+00		2.94E-01
+	RN-219	401.80	6.50	3.62E-01	1.25E+00	1.25E+00
+	RA-223	323.87	3.88	4.25E-01	1.88E+00	1.88E+00
+	RA-224	240.98	3.95	2.31E+01	3.91E+00	3.91E+00
+	RA-225	40.00	31.00	-6.44E-01	1.76E+00	1.76E+00
+	RA-226	186.21	* 3.28	3.40E+00	3.11E+00	3.11E+00
+	TH-227	50.10	8.40	1.59E-01	1.07E+00	1.07E+00
		236.00	11.50	2.86E+00		1.15E+00
		256.20	6.30	-5.10E-01		1.13E+00
+	AC-228	338.32	* 11.40	1.28E+00	5.31E-01	8.51E-01
		911.07	* 27.70	1.44E+00		5.31E-01

Analysis Report for 1510088-05

CP4104S08-09

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	9.92E-01	5.31E-01	8.97E-01
+	TH-230	48.44		16.90	5.72E-02	5.93E-01	5.93E-01
		62.85		4.60	1.69E+00		1.90E+00
		67.67		0.37	1.92E-01		2.04E+01
+	PA-231	283.67		1.60	1.12E-01	3.58E+00	4.61E+00
		302.67		2.30	3.23E+00		3.58E+00
+	TH-231	25.64		14.70	1.59E+00	1.04E+00	3.80E+00
		84.21		6.40	-2.19E+00		1.04E+00
+	PA-233	311.98		38.60	-6.03E-02	4.13E-01	4.13E-01
+	PA-234	131.20		20.40	-2.95E-02	2.80E-01	2.80E-01
		733.99		8.80	-3.02E-01		1.01E+00
		946.00		12.00	5.95E-03		8.52E-01
+	PA-234M	1001.03		0.92	1.06E+00	1.18E+01	1.18E+01
+	TH-234	63.29	*	3.80	1.59E+00	2.92E+00	2.92E+00
+	U-235	143.76		10.50	-1.32E-01	5.50E-01	5.50E-01
		163.35		4.70	3.31E-01		1.24E+00
		205.31		4.70	4.59E-01		1.56E+00
+	NP-237	86.50		12.60	6.91E-01	6.14E-01	6.14E-01
+	NP-239	106.10		22.70	3.04E+02	3.12E+03	3.12E+03
		228.18		10.70	-3.10E+03		9.23E+03
		277.60		14.10	-1.09E+03		7.01E+03
+	AM-241	59.54		35.90	5.16E-02	2.29E-01	2.29E-01
+	AM-243	74.67		66.00	2.12E-01	1.56E-01	1.56E-01
+	CM-243	209.75	*	3.29	2.12E+00	4.50E-01	2.47E+00
		228.14		10.60	-2.40E-01		7.13E-01
		277.60	*	14.00	2.27E-01		4.50E-01

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

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

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

NUCLIDE MDA REPORT

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

: 00499

Analysis Report for 1510088-05

CP4104S08-09

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	1.20E+00	1.20E+00	3.29E-02	5.65E-01	
NA-22	1274.54	99.94	1.29E-01	1.29E-01	-3.57E-02	5.90E-02	
NA-24	1368.53	99.99	3.48E+14	2.95E+14	2.18E+13	1.56E+14	
	2754.09	99.86	2.95E+14		1.26E+14	1.19E+14	
AL-26	1808.65	99.76	7.52E-02	7.52E-02	-1.41E-02	3.08E-02	
+ K-40	1460.81	*	10.67	9.85E-01	9.85E-01	1.99E+01	4.39E-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	7.98E-02	7.98E-02	7.51E-04	3.90E-02	
	78.34	96.00	1.02E-01		2.99E-01	5.04E-02	
SC-46	889.25	99.98	1.25E-01	1.25E-01	-3.98E-02	5.77E-02	
	1120.51	99.99	1.98E-01		1.79E-01	9.29E-02	
V-48	983.52	99.98	3.36E-01	3.36E-01	-2.66E-01	1.51E-01	
	1312.10	97.50	5.22E-01		-1.60E-01	2.39E-01	
CR-51	320.08	9.83	1.70E+00	1.70E+00	6.01E-02	8.15E-01	
+ MN-54	834.83	*	99.97	9.73E-02	9.73E-02	7.80E-02	4.47E-02
CO-56	846.75	99.96	1.32E-01	1.32E-01	-2.63E-02	6.11E-02	
	1037.75	14.03	9.81E-01		1.97E-01	4.49E-01	
	1238.25	67.00	3.08E-01		1.22E-01	1.44E-01	
	1771.40	15.51	6.33E-01		-1.02E+00	2.59E-01	
	2598.48	16.90	5.89E-01		-3.68E-02	2.28E-01	
CO-57	122.06	85.51	6.80E-02	6.80E-02	7.06E-03	3.30E-02	
	136.48	10.60	5.83E-01		-1.33E-01	2.83E-01	
CO-58	810.76	99.40	1.28E-01	1.28E-01	-6.36E-04	5.93E-02	
FE-59	1099.22	56.50	3.14E-01	3.14E-01	-6.18E-02	1.44E-01	
	1291.56	43.20	4.74E-01		9.64E-02	2.17E-01	
CO-60	1173.22	100.00	1.12E-01	1.12E-01	-4.53E-02	5.12E-02	
	1332.49	100.00	1.24E-01		-2.21E-02	5.67E-02	
ZN-65	1115.52	50.75	2.29E-01	2.29E-01	2.22E-02	1.05E-01	
+ GA-67	93.31	*	35.70	4.02E+02	4.02E+02	5.27E+02	1.99E+02
	208.95	2.24	3.27E+03		2.41E+03	1.59E+03	
	300.22	*	16.00	4.73E+02	4.25E+02	2.28E+02	
SE-75	121.11	16.70	3.84E-01	1.17E-01	7.80E-02	1.86E-01	
	136.00	59.20	1.17E-01		-8.41E-03	5.69E-02	
	264.65	59.80	1.38E-01		-1.19E-02	6.61E-02	
	279.53	25.20	3.75E-01		1.93E-01	1.81E-01	
	400.65	11.40	8.62E-01		1.97E-01	4.11E-01	
RB-82	776.52	13.00	1.80E+00	1.80E+00	3.62E-01	8.37E-01	
RB-83	520.41	46.00	2.48E-01	2.48E-01	1.68E-01	1.17E-01	
	529.64	30.30	3.48E-01		-2.37E-02	1.64E-01	
	552.65	16.40	6.41E-01		-1.84E-01	3.00E-01	
KR-85	513.99	0.43	2.70E+01	2.70E+01	2.70E+01	1.29E+01	
SR-85	513.99	99.27	1.65E-01	1.65E-01	1.66E-01	7.93E-02	
Y-88	898.02	93.40	1.29E-01	1.09E-01	1.85E-02	5.95E-02	
	1836.01	99.38	1.09E-01		1.25E-02	4.61E-02	
NB-93M	16.57	9.43	9.18E+01	9.18E+01	3.03E+01	4.47E+01	
NB-94	702.63	100.00	9.42E-02	8.73E-02	3.24E-02	4.40E-02	
	871.10	100.00	8.73E-02		8.85E-03	3.99E-02	
NB-95	765.79	99.81	2.24E-01	2.24E-01	2.03E-01	1.06E-01	
NB-95M	235.69	25.00	2.57E+02	2.57E+02	6.37E+02	1.26E+02	
ZR-95	724.18	43.70	3.66E-01	2.59E-01	2.61E-02	1.73E-01	
	756.72	55.30	2.59E-01		1.64E-01	1.21E-01	

Analysis Report for 1510088-05

CP4104S08-09

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
MO-99	181.06	6.20	3.20E+03	2.45E+03	4.54E+02	1.55E+03
	739.58	12.80	2.45E+03		5.77E+02	1.14E+03
	778.00	4.50	6.56E+03		-5.94E+02	3.02E+03
RU-103	497.08	89.00	1.58E-01	1.58E-01	-4.03E-02	7.43E-02
RU-106	621.84	9.80	8.93E-01	8.93E-01	-9.33E-02	4.16E-01
AG-108M	433.93	89.90	9.11E-02	9.11E-02	5.62E-02	4.32E-02
	614.37	90.40	1.05E-01		4.07E-02	4.97E-02
	722.95	90.50	1.10E-01		-1.86E-01	5.17E-02
+ CD-109	88.03	* 3.72	4.27E+00	4.27E+00	6.37E+00	2.11E+00
AG-110M	657.75	93.14	1.02E-01	1.02E-01	-5.65E-02	4.77E-02
	677.61	10.53	8.94E-01		-2.56E-01	4.15E-01
	706.67	16.46	6.11E-01		-6.57E-02	2.85E-01
	763.93	21.98	4.71E-01		-6.82E-01	2.19E-01
	884.67	71.63	1.53E-01		2.28E-02	7.08E-02
	1384.27	23.94	5.34E-01		-1.84E-01	2.42E-01
CD-113M	263.70	0.02	3.05E+02	3.05E+02	3.10E+01	1.46E+02
SN-113	255.12	1.93	4.45E+00	1.39E-01	-8.25E-01	2.14E+00
	391.69	64.90	1.39E-01		1.30E-02	6.60E-02
TE123M	159.00	84.10	8.53E-02	8.53E-02	-1.13E-02	4.13E-02
SB-124	602.71	97.87	1.27E-01	1.27E-01	-2.57E-03	5.95E-02
	645.85	7.26	1.92E+00		2.54E-01	9.03E-01
	722.78	11.10	1.30E+00		-2.19E+00	6.10E-01
	1691.02	49.00	1.84E-01		-6.75E-02	7.32E-02
I-125	35.49	6.49	3.67E+00	3.67E+00	7.93E-01	1.78E+00
SB-125	176.33	6.89	8.85E-01	2.74E-01	3.01E-02	4.27E-01
	427.89	29.33	2.74E-01		-4.78E-02	1.30E-01
	463.38	10.35	9.33E-01		7.31E-01	4.45E-01
	600.56	17.80	5.16E-01		1.61E-01	2.42E-01
	635.90	11.32	7.58E-01		1.04E-01	3.53E-01
		414.70	83.30		5.83E-01	5.67E-01	-7.26E-02	2.77E-01
SB-126	666.33	99.60	6.11E-01		1.34E-01	2.88E-01
	695.00	99.60	5.67E-01		2.02E-01	2.65E-01
	720.50	53.80	1.13E+00		2.16E-01	5.28E-01
+ SN-126	87.57	* 37.00	4.09E-01	4.09E-01	6.10E-01	2.02E-01
SB-127	473.00	25.00	1.08E+02	8.40E+01	-5.50E+00	5.12E+01
	685.20	35.70	8.40E+01		-3.25E+01	3.92E+01
	783.80	14.70	2.34E+02		5.84E+01	1.09E+02
I-129	29.78	57.00	4.99E-01	4.99E-01	3.32E-02	2.43E-01
	33.60	13.20	1.43E+00		-6.17E-01	6.97E-01
	39.58	7.52	1.64E+00		-6.02E-01	7.99E-01
I-131	284.30	6.05	1.96E+01	1.57E+00	4.79E-01	9.42E+00
	364.48	81.20	1.57E+00		2.33E-01	7.51E-01
	636.97	7.26	1.85E+01		-2.11E+00	8.60E+00
	722.89	1.80	8.92E+01		-1.50E+02	4.17E+01
TE-132	49.72	13.10	6.53E+02	8.10E+01	9.72E+01	3.18E+02
	228.16	88.00	8.10E+01		-2.72E+01	3.92E+01
BA-133	81.00	33.00	1.99E-01	1.78E-01	-1.21E+00	9.71E-02
	302.84	17.80	4.65E-01		4.20E-01	2.24E-01
	356.01	60.00	1.78E-01		5.37E-03	8.62E-02
I-133	529.87	86.30	1.45E+10	1.45E+10	-9.89E+08	6.83E+09
XE-133	81.00	38.00	1.21E+01	1.21E+01	-7.40E+01	5.92E+00
CS-134	563.23	8.38	1.07E+00	9.26E-02	-1.78E-01	5.02E-01
	569.32	15.43	6.14E-01		1.39E-01	2.90E-01

Analysis Report for 1510088-05
CP4104S08-09

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	9.26E-02	9.26E-02	-1.47E-02	4.34E-02
	795.84	85.40	1.34E-01		8.82E-02	6.30E-02
	801.93	8.73	1.13E+00		7.64E-02	5.23E-01
CS-135	268.24	16.00	4.73E-01	4.73E-01	-6.80E-02	2.28E-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	4.53E+00	5.32E-01	2.62E+00	2.20E+00
	163.89	4.61	6.88E+00		1.84E+00	3.33E+00
	176.55	13.56	2.34E+00		-8.37E-01	1.13E+00
	273.65	12.66	3.34E+00		-2.31E+00	1.61E+00
	340.57	48.50	1.09E+00		2.66E-01	5.28E-01
	818.50	99.70	5.32E-01		2.48E-01	2.47E-01
	1048.07	79.60	7.79E-01		4.65E-01	3.59E-01
	1235.34	19.70	4.33E+00		-1.42E+00	2.02E+00
CS-137	661.65	85.12	1.14E-01	1.14E-01	1.45E-02	5.37E-02
LA-138	788.74	34.00	3.11E-01	1.53E-01	-7.13E-03	1.45E-01
	1435.80	66.00	1.53E-01		-2.14E-02	6.79E-02
CE-139	165.85	80.35	8.30E-02	8.30E-02	-1.27E-02	4.01E-02
BA-140	162.64	6.70	5.00E+00	1.88E+00	1.63E+00	2.42E+00
	304.84	4.50	9.29E+00		1.80E+00	4.45E+00
	423.70	3.20	1.44E+01		5.73E+00	6.81E+00
	437.55	2.00	2.29E+01		3.51E+00	1.08E+01
	537.32	25.00	1.88E+00		1.48E-01	8.83E-01
LA-140	328.77	20.50	2.16E+00	6.71E-01	-2.00E-01	1.04E+00
	487.03	45.50	1.05E+00		1.33E-01	4.97E-01
	815.85	23.50	2.15E+00		-8.27E-01	9.89E-01
	1596.49	95.49	6.71E-01		-2.36E-02	2.98E-01
CE-141	145.44	48.40	2.38E-01	2.38E-01	3.13E-03	1.15E-01
CE-143	57.36	11.80	7.92E+06	2.77E+06	-5.28E+05	3.87E+06
	293.26	42.00	2.77E+06		5.82E+06	1.34E+06
	664.55	5.20	2.12E+07		-1.92E+06	9.97E+06
CE-144	133.54	10.80	5.75E-01	5.75E-01	5.50E-02	2.79E-01
PM-144	476.78	42.00	2.03E-01	8.57E-02	-5.15E-02	9.56E-02
	618.01	98.60	8.57E-02		-3.24E-02	3.98E-02
	696.49	99.49	9.79E-02		2.83E-02	4.56E-02
PM-145	36.85	21.70	6.93E-01	3.70E-01	2.16E-01	3.37E-01
	37.36	39.70	3.70E-01		2.19E-01	1.80E-01
	42.30	15.10	7.37E-01		-9.99E-02	3.59E-01
	72.40	2.31	3.78E+00		-5.74E+00	1.86E+00
PM-146	453.90	39.94	1.95E-01	1.95E-01	9.42E-02	9.21E-02
	735.90	14.01	6.51E-01		-2.60E-02	3.02E-01
	747.13	13.10	7.23E-01		1.59E-01	3.36E-01
ND-147	91.11	28.90	1.98E+00	1.98E+00	-2.16E+00	9.69E-01
	531.02	13.10	4.73E+00		-1.03E+00	2.22E+00
PM-149	285.90	3.10	5.59E+04	5.59E+04	7.48E+03	2.68E+04
EU-152	121.78	20.50	2.62E-01	2.62E-01	2.72E-02	1.27E-01
	244.69	5.40	1.61E+00		-1.15E+00	7.80E-01
	344.27	19.13	4.01E-01		1.12E-01	1.92E-01
	778.89	9.20	9.26E-01		-3.07E-03	4.26E-01
	964.01	10.40	1.19E+00		2.68E-01	5.54E-01
	1085.78	7.22	1.39E+00		2.80E-01	6.33E-01
	1112.02	9.60	1.15E+00		5.37E-02	5.26E-01

Analysis Report for 1510088-05
CP4104S08-09

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	8.52E-01	2.62E-01	4.22E-01	3.88E-01
GD-153	97.43	31.30	1.84E-01	1.84E-01	-7.76E-03	8.92E-02
	103.18	22.20	2.57E-01		-7.70E-02	1.24E-01
EU-154	123.07	40.50	1.35E-01	1.35E-01	-4.95E-03	6.52E-02
	723.30	19.70	5.11E-01		-8.59E-01	2.39E-01
	873.19	11.50	7.93E-01		3.76E-01	3.64E-01
	996.32	10.30	9.68E-01		-2.47E-01	4.43E-01
	1004.76	17.90	5.87E-01		-8.42E-02	2.69E-01
	1274.45	35.50	3.56E-01		-9.88E-02	1.63E-01
EU-155	86.50	30.90	2.53E-01	2.53E-01	2.85E-01	1.24E-01
	105.30	20.70	2.64E-01		4.38E-02	1.28E-01
EU-156	811.77	10.40	3.64E+00	3.64E+00	1.60E-01	1.67E+00
	1153.47	7.20	7.51E+00		2.34E+00	3.47E+00
	1230.71	8.90	7.46E+00		1.81E+00	3.48E+00
HO-166M	184.41	72.60	1.07E-01	1.07E-01	1.92E-01	5.18E-02
	280.45	29.60	2.69E-01		2.38E-01	1.30E-01
	410.94	11.10	7.67E-01		2.38E-01	3.66E-01
	711.69	54.10	1.61E-01		-3.22E-02	7.45E-02
TM-171	66.72	0.14	5.76E+01	5.76E+01	1.71E+01	2.82E+01
HF-172	81.75	4.52	1.46E+00	5.03E-01	-6.63E+00	7.12E-01
	125.81	11.30	5.03E-01		-2.27E-01	2.44E-01
LU-172	181.53	20.60	8.19E+00	4.74E+00	2.35E+00	3.96E+00
	810.06	16.63	1.68E+01		9.81E-01	7.79E+00
	912.12	15.25	3.52E+01		8.69E+01	1.69E+01
	1093.66	62.50	4.74E+00		-7.55E-02	2.17E+00
LU-173	100.72	5.24	1.01E+00	3.99E-01	-3.98E-01	4.90E-01
	272.11	21.20	3.99E-01		3.62E-01	1.93E-01
HF-175	343.40	84.00	1.25E-01	1.25E-01	1.31E-02	5.98E-02
LU-176	88.34	13.30	5.89E-01	7.61E-02	9.48E-02	2.88E-01
	201.83	86.00	8.84E-02		2.37E-02	4.29E-02
	306.78	94.00	7.61E-02		-2.03E-02	3.64E-02
TA-182	67.75	41.20	2.22E-01	2.22E-01	2.09E-03	1.09E-01
	1121.30	34.90	5.38E-01		6.26E-01	2.53E-01
	1189.05	16.23	9.45E-01		-2.30E-01	4.36E-01
	1221.41	26.98	6.40E-01		1.52E-01	2.97E-01
	1231.02	11.44	1.63E+00		4.97E-01	7.63E-01
IR-192	308.46	29.68	3.30E-01	2.49E-01	1.32E-01	1.58E-01
	468.07	48.10	2.49E-01		1.16E-01	1.19E-01
HG-203	279.19	77.30	1.63E-01	1.63E-01	5.34E-02	7.83E-02
BI-207	569.67	97.72	9.29E-02	9.29E-02	-1.35E-02	4.38E-02
	1063.62	74.90	1.52E-01		2.30E-03	7.03E-02
+ TL-208	583.14	* 30.22	4.02E-01	4.73E-02	1.42E+00	1.92E-01
	860.37	* 4.48	2.80E+00		2.08E+00	1.32E+00
	2614.66	* 35.85	4.73E-02		8.38E-01	0.00E+00
BI-210M	262.00	45.00	1.63E-01	1.63E-01	7.02E-02	7.86E-02
	300.00	23.00	3.55E-01		-1.15E+00	1.71E-01
+ PB-210	46.50	* 4.25	3.13E+00	3.13E+00	2.42E+00	1.54E+00
PB-211	404.84	2.90	2.68E+00	2.68E+00	4.00E-01	1.27E+00
	831.96	2.90	3.73E+00		6.15E-01	1.74E+00
BI-212	727.17	11.80	9.93E-01	9.93E-01	5.32E-01	4.69E-01
	1620.62	2.75	3.57E+00		1.58E+00	1.56E+00
+ PB-212	238.63	* 44.60	3.08E-01	3.08E-01	1.72E+00	1.51E-01
	300.09	* 3.41	2.36E+00		2.12E+00	1.14E+00

Analysis Report for 1510088-05
CP4104S08-09

	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	2.63E-01	2.63E-01	1.12E+00	1.25E-01
		1120.29 *		15.10	9.26E-01		1.03E+00	4.32E-01
		1764.49 *		15.80	6.07E-01		1.40E+00	2.61E-01
		2204.22 *		4.98	1.60E+00		3.00E+00	6.46E-01
+	PB-214	295.21 *		19.19	4.99E-01	2.94E-01	1.38E+00	2.42E-01
		351.92 *		37.19	2.94E-01		1.48E+00	1.43E-01
	RN-219	401.80		6.50	1.25E+00	1.25E+00	3.62E-01	5.97E-01
	RA-223	323.87		3.88	1.88E+00	1.88E+00	4.25E-01	8.99E-01
	RA-224	240.98		3.95	3.91E+00	3.91E+00	2.31E+01	1.92E+00
	RA-225	40.00		31.00	1.76E+00	1.76E+00	-6.44E-01	8.55E-01
+	RA-226	186.21 *		3.28	3.11E+00	3.11E+00	3.40E+00	1.52E+00
	TH-227	50.10		8.40	1.07E+00	1.07E+00	1.59E-01	5.19E-01
		236.00		11.50	1.15E+00		2.86E+00	5.65E-01
		256.20		6.30	1.13E+00		-5.10E-01	5.45E-01
+	AC-228	338.32 *		11.40	8.51E-01	5.31E-01	1.28E+00	4.11E-01
		911.07 *		27.70	5.31E-01		1.44E+00	2.51E-01
		969.11 *		16.60	8.97E-01		9.92E-01	4.24E-01
	TH-230	48.44		16.90	5.93E-01	5.93E-01	5.72E-02	2.90E-01
		62.85		4.60	1.90E+00		1.69E+00	9.31E-01
		67.67		0.37	2.04E+01		1.92E-01	9.96E+00
	PA-231	283.67		1.60	4.61E+00	3.58E+00	1.12E-01	2.21E+00
		302.67		2.30	3.58E+00		3.23E+00	1.72E+00
	TH-231	25.64		14.70	3.80E+00	1.04E+00	1.59E+00	1.85E+00
		84.21		6.40	1.04E+00		-2.19E+00	5.08E-01
	PA-233	311.98		38.60	4.13E-01	4.13E-01	-6.03E-02	1.97E-01
	PA-234	131.20		20.40	2.80E-01	2.80E-01	-2.95E-02	1.36E-01
		733.99		8.80	1.01E+00		-3.02E-01	4.66E-01
		946.00		12.00	8.52E-01		5.95E-03	3.92E-01
	PA-234M	1001.03		0.92	1.18E+01	1.18E+01	1.06E+00	5.43E+00
+	TH-234	63.29 *		3.80	2.92E+00	2.92E+00	1.59E+00	1.44E+00
	U-235	143.76		10.50	5.50E-01	5.50E-01	-1.32E-01	2.67E-01
		163.35		4.70	1.24E+00		3.31E-01	5.97E-01
		205.31		4.70	1.56E+00		4.59E-01	7.57E-01
	NP-237	86.50		12.60	6.14E-01	6.14E-01	6.91E-01	3.01E-01
	NP-239	106.10		22.70	3.12E+03	3.12E+03	3.04E+02	1.52E+03
		228.18		10.70	9.23E+03		-3.10E+03	4.47E+03
		277.60		14.10	7.01E+03		-1.09E+03	3.38E+03
	AM-241	59.54		35.90	2.29E-01	2.29E-01	5.16E-02	1.12E-01
	AM-243	74.67		66.00	1.56E-01	1.56E-01	2.12E-01	7.68E-02
+	CM-243	209.75 *		3.29	2.47E+00	4.50E-01	2.12E+00	1.20E+00
		228.14		10.60	7.13E-01		-2.40E-01	3.45E-01
		277.60 *		14.00	4.50E-01		2.27E-01	2.15E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

Analysis Report for 1510088-05
CP4104S08-09

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: CP4104S08-09

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:	14	185	173	139	121	97	85	99	
17:	104	102	91	84	55	77	83	81	
25:	104	100	76	84	79	63	77	94	
33:	74	73	70	85	94	89	81	81	
41:	77	76	84	90	108	117	166	119	
49:	93	96	104	95	93	114	122	122	
57:	106	111	134	135	124	133	171	210	
65:	156	135	118	137	139	120	138	121	
73:	133	157	383	250	423	485	144	102	
81:	104	95	111	121	130	129	180	246	
89:	117	137	144	144	211	198	104	84	
97:	69	72	56	80	67	68	62	66	
105:	85	84	76	64	85	72	58	74	
113:	68	72	78	76	53	63	66	61	
121:	61	69	77	68	66	66	79	68	
129:	74	87	61	82	57	80	69	71	
137:	79	56	70	78	74	74	67	77	
145:	63	56	67	71	73	55	58	63	
153:	74	74	94	62	59	76	59	74	
161:	51	62	55	65	66	45	46	52	
169:	51	62	57	71	51	56	61	63	
177:	50	50	41	63	60	53	50	49	
185:	53	157	141	51	49	46	49	40	
193:	65	66	42	54	56	57	60	52	
201:	58	55	53	46	58	50	44	40	
209:	68	91	45	42	48	29	39	56	
217:	49	39	42	38	38	51	54	43	
225:	47	39	56	39	37	43	50	62	
233:	35	46	41	49	55	195	514	198	
241:	86	124	86	33	30	31	32	32	
249:	37	25	37	34	33	28	21	37	
257:	44	30	36	38	40	37	32	33	
265:	19	26	22	30	37	47	59	34	
273:	40	25	27	27	32	45	40	23	
281:	32	39	31	37	24	22	22	32	
289:	24	24	22	34	33	34	108	138	
297:	37	17	26	61	43	24	25	30	
305:	22	28	30	20	25	15	27	28	
313:	23	12	26	25	20	25	24	28	
321:	19	35	22	20	27	20	18	44	
329:	37	17	23	18	23	22	32	26	
337:	30	66	81	28	14	31	26	22	
345:	23	16	27	19	24	22	68	264	
353:	159	34	23	20	21	20	21	16	
361:	22	24	22	23	20	21	19	27	

369: 24 21 18 18 12 17 20 18

Sample Title: CP4104S08-09

Channel	1	2	3	4	5	6	7	8
377:	21	18	20	17	12	19	14	20
385:	19	22	21	11	11	22	18	23
393:	12	14	19	15	18	23	21	18
401:	22	17	22	16	22	16	14	16
409:	21	28	23	16	15	26	23	18
417:	17	11	18	11	21	14	17	14
425:	23	15	17	13	15	13	18	23
433:	15	15	19	10	21	9	14	20
441:	20	20	10	10	11	15	15	17
449:	26	10	12	12	19	15	12	15
457:	13	9	11	15	14	13	40	35
465:	13	15	18	17	22	21	19	13
473:	10	14	10	17	10	15	14	17
481:	19	19	14	11	16	15	16	16
489:	16	12	12	11	15	11	13	15
497:	8	15	18	9	19	12	11	14
505:	14	19	17	16	21	23	59	49
513:	28	15	15	6	14	14	17	12
521:	19	9	16	8	10	14	11	16
529:	16	8	9	9	14	10	15	12
537:	11	12	12	10	10	12	10	9
545:	10	8	11	11	9	13	10	15
553:	7	10	6	15	16	13	14	10
561:	15	13	8	6	16	17	12	14
569:	11	14	12	14	14	11	13	8
577:	13	13	8	17	7	28	102	98
585:	25	8	12	8	7	7	9	12
593:	8	9	10	11	11	14	16	16
601:	12	6	8	9	9	13	9	22
609:	104	131	32	8	6	10	15	7
617:	10	6	5	7	9	13	11	9
625:	9	12	10	5	8	6	11	12
633:	7	7	9	15	7	6	12	6
641:	5	14	15	7	9	12	10	15
649:	14	9	15	9	14	9	7	6
657:	9	10	13	9	10	12	14	9
665:	13	15	8	15	11	13	8	13
673:	13	13	7	8	6	9	13	7
681:	9	8	7	13	9	17	5	6
689:	16	12	3	9	10	10	8	10
697:	12	8	6	9	8	7	14	11
705:	13	5	9	7	7	11	12	6
713:	7	5	7	11	8	11	9	9
721:	10	16	10	11	8	8	30	25
729:	8	10	5	12	10	7	7	6
737:	7	13	6	7	9	12	7	8
745:	5	12	9	9	10	6	8	3
753:	9	11	13	9	8	11	9	7
761:	3	9	10	10	5	13	8	20
769:	27	8	9	12	15	9	9	12
777:	6	5	4	5	7	5	5	16
785:	11	13	11	13	11	8	5	8
793:	8	8	23	11	11	6	9	8

801: 6 11 11 3 6 8 12 14

Sample Title: CP4104S08-09

Channel	1	2	3	4	5	6	7	8
809:	9	5	5	7	6	4	7	5
817:	7	7	8	10	10	4	7	11
825:	12	9	6	5	9	6	13	8
833:	6	11	13	17	10	5	5	5
841:	9	7	6	7	5	5	8	13
849:	6	9	8	13	7	7	10	2
857:	4	9	7	10	19	8	8	6
865:	9	13	6	2	8	5	4	6
873:	7	6	6	7	3	2	5	4
881:	13	7	4	7	6	8	5	6
889:	9	4	8	5	6	12	7	4
897:	6	7	3	9	10	2	4	7
905:	6	5	4	4	7	31	80	42
913:	12	6	9	4	2	7	9	11
921:	6	4	6	3	8	10	5	7
929:	2	7	5	5	7	15	12	6
937:	6	5	8	3	4	8	5	8
945:	7	5	5	4	12	8	6	5
953:	6	3	3	3	5	3	6	7
961:	6	10	6	8	18	7	11	14
969:	40	28	5	7	3	6	6	6
977:	8	5	10	2	5	6	5	4
985:	3	2	7	6	5	6	6	8
993:	4	2	10	5	7	7	4	6
1001:	7	9	4	10	8	5	4	3
1009:	6	8	5	5	2	7	4	4
1017:	3	7	6	5	4	5	8	4
1025:	8	3	4	6	6	5	7	6
1033:	5	7	4	9	6	7	5	5
1041:	4	5	3	6	11	8	8	4
1049:	2	7	8	6	1	5	7	10
1057:	5	4	5	7	7	2	6	8
1065:	10	7	8	9	6	8	7	4
1073:	7	4	6	4	4	1	10	9
1081:	3	5	5	2	4	4	8	6
1089:	5	7	1	5	10	5	5	5
1097:	7	4	6	8	6	3	7	8
1105:	2	4	6	5	9	5	6	4
1113:	2	6	8	8	3	6	12	23
1121:	21	10	4	6	1	6	2	2
1129:	8	9	5	8	7	5	7	9
1137:	7	6	10	7	10	6	8	3
1145:	3	5	4	3	5	6	6	11
1153:	6	5	9	6	8	5	9	11
1161:	4	7	5	5	10	6	6	11
1169:	2	5	5	5	6	8	3	5
1177:	9	6	3	4	8	9	9	5
1185:	14	7	5	8	10	3	9	6
1193:	8	6	3	6	7	15	13	9
1201:	4	7	8	13	9	4	6	8
1209:	5	4	8	4	7	8	9	8
1217:	8	10	5	8	12	10	10	4
1225:	7	6	8	2	10	13	14	10

1233: 11 9 11 7 9 14 17 5

Sample Title: CP4104S08-09

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	7	5	7	4	10	6	6	5
1249:	8	5	6	5	5	12	4	3
1257:	5	3	2	6	3	3	3	1
1265:	3	11	6	6	6	3	5	3
1273:	10	6	2	5	7	1	4	10
1281:	7	1	3	3	3	5	8	5
1289:	2	5	2	3	3	4	8	3
1297:	4	4	6	4	3	7	7	5
1305:	2	5	5	3	2	8	4	4
1313:	7	3	4	5	3	9	2	2
1321:	2	1	7	3	3	3	4	1
1329:	0	4	5	9	7	5	2	4
1337:	4	8	4	4	4	5	5	2
1345:	0	2	1	2	3	2	1	4
1353:	3	7	3	4	0	3	3	1
1361:	6	3	2	0	2	3	2	3
1369:	2	2	6	6	5	1	6	3
1377:	4	8	8	3	5	3	4	2
1385:	5	2	6	1	3	1	1	3
1393:	2	0	1	4	4	2	1	5
1401:	4	3	0	2	6	3	1	7
1409:	6	5	3	3	4	2	1	4
1417:	2	4	4	0	3	2	4	2
1425:	1	4	1	3	1	3	0	1
1433:	5	3	0	2	3	4	3	5
1441:	2	2	6	5	0	2	3	5
1449:	0	2	5	0	5	0	3	4
1457:	2	8	40	149	211	78	14	2
1465:	0	1	2	4	1	1	1	2
1473:	1	0	2	1	2	2	1	0
1481:	0	1	1	1	2	1	2	0
1489:	0	5	2	1	0	3	2	2
1497:	2	2	1	0	5	3	1	3
1505:	4	3	2	3	3	5	2	3
1513:	1	2	1	2	2	2	1	1
1521:	3	0	2	2	3	1	2	3
1529:	0	1	1	1	1	2	1	2
1537:	1	1	3	0	2	1	0	2
1545:	1	3	1	2	0	0	2	3
1553:	1	3	0	3	1	1	0	0
1561:	2	1	1	0	0	2	2	1
1569:	0	2	3	0	4	3	0	3
1577:	2	2	3	3	2	1	0	3
1585:	2	0	3	3	7	2	4	5
1593:	1	0	1	1	4	0	1	9
1601:	2	2	1	3	1	1	1	4
1609:	0	0	2	0	1	1	0	2
1617:	0	0	0	2	6	4	0	2
1625:	1	1	1	0	0	6	2	1
1633:	0	0	1	1	3	1	2	2
1641:	2	1	1	1	2	0	0	1
1649:	0	0	0	1	0	1	0	0
1657:	0	2	0	2	3	2	1	1

1665: 1 0 0 2 1 0 0 3

Sample Title: CP4104S08-09

Channel	1	2	3	4	5	6	7	8
1673:	1	2	3	0	1	1	1	2
1681:	0	0	1	0	3	1	0	0
1689:	0	0	0	1	0	3	1	0
1697:	1	0	0	0	4	3	2	0
1705:	0	1	2	1	1	3	2	1
1713:	1	1	0	2	0	0	0	2
1721:	1	1	2	0	0	0	2	2
1729:	7	2	2	0	1	2	1	1
1737:	2	1	1	2	2	2	0	1
1745:	0	1	0	0	1	0	2	0
1753:	0	0	0	0	0	1	2	1
1761:	0	2	8	17	19	8	0	1
1769:	0	2	1	1	1	0	1	0
1777:	0	1	0	0	2	1	1	1
1785:	1	0	2	1	0	0	1	1
1793:	1	1	1	0	0	0	1	3
1801:	1	1	2	1	1	2	1	1
1809:	1	0	0	0	0	1	2	1
1817:	1	0	0	1	0	1	1	3
1825:	0	2	1	3	0	1	2	2
1833:	2	1	0	1	0	0	2	0
1841:	1	1	0	1	0	2	3	1
1849:	1	0	3	0	3	1	0	0
1857:	2	2	0	2	3	0	0	2
1865:	2	0	1	0	1	0	0	0
1873:	0	0	2	3	0	0	0	0
1881:	1	1	1	1	2	1	0	2
1889:	3	0	0	3	1	0	1	0
1897:	1	0	0	1	5	1	0	0
1905:	2	0	2	1	2	1	0	2
1913:	3	1	0	0	3	1	0	1
1921:	0	1	0	1	0	1	2	1
1929:	0	1	3	0	0	2	1	0
1937:	6	2	3	2	0	0	1	1
1945:	1	1	2	1	1	1	0	1
1953:	0	2	0	0	1	1	0	1
1961:	0	1	1	0	1	1	1	0
1969:	1	1	0	2	3	0	1	2
1977:	0	1	1	2	0	1	0	0
1985:	0	2	1	0	0	1	2	1
1993:	1	1	1	1	3	1	0	1
2001:	0	1	1	0	0	0	1	1
2009:	1	0	2	0	1	0	1	1
2017:	1	1	1	2	0	0	0	0
2025:	0	1	1	0	1	3	3	0
2033:	1	3	0	0	0	1	2	0
2041:	1	0	1	0	0	0	1	1
2049:	2	1	0	1	1	0	0	0
2057:	0	0	1	2	0	2	1	1
2065:	0	0	1	2	2	0	1	2
2073:	2	0	2	1	1	3	1	2
2081:	2	1	0	0	0	3	0	0
2089:	0	0	0	1	1	1	2	2

2097: 1 1 1 0 1 2 5 3

Sample Title: CP4104S08-09

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

2529: 0 0 0 0 0 0 0 0 0

Sample Title: CP4104S08-09

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	1	0	0	0	0	1	0	1
2545:	0	0	0	0	0	0	0	0
2553:	1	0	0	0	0	1	0	0
2561:	0	0	0	0	0	1	0	1
2569:	1	1	0	0	0	0	0	0
2577:	0	0	1	0	0	1	0	0
2585:	0	0	1	0	0	1	0	0
2593:	2	0	0	0	2	0	0	0
2601:	1	1	1	0	0	0	0	1
2609:	1	1	0	2	8	15	16	4
2617:	0	0	0	0	0	0	0	0
2625:	0	0	0	0	0	0	0	0
2633:	0	0	0	0	0	1	0	0
2641:	0	0	0	0	0	0	0	2
2649:	0	0	1	2	0	0	0	0
2657:	0	0	0	0	0	0	0	0
2665:	0	1	0	0	0	1	0	0
2673:	0	1	0	0	0	0	0	0
2681:	0	0	0	0	0	0	0	0
2689:	0	0	0	0	1	1	1	0
2697:	0	0	0	0	0	0	0	0
2705:	0	0	0	1	0	0	0	0
2713:	0	1	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	1	2	0
2745:	0	0	0	0	1	1	1	0
2753:	1	1	1	0	0	0	0	0
2761:	0	1	0	0	0	0	0	0
2769:	1	0	0	0	0	0	1	0
2777:	0	0	0	1	0	0	0	0
2785:	0	0	2	0	0	0	0	0
2793:	0	0	0	0	1	2	0	0
2801:	1	0	0	0	0	0	1	0
2809:	0	0	0	0	0	1	0	0
2817:	0	0	2	1	2	0	0	0
2825:	0	2	0	1	0	0	0	0
2833:	0	0	0	0	0	0	2	0
2841:	0	1	1	1	0	0	0	0
2849:	0	0	0	0	1	0	0	0
2857:	0	1	0	1	1	1	0	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	0	1	0	0
2889:	0	0	1	0	0	1	1	0
2897:	0	2	0	0	1	0	0	1
2905:	0	0	0	0	0	0	1	0
2913:	0	1	0	1	0	0	0	0
2921:	0	0	1	1	0	0	0	0
2929:	0	0	0	1	0	0	1	1
2937:	0	0	0	0	0	0	0	1
2945:	0	1	0	0	0	0	0	0
2953:	0	0	1	0	0	0	0	0

2961: 0 0 0 0 0 0 0 0 0

Sample Title: CP4104S08-09

Channel	1	2	3	4	5	6	7	8	9
2969:	1	0	0	0	0	0	0	0	0
2977:	0	0	1	0	0	0	0	0	0
2985:	1	0	0	0	0	0	0	0	0
2993:	0	0	0	0	0	0	0	0	0
3001:	0	0	0	0	0	0	0	0	0
3009:	0	0	0	0	1	0	0	0	0
3017:	0	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	0	0	0	0
3033:	0	1	0	1	0	0	0	0	0
3041:	0	1	0	1	0	0	0	0	0
3049:	0	0	0	1	2	0	0	0	0
3057:	0	0	1	0	0	0	0	0	0
3065:	1	0	0	1	0	0	0	0	0
3073:	0	0	0	0	1	0	1	0	0
3081:	0	0	0	0	1	0	0	0	0
3089:	0	0	0	0	0	0	1	0	0
3097:	0	0	0	1	0	0	0	3	0
3105:	1	0	0	1	0	0	0	0	0
3113:	0	0	0	0	0	0	1	1	0
3121:	0	0	0	0	1	0	0	0	0
3129:	0	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0	0
3145:	0	0	1	1	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	1	0	0
3169:	0	0	0	1	1	0	0	1	0
3177:	0	0	0	0	0	0	1	0	0
3185:	0	0	0	0	1	0	0	0	0
3193:	0	1	0	0	0	0	0	0	0
3201:	0	1	1	0	1	0	0	0	0
3209:	0	0	0	0	0	0	0	0	0
3217:	0	1	1	0	0	0	0	0	0
3225:	0	0	0	0	0	0	0	0	0
3233:	0	0	1	1	0	0	1	0	0
3241:	0	0	0	0	0	0	1	0	0
3249:	0	0	0	0	1	0	0	0	0
3257:	0	1	0	1	1	0	0	0	0
3265:	0	0	0	0	0	0	0	1	0
3273:	0	1	0	0	0	1	1	0	0
3281:	0	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	1	0	0	0
3297:	0	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	1	0
3321:	0	0	0	0	0	0	0	0	0
3329:	0	1	0	0	0	0	0	0	0
3337:	0	0	1	0	0	0	1	0	0
3345:	1	0	0	1	0	1	0	1	0
3353:	0	1	0	0	0	0	0	0	0
3361:	0	0	1	0	0	0	1	0	0
3369:	0	0	0	1	0	0	0	0	0
3377:	1	0	1	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	1	0

3393: 0 0 0 1 0 0 0 0

Sample Title: CP4104S08-09

Channel	1	2	3	4	5	6	7	8
3401:	0	0	0	0	0	0	0	1
3409:	0	0	1	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	1	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	1	0	1	0	0
3457:	0	0	0	0	0	0	1	0
3465:	0	0	0	0	0	1	0	0
3473:	0	0	1	0	1	0	0	1
3481:	0	0	1	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	1	0	0	0	0	0	1
3505:	0	0	0	0	0	0	1	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	1	1	0	0	0	1	0
3537:	0	1	0	0	0	0	0	0
3545:	0	0	0	0	1	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	1
3569:	0	0	0	0	0	0	1	0
3577:	0	0	0	0	1	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	1	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	1	0	0	0
3625:	0	0	1	0	0	0	0	0
3633:	0	0	1	0	1	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	1	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	1	0	0	0	0	0
3681:	0	0	0	0	0	0	0	1
3689:	0	0	0	0	0	0	1	0
3697:	0	0	1	0	0	0	0	0
3705:	0	0	0	1	0	0	0	0
3713:	0	0	0	0	2	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	1	0	0	0	0	0	0
3745:	0	0	0	0	0	1	0	0
3753:	0	0	0	0	0	1	0	0
3761:	0	0	1	0	0	0	0	1
3769:	0	0	0	0	1	0	0	0
3777:	0	0	0	0	0	1	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	1	0
3809:	0	0	0	1	0	0	0	0
3817:	0	0	0	0	0	0	0	0

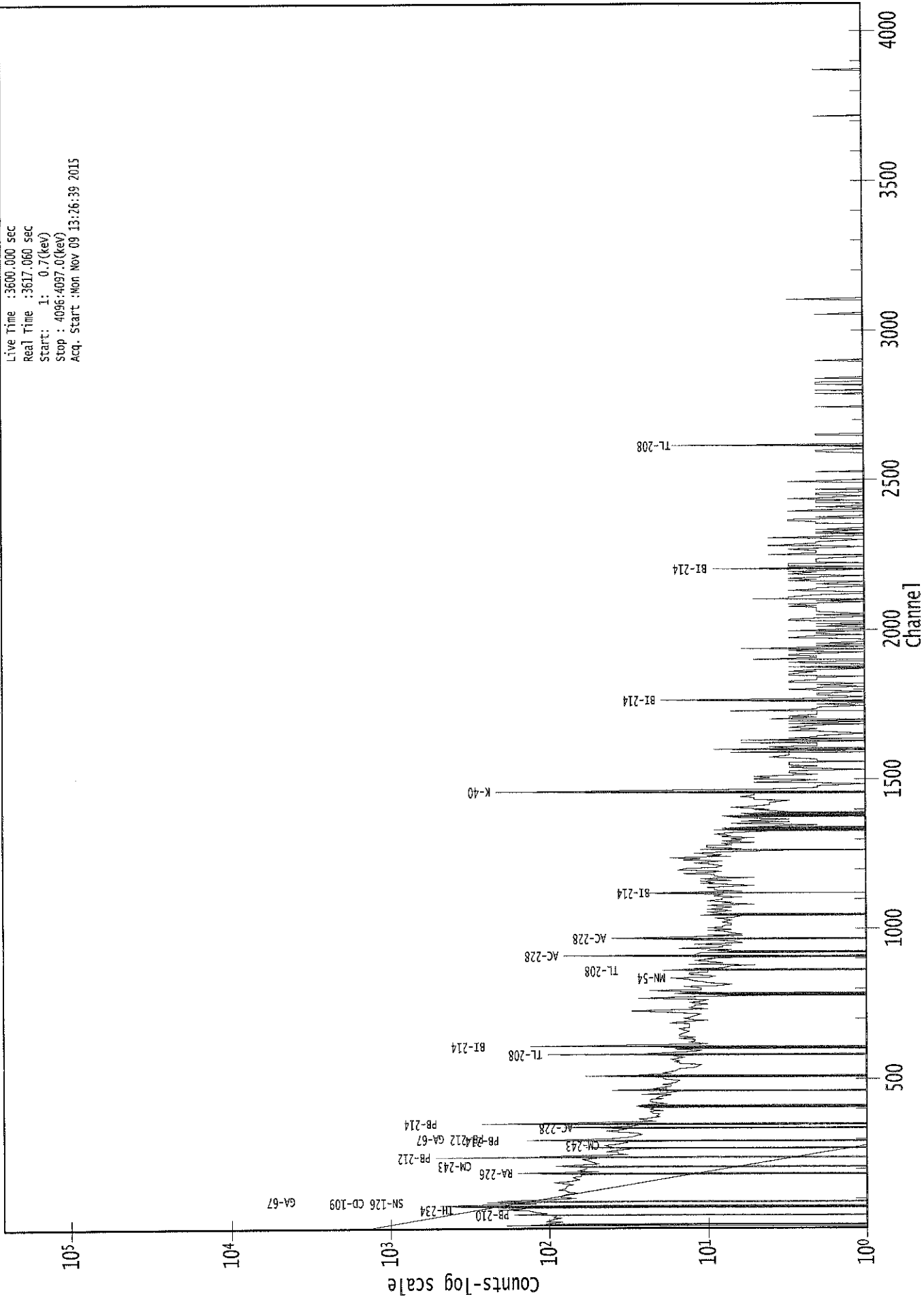
3825: 0 1 0 0 0 0 0 0

Sample Title: CP4104S08-09

Channel	1	2	3	4	5	6	7	8	9
3833:	0	0	0	0	0	0	0	0	0
3841:	0	0	1	0	1	0	1	0	0
3849:	1	1	0	1	0	0	0	0	0
3857:	0	1	0	0	0	0	0	0	0
3865:	0	0	1	0	0	0	0	2	0
3873:	0	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0	0
3889:	0	1	1	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0	0
3921:	0	0	0	0	1	0	0	0	0
3929:	0	0	0	0	0	0	0	0	0
3937:	0	0	0	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	0	0	0	0	0	0	0
3969:	0	1	0	0	0	0	0	1	0
3977:	0	0	1	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0	0
4001:	0	0	1	0	0	0	0	1	0
4009:	0	1	0	0	0	0	0	0	1
4017:	0	0	0	1	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	1	0	0	0
4057:	0	0	0	0	0	0	0	0	0
4065:	0	0	0	1	0	0	0	0	0
4073:	0	0	0	1	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0	1
4089:	0	0	1	0	0	0	1	0	0

0000029340.CNF

Live Time : 3600.000 sec
Real Time : 3617.060 sec
Start : 1: 0.7(keV)
Stop : 4096.4097.0(keV)
Acq. Start : Mon Nov 09 13:26:39 2015



91500 :

KCS
11/9/15

Analysis Report for 1510088-06
CP4104S11-12

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-06
Sample Description : CP4104S11-12
Sample Type : SOIL

Sample Size : 5.439E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 8:58:28AM
Acquisition Started : 11/9/2015 2:24:37PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.2 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 6 - 4096
Identification Energy Tolerance : 1.000 keV

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

Sample Number : 29344

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

: 00517

Analysis Report for 1510088-06
CP4104S11-12

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 3:24:42PM
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	46.47	46.57	0.0000	0.00
2	76.35	76.44	0.0000	0.00
3	88.11	88.19	0.0000	0.00
4	93.41	93.49	0.0000	0.00
5	129.43	129.48	0.0000	0.00
6	186.21	186.24	0.0000	0.00
7	209.32	209.33	0.0000	0.00
8	239.20	239.20	0.0000	0.00
9	270.10	270.08	0.0000	0.00
10	276.96	276.93	0.0000	0.00
11	295.35	295.31	0.0000	0.00
12	300.25	300.21	0.0000	0.00
13	338.60	338.55	0.0000	0.00
14	352.00	351.93	0.0000	0.00
15	409.24	409.15	0.0000	0.00
16	463.02	462.90	0.0000	0.00
17	510.60	510.46	0.0000	0.00
18	583.18	583.00	0.0000	0.00
19	609.62	609.42	0.0000	0.00
20	619.78	619.58	0.0000	0.00
21	703.36	703.12	0.0000	0.00
22	727.19	726.95	0.0000	0.00
23	785.02	784.75	0.0000	0.00
24	794.88	794.60	0.0000	0.00
25	860.71	860.40	0.0000	0.00
26	911.34	911.01	0.0000	0.00
27	934.29	933.95	0.0000	0.00
28	964.76	964.42	0.0000	0.00
29	969.29	968.95	0.0000	0.00
30	1064.37	1063.99	0.0000	0.00
31	1120.76	1120.35	0.0000	0.00
32	1234.46	1234.01	0.0000	0.00
33	1237.99	1237.54	0.0000	0.00
34	1242.46	1242.01	0.0000	0.00
35	1318.83	1318.35	0.0000	0.00
36	1377.46	1376.96	0.0000	0.00
37	1461.07	1460.55	0.0000	0.00
38	1473.68	1473.15	0.0000	0.00
39	1511.14	1510.60	0.0000	0.00
40	1530.68	1530.14	0.0000	0.00
41	1581.77	1581.21	0.0000	0.00
42	1589.18	1588.62	0.0000	0.00

Analysis Report for 1510088-06
CP4104S11-12

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1611.63	1611.06	0.0000	0.00
44	1621.01	1620.44	0.0000	0.00
45	1686.33	1685.75	0.0000	0.00
46	1694.03	1693.44	0.0000	0.00
47	1730.57	1729.97	0.0000	0.00
48	1764.70	1764.09	0.0000	0.00
49	2203.94	2203.25	0.0000	0.00
50	2246.70	2246.00	0.0000	0.00
51	2407.72	2407.00	0.0000	0.00
52	2429.97	2429.25	0.0000	0.00
53	2614.40	2613.66	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510088-06
 CP4104S11-12

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 3:24:42PM

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	46.47	43 -	50	46.57	2.38E+02	107.68	1.77E+03	3.32
2	76.35	72 -	81	76.44	1.15E+03	143.71	2.26E+03	3.73
3	88.11	86 -	91	88.19	1.63E+02	87.42	1.40E+03	3.19
4	93.41	91 -	96	93.49	1.92E+02	82.29	1.13E+03	1.52
5	129.43	127 -	132	129.48	5.63E+01	63.88	7.71E+02	1.48
6	186.21	182 -	190	186.24	2.00E+02	83.53	9.53E+02	1.51
7	209.32	207 -	212	209.33	7.54E+01	54.49	5.37E+02	1.70
8	239.20	234 -	243	239.20	9.37E+02	101.44	9.33E+02	1.48
M 9	270.10	265 -	285	270.08	7.16E+01	39.43	2.59E+02	1.61
m 10	276.96	265 -	285	276.93	4.80E+01	38.03	2.69E+02	1.62
M 11	295.35	292 -	303	295.31	2.91E+02	48.63	2.92E+02	1.59
m 12	300.25	292 -	303	300.21	6.90E+01	39.04	2.68E+02	1.82
13	338.60	335 -	342	338.55	1.78E+02	50.99	3.11E+02	1.71
14	352.00	348 -	356	351.93	5.07E+02	67.57	3.87E+02	1.51
15	409.24	406 -	413	409.15	4.07E+01	43.27	2.87E+02	1.62
16	463.02	460 -	465	462.90	6.94E+01	33.41	1.67E+02	1.94
17	510.60	505 -	516	510.46	1.87E+02	59.06	3.44E+02	2.41
18	583.18	578 -	587	583.00	2.86E+02	52.48	2.30E+02	1.77
19	609.62	604 -	614	609.42	4.21E+02	56.22	1.94E+02	1.95
20	619.78	615 -	625	619.58	4.90E+01	36.23	1.50E+02	8.29
21	703.36	701 -	707	703.12	2.30E+01	27.43	1.22E+02	1.04
22	727.19	722 -	729	726.95	6.18E+01	31.87	1.28E+02	1.74
23	785.02	781 -	788	784.75	2.15E+01	26.08	9.69E+01	3.29
24	794.88	792 -	797	794.60	2.75E+01	23.60	9.30E+01	1.32
25	860.71	856 -	866	860.40	5.38E+01	32.39	1.14E+02	2.54
26	911.34	905 -	915	911.01	1.93E+02	39.96	1.11E+02	2.04
27	934.29	931 -	939	933.95	2.68E+01	27.96	1.04E+02	3.24
M 28	964.76	959 -	973	964.42	4.52E+01	24.77	8.56E+01	2.41
m 29	969.29	959 -	973	968.95	9.13E+01	25.84	5.53E+01	1.67
30	1064.37	1061 -	1066	1063.99	1.68E+01	17.55	4.85E+01	2.52
31	1120.76	1116 -	1124	1120.35	6.50E+01	31.21	1.14E+02	1.63
M 32	1234.46	1232 -	1246	1234.01	1.79E+01	14.28	3.90E+01	3.18
m 33	1237.99	1232 -	1246	1237.54	4.64E+01	25.61	7.25E+01	2.63
m 34	1242.46	1232 -	1246	1242.01	1.98E+01	26.47	7.56E+01	2.90
35	1318.83	1316 -	1322	1318.35	1.32E+01	16.21	3.75E+01	2.81
36	1377.46	1373 -	1379	1376.96	2.00E+01	17.64	4.20E+01	1.38
37	1461.07	1455 -	1466	1460.55	7.09E+02	59.63	8.95E+01	2.39
38	1473.68	1471 -	1476	1473.15	9.00E+00	9.59	1.00E+01	2.96
39	1511.14	1504 -	1517	1510.60	3.10E+01	15.81	1.40E+01	1.11
40	1530.68	1526 -	1533	1530.14	1.10E+01	8.25	4.00E+00	1.90

Analysis Report for 1510088-06

CP4104S11-12

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1581.77	1579 -	1584	1581.21	6.18E+00	8.43	9.64E+00	1.05
42	1589.18	1584 -	1594	1588.62	2.20E+01	17.18	2.81E+01	7.76
43	1611.63	1606 -	1616	1611.06	1.31E+01	13.22	1.58E+01	4.39
44	1621.01	1618 -	1622	1620.44	8.50E+00	7.52	5.00E+00	1.34
45	1686.33	1682 -	1689	1685.75	8.25E+00	7.48	3.50E+00	3.13
46	1694.03	1690 -	1696	1693.44	9.00E+00	6.00	0.00E+00	3.24
47	1730.57	1727 -	1734	1729.97	1.45E+01	11.31	1.10E+01	2.33
48	1764.70	1759 -	1771	1764.09	4.80E+01	25.18	5.20E+01	2.84
49	2203.94	2199 -	2208	2203.25	1.79E+01	17.86	3.62E+01	1.80
50	2246.70	2242 -	2249	2246.00	1.00E+01	6.32	0.00E+00	3.70
51	2407.72	2404 -	2409	2407.00	7.00E+00	5.29	0.00E+00	2.50
52	2429.97	2426 -	2432	2429.25	8.00E+00	5.66	0.00E+00	3.70
53	2614.40	2608 -	2618	2613.66	1.05E+02	20.49	0.00E+00	3.62

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 : 11/9/2015 3:24:42PM

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	46.47	43 -	50	2.38E+02	107.68	1.77E+03	8.48E+01
2	76.35	72 -	81	1.15E+03	143.71	2.26E+03	1.04E+02
3	88.11	86 -	91	1.63E+02	87.42	1.40E+03	6.87E+01
4	93.41	91 -	96	1.92E+02	82.29	1.13E+03	6.37E+01
5	129.43	127 -	132	5.63E+01	63.88	7.71E+02	5.10E+01
6	186.21	182 -	190	2.00E+02	83.53	9.53E+02	6.46E+01
7	209.32	207 -	212	7.54E+01	54.49	5.37E+02	4.25E+01
8	239.20	234 -	243	9.37E+02	101.44	9.33E+02	6.65E+01
M 9	270.10	265 -	285	7.16E+01	39.43	2.59E+02	2.64E+01
m 10	276.96	265 -	285	4.80E+01	38.03	2.69E+02	2.70E+01
M 11	295.35	292 -	303	2.91E+02	48.63	2.92E+02	2.81E+01
m 12	300.25	292 -	303	6.90E+01	39.04	2.68E+02	2.69E+01
13	338.60	335 -	342	1.78E+02	50.99	3.11E+02	3.57E+01
14	352.00	348 -	356	5.07E+02	67.57	3.87E+02	4.14E+01
15	409.24	406 -	413	4.07E+01	43.27	2.87E+02	3.40E+01

: 00521

Analysis Report for 1510088-06

CP4104S11-12

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
16	463.02	460 -	465	6.94E+01	33.41	1.67E+02	2.38E+01
17	510.60	505 -	516	1.87E+02	59.06	3.44E+02	4.30E+01
18	583.18	578 -	587	2.86E+02	52.48	2.30E+02	3.30E+01
19	609.62	604 -	614	4.21E+02	56.22	1.94E+02	3.16E+01
20	619.78	615 -	625	4.90E+01	36.23	1.50E+02	2.75E+01
21	703.36	701 -	707	2.30E+01	27.43	1.22E+02	2.11E+01
22	727.19	722 -	729	6.18E+01	31.87	1.28E+02	2.28E+01
23	785.02	781 -	788	2.15E+01	26.08	9.69E+01	2.00E+01
24	794.88	792 -	797	2.75E+01	23.60	9.30E+01	2.10E+01
25	860.71	856 -	866	5.38E+01	32.39	1.14E+02	2.37E+01
26	911.34	905 -	915	1.93E+02	39.96	1.11E+02	2.36E+01
27	934.29	931 -	939	2.68E+01	27.96	1.04E+02	2.13E+01
M 28	964.76	959 -	973	4.52E+01	24.77	8.56E+01	1.52E+01
m 29	969.29	959 -	973	9.13E+01	25.84	5.53E+01	1.22E+01
30	1064.37	1061 -	1066	1.68E+01	17.55	4.85E+01	1.28E+01
31	1120.76	1116 -	1124	6.50E+01	31.21	1.14E+02	5.19E+01
M 32	1234.46	1232 -	1246	1.79E+01	14.28	3.90E+01	1.03E+01
m 33	1237.99	1232 -	1246	4.64E+01	25.61	7.25E+01	1.40E+01
m 34	1242.46	1232 -	1246	1.98E+01	26.47	7.56E+01	1.43E+01
35	1318.83	1316 -	1322	1.32E+01	16.21	3.75E+01	1.19E+01
36	1377.46	1373 -	1379	2.00E+01	17.64	4.20E+01	1.25E+01
37	1461.07	1455 -	1466	7.09E+02	59.63	8.95E+01	2.20E+01
38	1473.68	1471 -	1476	9.00E+00	9.59	1.00E+01	6.15E+00
39	1511.14	1504 -	1517	3.10E+01	15.81	1.40E+01	9.23E+00
40	1530.68	1526 -	1533	1.10E+01	8.25	4.00E+00	4.03E+00
41	1581.77	1579 -	1584	6.18E+00	8.43	9.64E+00	5.59E+00
42	1589.18	1584 -	1594	2.20E+01	17.18	2.81E+01	1.18E+01
43	1611.63	1606 -	1616	1.31E+01	13.22	1.58E+01	9.09E+00
44	1621.01	1618 -	1622	8.50E+00	7.52	5.00E+00	3.90E+00
45	1686.33	1682 -	1689	8.25E+00	7.48	3.50E+00	3.94E+00
46	1694.03	1690 -	1696	9.00E+00	6.00	0.00E+00	0.00E+00
47	1730.57	1727 -	1734	1.45E+01	11.31	1.10E+01	6.88E+00
48	1764.70	1759 -	1771	4.80E+01	25.18	5.20E+01	1.73E+01
49	2203.94	2199 -	2208	1.79E+01	17.86	3.62E+01	1.29E+01
50	2246.70	2242 -	2249	1.00E+01	6.32	0.00E+00	0.00E+00
51	2407.72	2404 -	2409	7.00E+00	5.29	0.00E+00	0.00E+00
52	2429.97	2426 -	2432	8.00E+00	5.66	0.00E+00	0.00E+00
53	2614.40	2608 -	2618	1.05E+02	20.49	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

Analysis Report for 1510088-06
CP4104S11-12

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 3:24:42PM

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	46.47	43 -	50	46.57	2.38E+02	107.68	1.77E+03	PB-210
2	76.35	72 -	81	76.44	1.15E+03	143.71	2.26E+03	.....
3	88.11	86 -	91	88.19	1.63E+02	87.42	1.40E+03	CD-109 LU-176 SN-126
4	93.41	91 -	96	93.49	1.92E+02	82.29	1.13E+03	GA-67
5	129.43	127 -	132	129.48	5.63E+01	63.88	7.71E+02	.....
6	186.21	182 -	190	186.24	2.00E+02	83.53	9.53E+02	RA-226
7	209.32	207 -	212	209.33	7.54E+01	54.49	5.37E+02	GA-67 CM-243
8	239.20	234 -	243	239.20	9.37E+02	101.44	9.33E+02	PB-212
M 9	270.10	265 -	285	270.08	7.16E+01	39.43	2.59E+02	.....
m 10	276.96	265 -	285	276.93	4.80E+01	38.03	2.69E+02	CM-243 NP-239
M 11	295.35	292 -	303	295.31	2.91E+02	48.63	2.92E+02	PB-214
m 12	300.25	292 -	303	300.21	6.90E+01	39.04	2.68E+02	GA-67 PB-212 BI-210M
13	338.60	335 -	342	338.55	1.78E+02	50.99	3.11E+02	AC-228
14	352.00	348 -	356	351.93	5.07E+02	67.57	3.87E+02	PB-214
15	409.24	406 -	413	409.15	4.07E+01	43.27	2.87E+02	.....
16	463.02	460 -	465	462.90	6.94E+01	33.41	1.67E+02	SB-125
17	510.60	505 -	516	510.46	1.87E+02	59.06	3.44E+02	.....
18	583.18	578 -	587	583.00	2.86E+02	52.48	2.30E+02	TL-208
19	609.62	604 -	614	609.42	4.21E+02	56.22	1.94E+02	BI-214
20	619.78	615 -	625	619.58	4.90E+01	36.23	1.50E+02	.....
21	703.36	701 -	707	703.12	2.30E+01	27.43	1.22E+02	NB-94
22	727.19	722 -	729	726.95	6.18E+01	31.87	1.28E+02	BI-212
23	785.02	781 -	788	784.75	2.15E+01	26.08	9.69E+01	.....
24	794.88	792 -	797	794.60	2.75E+01	23.60	9.30E+01	CS-134
25	860.71	856 -	866	860.40	5.38E+01	32.39	1.14E+02	TL-208
26	911.34	905 -	915	911.01	1.93E+02	39.96	1.11E+02	AC-228 LU-172
27	934.29	931 -	939	933.95	2.68E+01	27.96	1.04E+02	.....
M 28	964.76	959 -	973	964.42	4.52E+01	24.77	8.56E+01	EU-152
m 29	969.29	959 -	973	968.95	9.13E+01	25.84	5.53E+01	AC-228
30	1064.37	1061 -	1066	1063.99	1.68E+01	17.55	4.85E+01	BI-207
31	1120.76	1116 -	1124	1120.35	6.50E+01	31.21	1.14E+02	SC-46 BI-214 TA-182
M 32	1234.46	1232 -	1246	1234.01	1.79E+01	14.28	3.90E+01	CS-136

Analysis Report for 1510088-06

CP4104S11-12

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	33	1237.99	1232 -	1246	1237.54	4.64E+01	25.61	7.25E+01	CO-56
m	34	1242.46	1232 -	1246	1242.01	1.98E+01	26.47	7.56E+01	.....
	35	1318.83	1316 -	1322	1318.35	1.32E+01	16.21	3.75E+01	.....
	36	1377.46	1373 -	1379	1376.96	2.00E+01	17.64	4.20E+01	.....
	37	1461.07	1455 -	1466	1460.55	7.09E+02	59.63	8.95E+01	K-40
	38	1473.68	1471 -	1476	1473.15	9.00E+00	9.59	1.00E+01	.....
	39	1511.14	1504 -	1517	1510.60	3.10E+01	15.81	1.40E+01	.....
	40	1530.68	1526 -	1533	1530.14	1.10E+01	8.25	4.00E+00	.....
	41	1581.77	1579 -	1584	1581.21	6.18E+00	8.43	9.64E+00	.....
	42	1589.18	1584 -	1594	1588.62	2.20E+01	17.18	2.81E+01	.....
	43	1611.63	1606 -	1616	1611.06	1.31E+01	13.22	1.58E+01	.....
	44	1621.01	1618 -	1622	1620.44	8.50E+00	7.52	5.00E+00	BI-212
	45	1686.33	1682 -	1689	1685.75	8.25E+00	7.48	3.50E+00	.....
	46	1694.03	1690 -	1696	1693.44	9.00E+00	6.00	0.00E+00	.....
	47	1730.57	1727 -	1734	1729.97	1.45E+01	11.31	1.10E+01	.....
	48	1764.70	1759 -	1771	1764.09	4.80E+01	25.18	5.20E+01	BI-214
	49	2203.94	2199 -	2208	2203.25	1.79E+01	17.86	3.62E+01	BI-214
	50	2246.70	2242 -	2249	2246.00	1.00E+01	6.32	0.00E+00	.....
	51	2407.72	2404 -	2409	2407.00	7.00E+00	5.29	0.00E+00	.....
	52	2429.97	2426 -	2432	2429.25	8.00E+00	5.66	0.00E+00	.....
	53	2614.40	2608 -	2618	2613.66	1.05E+02	20.49	0.00E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 3:24:42PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.47	2.38E+02	107.68	1.34E-02	1.68E-03
	2	76.35	1.15E+03	143.71	2.74E-02	3.35E-03
	3	88.11	1.63E+02	87.42	2.84E-02	4.50E-03
	4	93.41	1.92E+02	82.29	2.85E-02	4.26E-03
	5	129.43	5.63E+01	63.88	2.60E-02	2.77E-03
	6	186.21	2.00E+02	83.53	2.11E-02	1.65E-03
	7	209.32	7.54E+01	54.49	1.95E-02	1.63E-03
	8	239.20	9.37E+02	101.44	1.78E-02	1.60E-03
M	9	270.10	7.16E+01	39.43	1.64E-02	1.57E-03

: 00524

Analysis Report for 1510088-06
CP4104S11-12

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	10	276.96	4.80E+01	38.03	1.62E-02	1.56E-03
M	11	295.35	2.91E+02	48.63	1.55E-02	1.48E-03
m	12	300.25	6.90E+01	39.04	1.53E-02	1.46E-03
	13	338.60	1.78E+02	50.99	1.41E-02	1.27E-03
	14	352.00	5.07E+02	67.57	1.37E-02	1.21E-03
	15	409.24	4.07E+01	43.27	1.24E-02	1.00E-03
	16	463.02	6.94E+01	33.41	1.13E-02	9.47E-04
	17	510.60	1.87E+02	59.06	1.06E-02	8.99E-04
	18	583.18	2.86E+02	52.48	9.58E-03	8.25E-04
	19	609.62	4.21E+02	56.22	9.27E-03	7.98E-04
	20	619.78	4.90E+01	36.23	9.15E-03	7.88E-04
	21	703.36	2.30E+01	27.43	8.30E-03	7.18E-04
	22	727.19	6.18E+01	31.87	8.09E-03	7.03E-04
	23	785.02	2.15E+01	26.08	7.61E-03	6.66E-04
	24	794.88	2.75E+01	23.60	7.53E-03	6.60E-04
	25	860.71	5.38E+01	32.39	7.07E-03	6.17E-04
	26	911.34	1.93E+02	39.96	6.74E-03	5.87E-04
	27	934.29	2.68E+01	27.96	6.61E-03	5.75E-04
M	28	964.76	4.52E+01	24.77	6.44E-03	5.59E-04
m	29	969.29	9.13E+01	25.84	6.41E-03	5.57E-04
	30	1064.37	1.68E+01	17.55	5.94E-03	5.08E-04
	31	1120.76	6.50E+01	31.21	5.70E-03	4.80E-04
M	32	1234.46	1.79E+01	14.28	5.28E-03	4.81E-04
m	33	1237.99	4.64E+01	25.61	5.27E-03	4.83E-04
m	34	1242.46	1.98E+01	26.47	5.26E-03	4.85E-04
	35	1318.83	1.32E+01	16.21	5.03E-03	5.20E-04
	36	1377.46	2.00E+01	17.64	4.87E-03	5.08E-04
	37	1461.07	7.09E+02	59.63	4.67E-03	4.73E-04
	38	1473.68	9.00E+00	9.59	4.65E-03	4.68E-04
	39	1511.14	3.10E+01	15.81	4.57E-03	4.52E-04
	40	1530.68	1.10E+01	8.25	4.53E-03	4.44E-04
	41	1581.77	6.18E+00	8.43	4.44E-03	4.23E-04
	42	1589.18	2.20E+01	17.18	4.43E-03	4.20E-04
	43	1611.63	1.31E+01	13.22	4.39E-03	4.11E-04
	44	1621.01	8.50E+00	7.52	4.38E-03	4.07E-04
	45	1686.33	8.25E+00	7.48	4.28E-03	3.80E-04
	46	1694.03	9.00E+00	6.00	4.27E-03	3.77E-04
	47	1730.57	1.45E+01	11.31	4.22E-03	3.62E-04
	48	1764.70	4.80E+01	25.18	4.18E-03	3.47E-04
	49	2203.94	1.79E+01	17.86	3.93E-03	3.18E-04
	50	2246.70	1.00E+01	6.32	3.93E-03	3.18E-04
	51	2407.72	7.00E+00	5.29	3.95E-03	3.18E-04
	52	2429.97	8.00E+00	5.66	3.96E-03	3.18E-04
	53	2614.40	1.05E+02	20.49	4.05E-03	3.18E-04

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

Analysis Report for 1510088-06
 CP4104S11-12

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 3:24:42PM

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	46.47	2.38E+02	107.68	6.46E+01	1.16E+01	1.74E+02	1.08E+02
2	76.35	1.15E+03	143.71			1.15E+03	1.44E+02
3	88.11	1.63E+02	87.42	1.46E+00	7.88E+00	1.62E+02	8.78E+01
4	93.41	1.92E+02	82.29	5.70E+01	9.03E+00	1.35E+02	8.28E+01
5	129.43	5.63E+01	63.88			5.63E+01	6.39E+01
6	186.21	2.00E+02	83.53	4.72E+01	7.97E+00	1.53E+02	8.39E+01
7	209.32	7.54E+01	54.49			7.54E+01	5.45E+01
8	239.20	9.37E+02	101.44	2.36E+01	1.35E+01	9.14E+02	1.02E+02
M	9	270.10	7.16E+01			7.16E+01	3.94E+01
m	10	276.96	4.80E+01			4.80E+01	3.80E+01
M	11	295.35	2.91E+02	8.57E+00	6.10E+00	2.83E+02	4.90E+01
m	12	300.25	6.90E+01			6.90E+01	3.90E+01
13	338.60	1.78E+02	50.99			1.78E+02	5.10E+01
14	352.00	5.07E+02	67.57	1.40E+01	5.55E+00	4.93E+02	6.78E+01
15	409.24	4.07E+01	43.27			4.07E+01	4.33E+01
16	463.02	6.94E+01	33.41			6.94E+01	3.34E+01
17	510.60	1.87E+02	59.06	8.41E+01	5.50E+00	1.03E+02	5.93E+01
18	583.18	2.86E+02	52.48	7.32E+00	4.08E+00	2.79E+02	5.26E+01
19	609.62	4.21E+02	56.22	1.30E+01	3.89E+00	4.08E+02	5.64E+01
20	619.78	4.90E+01	36.23			4.90E+01	3.62E+01
21	703.36	2.30E+01	27.43			2.30E+01	2.74E+01
22	727.19	6.18E+01	31.87			6.18E+01	3.19E+01
23	785.02	2.15E+01	26.08			2.15E+01	2.61E+01
24	794.88	2.75E+01	23.60			2.75E+01	2.36E+01
25	860.71	5.38E+01	32.39			5.38E+01	3.24E+01
26	911.34	1.93E+02	39.96	5.60E+00	3.32E+00	1.87E+02	4.01E+01
27	934.29	2.68E+01	27.96			2.68E+01	2.80E+01
M	28	964.76	4.52E+01			4.52E+01	2.48E+01
m	29	969.29	9.13E+01			9.13E+01	2.58E+01
30	1064.37	1.68E+01	17.55			1.68E+01	1.75E+01
31	1120.76	6.50E+01	31.21	3.93E+00	2.96E+00	6.11E+01	3.13E+01
M	32	1234.46	1.79E+01			1.79E+01	1.43E+01
m	33	1237.99	4.64E+01			4.64E+01	2.56E+01
m	34	1242.46	1.98E+01			1.98E+01	2.65E+01
35	1318.83	1.32E+01	16.21			1.32E+01	1.62E+01
36	1377.46	2.00E+01	17.64			2.00E+01	1.76E+01
37	1461.07	7.09E+02	59.63	1.12E+01	2.55E+00	6.98E+02	5.97E+01
38	1473.68	9.00E+00	9.59			9.00E+00	9.59E+00
39	1511.14	3.10E+01	15.81			3.10E+01	1.58E+01
40	1530.68	1.10E+01	8.25			1.10E+01	8.25E+00
41	1581.77	6.18E+00	8.43			6.18E+00	8.43E+00
42	1589.18	2.20E+01	17.18			2.20E+01	1.72E+01
43	1611.63	1.31E+01	13.22			1.31E+01	1.32E+01
44	1621.01	8.50E+00	7.52			8.50E+00	7.52E+00

Analysis Report for 1510088-06

CP4104S11-12

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
45	1686.33	8.25E+00	7.48			8.25E+00	7.48E+00
46	1694.03	9.00E+00	6.00			9.00E+00	6.00E+00
47	1730.57	1.45E+01	11.31			1.45E+01	1.13E+01
48	1764.70	4.80E+01	25.18	4.23E+00	2.21E+00	4.38E+01	2.53E+01
49	2203.94	1.79E+01	17.86	5.94E-01	1.16E+00	1.73E+01	1.79E+01
50	2246.70	1.00E+01	6.32			1.00E+01	6.32E+00
51	2407.72	7.00E+00	5.29			7.00E+00	5.29E+00
52	2429.97	8.00E+00	5.66			8.00E+00	5.66E+00
53	2614.40	1.05E+02	20.49	7.38E+00	1.57E+00	9.76E+01	2.06E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 3:24:42PM
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	46.47	2.38E+02	107.68	6.46E+01	1.16E+01	1.74E+02	1.08E+02
2	76.35	1.15E+03	143.71			1.15E+03	1.44E+02
3	88.11	1.63E+02	87.42	1.46E+00	7.88E+00	1.62E+02	8.78E+01
4	93.41	1.92E+02	82.29	5.70E+01	9.03E+00	1.35E+02	8.28E+01
5	129.43	5.63E+01	63.88			5.63E+01	6.39E+01
6	186.21	2.00E+02	83.53	4.72E+01	7.97E+00	1.53E+02	8.39E+01
7	209.32	7.54E+01	54.49			7.54E+01	5.45E+01
8	239.20	9.37E+02	101.44	2.36E+01	1.35E+01	9.14E+02	1.02E+02
M	9	270.10	7.16E+01	39.43		7.16E+01	3.94E+01
m	10	276.96	4.80E+01	38.03		4.80E+01	3.80E+01
M	11	295.35	2.91E+02	48.63	8.57E+00	2.83E+02	4.90E+01
m	12	300.25	6.90E+01	39.04		6.90E+01	3.90E+01
13	338.60	1.78E+02	50.99			1.78E+02	5.10E+01
14	352.00	5.07E+02	67.57	1.40E+01	5.55E+00	4.93E+02	6.78E+01
15	409.24	4.07E+01	43.27			4.07E+01	4.33E+01
16	463.02	6.94E+01	33.41			6.94E+01	3.34E+01
17	510.60	1.87E+02	59.06	8.41E+01	5.50E+00	1.03E+02	5.93E+01
18	583.18	2.86E+02	52.48	7.32E+00	4.08E+00	2.79E+02	5.26E+01
19	609.62	4.21E+02	56.22	1.30E+01	3.89E+00	4.08E+02	5.64E+01

: 00527

Analysis Report for 1510088-06

CP4104S11-12

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
20	619.78	4.90E+01	36.23			4.90E+01	3.62E+01
21	703.36	2.30E+01	27.43			2.30E+01	2.74E+01
22	727.19	6.18E+01	31.87			6.18E+01	3.19E+01
23	785.02	2.15E+01	26.08			2.15E+01	2.61E+01
24	794.88	2.75E+01	23.60			2.75E+01	2.36E+01
25	860.71	5.38E+01	32.39			5.38E+01	3.24E+01
26	911.34	1.93E+02	39.96	5.60E+00	3.32E+00	1.87E+02	4.01E+01
27	934.29	2.68E+01	27.96			2.68E+01	2.80E+01
M 28	964.76	4.52E+01	24.77			4.52E+01	2.48E+01
m 29	969.29	9.13E+01	25.84			9.13E+01	2.58E+01
30	1064.37	1.68E+01	17.55			1.68E+01	1.75E+01
31	1120.76	6.50E+01	31.21	3.93E+00	2.96E+00	6.11E+01	3.13E+01
M 32	1234.46	1.79E+01	14.28			1.79E+01	1.43E+01
m 33	1237.99	4.64E+01	25.61			4.64E+01	2.56E+01
m 34	1242.46	1.98E+01	26.47			1.98E+01	2.65E+01
35	1318.83	1.32E+01	16.21			1.32E+01	1.62E+01
36	1377.46	2.00E+01	17.64			2.00E+01	1.76E+01
37	1461.07	7.09E+02	59.63	1.12E+01	2.55E+00	6.98E+02	5.97E+01
38	1473.68	9.00E+00	9.59			9.00E+00	9.59E+00
39	1511.14	3.10E+01	15.81			3.10E+01	1.58E+01
40	1530.68	1.10E+01	8.25			1.10E+01	8.25E+00
41	1581.77	6.18E+00	8.43			6.18E+00	8.43E+00
42	1589.18	2.20E+01	17.18			2.20E+01	1.72E+01
43	1611.63	1.31E+01	13.22			1.31E+01	1.32E+01
44	1621.01	8.50E+00	7.52			8.50E+00	7.52E+00
45	1686.33	8.25E+00	7.48			8.25E+00	7.48E+00
46	1694.03	9.00E+00	6.00			9.00E+00	6.00E+00
47	1730.57	1.45E+01	11.31			1.45E+01	1.13E+01
48	1764.70	4.80E+01	25.18	4.23E+00	2.21E+00	4.38E+01	2.53E+01
49	2203.94	1.79E+01	17.86	5.94E-01	1.16E+00	1.73E+01	1.79E+01
50	2246.70	1.00E+01	6.32			1.00E+01	6.32E+00
51	2407.72	7.00E+00	5.29			7.00E+00	5.29E+00
52	2429.97	8.00E+00	5.66			8.00E+00	5.66E+00
53	2614.40	1.05E+02	20.49	7.38E+00	1.57E+00	9.76E+01	2.06E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1510088-06
CP4104S11-12

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.989	1460.81 *	10.67	1.93E+01	2.59E+00
GA-67	0.612	93.31 *	35.70	1.74E+02	7.65E+02
		208.95 *	2.24	2.26E+03	9.62E+03
		300.22 *	16.00	3.69E+02	1.62E+03
CD-109	0.999	88.03 *	3.72	2.21E+00	1.26E+00
SN-126	0.955	87.57 *	37.00	2.12E-01	1.20E-01
TL-208	0.993	583.14 *	30.22	1.33E+00	2.76E-01
		860.37 *	4.48	2.35E+00	1.43E+00
		2614.66 *	35.85	9.28E-01	2.08E-01
PB-210	1.000	46.50 *	4.25	4.23E+00	2.70E+00
BI-212	0.995	727.17 *	11.80	8.94E-01	4.68E-01
		1620.62 *	2.75	9.75E-01	8.67E-01
PB-212	0.953	238.63 *	44.60	1.59E+00	2.27E-01
		300.09 *	3.41	1.83E+00	1.05E+00
BI-214	0.983	609.31 *	46.30	1.31E+00	2.14E-01
		1120.29 *	15.10	9.80E-01	5.09E-01
		1764.49 *	15.80	9.14E-01	5.33E-01
		2204.22 *	4.98	1.22E+00	1.27E+00
PB-214	0.998	295.21 *	19.19	1.32E+00	2.60E-01
		351.92 *	37.19	1.33E+00	2.18E-01
RA-226	1.000	186.21 *	3.28	3.05E+00	5.83E+00
AC-228	0.990	338.32 *	11.40	1.53E+00	4.60E-01
		911.07 *	27.70	1.38E+00	3.20E-01
		969.11 *	16.60	1.18E+00	3.50E-01
		209.75 *	3.29	1.62E+00	1.18E+00
CM-243	0.338	228.14	10.60		
		277.60 *	14.00	2.93E-01	2.34E-01

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 3:24:42PM
 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	76.35	3.18632E-01	6.26		
5	129.43	1.56285E-02	56.77		

Analysis Report for 1510088-06
CP4104S11-12

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M 9	270.10	1.98809E-02	27.54		
15	409.24	1.13157E-02	53.11		
16	463.02	1.92647E-02	24.08	Sum	
17	510.60	2.85350E-02	28.87		
20	619.78	1.36111E-02	36.97		
21	703.36	6.39550E-03	59.57	Sum	
23	785.02	5.98214E-03	60.54		
24	794.88	7.64014E-03	42.90	Sum	
27	934.29	7.44726E-03	52.14	Sum	
M 28	964.76	1.25645E-02	27.39	Tol.	EU-152
30	1064.37	4.65447E-03	52.37	Tol.	BI-207
M 32	1234.46	4.97332E-03	39.89	Tol.	CS-136
m 33	1237.99	1.28795E-02	27.62		
m 34	1242.46	5.48960E-03	66.96		
35	1318.83	3.67622E-03	61.24		
36	1377.46	5.55556E-03	44.09		
38	1473.68	2.50000E-03	53.29	Sum	
39	1511.14	8.61111E-03	25.50		
40	1530.68	3.05556E-03	37.48		
41	1581.77	1.71717E-03	68.15		
42	1589.18	6.10340E-03	39.10		
43	1611.63	3.64418E-03	50.38		
45	1686.33	2.29167E-03	45.35		
46	1694.03	2.50000E-03	33.33		
47	1730.57	4.02778E-03	39.01	Sum	
50	2246.70	2.77778E-03	31.62		
51	2407.72	1.94444E-03	37.80		
52	2429.97	2.22222E-03	35.36	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
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Analysis Report for 1510088-06
 CP4104S11-12

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.98	1460.81 *	10.67	1.93E+01	2.59E+00
GA-67	0.61	93.31 *	35.70	1.74E+02	7.65E+02
		208.95 *	2.24	2.26E+03	9.62E+03
		300.22 *	16.00	3.69E+02	1.62E+03
CD-109	0.99	88.03 *	3.72	2.21E+00	1.26E+00
SN-126	0.95	87.57 *	37.00	2.12E-01	1.20E-01
TL-208	0.99	583.14 *	30.22	1.33E+00	2.76E-01
		860.37 *	4.48	2.35E+00	1.43E+00
		2614.66 *	35.85	9.28E-01	2.08E-01
PB-210	1.00	46.50 *	4.25	4.23E+00	2.70E+00
BI-212	0.99	727.17 *	11.80	8.94E-01	4.68E-01
		1620.62 *	2.75	9.75E-01	8.67E-01
PB-212	0.95	238.63 *	44.60	1.59E+00	2.27E-01
		300.09 *	3.41	1.83E+00	1.05E+00
BI-214	0.98	609.31 *	46.30	1.31E+00	2.14E-01
		1120.29 *	15.10	9.80E-01	5.09E-01
		1764.49 *	15.80	9.14E-01	5.33E-01
		2204.22 *	4.98	1.22E+00	1.27E+00
PB-214	0.99	295.21 *	19.19	1.32E+00	2.60E-01
		351.92 *	37.19	1.33E+00	2.18E-01
RA-226	1.00	186.21 *	3.28	3.05E+00	5.83E+00
AC-228	0.99	338.32 *	11.40	1.53E+00	4.60E-01
		911.07 *	27.70	1.38E+00	3.20E-01
		969.11 *	16.60	1.18E+00	3.50E-01
CM-243	0.33	209.75 *	3.29	1.62E+00	1.18E+00
		228.14	10.60		
		277.60 *	14.00	2.93E-01	2.34E-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
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Analysis Report for 1510088-06
CP4104S11-12

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.989	1.93E+01	2.59E+00	
GA-67	0.612	1.54E+02	6.56E+02	
? CD-109	0.999	2.21E+00	1.26E+00	
? SN-126	0.955	2.12E-01	1.20E-01	
TL-208	0.993	1.09E+00	1.65E-01	
PB-210	1.000	4.23E+00	2.70E+00	
BI-212	0.995	9.12E-01	4.12E-01	
PB-212	0.953	1.56E+00	2.23E-01	
BI-214	0.983	1.22E+00	1.83E-01	
PB-214	0.998	1.33E+00	1.67E-01	
RA-226	1.000	3.05E+00	5.83E+00	
AC-228	0.990	1.34E+00	2.10E-01	
CM-243	0.338	3.40E-01	2.30E-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 1510088-06
 CP4104S11-12

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 3:24:42PM
 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	76.35	3.18632E-01	6.26	
	5	129.43	1.56285E-02	56.77	
M	9	270.10	1.98809E-02	27.54	
	15	409.24	1.13157E-02	53.11	
	16	463.02	1.92647E-02	24.08	Sum
	17	510.60	2.85350E-02	28.87	
	20	619.78	1.36111E-02	36.97	
	21	703.36	6.39550E-03	59.57	Sum
	23	785.02	5.98214E-03	60.54	
	24	794.88	7.64014E-03	42.90	Sum
	27	934.29	7.44726E-03	52.14	Sum
M	28	964.76	1.25645E-02	27.39	Tol. EU-152
	30	1064.37	4.65447E-03	52.37	Tol. BI-207
M	32	1234.46	4.97332E-03	39.89	Tol. CS-136
m	33	1237.99	1.28795E-02	27.62	
m	34	1242.46	5.48960E-03	66.96	
	35	1318.83	3.67622E-03	61.24	
	36	1377.46	5.55556E-03	44.09	
	38	1473.68	2.50000E-03	53.29	Sum
	39	1511.14	8.61111E-03	25.50	
	40	1530.68	3.05556E-03	37.48	
	41	1581.77	1.71717E-03	68.15	
	42	1589.18	6.10340E-03	39.10	
	43	1611.63	3.64418E-03	50.38	
	45	1686.33	2.29167E-03	45.35	
	46	1694.03	2.50000E-03	33.33	
	47	1730.57	4.02778E-03	39.01	Sum
	50	2246.70	2.77778E-03	31.62	
	51	2407.72	1.94444E-03	37.80	
	52	2429.97	2.22222E-03	35.36	Sum

Analysis Report for 1510088-06
CP4104S11-12

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

NUCLIDE MDA REPORT

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

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
+	BE-7	477.59	10.42	4.18E-01	8.59E-01	8.59E-01
+	NA-22	1274.54	99.94	4.98E-02	9.77E-02	9.77E-02
+	NA-24	1368.53	99.99	-1.04E+14	1.36E+14	2.05E+14
		2754.09	99.86	4.52E+13		1.36E+14
+	AL-26	1808.65	99.76	8.42E-03	5.57E-02	5.57E-02
+	K-40	1460.81	* 10.67	1.93E+01	1.34E+00	1.34E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	1.16E-02	5.25E-02	5.25E-02
		78.34	96.00	2.92E-01		7.67E-02
+	SC-46	889.25	99.98	2.54E-02	9.58E-02	9.58E-02
		1120.51	99.99	2.24E-01		1.63E-01
+	V-48	983.52	99.98	3.92E-02	3.09E-01	3.09E-01
		1312.10	97.50	-2.24E-02		3.21E-01
+	CR-51	320.08	9.83	3.41E-02	1.17E+00	1.17E+00
+	MN-54	834.83	99.97	-1.44E-02	8.29E-02	8.29E-02
+	CO-56	846.75	99.96	-9.93E-03	8.95E-02	8.95E-02
		1037.75	14.03	-2.76E-02		7.53E-01
		1238.25	67.00	5.32E-02		2.34E-01
		1771.40	15.51	1.33E-01		6.03E-01
		2598.48	16.90	-7.52E-02		3.52E-01
+	CO-57	122.06	85.51	-1.92E-02	5.75E-02	5.75E-02
		136.48	10.60	-1.71E-01		5.03E-01
+	CO-58	810.76	99.40	-8.67E-02	8.06E-02	8.06E-02
+	FE-59	1099.22	56.50	-2.10E-02	2.31E-01	2.31E-01
		1291.56	43.20	2.23E-01		3.61E-01
+	CO-60	1173.22	100.00	6.76E-03	7.65E-02	8.70E-02
		1332.49	100.00	-5.14E-02		7.65E-02
+	ZN-65	1115.52	50.75	-1.12E-02	1.87E-01	1.87E-01
+	GA-67	93.31	* 35.70	1.74E+02	1.72E+02	1.72E+02
		208.95	* 2.24	2.26E+03		2.62E+03
		300.22	* 16.00	3.69E+02		6.14E+02
+	SE-75	121.11	16.70	-7.18E-02	9.74E-02	3.23E-01

Analysis Report for 1510088-06
CP4104S11-12

<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	6.88E-03	9.74E-02
		264.65	59.80	4.83E-03	9.74E-02
		279.53	25.20	-1.95E-01	2.63E-01
		400.65	11.40	2.20E-01	6.32E-01
+	RB-82	776.52	13.00	-2.62E-01	1.31E+00
+	RB-83	520.41	46.00	9.96E-03	1.56E-01
		529.64	30.30	-2.55E-02	2.31E-01
		552.65	16.40	-5.33E-02	4.37E-01
+	KR-85	513.99	0.43	-1.99E+01	1.53E+01
+	SR-85	513.99	99.27	-1.22E-01	9.40E-02
+	Y-88	898.02	93.40	2.66E-02	6.26E-02
		1836.01	99.38	-2.38E-03	6.26E-02
+	NB-93M	16.57	9.43	-9.47E+03	5.29E+03
+	NB-94	702.63	100.00	-1.30E-02	7.34E-02
		871.10	100.00	-1.49E-02	7.34E-02
+	NB-95	765.79	99.81	1.20E-01	1.62E-01
+	NB-95M	235.69	25.00	-1.10E+03	1.53E+02
+	ZR-95	724.18	43.70	8.25E-02	1.84E-01
		756.72	55.30	8.65E-02	1.84E-01
+	MO-99	181.06	6.20	7.43E+02	1.64E+03
		739.58	12.80	-5.65E+02	1.64E+03
		778.00	4.50	1.41E+03	5.28E+03
+	RU-103	497.08	89.00	6.03E-03	1.13E-01
+	RU-106	621.84	9.80	-1.60E-01	7.14E-01
+	AG-108M	433.93	89.90	7.92E-04	5.90E-02
		614.37	90.40	-7.30E-01	7.89E-02
		722.95	90.50	2.63E-03	8.03E-02
+	CD-109	88.03	* 3.72	2.21E+00	1.93E+00
+	AG-110M	657.75	93.14	6.00E-04	8.45E-02
		677.61	10.53	2.21E-01	7.90E-01
		706.67	16.46	-7.13E-02	4.80E-01
		763.93	21.98	-2.43E-01	3.68E-01
		884.67	71.63	-3.31E-02	1.15E-01
		1384.27	23.94	2.60E-02	3.25E-01
+	CD-113M	263.70	0.02	4.91E+01	2.13E+02
+	SN-113	255.12	1.93	1.29E+00	9.09E-02
		391.69	64.90	-9.00E-02	9.09E-02
+	TE123M	159.00	84.10	6.75E-02	7.50E-02
+	SB-124	602.71	97.87	7.25E-03	1.03E-01
		645.85	7.26	3.36E-01	1.39E+00
		722.78	11.10	3.11E-02	9.48E-01
		1691.02	49.00	-7.64E-02	1.66E-01
+	I-125	35.49	6.49	2.30E+00	5.86E+00
+	SB-125	176.33	6.89	2.52E-01	1.78E-01
		427.89	29.33	-3.89E-02	1.78E-01
		463.38	10.35	8.19E-01	6.93E-01
		600.56	17.80	6.87E-03	4.08E-01
		635.90	11.32	-8.68E-03	6.16E-01

Analysis Report for 1510088-06
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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	9.09E-02	3.98E-01	3.98E-01
		666.33	99.60	-1.16E-01		3.99E-01
		695.00	99.60	1.40E-01		4.42E-01
		720.50	53.80	6.17E-02		7.95E-01
+	SN-126	87.57	* 37.00	2.12E-01	1.85E-01	1.85E-01
+	SB-127	473.00	25.00	-1.80E+01	6.27E+01	6.89E+01
		685.20	35.70	-4.17E-01		6.27E+01
		783.80	14.70	6.86E+01		1.66E+02
+	I-129	29.78	57.00	-2.90E-01	1.20E+00	1.20E+00
		33.60	13.20	-7.22E-01		2.67E+00
		39.58	7.52	1.43E+00		2.25E+00
+	I-131	284.30	6.05	8.72E+00	1.08E+00	1.43E+01
		364.48	81.20	3.07E-01		1.08E+00
		636.97	7.26	-5.98E+00		1.49E+01
		722.89	1.80	2.13E+00		6.50E+01
+	TE-132	49.72	13.10	-3.32E+01	5.94E+01	5.74E+02
		228.16	88.00	1.46E+00		5.94E+01
+	BA-133	81.00	33.00	3.28E-02	8.83E-02	1.27E-01
		302.84	17.80	-4.68E-02		3.07E-01
		356.01	60.00	2.14E-02		8.83E-02
+	I-133	529.87	86.30	3.52E+09	1.04E+10	1.04E+10
+	XE-133	81.00	38.00	2.01E+00	7.79E+00	7.79E+00
+	CS-134	563.23	8.38	3.41E-01	8.77E-02	7.42E-01
		569.32	15.43	2.07E-01		4.01E-01
		604.70	97.60	-6.56E-03		8.77E-02
		795.84	85.40	1.89E-02		1.04E-01
		801.93	8.73	-2.24E-01		9.00E-01
+	CS-135	268.24	16.00	1.57E-01	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	9.30E-01	3.59E-01	3.62E+00
		163.89	4.61	1.30E+00		5.99E+00
		176.55	13.56	2.70E-01		2.09E+00
		273.65	12.66	-3.62E+00		2.25E+00
		340.57	48.50	-7.72E-01		7.08E-01
		818.50	99.70	8.57E-04		3.59E-01
		1048.07	79.60	-3.08E-01		5.06E-01
		1235.34	19.70	1.32E+00		3.25E+00
+	CS-137	661.65	85.12	2.68E-02	8.42E-02	8.42E-02
+	LA-138	788.74	34.00	-4.37E-03	1.06E-01	2.03E-01
		1435.80	66.00	-8.21E-03		1.06E-01
+	CE-139	165.85	80.35	-1.70E-02	7.37E-02	7.37E-02
+	BA-140	162.64	6.70	9.26E-01	1.36E+00	4.32E+00
		304.84	4.50	2.33E-01		6.42E+00
		423.70	3.20	-3.77E+00		8.99E+00
		437.55	2.00	3.37E+00		1.56E+01
		537.32	25.00	4.51E-01		1.36E+00
+	LA-140	328.77	20.50	1.09E+00	4.11E-01	1.78E+00

Analysis Report for 1510088-06
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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	1.43E-01	4.11E-01	7.18E-01
		815.85	23.50	1.09E+00		1.69E+00
		1596.49	95.49	-6.86E-02		4.11E-01
+	CE-141	145.44	48.40	1.12E-02	2.05E-01	2.05E-01
+	CE-143	57.36	11.80	-1.29E+06	2.06E+06	5.03E+06
		293.26	42.00	-3.21E+05		2.06E+06
		664.55	5.20	8.45E+05		1.50E+07
+	CE-144	133.54	10.80	-1.90E-01	4.70E-01	4.70E-01
+	PM-144	476.78	42.00	7.24E-02	7.19E-02	1.49E-01
		618.01	98.60	-2.62E-03		7.19E-02
		696.49	99.49	5.66E-02		7.95E-02
+	PM-145	36.85	21.70	-1.29E-01	5.16E-01	1.01E+00
		37.36	39.70	-6.64E-02		5.16E-01
		42.30	15.10	2.65E-02		8.30E-01
		72.40	2.31	-1.38E-01		2.23E+00
+	PM-146	453.90	39.94	-2.80E-02	1.46E-01	1.46E-01
		735.90	14.01	8.58E-02		4.86E-01
		747.13	13.10	-7.87E-02		5.17E-01
+	ND-147	91.11	28.90	-1.84E+00	1.65E+00	1.65E+00
		531.02	13.10	7.05E-01		3.31E+00
+	PM-149	285.90	3.10	-1.19E+04	4.09E+04	4.09E+04
+	EU-152	121.78	20.50	-7.41E-02	2.22E-01	2.22E-01
		244.69	5.40	-6.66E-01		1.02E+00
		344.27	19.13	2.03E-02		2.61E-01
		778.89	9.20	2.36E-01		7.69E-01
		964.01	10.40	-2.18E+00		9.33E-01
		1085.78	7.22	-8.21E-02		1.17E+00
		1112.02	9.60	-2.95E-01		8.71E-01
		1407.95	14.94	3.42E-01		5.78E-01
+	GD-153	97.43	31.30	1.47E-01	1.64E-01	1.64E-01
		103.18	22.20	-3.32E-01		2.22E-01
+	EU-154	123.07	40.50	-3.52E-02	1.13E-01	1.13E-01
		723.30	19.70	1.22E-02		3.71E-01
		873.19	11.50	1.79E-01		6.76E-01
		996.32	10.30	-1.67E-01		6.75E-01
		1004.76	17.90	-6.45E-02		4.52E-01
		1274.45	35.50	1.38E-01		2.70E-01
+	EU-155	86.50	30.90	-7.04E-02	2.03E-01	2.03E-01
		105.30	20.70	-5.83E-02		2.29E-01
+	EU-156	811.77	10.40	-2.37E+00	2.48E+00	2.48E+00
		1153.47	7.20	-1.96E-02		6.03E+00
		1230.71	8.90	-3.55E-01		4.75E+00
+	HO-166M	184.41	72.60	3.47E-02	8.61E-02	8.61E-02
		280.45	29.60	-1.38E-01		1.86E-01
		410.94	11.10	1.74E-01		5.48E-01
		711.69	54.10	4.25E-02		1.39E-01
+	TM-171	66.72	0.14	1.52E+00	3.65E+01	3.65E+01
+	HF-172	81.75	4.52	-5.80E-01	4.24E-01	9.23E-01
		125.81	11.30	1.63E-01		4.24E-01

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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	1.06E+00	3.84E+00	6.77E+00
		810.06	16.63	-1.06E+01		9.87E+00
		912.12	15.25	6.41E+01		2.71E+01
		1093.66	62.50	8.26E-01		3.84E+00
+	LU-173	100.72	5.24	6.12E-01	2.95E-01	9.50E-01
		272.11	21.20	1.33E-01		2.95E-01
+	HF-175	343.40	84.00	1.97E-02	8.49E-02	8.49E-02
+	LU-176	88.34	13.30	5.07E-01	5.15E-02	4.74E-01
		201.83	86.00	-4.20E-02		6.25E-02
		306.78	94.00	-4.27E-03		5.15E-02
+	TA-182	67.75	41.20	3.24E-02	1.46E-01	1.46E-01
		1121.30	34.90	5.57E-01		4.29E-01
		1189.05	16.23	9.50E-03		7.36E-01
		1221.41	26.98	-1.93E-01		4.27E-01
		1231.02	11.44	1.43E-01		1.05E+00
+	IR-192	308.46	29.68	-7.44E-02	1.42E-01	2.20E-01
		468.07	48.10	-6.69E-02		1.42E-01
+	HG-203	279.19	77.30	3.34E-02	1.20E-01	1.20E-01
+	BI-207	569.67	97.72	3.18E-02	6.16E-02	6.16E-02
		1063.62	74.90	1.71E-02		1.04E-01
+	TL-208	583.14	* 30.22	1.33E+00	1.14E-01	3.32E-01
		860.37	* 4.48	2.35E+00		2.19E+00
		2614.66	* 35.85	9.28E-01		1.14E-01
+	BI-210M	262.00	45.00	1.76E-02	1.11E-01	1.11E-01
		300.00	23.00	2.53E-01		2.71E-01
+	PB-210	46.50	* 4.25	4.23E+00	4.28E+00	4.28E+00
+	PB-211	404.84	2.90	-3.03E-01	1.88E+00	1.88E+00
		831.96	2.90	-2.79E-01		2.52E+00
+	BI-212	727.17	* 11.80	8.94E-01	6.99E-01	6.99E-01
		1620.62	* 2.75	9.75E-01		1.21E+00
+	PB-212	238.63	* 44.60	1.59E+00	2.40E-01	2.40E-01
		300.09	* 3.41	1.83E+00		3.04E+00
+	BI-214	609.31	* 46.30	1.31E+00	2.17E-01	2.17E-01
		1120.29	* 15.10	9.80E-01		1.71E+00
		1764.49	* 15.80	9.14E-01		7.96E-01
		2204.22	* 4.98	1.22E+00		2.03E+00
+	PB-214	295.21	* 19.19	1.32E+00	2.35E-01	5.40E-01
		351.92	* 37.19	1.33E+00		2.35E-01
+	RN-219	401.80	6.50	3.67E-01	8.88E-01	8.88E-01
+	RA-223	323.87	3.88	4.31E-01	1.40E+00	1.40E+00
+	RA-224	240.98	3.95	1.02E+01	2.87E+00	2.87E+00
+	RA-225	40.00	31.00	1.51E+00	2.37E+00	2.37E+00
+	RA-226	186.21	* 3.28	3.05E+00	2.69E+00	2.69E+00
+	TH-227	50.10	8.40	-5.33E-02	6.80E-01	9.22E-01
		236.00	11.50	-4.91E+00		6.80E-01
		256.20	6.30	-5.89E-01		7.97E-01
+	AC-228	338.32	* 11.40	1.53E+00	3.76E-01	6.37E-01
		911.07	* 27.70	1.38E+00		3.76E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.18E+00	3.76E-01	8.34E-01
+	TH-230	48.44		16.90	-3.83E-02	5.19E-01	5.19E-01
		62.85		4.60	1.13E+00		1.24E+00
		67.67		0.37	2.97E+00		1.34E+01
+	PA-231	283.67		1.60	2.04E+00	2.36E+00	3.34E+00
		302.67		2.30	-3.60E-01		2.36E+00
+	TH-231	25.64		14.70	2.17E+00	6.98E-01	1.48E+01
		84.21		6.40	4.43E-01		6.98E-01
+	PA-233	311.98		38.60	9.23E-02	3.19E-01	3.19E-01
+	PA-234	131.20		20.40	1.12E-01	2.45E-01	2.45E-01
		733.99		8.80	1.83E-01		7.86E-01
		946.00		12.00	-2.35E-01		5.38E-01
+	PA-234M	1001.03		0.92	-1.21E+00	8.47E+00	8.47E+00
+	TH-234	63.29		3.80	1.35E+00	1.49E+00	1.49E+00
+	U-235	143.76		10.50	1.60E-01	4.81E-01	4.81E-01
		163.35		4.70	2.31E-01		1.07E+00
		205.31		4.70	4.07E-01		1.13E+00
+	NP-237	86.50		12.60	-1.70E-01	4.91E-01	4.91E-01
+	NP-239	106.10		22.70	-8.63E+02	2.77E+03	2.77E+03
		228.18		10.70	1.67E+02		6.78E+03
		277.60		14.10	2.98E+03		5.39E+03
+	AM-241	59.54		35.90	-5.64E-03	1.48E-01	1.48E-01
+	AM-243	74.67		66.00	-2.35E-01	1.03E-01	1.03E-01
+	CM-243	209.75	*	3.29	1.62E+00	5.18E-01	1.89E+00
		228.14		10.60	1.28E-02		5.18E-01
		277.60	*	14.00	2.93E-01		1.13E+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

Analysis Report for 1510088-06
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	8.59E-01	8.59E-01	4.18E-01	4.05E-01
NA-22	1274.54	99.94	9.77E-02	9.77E-02	4.98E-02	4.51E-02
NA-24	1368.53	99.99	2.05E+14	1.36E+14	-1.04E+14	8.94E+13
	2754.09	99.86	1.36E+14		4.52E+13	5.26E+13
AL-26	1808.65	99.76	5.57E-02	5.57E-02	8.42E-03	2.33E-02
+ K-40	1460.81	*	1.34E+00	1.34E+00	1.93E+01	6.32E-01
@ AR-41	1293.64		1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	5.25E-02	5.25E-02	1.16E-02	2.55E-02
	78.34	96.00	7.67E-02		2.92E-01	3.76E-02
SC-46	889.25	99.98	9.58E-02	9.58E-02	2.54E-02	4.44E-02
	1120.51	99.99	1.63E-01		2.24E-01	7.75E-02
V-48	983.52	99.98	3.09E-01	3.09E-01	3.92E-02	1.42E-01
	1312.10	97.50	3.21E-01		-2.24E-02	1.45E-01
CR-51	320.08	9.83	1.17E+00	1.17E+00	3.41E-02	5.57E-01
MN-54	834.83	99.97	8.29E-02	8.29E-02	-1.44E-02	3.87E-02
CO-56	846.75	99.96	8.95E-02	8.95E-02	-9.93E-03	4.13E-02
	1037.75	14.03	7.53E-01		-2.76E-02	3.47E-01
	1238.25	67.00	2.34E-01		5.32E-02	1.10E-01
	1771.40	15.51	6.03E-01		1.33E-01	2.63E-01
	2598.48	16.90	3.52E-01		-7.52E-02	1.40E-01
CO-57	122.06	85.51	5.75E-02	5.75E-02	-1.92E-02	2.79E-02
	136.48	10.60	5.03E-01		-1.71E-01	2.44E-01
CO-58	810.76	99.40	8.06E-02	8.06E-02	-8.67E-02	3.68E-02
FE-59	1099.22	56.50	2.31E-01	2.31E-01	-2.10E-02	1.06E-01
	1291.56	43.20	3.61E-01		2.23E-01	1.66E-01
CO-60	1173.22	100.00	8.70E-02	7.65E-02	6.76E-03	4.01E-02
	1332.49	100.00	7.65E-02		-5.14E-02	3.45E-02
ZN-65	1115.52	50.75	1.87E-01	1.87E-01	-1.12E-02	8.65E-02
+ GA-67	93.31	*	1.72E+02	1.72E+02	1.74E+02	8.41E+01
	208.95	*	2.62E+03		2.26E+03	1.27E+03
	300.22	*	6.14E+02		3.69E+02	3.00E+02
SE-75	121.11	16.70	3.23E-01	9.74E-02	-7.18E-02	1.56E-01
	136.00	59.20	9.94E-02		6.88E-03	4.82E-02
	264.65	59.80	9.74E-02		4.83E-03	4.64E-02
	279.53	25.20	2.63E-01		-1.95E-01	1.26E-01
	400.65	11.40	6.32E-01		2.20E-01	3.00E-01
RB-82	776.52	13.00	1.31E+00	1.31E+00	-2.62E-01	6.08E-01
RB-83	520.41	46.00	1.56E-01	1.56E-01	9.96E-03	7.32E-02
	529.64	30.30	2.31E-01		-2.55E-02	1.08E-01
	552.65	16.40	4.37E-01		-5.33E-02	2.04E-01
KR-85	513.99	0.43	1.53E+01	1.53E+01	-1.99E+01	7.25E+00
SR-85	513.99	99.27	9.40E-02	9.40E-02	-1.22E-01	4.45E-02
Y-88	898.02	93.40	9.85E-02	6.26E-02	2.66E-02	4.56E-02
	1836.01	99.38	6.26E-02		-2.38E-03	2.56E-02
NB-93M	16.57	9.43	5.29E+03	5.29E+03	-9.47E+03	2.57E+03
NB-94	702.63	100.00	7.70E-02	7.34E-02	-1.30E-02	3.63E-02
	871.10	100.00	7.34E-02		-1.49E-02	3.40E-02
NB-95	765.79	99.81	1.62E-01	1.62E-01	1.20E-01	7.64E-02
NB-95M	235.69	25.00	1.53E+02	1.53E+02	-1.10E+03	7.43E+01
ZR-95	724.18	43.70	2.76E-01	1.84E-01	8.25E-02	1.30E-01
	756.72	55.30	1.84E-01		8.65E-02	8.60E-02

Analysis Report for 1510088-06

CP4104S11-12

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	2.74E+03	1.64E+03	7.43E+02	1.32E+03
	739.58	12.80	1.64E+03		-5.65E+02	7.59E+02
	778.00	4.50	5.28E+03		1.41E+03	2.46E+03
RU-103	497.08	89.00	1.13E-01	1.13E-01	6.03E-03	5.29E-02
RU-106	621.84	9.80	7.14E-01	7.14E-01	-1.60E-01	3.35E-01
AG-108M	433.93	89.90	5.90E-02	5.90E-02	7.92E-04	2.78E-02
	614.37	90.40	7.89E-02		-7.30E-01	3.72E-02
	722.95	90.50	8.03E-02		2.63E-03	3.76E-02
+ CD-109	88.03	* 3.72	1.93E+00	1.93E+00	2.21E+00	9.46E-01
AG-110M	657.75	93.14	8.45E-02	8.45E-02	6.00E-04	3.97E-02
	677.61	10.53	7.90E-01		2.21E-01	3.72E-01
	706.67	16.46	4.80E-01		-7.13E-02	2.25E-01
	763.93	21.98	3.68E-01		-2.43E-01	1.72E-01
	884.67	71.63	1.15E-01		-3.31E-02	5.36E-02
	1384.27	23.94	3.25E-01		2.60E-02	1.45E-01
CD-113M	263.70	0.02	2.13E+02	2.13E+02	4.91E+01	1.01E+02
SN-113	255.12	1.93	3.30E+00	9.09E-02	1.29E+00	1.58E+00
	391.69	64.90	9.09E-02		-9.00E-02	4.27E-02
TE123M	159.00	84.10	7.50E-02	7.50E-02	6.75E-02	3.63E-02
SB-124	602.71	97.87	1.03E-01	1.03E-01	7.25E-03	4.85E-02
	645.85	7.26	1.39E+00		3.36E-01	6.51E-01
	722.78	11.10	9.48E-01		3.11E-02	4.44E-01
	1691.02	49.00	1.66E-01		-7.64E-02	7.03E-02
I-125	35.49	6.49	5.86E+00	5.86E+00	2.30E+00	2.85E+00
SB-125	176.33	6.89	7.74E-01	1.78E-01	2.52E-01	3.74E-01
	427.89	29.33	1.78E-01		-3.89E-02	8.35E-02
	463.38	10.35	6.93E-01		8.19E-01	3.30E-01
	600.56	17.80	4.08E-01		6.87E-03	1.93E-01
	635.90	11.32	6.16E-01		-8.68E-03	2.89E-01
	666.33	99.60	3.99E-01		9.09E-02	1.88E-01
SB-126	414.70	83.30	3.98E-01	3.98E-01	9.09E-02	1.88E-01
	666.33	99.60	3.99E-01		-1.16E-01	1.86E-01
	695.00	99.60	4.42E-01		1.40E-01	2.07E-01
+ SN-126	720.50	53.80	7.95E-01	1.85E-01	6.17E-02	3.72E-01
	87.57	* 37.00	1.85E-01		2.12E-01	9.07E-02
	473.00	25.00	6.89E+01		6.27E+01	-1.80E+01	3.22E+01
SB-127	685.20	35.70	6.27E+01	6.27E+01	-4.17E-01	2.93E+01
	783.80	14.70	1.66E+02		6.86E+01	7.74E+01
	29.78	57.00	1.20E+00		1.20E+00	-2.90E-01	5.79E-01
I-129	33.60	13.20	2.67E+00	1.08E+00	-7.22E-01	1.30E+00
	39.58	7.52	2.25E+00		1.43E+00	1.09E+00
	284.30	6.05	1.43E+01		8.72E+00	6.82E+00
I-131	364.48	81.20	1.08E+00	1.08E+00	3.07E-01	5.10E-01
	636.97	7.26	1.49E+01		-5.98E+00	6.98E+00
	722.89	1.80	6.50E+01		2.13E+00	3.05E+01
	49.72	13.10	5.74E+02		5.94E+01	-3.32E+01	2.78E+02
TE-132	228.16	88.00	5.94E+01	5.94E+01	1.46E+00	2.86E+01
	81.00	33.00	1.27E-01		8.83E-02	3.28E-02	6.15E-02
BA-133	302.84	17.80	3.07E-01	8.83E-02	-4.68E-02	1.47E-01
	356.01	60.00	8.83E-02		2.14E-02	4.18E-02
	529.87	86.30	1.04E+10		1.04E+10	3.52E+09	4.87E+09
XE-133	81.00	38.00	7.79E+00	7.79E+00	2.01E+00	3.77E+00
CS-134	563.23	8.38	7.42E-01	8.77E-02	3.41E-01	3.48E-01
	569.32	15.43	4.01E-01		2.07E-01	1.88E-01

: 00541

Analysis Report for 1510088-06

CP4104S11-12

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	8.77E-02	8.77E-02	-6.56E-03	4.18E-02
	795.84	85.40	1.04E-01		1.89E-02	4.88E-02
	801.93	8.73	9.00E-01		-2.24E-01	4.21E-01
CS-135	268.24	16.00	3.61E-01	3.61E-01	1.57E-01	1.74E-01
	1131.51	22.50	1.00E+26		1.00E+26	1.00E+26
@ I-135	1260.41	28.60	1.00E+26		1.00E+26	1.00E+26
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+26
CS-136	153.22	7.46	3.62E+00	3.59E-01	9.30E-01	1.75E+00
	163.89	4.61	5.99E+00		1.30E+00	2.90E+00
	176.55	13.56	2.09E+00		2.70E-01	1.01E+00
	273.65	12.66	2.25E+00		-3.62E+00	1.08E+00
	340.57	48.50	7.08E-01		-7.72E-01	3.39E-01
	818.50	99.70	3.59E-01		8.57E-04	1.66E-01
	1048.07	79.60	5.06E-01		-3.08E-01	2.32E-01
	1235.34	19.70	3.25E+00		1.32E+00	1.53E+00
CS-137	661.65	85.12	8.42E-02	8.42E-02	2.68E-02	3.96E-02
LA-138	788.74	34.00	2.03E-01	1.06E-01	-4.37E-03	9.41E-02
	1435.80	66.00	1.06E-01		-8.21E-03	4.72E-02
CE-139	165.85	80.35	7.37E-02	7.37E-02	-1.70E-02	3.56E-02
BA-140	162.64	6.70	4.32E+00	1.36E+00	9.26E-01	2.09E+00
	304.84	4.50	6.42E+00		2.33E-01	3.05E+00
	423.70	3.20	8.99E+00		-3.77E+00	4.22E+00
	437.55	2.00	1.56E+01		3.37E+00	7.33E+00
	537.32	25.00	1.36E+00		4.51E-01	6.40E-01
LA-140	328.77	20.50	1.78E+00	4.11E-01	1.09E+00	8.55E-01
	487.03	45.50	7.18E-01		1.43E-01	3.38E-01
	815.85	23.50	1.69E+00		1.09E+00	7.81E-01
	1596.49	95.49	4.11E-01		-6.86E-02	1.80E-01
CE-141	145.44	48.40	2.05E-01	2.05E-01	1.12E-02	9.94E-02
CE-143	57.36	11.80	5.03E+06	2.06E+06	-1.29E+06	2.43E+06
	293.26	42.00	2.06E+06		-3.21E+05	9.98E+05
	664.55	5.20	1.50E+07		8.45E+05	7.03E+06
CE-144	133.54	10.80	4.70E-01	4.70E-01	-1.90E-01	2.28E-01
PM-144	476.78	42.00	1.49E-01	7.19E-02	7.24E-02	7.03E-02
	618.01	98.60	7.19E-02		-2.62E-03	3.38E-02
	696.49	99.49	7.95E-02		5.66E-02	3.74E-02
PM-145	36.85	21.70	1.01E+00	5.16E-01	-1.29E-01	4.88E-01
	37.36	39.70	5.16E-01		-6.64E-02	2.51E-01
	42.30	15.10	8.30E-01		2.65E-02	4.03E-01
	72.40	2.31	2.23E+00		-1.38E-01	1.08E+00
PM-146	453.90	39.94	1.46E-01	1.46E-01	-2.80E-02	6.89E-02
	735.90	14.01	4.86E-01		8.58E-02	2.26E-01
	747.13	13.10	5.17E-01		-7.87E-02	2.41E-01
ND-147	91.11	28.90	1.65E+00	1.65E+00	-1.84E+00	8.05E-01
	531.02	13.10	3.31E+00		7.05E-01	1.55E+00
PM-149	285.90	3.10	4.09E+04	4.09E+04	-1.19E+04	1.95E+04
EU-152	121.78	20.50	2.22E-01	2.22E-01	-7.41E-02	1.07E-01
	244.69	5.40	1.02E+00		-6.66E-01	4.90E-01
	344.27	19.13	2.61E-01		2.03E-02	1.23E-01
	778.89	9.20	7.69E-01		2.36E-01	3.58E-01
	964.01	10.40	9.33E-01		-2.18E+00	4.39E-01
	1085.78	7.22	1.17E+00		-8.21E-02	5.40E-01
	1112.02	9.60	8.71E-01		-2.95E-01	4.02E-01

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Analysis Report for 1510088-06
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	1407.95	14.94	5.78E-01	2.22E-01	3.42E-01	2.63E-01
GD-153	97.43	31.30	1.64E-01	1.64E-01	1.47E-01	7.95E-02
	103.18	22.20	2.22E-01		-3.32E-01	1.08E-01
EU-154	123.07	40.50	1.13E-01	1.13E-01	-3.52E-02	5.47E-02
	723.30	19.70	3.71E-01		1.22E-02	1.74E-01
	873.19	11.50	6.76E-01		1.79E-01	3.14E-01
	996.32	10.30	6.75E-01		-1.67E-01	3.09E-01
	1004.76	17.90	4.52E-01		-6.45E-02	2.09E-01
	1274.45	35.50	2.70E-01		1.38E-01	1.25E-01
EU-155	86.50	30.90	2.03E-01	2.03E-01	-7.04E-02	9.91E-02
	105.30	20.70	2.29E-01		-5.83E-02	1.11E-01
EU-156	811.77	10.40	2.48E+00	2.48E+00	-2.37E+00	1.13E+00
	1153.47	7.20	6.03E+00		-1.96E-02	2.81E+00
	1230.71	8.90	4.75E+00		-3.55E-01	2.20E+00
HO-166M	184.41	72.60	8.61E-02	8.61E-02	3.47E-02	4.18E-02
	280.45	29.60	1.86E-01		-1.38E-01	8.91E-02
	410.94	11.10	5.48E-01		1.74E-01	2.60E-01
	711.69	54.10	1.39E-01		4.25E-02	6.54E-02
TM-171	66.72	0.14	3.65E+01	3.65E+01	1.52E+00	1.77E+01
HF-172	81.75	4.52	9.23E-01	4.24E-01	-5.80E-01	4.46E-01
	125.81	11.30	4.24E-01		1.63E-01	2.06E-01
LU-172	181.53	20.60	6.77E+00	3.84E+00	1.06E+00	3.27E+00
	810.06	16.63	9.87E+00		-1.06E+01	4.51E+00
	912.12	15.25	2.71E+01		6.41E+01	1.30E+01
	1093.66	62.50	3.84E+00		8.26E-01	1.77E+00
LU-173	100.72	5.24	9.50E-01	2.95E-01	6.12E-01	4.62E-01
	272.11	21.20	2.95E-01		1.33E-01	1.42E-01
HF-175	343.40	84.00	8.49E-02	8.49E-02	1.97E-02	4.03E-02
LU-176	88.34	13.30	4.74E-01	5.15E-02	5.07E-01	2.32E-01
	201.83	86.00	6.25E-02		-4.20E-02	3.02E-02
	306.78	94.00	5.15E-02		-4.27E-03	2.44E-02
TA-182	67.75	41.20	1.46E-01	1.46E-01	3.24E-02	7.10E-02
	1121.30	34.90	4.29E-01		5.57E-01	2.03E-01
	1189.05	16.23	7.36E-01		9.50E-03	3.42E-01
	1221.41	26.98	4.27E-01		-1.93E-01	1.98E-01
	1231.02	11.44	1.05E+00		1.43E-01	4.87E-01
IR-192	308.46	29.68	2.20E-01	1.42E-01	-7.44E-02	1.05E-01
	468.07	48.10	1.42E-01		-6.69E-02	6.62E-02
HG-203	279.19	77.30	1.20E-01	1.20E-01	3.34E-02	5.77E-02
BI-207	569.67	97.72	6.16E-02	6.16E-02	3.18E-02	2.88E-02
	1063.62	74.90	1.04E-01		1.71E-02	4.79E-02
+ TL-208	583.14	* 30.22	3.32E-01	1.14E-01	1.33E+00	1.60E-01
	860.37	* 4.48	2.19E+00		2.35E+00	1.04E+00
	2614.66	* 35.85	1.14E-01		9.28E-01	4.42E-02
BI-210M	262.00	45.00	1.11E-01	1.11E-01	1.76E-02	5.31E-02
	300.00	23.00	2.71E-01		2.53E-01	1.30E-01
+ PB-210	46.50	* 4.25	4.28E+00	4.28E+00	4.23E+00	2.11E+00
PB-211	404.84	2.90	1.88E+00	1.88E+00	-3.03E-01	8.89E-01
	831.96	2.90	2.52E+00		-2.79E-01	1.17E+00
+ BI-212	727.17	* 11.80	6.99E-01	6.99E-01	8.94E-01	3.30E-01
	1620.62	* 2.75	1.21E+00		9.75E-01	4.47E-01
+ PB-212	238.63	* 44.60	2.40E-01	2.40E-01	1.59E+00	1.18E-01
	300.09	* 3.41	3.04E+00		1.83E+00	1.48E+00

Analysis Report for 1510088-06
CP4104S11-12

	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	2.17E-01	2.17E-01	1.31E+00	1.04E-01
		1120.29 *		15.10	1.71E+00		9.80E-01	8.34E-01
		1764.49 *		15.80	7.96E-01		9.14E-01	3.70E-01
		2204.22 *		4.98	2.03E+00		1.22E+00	9.19E-01
+	PB-214	295.21 *		19.19	5.40E-01	2.35E-01	1.32E+00	2.64E-01
		351.92 *		37.19	2.35E-01		1.33E+00	1.14E-01
	RN-219	401.80		6.50	8.88E-01	8.88E-01	3.67E-01	4.21E-01
	RA-223	323.87		3.88	1.40E+00	1.40E+00	4.31E-01	6.67E-01
	RA-224	240.98		3.95	2.87E+00	2.87E+00	1.02E+01	1.41E+00
	RA-225	40.00		31.00	2.37E+00	2.37E+00	1.51E+00	1.15E+00
+	RA-226	186.21 *		3.28	2.69E+00	2.69E+00	3.05E+00	1.32E+00
	TH-227	50.10		8.40	9.22E-01	6.80E-01	-5.33E-02	4.47E-01
		236.00		11.50	6.80E-01		-4.91E+00	3.31E-01
		256.20		6.30	7.97E-01		-5.89E-01	3.81E-01
+	AC-228	338.32 *		11.40	6.37E-01	3.76E-01	1.53E+00	3.07E-01
		911.07 *		27.70	3.76E-01		1.38E+00	1.78E-01
		969.11 *		16.60	8.34E-01		1.18E+00	4.00E-01
	TH-230	48.44		16.90	5.19E-01	5.19E-01	-3.83E-02	2.52E-01
		62.85		4.60	1.24E+00		1.13E+00	6.03E-01
		67.67		0.37	1.34E+01		2.97E+00	6.51E+00
	PA-231	283.67		1.60	3.34E+00	2.36E+00	2.04E+00	1.60E+00
		302.67		2.30	2.36E+00		-3.60E-01	1.13E+00
	TH-231	25.64		14.70	1.48E+01	6.98E-01	2.17E+00	7.15E+00
		84.21		6.40	6.98E-01		4.43E-01	3.39E-01
	PA-233	311.98		38.60	3.19E-01	3.19E-01	9.23E-02	1.52E-01
	PA-234	131.20		20.40	2.45E-01	2.45E-01	1.12E-01	1.19E-01
		733.99		8.80	7.86E-01		1.83E-01	3.66E-01
		946.00		12.00	5.38E-01		-2.35E-01	2.45E-01
	PA-234M	1001.03		0.92	8.47E+00	8.47E+00	-1.21E+00	3.91E+00
	TH-234	63.29		3.80	1.49E+00	1.49E+00	1.35E+00	7.24E-01
	U-235	143.76		10.50	4.81E-01	4.81E-01	1.60E-01	2.33E-01
		163.35		4.70	1.07E+00		2.31E-01	5.20E-01
		205.31		4.70	1.13E+00		4.07E-01	5.44E-01
	NP-237	86.50		12.60	4.91E-01	4.91E-01	-1.70E-01	2.40E-01
	NP-239	106.10		22.70	2.77E+03	2.77E+03	-8.63E+02	1.35E+03
		228.18		10.70	6.78E+03		1.67E+02	3.27E+03
		277.60		14.10	5.39E+03		2.98E+03	2.58E+03
	AM-241	59.54		35.90	1.48E-01	1.48E-01	-5.64E-03	7.14E-02
	AM-243	74.67		66.00	1.03E-01	1.03E-01	-2.35E-01	5.06E-02
+	CM-243	209.75 *		3.29	1.89E+00	5.18E-01	1.62E+00	9.15E-01
		228.14		10.60	5.18E-01		1.28E-02	2.49E-01
		277.60 *		14.00	1.13E+00		2.93E-01	5.56E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

Analysis Report for 1510088-06
CP4104S11-12

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: CP4104S11-12

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	1	0	145
9:	558	1182	1103	426	591	1723	295	122
17:	136	114	123	104	116	123	129	115
25:	91	119	115	98	109	104	110	123
33:	146	113	118	139	112	110	127	148
41:	128	116	112	141	151	149	181	144
49:	140	105	111	110	116	106	88	92
57:	77	93	97	101	111	110	141	163
65:	107	109	112	129	120	116	123	145
73:	160	161	416	218	481	395	93	115
81:	92	102	97	136	131	102	174	203
89:	105	163	115	118	226	150	94	56
97:	81	76	87	102	71	73	82	67
105:	71	99	75	91	90	77	62	73
113:	77	68	80	75	81	66	65	77
121:	57	65	62	71	77	68	60	64
129:	101	83	69	65	64	70	73	56
137:	80	71	72	81	64	78	63	81
145:	70	61	65	60	60	59	52	57
153:	61	77	67	58	89	72	60	61
161:	55	48	69	59	72	54	58	52
169:	59	54	48	47	45	63	54	58
177:	61	58	59	51	57	44	52	51
185:	90	165	91	61	65	57	53	60
193:	51	45	55	52	55	57	68	48
201:	54	52	54	53	59	41	41	46
209:	90	74	47	46	49	42	46	50
217:	36	43	48	61	41	41	47	44
225:	40	47	47	39	56	40	49	55
233:	39	41	49	44	40	281	546	87
241:	117	127	72	35	41	30	30	31
249:	28	41	33	32	47	31	37	29
257:	35	30	38	35	30	35	30	26
265:	24	31	32	33	35	73	45	37
273:	32	27	37	27	56	50	26	32
281:	27	38	37	29	24	32	23	40
289:	45	21	33	30	21	43	185	132
297:	32	32	28	68	43	33	25	26
305:	24	31	21	25	15	23	28	22
313:	34	35	33	29	20	35	21	26
321:	18	24	27	28	33	25	28	59
329:	36	27	37	32	36	26	18	27
337:	18	117	85	23	30	16	19	27
345:	22	20	24	23	22	24	143	327
353:	102	19	22	19	21	31	20	26
361:	20	28	18	30	19	20	20	16

369: 24 27 24 20 21 19 21 22

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	35	16	18	18	14	18	16	22
385:	20	24	24	21	21	13	23	15
393:	18	13	28	18	14	25	27	20
401:	26	25	25	18	13	20	24	17
409:	28	35	18	23	19	19	24	22
417:	13	14	15	22	19	16	18	15
425:	14	15	18	19	18	10	17	23
433:	15	10	19	18	16	22	13	20
441:	15	12	13	15	23	10	19	15
449:	18	18	19	17	20	18	19	21
457:	15	30	15	14	11	37	53	29
465:	9	18	10	14	9	17	19	14
473:	9	12	17	25	12	17	21	16
481:	16	18	12	17	13	21	18	14
489:	17	19	11	11	11	17	15	21
497:	15	11	18	19	14	10	13	19
505:	7	14	24	22	30	79	78	43
513:	20	12	21	9	22	13	14	22
521:	8	14	11	14	15	8	11	13
529:	15	16	10	18	13	13	13	20
537:	16	9	20	13	12	17	16	12
545:	11	9	13	20	14	9	9	15
553:	15	16	9	13	10	8	16	8
561:	23	8	17	14	13	8	13	11
569:	15	22	12	12	8	13	15	14
577:	7	17	17	10	16	58	158	88
585:	8	16	13	9	10	9	11	16
593:	11	14	15	14	18	13	11	17
601:	14	12	11	13	13	11	19	53
609:	201	149	18	16	18	7	5	12
617:	17	13	12	13	8	8	14	14
625:	8	7	14	11	17	10	14	16
633:	11	13	12	13	7	13	11	8
641:	10	17	11	11	16	10	10	12
649:	11	10	5	10	14	13	14	8
657:	11	15	12	12	13	11	11	9
665:	8	12	10	9	9	13	9	16
673:	8	17	9	15	10	18	9	13
681:	11	10	8	9	6	9	13	14
689:	5	11	6	8	8	13	12	15
697:	8	15	12	8	7	22	10	14
705:	15	8	8	11	10	17	14	8
713:	12	10	12	10	11	12	9	12
721:	8	10	8	11	9	16	41	26
729:	5	9	10	11	14	11	6	6
737:	7	7	10	5	7	9	13	6
745:	11	10	8	9	7	8	8	8
753:	11	7	12	11	8	8	10	5
761:	7	8	9	13	9	7	17	29
769:	11	6	13	13	10	6	8	10
777:	6	12	10	9	6	8	12	6
785:	16	13	5	4	6	9	4	9
793:	6	15	29	10	5	11	14	11

801: 6 11 8 11 8 19 8 5

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Channel	1	2	3	4	5	6	7	8
809:	4	7	2	5	7	9	7	6
817:	5	9	11	5	5	7	5	10
825:	10	4	5	7	4	8	10	9
833:	6	7	15	18	6	5	10	13
841:	9	7	9	7	8	4	5	7
849:	8	8	6	12	7	8	2	4
857:	7	6	12	23	19	13	5	7
865:	11	4	10	8	7	9	4	9
873:	9	9	7	14	8	6	9	11
881:	16	6	4	8	5	10	8	5
889:	14	5	6	5	6	6	9	5
897:	3	14	12	9	2	6	7	9
905:	4	9	8	7	16	36	90	61
913:	9	6	2	5	9	6	8	5
921:	5	9	5	3	10	8	6	12
929:	9	7	4	9	15	13	13	8
937:	7	6	4	8	4	8	4	3
945:	8	4	4	6	7	7	9	7
953:	8	5	3	5	4	9	4	10
961:	5	7	6	28	18	12	7	42
969:	48	22	4	6	4	6	2	5
977:	5	2	7	5	8	11	3	6
985:	10	5	4	11	4	7	6	2
993:	6	3	1	7	9	3	9	9
1001:	9	6	5	8	7	8	9	11
1009:	4	4	12	6	6	7	6	8
1017:	2	6	2	8	3	11	4	3
1025:	2	10	5	7	7	9	6	6
1033:	5	7	4	12	11	4	8	2
1041:	7	9	11	5	4	6	4	4
1049:	5	9	8	7	11	5	8	9
1057:	7	5	4	3	4	5	8	8
1065:	12	4	5	8	8	7	6	11
1073:	11	9	6	4	9	9	9	6
1081:	9	11	5	8	2	9	8	7
1089:	7	8	2	8	9	12	3	9
1097:	7	4	5	7	9	2	2	10
1105:	8	7	11	8	6	9	5	5
1113:	6	8	8	9	6	9	12	43
1121:	25	9	7	2	5	5	5	6
1129:	7	8	4	5	4	9	11	2
1137:	1	13	6	9	4	5	9	7
1145:	9	9	6	8	9	8	9	7
1153:	6	14	12	9	13	7	6	7
1161:	4	7	9	9	9	6	11	9
1169:	9	4	12	9	4	10	3	4
1177:	4	5	6	9	5	6	5	7
1185:	10	10	8	8	10	6	6	12
1193:	8	9	8	11	10	5	10	7
1201:	10	6	7	10	5	6	8	10
1209:	12	9	4	6	5	15	7	8
1217:	9	7	8	11	5	6	7	9
1225:	14	8	7	7	7	11	9	1

1233: 13 9 10 11 16 22 9 7

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Channel	13	9	10	11	16	22	9	7
1241:	8	13	7	8	6	4	4	7
1249:	7	6	3	6	3	3	7	3
1257:	8	3	8	5	8	3	9	2
1265:	7	5	3	6	6	6	9	7
1273:	8	2	10	6	8	5	2	8
1281:	10	5	3	8	5	4	6	5
1289:	13	9	5	4	5	7	4	2
1297:	8	5	3	5	0	3	4	3
1305:	4	6	4	3	2	3	4	9
1313:	4	4	4	2	9	4	10	2
1321:	4	1	4	9	2	2	6	6
1329:	3	4	6	9	1	3	2	7
1337:	7	2	3	3	1	1	6	1
1345:	2	4	4	5	2	3	4	5
1353:	3	4	1	2	4	0	2	5
1361:	3	3	5	4	2	1	1	0
1369:	4	5	3	1	5	1	2	8
1377:	9	15	1	5	5	3	2	2
1385:	7	2	2	4	2	1	4	4
1393:	4	5	1	2	3	3	3	4
1401:	6	4	3	6	3	4	8	6
1409:	2	5	2	1	6	3	2	1
1417:	1	2	1	2	0	2	6	2
1425:	3	2	3	1	2	4	2	1
1433:	4	4	2	2	5	3	2	5
1441:	3	2	7	1	3	4	5	3
1449:	2	0	2	1	2	4	4	3
1457:	5	11	78	265	266	103	10	4
1465:	2	3	4	3	2	2	1	5
1473:	2	5	1	0	1	0	3	3
1481:	1	0	1	3	1	1	2	2
1489:	0	2	1	5	2	0	3	3
1497:	4	2	2	2	2	4	0	1
1505:	2	1	2	2	11	1	4	2
1513:	3	4	3	2	0	1	2	3
1521:	3	2	1	4	1	0	1	0
1529:	3	5	2	2	0	0	1	1
1537:	1	3	4	2	2	3	4	2
1545:	4	0	2	2	1	2	1	2
1553:	4	3	2	3	0	2	4	0
1561:	2	2	3	0	2	1	4	5
1569:	1	1	2	1	1	2	3	1
1577:	0	1	0	1	7	1	2	0
1585:	2	5	6	6	3	3	4	1
1593:	5	1	2	0	2	0	3	3
1601:	1	2	0	3	1	1	1	1
1609:	4	5	1	2	3	1	1	1
1617:	0	1	1	3	6	0	1	2
1625:	4	1	1	2	2	3	2	1
1633:	0	0	1	1	0	2	2	3
1641:	2	1	2	1	2	1	0	2
1649:	1	1	2	0	4	2	1	1
1657:	0	1	4	1	0	4	3	1

1665: 2 0 3 0 3 2 1 2

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
1673:	1	2	1	1	1	2	1	1
1681:	0	1	0	1	4	0	3	1
1689:	0	0	1	1	3	1	3	0
1697:	0	1	0	3	0	1	2	0
1705:	1	1	0	3	1	0	1	1
1713:	0	0	3	1	2	2	3	0
1721:	0	0	1	3	2	2	0	3
1729:	5	6	2	3	1	0	1	2
1737:	1	0	1	0	2	1	0	2
1745:	2	0	0	0	1	0	0	0
1753:	1	2	1	2	0	3	1	4
1761:	0	3	15	20	15	7	2	2
1769:	3	2	0	4	2	1	0	1
1777:	0	0	0	2	0	1	2	0
1785:	0	0	2	2	1	1	1	0
1793:	1	0	1	0	2	3	3	3
1801:	0	3	2	2	0	1	0	3
1809:	0	1	1	1	0	0	0	1
1817:	1	1	2	1	1	3	2	0
1825:	0	2	0	1	1	1	1	0
1833:	0	1	1	1	1	1	1	0
1841:	2	0	1	0	1	2	2	4
1849:	2	2	2	2	3	3	1	0
1857:	1	1	1	2	0	3	1	0
1865:	1	3	3	0	1	1	1	2
1873:	3	0	2	0	0	1	2	1
1881:	1	0	1	1	0	0	0	0
1889:	1	0	0	2	0	0	0	2
1897:	1	1	0	3	0	1	0	0
1905:	1	2	1	2	3	0	0	2
1913:	2	1	3	0	1	0	1	0
1921:	1	1	1	0	1	0	1	0
1929:	0	2	0	1	1	0	1	0
1937:	1	0	0	2	2	1	2	3
1945:	2	1	2	1	3	3	4	1
1953:	3	2	2	0	2	3	2	1
1961:	1	1	2	0	0	1	1	0
1969:	0	1	1	0	0	0	2	0
1977:	1	1	1	0	0	1	2	0
1985:	0	1	2	1	0	2	2	1
1993:	2	4	0	1	2	3	0	1
2001:	2	1	1	1	1	0	1	1
2009:	1	1	0	2	1	1	1	1
2017:	0	0	2	0	0	2	0	0
2025:	1	2	0	0	0	2	2	2
2033:	2	1	0	1	1	0	1	0
2041:	1	0	2	2	1	0	1	2
2049:	2	1	2	1	2	0	1	1
2057:	0	0	0	0	1	2	0	1
2065:	1	2	0	2	1	0	1	1
2073:	0	2	1	1	0	0	1	0
2081:	0	1	2	1	1	1	0	0
2089:	1	0	1	1	1	1	0	0

2097: 0 1 0 3 3 6 3 0

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

2529: 0 0 0 0 0 0 0 0 1

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	1	0	0	0	0	1	1	0
2545:	0	1	0	0	0	0	0	0
2553:	0	0	0	0	1	1	0	0
2561:	1	0	0	1	0	0	0	0
2569:	0	1	0	0	0	1	0	0
2577:	2	1	1	0	1	0	2	1
2585:	0	1	0	0	0	1	1	0
2593:	1	0	0	2	0	1	2	0
2601:	0	0	1	0	2	1	0	0
2609:	1	2	3	16	25	28	19	9
2617:	2	0	0	0	1	0	0	0
2625:	0	0	0	2	1	0	0	0
2633:	0	0	0	0	1	0	0	0
2641:	0	0	0	0	0	0	1	0
2649:	0	2	0	0	0	0	1	0
2657:	0	1	0	2	0	0	0	0
2665:	0	0	1	0	0	1	0	0
2673:	0	0	1	0	0	0	1	0
2681:	0	0	0	0	1	0	1	0
2689:	0	0	1	0	1	0	0	1
2697:	1	0	0	1	1	0	0	0
2705:	0	0	0	2	0	0	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	1	0	1	0	0
2729:	0	0	0	0	0	1	0	0
2737:	0	0	0	0	0	0	0	0
2745:	0	0	0	0	0	0	1	0
2753:	1	1	1	0	0	0	0	0
2761:	0	0	0	0	1	0	0	0
2769:	0	1	0	0	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	1	0	1	1
2793:	0	0	0	0	0	1	1	1
2801:	0	1	0	0	0	1	0	0
2809:	0	0	1	2	0	0	0	0
2817:	0	0	0	0	0	1	0	0
2825:	0	0	0	0	0	1	1	1
2833:	0	0	0	0	0	1	0	0
2841:	0	0	0	0	0	1	0	0
2849:	1	0	0	0	0	0	0	0
2857:	1	0	0	0	1	0	1	0
2865:	1	0	0	0	1	0	0	0
2873:	0	0	0	0	0	0	1	1
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	2	0	1	0
2897:	0	0	0	0	1	0	0	0
2905:	1	0	0	0	0	0	0	0
2913:	0	0	0	1	0	0	1	0
2921:	0	0	0	1	0	1	0	0
2929:	0	0	0	0	1	0	1	0
2937:	0	1	0	1	0	0	0	0
2945:	0	0	0	0	0	0	1	0
2953:	0	0	0	0	1	0	1	1

2961: 1 0 3 1 0 2 1 0

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Channel	1	0	3	1	0	2	1	0
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	0	0	0	0	0
2985:	0	1	0	0	0	1	0	0
2993:	1	1	0	1	0	0	0	0
3001:	2	0	1	0	0	1	0	0
3009:	0	0	0	0	0	0	0	2
3017:	0	1	0	0	0	0	0	0
3025:	0	0	0	2	0	0	1	0
3033:	0	0	0	0	0	0	0	1
3041:	0	1	0	0	0	0	0	0
3049:	0	0	1	1	1	0	0	0
3057:	0	1	0	0	1	0	0	0
3065:	0	0	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	2	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	1	0	0	1	0	0
3113:	0	0	0	0	0	0	0	1
3121:	0	0	1	0	0	0	0	0
3129:	0	0	1	1	0	1	0	1
3137:	0	0	0	1	0	0	1	0
3145:	1	0	0	0	0	0	1	1
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	1	0
3169:	0	0	0	0	0	0	1	0
3177:	0	1	0	1	0	0	0	0
3185:	0	0	1	0	0	0	0	0
3193:	0	0	0	2	0	0	0	1
3201:	0	0	0	0	0	0	1	0
3209:	0	0	0	0	0	0	1	0
3217:	0	0	0	0	1	0	0	0
3225:	0	0	0	0	0	0	0	1
3233:	0	0	0	0	0	0	0	1
3241:	0	0	0	0	0	0	0	0
3249:	1	0	0	1	0	0	1	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	1	0	0	1
3273:	0	0	1	0	0	0	0	0
3281:	2	0	0	0	0	0	0	2
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	1	0	1	0	0	0
3313:	0	0	0	1	0	0	0	2
3321:	0	0	1	0	0	0	0	0
3329:	0	0	0	0	0	0	0	1
3337:	0	0	0	1	1	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	1	0	0	0	0	0
3385:	0	0	0	0	0	1	0	0

3393: 0 0 0 0 0 0 0 0 2

Sample Title: CP4104S11-12

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	0	0
3409:	2	1	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	1	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	0	0
3465:	1	0	0	0	1	0	0	0
3473:	0	0	0	1	0	1	0	0
3481:	0	0	0	0	0	0	0	1
3489:	0	0	0	0	0	0	0	0
3497:	2	1	0	1	0	0	0	0
3505:	0	0	0	1	0	0	0	0
3513:	0	1	0	1	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	1	0	1
3537:	0	0	0	0	1	0	0	0
3545:	0	0	0	0	0	0	1	0
3553:	0	1	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	1	0	0	0	0	0	1
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	1	0	0	0	1	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	1	0	0	0	0	0	0	1
3641:	0	0	0	1	0	1	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	1	0	0
3665:	0	0	0	0	0	0	1	0
3673:	0	1	1	1	1	0	0	0
3681:	1	0	0	0	0	0	0	0
3689:	0	0	0	2	0	2	0	1
3697:	0	0	0	1	0	0	0	0
3705:	0	1	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	1	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	1	0	0	0	0	0
3745:	0	1	0	0	0	1	0	0
3753:	1	0	0	0	0	1	0	1
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	1	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	1	1	1	1
3801:	0	0	0	1	0	0	0	1
3809:	0	0	1	0	0	0	0	0
3817:	0	0	2	0	0	0	0	0

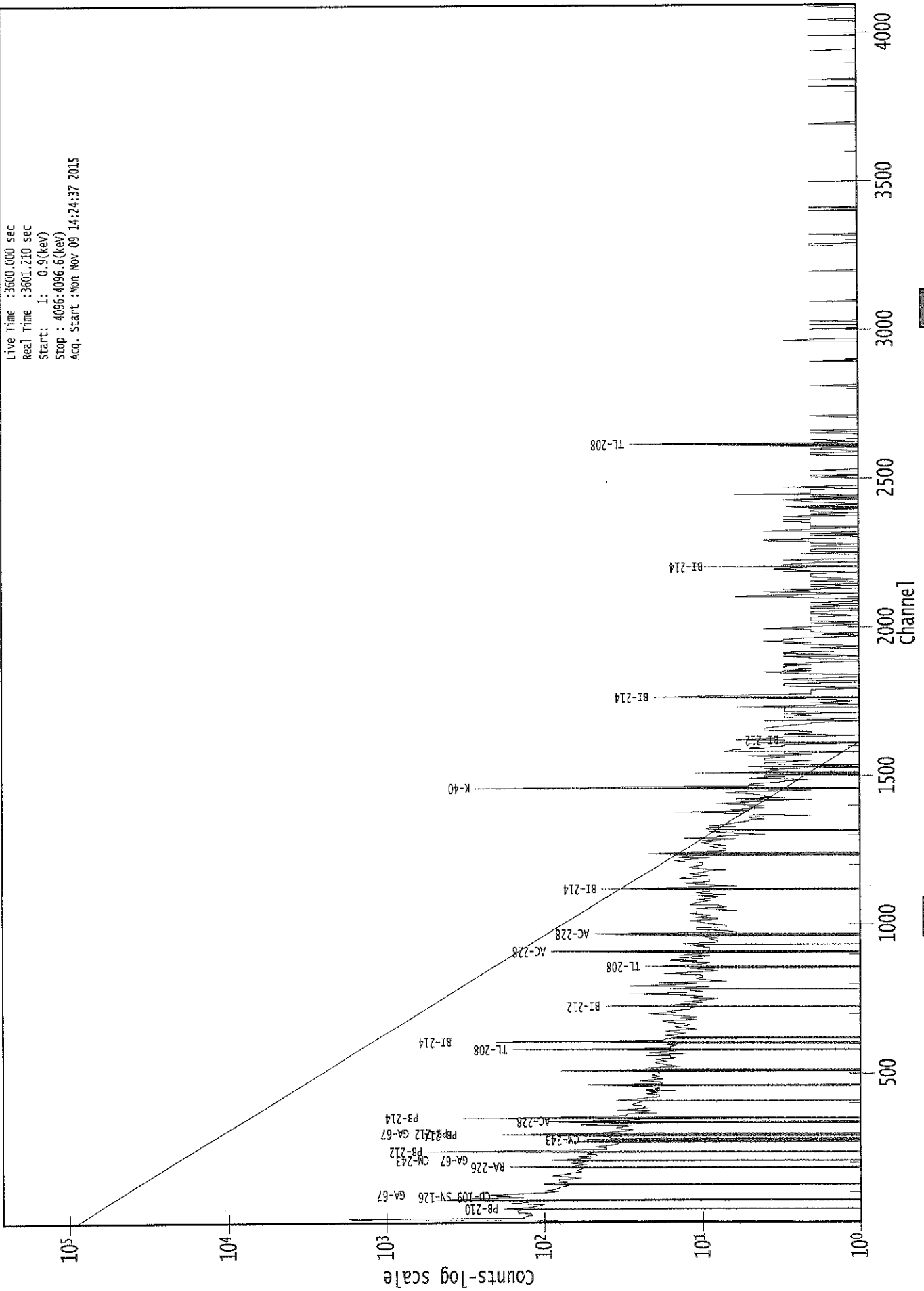
3825: 0 1 0 0 0 0 0 1

Sample Title: CP4104S11-12

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

0000029344.CNF

Live Time : 3600.000 sec
Real Time : 3601.210 sec
Start: 1: 0.9(keV)
Stop : 4096.4096.6(keV)
Acq. Start: Mon Nov 09 14:24:37 2015



KCS
11/9/15Analysis Report for 1510088-07
CP4104S17-18

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-07
Sample Description : CP4104S17-18
Sample Type : SOIL

Sample Size : 5.550E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 8:59:00AM
Acquisition Started : 11/9/2015 2:27:41PM

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 : 29345

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

Analysis Report for 1510088-07
CP4104S17-18

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 3:27:59PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	38.53	38.77	0.0000	0.00
2	47.10	47.33	0.0000	0.00
3	63.02	63.25	0.0000	0.00
4	76.42	76.64	0.0000	0.00
5	87.21	87.41	0.0000	0.00
6	93.13	93.34	0.0000	0.00
7	186.57	186.73	0.0000	0.00
8	209.22	209.37	0.0000	0.00
9	238.89	239.02	0.0000	0.00
10	241.87	241.99	0.0000	0.00
11	295.49	295.59	0.0000	0.00
12	301.48	301.58	0.0000	0.00
13	308.62	308.71	0.0000	0.00
14	338.70	338.78	0.0000	0.00
15	352.13	352.20	0.0000	0.00
16	416.27	416.31	0.0000	0.00
17	462.79	462.80	0.0000	0.00
18	502.00	502.00	0.0000	0.00
19	511.14	511.13	0.0000	0.00
20	583.37	583.32	0.0000	0.00
21	609.80	609.75	0.0000	0.00
22	727.43	727.32	0.0000	0.00
23	785.33	785.19	0.0000	0.00
24	860.27	860.10	0.0000	0.00
25	908.28	908.09	0.0000	0.00
26	911.41	911.22	0.0000	0.00
27	969.04	968.82	0.0000	0.00
28	987.21	986.98	0.0000	0.00
29	1032.54	1032.29	0.0000	0.00
30	1052.35	1052.09	0.0000	0.00
31	1077.03	1076.76	0.0000	0.00
32	1117.95	1117.67	0.0000	0.00
33	1121.29	1121.00	0.0000	0.00
34	1376.97	1376.58	0.0000	0.00
35	1432.21	1431.80	0.0000	0.00
36	1461.19	1460.77	0.0000	0.00
37	1508.90	1508.46	0.0000	0.00
38	1587.67	1587.20	0.0000	0.00
39	1662.21	1661.71	0.0000	0.00
40	1685.83	1685.32	0.0000	0.00
41	1730.73	1730.21	0.0000	0.00
42	1765.52	1764.99	0.0000	0.00

Analysis Report for 1510088-07
CP4104S17-18

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1847.31	1846.75	0.0000	0.00
44	2021.77	2021.16	0.0000	0.00
45	2126.65	2126.00	0.0000	0.00
46	2192.22	2191.56	0.0000	0.00
47	2203.25	2202.58	0.0000	0.00
48	2332.07	2331.36	0.0000	0.00
49	2342.45	2341.74	0.0000	0.00
50	2382.12	2381.40	0.0000	0.00
51	2391.11	2390.39	0.0000	0.00
52	2615.09	2614.31	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510088-07

CP4104S17-18

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 3:27:59PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	38.53	35 -	42	38.77	8.50E+01	88.20	1.24E+03	4.56
2	47.10	44 -	50	47.33	1.25E+02	85.80	1.25E+03	1.06
3	63.02	60 -	66	63.25	1.74E+02	97.75	1.62E+03	2.09
4	76.42	71 -	81	76.64	1.04E+03	151.83	2.51E+03	3.86
5	87.21	83 -	91	87.41	2.13E+02	118.63	2.04E+03	1.83
6	93.13	91 -	96	93.34	2.18E+02	83.90	1.16E+03	1.39
7	186.57	181 -	192	186.73	2.21E+02	96.21	1.04E+03	1.96
8	209.22	206 -	212	209.37	5.70E+01	59.49	6.02E+02	1.97
M m 9	238.89	233 -	246	239.02	7.13E+02	67.35	3.53E+02	1.68
10	241.87	233 -	246	241.99	1.42E+02	73.94	4.34E+02	2.29
11	295.49	292 -	298	295.59	1.94E+02	49.49	3.05E+02	1.87
12	301.48	299 -	305	301.58	7.94E+01	41.21	2.43E+02	2.11
13	308.62	307 -	312	308.71	2.81E+01	33.45	2.02E+02	4.36
14	338.70	335 -	343	338.78	1.40E+02	54.37	3.68E+02	1.68
15	352.13	348 -	355	352.20	2.92E+02	54.22	2.94E+02	1.66
16	416.27	414 -	419	416.31	2.25E+01	28.28	1.39E+02	2.36
17	462.79	459 -	467	462.80	6.05E+01	37.50	1.77E+02	1.49
M m 18	502.00	499 -	517	502.00	2.35E+01	24.12	9.00E+01	1.93
19	511.14	499 -	517	511.13	1.48E+02	39.54	1.35E+02	3.12
20	583.37	578 -	587	583.32	1.75E+02	47.29	2.18E+02	2.00
21	609.80	605 -	614	609.75	2.34E+02	46.42	1.72E+02	1.99
22	727.43	724 -	731	727.32	3.19E+01	30.46	1.36E+02	2.33
23	785.33	780 -	789	785.19	4.39E+01	26.44	7.42E+01	2.95
24	860.27	856 -	864	860.10	3.17E+01	26.70	9.06E+01	1.97
M m 25	908.28	907 -	918	908.09	1.33E+01	10.77	2.92E+01	2.38
26	911.41	907 -	918	911.22	1.39E+02	29.26	5.63E+01	2.39
27	969.04	963 -	973	968.82	8.53E+01	38.11	1.47E+02	1.82
28	987.21	984 -	991	986.98	1.84E+01	20.30	5.71E+01	1.58
M m 29	1032.54	1020 -	1055	1032.29	1.97E+01	18.00	4.00E+01	2.70
30	1052.35	1020 -	1055	1052.09	1.51E+01	16.85	4.00E+01	2.71
31	1077.03	1073 -	1082	1076.76	2.31E+01	23.26	6.18E+01	2.31
M m 32	1117.95	1116 -	1125	1117.67	1.01E+01	10.79	2.47E+01	3.05
33	1121.29	1116 -	1125	1121.00	5.36E+01	23.42	6.48E+01	2.27
34	1376.97	1370 -	1380	1376.58	2.86E+01	16.76	2.28E+01	3.41
35	1432.21	1429 -	1435	1431.80	1.27E+01	8.26	2.64E+00	3.24
36	1461.19	1455 -	1465	1460.77	5.04E+02	47.60	3.34E+01	1.98
37	1508.90	1504 -	1512	1508.46	1.20E+01	12.85	1.80E+01	1.90
38	1587.67	1582 -	1590	1587.20	1.28E+01	14.04	2.25E+01	1.14
39	1662.21	1659 -	1665	1661.71	7.38E+00	9.42	1.12E+01	1.04
40	1685.83	1683 -	1687	1685.32	6.94E+00	6.18	2.13E+00	1.37

Analysis Report for 1510088-07

CP4104S17-18

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1730.73	1726 - 1735		1730.21	1.33E+01	10.86	7.41E+00	2.15
42	1765.52	1760 - 1771		1764.99	3.80E+01	15.75	1.20E+01	3.58
43	1847.31	1843 - 1850		1846.75	9.71E+00	11.49	1.46E+01	1.35
44	2021.77	2018 - 2023		2021.16	7.50E+00	6.71	3.00E+00	1.90
45	2126.65	2123 - 2129		2126.00	9.00E+00	6.00	0.00E+00	3.50
46	2192.22	2186 - 2195		2191.56	9.00E+00	6.00	0.00E+00	2.75
47	2203.25	2197 - 2206		2202.58	2.18E+01	11.00	4.38E+00	4.41
48	2332.07	2325 - 2336		2331.36	7.95E+00	8.94	6.09E+00	1.07
49	2342.45	2337 - 2345		2341.74	8.91E+00	8.02	4.18E+00	4.50
50	2382.12	2379 - 2384		2381.40	5.00E+00	4.47	0.00E+00	1.70
51	2391.11	2386 - 2394		2390.39	1.05E+01	10.02	8.93E+00	6.76
52	2615.09	2610 - 2618		2614.31	6.70E+01	16.37	0.00E+00	2.74

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 3:27:59PM

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	38.53	35 -	42	8.50E+01	88.20	1.24E+03	7.09E+01
2	47.10	44 -	50	1.25E+02	85.80	1.25E+03	6.81E+01
3	63.02	60 -	66	1.74E+02	97.75	1.62E+03	7.74E+01
4	76.42	71 -	81	1.04E+03	151.83	2.51E+03	1.13E+02
5	87.21	83 -	91	2.13E+02	118.63	2.04E+03	9.45E+01
6	93.13	91 -	96	2.18E+02	83.90	1.16E+03	6.46E+01
7	186.57	181 -	192	2.21E+02	96.21	1.04E+03	7.52E+01
8	209.22	206 -	212	5.70E+01	59.49	6.02E+02	4.73E+01
M	9	233 -	246	7.13E+02	67.35	3.53E+02	3.09E+01
m	10	233 -	246	1.42E+02	73.94	4.34E+02	3.43E+01
11	295.49	292 -	298	1.94E+02	49.49	3.05E+02	3.36E+01
12	301.48	299 -	305	7.94E+01	41.21	2.43E+02	3.05E+01
13	308.62	307 -	312	2.81E+01	33.45	2.02E+02	2.61E+01
14	338.70	335 -	343	1.40E+02	54.37	3.68E+02	4.02E+01
15	352.13	348 -	355	2.92E+02	54.22	2.94E+02	3.46E+01
16	416.27	414 -	419	2.25E+01	28.28	1.39E+02	2.19E+01

: 00561

Analysis Report for 1510088-07

CP4104S17-18

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	17	462.79	459 -	467	6.05E+01	37.50	1.77E+02	2.80E+01
M	18	502.00	499 -	517	2.35E+01	24.12	9.00E+01	1.56E+01
m	19	511.14	499 -	517	1.48E+02	39.54	1.35E+02	1.91E+01
	20	583.37	578 -	587	1.75E+02	47.29	2.18E+02	3.22E+01
	21	609.80	605 -	614	2.34E+02	46.42	1.72E+02	2.87E+01
	22	727.43	724 -	731	3.19E+01	30.46	1.36E+02	2.33E+01
	23	785.33	780 -	789	4.39E+01	26.44	7.42E+01	1.88E+01
	24	860.27	856 -	864	3.17E+01	26.70	9.06E+01	1.99E+01
M	25	908.28	907 -	918	1.33E+01	10.77	2.92E+01	8.88E+00
m	26	911.41	907 -	918	1.39E+02	29.26	5.63E+01	1.23E+01
	27	969.04	963 -	973	8.53E+01	38.11	1.47E+02	2.74E+01
	28	987.21	984 -	991	1.84E+01	20.30	5.71E+01	1.51E+01
M	29	1032.54	1020 -	1055	1.97E+01	18.00	4.00E+01	1.04E+01
m	30	1052.35	1020 -	1055	1.51E+01	16.85	4.00E+01	1.04E+01
	31	1077.03	1073 -	1082	2.31E+01	23.26	6.18E+01	1.74E+01
M	32	1117.95	1116 -	1125	1.01E+01	10.79	2.47E+01	8.17E+00
m	33	1121.29	1116 -	1125	5.36E+01	23.42	6.48E+01	1.32E+01
	34	1376.97	1370 -	1380	2.86E+01	16.76	2.28E+01	1.06E+01
	35	1432.21	1429 -	1435	1.27E+01	8.26	2.64E+00	3.44E+00
	36	1461.19	1455 -	1465	5.04E+02	47.60	3.34E+01	1.30E+01
	37	1508.90	1504 -	1512	1.20E+01	12.85	1.80E+01	8.89E+00
	38	1587.67	1582 -	1590	1.28E+01	14.04	2.25E+01	9.94E+00
	39	1662.21	1659 -	1665	7.38E+00	9.42	1.12E+01	6.33E+00
	40	1685.83	1683 -	1687	6.94E+00	6.18	2.13E+00	2.66E+00
	41	1730.73	1726 -	1735	1.33E+01	10.86	7.41E+00	6.62E+00
	42	1765.52	1760 -	1771	3.80E+01	15.75	1.20E+01	8.05E+00
	43	1847.31	1843 -	1850	9.71E+00	11.49	1.46E+01	7.93E+00
	44	2021.77	2018 -	2023	7.50E+00	6.71	3.00E+00	3.18E+00
	45	2126.65	2123 -	2129	9.00E+00	6.00	0.00E+00	0.00E+00
	46	2192.22	2186 -	2195	9.00E+00	6.00	0.00E+00	0.00E+00
	47	2203.25	2197 -	2206	2.18E+01	11.00	4.38E+00	4.78E+00
	48	2332.07	2325 -	2336	7.95E+00	8.94	6.09E+00	5.71E+00
	49	2342.45	2337 -	2345	8.91E+00	8.02	4.18E+00	4.40E+00
	50	2382.12	2379 -	2384	5.00E+00	4.47	0.00E+00	0.00E+00
	51	2391.11	2386 -	2394	1.05E+01	10.02	8.93E+00	6.28E+00
	52	2615.09	2610 -	2618	6.70E+01	16.37	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 1510088-07
 CP4104S17-18

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 3:27:59PM

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

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
 Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	38.53	35 -	42	38.77	8.50E+01	88.20	1.24E+03	.....
2	47.10	44 -	50	47.33	1.25E+02	85.80	1.25E+03	PB-210
3	63.02	60 -	66	63.25	1.74E+02	97.75	1.62E+03	TH-230 TH-234
4	76.42	71 -	81	76.64	1.04E+03	151.83	2.51E+03	.....
5	87.21	83 -	91	87.41	2.13E+02	118.63	2.04E+03	SN-126 NP-237 EU-155 CD-109
6	93.13	91 -	96	93.34	2.18E+02	83.90	1.16E+03	GA-67
7	186.57	181 -	192	186.73	2.21E+02	96.21	1.04E+03	RA-226
8	209.22	206 -	212	209.37	5.70E+01	59.49	6.02E+02	GA-67 CM-243
M 9	238.89	233 -	246	239.02	7.13E+02	67.35	3.53E+02	PB-212
m 10	241.87	233 -	246	241.99	1.42E+02	73.94	4.34E+02	RA-224
11	295.49	292 -	298	295.59	1.94E+02	49.49	3.05E+02	PB-214
12	301.48	299 -	305	301.58	7.94E+01	41.21	2.43E+02	.....
13	308.62	307 -	312	308.71	2.81E+01	33.45	2.02E+02	IR-192
14	338.70	335 -	343	338.78	1.40E+02	54.37	3.68E+02	AC-228
15	352.13	348 -	355	352.20	2.92E+02	54.22	2.94E+02	PB-214
16	416.27	414 -	419	416.31	2.25E+01	28.28	1.39E+02	.....
17	462.79	459 -	467	462.80	6.05E+01	37.50	1.77E+02	SB-125
M 18	502.00	499 -	517	502.00	2.35E+01	24.12	9.00E+01	.....
m 19	511.14	499 -	517	511.13	1.48E+02	39.54	1.35E+02	.....
20	583.37	578 -	587	583.32	1.75E+02	47.29	2.18E+02	TL-208
21	609.80	605 -	614	609.75	2.34E+02	46.42	1.72E+02	BI-214
22	727.43	724 -	731	727.32	3.19E+01	30.46	1.36E+02	BI-212
23	785.33	780 -	789	785.19	4.39E+01	26.44	7.42E+01	.....
24	860.27	856 -	864	860.10	3.17E+01	26.70	9.06E+01	TL-208
M 25	908.28	907 -	918	908.09	1.33E+01	10.77	2.92E+01	.....
m 26	911.41	907 -	918	911.22	1.39E+02	29.26	5.63E+01	AC-228 LU-172
27	969.04	963 -	973	968.82	8.53E+01	38.11	1.47E+02	AC-228
28	987.21	984 -	991	986.98	1.84E+01	20.30	5.71E+01	.....
M 29	1032.54	1020 -	1055	1032.29	1.97E+01	18.00	4.00E+01	.....
m 30	1052.35	1020 -	1055	1052.09	1.51E+01	16.85	4.00E+01	.....
31	1077.03	1073 -	1082	1076.76	2.31E+01	23.26	6.18E+01	.....
M 32	1117.95	1116 -	1125	1117.67	1.01E+01	10.79	2.47E+01	.....
m 33	1121.29	1116 -	1125	1121.00	5.36E+01	23.42	6.48E+01	TA-182 SC-46 BI-214

Analysis Report for 1510088-07

CP4104S17-18

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
34	1376.97	1370 -	1380	1376.58	2.86E+01	16.76	2.28E+01	.....
35	1432.21	1429 -	1435	1431.80	1.27E+01	8.26	2.64E+00	.....
36	1461.19	1455 -	1465	1460.77	5.04E+02	47.60	3.34E+01	K-40
37	1508.90	1504 -	1512	1508.46	1.20E+01	12.85	1.80E+01	.....
38	1587.67	1582 -	1590	1587.20	1.28E+01	14.04	2.25E+01	.....
39	1662.21	1659 -	1665	1661.71	7.38E+00	9.42	1.12E+01	.....
40	1685.83	1683 -	1687	1685.32	6.94E+00	6.18	2.13E+00	.....
41	1730.73	1726 -	1735	1730.21	1.33E+01	10.86	7.41E+00	.....
42	1765.52	1760 -	1771	1764.99	3.80E+01	15.75	1.20E+01	.....
43	1847.31	1843 -	1850	1846.75	9.71E+00	11.49	1.46E+01	.....
44	2021.77	2018 -	2023	2021.16	7.50E+00	6.71	3.00E+00	.....
45	2126.65	2123 -	2129	2126.00	9.00E+00	6.00	0.00E+00	.....
46	2192.22	2186 -	2195	2191.56	9.00E+00	6.00	0.00E+00	.....
47	2203.25	2197 -	2206	2202.58	2.18E+01	11.00	4.38E+00	BI-214
48	2332.07	2325 -	2336	2331.36	7.95E+00	8.94	6.09E+00	.....
49	2342.45	2337 -	2345	2341.74	8.91E+00	8.02	4.18E+00	.....
50	2382.12	2379 -	2384	2381.40	5.00E+00	4.47	0.00E+00	.....
51	2391.11	2386 -	2394	2390.39	1.05E+01	10.02	8.93E+00	.....
52	2615.09	2610 -	2618	2614.31	6.70E+01	16.37	0.00E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 3:27:59PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	38.53	8.50E+01	88.20	1.02E-02	1.58E-03
2	47.10	1.25E+02	85.80	1.53E-02	1.58E-03
3	63.02	1.74E+02	97.75	2.15E-02	1.70E-03
4	76.42	1.04E+03	151.83	2.38E-02	2.14E-03
5	87.21	2.13E+02	118.63	2.44E-02	2.50E-03
6	93.13	2.18E+02	83.90	2.44E-02	2.41E-03
7	186.57	2.21E+02	96.21	1.82E-02	1.42E-03
8	209.22	5.70E+01	59.49	1.68E-02	1.31E-03
M	9	238.89	7.13E+02	1.52E-02	1.18E-03
m	10	241.87	1.42E+02	1.51E-02	1.17E-03
	11	295.49	1.94E+02	1.28E-02	9.74E-04

Analysis Report for 1510088-07
CP4104S17-18

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	12	301.48	7.94E+01	41.21	1.26E-02	9.65E-04
	13	308.62	2.81E+01	33.45	1.24E-02	9.55E-04
	14	338.70	1.40E+02	54.37	1.14E-02	9.12E-04
	15	352.13	2.92E+02	54.22	1.11E-02	8.93E-04
	16	416.27	2.25E+01	28.28	9.57E-03	8.13E-04
	17	462.79	6.05E+01	37.50	8.73E-03	7.66E-04
M	18	502.00	2.35E+01	24.12	8.14E-03	7.27E-04
m	19	511.14	1.48E+02	39.54	8.01E-03	7.18E-04
	20	583.37	1.75E+02	47.29	7.14E-03	6.46E-04
	21	609.80	2.34E+02	46.42	6.87E-03	6.20E-04
	22	727.43	3.19E+01	30.46	5.89E-03	5.14E-04
	23	785.33	4.39E+01	26.44	5.51E-03	4.67E-04
	24	860.27	3.17E+01	26.70	5.10E-03	4.06E-04
M	25	908.28	1.33E+01	10.77	4.87E-03	3.73E-04
m	26	911.41	1.39E+02	29.26	4.85E-03	3.72E-04
	27	969.04	8.53E+01	38.11	4.60E-03	3.61E-04
	28	987.21	1.84E+01	20.30	4.53E-03	3.58E-04
M	29	1032.54	1.97E+01	18.00	4.36E-03	3.50E-04
m	30	1052.35	1.51E+01	16.85	4.30E-03	3.46E-04
	31	1077.03	2.31E+01	23.26	4.21E-03	3.41E-04
M	32	1117.95	1.01E+01	10.79	4.08E-03	3.34E-04
m	33	1121.29	5.36E+01	23.42	4.07E-03	3.33E-04
	34	1376.97	2.86E+01	16.76	3.45E-03	2.82E-04
	35	1432.21	1.27E+01	8.26	3.34E-03	2.74E-04
	36	1461.19	5.04E+02	47.60	3.29E-03	2.69E-04
	37	1508.90	1.20E+01	12.85	3.21E-03	2.62E-04
	38	1587.67	1.28E+01	14.04	3.09E-03	2.50E-04
	39	1662.21	7.38E+00	9.42	2.98E-03	2.39E-04
	40	1685.83	6.94E+00	6.18	2.95E-03	2.36E-04
	41	1730.73	1.33E+01	10.86	2.90E-03	2.29E-04
	42	1765.52	3.80E+01	15.75	2.86E-03	2.24E-04
	43	1847.31	9.71E+00	11.49	2.77E-03	2.13E-04
	44	2021.77	7.50E+00	6.71	2.60E-03	2.13E-04
	45	2126.65	9.00E+00	6.00	2.52E-03	2.13E-04
	46	2192.22	9.00E+00	6.00	2.47E-03	2.13E-04
	47	2203.25	2.18E+01	11.00	2.46E-03	2.13E-04
	48	2332.07	7.95E+00	8.94	2.38E-03	2.13E-04
	49	2342.45	8.91E+00	8.02	2.38E-03	2.13E-04
	50	2382.12	5.00E+00	4.47	2.35E-03	2.13E-04
	51	2391.11	1.05E+01	10.02	2.35E-03	2.13E-04
	52	2615.09	6.70E+01	16.37	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 1510088-07

CP4104S17-18

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 3:27:59PM

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	38.53	8.50E+01	88.20			8.50E+01	8.82E+01
2	47.10	1.25E+02	85.80	5.28E+01	1.09E+01	7.26E+01	8.65E+01
3	63.02	1.74E+02	97.75	5.52E+01	2.05E+01	1.19E+02	9.99E+01
4	76.42	1.04E+03	151.83			1.04E+03	1.52E+02
5	87.21	2.13E+02	118.63	1.52E+01	5.37E+00	1.98E+02	1.19E+02
6	93.13	2.18E+02	83.90	9.04E+01	2.62E+01	1.27E+02	8.79E+01
7	186.57	2.21E+02	96.21	3.93E+01	6.56E+00	1.82E+02	9.64E+01
8	209.22	5.70E+01	59.49			5.70E+01	5.95E+01
M	9	238.89	7.13E+02	1.34E+01	2.14E+00	7.00E+02	6.74E+01
m	10	241.87	1.42E+02	2.69E+00	1.46E+00	1.39E+02	7.40E+01
	11	295.49	1.94E+02			1.94E+02	4.95E+01
	12	301.48	7.94E+01			7.94E+01	4.12E+01
	13	308.62	2.81E+01			2.81E+01	3.35E+01
	14	338.70	1.40E+02			1.40E+02	5.44E+01
	15	352.13	2.92E+02	54.22	3.99E+00	2.88E+02	5.44E+01
	16	416.27	2.25E+01	28.28		2.25E+01	2.83E+01
	17	462.79	6.05E+01	37.50		6.05E+01	3.75E+01
M	18	502.00	2.35E+01	24.12		2.35E+01	2.41E+01
m	19	511.14	1.48E+02	39.54	5.78E+01	4.60E+00	9.06E+01
	20	583.37	1.75E+02	47.29	5.96E+00	3.46E+00	1.69E+02
	21	609.80	2.34E+02	46.42	6.71E+00	3.44E+00	2.27E+02
	22	727.43	3.19E+01	30.46		3.19E+01	3.05E+01
	23	785.33	4.39E+01	26.44		4.39E+01	2.64E+01
	24	860.27	3.17E+01	26.70		3.17E+01	2.67E+01
M	25	908.28	1.33E+01	10.77		1.33E+01	1.08E+01
m	26	911.41	1.39E+02	29.26	2.32E+00	2.73E+00	1.37E+02
	27	969.04	8.53E+01	38.11		8.53E+01	3.81E+01
	28	987.21	1.84E+01	20.30		1.84E+01	2.03E+01
M	29	1032.54	1.97E+01	18.00		1.97E+01	1.80E+01
m	30	1052.35	1.51E+01	16.85		1.51E+01	1.69E+01
	31	1077.03	2.31E+01	23.26		2.31E+01	2.33E+01
M	32	1117.95	1.01E+01	10.79		1.01E+01	1.08E+01
m	33	1121.29	5.36E+01	23.42		5.36E+01	2.34E+01
	34	1376.97	2.86E+01	16.76		2.86E+01	1.68E+01
	35	1432.21	1.27E+01	8.26		1.27E+01	8.26E+00
	36	1461.19	5.04E+02	47.60		5.04E+02	4.76E+01
	37	1508.90	1.20E+01	12.85		1.20E+01	1.28E+01
	38	1587.67	1.28E+01	14.04		1.28E+01	1.40E+01
	39	1662.21	7.38E+00	9.42		7.38E+00	9.42E+00
	40	1685.83	6.94E+00	6.18		6.94E+00	6.18E+00
	41	1730.73	1.33E+01	10.86		1.33E+01	1.09E+01
	42	1765.52	3.80E+01	15.75	1.45E+00	1.16E+00	3.65E+01
	43	1847.31	9.71E+00	11.49		9.71E+00	1.15E+01
	44	2021.77	7.50E+00	6.71		7.50E+00	6.71E+00

Analysis Report for 1510088-07

CP4104S17-18

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
45	2126.65	9.00E+00	6.00			9.00E+00	6.00E+00
46	2192.22	9.00E+00	6.00			9.00E+00	6.00E+00
47	2203.25	2.18E+01	11.00			2.18E+01	1.10E+01
48	2332.07	7.95E+00	8.94			7.95E+00	8.94E+00
49	2342.45	8.91E+00	8.02			8.91E+00	8.02E+00
50	2382.12	5.00E+00	4.47			5.00E+00	4.47E+00
51	2391.11	1.05E+01	10.02			1.05E+01	1.00E+01
52	2615.09	6.70E+01	16.37			6.70E+01	1.64E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 3:27:59PM
 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	38.53	8.50E+01	88.20			8.50E+01	8.82E+01
2	47.10	1.25E+02	85.80	5.28E+01	1.09E+01	7.26E+01	8.65E+01
3	63.02	1.74E+02	97.75	5.52E+01	2.05E+01	1.19E+02	9.99E+01
4	76.42	1.04E+03	151.83			1.04E+03	1.52E+02
5	87.21	2.13E+02	118.63	1.52E+01	5.37E+00	1.98E+02	1.19E+02
6	93.13	2.18E+02	83.90	9.04E+01	2.62E+01	1.27E+02	8.79E+01
7	186.57	2.21E+02	96.21	3.93E+01	6.56E+00	1.82E+02	9.64E+01
8	209.22	5.70E+01	59.49			5.70E+01	5.95E+01
M	9	238.89	7.13E+02	1.34E+01	2.14E+00	7.00E+02	6.74E+01
m	10	241.87	1.42E+02	2.69E+00	1.46E+00	1.39E+02	7.40E+01
	11	295.49	1.94E+02			1.94E+02	4.95E+01
	12	301.48	7.94E+01			7.94E+01	4.12E+01
	13	308.62	2.81E+01			2.81E+01	3.35E+01
	14	338.70	1.40E+02			1.40E+02	5.44E+01
	15	352.13	2.92E+02	3.99E+00	4.73E+00	2.88E+02	5.44E+01
	16	416.27	2.25E+01			2.25E+01	2.83E+01
	17	462.79	6.05E+01			6.05E+01	3.75E+01
M	18	502.00	2.35E+01			2.35E+01	2.41E+01
m	19	511.14	1.48E+02	5.78E+01	4.60E+00	9.06E+01	3.98E+01
	20	583.37	1.75E+02	5.96E+00	3.46E+00	1.69E+02	4.74E+01

Analysis Report for 1510088-07

CP4104S17-18

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
21	609.80	2.34E+02	46.42	6.71E+00	3.44E+00	2.27E+02	4.65E+01
22	727.43	3.19E+01	30.46			3.19E+01	3.05E+01
23	785.33	4.39E+01	26.44			4.39E+01	2.64E+01
24	860.27	3.17E+01	26.70			3.17E+01	2.67E+01
M	25	908.28	1.33E+01			1.33E+01	1.08E+01
m	26	911.41	1.39E+02	2.32E+00	2.73E+00	1.37E+02	2.94E+01
	27	969.04	8.53E+01			8.53E+01	3.81E+01
	28	987.21	1.84E+01			1.84E+01	2.03E+01
M	29	1032.54	1.97E+01			1.97E+01	1.80E+01
m	30	1052.35	1.51E+01			1.51E+01	1.69E+01
	31	1077.03	2.31E+01			2.31E+01	2.33E+01
M	32	1117.95	1.01E+01			1.01E+01	1.08E+01
m	33	1121.29	5.36E+01			5.36E+01	2.34E+01
	34	1376.97	2.86E+01			2.86E+01	1.68E+01
	35	1432.21	1.27E+01			1.27E+01	8.26E+00
	36	1461.19	5.04E+02			5.04E+02	4.76E+01
	37	1508.90	1.20E+01			1.20E+01	1.28E+01
	38	1587.67	1.28E+01			1.28E+01	1.40E+01
	39	1662.21	7.38E+00			7.38E+00	9.42E+00
	40	1685.83	6.94E+00			6.94E+00	6.18E+00
	41	1730.73	1.33E+01			1.33E+01	1.09E+01
	42	1765.52	3.80E+01	1.45E+00	1.16E+00	3.65E+01	1.58E+01
	43	1847.31	9.71E+00			9.71E+00	1.15E+01
	44	2021.77	7.50E+00			7.50E+00	6.71E+00
	45	2126.65	9.00E+00			9.00E+00	6.00E+00
	46	2192.22	9.00E+00			9.00E+00	6.00E+00
	47	2203.25	2.18E+01			2.18E+01	1.10E+01
	48	2332.07	7.95E+00			7.95E+00	8.94E+00
	49	2342.45	8.91E+00			8.91E+00	8.02E+00
	50	2382.12	5.00E+00			5.00E+00	4.47E+00
	51	2391.11	1.05E+01			1.05E+01	1.00E+01
	52	2615.09	6.70E+01			6.70E+01	1.64E+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

: 00568

Analysis Report for 1510088-07
 CP4104S17-18

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.977	1460.81 *	10.67	1.94E+01	2.46E+00
GA-67	0.381	93.31 *	35.70	1.87E+02	8.25E+02
		208.95 *	2.24	1.94E+03	8.40E+03
		300.22	16.00		
CD-109	0.896	88.03 *	3.72	3.09E+00	1.89E+00
SN-126	0.979	87.57 *	37.00	2.96E-01	1.81E-01
EU-155	0.314	86.50 *	30.90	3.59E-01	2.19E-01
		105.30	20.70		
TL-208	0.981	583.14 *	30.22	1.06E+00	3.12E-01
		860.37 *	4.48	1.88E+00	1.59E+00
		2614.66 *	35.85	1.13E+00	2.96E-01
PB-210	0.943	46.50 *	4.25	1.51E+00	1.81E+00
BI-212	0.762	727.17 *	11.80	6.21E-01	5.95E-01
		1620.62	2.75		
PB-212	0.885	238.63 *	44.60	1.40E+00	1.73E-01
		300.09	3.41		
BI-214	0.712	609.31 *	46.30	9.67E-01	2.16E-01
		1120.29 *	15.10	1.18E+00	5.24E-01
		1764.49	15.80		
		2204.22 *	4.98	2.40E+00	1.23E+00
PB-214	0.991	295.21 *	19.19	1.07E+00	2.84E-01
		351.92 *	37.19	9.47E-01	1.95E-01
RA-224	0.882	240.98 *	3.95	3.16E+00	1.70E+00
RA-226	0.980	186.21 *	3.28	4.11E+00	7.84E+00
AC-228	0.986	338.32 *	11.40	1.45E+00	5.76E-01
		911.07 *	27.70	1.37E+00	3.14E-01
		969.11 *	16.60	1.51E+00	6.85E-01
TH-234	0.989	63.29 *	3.80	1.96E+00	1.66E+00
NP-237	0.924	86.50 *	12.60	8.70E-01	5.30E-01

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 3:27:59PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
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Analysis Report for 1510088-07

CP4104S17-18

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	38.53	2.36111E-02	51.88		
4	76.42	2.88275E-01	7.32		
12	301.48	2.20522E-02	25.95	Sum	
13	308.62	7.81438E-03	59.45	Tol.	IR-192
16	416.27	6.24396E-03	62.91		
17	462.79	1.68009E-02	31.00	Tol.	SB-125
M	18	502.00	6.53456E-03	51.28	
m	19	511.14	2.51573E-02	21.98	
23	785.33	1.21965E-02	30.11		
M	25	908.28	3.69795E-03	40.45	Sum
28	987.21	5.11820E-03	55.08		
M	29	1032.54	5.46510E-03	45.74	Sum
m	30	1052.35	4.19702E-03	55.77	
31	1077.03	6.41975E-03	50.32		
M	32	1117.95	2.81465E-03	53.26	
34	1376.97	7.94444E-03	29.31		
35	1432.21	3.52183E-03	32.58		
37	1508.90	3.33333E-03	53.52	Sum	
38	1587.67	3.54167E-03	55.08	Sum	
39	1662.21	2.05128E-03	63.79		
40	1685.83	1.92708E-03	44.57		
41	1730.73	3.69281E-03	40.86	Sum	
42	1765.52	1.01520E-02	21.60		
43	1847.31	2.69608E-03	59.19		
44	2021.77	2.08333E-03	44.72		
45	2126.65	2.50000E-03	33.33		
46	2192.22	2.50000E-03	33.33		
48	2332.07	2.20960E-03	56.22		
49	2342.45	2.47475E-03	44.99		
50	2382.12	1.38889E-03	44.72		
51	2391.11	2.92593E-03	47.59		

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 1510088-07
CP4104S17-18

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.97	1460.81 *	10.67	1.94E+01	2.46E+00
GA-67	0.38	93.31 *	35.70	1.87E+02	8.25E+02
		208.95 *	2.24	1.94E+03	8.40E+03
		300.22	16.00		
CD-109	0.89	88.03 *	3.72	3.09E+00	1.89E+00
SN-126	0.97	87.57 *	37.00	2.96E-01	1.81E-01
EU-155	0.31	86.50 *	30.90	3.59E-01	2.19E-01
		105.30	20.70		
TL-208	0.98	583.14 *	30.22	1.06E+00	3.12E-01
		860.37 *	4.48	1.88E+00	1.59E+00
		2614.66 *	35.85	1.13E+00	2.96E-01
PB-210	0.94	46.50 *	4.25	1.51E+00	1.81E+00
BI-212	0.76	727.17 *	11.80	6.21E-01	5.95E-01
		1620.62	2.75		
PB-212	0.88	238.63 *	44.60	1.40E+00	1.73E-01
		300.09	3.41		
BI-214	0.71	609.31 *	46.30	9.67E-01	2.16E-01
		1120.29 *	15.10	1.18E+00	5.24E-01
		1764.49	15.80		
PB-214	0.99	2204.22 *	4.98	2.40E+00	1.23E+00
		295.21 *	19.19	1.07E+00	2.84E-01
		351.92 *	37.19	9.47E-01	1.95E-01
RA-224	0.88	240.98 *	3.95	3.16E+00	1.70E+00
RA-226	0.98	186.21 *	3.28	4.11E+00	7.84E+00
AC-228	0.98	338.32 *	11.40	1.45E+00	5.76E-01
		911.07 *	27.70	1.37E+00	3.14E-01
		969.11 *	16.60	1.51E+00	6.85E-01
TH-234	0.98	63.29 *	3.80	1.96E+00	1.66E+00
NP-237	0.92	86.50 *	12.60	8.70E-01	5.30E-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 1510088-07
CP4104S17-18

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.977	1.94E+01	2.46E+00	
GA-67	0.381	2.13E+02	9.28E+02	
? CD-109	0.896	3.09E+00	1.89E+00	
? SN-126	0.979	2.96E-01	1.81E-01	
? EU-155	0.314	3.59E-01	2.19E-01	
TL-208	0.981	1.11E+00	2.13E-01	
PB-210	0.943	1.51E+00	1.81E+00	
BI-212	0.762	6.21E-01	5.95E-01	
PB-212	0.885	1.40E+00	1.73E-01	
BI-214	0.712	1.03E+00	1.97E-01	
PB-214	0.991	9.85E-01	1.61E-01	
RA-224	0.882	3.16E+00	1.70E+00	
RA-226	0.980	4.11E+00	7.84E+00	
AC-228	0.986	1.41E+00	2.56E-01	
TH-234	0.989	1.96E+00	1.66E+00	
? NP-237	0.924	8.70E-01	5.30E-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 2.00sigma

Analysis Report for 1510088-07
 CP4104S17-18

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 3:27:59PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	38.53	2.36111E-02	51.88		
4	76.42	2.88275E-01	7.32		
12	301.48	2.20522E-02	25.95	Sum	
13	308.62	7.81438E-03	59.45	Tol.	IR-192
16	416.27	6.24396E-03	62.91		
17	462.79	1.68009E-02	31.00	Tol.	SB-125
M 18	502.00	6.53456E-03	51.28		
m 19	511.14	2.51573E-02	21.98		
23	785.33	1.21965E-02	30.11		
M 25	908.28	3.69795E-03	40.45	Sum	
28	987.21	5.11820E-03	55.08		
M 29	1032.54	5.46510E-03	45.74	Sum	
m 30	1052.35	4.19702E-03	55.77		
31	1077.03	6.41975E-03	50.32		
M 32	1117.95	2.81465E-03	53.26		
34	1376.97	7.94444E-03	29.31		
35	1432.21	3.52183E-03	32.58		
37	1508.90	3.33333E-03	53.52	Sum	
38	1587.67	3.54167E-03	55.08	Sum	
39	1662.21	2.05128E-03	63.79		
40	1685.83	1.92708E-03	44.57		
41	1730.73	3.69281E-03	40.86	Sum	
42	1765.52	1.01520E-02	21.60		
43	1847.31	2.69608E-03	59.19		
44	2021.77	2.08333E-03	44.72		
45	2126.65	2.50000E-03	33.33		
46	2192.22	2.50000E-03	33.33		
48	2332.07	2.20960E-03	56.22		
49	2342.45	2.47475E-03	44.99		
50	2382.12	1.38889E-03	44.72		
51	2391.11	2.92593E-03	47.59		

Analysis Report for 1510088-07
CP4104S17-18

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	-6.19E-03	1.09E+00	1.09E+00
+ NA-22	1274.54	99.94	-6.96E-02	1.05E-01	1.05E-01
+ NA-24	1368.53	99.99	-1.64E+13	1.56E+14	3.13E+14
	2754.09	99.86	-4.23E+13		1.56E+14
+ AL-26	1808.65	99.76	2.15E-02	8.05E-02	8.05E-02
+ K-40	1460.81	* 10.67	1.94E+01	1.10E+00	1.10E+00
+ @ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+ TI-44	67.88	94.40	2.28E-02	7.68E-02	7.68E-02
	78.34	96.00	2.39E-01		9.41E-02
+ SC-46	889.25	99.98	-3.65E-02	1.12E-01	1.12E-01
	1120.51	99.99	2.30E-01		1.98E-01
+ V-48	983.52	99.98	3.11E-02	3.69E-01	3.69E-01
	1312.10	97.50	-7.96E-02		5.21E-01
+ CR-51	320.08	9.83	8.13E-01	1.65E+00	1.65E+00
+ MN-54	834.83	99.97	-6.08E-03	1.07E-01	1.07E-01
+ CO-56	846.75	99.96	-3.83E-02	1.23E-01	1.23E-01
	1037.75	14.03	2.68E-01		9.02E-01
	1238.25	67.00	4.92E-02		2.61E-01
	1771.40	15.51	-1.63E-01		7.65E-01
	2598.48	16.90	-1.05E-01		5.09E-01
+ CO-57	122.06	85.51	-1.26E-02	6.31E-02	6.31E-02
	136.48	10.60	9.84E-02		5.32E-01
+ CO-58	810.76	99.40	-3.43E-02	1.11E-01	1.11E-01
+ FE-59	1099.22	56.50	-1.23E-01	2.96E-01	2.96E-01
	1291.56	43.20	-5.34E-02		4.13E-01
+ CO-60	1173.22	100.00	2.85E-03	1.13E-01	1.13E-01
	1332.49	100.00	-7.16E-03		1.15E-01
+ ZN-65	1115.52	50.75	-3.21E-02	2.27E-01	2.27E-01
+ GA-67	93.31	* 35.70	1.87E+02	2.10E+02	2.10E+02
	208.95	* 2.24	1.94E+03		3.32E+03
	300.22	16.00	-1.36E+03		4.42E+02
+ SE-75	121.11	16.70	-1.11E-01	1.03E-01	3.52E-01

Analysis Report for 1510088-07
CP4104S17-18

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	-5.01E-02	1.03E-01	1.03E-01
		264.65	59.80	-1.29E-01		1.24E-01
		279.53	25.20	1.14E-01		3.44E-01
		400.65	11.40	-2.61E-01		7.66E-01
+	RB-82	776.52	13.00	-3.19E-01	1.51E+00	1.51E+00
+	RB-83	520.41	46.00	1.41E-02	2.05E-01	2.05E-01
		529.64	30.30	-1.68E-02		3.28E-01
		552.65	16.40	-2.65E-01		5.62E-01
+	KR-85	513.99	0.43	2.25E+01	2.47E+01	2.47E+01
+	SR-85	513.99	99.27	1.38E-01	1.52E-01	1.52E-01
+	Y-88	898.02	93.40	-5.93E-04	9.07E-02	1.25E-01
		1836.01	99.38	-5.75E-03		9.07E-02
+	NB-93M	16.57	9.43	-5.57E+01	8.10E+01	8.10E+01
+	NB-94	702.63	100.00	-9.42E-03	8.90E-02	8.90E-02
		871.10	100.00	6.47E-02		9.64E-02
+	NB-95	765.79	99.81	4.34E-02	1.89E-01	1.89E-01
+	NB-95M	235.69	25.00	5.55E+02	2.32E+02	2.32E+02
+	ZR-95	724.18	43.70	1.66E-02	2.23E-01	3.05E-01
		756.72	55.30	-1.19E-02		2.23E-01
+	MO-99	181.06	6.20	4.22E+02	2.40E+03	3.20E+03
		739.58	12.80	-6.46E+01		2.40E+03
		778.00	4.50	-1.58E+03		5.67E+03
+	RU-103	497.08	89.00	2.94E-02	1.44E-01	1.44E-01
+	RU-106	621.84	9.80	-1.83E-01	8.67E-01	8.67E-01
+	AG-108M	433.93	89.90	-1.33E-02	8.06E-02	8.06E-02
		614.37	90.40	-5.97E-03		1.04E-01
		722.95	90.50	-7.38E-03		9.07E-02
+	CD-109	88.03	3.72	3.09E+00	3.01E+00	3.01E+00
+	AG-110M	657.75	93.14	6.64E-03	1.03E-01	1.03E-01
		677.61	10.53	-1.17E-01		8.06E-01
		706.67	16.46	-1.58E-01		5.54E-01
		763.93	21.98	1.11E-01		4.73E-01
		884.67	71.63	-1.21E-01		1.22E-01
		1384.27	23.94	-3.26E-01		2.70E-01
+	CD-113M	263.70	0.02	-8.17E+01	2.71E+02	2.71E+02
+	SN-113	255.12	1.93	-1.86E+00	1.32E-01	4.09E+00
		391.69	64.90	-2.06E-02		1.32E-01
+	TE123M	159.00	84.10	-7.50E-03	7.60E-02	7.60E-02
+	SB-124	602.71	97.87	4.71E-03	1.27E-01	1.27E-01
		645.85	7.26	-6.51E-01		1.51E+00
		722.78	11.10	-8.72E-02		1.07E+00
		1691.02	49.00	-1.28E-01		1.46E-01
+	I-125	35.49	6.49	-1.49E+00	3.63E+00	3.63E+00
+	SB-125	176.33	6.89	-1.41E-01	2.65E-01	8.25E-01
		427.89	29.33	3.26E-02		2.65E-01
		463.38	10.35	9.22E-01		8.51E-01
		600.56	17.80	-9.14E-02		4.98E-01
		635.90	11.32	-2.21E-01		7.15E-01

Analysis Report for 1510088-07
CP4104S17-18

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-1.89E-02	5.33E-01	5.33E-01
		666.33	99.60	-5.18E-02		5.61E-01
		695.00	99.60	3.12E-01		6.06E-01
		720.50	53.80	8.91E-02		9.31E-01
+	SN-126	87.57	* 37.00	2.96E-01	2.88E-01	2.88E-01
+	SB-127	473.00	25.00	-1.33E+01	8.10E+01	9.67E+01
		685.20	35.70	3.27E+01		8.10E+01
		783.80	14.70	1.39E+02		2.21E+02
+	I-129	29.78	57.00	1.99E-01	5.02E-01	5.02E-01
		33.60	13.20	4.96E-01		1.42E+00
		39.58	7.52	7.34E-02		1.68E+00
+	I-131	284.30	6.05	-3.25E+00	1.41E+00	1.82E+01
		364.48	81.20	3.52E-01		1.41E+00
		636.97	7.26	-1.11E+00		1.77E+01
		722.89	1.80	-5.98E+00		7.35E+01
+	TE-132	49.72	13.10	-1.06E+02	7.57E+01	6.18E+02
		228.16	88.00	-2.81E+01		7.57E+01
+	BA-133	81.00	33.00	-9.83E-01	1.48E-01	1.89E-01
		302.84	17.80	1.46E-01		4.02E-01
		356.01	60.00	2.12E-02		1.48E-01
+	I-133	529.87	86.30	-7.24E+08	1.41E+10	1.41E+10
+	XE-133	81.00	38.00	-6.03E+01	1.16E+01	1.16E+01
+	CS-134	563.23	8.38	5.74E-02	9.25E-02	1.09E+00
		569.32	15.43	-3.16E-02		5.92E-01
		604.70	97.60	-6.52E-03		9.25E-02
		795.84	85.40	4.33E-02		1.11E-01
		801.93	8.73	1.07E-01		1.12E+00
+	CS-135	268.24	16.00	2.74E-01	4.31E-01	4.31E-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	1.84E-01	4.05E-01	3.98E+00
		163.89	4.61	2.66E+00		6.42E+00
		176.55	13.56	2.24E-01		2.27E+00
		273.65	12.66	-1.60E+00		3.03E+00
		340.57	48.50	2.11E+00		1.09E+00
		818.50	99.70	-1.49E-01		4.05E-01
		1048.07	79.60	-3.06E-01		5.70E-01
		1235.34	19.70	-1.02E+00		3.49E+00
+	CS-137	661.65	85.12	1.73E-02	1.12E-01	1.12E-01
+	LA-138	788.74	34.00	-3.26E-02	1.44E-01	2.63E-01
		1435.80	66.00	2.93E-02		1.44E-01
+	CE-139	165.85	80.35	-1.71E-02	7.78E-02	7.78E-02
+	BA-140	162.64	6.70	1.30E+00	1.76E+00	4.62E+00
		304.84	4.50	-8.45E+00		8.33E+00
		423.70	3.20	2.38E+00		1.34E+01
		437.55	2.00	4.50E+00		2.12E+01
		537.32	25.00	6.92E-02		1.76E+00
+	LA-140	328.77	20.50	1.96E-01	6.08E-01	2.09E+00

Analysis Report for 1510088-07

CP4104S17-18

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	487.03	45.50	-1.90E-02	6.08E-01	9.42E-01
		815.85	23.50	1.07E+00		2.06E+00
		1596.49	95.49	2.64E-01		6.08E-01
+	CE-141	145.44	48.40	3.69E-02	2.25E-01	2.25E-01
+	CE-143	57.36	11.80	1.56E+06	2.55E+06	7.34E+06
		293.26	42.00	1.70E+05		2.55E+06
		664.55	5.20	6.10E+06		2.12E+07
+	CE-144	133.54	10.80	2.59E-02	5.22E-01	5.22E-01
+	PM-144	476.78	42.00	-2.45E-02	8.65E-02	1.91E-01
		618.01	98.60	-8.50E-03		8.65E-02
		696.49	99.49	5.02E-02		1.08E-01
+	PM-145	36.85	21.70	3.82E-01	3.69E-01	6.97E-01
		37.36	39.70	4.08E-02		3.69E-01
		42.30	15.10	-1.68E-02		7.03E-01
		72.40	2.31	-4.62E+00		3.59E+00
+	PM-146	453.90	39.94	2.85E-02	1.77E-01	1.77E-01
		735.90	14.01	-1.35E-01		6.54E-01
		747.13	13.10	-7.13E-02		6.86E-01
+	ND-147	91.11	28.90	-2.62E-01	1.90E+00	1.90E+00
		531.02	13.10	-1.30E-01		4.52E+00
+	PM-149	285.90	3.10	-1.44E+04	5.31E+04	5.31E+04
+	EU-152	121.78	20.50	-4.85E-02	2.43E-01	2.43E-01
		244.69	5.40	-1.63E-01		1.41E+00
		344.27	19.13	2.17E-02		3.67E-01
		778.89	9.20	-7.52E-02		8.55E-01
		964.01	10.40	-1.20E-01		1.03E+00
		1085.78	7.22	7.56E-02		1.38E+00
		1112.02	9.60	-9.56E-02		1.07E+00
		1407.95	14.94	-1.29E-02		6.97E-01
+	GD-153	97.43	31.30	7.61E-03	1.78E-01	1.78E-01
		103.18	22.20	-1.55E-01		2.45E-01
+	EU-154	123.07	40.50	-3.64E-02	1.25E-01	1.25E-01
		723.30	19.70	-3.41E-02		4.20E-01
		873.19	11.50	-3.79E-02		7.65E-01
		996.32	10.30	-5.47E-01		8.77E-01
		1004.76	17.90	-9.61E-02		5.41E-01
		1274.45	35.50	-1.93E-01		2.90E-01
+	EU-155	86.50	* 30.90	3.59E-01	2.57E-01	3.50E-01
		105.30	20.70	1.04E-01		2.57E-01
+	EU-156	811.77	10.40	-1.25E+00	3.28E+00	3.28E+00
		1153.47	7.20	1.58E+00		7.19E+00
		1230.71	8.90	1.75E-01		5.83E+00
+	HO-166M	184.41	72.60	1.28E-01	9.51E-02	9.51E-02
		280.45	29.60	8.80E-03		2.39E-01
		410.94	11.10	2.87E-01		7.02E-01
		711.69	54.10	1.86E-02		1.60E-01
+	TM-171	66.72	0.14	1.39E+01	5.40E+01	5.40E+01
+	HF-172	81.75	4.52	-4.76E+00	4.82E-01	1.41E+00
		125.81	11.30	-2.29E-01		4.82E-01

Analysis Report for 1510088-07

CP4104S17-18

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	-1.12E+01	5.16E+00	7.78E+00
		810.06	16.63	-3.49E+00		1.38E+01
		912.12	15.25	5.58E+01		3.18E+01
		1093.66	62.50	2.17E+00		5.16E+00
+	LU-173	100.72	5.24	-3.35E-01	3.54E-01	9.81E-01
		272.11	21.20	2.01E-01		3.54E-01
+	HF-175	343.40	84.00	-1.91E-02	1.18E-01	1.18E-01
+	LU-176	88.34	13.30	5.39E-01	6.98E-02	5.55E-01
		201.83	86.00	2.48E-02		7.77E-02
		306.78	94.00	1.47E-02		6.98E-02
+	TA-182	67.75	41.20	6.35E-02	2.14E-01	2.14E-01
		1121.30	34.90	4.94E-01		5.19E-01
		1189.05	16.23	2.69E-02		9.21E-01
		1221.41	26.98	1.96E-01		6.17E-01
		1231.02	11.44	-2.63E-01		1.27E+00
+	IR-192	308.46	29.68	-1.35E-01	1.90E-01	2.88E-01
		468.07	48.10	2.90E-02		1.90E-01
+	HG-203	279.19	77.30	1.16E-01	1.53E-01	1.53E-01
+	BI-207	569.67	97.72	-3.89E-03	9.10E-02	9.10E-02
		1063.62	74.90	4.86E-02		1.43E-01
+	TL-208	583.14	* 30.22	1.06E+00	4.56E-02	4.26E-01
		860.37	* 4.48	1.88E+00		2.52E+00
		2614.66	* 35.85	1.13E+00		4.56E-02
+	BI-210M	262.00	45.00	4.28E-02	1.44E-01	1.44E-01
		300.00	23.00	-1.00E+00		3.24E-01
+	PB-210	46.50	* 4.25	1.51E+00	2.96E+00	2.96E+00
+	PB-211	404.84	2.90	-1.80E+00	2.48E+00	2.48E+00
		831.96	2.90	-1.12E+00		3.02E+00
+	BI-212	727.17	* 11.80	6.21E-01	9.58E-01	9.58E-01
		1620.62	2.75	-6.58E-01		3.25E+00
+	PB-212	238.63	* 44.60	1.40E+00	2.94E-01	2.94E-01
		300.09	3.41	-6.75E+00		2.18E+00
+	BI-214	609.31	* 46.30	9.67E-01	2.60E-01	2.60E-01
		1120.29	* 15.10	1.18E+00		9.30E-01
		1764.49	15.80	1.01E+00		9.74E-01
		2204.22	* 4.98	2.40E+00		1.35E+00
+	PB-214	295.21	* 19.19	1.07E+00	2.39E-01	3.85E-01
		351.92	* 37.19	9.47E-01		2.39E-01
+	RN-219	401.80	6.50	-6.04E-01	1.07E+00	1.07E+00
+	RA-223	323.87	3.88	-1.93E+00	1.81E+00	1.81E+00
+	RA-224	240.98	* 3.95	3.16E+00	3.37E+00	3.37E+00
+	RA-225	40.00	31.00	7.87E-02	1.80E+00	1.80E+00
+	RA-226	186.21	* 3.28	4.11E+00	3.50E+00	3.50E+00
+	TH-227	50.10	8.40	-1.72E-01	9.99E-01	9.99E-01
		236.00	11.50	2.47E+00		1.03E+00
		256.20	6.30	-1.94E-01		1.04E+00
+	AC-228	338.32	* 11.40	1.45E+00	4.67E-01	8.64E-01
		911.07	* 27.70	1.37E+00		4.67E-01

Analysis Report for 1510088-07
CP4104S17-18

	<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>
	AC-228	969.11	*	16.60	1.51E+00	4.67E-01	1.02E+00
+	TH-230	48.44		16.90	3.96E-01	5.69E-01	5.69E-01
		62.85		4.60	2.75E+00		1.80E+00
		67.67		0.37	5.82E+00		1.96E+01
+	PA-231	283.67		1.60	-7.61E-01	3.09E+00	4.25E+00
		302.67		2.30	1.12E+00		3.09E+00
+	TH-231	25.64		14.70	-1.59E+00	9.68E-01	3.42E+00
		84.21		6.40	-2.07E+00		9.68E-01
+	PA-233	311.98		38.60	8.19E-02	3.92E-01	3.92E-01
+	PA-234	131.20		20.40	1.59E-01	2.68E-01	2.68E-01
		733.99		8.80	1.15E-01		1.05E+00
		946.00		12.00	4.64E-01		8.38E-01
+	PA-234M	1001.03		0.92	3.61E+00	1.09E+01	1.09E+01
+	TH-234	63.29	*	3.80	1.96E+00	2.70E+00	2.70E+00
+	U-235	143.76		10.50	1.05E-01	5.13E-01	5.13E-01
		163.35		4.70	4.77E-01		1.15E+00
		205.31		4.70	5.20E-01		1.45E+00
+	NP-237	86.50	*	12.60	8.70E-01	8.47E-01	8.47E-01
+	NP-239	106.10		22.70	1.22E+03	3.09E+03	3.09E+03
		228.18		10.70	-3.21E+03		8.65E+03
		277.60		14.10	3.91E+03		6.76E+03
+	AM-241	59.54		35.90	3.58E-02	2.14E-01	2.14E-01
+	AM-243	74.67		66.00	2.24E-01	1.46E-01	1.46E-01
+	CM-243	209.75		3.29	1.15E+00	5.15E-01	2.24E+00
		228.14		10.60	-2.45E-01		6.60E-01
		277.60		14.00	2.98E-01		5.15E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

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

Analysis Report for 1510088-07
CP4104S17-18

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	1.09E+00	1.09E+00	-6.19E-03	5.12E-01
NA-22	1274.54	99.94	1.05E-01	1.05E-01	-6.96E-02	4.73E-02
NA-24	1368.53	99.99	3.13E+14	1.56E+14	-1.64E+13	1.38E+14
	2754.09	99.86	1.56E+14		-4.23E+13	4.92E+13
AL-26	1808.65	99.76	8.05E-02	8.05E-02	2.15E-02	3.37E-02
+ K-40	1460.81	*	1.10E+00	1.10E+00	1.94E+01	4.99E-01
@ AR-41	1293.64		1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	7.68E-02	7.68E-02	2.28E-02	3.75E-02
	78.34	96.00	9.41E-02		2.39E-01	4.63E-02
SC-46	889.25	99.98	1.12E-01	1.12E-01	-3.65E-02	5.11E-02
	1120.51	99.99	1.98E-01		2.30E-01	9.29E-02
V-48	983.52	99.98	3.69E-01	3.69E-01	3.11E-02	1.68E-01
	1312.10	97.50	5.21E-01		-7.96E-02	2.39E-01
CR-51	320.08	9.83	1.65E+00	1.65E+00	8.13E-01	7.90E-01
MN-54	834.83	99.97	1.07E-01	1.07E-01	-6.08E-03	4.97E-02
CO-56	846.75	99.96	1.23E-01	1.23E-01	-3.83E-02	5.67E-02
	1037.75	14.03	9.02E-01		2.68E-01	4.11E-01
	1238.25	67.00	2.61E-01		4.92E-02	1.21E-01
	1771.40	15.51	7.65E-01		-1.63E-01	3.28E-01
	2598.48	16.90	5.09E-01		-1.05E-01	1.91E-01
CO-57	122.06	85.51	6.31E-02	6.31E-02	-1.26E-02	3.05E-02
	136.48	10.60	5.32E-01		9.84E-02	2.57E-01
CO-58	810.76	99.40	1.11E-01	1.11E-01	-3.43E-02	5.06E-02
FE-59	1099.22	56.50	2.96E-01	2.96E-01	-1.23E-01	1.35E-01
	1291.56	43.20	4.13E-01		-5.34E-02	1.87E-01
CO-60	1173.22	100.00	1.13E-01	1.13E-01	2.85E-03	5.19E-02
	1332.49	100.00	1.15E-01		-7.16E-03	5.24E-02
ZN-65	1115.52	50.75	2.27E-01	2.27E-01	-3.21E-02	1.04E-01
+ GA-67	93.31	*	2.10E+02	2.10E+02	1.87E+02	1.03E+02
	208.95	*	2.24		1.94E+03	1.61E+03
	300.22	16.00	4.42E+02		-1.36E+03	2.12E+02
SE-75	121.11	16.70	3.52E-01	1.03E-01	-1.11E-01	1.70E-01
	136.00	59.20	1.03E-01		-5.01E-02	5.00E-02
	264.65	59.80	1.24E-01		-1.29E-01	5.95E-02
	279.53	25.20	3.44E-01		1.14E-01	1.65E-01
	400.65	11.40	7.66E-01		-2.61E-01	3.64E-01
RB-82	776.52	13.00	1.51E+00	1.51E+00	-3.19E-01	6.92E-01
RB-83	520.41	46.00	2.05E-01	2.05E-01	1.41E-02	9.61E-02
	529.64	30.30	3.28E-01		-1.68E-02	1.54E-01
	552.65	16.40	5.62E-01		-2.65E-01	2.62E-01
KR-85	513.99	0.43	2.47E+01	2.47E+01	2.25E+01	1.18E+01
SR-85	513.99	99.27	1.52E-01	1.52E-01	1.38E-01	7.26E-02
Y-88	898.02	93.40	1.25E-01	9.07E-02	-5.93E-04	5.74E-02
	1836.01	99.38	9.07E-02		-5.75E-03	3.72E-02
NB-93M	16.57	9.43	8.10E+01	8.10E+01	-5.57E+01	3.93E+01
NB-94	702.63	100.00	8.90E-02	8.90E-02	-9.42E-03	4.15E-02
	871.10	100.00	9.64E-02		6.47E-02	4.46E-02
NB-95	765.79	99.81	1.89E-01	1.89E-01	4.34E-02	8.86E-02
NB-95M	235.69	25.00	2.32E+02	2.32E+02	5.55E+02	1.14E+02
ZR-95	724.18	43.70	3.05E-01	2.23E-01	1.66E-02	1.42E-01
	756.72	55.30	2.23E-01		-1.19E-02	1.03E-01

Analysis Report for 1510088-07

CP4104S17-18

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)		
MO-99	181.06	6.20	3.20E+03	2.40E+03	4.22E+02	1.54E+03		
	739.58	12.80	2.40E+03		-6.46E+01	1.12E+03		
	778.00	4.50	5.67E+03		-1.58E+03	2.59E+03		
RU-103	497.08	89.00	1.44E-01	1.44E-01	2.94E-02	6.76E-02		
RU-106	621.84	9.80	8.67E-01	8.67E-01	-1.83E-01	4.04E-01		
AG-108M	433.93	89.90	8.06E-02	8.06E-02	-1.33E-02	3.81E-02		
	614.37	90.40	1.04E-01		-5.97E-03	4.90E-02		
	722.95	90.50	9.07E-02		-7.38E-03	4.20E-02		
+ CD-109	88.03	* 3.72	3.01E+00	3.01E+00	3.09E+00	1.48E+00		
AG-110M	657.75	93.14	1.03E-01	1.03E-01	6.64E-03	4.81E-02		
	677.61	10.53	8.06E-01		-1.17E-01	3.73E-01		
	706.67	16.46	5.54E-01		-1.58E-01	2.57E-01		
	763.93	21.98	4.73E-01		1.11E-01	2.20E-01		
	884.67	71.63	1.22E-01		-1.21E-01	5.55E-02		
CD-113M	1384.27	23.94	2.70E-01	2.71E+02	-3.26E-01	1.11E-01		
	263.70	0.02	2.71E+02		-8.17E+01	1.30E+02		
	SN-113	255.12	1.93		4.09E+00	1.32E-01	-1.86E+00	1.96E+00
TE123M	391.69	64.90	1.32E-01	7.60E-02	-2.06E-02	6.28E-02		
	159.00	84.10	7.60E-02		-7.50E-03	3.67E-02		
	SB-124	602.71	97.87		1.27E-01	1.27E-01	4.71E-03	5.93E-02
SB-124	645.85	7.26	1.51E+00	7.60E-02	-6.51E-01	7.00E-01		
	722.78	11.10	1.07E+00		-8.72E-02	4.96E-01		
	1691.02	49.00	1.46E-01		-1.28E-01	5.47E-02		
	I-125	35.49	6.49		3.63E+00	3.63E+00	-1.49E+00	1.77E+00
	SB-125	176.33	6.89		8.25E-01	2.65E-01	-1.41E-01	3.98E-01
427.89		29.33	2.65E-01	3.26E-02	1.26E-01			
463.38		10.35	8.51E-01	9.22E-01	4.05E-01			
600.56		17.80	4.98E-01	-9.14E-02	2.34E-01			
635.90		11.32	7.15E-01	-2.21E-01	3.33E-01			
SB-126	414.70	83.30	5.33E-01	5.33E-01	-1.89E-02	2.52E-01		
	666.33	99.60	5.61E-01		-5.18E-02	2.63E-01		
	695.00	99.60	6.06E-01		3.12E-01	2.85E-01		
	720.50	53.80	9.31E-01		8.91E-02	4.31E-01		
+ SN-126	87.57	* 37.00	2.88E-01	2.88E-01	2.96E-01	1.42E-01		
SB-127	473.00	25.00	9.67E+01	8.10E+01	-1.33E+01	4.55E+01		
	685.20	35.70	8.10E+01		3.27E+01	3.78E+01		
	783.80	14.70	2.21E+02		1.39E+02	1.03E+02		
I-129	29.78	57.00	5.02E-01	5.02E-01	1.99E-01	2.44E-01		
	33.60	13.20	1.42E+00		4.96E-01	6.90E-01		
	39.58	7.52	1.68E+00		7.34E-02	8.16E-01		
I-131	284.30	6.05	1.82E+01	1.41E+00	-3.25E+00	8.72E+00		
	364.48	81.20	1.41E+00		3.52E-01	6.69E-01		
	636.97	7.26	1.77E+01		-1.11E+00	8.26E+00		
	722.89	1.80	7.35E+01		-5.98E+00	3.40E+01		
TE-132	49.72	13.10	6.18E+02	7.57E+01	-1.06E+02	3.01E+02		
	228.16	88.00	7.57E+01		-2.81E+01	3.66E+01		
BA-133	81.00	33.00	1.89E-01	1.48E-01	-9.83E-01	9.23E-02		
	302.84	17.80	4.02E-01		1.46E-01	1.93E-01		
	356.01	60.00	1.48E-01		2.12E-02	7.14E-02		
I-133	529.87	86.30	1.41E+10	1.41E+10	-7.24E+08	6.64E+09		
XE-133	81.00	38.00	1.16E+01	1.16E+01	-6.03E+01	5.66E+00		
CS-134	563.23	8.38	1.09E+00	9.25E-02	5.74E-02	5.12E-01		
	569.32	15.43	5.92E-01		-3.16E-02	2.79E-01		

Analysis Report for 1510088-07

CP4104S17-18

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	9.25E-02	9.25E-02	-6.52E-03	4.35E-02
	795.84	85.40	1.11E-01		4.33E-02	5.17E-02
	801.93	8.73	1.12E+00		1.07E-01	5.22E-01
CS-135	268.24	16.00	4.31E-01	4.31E-01	2.74E-01	2.07E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.98E+00	4.05E-01	1.84E-01	1.93E+00
	163.89	4.61	6.42E+00		2.66E+00	3.10E+00
	176.55	13.56	2.27E+00		2.24E-01	1.10E+00
	273.65	12.66	3.03E+00		-1.60E+00	1.46E+00
	340.57	48.50	1.09E+00		2.11E+00	5.29E-01
	818.50	99.70	4.05E-01		-1.49E-01	1.83E-01
	1048.07	79.60	5.70E-01		-3.06E-01	2.56E-01
	1235.34	19.70	3.49E+00		-1.02E+00	1.61E+00
CS-137	661.65	85.12	1.12E-01	1.12E-01	1.73E-02	5.25E-02
LA-138	788.74	34.00	2.63E-01	1.44E-01	-3.26E-02	1.22E-01
	1435.80	66.00	1.44E-01		2.93E-02	6.39E-02
CE-139	165.85	80.35	7.78E-02	7.78E-02	-1.71E-02	3.75E-02
BA-140	162.64	6.70	4.62E+00	1.76E+00	1.30E+00	2.23E+00
	304.84	4.50	8.33E+00		-8.45E+00	3.98E+00
	423.70	3.20	1.34E+01		2.38E+00	6.37E+00
	437.55	2.00	2.12E+01		4.50E+00	1.00E+01
	537.32	25.00	1.76E+00		6.92E-02	8.27E-01
LA-140	328.77	20.50	2.09E+00	6.08E-01	1.96E-01	1.00E+00
	487.03	45.50	9.42E-01		-1.90E-02	4.43E-01
	815.85	23.50	2.06E+00		1.07E+00	9.45E-01
	1596.49	95.49	6.08E-01		2.64E-01	2.68E-01
CE-141	145.44	48.40	2.25E-01	2.25E-01	3.69E-02	1.09E-01
CE-143	57.36	11.80	7.34E+06	2.55E+06	1.56E+06	3.58E+06
	293.26	42.00	2.55E+06		1.70E+05	1.24E+06
	664.55	5.20	2.12E+07		6.10E+06	9.94E+06
CE-144	133.54	10.80	5.22E-01	5.22E-01	2.59E-02	2.53E-01
PM-144	476.78	42.00	1.91E-01	8.65E-02	-2.45E-02	8.98E-02
	618.01	98.60	8.65E-02		-8.50E-03	4.03E-02
	696.49	99.49	1.08E-01		5.02E-02	5.07E-02
	36.85	21.70	6.97E-01		3.82E-01	3.39E-01
PM-145	37.36	39.70	3.69E-01	3.69E-01	4.08E-02	1.80E-01
	42.30	15.10	7.03E-01		-1.68E-02	3.42E-01
	72.40	2.31	3.59E+00		-4.62E+00	1.76E+00
	453.90	39.94	1.77E-01		1.77E-01	2.85E-02	8.32E-02
PM-146	735.90	14.01	6.54E-01	1.77E-01	-1.35E-01	3.04E-01
	747.13	13.10	6.86E-01		-7.13E-02	3.19E-01
	91.11	28.90	1.90E+00		1.90E+00	-2.62E-01	9.28E-01
ND-147	531.02	13.10	4.52E+00		-1.30E-01	2.12E+00
PM-149	285.90	3.10	5.31E+04	5.31E+04	-1.44E+04	2.54E+04
EU-152	121.78	20.50	2.43E-01	2.43E-01	-4.85E-02	1.18E-01
	244.69	5.40	1.41E+00		-1.63E-01	6.82E-01
	344.27	19.13	3.67E-01		2.17E-02	1.75E-01
	778.89	9.20	8.55E-01		-7.52E-02	3.92E-01
	964.01	10.40	1.03E+00		-1.20E-01	4.78E-01
	1085.78	7.22	1.38E+00		7.56E-02	6.28E-01
	1112.02	9.60	1.07E+00		-9.56E-02	4.88E-01

Analysis Report for 1510088-07

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	1407.95	14.94	6.97E-01	2.43E-01	-1.29E-02	3.12E-01
GD-153	97.43	31.30	1.78E-01	1.78E-01	7.61E-03	8.65E-02
	103.18	22.20	2.45E-01		-1.55E-01	1.19E-01
EU-154	123.07	40.50	1.25E-01	1.25E-01	-3.64E-02	6.05E-02
	723.30	19.70	4.20E-01		-3.41E-02	1.94E-01
	873.19	11.50	7.65E-01		-3.79E-02	3.51E-01
	996.32	10.30	8.77E-01		-5.47E-01	3.99E-01
	1004.76	17.90	5.41E-01		-9.61E-02	2.48E-01
	1274.45	35.50	2.90E-01		-1.93E-01	1.31E-01
+ EU-155	86.50	* 30.90	3.50E-01	2.57E-01	3.59E-01	1.72E-01
	105.30	20.70	2.57E-01		1.04E-01	1.25E-01
EU-156	811.77	10.40	3.28E+00	3.28E+00	-1.25E+00	1.50E+00
	1153.47	7.20	7.19E+00		1.58E+00	3.31E+00
	1230.71	8.90	5.83E+00		1.75E-01	2.68E+00
HO-166M	184.41	72.60	9.51E-02	9.51E-02	1.28E-01	4.62E-02
	280.45	29.60	2.39E-01		8.80E-03	1.15E-01
	410.94	11.10	7.02E-01		2.87E-01	3.34E-01
	711.69	54.10	1.60E-01		1.86E-02	7.44E-02
TM-171	66.72	0.14	5.40E+01	5.40E+01	1.39E+01	2.64E+01
HF-172	81.75	4.52	1.41E+00	4.82E-01	-4.76E+00	6.86E-01
	125.81	11.30	4.82E-01		-2.29E-01	2.34E-01
LU-172	181.53	20.60	7.78E+00	5.16E+00	-1.12E+01	3.75E+00
	810.06	16.63	1.38E+01		-3.49E+00	6.35E+00
	912.12	15.25	3.18E+01		5.58E+01	1.52E+01
	1093.66	62.50	5.16E+00		2.17E+00	2.38E+00
LU-173	100.72	5.24	9.81E-01	3.54E-01	-3.35E-01	4.75E-01
	272.11	21.20	3.54E-01		2.01E-01	1.71E-01
HF-175	343.40	84.00	1.18E-01	1.18E-01	-1.91E-02	5.63E-02
LU-176	88.34	13.30	5.55E-01	6.98E-02	5.39E-01	2.72E-01
	201.83	86.00	7.77E-02		2.48E-02	3.76E-02
	306.78	94.00	6.98E-02		1.47E-02	3.33E-02
TA-182	67.75	41.20	2.14E-01	2.14E-01	6.35E-02	1.05E-01
	1121.30	34.90	5.19E-01		4.94E-01	2.44E-01
	1189.05	16.23	9.21E-01		2.69E-02	4.25E-01
	1221.41	26.98	6.17E-01		1.96E-01	2.87E-01
	1231.02	11.44	1.27E+00		-2.63E-01	5.81E-01
IR-192	308.46	29.68	2.88E-01	1.90E-01	-1.35E-01	1.37E-01
	468.07	48.10	1.90E-01		2.90E-02	8.92E-02
HG-203	279.19	77.30	1.53E-01	1.53E-01	1.16E-01	7.38E-02
BI-207	569.67	97.72	9.10E-02	9.10E-02	-3.89E-03	4.29E-02
	1063.62	74.90	1.43E-01		4.86E-02	6.56E-02
+ TL-208	583.14	* 30.22	4.26E-01	4.56E-02	1.06E+00	2.05E-01
	860.37	* 4.48	2.52E+00		1.88E+00	1.18E+00
	2614.66	* 35.85	4.56E-02		1.13E+00	0.00E+00
BI-210M	262.00	45.00	1.44E-01	1.44E-01	4.28E-02	6.93E-02
	300.00	23.00	3.24E-01		-1.00E+00	1.56E-01
+ PB-210	46.50	* 4.25	2.96E+00	2.96E+00	1.51E+00	1.45E+00
PB-211	404.84	2.90	2.48E+00	2.48E+00	-1.80E+00	1.18E+00
	831.96	2.90	3.02E+00		-1.12E+00	1.39E+00
+ BI-212	727.17	* 11.80	9.58E-01	9.58E-01	6.21E-01	4.53E-01
	1620.62	2.75	3.25E+00		-6.58E-01	1.41E+00
+ PB-212	238.63	* 44.60	2.94E-01	2.94E-01	1.40E+00	1.44E-01
	300.09	3.41	2.18E+00		-6.75E+00	1.05E+00

Analysis Report for 1510088-07

CP4104S17-18

	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	2.60E-01	2.60E-01	9.67E-01	1.24E-01
		1120.29 *		15.10	9.30E-01		1.18E+00	4.35E-01
		1764.49		15.80	9.74E-01		1.01E+00	4.46E-01
		2204.22 *		4.98	1.35E+00		2.40E+00	5.27E-01
+	PB-214	295.21 *		19.19	3.85E-01	2.39E-01	1.07E+00	1.85E-01
		351.92 *		37.19	2.39E-01		9.47E-01	1.15E-01
	RN-219	401.80		6.50	1.07E+00	1.07E+00	-6.04E-01	5.07E-01
	RA-223	323.87		3.88	1.81E+00	1.81E+00	-1.93E+00	8.64E-01
+	RA-224	240.98 *		3.95	3.37E+00	3.37E+00	3.16E+00	1.66E+00
	RA-225	40.00		31.00	1.80E+00	1.80E+00	7.87E-02	8.75E-01
+	RA-226	186.21 *		3.28	3.50E+00	3.50E+00	4.11E+00	1.72E+00
	TH-227	50.10		8.40	9.99E-01	9.99E-01	-1.72E-01	4.87E-01
		236.00		11.50	1.03E+00		2.47E+00	5.06E-01
		256.20		6.30	1.04E+00		-1.94E-01	5.02E-01
+	AC-228	338.32 *		11.40	8.64E-01	4.67E-01	1.45E+00	4.18E-01
		911.07 *		27.70	4.67E-01		1.37E+00	2.20E-01
		969.11 *		16.60	1.02E+00		1.51E+00	4.85E-01
	TH-230	48.44		16.90	5.69E-01	5.69E-01	3.96E-01	2.78E-01
		62.85		4.60	1.80E+00		2.75E+00	8.79E-01
		67.67		0.37	1.96E+01		5.82E+00	9.59E+00
	PA-231	283.67		1.60	4.25E+00	3.09E+00	-7.61E-01	2.04E+00
		302.67		2.30	3.09E+00		1.12E+00	1.48E+00
	TH-231	25.64		14.70	3.42E+00	9.68E-01	-1.59E+00	1.66E+00
		84.21		6.40	9.68E-01		-2.07E+00	4.72E-01
	PA-233	311.98		38.60	3.92E-01	3.92E-01	8.19E-02	1.87E-01
	PA-234	131.20		20.40	2.68E-01	2.68E-01	1.59E-01	1.30E-01
		733.99		8.80	1.05E+00		1.15E-01	4.89E-01
		946.00		12.00	8.38E-01		4.64E-01	3.87E-01
	PA-234M	1001.03		0.92	1.09E+01	1.09E+01	3.61E+00	5.01E+00
+	TH-234	63.29 *		3.80	2.70E+00	2.70E+00	1.96E+00	1.33E+00
	U-235	143.76		10.50	5.13E-01	5.13E-01	1.05E-01	2.48E-01
		163.35		4.70	1.15E+00		4.77E-01	5.55E-01
		205.31		4.70	1.45E+00		5.20E-01	7.02E-01
+	NP-237	86.50 *		12.60	8.47E-01	8.47E-01	8.70E-01	4.18E-01
	NP-239	106.10		22.70	3.09E+03	3.09E+03	1.22E+03	1.50E+03
		228.18		10.70	8.65E+03		-3.21E+03	4.18E+03
		277.60		14.10	6.76E+03		3.91E+03	3.25E+03
	AM-241	59.54		35.90	2.14E-01	2.14E-01	3.58E-02	1.05E-01
	AM-243	74.67		66.00	1.46E-01	1.46E-01	2.24E-01	7.19E-02
	CM-243	209.75		3.29	2.24E+00	5.15E-01	1.15E+00	1.09E+00
		228.14		10.60	6.60E-01		-2.45E-01	3.19E-01
		277.60		14.00	5.15E-01		2.98E-01	2.48E-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

Analysis Report for 1510088-07
CP4104S17-18

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: CP4104S17-18

Elapsed Live time: 3600

Elapsed Real Time: 3617

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	5	181	177	123	126	117	74	97
17:	73	89	67	78	78	78	92	69
25:	81	76	74	87	82	88	77	99
33:	82	80	75	81	96	100	104	80
41:	100	69	86	88	82	89	196	101
49:	93	101	81	103	101	111	97	95
57:	106	121	109	105	119	147	167	200
65:	128	117	128	141	133	127	127	120
73:	132	171	351	250	365	425	128	116
81:	107	98	91	120	128	108	184	195
89:	118	139	152	110	220	143	98	74
97:	63	82	76	70	57	69	65	63
105:	85	93	74	69	76	66	76	71
113:	71	55	67	79	62	65	52	66
121:	54	63	65	62	71	69	80	60
129:	78	93	54	77	54	56	54	75
137:	58	52	68	68	53	57	53	87
145:	59	58	61	56	76	54	50	64
153:	59	67	58	56	53	60	63	48
161:	47	50	60	66	49	47	45	51
169:	56	54	48	47	53	58	46	54
177:	55	48	65	51	48	58	59	48
185:	54	122	101	57	43	56	52	41
193:	35	50	45	46	33	52	39	40
201:	43	46	55	51	41	45	35	47
209:	74	75	45	37	49	47	46	35
217:	45	36	38	40	48	37	51	48
225:	49	33	45	35	44	38	42	44
233:	40	36	41	33	40	161	455	184
241:	72	98	54	36	33	30	28	23
249:	33	27	40	33	27	30	32	29
257:	34	20	37	31	25	34	29	24
265:	16	33	15	22	26	50	52	23
273:	20	31	25	29	34	41	28	30
281:	33	32	19	25	31	25	24	26
289:	31	26	24	19	21	33	95	126
297:	35	17	27	35	44	28	21	28
305:	18	11	22	25	26	23	19	14
313:	20	29	20	19	21	25	30	24
321:	22	22	30	22	20	24	20	42
329:	30	20	20	22	26	28	14	25
337:	16	68	104	34	24	18	21	19
345:	21	15	24	21	16	25	50	189
353:	108	16	14	15	22	22	23	19
361:	21	17	24	12	22	22	18	17

369: 11 18 16 18 16 26 20 20

Sample Title: CP4104S17-18

Channel	1	2	3	4	5	6	7	8
377:	21	18	15	21	15	24	12	11
385:	15	22	16	23	17	19	17	14
393:	18	16	15	20	13	28	14	11
401:	24	13	12	15	18	24	13	18
409:	27	23	20	14	17	11	18	22
417:	18	12	11	9	15	15	19	16
425:	13	21	14	19	18	12	18	13
433:	15	16	12	16	11	15	17	14
441:	19	12	11	17	9	17	8	9
449:	10	13	10	9	15	12	13	11
457:	16	9	13	11	16	19	41	21
465:	12	9	7	11	11	10	16	12
473:	12	16	12	9	17	13	9	16
481:	14	17	7	12	4	20	16	13
489:	9	13	14	12	8	17	17	11
497:	6	8	7	13	7	19	12	20
505:	12	13	13	14	19	42	63	32
513:	23	20	11	10	8	7	15	8
521:	7	12	16	12	11	14	11	10
529:	13	15	13	11	6	12	10	12
537:	9	9	12	13	11	14	9	17
545:	10	16	7	16	10	9	11	8
553:	9	11	8	6	9	12	16	8
561:	9	16	19	15	12	16	14	11
569:	12	15	16	10	16	12	15	8
577:	6	10	9	8	13	21	92	93
585:	19	9	10	18	9	6	10	11
593:	9	9	8	13	19	16	8	12
601:	14	10	9	12	9	12	12	18
609:	88	116	36	11	11	7	7	8
617:	12	13	8	8	9	7	14	4
625:	14	8	9	10	15	9	10	7
633:	10	7	9	11	10	5	8	11
641:	12	7	12	7	8	7	7	10
649:	2	9	11	12	10	6	11	4
657:	11	11	11	9	13	14	8	17
665:	10	12	9	12	8	9	11	5
673:	7	11	13	8	5	6	10	4
681:	5	12	3	5	11	7	15	11
689:	8	10	6	10	8	16	12	9
697:	14	14	12	6	14	9	12	8
705:	7	8	8	7	9	8	10	7
713:	10	7	8	10	6	9	11	5
721:	9	5	7	4	7	14	22	26
729:	13	6	8	14	12	4	11	8
737:	7	7	12	7	11	9	9	11
745:	7	8	7	8	9	7	8	9
753:	8	8	10	12	8	8	2	5
761:	9	6	13	8	8	6	13	15
769:	7	13	6	15	12	6	6	3
777:	6	6	5	4	7	9	9	4
785:	10	17	8	10	3	3	8	3
793:	6	6	14	11	3	10	5	6

801: 6 9 14 9 9 8 10 6

Sample Title: CP4104S17-18

Channel	1	2	3	4	5	6	7	8
809:	4	2	5	6	8	8	4	6
817:	6	7	4	3	2	6	4	6
825:	11	5	3	5	6	8	7	8
833:	5	7	4	11	11	13	10	10
841:	6	5	9	6	5	8	4	9
849:	8	9	8	12	7	6	8	0
857:	9	5	6	21	16	11	5	4
865:	8	5	5	7	9	8	6	7
873:	5	9	3	3	5	5	10	9
881:	6	3	7	5	6	2	4	10
889:	7	6	5	4	9	7	8	5
897:	5	7	7	7	7	6	5	7
905:	4	6	4	11	5	17	65	48
913:	9	10	7	7	8	0	6	5
921:	4	3	1	5	8	7	5	5
929:	3	8	8	2	8	8	9	6
937:	6	7	5	7	2	9	7	8
945:	4	8	6	7	8	1	5	3
953:	7	4	2	8	8	4	8	6
961:	6	6	10	7	11	7	6	24
969:	49	27	8	4	6	5	6	8
977:	2	4	4	6	8	3	3	3
985:	6	7	11	5	6	5	4	4
993:	5	6	8	5	3	5	2	12
1001:	7	7	6	4	3	7	5	7
1009:	6	2	5	5	11	5	3	7
1017:	10	3	3	2	8	6	0	5
1025:	9	6	7	5	3	3	5	11
1033:	4	7	3	6	6	4	7	5
1041:	5	3	2	3	6	4	5	2
1049:	3	4	2	9	6	2	3	2
1057:	4	6	5	5	6	7	6	8
1065:	8	4	2	6	8	5	6	2
1073:	6	3	5	11	10	6	3	4
1081:	4	2	3	6	5	7	3	6
1089:	6	6	7	6	8	8	8	6
1097:	4	4	8	6	5	4	3	10
1105:	8	4	6	3	6	6	5	5
1113:	5	5	5	3	10	6	9	17
1121:	27	10	6	7	3	7	7	4
1129:	8	3	5	5	7	6	6	4
1137:	8	1	3	7	4	4	6	12
1145:	7	7	2	7	1	6	6	4
1153:	3	10	10	9	8	7	8	6
1161:	4	7	7	6	10	5	4	7
1169:	5	5	3	3	8	10	7	5
1177:	5	6	6	13	8	8	3	5
1185:	7	7	8	5	9	4	9	7
1193:	7	8	6	7	5	8	8	5
1201:	5	14	6	8	8	8	2	8
1209:	2	10	11	7	7	9	4	7
1217:	8	10	5	11	5	6	10	12
1225:	6	6	6	6	7	3	8	7

1233: 6 6 6 10 7 6 12 9

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Channel	1	2	3	4	5	6	7	8	9
1241:	3	9	5	8	7	4	5	9	
1249:	2	7	9	4	6	2	4	2	
1257:	7	4	5	3	6	7	3	3	
1265:	12	2	4	5	4	4	2	2	
1273:	2	2	6	3	5	3	6	6	
1281:	7	8	6	7	3	3	3	2	
1289:	5	2	2	4	3	4	7	3	
1297:	7	2	2	4	4	2	6	5	
1305:	1	3	6	8	4	4	2	3	
1313:	4	8	8	2	5	7	7	1	
1321:	3	1	1	3	2	2	7	2	
1329:	3	3	4	3	9	3	4	3	
1337:	4	3	3	2	3	1	3	4	
1345:	2	6	4	4	2	4	3	5	
1353:	4	5	3	1	2	5	2	4	
1361:	1	4	3	3	1	2	1	4	
1369:	2	1	2	4	1	3	2	6	
1377:	8	8	5	0	1	1	1	2	
1385:	1	0	0	1	5	2	1	2	
1393:	4	0	2	1	0	4	3	4	
1401:	4	4	1	2	5	4	2	7	
1409:	2	2	1	0	4	2	3	4	
1417:	3	1	2	2	1	4	2	0	
1425:	4	3	3	0	1	2	3	4	
1433:	3	1	0	0	5	1	3	2	
1441:	1	0	3	2	1	1	4	1	
1449:	4	2	5	3	2	1	3	2	
1457:	3	7	38	134	231	89	11	3	
1465:	0	2	0	1	0	0	3	3	
1473:	2	0	1	5	1	1	1	2	
1481:	2	2	2	0	0	1	3	3	
1489:	1	2	1	3	2	2	2	2	
1497:	2	2	1	1	0	2	1	1	
1505:	2	3	1	3	4	6	1	0	
1513:	2	0	0	0	1	2	2	5	
1521:	3	2	3	1	3	2	1	0	
1529:	1	2	1	3	3	1	0	0	
1537:	3	2	4	2	1	0	3	1	
1545:	5	1	1	4	1	3	0	3	
1553:	0	1	2	2	1	2	2	2	
1561:	2	0	2	2	2	1	1	2	
1569:	0	3	2	1	1	1	1	2	
1577:	2	1	1	3	2	1	3	2	
1585:	1	4	3	3	7	0	2	5	
1593:	4	0	2	2	2	1	2	1	
1601:	1	1	0	2	1	0	0	4	
1609:	1	2	2	1	1	1	2	2	
1617:	0	1	2	1	1	5	1	1	
1625:	2	3	2	2	1	3	4	1	
1633:	2	0	0	2	2	1	3	2	
1641:	1	0	3	1	2	0	1	1	
1649:	1	2	5	0	0	1	1	3	
1657:	1	0	1	2	1	6	1	2	

1665: 0 2 1 2 0 0 0 2

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Channel	1	2	3	4	5	6	7	8
1673:	1	1	1	3	2	1	0	4
1681:	1	0	1	1	2	4	0	0
1689:	0	0	0	0	2	1	0	0
1697:	1	1	0	0	0	2	1	0
1705:	2	1	1	2	1	1	0	1
1713:	0	1	0	0	2	1	0	1
1721:	1	1	1	2	1	1	1	2
1729:	5	3	2	1	1	1	0	0
1737:	2	1	2	3	1	3	1	1
1745:	3	0	2	0	3	0	0	0
1753:	0	0	0	0	0	1	1	0
1761:	1	2	5	10	10	8	4	1
1769:	2	1	0	1	2	1	0	5
1777:	1	1	2	0	3	2	1	2
1785:	1	1	1	1	1	2	0	2
1793:	2	0	1	1	0	0	1	1
1801:	0	1	0	0	1	2	2	0
1809:	0	2	0	2	1	1	0	1
1817:	1	0	1	2	1	0	1	1
1825:	1	1	1	1	0	1	0	2
1833:	1	1	1	1	1	0	0	1
1841:	0	2	1	2	1	6	3	2
1849:	2	0	1	1	3	0	0	0
1857:	1	1	1	0	0	1	2	2
1865:	1	1	1	1	3	1	0	2
1873:	0	2	0	3	1	1	1	0
1881:	1	0	0	1	2	3	1	1
1889:	2	3	0	0	0	1	2	1
1897:	1	1	3	0	0	2	2	0
1905:	0	0	1	0	1	1	0	0
1913:	0	1	0	1	2	1	2	0
1921:	1	2	1	0	0	1	2	0
1929:	1	2	1	1	3	1	1	2
1937:	1	2	0	2	1	2	0	1
1945:	0	1	0	1	2	1	2	1
1953:	2	1	2	0	0	1	0	1
1961:	0	1	0	1	1	0	0	1
1969:	1	2	0	0	1	1	0	4
1977:	0	2	1	0	0	0	1	0
1985:	2	0	1	0	1	2	0	0
1993:	0	2	2	0	0	0	0	1
2001:	2	0	1	0	0	0	0	1
2009:	1	0	0	1	2	1	1	0
2017:	1	0	1	1	4	3	0	0
2025:	1	2	1	1	1	1	0	0
2033:	0	0	1	1	0	1	1	2
2041:	0	1	2	0	1	1	0	0
2049:	2	1	0	1	0	2	0	3
2057:	1	0	2	1	0	0	0	3
2065:	1	1	0	1	0	1	0	1
2073:	0	0	0	0	0	0	0	2
2081:	2	0	0	0	0	2	0	1
2089:	2	0	0	1	0	1	0	1

2097: 3 2 1 3 2 3 1 2

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

2529: 0 1 0 0 0 0 0 0 0

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Channel	1	2	3	4	5	6	7	8	9
2537:	0	2	1	0	0	0	0	0	0
2545:	0	0	1	1	0	1	0	0	0
2553:	1	1	0	0	2	1	0	0	0
2561:	0	0	0	0	1	0	1	0	0
2569:	0	0	1	0	0	0	0	0	0
2577:	1	0	1	0	0	0	0	0	0
2585:	2	0	0	0	1	0	0	0	1
2593:	0	1	0	1	0	0	1	0	0
2601:	0	0	1	0	1	0	0	0	0
2609:	0	0	0	2	16	17	26	3	0
2617:	3	0	0	0	0	1	0	0	0
2625:	0	1	0	0	0	2	1	0	0
2633:	0	0	0	0	1	0	0	0	0
2641:	0	0	0	0	1	0	0	0	0
2649:	0	0	0	1	0	0	1	0	0
2657:	0	0	1	0	0	0	0	0	0
2665:	0	1	1	1	0	0	0	0	0
2673:	1	0	1	0	0	0	1	0	0
2681:	0	0	1	0	0	1	0	0	0
2689:	0	0	0	0	0	0	0	1	0
2697:	0	1	0	0	0	0	0	0	0
2705:	0	1	0	1	0	1	0	2	0
2713:	0	0	0	0	0	0	0	0	0
2721:	1	1	0	0	1	0	1	0	0
2729:	0	1	0	0	0	0	0	0	0
2737:	0	0	0	1	0	1	0	0	0
2745:	0	0	0	1	0	1	0	0	0
2753:	0	0	0	0	0	0	0	1	0
2761:	1	0	0	0	1	0	0	0	0
2769:	0	0	0	0	0	2	0	1	0
2777:	0	0	0	1	0	1	0	0	0
2785:	0	0	0	0	0	0	0	1	0
2793:	0	0	1	0	0	0	0	0	0
2801:	0	0	0	0	0	0	0	2	0
2809:	1	0	0	0	1	0	0	1	0
2817:	0	0	0	0	0	0	1	0	0
2825:	0	0	0	1	0	0	1	0	0
2833:	0	0	1	0	1	0	0	0	0
2841:	0	0	0	0	0	1	1	0	0
2849:	0	0	0	0	0	0	1	0	0
2857:	0	0	0	1	0	0	0	0	0
2865:	0	1	0	0	1	1	0	0	0
2873:	0	0	0	0	0	0	0	1	0
2881:	0	0	0	0	0	0	0	0	0
2889:	0	0	0	0	0	0	0	0	0
2897:	0	0	1	0	0	0	1	0	0
2905:	1	0	0	0	0	0	0	1	0
2913:	0	1	0	0	0	0	1	1	0
2921:	0	0	0	1	0	0	0	0	0
2929:	1	0	0	0	1	1	0	0	0
2937:	1	0	0	1	0	1	0	0	0
2945:	0	0	0	0	1	0	0	0	0
2953:	0	0	0	0	0	0	0	0	0

2961: 0 1 0 0 0 0 0 0

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Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	1	1	0	0	0
2977:	0	0	0	1	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	1
3009:	0	2	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	1	0	0	0
3033:	0	0	0	1	0	1	0	0
3041:	0	1	0	0	0	0	1	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	0	1	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	1	0	0	0	0	1
3081:	1	0	0	0	1	1	1	0
3089:	0	0	1	0	0	1	1	0
3097:	0	0	2	0	0	1	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	1	0	0
3129:	0	0	0	0	0	1	0	0
3137:	0	0	0	0	1	0	1	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	1	0	0	0	0
3169:	0	1	1	0	0	0	0	0
3177:	0	0	0	0	2	0	0	0
3185:	0	0	1	1	0	0	0	0
3193:	1	0	0	1	0	0	0	0
3201:	0	0	0	0	0	0	1	0
3209:	0	0	0	0	0	0	0	1
3217:	0	1	0	0	2	0	0	0
3225:	0	1	0	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	1	0	0
3249:	0	0	0	0	0	0	0	0
3257:	1	0	0	0	1	1	1	0
3265:	0	0	0	0	1	0	0	0
3273:	0	0	0	0	0	0	1	0
3281:	0	1	0	0	0	0	1	0
3289:	0	0	0	0	0	1	0	0
3297:	1	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	1	0	0
3321:	0	0	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	0	0	0	0	0
3353:	0	0	0	0	1	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	1	0	0	0	0	2
3377:	0	0	0	1	0	0	0	0
3385:	0	0	2	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP4104S17-18

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	1	0	0	0	0	1	1	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	1	1	0	0	0	0
3425:	0	1	0	0	0	0	0	0
3433:	0	1	0	0	0	0	0	0
3441:	0	0	0	0	0	0	2	0
3449:	0	0	0	1	0	0	0	0
3457:	0	1	0	0	0	0	1	0
3465:	1	1	0	0	0	0	1	0
3473:	1	0	0	0	0	0	0	0
3481:	0	0	0	0	0	1	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	1	0	0	0	0	0	0
3513:	0	0	0	1	0	0	0	0
3521:	0	0	0	0	0	0	1	0
3529:	0	0	0	0	0	0	0	1
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	1	1	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:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	1	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	1	0	0	0	0	0
3617:	0	0	0	0	0	0	1	0
3625:	0	0	0	0	0	0	1	0
3633:	0	0	0	0	0	0	1	0
3641:	0	0	1	0	0	0	0	1
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	1	0	0	0	0	0	0	0
3673:	0	0	0	1	0	0	0	1
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	1
3697:	0	0	0	1	0	0	0	1
3705:	0	0	1	0	0	0	0	1
3713:	0	0	0	0	0	0	1	0
3721:	0	0	1	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	1	0	0	0	0	1	0
3745:	0	0	0	0	0	1	0	0
3753:	1	0	0	0	0	0	1	1
3761:	0	0	0	1	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:	1	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	1	0	0	1	0	1	1

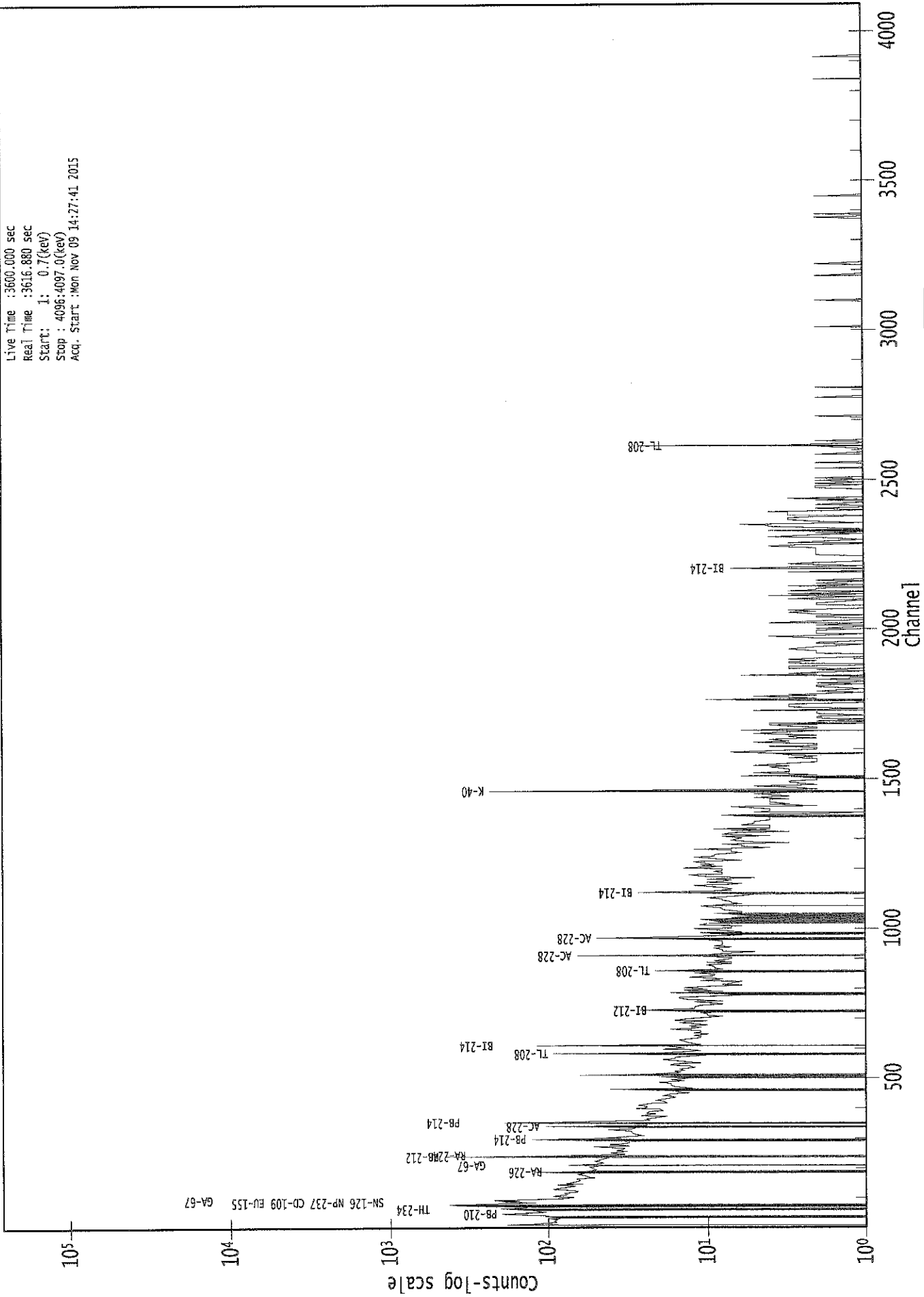
3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP4104S17-18

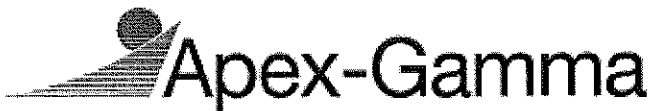
Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	2
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	1	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	1
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	1	0	0
3897:	0	1	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	2	0	0	0	1	0	1
3921: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

0000029345.CNF

Live Time :3600.000 sec
Real Time :3616.880 sec
Start: 1: 0.7(keV)
Stop : 4096.4097.0(keV)
Acq. Start :Mon Nov 09 14:27:41 2015



CB
11/9/15



Analysis Report for 1510088-08
CP1804S03-04

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-08
Sample Description : CP1804S03-04
Sample Type : SOIL

Sample Size : 5.197E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 8:59:31AM
Acquisition Started : 11/9/2015 3:25:05PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.3 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 8 - 4096
Identification Energy Tolerance : 1.000 keV

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

Sample Number : 29348

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

Analysis Report for 1510088-08
CP1804S03-04

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 4:25:09PM
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	63.75	63.84	0.0000	0.00
2	76.29	76.38	0.0000	0.00
3	85.13	85.21	0.0000	0.00
4	89.71	89.79	0.0000	0.00
5	92.84	92.92	0.0000	0.00
6	154.04	154.08	0.0000	0.00
7	186.13	186.16	0.0000	0.00
8	209.61	209.63	0.0000	0.00
9	238.86	238.85	0.0000	0.00
10	241.75	241.74	0.0000	0.00
11	270.51	270.49	0.0000	0.00
12	277.08	277.06	0.0000	0.00
13	295.28	295.24	0.0000	0.00
14	300.85	300.81	0.0000	0.00
15	328.54	328.49	0.0000	0.00
16	338.38	338.33	0.0000	0.00
17	352.07	352.01	0.0000	0.00
18	366.79	366.72	0.0000	0.00
19	406.56	406.47	0.0000	0.00
20	409.59	409.50	0.0000	0.00
21	463.00	462.88	0.0000	0.00
22	510.11	509.97	0.0000	0.00
23	583.33	583.16	0.0000	0.00
24	609.46	609.27	0.0000	0.00
25	687.63	687.40	0.0000	0.00
26	727.62	727.37	0.0000	0.00
27	768.94	768.67	0.0000	0.00
28	795.89	795.61	0.0000	0.00
29	861.29	860.98	0.0000	0.00
30	911.19	910.87	0.0000	0.00
31	935.84	935.50	0.0000	0.00
32	949.98	949.64	0.0000	0.00
33	969.36	969.01	0.0000	0.00
34	1120.41	1120.01	0.0000	0.00
35	1135.31	1134.90	0.0000	0.00
36	1231.56	1231.11	0.0000	0.00
37	1238.67	1238.22	0.0000	0.00
38	1292.53	1292.06	0.0000	0.00
39	1378.14	1377.64	0.0000	0.00
40	1402.34	1401.84	0.0000	0.00
41	1412.51	1412.00	0.0000	0.00
42	1422.73	1422.22	0.0000	0.00

Analysis Report for 1510088-08
CP1804S03-04

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1461.03	1460.50	0.0000	0.00
44	1594.00	1593.44	0.0000	0.00
45	1620.25	1619.68	0.0000	0.00
46	1729.13	1728.53	0.0000	0.00
47	1764.54	1763.94	0.0000	0.00
48	1846.79	1846.17	0.0000	0.00
49	1906.06	1905.42	0.0000	0.00
50	1978.45	1977.80	0.0000	0.00
51	2041.17	2040.50	0.0000	0.00
52	2048.63	2047.96	0.0000	0.00
53	2105.46	2104.78	0.0000	0.00
54	2156.26	2155.58	0.0000	0.00
55	2165.51	2164.82	0.0000	0.00
56	2203.22	2202.53	0.0000	0.00
57	2239.60	2238.90	0.0000	0.00
58	2592.54	2591.80	0.0000	0.00
59	2614.35	2613.61	0.0000	0.00
60	3428.14	3427.40	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510088-08

CP1804S03-04

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 4:25:09PM

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 -	66	63.84	1.63E+02	85.53	1.32E+03	1.71
	2	72 -	83	76.38	1.21E+03	167.01	2.87E+03	3.85
M	3	83 -	96	85.21	8.52E+01	58.55	8.04E+02	1.21
m	4	83 -	96	89.79	1.32E+02	63.69	6.88E+02	1.23
m	5	83 -	96	92.92	2.08E+02	63.59	6.28E+02	1.23
	6	151 -	157	154.08	8.69E+01	70.57	8.34E+02	2.80
	7	183 -	188	186.16	1.90E+02	64.76	6.82E+02	1.45
	8	207 -	211	209.63	5.60E+01	49.56	4.88E+02	1.52
M	9	234 -	244	238.85	8.84E+02	76.92	3.99E+02	1.55
m	10	234 -	244	241.74	2.03E+02	72.42	3.69E+02	1.56
M	11	266 -	280	270.49	1.11E+02	46.55	3.34E+02	1.94
m	12	266 -	280	277.06	5.46E+01	45.81	3.31E+02	1.96
	13	292 -	297	295.24	3.14E+02	55.28	3.60E+02	1.65
	14	299 -	304	300.81	6.93E+01	45.46	3.41E+02	1.40
	15	326 -	331	328.49	4.80E+01	40.41	2.84E+02	1.14
	16	335 -	342	338.33	1.32E+02	58.79	4.80E+02	1.75
	17	348 -	356	352.01	5.57E+02	70.88	4.26E+02	1.42
	18	363 -	371	366.72	5.69E+01	45.60	2.88E+02	5.28
M	19	405 -	413	406.47	1.95E+01	20.00	9.96E+01	1.60
m	20	405 -	413	409.50	3.13E+01	34.06	1.88E+02	2.00
	21	459 -	466	462.88	6.21E+01	38.31	2.02E+02	1.56
	22	501 -	515	509.97	1.94E+02	70.02	4.33E+02	2.34
	23	579 -	587	583.16	3.14E+02	51.30	2.11E+02	1.67
	24	605 -	613	609.27	4.21E+02	58.85	2.73E+02	1.61
	25	682 -	691	687.40	4.26E+01	36.85	1.69E+02	4.08
	26	723 -	733	727.37	8.28E+01	40.82	1.68E+02	2.59
	27	765 -	772	768.67	4.58E+01	33.88	1.62E+02	1.19
	28	793 -	799	795.61	3.76E+01	25.67	8.89E+01	4.26
	29	857 -	865	860.98	3.75E+01	32.50	1.29E+02	1.80
	30	906 -	915	910.87	2.00E+02	40.09	1.15E+02	1.71
	31	930 -	942	935.50	4.03E+01	39.73	1.59E+02	2.27
	32	946 -	954	949.64	2.65E+01	27.38	9.90E+01	4.19
	33	966 -	973	969.01	9.21E+01	37.68	1.58E+02	1.53
	34	1116 -	1124	1120.01	9.15E+01	35.26	1.35E+02	1.53
	35	1132 -	1138	1134.90	2.45E+01	19.69	5.29E+01	4.63
M	36	1226 -	1246	1231.11	2.92E+01	23.35	7.31E+01	2.39
m	37	1226 -	1246	1238.22	4.84E+01	24.35	6.76E+01	2.39
	38	1289 -	1295	1292.06	1.50E+01	17.06	4.20E+01	3.64
	39	1373 -	1382	1377.64	3.78E+01	19.03	3.04E+01	3.28
M	40	1395 -	1415	1401.84	2.18E+01	16.67	2.92E+01	3.03

Analysis Report for 1510088-08

CP1804S03-04

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
m	41	1412.51	1395 - 1415		1412.00	1.22E+01	13.77	2.72E+01	2.28
	42	1422.73	1419 - 1426		1422.22	1.16E+01	15.49	3.28E+01	1.09
	43	1461.03	1455 - 1466		1460.50	6.99E+02	55.06	2.84E+01	2.39
	44	1594.00	1591 - 1595		1593.44	9.93E+00	12.61	2.21E+01	1.32
	45	1620.25	1616 - 1622		1619.68	1.19E+01	10.23	1.03E+01	3.49
	46	1729.13	1724 - 1733		1728.53	2.42E+01	14.25	1.57E+01	2.94
	47	1764.54	1760 - 1770		1763.94	6.16E+01	20.42	2.47E+01	3.18
	48	1846.79	1841 - 1850		1846.17	1.70E+01	14.42	2.00E+01	3.10
	49	1906.06	1899 - 1910		1905.42	1.20E+01	12.00	1.20E+01	3.66
	50	1978.45	1974 - 1982		1977.80	1.50E+01	7.75	0.00E+00	2.58
	51	2041.17	2037 - 2044		2040.50	1.40E+01	7.48	0.00E+00	1.45
	52	2048.63	2045 - 2050		2047.96	6.50E+00	6.40	3.00E+00	2.05
	53	2105.46	2099 - 2110		2104.78	2.50E+01	14.00	1.20E+01	2.05
	54	2156.26	2151 - 2160		2155.58	9.64E+00	10.30	8.71E+00	7.52
	55	2165.51	2161 - 2170		2164.82	1.04E+01	10.68	1.13E+01	2.80
	56	2203.22	2197 - 2206		2202.53	1.87E+01	11.92	8.70E+00	1.88
	57	2239.60	2233 - 2243		2238.90	1.13E+01	9.29	5.36E+00	6.60
	58	2592.54	2588 - 2594		2591.80	5.00E+00	4.47	0.00E+00	2.41
	59	2614.35	2609 - 2618		2613.61	1.15E+02	21.45	0.00E+00	2.95
	60	3428.14	3424 - 3430		3427.40	5.00E+00	4.47	0.00E+00	1.00

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 4:25:09PM

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	63.75	61 -	66	1.63E+02	85.53	1.32E+03	6.71E+01
	2	76.29	72 -	83	1.21E+03	167.01	2.87E+03	1.25E+02
M	3	85.13	83 -	96	8.52E+01	58.55	8.04E+02	4.66E+01
m	4	89.71	83 -	96	1.32E+02	63.69	6.88E+02	4.31E+01
m	5	92.84	83 -	96	2.08E+02	63.59	6.28E+02	4.12E+01
	6	154.04	151 -	157	8.69E+01	70.57	8.34E+02	5.60E+01
	7	186.13	183 -	188	1.90E+02	64.76	6.82E+02	4.82E+01
	8	209.61	207 -	211	5.60E+01	49.56	4.88E+02	3.88E+01

: 00601

Analysis Report for 1510088-08

CP1804S03-04

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	9	238.86	234 -	244	8.84E+02	76.92	3.99E+02	3.28E+01
m	10	241.75	234 -	244	2.03E+02	72.42	3.69E+02	3.16E+01
M	11	270.51	266 -	280	1.11E+02	46.55	3.34E+02	3.00E+01
m	12	277.08	266 -	280	5.46E+01	45.81	3.31E+02	2.99E+01
	13	295.28	292 -	297	3.14E+02	55.28	3.60E+02	3.49E+01
	14	300.85	299 -	304	6.93E+01	45.46	3.41E+02	3.48E+01
	15	328.54	326 -	331	4.80E+01	40.41	2.84E+02	3.12E+01
	16	338.38	335 -	342	1.32E+02	58.79	4.80E+02	4.45E+01
	17	352.07	348 -	356	5.57E+02	70.88	4.26E+02	4.35E+01
	18	366.79	363 -	371	5.69E+01	45.60	2.88E+02	3.54E+01
M	19	406.56	405 -	413	1.95E+01	20.00	9.96E+01	1.64E+01
m	20	409.59	405 -	413	3.13E+01	34.06	1.88E+02	2.26E+01
	21	463.00	459 -	466	6.21E+01	38.31	2.02E+02	2.87E+01
	22	510.11	501 -	515	1.94E+02	70.02	4.33E+02	2.45E+01
	23	583.33	579 -	587	3.14E+02	51.30	2.11E+02	3.05E+01
	24	609.46	605 -	613	4.21E+02	58.85	2.73E+02	3.47E+01
	25	687.63	682 -	691	4.26E+01	36.85	1.69E+02	2.83E+01
	26	727.62	723 -	733	8.28E+01	40.82	1.68E+02	3.00E+01
	27	768.94	765 -	772	4.58E+01	33.88	1.62E+02	2.55E+01
	28	795.89	793 -	799	3.76E+01	25.67	8.89E+01	1.85E+01
	29	861.29	857 -	865	3.75E+01	32.50	1.29E+02	2.47E+01
	30	911.19	906 -	915	2.00E+02	40.09	1.15E+02	2.33E+01
	31	935.84	930 -	942	4.03E+01	39.73	1.59E+02	1.68E+01
	32	949.98	946 -	954	2.65E+01	27.38	9.90E+01	2.09E+01
	33	969.36	966 -	973	9.21E+01	37.68	1.58E+02	2.67E+01
	34	1120.41	1116 -	1124	9.15E+01	35.26	1.35E+02	2.44E+01
	35	1135.31	1132 -	1138	2.45E+01	19.69	5.29E+01	1.40E+01
M	36	1231.56	1226 -	1246	2.92E+01	23.35	7.31E+01	1.41E+01
m	37	1238.67	1226 -	1246	4.84E+01	24.35	6.76E+01	1.35E+01
	38	1292.53	1289 -	1295	1.50E+01	17.06	4.20E+01	1.25E+01
	39	1378.14	1373 -	1382	3.78E+01	19.03	3.04E+01	1.19E+01
M	40	1402.34	1395 -	1415	2.18E+01	16.67	2.92E+01	8.88E+00
m	41	1412.51	1395 -	1415	1.22E+01	13.77	2.72E+01	8.58E+00
	42	1422.73	1419 -	1426	1.16E+01	15.49	3.28E+01	1.14E+01
	43	1461.03	1455 -	1466	6.99E+02	55.06	2.84E+01	1.26E+01
	44	1594.00	1591 -	1595	9.93E+00	12.61	2.21E+01	8.98E+00
	45	1620.25	1616 -	1622	1.19E+01	10.23	1.03E+01	6.22E+00
	46	1729.13	1724 -	1733	2.42E+01	14.25	1.57E+01	8.48E+00
	47	1764.54	1760 -	1770	6.16E+01	20.42	2.47E+01	1.07E+01
	48	1846.79	1841 -	1850	1.70E+01	14.42	2.00E+01	9.73E+00
	49	1906.06	1899 -	1910	1.20E+01	12.00	1.20E+01	8.05E+00
	50	1978.45	1974 -	1982	1.50E+01	7.75	0.00E+00	0.00E+00
	51	2041.17	2037 -	2044	1.40E+01	7.48	0.00E+00	0.00E+00
	52	2048.63	2045 -	2050	6.50E+00	6.40	3.00E+00	3.18E+00
	53	2105.46	2099 -	2110	2.50E+01	14.00	1.20E+01	8.05E+00
	54	2156.26	2151 -	2160	9.64E+00	10.30	8.71E+00	6.75E+00
	55	2165.51	2161 -	2170	1.04E+01	10.68	1.13E+01	7.00E+00
	56	2203.22	2197 -	2206	1.87E+01	11.92	8.70E+00	6.75E+00
	57	2239.60	2233 -	2243	1.13E+01	9.29	5.36E+00	5.26E+00
	58	2592.54	2588 -	2594	5.00E+00	4.47	0.00E+00	0.00E+00
	59	2614.35	2609 -	2618	1.15E+02	21.45	0.00E+00	0.00E+00

Analysis Report for 1510088-08
CP1804S03-04

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
60	3428.14	3424 -	3430	5.00E+00	4.47	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 4:25:09PM

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	63.75	61 -	66	63.84	1.63E+02	85.53	1.32E+03	TH-234
								TH-230
							
M 3	76.29	72 -	83	76.38	1.21E+03	167.01	2.87E+03	TH-231
m 4	85.13	83 -	96	85.21	8.52E+01	58.55	8.04E+02	.....
m 5	89.71	83 -	96	89.79	1.32E+02	63.69	6.88E+02	GA-67
	92.84	83 -	96	92.92	2.08E+02	63.59	6.28E+02	CS-136
	154.04	151 -	157	154.08	8.69E+01	70.57	8.34E+02	RA-226
	186.13	183 -	188	186.16	1.90E+02	64.76	6.82E+02	CM-243
	209.61	207 -	211	209.63	5.60E+01	49.56	4.88E+02	GA-67
M 9	238.86	234 -	244	238.85	8.84E+02	76.92	3.99E+02	PB-212
m 10	241.75	234 -	244	241.74	2.03E+02	72.42	3.69E+02	RA-224
M 11	270.51	266 -	280	270.49	1.11E+02	46.55	3.34E+02	.....
m 12	277.08	266 -	280	277.06	5.46E+01	45.81	3.31E+02	CM-243
								NP-239
	295.28	292 -	297	295.24	3.14E+02	55.28	3.60E+02	PB-214
	300.85	299 -	304	300.81	6.93E+01	45.46	3.41E+02	GA-67
								PB-212
								BI-210M
	328.54	326 -	331	328.49	4.80E+01	40.41	2.84E+02	LA-140
	338.38	335 -	342	338.33	1.32E+02	58.79	4.80E+02	AC-228
	352.07	348 -	356	352.01	5.57E+02	70.88	4.26E+02	PB-214
	366.79	363 -	371	366.72	5.69E+01	45.60	2.88E+02	.....
M 19	406.56	405 -	413	406.47	1.95E+01	20.00	9.96E+01	.....
m 20	409.59	405 -	413	409.50	3.13E+01	34.06	1.88E+02	.....

Analysis Report for 1510088-08

CP1804S03-04

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
21	463.00	459 -	466	462.88	6.21E+01	38.31	2.02E+02	SB-125
22	510.11	501 -	515	509.97	1.94E+02	70.02	4.33E+02	.....
23	583.33	579 -	587	583.16	3.14E+02	51.30	2.11E+02	TL-208
24	609.46	605 -	613	609.27	4.21E+02	58.85	2.73E+02	BI-214
25	687.63	682 -	691	687.40	4.26E+01	36.85	1.69E+02	.....
26	727.62	723 -	733	727.37	8.28E+01	40.82	1.68E+02	BI-212
27	768.94	765 -	772	768.67	4.58E+01	33.88	1.62E+02	.....
28	795.89	793 -	799	795.61	3.76E+01	25.67	8.89E+01	CS-134
29	861.29	857 -	865	860.98	3.75E+01	32.50	1.29E+02	TL-208
30	911.19	906 -	915	910.87	2.00E+02	40.09	1.15E+02	AC-228 LU-172
31	935.84	930 -	942	935.50	4.03E+01	39.73	1.59E+02	.....
32	949.98	946 -	954	949.64	2.65E+01	27.38	9.90E+01	.....
33	969.36	966 -	973	969.01	9.21E+01	37.68	1.58E+02	AC-228
34	1120.41	1116 -	1124	1120.01	9.15E+01	35.26	1.35E+02	SC-46 BI-214 TA-182
M 35	1135.31	1132 -	1138	1134.90	2.45E+01	19.69	5.29E+01	.....
M 36	1231.56	1226 -	1246	1231.11	2.92E+01	23.35	7.31E+01	TA-182 EU-156
m 37	1238.67	1226 -	1246	1238.22	4.84E+01	24.35	6.76E+01	CO-56
38	1292.53	1289 -	1295	1292.06	1.50E+01	17.06	4.20E+01	FE-59
39	1378.14	1373 -	1382	1377.64	3.78E+01	19.03	3.04E+01	.....
M 40	1402.34	1395 -	1415	1401.84	2.18E+01	16.67	2.92E+01	.....
m 41	1412.51	1395 -	1415	1412.00	1.22E+01	13.77	2.72E+01	.....
42	1422.73	1419 -	1426	1422.22	1.16E+01	15.49	3.28E+01	.....
43	1461.03	1455 -	1466	1460.50	6.99E+02	55.06	2.84E+01	K-40
44	1594.00	1591 -	1595	1593.44	9.93E+00	12.61	2.21E+01	.....
45	1620.25	1616 -	1622	1619.68	1.19E+01	10.23	1.03E+01	BI-212
46	1729.13	1724 -	1733	1728.53	2.42E+01	14.25	1.57E+01	.....
47	1764.54	1760 -	1770	1763.94	6.16E+01	20.42	2.47E+01	BI-214
48	1846.79	1841 -	1850	1846.17	1.70E+01	14.42	2.00E+01	.....
49	1906.06	1899 -	1910	1905.42	1.20E+01	12.00	1.20E+01	.....
50	1978.45	1974 -	1982	1977.80	1.50E+01	7.75	0.00E+00	.....
51	2041.17	2037 -	2044	2040.50	1.40E+01	7.48	0.00E+00	.....
52	2048.63	2045 -	2050	2047.96	6.50E+00	6.40	3.00E+00	.....
53	2105.46	2099 -	2110	2104.78	2.50E+01	14.00	1.20E+01	.....
54	2156.26	2151 -	2160	2155.58	9.64E+00	10.30	8.71E+00	.....
55	2165.51	2161 -	2170	2164.82	1.04E+01	10.68	1.13E+01	.....
56	2203.22	2197 -	2206	2202.53	1.87E+01	11.92	8.70E+00	BI-214
57	2239.60	2233 -	2243	2238.90	1.13E+01	9.29	5.36E+00	.....
58	2592.54	2588 -	2594	2591.80	5.00E+00	4.47	0.00E+00	.....
59	2614.35	2609 -	2618	2613.61	1.15E+02	21.45	0.00E+00	TL-208
60	3428.14	3424 -	3430	3427.40	5.00E+00	4.47	0.00E+00	.....

Analysis Report for 1510088-08

CP1804S03-04

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 4:25:09PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	63.75	1.63E+02	85.53	2.39E-02	2.10E-03
	2	76.29	1.21E+03	167.01	2.74E-02	3.34E-03
M	3	85.13	8.52E+01	58.55	2.83E-02	4.22E-03
m	4	89.71	1.32E+02	63.69	2.85E-02	4.43E-03
m	5	92.84	2.08E+02	63.59	2.85E-02	4.29E-03
	6	154.04	8.69E+01	70.57	2.37E-02	2.03E-03
	7	186.13	1.90E+02	64.76	2.11E-02	1.65E-03
	8	209.61	5.60E+01	49.56	1.95E-02	1.63E-03
M	9	238.86	8.84E+02	76.92	1.79E-02	1.60E-03
m	10	241.75	2.03E+02	72.42	1.77E-02	1.60E-03
M	11	270.51	1.11E+02	46.55	1.64E-02	1.57E-03
m	12	277.08	5.46E+01	45.81	1.62E-02	1.56E-03
	13	295.28	3.14E+02	55.28	1.55E-02	1.48E-03
	14	300.85	6.93E+01	45.46	1.53E-02	1.45E-03
	15	328.54	4.80E+01	40.41	1.44E-02	1.32E-03
	16	338.38	1.32E+02	58.79	1.41E-02	1.27E-03
	17	352.07	5.57E+02	70.88	1.37E-02	1.21E-03
	18	366.79	5.69E+01	45.60	1.33E-02	1.14E-03
M	19	406.56	1.95E+01	20.00	1.24E-02	1.00E-03
m	20	409.59	3.13E+01	34.06	1.24E-02	1.00E-03
	21	463.00	6.21E+01	38.31	1.13E-02	9.47E-04
	22	510.11	1.94E+02	70.02	1.06E-02	8.99E-04
	23	583.33	3.14E+02	51.30	9.58E-03	8.25E-04
	24	609.46	4.21E+02	58.85	9.27E-03	7.98E-04
	25	687.63	4.26E+01	36.85	8.45E-03	7.28E-04
	26	727.62	8.28E+01	40.82	8.08E-03	7.03E-04
	27	768.94	4.58E+01	33.88	7.74E-03	6.76E-04
	28	795.89	3.76E+01	25.67	7.53E-03	6.59E-04
	29	861.29	3.75E+01	32.50	7.06E-03	6.17E-04
	30	911.19	2.00E+02	40.09	6.75E-03	5.87E-04
	31	935.84	4.03E+01	39.73	6.60E-03	5.74E-04
	32	949.98	2.65E+01	27.38	6.52E-03	5.67E-04
	33	969.36	9.21E+01	37.68	6.41E-03	5.57E-04
	34	1120.41	9.15E+01	35.26	5.70E-03	4.80E-04

Analysis Report for 1510088-08

CP1804S03-04

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	35	1135.31	2.45E+01	19.69	5.64E-03	4.72E-04
M	36	1231.56	2.92E+01	23.35	5.29E-03	4.80E-04
m	37	1238.67	4.84E+01	24.35	5.27E-03	4.83E-04
	38	1292.53	1.50E+01	17.06	5.10E-03	5.08E-04
	39	1378.14	3.78E+01	19.03	4.87E-03	5.08E-04
M	40	1402.34	2.18E+01	16.67	4.81E-03	4.97E-04
m	41	1412.51	1.22E+01	13.77	4.78E-03	4.93E-04
	42	1422.73	1.16E+01	15.49	4.76E-03	4.89E-04
	43	1461.03	6.99E+02	55.06	4.67E-03	4.73E-04
	44	1594.00	9.93E+00	12.61	4.42E-03	4.18E-04
	45	1620.25	1.19E+01	10.23	4.38E-03	4.07E-04
	46	1729.13	2.42E+01	14.25	4.23E-03	3.62E-04
	47	1764.54	6.16E+01	20.42	4.19E-03	3.47E-04
	48	1846.79	1.70E+01	14.42	4.10E-03	3.18E-04
	49	1906.06	1.20E+01	12.00	4.05E-03	3.18E-04
	50	1978.45	1.50E+01	7.75	4.01E-03	3.18E-04
	51	2041.17	1.40E+01	7.48	3.97E-03	3.18E-04
	52	2048.63	6.50E+00	6.40	3.97E-03	3.18E-04
	53	2105.46	2.50E+01	14.00	3.95E-03	3.18E-04
	54	2156.26	9.64E+00	10.30	3.94E-03	3.18E-04
	55	2165.51	1.04E+01	10.68	3.94E-03	3.18E-04
	56	2203.22	1.87E+01	11.92	3.93E-03	3.18E-04
	57	2239.60	1.13E+01	9.29	3.93E-03	3.18E-04
	58	2592.54	5.00E+00	4.47	4.04E-03	3.18E-04
	59	2614.35	1.15E+02	21.45	4.05E-03	3.18E-04
	60	3428.14	5.00E+00	4.47	5.28E-03	3.18E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 4:25:09PM

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	63.75	1.63E+02	85.53	4.34E+01	1.15E+01	1.20E+02	8.63E+01
	2	76.29	1.21E+03	167.01			1.21E+03	1.67E+02
M	3	85.13	8.52E+01	58.55			8.52E+01	5.85E+01
m	4	89.71	1.32E+02	63.69			1.32E+02	6.37E+01

Analysis Report for 1510088-08

CP1804S03-04

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	5	92.84	2.08E+02	63.59	5.70E+01	9.03E+00	1.51E+02	6.42E+01
	6	154.04	8.69E+01	70.57			8.69E+01	7.06E+01
	7	186.13	1.90E+02	64.76	4.72E+01	7.97E+00	1.43E+02	6.52E+01
	8	209.61	5.60E+01	49.56			5.60E+01	4.96E+01
M	9	238.86	8.84E+02	76.92	2.36E+01	1.35E+01	8.61E+02	7.81E+01
m	10	241.75	2.03E+02	72.42	6.38E+00	3.91E+00	1.97E+02	7.25E+01
M	11	270.51	1.11E+02	46.55			1.11E+02	4.66E+01
m	12	277.08	5.46E+01	45.81			5.46E+01	4.58E+01
	13	295.28	3.14E+02	55.28	8.57E+00	6.10E+00	3.06E+02	5.56E+01
	14	300.85	6.93E+01	45.46			6.93E+01	4.55E+01
	15	328.54	4.80E+01	40.41	0.00E+00	0.00E+00	4.80E+01	4.04E+01
	16	338.38	1.32E+02	58.79			1.32E+02	5.88E+01
	17	352.07	5.57E+02	70.88	1.40E+01	5.55E+00	5.43E+02	7.11E+01
	18	366.79	5.69E+01	45.60			5.69E+01	4.56E+01
M	19	406.56	1.95E+01	20.00			1.95E+01	2.00E+01
m	20	409.59	3.13E+01	34.06			3.13E+01	3.41E+01
	21	463.00	6.21E+01	38.31			6.21E+01	3.83E+01
	22	510.11	1.94E+02	70.02			1.94E+02	7.00E+01
	23	583.33	3.14E+02	51.30	7.32E+00	4.08E+00	3.07E+02	5.15E+01
	24	609.46	4.21E+02	58.85	1.30E+01	3.89E+00	4.08E+02	5.90E+01
	25	687.63	4.26E+01	36.85			4.26E+01	3.69E+01
	26	727.62	8.28E+01	40.82			8.28E+01	4.08E+01
	27	768.94	4.58E+01	33.88			4.58E+01	3.39E+01
	28	795.89	3.76E+01	25.67			3.76E+01	2.57E+01
	29	861.29	3.75E+01	32.50			3.75E+01	3.25E+01
	30	911.19	2.00E+02	40.09	5.60E+00	3.32E+00	1.95E+02	4.02E+01
	31	935.84	4.03E+01	39.73			4.03E+01	3.97E+01
	32	949.98	2.65E+01	27.38			2.65E+01	2.74E+01
	33	969.36	9.21E+01	37.68			9.21E+01	3.77E+01
	34	1120.41	9.15E+01	35.26	3.93E+00	2.96E+00	8.76E+01	3.54E+01
	35	1135.31	2.45E+01	19.69			2.45E+01	1.97E+01
M	36	1231.56	2.92E+01	23.35			2.92E+01	2.33E+01
m	37	1238.67	4.84E+01	24.35			4.84E+01	2.44E+01
	38	1292.53	1.50E+01	17.06			1.50E+01	1.71E+01
	39	1378.14	3.78E+01	19.03			3.78E+01	1.90E+01
M	40	1402.34	2.18E+01	16.67			2.18E+01	1.67E+01
m	41	1412.51	1.22E+01	13.77			1.22E+01	1.38E+01
	42	1422.73	1.16E+01	15.49			1.16E+01	1.55E+01
	43	1461.03	6.99E+02	55.06	1.12E+01	2.55E+00	6.88E+02	5.51E+01
	44	1594.00	9.93E+00	12.61			9.93E+00	1.26E+01
	45	1620.25	1.19E+01	10.23			1.19E+01	1.02E+01
	46	1729.13	2.42E+01	14.25			2.42E+01	1.42E+01
	47	1764.54	6.16E+01	20.42	4.23E+00	2.21E+00	5.74E+01	2.05E+01
	48	1846.79	1.70E+01	14.42			1.70E+01	1.44E+01
	49	1906.06	1.20E+01	12.00			1.20E+01	1.20E+01
	50	1978.45	1.50E+01	7.75			1.50E+01	7.75E+00
	51	2041.17	1.40E+01	7.48			1.40E+01	7.48E+00
	52	2048.63	6.50E+00	6.40			6.50E+00	6.40E+00
	53	2105.46	2.50E+01	14.00			2.50E+01	1.40E+01
	54	2156.26	9.64E+00	10.30			9.64E+00	1.03E+01
	55	2165.51	1.04E+01	10.68			1.04E+01	1.07E+01
	56	2203.22	1.87E+01	11.92	5.94E-01	1.16E+00	1.81E+01	1.20E+01
	57	2239.60	1.13E+01	9.29			1.13E+01	9.29E+00
	58	2592.54	5.00E+00	4.47			5.00E+00	4.47E+00

Analysis Report for 1510088-08

CP1804S03-04

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
59	2614.35	1.15E+02	21.45	7.38E+00	1.57E+00	1.08E+02	2.15E+01
60	3428.14	5.00E+00	4.47			5.00E+00	4.47E+00

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 4:25:09PM

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	63.75	1.63E+02	85.53	4.34E+01	1.15E+01	1.20E+02	8.63E+01
	2	76.29	1.21E+03	167.01			1.21E+03	1.67E+02
M	3	85.13	8.52E+01	58.55			8.52E+01	5.85E+01
m	4	89.71	1.32E+02	63.69			1.32E+02	6.37E+01
m	5	92.84	2.08E+02	63.59	5.70E+01	9.03E+00	1.51E+02	6.42E+01
	6	154.04	8.69E+01	70.57			8.69E+01	7.06E+01
	7	186.13	1.90E+02	64.76	4.72E+01	7.97E+00	1.43E+02	6.52E+01
	8	209.61	5.60E+01	49.56			5.60E+01	4.96E+01
M	9	238.86	8.84E+02	76.92	2.36E+01	1.35E+01	8.61E+02	7.81E+01
m	10	241.75	2.03E+02	72.42	6.38E+00	3.91E+00	1.97E+02	7.25E+01
M	11	270.51	1.11E+02	46.55			1.11E+02	4.66E+01
m	12	277.08	5.46E+01	45.81			5.46E+01	4.58E+01
	13	295.28	3.14E+02	55.28	8.57E+00	6.10E+00	3.06E+02	5.56E+01
	14	300.85	6.93E+01	45.46			6.93E+01	4.55E+01
	15	328.54	4.80E+01	40.41	0.00E+00	0.00E+00	4.80E+01	4.04E+01
	16	338.38	1.32E+02	58.79			1.32E+02	5.88E+01
	17	352.07	5.57E+02	70.88	1.40E+01	5.55E+00	5.43E+02	7.11E+01
	18	366.79	5.69E+01	45.60			5.69E+01	4.56E+01
M	19	406.56	1.95E+01	20.00			1.95E+01	2.00E+01
m	20	409.59	3.13E+01	34.06			3.13E+01	3.41E+01
	21	463.00	6.21E+01	38.31			6.21E+01	3.83E+01
	22	510.11	1.94E+02	70.02			1.94E+02	7.00E+01
	23	583.33	3.14E+02	51.30	7.32E+00	4.08E+00	3.07E+02	5.15E+01
	24	609.46	4.21E+02	58.85	1.30E+01	3.89E+00	4.08E+02	5.90E+01
	25	687.63	4.26E+01	36.85			4.26E+01	3.69E+01
	26	727.62	8.28E+01	40.82			8.28E+01	4.08E+01

: 00608

Analysis Report for 1510088-08

CP1804S03-04

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
27	768.94	4.58E+01	33.88			4.58E+01	3.39E+01
28	795.89	3.76E+01	25.67			3.76E+01	2.57E+01
29	861.29	3.75E+01	32.50			3.75E+01	3.25E+01
30	911.19	2.00E+02	40.09	5.60E+00	3.32E+00	1.95E+02	4.02E+01
31	935.84	4.03E+01	39.73			4.03E+01	3.97E+01
32	949.98	2.65E+01	27.38			2.65E+01	2.74E+01
33	969.36	9.21E+01	37.68			9.21E+01	3.77E+01
34	1120.41	9.15E+01	35.26	3.93E+00	2.96E+00	8.76E+01	3.54E+01
35	1135.31	2.45E+01	19.69			2.45E+01	1.97E+01
M	36	1231.56	2.92E+01			2.92E+01	2.33E+01
m	37	1238.67	4.84E+01			4.84E+01	2.44E+01
	38	1292.53	1.50E+01			1.50E+01	1.71E+01
	39	1378.14	3.78E+01			3.78E+01	1.90E+01
M	40	1402.34	2.18E+01			2.18E+01	1.67E+01
m	41	1412.51	1.22E+01			1.22E+01	1.38E+01
	42	1422.73	1.16E+01			1.16E+01	1.55E+01
	43	1461.03	6.99E+02	1.12E+01	2.55E+00	6.88E+02	5.51E+01
	44	1594.00	9.93E+00			9.93E+00	1.26E+01
	45	1620.25	1.19E+01			1.19E+01	1.02E+01
	46	1729.13	2.42E+01			2.42E+01	1.42E+01
	47	1764.54	6.16E+01	4.23E+00	2.21E+00	5.74E+01	2.05E+01
	48	1846.79	1.70E+01			1.70E+01	1.44E+01
	49	1906.06	1.20E+01			1.20E+01	1.20E+01
	50	1978.45	1.50E+01			1.50E+01	7.75E+00
	51	2041.17	1.40E+01			1.40E+01	7.48E+00
	52	2048.63	6.50E+00			6.50E+00	6.40E+00
	53	2105.46	2.50E+01			2.50E+01	1.40E+01
	54	2156.26	9.64E+00			9.64E+00	1.03E+01
	55	2165.51	1.04E+01			1.04E+01	1.07E+01
	56	2203.22	1.87E+01	5.94E-01	1.16E+00	1.81E+01	1.20E+01
	57	2239.60	1.13E+01			1.13E+01	9.29E+00
	58	2592.54	5.00E+00			5.00E+00	4.47E+00
	59	2614.35	1.15E+02	7.38E+00	1.57E+00	1.08E+02	2.15E+01
	60	3428.14	5.00E+00			5.00E+00	4.47E+00

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1510088-08
CP1804S03-04

<i>Nuclide Name</i>	<i>Id Confidence</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Activity Uncertainty</i>
K-40	0.993	1460.81 *	10.67	1.99E+01	2.61E+00
GA-67	0.586	93.31 *	35.70	2.05E+02	8.99E+02
		208.95 *	2.24	1.77E+03	7.62E+03
		300.22 *	16.00	3.92E+02	1.72E+03
TL-208	0.981	583.14 *	30.22	1.53E+00	2.89E-01
		860.37 *	4.48	1.71E+00	1.49E+00
		2614.66 *	35.85	1.07E+00	2.30E-01
BI-212	0.970	727.17 *	11.80	1.25E+00	6.28E-01
		1620.62 *	2.75	1.42E+00	1.24E+00
PB-212	0.986	238.63 *	44.60	1.56E+00	1.99E-01
		300.09 *	3.41	1.92E+00	1.27E+00
BI-214	0.988	609.31 *	46.30	1.37E+00	2.31E-01
		1120.29 *	15.10	1.47E+00	6.06E-01
		1764.49 *	15.80	1.25E+00	4.61E-01
		2204.22 *	4.98	1.33E+00	8.90E-01
PB-214	0.997	295.21 *	19.19	1.49E+00	3.06E-01
		351.92 *	37.19	1.54E+00	2.43E-01
RA-224	0.910	240.98 *	3.95	4.06E+00	1.54E+00
RA-226	0.999	186.21 *	3.28	2.99E+00	5.64E+00
AC-228	0.996	338.32 *	11.40	1.19E+00	5.39E-01
		911.07 *	27.70	1.51E+00	3.37E-01
		969.11 *	16.60	1.25E+00	5.23E-01
TH-231	0.572	25.64	14.70		
		84.21 *	6.40	6.80E-01	4.78E-01
TH-234	0.967	63.29 *	3.80	1.91E+00	1.38E+00
CM-243	0.352	209.75 *	3.29	1.26E+00	1.12E+00
		228.14	10.60		
		277.60 *	14.00	3.50E-01	2.95E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 4:25:09PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Peak Size (CPS)</i>	<i>Peak CPS (%) Uncertainty</i>	<i>Peak Type</i>	<i>Tolerance Nuclide</i>
2	76.29	3.35604E-01	6.91		

Analysis Report for 1510088-08

CP1804S03-04

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	4	89.71	3.67935E-02		
	6	154.04	2.41253E-02		
M	11	270.51	3.07387E-02	Tol.	CS-136
	15	328.54	1.33304E-02	Sum	
	18	366.79	1.58022E-02		
M	19	406.56	5.41373E-03		
m	20	409.59	8.68438E-03		
	21	463.00	1.72597E-02	Sum	
	22	510.11	5.37744E-02	Sum	
	25	687.63	1.18460E-02		
	27	768.94	1.27340E-02	Sum	
	28	795.89	1.04353E-02	Sum	
	31	935.84	1.11944E-02	Sum	
	32	949.98	7.36111E-03	S-Esc	
	35	1135.31	6.81645E-03		
M	36	1231.56	8.10010E-03	Tol.	EU-156 TA-182
m	37	1238.67	1.34401E-02		
	38	1292.53	4.16667E-03		
	39	1378.14	1.04979E-02	Tol.	FE-59
M	40	1402.34	6.06436E-03		
m	41	1412.51	3.38639E-03		
	42	1422.73	3.22421E-03		
	44	1594.00	2.75794E-03		
	46	1729.13	6.71441E-03	Sum	
	48	1846.79	4.72222E-03		
	49	1906.06	3.33333E-03		
	50	1978.45	4.16667E-03		
	51	2041.17	3.88889E-03	Sum	
	52	2048.63	1.80556E-03		
	53	2105.46	6.94444E-03		
	54	2156.26	2.67857E-03		
	55	2165.51	2.88194E-03		
	57	2239.60	3.14484E-03		
	58	2592.54	1.38889E-03		
	60	3428.14	1.38889E-03		

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 1510088-08

CP1804S03-04

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	0.99	1460.81 *	10.67	1.99E+01	2.61E+00
GA-67	0.58	93.31 *	35.70	2.05E+02	8.99E+02
		208.95 *	2.24	1.77E+03	7.62E+03
		300.22 *	16.00	3.92E+02	1.72E+03
TL-208	0.98	583.14 *	30.22	1.53E+00	2.89E-01
		860.37 *	4.48	1.71E+00	1.49E+00
		2614.66 *	35.85	1.07E+00	2.30E-01
BI-212	0.97	727.17 *	11.80	1.25E+00	6.28E-01
		1620.62 *	2.75	1.42E+00	1.24E+00
PB-212	0.98	238.63 *	44.60	1.56E+00	1.99E-01
		300.09 *	3.41	1.92E+00	1.27E+00
BI-214	0.98	609.31 *	46.30	1.37E+00	2.31E-01
		1120.29 *	15.10	1.47E+00	6.06E-01
		1764.49 *	15.80	1.25E+00	4.61E-01
		2204.22 *	4.98	1.33E+00	8.90E-01
PB-214	0.99	295.21 *	19.19	1.49E+00	3.06E-01
		351.92 *	37.19	1.54E+00	2.43E-01
RA-224	0.91	240.98 *	3.95	4.06E+00	1.54E+00
RA-226	0.99	186.21 *	3.28	2.99E+00	5.64E+00
AC-228	0.99	338.32 *	11.40	1.19E+00	5.39E-01
		911.07 *	27.70	1.51E+00	3.37E-01
		969.11 *	16.60	1.25E+00	5.23E-01
TH-231	0.57	25.64	14.70		
		84.21 *	6.40	6.80E-01	4.78E-01
TH-234	0.96	63.29 *	3.80	1.91E+00	1.38E+00
CM-243	0.35	209.75 *	3.29	1.26E+00	1.12E+00
		228.14	10.60		
		277.60 *	14.00	3.50E-01	2.95E-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 1510088-08

CP1804S03-04

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.993	1.99E+01	2.61E+00	
GA-67	0.586	1.94E+02	8.21E+02	
TL-208	0.981	1.26E+00	1.79E-01	
BI-212	0.970	1.29E+00	5.60E-01	
PB-212	0.986	1.55E+00	1.97E-01	
BI-214	0.988	1.36E+00	1.91E-01	
PB-214	0.997	1.52E+00	1.90E-01	
RA-224	0.910	4.06E+00	1.54E+00	
RA-226	0.999	2.99E+00	5.64E+00	
AC-228	0.996	1.38E+00	2.51E-01	
TH-231	0.572	6.80E-01	4.78E-01	
TH-234	0.967	1.91E+00	1.38E+00	
CM-243	0.352	4.00E-01	2.86E-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 1510088-08
CP1804S03-04

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 4:25:09PM
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	76.29	3.35604E-01		
m	4	89.71	3.67935E-02		
	6	154.04	2.41253E-02	Tol.	CS-136
M	11	270.51	3.07387E-02	Sum	
	15	328.54	1.33304E-02		
	18	366.79	1.58022E-02		
M	19	406.56	5.41373E-03		
m	20	409.59	8.68438E-03		
	21	463.00	1.72597E-02	Sum	
	22	510.11	5.37744E-02	Sum	
	25	687.63	1.18460E-02		
	27	768.94	1.27340E-02	Sum	
	28	795.89	1.04353E-02	Sum	
	31	935.84	1.11944E-02	Sum	
	32	949.98	7.36111E-03	S-Esc	
	35	1135.31	6.81645E-03		
M	36	1231.56	8.10010E-03	Tol.	EU-156 TA-182
m	37	1238.67	1.34401E-02		
	38	1292.53	4.16667E-03	Tol.	FE-59
	39	1378.14	1.04979E-02		
M	40	1402.34	6.06436E-03		
m	41	1412.51	3.38639E-03		
	42	1422.73	3.22421E-03		
	44	1594.00	2.75794E-03		
	46	1729.13	6.71441E-03	Sum	
	48	1846.79	4.72222E-03		
	49	1906.06	3.33333E-03		
	50	1978.45	4.16667E-03		
	51	2041.17	3.88889E-03	Sum	
	52	2048.63	1.80556E-03		
	53	2105.46	6.94444E-03		
	54	2156.26	2.67857E-03		
	55	2165.51	2.88194E-03		
	57	2239.60	3.14484E-03		

Analysis Report for 1510088-08
CP1804S03-04

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
58	2592.54	1.38889E-03	44.72		
60	3428.14	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	-1.43E-01	8.17E-01	8.17E-01
+	NA-22	1274.54	99.94	3.37E-02	9.22E-02	9.22E-02
+	NA-24	1368.53	99.99	1.43E+14	1.33E+14	2.68E+14
		2754.09	99.86	1.24E+13		1.33E+14
+	AL-26	1808.65	99.76	7.00E-03	6.35E-02	6.35E-02
+	K-40	1460.81	* 10.67	1.99E+01	8.88E-01	8.88E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.84E-03	5.54E-02	5.54E-02
		78.34	96.00	2.74E-01		8.14E-02
+	SC-46	889.25	99.98	-4.13E-02	9.40E-02	9.40E-02
		1120.51	99.99	2.86E-01		1.90E-01
+	V-48	983.52	99.98	3.29E-02	3.20E-01	3.20E-01
		1312.10	97.50	-5.47E-02		3.31E-01
+	CR-51	320.08	9.83	3.25E-01	1.34E+00	1.34E+00
+	MN-54	834.83	99.97	-2.31E-02	8.37E-02	8.37E-02
+	CO-56	846.75	99.96	2.21E-02	7.61E-02	9.72E-02
		1037.75	14.03	-1.80E-01		6.91E-01
		1238.25	67.00	1.83E-01		2.51E-01
		1771.40	15.51	5.18E-02		5.16E-01
		2598.48	16.90	0.00E+00		7.61E-02
+	CO-57	122.06	85.51	-1.58E-02	6.09E-02	6.09E-02
		136.48	10.60	-4.67E-01		5.14E-01
+	CO-58	810.76	99.40	-1.56E-02	1.10E-01	1.10E-01
+	FE-59	1099.22	56.50	-7.95E-02	2.42E-01	2.42E-01
		1291.56	43.20	3.46E-02		3.27E-01
+	CO-60	1173.22	100.00	-4.65E-02	8.74E-02	8.74E-02
		1332.49	100.00	5.86E-03		9.09E-02

Analysis Report for 1510088-08
CP1804S03-04

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZN-65	1115.52		50.75	-5.45E-02	2.05E-01	2.05E-01
+	GA-67	93.31	*	35.70	2.05E+02	3.11E+02	3.11E+02
		208.95	*	2.24	1.77E+03		2.54E+03
		300.22	*	16.00	3.92E+02		4.09E+02
+	SE-75	121.11		16.70	1.60E-02	1.03E-01	3.44E-01
		136.00		59.20	-5.93E-02		1.03E-01
		264.65		59.80	9.14E-03		1.05E-01
		279.53		25.20	1.61E-03		2.83E-01
		400.65		11.40	-6.97E-02		6.59E-01
+	RB-82	776.52		13.00	-1.99E-03	1.36E+00	1.36E+00
+	RB-83	520.41		46.00	8.35E-02	1.79E-01	1.79E-01
		529.64		30.30	1.29E-02		2.33E-01
		552.65		16.40	1.19E-01		4.95E-01
+	KR-85	513.99		0.43	-1.75E+01	1.65E+01	1.65E+01
+	SR-85	513.99		99.27	-1.07E-01	1.01E-01	1.01E-01
+	Y-88	898.02		93.40	-2.08E-02	9.55E-02	9.86E-02
		1836.01		99.38	4.12E-02		9.55E-02
+	NB-93M	16.57		9.43	-9.01E+03	5.86E+03	5.86E+03
+	NB-94	702.63		100.00	2.21E-03	7.07E-02	8.06E-02
		871.10		100.00	1.43E-02		7.07E-02
+	NB-95	765.79		99.81	-4.83E-03	1.75E-01	1.75E-01
+	NB-95M	235.69		25.00	-1.36E+03	1.73E+02	1.73E+02
+	ZR-95	724.18		43.70	-1.70E-02	1.98E-01	3.10E-01
		756.72		55.30	-2.14E-02		1.98E-01
+	MO-99	181.06		6.20	-3.02E+02	1.98E+03	3.06E+03
		739.58		12.80	-3.66E+02		1.98E+03
		778.00		4.50	-3.94E+03		5.09E+03
+	RU-103	497.08		89.00	9.31E-03	1.12E-01	1.12E-01
+	RU-106	621.84		9.80	-4.91E-01	7.47E-01	7.47E-01
+	AG-108M	433.93		89.90	-1.15E-02	5.79E-02	5.79E-02
		614.37		90.40	-9.23E-03		9.13E-02
		722.95		90.50	-3.93E-03		9.40E-02
+	CD-109	88.03		3.72	2.21E+00	2.01E+00	2.01E+00
+	AG-110M	657.75		93.14	2.01E-02	9.18E-02	9.18E-02
		677.61		10.53	5.00E-01		8.44E-01
		706.67		16.46	4.58E-02		5.44E-01
		763.93		21.98	-7.32E-02		3.82E-01
		884.67		71.63	-5.41E-02		1.13E-01
		1384.27		23.94	3.90E-02		3.60E-01
+	CD-113M	263.70		0.02	3.61E+01	2.26E+02	2.26E+02
+	SN-113	255.12		1.93	-5.27E-01	1.01E-01	3.67E+00
		391.69		64.90	1.62E-03		1.01E-01
+	TE123M	159.00		84.10	1.26E-02	7.72E-02	7.72E-02
+	SB-124	602.71		97.87	-1.56E-02	1.14E-01	1.14E-01
		645.85		7.26	4.27E-01		1.48E+00
		722.78		11.10	-4.65E-02		1.11E+00
		1691.02		49.00	5.42E-02		1.95E-01
+	I-125	35.49		6.49	8.68E-01	6.23E+00	6.23E+00

Analysis Report for 1510088-08
CP1804S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-125	176.33	6.89	3.43E-02	2.02E-01	8.10E-01
		427.89	29.33	1.71E-02		2.02E-01
		463.38	10.35	7.23E-01		6.84E-01
		600.56	17.80	-2.31E-01		4.23E-01
		635.90	11.32	-3.01E-02		6.85E-01
+	SB-126	414.70	83.30	1.60E-01	4.09E-01	4.09E-01
		666.33	99.60	3.43E-02		4.85E-01
		695.00	99.60	-6.74E-02		4.41E-01
		720.50	53.80	-1.53E-01		8.29E-01
+	SN-126	87.57	37.00	2.12E-01	1.93E-01	1.93E-01
+	SB-127	473.00	25.00	-8.66E-01	7.45E+01	7.45E+01
		685.20	35.70	-5.73E+00		7.53E+01
		783.80	14.70	1.12E+02		1.84E+02
+	I-129	29.78	57.00	-4.32E-01	1.23E+00	1.23E+00
		33.60	13.20	-1.32E+00		2.69E+00
		39.58	7.52	-1.04E+00		2.18E+00
+	I-131	284.30	6.05	2.95E+00	1.09E+00	1.50E+01
		364.48	81.20	3.43E-01		1.09E+00
		636.97	7.26	3.39E-01		1.67E+01
		722.89	1.80	-3.20E+00		7.64E+01
+	TE-132	49.72	13.10	4.60E+01	6.07E+01	5.90E+02
		228.16	88.00	-6.85E+00		6.07E+01
+	BA-133	81.00	33.00	1.02E-01	9.28E-02	1.46E-01
		302.84	17.80	-1.56E-01		3.20E-01
		356.01	60.00	2.32E-02		9.28E-02
+	I-133	529.87	86.30	-1.16E+09	1.03E+10	1.03E+10
+	XE-133	81.00	38.00	6.32E+00	8.98E+00	8.98E+00
+	CS-134	563.23	8.38	2.51E-02	9.82E-02	7.16E-01
		569.32	15.43	1.30E-01		4.20E-01
		604.70	97.60	-6.07E-03		9.82E-02
		795.84	85.40	4.09E-02		1.04E-01
		801.93	8.73	5.11E-02		8.96E-01
+	CS-135	268.24	16.00	-1.35E-01	3.86E-01	3.86E-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	2.81E+00	3.80E-01	4.20E+00
		163.89	4.61	3.38E+00		6.64E+00
		176.55	13.56	-3.75E-01		2.18E+00
		273.65	12.66	-4.38E+00		2.61E+00
		340.57	48.50	-5.84E-01		7.79E-01
		818.50	99.70	-2.27E-01		3.80E-01
		1048.07	79.60	-1.03E-01		5.72E-01
		1235.34	19.70	-9.69E-01		3.39E+00
+	CS-137	661.65	85.12	-5.55E-03	9.34E-02	9.34E-02
+	LA-138	788.74	34.00	9.68E-02	1.14E-01	2.39E-01
		1435.80	66.00	1.43E-02		1.14E-01
+	CE-139	165.85	80.35	5.95E-03	7.90E-02	7.90E-02
+	BA-140	162.64	6.70	-8.64E-03	1.29E+00	4.77E+00

Analysis Report for 1510088-08
CP1804S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	304.84	4.50	-2.04E+00	1.29E+00	6.80E+00
		423.70	3.20	-1.05E+00		1.00E+01
		437.55	2.00	2.29E+00		1.55E+01
		537.32	25.00	-1.94E-01		1.29E+00
+	LA-140	328.77	20.50	1.99E+00	5.21E-01	1.78E+00
		487.03	45.50	8.12E-02		7.53E-01
		815.85	23.50	-1.85E-01		1.78E+00
		1596.49	95.49	-9.20E-02		5.21E-01
+	CE-141	145.44	48.40	1.15E-01	2.31E-01	2.31E-01
+	CE-143	57.36	11.80	-5.43E+06	2.36E+06	5.51E+06
		293.26	42.00	1.70E+05		2.36E+06
		664.55	5.20	7.14E+06		1.82E+07
+	CE-144	133.54	10.80	1.87E-01	5.22E-01	5.22E-01
+	PM-144	476.78	42.00	-2.47E-02	7.79E-02	1.42E-01
		618.01	98.60	-9.99E-03		7.79E-02
		696.49	99.49	1.02E-02		7.84E-02
+	PM-145	36.85	21.70	8.04E-01	5.54E-01	1.08E+00
		37.36	39.70	4.13E-01		5.54E-01
		42.30	15.10	8.24E-02		8.85E-01
		72.40	2.31	-2.07E+00		2.27E+00
+	PM-146	453.90	39.94	1.50E-02	1.46E-01	1.46E-01
		735.90	14.01	3.08E-02		5.08E-01
		747.13	13.10	-1.34E-01		5.62E-01
+	ND-147	91.11	28.90	-3.20E+00	1.78E+00	1.78E+00
		531.02	13.10	-1.66E+00		3.02E+00
+	PM-149	285.90	3.10	1.82E+04	4.42E+04	4.42E+04
+	EU-152	121.78	20.50	-6.08E-02	2.35E-01	2.35E-01
		244.69	5.40	-1.16E-01		1.04E+00
		344.27	19.13	1.82E-03		2.93E-01
		778.89	9.20	-2.94E-02		7.73E-01
		964.01	10.40	3.13E-01		9.99E-01
		1085.78	7.22	3.44E-01		1.17E+00
		1112.02	9.60	-1.37E-01		1.00E+00
		1407.95	14.94	-1.97E-01		5.88E-01
+	GD-153	97.43	31.30	4.48E-02	1.70E-01	1.70E-01
		103.18	22.20	-1.46E-01		2.43E-01
+	EU-154	123.07	40.50	-2.06E-02	1.20E-01	1.20E-01
		723.30	19.70	-1.82E-02		4.35E-01
		873.19	11.50	-1.67E-01		6.02E-01
		996.32	10.30	-3.56E-01		8.38E-01
		1004.76	17.90	1.50E-01		4.65E-01
		1274.45	35.50	9.34E-02		2.55E-01
+	EU-155	86.50	30.90	1.32E-01	2.32E-01	2.32E-01
		105.30	20.70	2.02E-01		2.49E-01
+	EU-156	811.77	10.40	1.77E+00	3.45E+00	3.45E+00
		1153.47	7.20	1.89E+00		5.54E+00
		1230.71	8.90	3.39E+00		5.75E+00
+	HO-166M	184.41	72.60	4.68E-02	9.45E-02	9.45E-02
		280.45	29.60	1.14E-03		2.00E-01

Analysis Report for 1510088-08
CP1804S03-04

<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	410.94	11.10	1.14E-01	9.45E-02	5.48E-01
	711.69	54.10	1.43E-02		1.50E-01
+ TM-171	66.72	0.14	-4.60E+00	3.70E+01	3.70E+01
+ HF-172	81.75	4.52	2.48E-01	4.67E-01	1.03E+00
	125.81	11.30	-5.75E-01		4.67E-01
+ LU-172	181.53	20.60	3.95E-01	4.14E+00	7.74E+00
	810.06	16.63	-1.92E+00		1.36E+01
	912.12	15.25	7.55E+01		2.96E+01
	1093.66	62.50	2.09E+00		4.14E+00
+ LU-173	100.72	5.24	1.07E-01	3.39E-01	9.80E-01
	272.11	21.20	1.89E-01		3.39E-01
+ HF-175	343.40	84.00	3.43E-02	9.36E-02	9.36E-02
+ LU-176	88.34	13.30	5.88E-01	5.56E-02	5.35E-01
	201.83	86.00	-4.86E-02		6.53E-02
	306.78	94.00	-2.68E-03		5.56E-02
+ TA-182	67.75	41.20	-5.13E-03	1.54E-01	1.54E-01
	1121.30	34.90	7.91E-01		5.08E-01
	1189.05	16.23	2.85E-01		8.00E-01
	1221.41	26.98	-9.11E-02		4.23E-01
	1231.02	11.44	6.97E-01		1.25E+00
+ IR-192	308.46	29.68	7.00E-03	1.51E-01	2.44E-01
	468.07	48.10	2.45E-02		1.51E-01
+ HG-203	279.19	77.30	9.44E-03	1.30E-01	1.30E-01
+ BI-207	569.67	97.72	2.00E-02	6.45E-02	6.45E-02
	1063.62	74.90	8.13E-02		1.29E-01
+ TL-208	583.14	* 30.22	1.53E+00	1.19E-01	3.23E-01
	860.37	* 4.48	1.71E+00		2.38E+00
	2614.66	* 35.85	1.07E+00		1.19E-01
+ BI-210M	262.00	45.00	2.24E-03	1.19E-01	1.19E-01
	300.00	23.00	2.27E-01		2.91E-01
+ PB-210	46.50	4.25	4.65E+00	2.73E+00	2.73E+00
+ PB-211	404.84	2.90	4.99E-01	2.05E+00	2.05E+00
	831.96	2.90	-6.57E-01		2.44E+00
+ BI-212	727.17	* 11.80	1.25E+00	9.51E-01	9.51E-01
	1620.62	* 2.75	1.42E+00		1.82E+00
+ PB-212	238.63	* 44.60	1.56E+00	2.35E-01	2.35E-01
	300.09	* 3.41	1.92E+00		2.01E+00
+ BI-214	609.31	* 46.30	1.37E+00	2.47E-01	2.47E-01
	1120.29	* 15.10	1.47E+00		8.74E-01
	1764.49	* 15.80	1.25E+00		5.57E-01
	2204.22	* 4.98	1.33E+00		1.22E+00
+ PB-214	295.21	* 19.19	1.49E+00	2.58E-01	3.59E-01
	351.92	* 37.19	1.54E+00		2.58E-01
+ RN-219	401.80	6.50	6.82E-01	9.56E-01	9.56E-01
+ RA-223	323.87	3.88	2.11E-01	1.49E+00	1.49E+00
+ RA-224	240.98	* 3.95	4.06E+00	2.62E+00	2.62E+00
+ RA-225	40.00	31.00	-1.10E+00	2.31E+00	2.31E+00
+ RA-226	186.21	* 3.28	2.99E+00	2.14E+00	2.14E+00

Analysis Report for 1510088-08
CP1804S03-04

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-227	50.10		8.40	7.34E-02	7.64E-01	9.40E-01
		236.00		11.50	-5.99E+00		7.64E-01
		256.20		6.30	-3.56E-03		9.31E-01
+	AC-228	338.32	*	11.40	1.19E+00	3.89E-01	8.24E-01
		911.07	*	27.70	1.51E+00		3.89E-01
		969.11	*	16.60	1.25E+00		7.61E-01
+	TH-230	48.44		16.90	-8.07E-01	5.00E-01	5.00E-01
		62.85		4.60	1.08E+00		1.38E+00
		67.67		0.37	-4.71E-01		1.41E+01
+	PA-231	283.67		1.60	6.88E-01	2.46E+00	3.51E+00
		302.67		2.30	-1.20E+00		2.46E+00
+	TH-231	25.64		14.70	-5.72E+00	1.82E+00	1.60E+01
		84.21	*	6.40	6.80E-01		1.82E+00
+	PA-233	311.98		38.60	3.45E-02	3.33E-01	3.33E-01
+	PA-234	131.20		20.40	8.26E-02	2.76E-01	2.76E-01
		733.99		8.80	-1.47E-01		7.61E-01
		946.00		12.00	1.20E-01		6.96E-01
+	PA-234M	1001.03		0.92	3.04E+00	9.66E+00	9.66E+00
+	TH-234	63.29	*	3.80	1.91E+00	2.22E+00	2.22E+00
+	U-235	143.76		10.50	2.19E-01	5.30E-01	5.30E-01
		163.35		4.70	-2.15E-03		1.19E+00
		205.31		4.70	6.64E-01		1.27E+00
+	NP-237	86.50		12.60	3.19E-01	5.62E-01	5.62E-01
+	NP-239	106.10		22.70	-5.81E+02	2.96E+03	2.96E+03
		228.18		10.70	-7.85E+02		6.95E+03
		277.60		14.10	5.05E+03		6.11E+03
+	AM-241	59.54		35.90	9.31E-03	1.67E-01	1.67E-01
+	AM-243	74.67		66.00	-1.61E-01	1.15E-01	1.15E-01
+	CM-243	209.75	*	3.29	1.26E+00	5.25E-01	1.82E+00
		228.14		10.60	-5.92E-02		5.25E-01
		277.60	*	14.00	3.50E-01		8.93E-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 1510088-08

CP1804S03-04

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	8.17E-01	8.17E-01	-1.43E-01	3.83E-01
NA-22	1274.54	99.94	9.22E-02	9.22E-02	3.37E-02	4.22E-02
NA-24	1368.53	99.99	2.68E+14	1.33E+14	1.43E+14	1.20E+14
	2754.09	99.86	1.33E+14		1.24E+13	4.99E+13
AL-26	1808.65	99.76	6.35E-02	6.35E-02	7.00E-03	2.70E-02
+ K-40	1460.81	*	10.67	8.88E-01	8.88E-01	1.99E+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	5.54E-02	5.54E-02	-1.84E-03	2.69E-02
	78.34	96.00	8.14E-02		2.74E-01	3.99E-02
SC-46	889.25	99.98	9.40E-02	9.40E-02	-4.13E-02	4.33E-02
	1120.51	99.99	1.90E-01		2.86E-01	9.08E-02
V-48	983.52	99.98	3.20E-01	3.20E-01	3.29E-02	1.48E-01
	1312.10	97.50	3.31E-01		-5.47E-02	1.49E-01
CR-51	320.08	9.83	1.34E+00	1.34E+00	3.25E-01	6.37E-01
MN-54	834.83	99.97	8.37E-02	8.37E-02	-2.31E-02	3.89E-02
CO-56	846.75	99.96	9.72E-02	7.61E-02	2.21E-02	4.50E-02
	1037.75	14.03	6.91E-01		-1.80E-01	3.15E-01
	1238.25	67.00	2.51E-01		1.83E-01	1.18E-01
	1771.40	15.51	5.16E-01		5.18E-02	2.18E-01
	2598.48	16.90	7.61E-02		0.00E+00	0.00E+00
CO-57	122.06	85.51	6.09E-02	6.09E-02	-1.58E-02	2.95E-02
	136.48	10.60	5.14E-01		-4.67E-01	2.49E-01
CO-58	810.76	99.40	1.10E-01	1.10E-01	-1.56E-02	5.16E-02
FE-59	1099.22	56.50	2.42E-01	2.42E-01	-7.95E-02	1.11E-01
	1291.56	43.20	3.27E-01		3.46E-02	1.49E-01
CO-60	1173.22	100.00	8.74E-02	8.74E-02	-4.65E-02	4.01E-02
	1332.49	100.00	9.09E-02		5.86E-03	4.15E-02
ZN-65	1115.52	50.75	2.05E-01	2.05E-01	-5.45E-02	9.49E-02
+ GA-67	93.31	*	35.70	3.11E+02	3.11E+02	2.05E+02
	208.95	*	2.24	2.54E+03		1.77E+03
	300.22	*	16.00	4.09E+02		3.92E+02
SE-75	121.11	16.70	3.44E-01	1.03E-01	1.60E-02	1.67E-01
	136.00	59.20	1.03E-01		-5.93E-02	5.00E-02
	264.65	59.80	1.05E-01		9.14E-03	5.00E-02
	279.53	25.20	2.83E-01		1.61E-03	1.35E-01
	400.65	11.40	6.59E-01		-6.97E-02	3.13E-01
RB-82	776.52	13.00	1.36E+00	1.36E+00	-1.99E-03	6.32E-01
RB-83	520.41	46.00	1.79E-01	1.79E-01	8.35E-02	8.43E-02
	529.64	30.30	2.33E-01		1.29E-02	1.08E-01
	552.65	16.40	4.95E-01		1.19E-01	2.32E-01
KR-85	513.99	0.43	1.65E+01	1.65E+01	-1.75E+01	7.80E+00
SR-85	513.99	99.27	1.01E-01	1.01E-01	-1.07E-01	4.79E-02
Y-88	898.02	93.40	9.86E-02	9.55E-02	-2.08E-02	4.55E-02
	1836.01	99.38	9.55E-02		4.12E-02	4.18E-02
NB-93M	16.57	9.43	5.86E+03	5.86E+03	-9.01E+03	2.85E+03

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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	8.06E-02	7.07E-02	2.21E-03	3.79E-02
	871.10	100.00	7.07E-02		1.43E-02	3.26E-02
NB-95	765.79	99.81	1.75E-01	1.75E-01	-4.83E-03	8.25E-02
NB-95M	235.69	25.00	1.73E+02	1.73E+02	-1.36E+03	8.43E+01
ZR-95	724.18	43.70	3.10E-01	1.98E-01	-1.70E-02	1.47E-01
	756.72	55.30	1.98E-01		-2.14E-02	9.27E-02
MO-99	181.06	6.20	3.06E+03	1.98E+03	-3.02E+02	1.48E+03
	739.58	12.80	1.98E+03		-3.66E+02	9.27E+02
	778.00	4.50	5.09E+03		-3.94E+03	2.35E+03
RU-103	497.08	89.00	1.12E-01	1.12E-01	9.31E-03	5.22E-02
RU-106	621.84	9.80	7.47E-01	7.47E-01	-4.91E-01	3.50E-01
AG-108M	433.93	89.90	5.79E-02	5.79E-02	-1.15E-02	2.71E-02
	614.37	90.40	9.13E-02		-9.23E-03	4.33E-02
	722.95	90.50	9.40E-02		-3.93E-03	4.43E-02
	88.03	3.72	2.01E+00		2.01E+00	2.21E+00	9.85E-01
AG-110M	657.75	93.14	9.18E-02	9.18E-02	2.01E-02	4.33E-02
	677.61	10.53	8.44E-01		5.00E-01	3.98E-01
	706.67	16.46	5.44E-01		4.58E-02	2.56E-01
	763.93	21.98	3.82E-01		-7.32E-02	1.79E-01
	884.67	71.63	1.13E-01		-5.41E-02	5.20E-02
	1384.27	23.94	3.60E-01		3.90E-02	1.61E-01
CD-113M	263.70	0.02	2.26E+02	2.26E+02	3.61E+01	1.08E+02
SN-113	255.12	1.93	3.67E+00	1.01E-01	-5.27E-01	1.76E+00
	391.69	64.90	1.01E-01		1.62E-03	4.78E-02
TE123M	159.00	84.10	7.72E-02	7.72E-02	1.26E-02	3.74E-02
SB-124	602.71	97.87	1.14E-01	1.14E-01	-1.56E-02	5.38E-02
	645.85	7.26	1.48E+00		4.27E-01	6.94E-01
	722.78	11.10	1.11E+00		-4.65E-02	5.24E-01
	1691.02	49.00	1.95E-01		5.42E-02	8.39E-02
	35.49	6.49	6.23E+00		6.23E+00	8.68E-01	3.02E+00
SB-125	176.33	6.89	8.10E-01	2.02E-01	3.43E-02	3.92E-01
	427.89	29.33	2.02E-01		1.71E-02	9.53E-02
	463.38	10.35	6.84E-01		7.23E-01	3.25E-01
	600.56	17.80	4.23E-01		-2.31E-01	2.00E-01
	635.90	11.32	6.85E-01		-3.01E-02	3.23E-01
SB-126	414.70	83.30	4.09E-01	4.09E-01	1.60E-01	1.93E-01
	666.33	99.60	4.85E-01		3.43E-02	2.28E-01
	695.00	99.60	4.41E-01		-6.74E-02	2.06E-01
	720.50	53.80	8.29E-01		-1.53E-01	3.87E-01
SN-126	87.57	37.00	1.93E-01	1.93E-01	2.12E-01	9.44E-02
SB-127	473.00	25.00	7.45E+01	7.45E+01	-8.66E-01	3.49E+01
	685.20	35.70	7.53E+01		-5.73E+00	3.55E+01
	783.80	14.70	1.84E+02		1.12E+02	8.64E+01
I-129	29.78	57.00	1.23E+00	1.23E+00	-4.32E-01	5.93E-01
	33.60	13.20	2.69E+00		-1.32E+00	1.31E+00
	39.58	7.52	2.18E+00		-1.04E+00	1.06E+00
I-131	284.30	6.05	1.50E+01	1.09E+00	2.95E+00	7.18E+00
	364.48	81.20	1.09E+00		3.43E-01	5.15E-01
	636.97	7.26	1.67E+01		3.39E-01	7.88E+00
	722.89	1.80	7.64E+01		-3.20E+00	3.60E+01
TE-132	49.72	13.10	5.90E+02	6.07E+01	4.60E+01	2.86E+02
	228.16	88.00	6.07E+01		-6.85E+00	2.92E+01
BA-133	81.00	33.00	1.46E-01	9.28E-02	1.02E-01	7.07E-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	3.20E-01	9.28E-02	-1.56E-01	1.53E-01
	356.01	60.00	9.28E-02		2.32E-02	4.40E-02
I-133	529.87	86.30	1.03E+10	1.03E+10	-1.16E+09	4.77E+09
XE-133	81.00	38.00	8.98E+00	8.98E+00	6.32E+00	4.36E+00
CS-134	563.23	8.38	7.16E-01	9.82E-02	2.51E-02	3.33E-01
	569.32	15.43	4.20E-01		1.30E-01	1.97E-01
	604.70	97.60	9.82E-02		-6.07E-03	4.69E-02
	795.84	85.40	1.04E-01		4.09E-02	4.88E-02
	801.93	8.73	8.96E-01		5.11E-02	4.17E-01
CS-135	268.24	16.00	3.86E-01	3.86E-01	-1.35E-01	1.86E-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	4.20E+00	3.80E-01	2.81E+00	2.04E+00
	163.89	4.61	6.64E+00		3.38E+00	3.22E+00
	176.55	13.56	2.18E+00		-3.75E-01	1.05E+00
	273.65	12.66	2.61E+00		-4.38E+00	1.25E+00
	340.57	48.50	7.79E-01		-5.84E-01	3.74E-01
	818.50	99.70	3.80E-01		-2.27E-01	1.76E-01
	1048.07	79.60	5.72E-01		-1.03E-01	2.63E-01
	1235.34	19.70	3.39E+00		-9.69E-01	1.59E+00
CS-137	661.65	85.12	9.34E-02	9.34E-02	-5.55E-03	4.41E-02
LA-138	788.74	34.00	2.39E-01	1.14E-01	9.68E-02	1.12E-01
	1435.80	66.00	1.14E-01		1.43E-02	5.05E-02
CE-139	165.85	80.35	7.90E-02	7.90E-02	5.95E-03	3.82E-02
BA-140	162.64	6.70	4.77E+00	1.29E+00	-8.64E-03	2.31E+00
	304.84	4.50	6.80E+00		-2.04E+00	3.24E+00
	423.70	3.20	1.00E+01		-1.05E+00	4.72E+00
	437.55	2.00	1.55E+01		2.29E+00	7.28E+00
	537.32	25.00	1.29E+00		-1.94E-01	6.03E-01
LA-140	328.77	20.50	1.78E+00	5.21E-01	1.99E+00	8.53E-01
	487.03	45.50	7.53E-01		8.12E-02	3.54E-01
	815.85	23.50	1.78E+00		-1.85E-01	8.27E-01
	1596.49	95.49	5.21E-01		-9.20E-02	2.34E-01
CE-141	145.44	48.40	2.31E-01	2.31E-01	1.15E-01	1.12E-01
CE-143	57.36	11.80	5.51E+06	2.36E+06	-5.43E+06	2.66E+06
	293.26	42.00	2.36E+06		1.70E+05	1.15E+06
	664.55	5.20	1.82E+07		7.14E+06	8.60E+06
CE-144	133.54	10.80	5.22E-01	5.22E-01	1.87E-01	2.53E-01
PM-144	476.78	42.00	1.42E-01	7.79E-02	-2.47E-02	6.64E-02
	618.01	98.60	7.79E-02		-9.99E-03	3.67E-02
	696.49	99.49	7.84E-02		1.02E-02	3.67E-02
PM-145	36.85	21.70	1.08E+00	5.54E-01	8.04E-01	5.24E-01
	37.36	39.70	5.54E-01		4.13E-01	2.69E-01
	42.30	15.10	8.85E-01		8.24E-02	4.29E-01
	72.40	2.31	2.27E+00		-2.07E+00	1.10E+00
PM-146	453.90	39.94	1.46E-01	1.46E-01	1.50E-02	6.86E-02
	735.90	14.01	5.08E-01		3.08E-02	2.36E-01
	747.13	13.10	5.62E-01		-1.34E-01	2.62E-01
ND-147	91.11	28.90	1.78E+00	1.78E+00	-3.20E+00	8.71E-01
	531.02	13.10	3.02E+00		-1.66E+00	1.40E+00
PM-149	285.90	3.10	4.42E+04	4.42E+04	1.82E+04	2.11E+04
EU-152	121.78	20.50	2.35E-01	2.35E-01	-6.08E-02	1.14E-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-152	244.69	5.40	1.04E+00	2.35E-01	-1.16E-01	4.97E-01
	344.27	19.13	2.93E-01		1.82E-03	1.39E-01
	778.89	9.20	7.73E-01		-2.94E-02	3.59E-01
	964.01	10.40	9.99E-01		3.13E-01	4.70E-01
	1085.78	7.22	1.17E+00		3.44E-01	5.36E-01
	1112.02	9.60	1.00E+00		-1.37E-01	4.67E-01
	1407.95	14.94	5.88E-01		-1.97E-01	2.67E-01
GD-153	97.43	31.30	1.70E-01	1.70E-01	4.48E-02	8.27E-02
	103.18	22.20	2.43E-01	-1.46E-01	1.18E-01	
EU-154	123.07	40.50	1.20E-01	1.20E-01	-2.06E-02	5.84E-02
	723.30	19.70	4.35E-01	-1.82E-02	2.05E-01	
	873.19	11.50	6.02E-01	-1.67E-01	2.76E-01	
	996.32	10.30	8.38E-01	-3.56E-01	3.89E-01	
	1004.76	17.90	4.65E-01	1.50E-01	2.15E-01	
EU-155	1274.45	35.50	2.55E-01	9.34E-02	1.17E-01	
	86.50	30.90	2.32E-01	2.32E-01	1.32E-01	1.14E-01
EU-156	105.30	20.70	2.49E-01	2.49E-01	2.02E-01	1.21E-01
	811.77	10.40	3.45E+00	3.45E+00	1.77E+00	1.62E+00
HO-166M	1153.47	7.20	5.54E+00	5.54E+00	1.89E+00	2.56E+00
	1230.71	8.90	5.75E+00	5.75E+00	3.39E+00	2.69E+00
	184.41	72.60	9.45E-02	9.45E-02	4.68E-02	4.60E-02
	280.45	29.60	2.00E-01	2.00E-01	1.14E-03	9.59E-02
TM-171	410.94	11.10	5.48E-01	5.48E-01	1.14E-01	2.60E-01
	711.69	54.10	1.50E-01	1.50E-01	1.43E-02	7.04E-02
	66.72	0.14	3.70E+01	3.70E+01	-4.60E+00	1.79E+01
HF-172	81.75	4.52	1.03E+00	1.03E+00	4.67E-01	4.99E-01
	125.81	11.30	4.67E-01	4.67E-01	-5.75E-01	2.27E-01
LU-172	181.53	20.60	7.74E+00	7.74E+00	3.95E-01	3.74E+00
	810.06	16.63	1.36E+01	1.36E+01	-1.92E+00	6.34E+00
	912.12	15.25	2.96E+01	2.96E+01	7.55E+01	1.42E+01
	1093.66	62.50	4.14E+00	4.14E+00	2.09E+00	1.92E+00
LU-173	100.72	5.24	9.80E-01	9.80E-01	1.07E-01	4.76E-01
	272.11	21.20	3.39E-01	3.39E-01	1.89E-01	1.63E-01
HF-175	343.40	84.00	9.36E-02	9.36E-02	3.43E-02	4.45E-02
LU-176	88.34	13.30	5.35E-01	5.35E-01	5.88E-01	2.62E-01
	201.83	86.00	6.53E-02	6.53E-02	-4.86E-02	3.15E-02
	306.78	94.00	5.56E-02	5.56E-02	-2.68E-03	2.64E-02
TA-182	67.75	41.20	1.54E-01	1.54E-01	-5.13E-03	7.49E-02
	1121.30	34.90	5.08E-01	5.08E-01	7.91E-01	2.42E-01
	1189.05	16.23	8.00E-01	8.00E-01	2.85E-01	3.73E-01
	1221.41	26.98	4.23E-01	4.23E-01	-9.11E-02	1.95E-01
	1231.02	11.44	1.25E+00	1.25E+00	6.97E-01	5.84E-01
IR-192	308.46	29.68	2.44E-01	2.44E-01	7.00E-03	1.16E-01
	468.07	48.10	1.51E-01	1.51E-01	2.45E-02	7.08E-02
HG-203	279.19	77.30	1.30E-01	1.30E-01	9.44E-03	6.23E-02
BI-207	569.67	97.72	6.45E-02	6.45E-02	2.00E-02	3.02E-02
	1063.62	74.90	1.29E-01	1.29E-01	8.13E-02	6.00E-02
+ TL-208	583.14	* 30.22	3.23E-01	1.19E-01	1.53E+00	1.55E-01
	860.37	* 4.48	2.38E+00	2.38E+00	1.71E+00	1.13E+00
	2614.66	* 35.85	1.19E-01	1.19E-01	1.07E+00	4.63E-02
BI-210M	262.00	45.00	1.19E-01	1.19E-01	2.24E-03	5.70E-02
	300.00	23.00	2.91E-01	2.91E-01	2.27E-01	1.40E-01
PB-210	46.50	4.25	2.73E+00	2.73E+00	4.65E+00	1.33E+00

Analysis Report for 1510088-08
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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	2.05E+00	2.05E+00	4.99E-01	9.71E-01
	831.96		2.90	2.44E+00		-6.57E-01	1.13E+00
+ BI-212	727.17	*	11.80	9.51E-01	9.51E-01	1.25E+00	4.55E-01
	1620.62	*	2.75	1.82E+00		1.42E+00	7.47E-01
+ PB-212	238.63	*	44.60	2.35E-01	2.35E-01	1.56E+00	1.15E-01
	300.09	*	3.41	2.01E+00		1.92E+00	9.65E-01
+ BI-214	609.31	*	46.30	2.47E-01	2.47E-01	1.37E+00	1.19E-01
	1120.29	*	15.10	8.74E-01		1.47E+00	4.14E-01
	1764.49	*	15.80	5.57E-01		1.25E+00	2.49E-01
	2204.22	*	4.98	1.22E+00		1.33E+00	5.12E-01
+ PB-214	295.21	*	19.19	3.59E-01	2.58E-01	1.49E+00	1.73E-01
	351.92	*	37.19	2.58E-01		1.54E+00	1.25E-01
RN-219	401.80		6.50	9.56E-01	9.56E-01	6.82E-01	4.54E-01
RA-223	323.87		3.88	1.49E+00	1.49E+00	2.11E-01	7.08E-01
+ RA-224	240.98	*	3.95	2.62E+00	2.62E+00	4.06E+00	1.28E+00
RA-225	40.00		31.00	2.31E+00	2.31E+00	-1.10E+00	1.12E+00
+ RA-226	186.21	*	3.28	2.14E+00	2.14E+00	2.99E+00	1.04E+00
TH-227	50.10		8.40	9.40E-01	7.64E-01	7.34E-02	4.56E-01
	236.00		11.50	7.64E-01		-5.99E+00	3.73E-01
	256.20		6.30	9.31E-01		-3.56E-03	4.47E-01
+ AC-228	338.32	*	11.40	8.24E-01	3.89E-01	1.19E+00	4.00E-01
	911.07	*	27.70	3.89E-01		1.51E+00	1.84E-01
	969.11	*	16.60	7.61E-01		1.25E+00	3.62E-01
TH-230	48.44		16.90	5.00E-01	5.00E-01	-8.07E-01	2.42E-01
	62.85		4.60	1.38E+00		1.08E+00	6.74E-01
	67.67		0.37	1.41E+01		-4.71E-01	6.87E+00
PA-231	283.67		1.60	3.51E+00	2.46E+00	6.88E-01	1.68E+00
	302.67		2.30	2.46E+00		-1.20E+00	1.18E+00
+ TH-231	25.64		14.70	1.60E+01	1.82E+00	-5.72E+00	7.78E+00
	84.21	*	6.40	1.82E+00		6.80E-01	9.02E-01
PA-233	311.98		38.60	3.33E-01	3.33E-01	3.45E-02	1.59E-01
PA-234	131.20		20.40	2.76E-01	2.76E-01	8.26E-02	1.34E-01
	733.99		8.80	7.61E-01		-1.47E-01	3.53E-01
	946.00		12.00	6.96E-01		1.20E-01	3.23E-01
PA-234M	1001.03		0.92	9.66E+00	9.66E+00	3.04E+00	4.49E+00
+ TH-234	63.29	*	3.80	2.22E+00	2.22E+00	1.91E+00	1.09E+00
U-235	143.76		10.50	5.30E-01	5.30E-01	2.19E-01	2.58E-01
	163.35		4.70	1.19E+00		-2.15E-03	5.75E-01
	205.31		4.70	1.27E+00		6.64E-01	6.12E-01
NP-237	86.50		12.60	5.62E-01	5.62E-01	3.19E-01	2.75E-01
NP-239	106.10		22.70	2.96E+03	2.96E+03	-5.81E+02	1.44E+03
	228.18		10.70	6.95E+03		-7.85E+02	3.34E+03
	277.60		14.10	6.11E+03		5.05E+03	2.94E+03
AM-241	59.54		35.90	1.67E-01	1.67E-01	9.31E-03	8.10E-02
AM-243	74.67		66.00	1.15E-01	1.15E-01	-1.61E-01	5.63E-02
+ CM-243	209.75	*	3.29	1.82E+00	5.25E-01	1.26E+00	8.77E-01
	228.14		10.60	5.25E-01		-5.92E-02	2.52E-01
	277.60	*	14.00	8.93E-01		3.50E-01	4.38E-01

Analysis Report for 1510088-08

CP1804S03-04

-
- + = 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***

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: CP1804S03-04

Elapsed Live time: 3600

Elapsed Real Time: 3601

Channel	-----|	-----|	-----|	-----|	-----|	-----|	-----|	-----|
1:	0	0	0	0	0	0	0	167
9:	539	1177	1096	414	580	1644	338	144
17:	137	137	117	127	124	109	110	129
25:	111	118	122	127	106	100	103	106
33:	105	123	122	145	113	122	95	135
41:	115	133	122	113	125	168	218	119
49:	100	110	127	105	110	122	117	89
57:	86	101	119	121	123	117	156	199
65:	135	93	110	124	133	140	126	121
73:	158	178	457	264	486	395	115	138
81:	121	114	97	137	154	116	233	232
89:	123	169	137	101	242	178	105	70
97:	72	84	83	88	79	76	77	75
105:	93	94	86	64	92	77	89	65
113:	66	83	84	74	73	56	72	68
121:	50	82	66	74	73	75	66	89
129:	121	97	70	65	90	79	65	72
137:	66	61	72	86	66	72	70	98
145:	81	72	74	68	75	65	67	65
153:	82	90	81	64	55	55	83	64
161:	69	70	62	75	62	70	52	51
169:	60	43	73	60	67	60	50	61
177:	66	57	52	60	55	65	62	61
185:	79	176	103	50	53	70	58	62
193:	67	63	55	61	55	57	48	56
201:	57	50	55	42	73	68	48	53
209:	75	89	35	50	53	49	54	43
217:	59	44	49	44	42	44	54	53
225:	45	52	35	35	48	44	44	49
233:	43	48	54	58	61	306	626	119
241:	114	147	52	32	39	39	33	43
249:	35	38	36	42	42	36	37	38
257:	50	43	40	40	29	31	35	29
265:	28	28	31	29	44	81	68	38
273:	32	41	43	43	58	47	43	29
281:	26	38	33	30	35	25	32	32
289:	21	29	33	23	32	51	221	140
297:	27	37	40	69	44	25	35	27
305:	19	19	30	29	27	24	30	35
313:	23	29	27	26	22	22	34	30
321:	38	24	30	32	34	21	27	60
329:	30	29	23	19	35	32	38	25
337:	34	115	91	22	25	22	31	23
345:	26	19	26	28	19	16	137	381
353:	122	22	27	18	24	22	16	22
361:	17	12	15	21	27	31	19	24

369: 26 25 13 23 21 21 28 22

Sample Title: CP1804S03-04

Channel	1	2	3	4	5	6	7	8
377:	29	21	21	32	28	23	30	18
385:	22	15	28	23	18	19	21	28
393:	15	11	19	26	22	32	22	23
401:	26	27	24	21	13	27	24	20
409:	35	26	23	18	10	20	19	19
417:	25	21	14	23	14	12	17	19
425:	18	23	17	21	19	15	18	18
433:	18	11	18	9	16	17	19	13
441:	16	17	14	15	19	14	21	15
449:	20	17	18	18	16	22	17	13
457:	15	16	12	19	17	22	42	24
465:	18	9	14	16	16	16	18	10
473:	15	18	14	15	14	18	14	16
481:	17	12	18	17	21	16	16	12
489:	18	16	13	15	15	12	13	23
497:	8	13	14	15	12	17	14	22
505:	18	27	12	11	30	69	85	45
513:	12	23	13	18	13	15	18	17
521:	12	24	8	14	16	11	11	17
529:	15	8	9	10	11	16	14	9
537:	14	9	17	14	14	17	15	10
545:	9	15	8	15	16	15	13	20
553:	11	17	8	15	8	9	16	15
561:	5	21	11	14	12	13	7	11
569:	23	15	17	7	16	15	12	17
577:	19	16	8	12	10	59	192	102
585:	13	12	12	11	7	12	14	14
593:	15	15	11	25	11	13	16	12
601:	16	10	16	16	17	15	13	65
609:	252	132	30	19	14	14	12	11
617:	15	14	12	12	10	9	16	7
625:	11	20	11	14	14	15	14	12
633:	16	15	13	10	10	13	14	14
641:	13	10	16	4	8	18	13	11
649:	14	7	11	10	15	10	12	15
657:	11	15	9	15	15	10	12	18
665:	21	8	13	7	14	6	20	11
673:	8	14	17	11	15	12	11	15
681:	9	10	9	12	6	22	15	17
689:	16	14	6	9	8	10	10	7
697:	14	13	11	13	10	14	15	11
705:	14	15	8	17	10	19	6	9
713:	15	11	14	10	10	14	6	12
721:	5	12	10	11	11	33	38	26
729:	6	10	5	11	6	5	9	16
737:	3	10	12	5	13	9	12	15
745:	10	10	7	4	6	12	8	13
753:	12	9	13	8	9	7	13	12
761:	10	8	11	8	9	12	11	34
769:	16	19	18	8	15	9	9	8
777:	9	7	4	6	7	15	6	9
785:	10	15	12	9	8	13	7	12
793:	5	17	21	15	7	13	4	6

801: 12 7 7 13 13 12 8 8

Sample Title: CP1804S03-04

809:	12	11	8	13	8	12	6	4
817:	12	7	6	9	5	5	15	13
825:	10	7	6	9	3	6	12	4
833:	4	11	10	16	3	13	14	9
841:	10	5	7	11	10	7	8	1
849:	8	1	10	12	6	11	13	11
857:	12	11	8	21	23	7	10	8
865:	2	7	6	7	6	12	5	6
873:	4	6	4	6	8	8	9	11
881:	3	10	9	8	7	7	5	7
889:	11	10	3	3	14	5	3	9
897:	11	5	9	8	4	5	9	5
905:	6	5	10	5	12	52	109	45
913:	7	9	4	8	5	5	9	10
921:	7	9	7	4	5	6	11	8
929:	12	5	11	9	9	19	16	11
937:	11	7	4	11	5	2	7	6
945:	7	4	6	13	14	11	12	9
953:	4	3	8	8	7	11	7	9
961:	5	7	6	19	26	9	15	39
969:	66	19	12	7	4	7	3	6
977:	5	4	9	11	6	2	9	5
985:	5	9	7	5	6	6	9	6
993:	6	11	9	5	9	9	6	12
1001:	12	7	6	7	8	5	5	0
1009:	7	8	6	9	4	8	5	8
1017:	5	6	9	4	6	11	10	5
1025:	7	5	2	3	9	4	10	2
1033:	2	3	7	4	6	4	4	8
1041:	9	11	5	8	4	8	6	6
1049:	11	7	5	9	8	7	6	3
1057:	5	6	7	7	7	9	9	13
1065:	8	10	6	3	6	7	8	6
1073:	2	9	7	4	6	8	7	7
1081:	3	10	6	6	6	8	5	4
1089:	5	5	9	3	13	11	5	8
1097:	5	6	6	9	4	5	4	11
1105:	9	10	7	8	8	9	11	8
1113:	11	7	4	11	9	6	24	58
1121:	26	13	3	9	6	5	5	8
1129:	7	3	6	1	10	10	9	8
1137:	10	3	5	10	9	7	10	6
1145:	7	7	9	6	4	5	8	10
1153:	3	7	14	2	6	5	3	3
1161:	5	6	7	4	8	8	8	8
1169:	9	3	8	6	7	7	5	6
1177:	10	7	5	8	4	8	7	7
1185:	8	7	5	8	12	13	9	11
1193:	7	7	14	10	11	10	8	7
1201:	11	8	9	14	6	3	9	9
1209:	14	11	4	2	9	7	3	13
1217:	8	3	10	6	6	7	8	7
1225:	5	6	8	4	12	14	18	9

1233: 10 8 9 6 13 26 13 8

Sample Title: CP1804S03-04

Channel	1	2	3	4	5	6	7	8
1241:	12	7	6	8	4	3	6	3
1249:	3	4	6	4	8	9	2	6
1257:	5	3	6	4	6	5	6	4
1265:	7	9	7	8	8	3	9	4
1273:	3	5	8	7	4	4	2	7
1281:	6	5	4	0	7	7	5	2
1289:	4	2	9	6	5	7	3	3
1297:	5	3	4	4	2	5	3	7
1305:	2	2	4	4	3	0	5	11
1313:	2	4	4	6	5	10	4	6
1321:	1	6	2	5	4	5	5	5
1329:	3	7	7	9	5	3	3	7
1337:	3	4	5	3	3	5	6	7
1345:	1	5	5	6	1	4	2	3
1353:	5	4	3	2	3	4	0	6
1361:	5	5	0	5	5	5	6	1
1369:	2	3	2	1	1	2	5	6
1377:	10	11	8	3	3	4	0	6
1385:	5	5	3	4	2	3	3	2
1393:	0	2	1	2	1	1	2	4
1401:	6	11	2	2	5	4	5	7
1409:	7	2	4	7	2	3	1	3
1417:	2	1	2	4	0	8	4	5
1425:	3	2	3	2	5	3	3	3
1433:	4	2	6	1	4	2	2	3
1441:	3	4	3	1	2	2	5	4
1449:	3	2	4	5	1	1	3	3
1457:	2	13	87	253	250	87	10	3
1465:	2	0	1	2	1	5	1	0
1473:	1	1	1	3	1	2	1	0
1481:	4	4	2	4	0	2	1	3
1489:	1	1	3	3	1	0	1	1
1497:	1	1	1	1	0	4	1	1
1505:	1	3	2	5	9	2	4	2
1513:	8	1	1	3	1	2	2	1
1521:	3	3	1	1	1	3	2	3
1529:	1	1	2	3	4	1	2	1
1537:	1	4	1	0	2	1	5	4
1545:	2	2	2	1	2	3	2	1
1553:	1	3	2	1	0	0	3	1
1561:	2	1	1	1	0	0	3	0
1569:	0	2	0	0	1	2	3	2
1577:	3	3	0	3	5	3	4	4
1585:	1	2	7	7	2	7	4	5
1593:	5	7	0	1	1	3	1	3
1601:	3	1	0	1	4	2	1	1
1609:	1	2	2	1	1	0	0	1
1617:	0	3	2	5	5	1	1	1
1625:	3	3	2	2	2	3	4	2
1633:	3	0	1	3	1	3	1	1
1641:	0	5	1	2	3	1	0	2
1649:	2	0	1	1	1	1	1	0
1657:	1	4	0	3	1	3	0	0

1665: 2 1 0 0 3 0 2 1

Sample Title: CP1804S03-04

Channel	1	2	3	4	5	6	7	8
1673:	0	0	2	0	3	0	2	3
1681:	3	2	4	0	1	4	1	0
1689:	4	0	2	1	0	1	0	2
1697:	0	0	1	1	1	1	3	0
1705:	2	1	1	3	0	1	1	2
1713:	2	1	0	3	2	0	2	1
1721:	1	1	0	0	1	3	2	7
1729:	6	10	2	1	0	3	1	2
1737:	0	2	1	0	1	0	1	0
1745:	2	0	0	1	0	3	0	1
1753:	0	1	1	1	1	0	1	0
1761:	2	5	20	17	21	5	2	1
1769:	1	0	3	0	1	1	1	2
1777:	0	1	1	3	0	0	2	2
1785:	1	1	4	0	0	0	3	0
1793:	2	3	1	1	3	0	1	1
1801:	2	1	0	0	0	1	1	1
1809:	1	3	3	1	0	1	2	0
1817:	1	1	0	0	1	1	0	2
1825:	0	0	0	1	1	0	1	2
1833:	2	2	0	3	3	3	1	0
1841:	2	1	2	3	2	5	4	6
1849:	2	0	2	0	0	0	4	0
1857:	1	2	2	2	0	1	1	0
1865:	2	1	3	0	1	0	0	0
1873:	1	0	1	1	0	4	1	0
1881:	1	0	0	0	0	1	0	1
1889:	3	1	0	2	2	2	1	1
1897:	0	1	0	1	1	1	1	3
1905:	1	3	5	1	1	0	1	1
1913:	1	1	1	1	0	3	0	1
1921:	1	0	1	0	1	1	0	0
1929:	1	3	1	0	0	0	1	1
1937:	3	1	0	1	0	1	1	0
1945:	0	3	1	1	0	4	0	2
1953:	0	1	1	2	1	3	2	0
1961:	0	1	1	1	2	3	0	1
1969:	1	2	3	0	0	0	2	2
1977:	2	3	4	1	1	0	0	2
1985:	0	1	1	1	0	0	1	0
1993:	1	0	2	3	0	0	0	0
2001:	2	0	2	2	1	0	0	1
2009:	0	0	0	2	0	0	2	0
2017:	1	2	2	1	1	0	1	0
2025:	0	1	1	0	2	0	1	2
2033:	1	1	1	0	0	2	2	2
2041:	5	1	2	0	0	1	1	3
2049:	3	0	1	1	3	0	2	1
2057:	2	1	2	2	1	3	2	2
2065:	0	0	1	1	1	1	2	0
2073:	3	0	1	2	2	1	1	0
2081:	2	1	2	1	1	0	0	0
2089:	0	3	3	1	2	1	2	0

2097: 1 0 1 2 1 2 3 7

Sample Title: CP1804S03-04

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

2529: 1 0 0 1 1 0 1 1

Sample Title: CP1804S03-04

Channel	1	2	3	4	5	6	7	8
2537:	0	1	0	1	2	1	1	1
2545:	1	0	0	0	0	1	1	0
2553:	0	0	1	0	0	0	1	1
2561:	0	0	1	1	1	0	2	0
2569:	1	0	0	0	0	0	0	0
2577:	0	0	0	0	0	0	0	0
2585:	0	0	0	0	0	0	2	2
2593:	1	0	0	0	0	0	0	0
2601:	0	0	0	0	0	0	0	0
2609:	0	2	6	13	29	36	23	5
2617:	1	0	0	0	0	0	0	2
2625:	0	0	0	0	0	0	1	0
2633:	0	1	0	2	1	0	0	0
2641:	0	0	0	0	1	0	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	0	0	0	0	0
2665:	0	2	0	0	0	1	1	0
2673:	0	0	0	1	0	0	0	0
2681:	0	1	1	0	2	0	0	0
2689:	1	1	0	1	1	0	0	0
2697:	1	0	0	1	0	0	1	0
2705:	0	0	0	3	0	0	0	0
2713:	0	1	0	0	0	0	0	1
2721:	0	0	0	0	1	0	0	0
2729:	1	1	0	0	0	1	1	0
2737:	1	0	0	0	0	0	1	0
2745:	0	1	0	0	0	0	0	0
2753:	1	0	1	0	1	0	0	0
2761:	0	0	0	0	1	1	0	0
2769:	0	0	1	2	0	0	0	0
2777:	0	0	0	0	1	0	1	1
2785:	1	0	0	0	1	1	3	0
2793:	0	0	0	0	0	0	0	0
2801:	3	0	0	0	0	0	1	0
2809:	0	0	0	1	0	0	0	0
2817:	0	2	0	0	1	0	0	0
2825:	1	0	0	0	0	1	0	0
2833:	1	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	0	1
2849:	1	1	1	0	0	0	0	0
2857:	1	0	0	0	1	0	0	1
2865:	0	1	1	0	0	1	0	0
2873:	0	0	0	0	0	1	2	0
2881:	0	1	0	0	0	0	0	0
2889:	0	0	1	0	0	1	1	0
2897:	0	0	0	1	0	1	0	1
2905:	1	0	0	0	2	0	1	1
2913:	0	0	0	0	0	0	1	0
2921:	0	0	1	0	2	0	0	0
2929:	0	1	1	0	0	0	0	0
2937:	0	2	1	0	0	0	1	2
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	1

2961: 0 0 0 0 0 0 0 0

Sample Title: CP1804S03-04

Channel	1	2	3	4	5	6	7	8	9
2969:	1	1	0	0	0	0	1	0	
2977:	0	0	0	0	0	0	2	0	
2985:	1	0	0	0	0	0	0	1	
2993:	0	1	0	0	0	0	0	0	
3001:	0	1	0	0	0	0	0	0	
3009:	0	0	1	0	0	0	0	0	
3017:	0	0	0	1	0	0	0	0	
3025:	0	1	0	0	0	0	0	0	
3033:	0	0	0	0	1	0	0	0	
3041:	0	0	0	0	0	0	0	0	
3049:	0	0	0	1	0	0	1	0	
3057:	2	0	0	0	0	0	0	0	
3065:	0	1	0	0	0	0	0	0	
3073:	0	0	0	0	0	1	0	0	
3081:	0	0	0	0	0	0	0	0	
3089:	0	0	0	0	1	1	0	1	
3097:	0	1	0	0	0	0	0	0	
3105:	0	0	0	0	0	0	0	0	
3113:	0	0	0	0	1	0	0	0	
3121:	0	1	0	0	0	0	0	0	
3129:	0	0	0	1	0	0	1	0	
3137:	1	0	0	0	1	0	0	0	
3145:	1	0	0	0	0	0	0	0	
3153:	0	1	0	0	0	0	0	1	
3161:	0	0	0	0	0	1	0	0	
3169:	0	1	1	0	0	0	2	0	
3177:	0	0	0	1	0	0	0	0	
3185:	0	0	0	1	1	0	0	0	
3193:	0	0	2	1	1	1	1	2	
3201:	1	0	0	0	0	0	0	0	
3209:	0	0	0	0	0	0	0	0	
3217:	0	1	0	1	1	0	0	0	
3225:	1	0	0	0	0	0	0	0	
3233:	0	0	0	0	0	1	0	0	
3241:	0	0	0	0	0	1	0	0	
3249:	0	0	0	0	0	0	0	1	
3257:	1	1	0	0	0	0	0	0	
3265:	0	0	0	0	0	0	0	0	
3273:	0	1	1	0	0	0	0	0	
3281:	0	0	0	0	1	1	0	0	
3289:	0	0	0	2	0	0	1	0	
3297:	1	1	0	1	0	0	0	0	
3305:	1	0	0	0	0	0	1	0	
3313:	0	0	0	1	1	1	0	0	
3321:	0	0	0	0	0	1	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	0	0	2	
3353:	1	2	0	3	0	0	0	0	
3361:	0	1	1	0	0	0	1	0	
3369:	1	1	0	0	0	0	0	0	
3377:	0	1	0	0	0	1	0	0	
3385:	0	0	0	1	2	1	0	0	

3393: 0 0 0 0 0 0 0 0

Sample Title: CP1804S03-04

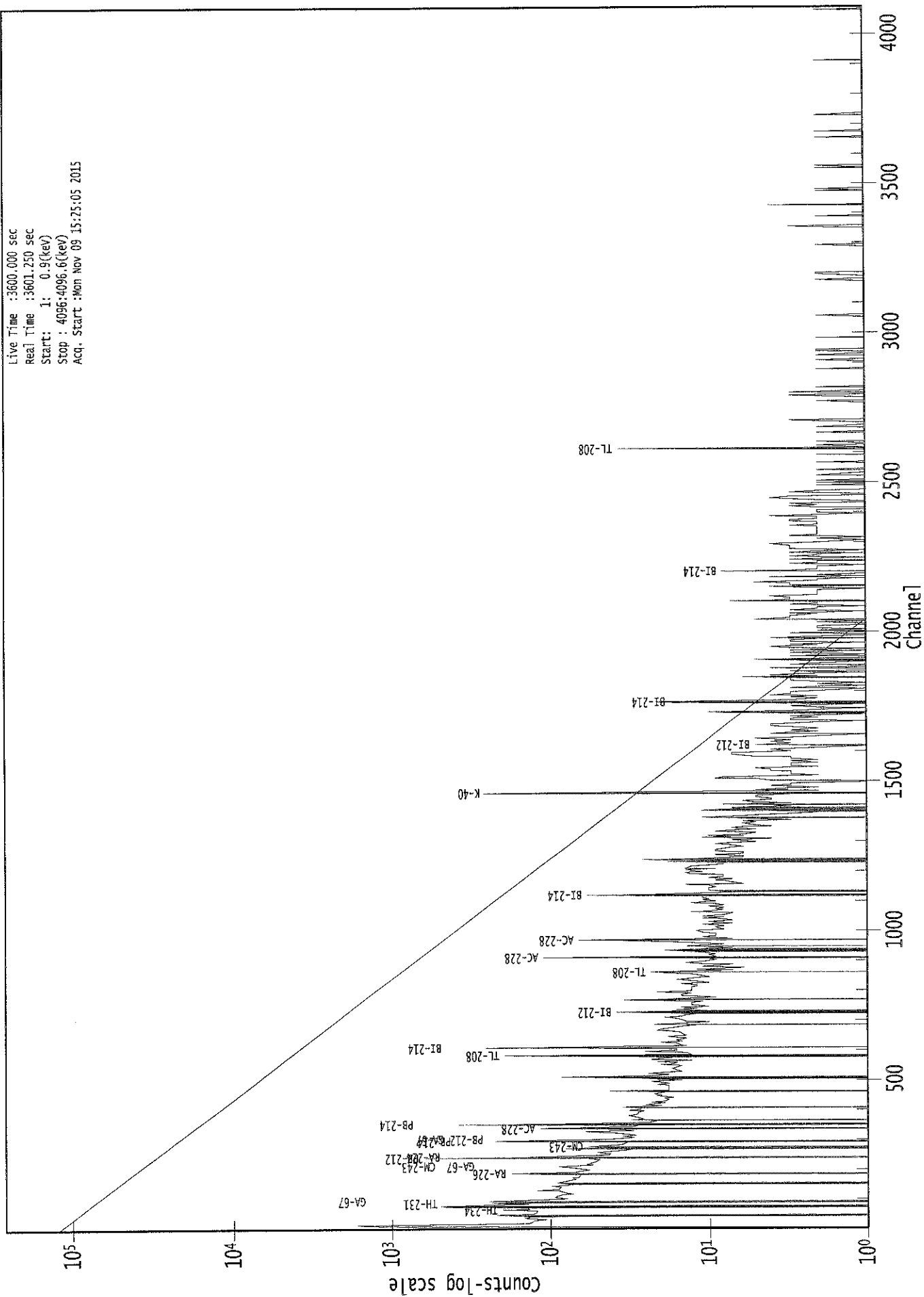
Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	4	0	1	0	0	0
3433:	0	0	0	0	0	0	0	1
3441:	0	0	0	0	0	0	1	0
3449:	0	0	0	0	0	0	0	1
3457:	0	0	0	0	0	0	0	0
3465:	0	0	1	0	0	0	0	0
3473:	0	0	2	0	1	1	0	0
3481:	2	0	0	0	0	0	0	0
3489:	0	0	0	0	1	1	1	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	1	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	1	0	0	0	0	1	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	1	0	0	0
3545:	0	0	0	0	0	1	2	1
3553:	1	0	0	0	1	0	2	1
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	1	0	0
3577:	0	0	0	0	0	0	1	0
3585:	0	0	0	0	0	0	0	1
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	1
3609:	0	0	0	0	0	1	0	0
3617:	0	0	0	0	0	0	1	0
3625:	0	0	1	0	0	0	0	0
3633:	0	0	0	1	0	0	0	0
3641:	0	0	0	0	1	1	0	0
3649:	0	0	0	1	0	2	0	0
3657:	0	0	0	0	0	0	0	1
3665:	0	1	0	0	0	0	0	0
3673:	0	2	0	0	0	1	0	0
3681:	0	1	0	0	1	0	0	0
3689:	0	0	0	0	1	0	0	0
3697:	0	0	0	1	0	0	0	0
3705:	0	0	0	0	1	1	0	0
3713:	0	0	0	0	1	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	2	0	0	0	0	0	0	1
3737:	0	0	0	0	1	0	0	0
3745:	1	0	0	0	0	1	0	0
3753:	0	0	0	0	1	0	0	0
3761:	0	0	0	0	0	0	1	0
3769:	0	0	0	1	0	0	0	0
3777:	0	1	0	0	0	0	0	1
3785:	0	0	0	0	0	0	0	0
3793:	0	1	0	0	0	0	0	0
3801:	0	0	1	0	0	0	0	0
3809:	0	0	0	0	0	1	0	0
3817:	0	0	0	0	0	0	0	0

3825: 0 0 0 0 0 0 0 0 1

Sample Title: CP1804S03-04

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

Live Time : 3600.000 sec
Real Time : 3601.250 sec
Start : 1: 0.9(keV)
Stop : 4096.4096.6(keV)
Acq. Start : Mon Nov 09 15:25:05 2015



ROI Type: 2

ROI Type: 1

KB
11/9/15Analysis Report for 1510088-09
CP1804S05-06

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-09
Sample Description : CP1804S05-06
Sample Type : SOIL

Sample Size : 5.677E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 9:00:05AM
Acquisition Started : 11/9/2015 3:28:18PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3616.5 seconds

Dead Time : 0.46 %

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 : 29349

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

Analysis Report for 1510088-09
CP1804S05-06

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 4:28:36PM
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	40.08	40.31	0.0000	0.00
2	46.31	46.54	0.0000	0.00
3	63.59	63.81	0.0000	0.00
4	76.30	76.51	0.0000	0.00
5	128.99	129.18	0.0000	0.00
6	185.99	186.15	0.0000	0.00
7	191.65	191.80	0.0000	0.00
8	209.54	209.69	0.0000	0.00
9	238.84	238.97	0.0000	0.00
10	241.96	242.09	0.0000	0.00
11	269.78	269.89	0.0000	0.00
12	295.46	295.56	0.0000	0.00
13	300.55	300.65	0.0000	0.00
14	328.44	328.52	0.0000	0.00
15	338.83	338.90	0.0000	0.00
16	352.20	352.27	0.0000	0.00
17	410.46	410.50	0.0000	0.00
18	511.12	511.11	0.0000	0.00
19	544.21	544.19	0.0000	0.00
20	560.77	560.73	0.0000	0.00
21	583.51	583.46	0.0000	0.00
22	609.61	609.56	0.0000	0.00
23	727.15	727.04	0.0000	0.00
24	769.12	768.99	0.0000	0.00
25	791.58	791.44	0.0000	0.00
26	795.59	795.44	0.0000	0.00
27	835.09	834.92	0.0000	0.00
28	840.61	840.45	0.0000	0.00
29	861.79	861.61	0.0000	0.00
30	879.14	878.96	0.0000	0.00
31	911.35	911.16	0.0000	0.00
32	969.07	968.84	0.0000	0.00
33	1120.24	1119.95	0.0000	0.00
34	1155.30	1155.00	0.0000	0.00
35	1222.52	1222.19	0.0000	0.00
36	1334.09	1333.72	0.0000	0.00
37	1377.68	1377.29	0.0000	0.00
38	1402.83	1402.43	0.0000	0.00
39	1407.61	1407.21	0.0000	0.00
40	1461.12	1460.70	0.0000	0.00
41	1513.30	1512.86	0.0000	0.00
42	1525.61	1525.16	0.0000	0.00

Analysis Report for 1510088-09
CP1804S05-06

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1551.77	1551.31	0.0000	0.00
44	1620.11	1619.63	0.0000	0.00
45	1631.85	1631.37	0.0000	0.00
46	1709.37	1708.86	0.0000	0.00
47	1729.25	1728.73	0.0000	0.00
48	1765.12	1764.59	0.0000	0.00
49	1779.39	1778.85	0.0000	0.00
50	1848.16	1847.60	0.0000	0.00
51	2102.92	2102.28	0.0000	0.00
52	2204.85	2204.18	0.0000	0.00
53	2446.38	2445.64	0.0000	0.00
54	2614.88	2614.10	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1510088-09
CP1804S05-06

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 4:28:36PM

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	40.08	37 -	43	40.31	7.35E+01	78.82	1.08E+03	3.81
2	46.31	44 -	50	46.54	1.47E+02	85.93	1.25E+03	1.61
3	63.59	61 -	66	63.81	1.43E+02	93.99	1.65E+03	1.44
4	76.30	71 -	83	76.51	1.17E+03	190.31	3.68E+03	3.91
5	128.99	125 -	133	129.18	1.09E+02	97.37	1.39E+03	1.97
6	185.99	182 -	189	186.15	2.65E+02	79.07	8.59E+02	1.90
7	191.65	190 -	195	191.80	4.92E+01	54.73	5.58E+02	1.94
8	209.54	206 -	213	209.69	1.02E+02	68.56	7.13E+02	1.91
M	9	234 -	246	238.97	8.64E+02	72.03	4.01E+02	1.66
m	10	234 -	246	242.09	2.69E+02	81.20	4.78E+02	2.35
11	269.78	265 -	274	269.89	9.13E+01	66.05	5.73E+02	1.80
12	295.46	292 -	298	295.56	2.98E+02	56.95	3.70E+02	1.99
13	300.55	299 -	304	300.65	5.55E+01	40.10	2.79E+02	1.66
14	328.44	325 -	332	328.52	7.53E+01	53.10	4.19E+02	2.48
15	338.83	335 -	343	338.90	1.17E+02	57.70	4.29E+02	1.87
16	352.20	348 -	355	352.27	4.98E+02	62.74	3.24E+02	1.72
17	410.46	407 -	414	410.50	5.56E+01	39.45	2.19E+02	3.04
18	511.12	507 -	518	511.11	1.21E+02	53.29	2.95E+02	2.72
19	544.21	540 -	549	544.19	3.64E+01	36.58	1.71E+02	6.78
20	560.77	557 -	564	560.73	3.00E+01	30.59	1.36E+02	2.92
21	583.51	581 -	588	583.46	2.47E+02	43.54	1.59E+02	1.84
22	609.61	604 -	614	609.56	3.29E+02	53.32	2.03E+02	2.16
23	727.15	722 -	731	727.04	8.30E+01	34.23	1.20E+02	2.13
24	769.12	765 -	774	768.99	3.68E+01	33.65	1.42E+02	1.93
M	25	789 -	804	791.44	2.15E+01	20.15	6.22E+01	2.55
m	26	789 -	804	795.44	3.40E+01	26.98	8.80E+01	2.55
27	835.09	832 -	838	834.92	2.25E+01	22.30	7.49E+01	3.39
28	840.61	839 -	844	840.45	1.52E+01	19.54	6.17E+01	1.17
29	861.79	856 -	867	861.61	5.31E+01	34.18	1.18E+02	1.82
30	879.14	875 -	882	878.96	2.49E+01	20.78	5.42E+01	3.64
31	911.35	907 -	914	911.16	1.44E+02	34.99	1.08E+02	1.73
32	969.07	963 -	974	968.84	9.72E+01	38.57	1.36E+02	2.05
33	1120.24	1115 -	1126	1119.95	9.12E+01	33.70	9.76E+01	2.51
34	1155.30	1146 -	1165	1155.00	7.10E+01	48.17	1.68E+02	3.96
35	1222.52	1217 -	1226	1222.19	2.20E+01	28.07	1.00E+02	4.44
36	1334.09	1327 -	1339	1333.72	2.48E+01	20.72	3.83E+01	3.43
37	1377.68	1373 -	1380	1377.29	1.98E+01	17.09	3.44E+01	1.83
M	38	1401 -	1414	1402.43	8.88E+00	9.38	1.67E+01	2.60
m	39	1401 -	1414	1407.21	1.48E+01	20.92	3.66E+01	4.24
40	1461.12	1454 -	1467	1460.70	4.93E+02	47.80	3.39E+01	2.50

Analysis Report for 1510088-09

CP1804S05-06

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1513.30	1511 -	1516	1512.86	8.35E+00	11.45	1.73E+01	2.79
42	1525.61	1521 -	1528	1525.16	1.01E+01	10.58	1.19E+01	1.80
43	1551.77	1547 -	1555	1551.31	1.26E+01	11.69	1.29E+01	3.46
44	1620.11	1615 -	1624	1619.63	1.90E+01	8.72	0.00E+00	3.01
45	1631.85	1627 -	1633	1631.37	6.69E+00	6.65	2.63E+00	1.05
46	1709.37	1706 -	1711	1708.86	7.00E+00	5.29	0.00E+00	1.66
47	1729.25	1724 -	1732	1728.73	1.06E+01	10.02	8.80E+00	3.76
48	1765.12	1760 -	1770	1764.59	6.93E+01	19.87	1.33E+01	2.63
49	1779.39	1775 -	1781	1778.85	7.44E+00	6.95	3.11E+00	2.44
50	1848.16	1842 -	1853	1847.60	1.50E+01	12.49	1.19E+01	4.69
51	2102.92	2097 -	2106	2102.28	1.46E+01	12.77	1.47E+01	3.96
52	2204.85	2199 -	2207	2204.18	2.60E+01	13.88	1.39E+01	2.63
53	2446.38	2442 -	2448	2445.64	5.78E+00	7.78	6.44E+00	1.78
54	2614.88	2609 -	2617	2614.10	5.75E+01	16.13	5.02E+00	2.20

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 4:28:36PM

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	40.08	37 -	43	7.35E+01	78.82	1.08E+03	6.32E+01
2	46.31	44 -	50	1.47E+02	85.93	1.25E+03	6.78E+01
3	63.59	61 -	66	1.43E+02	93.99	1.65E+03	7.47E+01
4	76.30	71 -	83	1.17E+03	190.31	3.68E+03	1.46E+02
5	128.99	125 -	133	1.09E+02	97.37	1.39E+03	7.82E+01
6	185.99	182 -	189	2.65E+02	79.07	8.59E+02	5.92E+01
7	191.65	190 -	195	4.92E+01	54.73	5.58E+02	4.35E+01
8	209.54	206 -	213	1.02E+02	68.56	7.13E+02	5.38E+01
M	9	234 -	246	8.64E+02	72.03	4.01E+02	3.29E+01
m	10	234 -	246	2.69E+02	81.20	4.78E+02	3.59E+01
11	269.78	265 -	274	9.13E+01	66.05	5.73E+02	5.20E+01
12	295.46	292 -	298	2.98E+02	56.95	3.70E+02	3.72E+01
13	300.55	299 -	304	5.55E+01	40.10	2.79E+02	3.06E+01
14	328.44	325 -	332	7.53E+01	53.10	4.19E+02	4.13E+01

0641A

Analysis Report for 1510088-09

CP1804S05-06

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level	
15	338.83	335 -	343	1.17E+02	57.70	4.29E+02	4.40E+01	
16	352.20	348 -	355	4.98E+02	62.74	3.24E+02	3.62E+01	
17	410.46	407 -	414	5.56E+01	39.45	2.19E+02	3.00E+01	
18	511.12	507 -	518	1.21E+02	53.29	2.95E+02	3.99E+01	
19	544.21	540 -	549	3.64E+01	36.58	1.71E+02	2.84E+01	
20	560.77	557 -	564	3.00E+01	30.59	1.36E+02	2.35E+01	
21	583.51	581 -	588	2.47E+02	43.54	1.59E+02	2.48E+01	
22	609.61	604 -	614	3.29E+02	53.32	2.03E+02	3.21E+01	
23	727.15	722 -	731	8.30E+01	34.23	1.20E+02	2.38E+01	
24	769.12	765 -	774	3.68E+01	33.65	1.42E+02	2.58E+01	
M	25	791.58	789 -	804	2.15E+01	20.15	6.22E+01	1.30E+01
m	26	795.59	789 -	804	3.40E+01	26.98	8.80E+01	1.54E+01
	27	835.09	832 -	838	2.25E+01	22.30	7.49E+01	1.66E+01
	28	840.61	839 -	844	1.52E+01	19.54	6.17E+01	1.47E+01
	29	861.79	856 -	867	5.31E+01	34.18	1.18E+02	2.54E+01
	30	879.14	875 -	882	2.49E+01	20.78	5.42E+01	1.50E+01
	31	911.35	907 -	914	1.44E+02	34.99	1.08E+02	2.09E+01
	32	969.07	963 -	974	9.72E+01	38.57	1.36E+02	2.73E+01
	33	1120.24	1115 -	1126	9.12E+01	33.70	9.76E+01	2.28E+01
	34	1155.30	1146 -	1165	7.10E+01	48.17	1.68E+02	3.71E+01
	35	1222.52	1217 -	1226	2.20E+01	28.07	1.00E+02	2.17E+01
	36	1334.09	1327 -	1339	2.48E+01	20.72	3.83E+01	1.49E+01
	37	1377.68	1373 -	1380	1.98E+01	17.09	3.44E+01	1.20E+01
M	38	1402.83	1401 -	1414	8.88E+00	9.38	1.67E+01	6.71E+00
m	39	1407.61	1401 -	1414	1.48E+01	20.92	3.66E+01	9.94E+00
	40	1461.12	1454 -	1467	4.93E+02	47.80	3.39E+01	1.45E+01
	41	1513.30	1511 -	1516	8.35E+00	11.45	1.73E+01	8.12E+00
	42	1525.61	1521 -	1528	1.01E+01	10.58	1.19E+01	6.96E+00
	43	1551.77	1547 -	1555	1.26E+01	11.69	1.29E+01	7.65E+00
	44	1620.11	1615 -	1624	1.90E+01	8.72	0.00E+00	0.00E+00
	45	1631.85	1627 -	1633	6.69E+00	6.65	2.63E+00	3.44E+00
	46	1709.37	1706 -	1711	7.00E+00	5.29	0.00E+00	0.00E+00
	47	1729.25	1724 -	1732	1.06E+01	10.02	8.80E+00	6.27E+00
	48	1765.12	1760 -	1770	6.93E+01	19.87	1.33E+01	8.91E+00
	49	1779.39	1775 -	1781	7.44E+00	6.95	3.11E+00	3.53E+00
	50	1848.16	1842 -	1853	1.50E+01	12.49	1.19E+01	8.05E+00
	51	2102.92	2097 -	2106	1.46E+01	12.77	1.47E+01	8.40E+00
	52	2204.85	2199 -	2207	2.60E+01	13.88	1.39E+01	7.74E+00
	53	2446.38	2442 -	2448	5.78E+00	7.78	6.44E+00	5.03E+00
	54	2614.88	2609 -	2617	5.75E+01	16.13	5.02E+00	4.52E+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 1510088-09

CP1804S05-06

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 4:28:36PM

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	40.08	37 -	43	40.31	7.35E+01	78.82	1.08E+03	RA-225 I-129
2	46.31	44 -	50	46.54	1.47E+02	85.93	1.25E+03	PB-210
3	63.59	61 -	66	63.81	1.43E+02	93.99	1.65E+03	TH-234 TH-230
4	76.30	71 -	83	76.51	1.17E+03	190.31	3.68E+03	.....
5	128.99	125 -	133	129.18	1.09E+02	97.37	1.39E+03	.....
6	185.99	182 -	189	186.15	2.65E+02	79.07	8.59E+02	RA-226
7	191.65	190 -	195	191.80	4.92E+01	54.73	5.58E+02	.....
8	209.54	206 -	213	209.69	1.02E+02	68.56	7.13E+02	CM-243 GA-67
M	9	238.84	234 -	246	238.97	8.64E+02	4.01E+02	PB-212
m	10	241.96	234 -	246	242.09	2.69E+02	4.78E+02	RA-224
	11	269.78	265 -	274	269.89	9.13E+01	5.73E+02	.....
	12	295.46	292 -	298	295.56	2.98E+02	3.70E+02	PB-214
	13	300.55	299 -	304	300.65	5.55E+01	40.10	2.79E+02 GA-67 PB-212 BI-210M
	14	328.44	325 -	332	328.52	7.53E+01	53.10	4.19E+02 LA-140
	15	338.83	335 -	343	338.90	1.17E+02	57.70	4.29E+02 AC-228
	16	352.20	348 -	355	352.27	4.98E+02	62.74	3.24E+02 PB-214
	17	410.46	407 -	414	410.50	5.56E+01	39.45	2.19E+02 HO-166M
	18	511.12	507 -	518	511.11	1.21E+02	53.29	2.95E+02
	19	544.21	540 -	549	544.19	3.64E+01	36.58	1.71E+02
	20	560.77	557 -	564	560.73	3.00E+01	30.59	1.36E+02
	21	583.51	581 -	588	583.46	2.47E+02	43.54	1.59E+02 TL-208
	22	609.61	604 -	614	609.56	3.29E+02	53.32	2.03E+02 BI-214
	23	727.15	722 -	731	727.04	8.30E+01	34.23	1.20E+02 BI-212
	24	769.12	765 -	774	768.99	3.68E+01	33.65	1.42E+02
M	25	791.58	789 -	804	791.44	2.15E+01	20.15	6.22E+01
m	26	795.59	789 -	804	795.44	3.40E+01	26.98	8.80E+01 CS-134
	27	835.09	832 -	838	834.92	2.25E+01	22.30	7.49E+01 MN-54
	28	840.61	839 -	844	840.45	1.52E+01	19.54	6.17E+01
	29	861.79	856 -	867	861.61	5.31E+01	34.18	1.18E+02
	30	879.14	875 -	882	878.96	2.49E+01	20.78	5.42E+01
	31	911.35	907 -	914	911.16	1.44E+02	34.99	1.08E+02 AC-228 LU-172
	32	969.07	963 -	974	968.84	9.72E+01	38.57	1.36E+02 AC-228
	33	1120.24	1115 -	1126	1119.95	9.12E+01	33.70	9.76E+01 BI-214 SC-46
	34	1155.30	1146 -	1165	1155.00	7.10E+01	48.17	1.68E+02

: 00643

Analysis Report for 1510088-09

CP1804S05-06

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	35	1222.52	1217 -	1226	1222.19	2.20E+01	28.07	1.00E+02	.....
	36	1334.09	1327 -	1339	1333.72	2.48E+01	20.72	3.83E+01	.....
	37	1377.68	1373 -	1380	1377.29	1.98E+01	17.09	3.44E+01	.....
M	38	1402.83	1401 -	1414	1402.43	8.88E+00	9.38	1.67E+01	.....
m	39	1407.61	1401 -	1414	1407.21	1.48E+01	20.92	3.66E+01	EU-152
	40	1461.12	1454 -	1467	1460.70	4.93E+02	47.80	3.39E+01	K-40
	41	1513.30	1511 -	1516	1512.86	8.35E+00	11.45	1.73E+01	.....
	42	1525.61	1521 -	1528	1525.16	1.01E+01	10.58	1.19E+01	.....
	43	1551.77	1547 -	1555	1551.31	1.26E+01	11.69	1.29E+01	.....
	44	1620.11	1615 -	1624	1619.63	1.90E+01	8.72	0.00E+00	BI-212
	45	1631.85	1627 -	1633	1631.37	6.69E+00	6.65	2.63E+00	.....
	46	1709.37	1706 -	1711	1708.86	7.00E+00	5.29	0.00E+00	.....
	47	1729.25	1724 -	1732	1728.73	1.06E+01	10.02	8.80E+00	.....
	48	1765.12	1760 -	1770	1764.59	6.93E+01	19.87	1.33E+01	BI-214
	49	1779.39	1775 -	1781	1778.85	7.44E+00	6.95	3.11E+00	.....
	50	1848.16	1842 -	1853	1847.60	1.50E+01	12.49	1.19E+01	.....
	51	2102.92	2097 -	2106	2102.28	1.46E+01	12.77	1.47E+01	.....
	52	2204.85	2199 -	2207	2204.18	2.60E+01	13.88	1.39E+01	BI-214
	53	2446.38	2442 -	2448	2445.64	5.78E+00	7.78	6.44E+00	.....
	54	2614.88	2609 -	2617	2614.10	5.75E+01	16.13	5.02E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 4:28:36PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	40.08	7.35E+01	78.82	1.12E-02	1.58E-03
	2	46.31	1.47E+02	85.93	1.49E-02	1.58E-03
	3	63.59	1.43E+02	93.99	2.17E-02	1.72E-03
	4	76.30	1.17E+03	190.31	2.38E-02	2.14E-03
	5	128.99	1.09E+02	97.37	2.25E-02	1.70E-03
	6	185.99	2.65E+02	79.07	1.83E-02	1.42E-03
	7	191.65	4.92E+01	54.73	1.79E-02	1.39E-03
	8	209.54	1.02E+02	68.56	1.68E-02	1.31E-03
M	9	238.84	8.64E+02	72.03	1.52E-02	1.18E-03
m	10	241.96	2.69E+02	81.20	1.51E-02	1.17E-03

: 00644

Analysis Report for 1510088-09

CP1804S05-06

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	11	269.78	9.13E+01	66.05	1.38E-02	1.04E-03
	12	295.46	2.98E+02	56.95	1.28E-02	9.74E-04
	13	300.55	5.55E+01	40.10	1.26E-02	9.66E-04
	14	328.44	7.53E+01	53.10	1.17E-02	9.27E-04
	15	338.83	1.17E+02	57.70	1.14E-02	9.12E-04
	16	352.20	4.98E+02	62.74	1.11E-02	8.93E-04
	17	410.46	5.56E+01	39.45	9.69E-03	8.19E-04
	18	511.12	1.21E+02	53.29	8.01E-03	7.18E-04
	19	544.21	3.64E+01	36.58	7.58E-03	6.85E-04
	20	560.77	3.00E+01	30.59	7.39E-03	6.69E-04
	21	583.51	2.47E+02	43.54	7.14E-03	6.46E-04
	22	609.61	3.29E+02	53.32	6.87E-03	6.20E-04
	23	727.15	8.30E+01	34.23	5.89E-03	5.14E-04
	24	769.12	3.68E+01	33.65	5.61E-03	4.80E-04
M	25	791.58	2.15E+01	20.15	5.47E-03	4.62E-04
m	26	795.59	3.40E+01	26.98	5.45E-03	4.58E-04
	27	835.09	2.25E+01	22.30	5.23E-03	4.26E-04
	28	840.61	1.52E+01	19.54	5.20E-03	4.22E-04
	29	861.79	5.31E+01	34.18	5.09E-03	4.04E-04
	30	879.14	2.49E+01	20.78	5.00E-03	3.90E-04
	31	911.35	1.44E+02	34.99	4.85E-03	3.72E-04
	32	969.07	9.72E+01	38.57	4.60E-03	3.61E-04
	33	1120.24	9.12E+01	33.70	4.08E-03	3.33E-04
	34	1155.30	7.10E+01	48.17	3.97E-03	3.27E-04
	35	1222.52	2.20E+01	28.07	3.79E-03	3.13E-04
	36	1334.09	2.48E+01	20.72	3.54E-03	2.88E-04
	37	1377.68	1.98E+01	17.09	3.45E-03	2.82E-04
M	38	1402.83	8.88E+00	9.38	3.40E-03	2.78E-04
m	39	1407.61	1.48E+01	20.92	3.39E-03	2.77E-04
	40	1461.12	4.93E+02	47.80	3.29E-03	2.69E-04
	41	1513.30	8.35E+00	11.45	3.20E-03	2.61E-04
	42	1525.61	1.01E+01	10.58	3.18E-03	2.60E-04
	43	1551.77	1.26E+01	11.69	3.14E-03	2.56E-04
	44	1620.11	1.90E+01	8.72	3.04E-03	2.45E-04
	45	1631.85	6.69E+00	6.65	3.03E-03	2.44E-04
	46	1709.37	7.00E+00	5.29	2.92E-03	2.32E-04
	47	1729.25	1.06E+01	10.02	2.90E-03	2.29E-04
	48	1765.12	6.93E+01	19.87	2.86E-03	2.24E-04
	49	1779.39	7.44E+00	6.95	2.84E-03	2.22E-04
	50	1848.16	1.50E+01	12.49	2.77E-03	2.13E-04
	51	2102.92	1.46E+01	12.77	2.54E-03	2.13E-04
	52	2204.85	2.60E+01	13.88	2.46E-03	2.13E-04
	53	2446.38	5.78E+00	7.78	2.32E-03	2.13E-04
	54	2614.88	5.75E+01	16.13	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 1510088-09

CP1804S05-06

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 4:28:36PM

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

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	40.08	7.35E+01	78.82			7.35E+01	7.88E+01
2	46.31	1.47E+02	85.93	5.28E+01	1.09E+01	9.44E+01	8.66E+01
3	63.59	1.43E+02	93.99	5.52E+01	2.05E+01	8.75E+01	9.62E+01
4	76.30	1.17E+03	190.31			1.17E+03	1.90E+02
5	128.99	1.09E+02	97.37			1.09E+02	9.74E+01
6	185.99	2.65E+02	79.07	3.93E+01	6.56E+00	2.26E+02	7.93E+01
7	191.65	4.92E+01	54.73			4.92E+01	5.47E+01
8	209.54	1.02E+02	68.56			1.02E+02	6.86E+01
M	9	238.84	8.64E+02	1.34E+01	2.14E+00	8.51E+02	7.21E+01
m	10	241.96	2.69E+02	2.69E+00	1.46E+00	2.66E+02	8.12E+01
	11	269.78	9.13E+01			9.13E+01	6.60E+01
	12	295.46	2.98E+02			2.98E+02	5.69E+01
	13	300.55	5.55E+01			5.55E+01	4.01E+01
	14	328.44	7.53E+01			7.53E+01	5.31E+01
	15	338.83	1.17E+02			1.17E+02	5.77E+01
	16	352.20	4.98E+02	3.99E+00	4.73E+00	4.94E+02	6.29E+01
	17	410.46	5.56E+01			5.56E+01	3.94E+01
	18	511.12	1.21E+02	5.78E+01	4.60E+00	6.36E+01	5.35E+01
	19	544.21	3.64E+01			3.64E+01	3.66E+01
	20	560.77	3.00E+01			3.00E+01	3.06E+01
	21	583.51	2.47E+02	5.96E+00	3.46E+00	2.41E+02	4.37E+01
	22	609.61	3.29E+02	6.71E+00	3.44E+00	3.23E+02	5.34E+01
	23	727.15	8.30E+01			8.30E+01	3.42E+01
	24	769.12	3.68E+01			3.68E+01	3.36E+01
M	25	791.58	2.15E+01			2.15E+01	2.01E+01
m	26	795.59	3.40E+01			3.40E+01	2.70E+01
	27	835.09	2.25E+01			2.25E+01	2.23E+01
	28	840.61	1.52E+01			1.52E+01	1.95E+01
	29	861.79	5.31E+01			5.31E+01	3.42E+01
	30	879.14	2.49E+01			2.49E+01	2.08E+01
	31	911.35	1.44E+02	2.32E+00	2.73E+00	1.42E+02	3.51E+01
	32	969.07	9.72E+01			9.72E+01	3.86E+01
	33	1120.24	9.12E+01	2.00E+00	2.20E+00	8.92E+01	3.38E+01
	34	1155.30	7.10E+01			7.10E+01	4.82E+01
	35	1222.52	2.20E+01			2.20E+01	2.81E+01
	36	1334.09	2.48E+01			2.48E+01	2.07E+01
	37	1377.68	1.98E+01			1.98E+01	1.71E+01
M	38	1402.83	8.88E+00			8.88E+00	9.38E+00
m	39	1407.61	1.48E+01			1.48E+01	2.09E+01
	40	1461.12	4.93E+02			4.93E+02	4.78E+01
	41	1513.30	8.35E+00			8.35E+00	1.14E+01
	42	1525.61	1.01E+01			1.01E+01	1.06E+01
	43	1551.77	1.26E+01			1.26E+01	1.17E+01
	44	1620.11	1.90E+01			1.90E+01	8.72E+00

Analysis Report for 1510088-09

CP1804S05-06

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
45	1631.85	6.69E+00	6.65			6.69E+00	6.65E+00
46	1709.37	7.00E+00	5.29			7.00E+00	5.29E+00
47	1729.25	1.06E+01	10.02			1.06E+01	1.00E+01
48	1765.12	6.93E+01	19.87	1.45E+00	1.16E+00	6.79E+01	1.99E+01
49	1779.39	7.44E+00	6.95			7.44E+00	6.95E+00
50	1848.16	1.50E+01	12.49			1.50E+01	1.25E+01
51	2102.92	1.46E+01	12.77			1.46E+01	1.28E+01
52	2204.85	2.60E+01	13.88			2.60E+01	1.39E+01
53	2446.38	5.78E+00	7.78			5.78E+00	7.78E+00
54	2614.88	5.75E+01	16.13			5.75E+01	1.61E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 4:28:36PM
 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	40.08	7.35E+01	78.82			7.35E+01	7.88E+01
2	46.31	1.47E+02	85.93	5.28E+01	1.09E+01	9.44E+01	8.66E+01
3	63.59	1.43E+02	93.99	5.52E+01	2.05E+01	8.75E+01	9.62E+01
4	76.30	1.17E+03	190.31			1.17E+03	1.90E+02
5	128.99	1.09E+02	97.37			1.09E+02	9.74E+01
6	185.99	2.65E+02	79.07	3.93E+01	6.56E+00	2.26E+02	7.93E+01
7	191.65	4.92E+01	54.73			4.92E+01	5.47E+01
8	209.54	1.02E+02	68.56			1.02E+02	6.86E+01
M	9	238.84	8.64E+02	1.34E+01	2.14E+00	8.51E+02	7.21E+01
m	10	241.96	2.69E+02	2.69E+00	1.46E+00	2.66E+02	8.12E+01
11	269.78	9.13E+01	66.05			9.13E+01	6.60E+01
12	295.46	2.98E+02	56.95			2.98E+02	5.69E+01
13	300.55	5.55E+01	40.10			5.55E+01	4.01E+01
14	328.44	7.53E+01	53.10			7.53E+01	5.31E+01
15	338.83	1.17E+02	57.70			1.17E+02	5.77E+01
16	352.20	4.98E+02	62.74	3.99E+00	4.73E+00	4.94E+02	6.29E+01
17	410.46	5.56E+01	39.45			5.56E+01	3.94E+01
18	511.12	1.21E+02	53.29	5.78E+01	4.60E+00	6.36E+01	5.35E+01

Analysis Report for 1510088-09

CP1804S05-06

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
19	544.21	3.64E+01	36.58			3.64E+01	3.66E+01
20	560.77	3.00E+01	30.59			3.00E+01	3.06E+01
21	583.51	2.47E+02	43.54	5.96E+00	3.46E+00	2.41E+02	4.37E+01
22	609.61	3.29E+02	53.32	6.71E+00	3.44E+00	3.23E+02	5.34E+01
23	727.15	8.30E+01	34.23			8.30E+01	3.42E+01
24	769.12	3.68E+01	33.65			3.68E+01	3.36E+01
M 25	791.58	2.15E+01	20.15			2.15E+01	2.01E+01
m 26	795.59	3.40E+01	26.98			3.40E+01	2.70E+01
27	835.09	2.25E+01	22.30			2.25E+01	2.23E+01
28	840.61	1.52E+01	19.54			1.52E+01	1.95E+01
29	861.79	5.31E+01	34.18			5.31E+01	3.42E+01
30	879.14	2.49E+01	20.78			2.49E+01	2.08E+01
31	911.35	1.44E+02	34.99	2.32E+00	2.73E+00	1.42E+02	3.51E+01
32	969.07	9.72E+01	38.57			9.72E+01	3.86E+01
33	1120.24	9.12E+01	33.70	2.00E+00	2.20E+00	8.92E+01	3.38E+01
34	1155.30	7.10E+01	48.17			7.10E+01	4.82E+01
35	1222.52	2.20E+01	28.07			2.20E+01	2.81E+01
36	1334.09	2.48E+01	20.72			2.48E+01	2.07E+01
37	1377.68	1.98E+01	17.09			1.98E+01	1.71E+01
M 38	1402.83	8.88E+00	9.38			8.88E+00	9.38E+00
m 39	1407.61	1.48E+01	20.92			1.48E+01	2.09E+01
40	1461.12	4.93E+02	47.80			4.93E+02	4.78E+01
41	1513.30	8.35E+00	11.45			8.35E+00	1.14E+01
42	1525.61	1.01E+01	10.58			1.01E+01	1.06E+01
43	1551.77	1.26E+01	11.69			1.26E+01	1.17E+01
44	1620.11	1.90E+01	8.72			1.90E+01	8.72E+00
45	1631.85	6.69E+00	6.65			6.69E+00	6.65E+00
46	1709.37	7.00E+00	5.29			7.00E+00	5.29E+00
47	1729.25	1.06E+01	10.02			1.06E+01	1.00E+01
48	1765.12	6.93E+01	19.87	1.45E+00	1.16E+00	6.79E+01	1.99E+01
49	1779.39	7.44E+00	6.95			7.44E+00	6.95E+00
50	1848.16	1.50E+01	12.49			1.50E+01	1.25E+01
51	2102.92	1.46E+01	12.77			1.46E+01	1.28E+01
52	2204.85	2.60E+01	13.88			2.60E+01	1.39E+01
53	2446.38	5.78E+00	7.78			5.78E+00	7.78E+00
54	2614.88	5.75E+01	16.13			5.75E+01	1.61E+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 1510088-09
CP1804S05-06

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.985	1460.81 *	10.67	1.86E+01	2.39E+00
MN-54	0.989	834.83 *	99.97	6.13E-02	6.08E-02
TL-208	0.875	583.14 *	30.22	1.48E+00	2.99E-01
		860.37	4.48		
		2614.66 *	35.85	9.47E-01	2.81E-01
PB-210	0.994	46.50 *	4.25	1.98E+00	1.82E+00
BI-212	0.992	727.17 *	11.80	1.58E+00	6.66E-01
		1620.62 *	2.75	3.00E+00	1.40E+00
PB-212	0.991	238.63 *	44.60	1.66E+00	1.90E-01
		300.09 *	3.41	1.70E+00	1.24E+00
BI-214	0.976	609.31 *	46.30	1.34E+00	2.53E-01
		1120.29 *	15.10	1.92E+00	7.42E-01
		1764.49 *	15.80	1.99E+00	6.04E-01
		2204.22 *	4.98	2.81E+00	1.52E+00
PB-214	0.989	295.21 *	19.19	1.60E+00	3.30E-01
		351.92 *	37.19	1.59E+00	2.40E-01
RA-224	0.857	240.98 *	3.95	5.91E+00	1.86E+00
RA-225	0.976	40.00 *	31.00	1.27E+00	1.37E+00
RA-226	0.992	186.21 *	3.28	4.98E+00	9.29E+00
AC-228	0.985	338.32 *	11.40	1.18E+00	5.94E-01
		911.07 *	27.70	1.39E+00	3.62E-01
		969.11 *	16.60	1.68E+00	6.80E-01
TH-234	0.986	63.29 *	3.80	1.41E+00	1.55E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0,30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 4:28:36PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
4	76.30	3.25813E-01	8.11		
5	128.99	3.02506E-02	44.71		
7	191.65	1.36539E-02	55.67		

Analysis Report for 1510088-09
 CP1804S05-06

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
8	209.54	2.84277E-02	33.49	Tol.	GA-67 CM-243
11	269.78	2.53498E-02	36.19		
14	328.44	2.09035E-02	35.28	Tol.	LA-140
17	410.46	1.54562E-02	35.45	Tol.	HO-166M
18	511.12	1.76650E-02	42.06		
19	544.21	1.01207E-02	50.20		
20	560.77	8.33333E-03	50.99		
24	769.12	1.02212E-02	45.72	Sum	
M	25	791.58	5.97639E-03	Sum	
m	26	795.59	9.44222E-03	Sum	
	28	840.61	4.21498E-03		
	29	861.79	1.47520E-02		
	30	879.14	6.91239E-03	Sum	
	34	1155.30	1.97142E-02	Sum	
	35	1222.52	6.11111E-03		
	36	1334.09	6.90025E-03		
	37	1377.68	5.50300E-03		
M	38	1402.83	2.46750E-03		
m	39	1407.61	4.10497E-03	70.77	Tol. EU-152
	41	1513.30	2.32026E-03		
	42	1525.61	2.79514E-03	52.59	Sum
	43	1551.77	3.48684E-03	46.58	Sum
	45	1631.85	1.85764E-03	49.74	
	46	1709.37	1.94444E-03	37.80	
	47	1729.25	2.94444E-03	47.29	Sum
	49	1779.39	2.06790E-03	46.65	
	50	1848.16	4.17989E-03	41.50	Sum
	51	2102.92	4.06566E-03	43.61	S-Esc
	53	2446.38	1.60494E-03	67.31	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

Analysis Report for 1510088-09

CP1804S05-06

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.98	1460.81 *	10.67	1.86E+01	2.39E+00
MN-54	0.98	834.83 *	99.97	6.13E-02	6.08E-02
TL-208	0.87	583.14 *	30.22	1.48E+00	2.99E-01
		860.37	4.48		
		2614.66 *	35.85	9.47E-01	2.81E-01
PB-210	0.99	46.50 *	4.25	1.98E+00	1.82E+00
BI-212	0.99	727.17 *	11.80	1.58E+00	6.66E-01
		1620.62 *	2.75	3.00E+00	1.40E+00
PB-212	0.99	238.63 *	44.60	1.66E+00	1.90E-01
		300.09 *	3.41	1.70E+00	1.24E+00
BI-214	0.97	609.31 *	46.30	1.34E+00	2.53E-01
		1120.29 *	15.10	1.92E+00	7.42E-01
		1764.49 *	15.80	1.99E+00	6.04E-01
		2204.22 *	4.98	2.81E+00	1.52E+00
PB-214	0.98	295.21 *	19.19	1.60E+00	3.30E-01
		351.92 *	37.19	1.59E+00	2.40E-01
RA-224	0.85	240.98 *	3.95	5.91E+00	1.86E+00
RA-225	0.97	40.00 *	31.00	1.27E+00	1.37E+00
RA-226	0.99	186.21 *	3.28	4.98E+00	9.29E+00
AC-228	0.98	338.32 *	11.40	1.18E+00	5.94E-01
		911.07 *	27.70	1.39E+00	3.62E-01
		969.11 *	16.60	1.68E+00	6.80E-01
TH-234	0.98	63.29 *	3.80	1.41E+00	1.55E+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	0.985	1.86E+01	2.39E+00	
MN-54	0.989	6.13E-02	6.08E-02	
TL-208	0.875	1.19E+00	2.05E-01	
PB-210	0.994	1.98E+00	1.82E+00	

Analysis Report for 1510088-09

CP1804S05-06

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BI-212	0.992	1.84E+00	6.01E-01	
PB-212	0.991	1.66E+00	1.88E-01	
BI-214	0.976	1.51E+00	2.20E-01	
PB-214	0.989	1.59E+00	1.94E-01	
RA-224	0.857	5.91E+00	1.86E+00	
RA-225	0.976	1.27E+00	1.37E+00	
RA-226	0.992	4.98E+00	9.29E+00	
AC-228	0.985	1.40E+00	2.81E-01	
TH-234	0.986	1.41E+00	1.55E+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 1510088-09
 CP1804S05-06

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 4:28:36PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
4	76.30	3.25813E-01	8.11			
5	128.99	3.02506E-02	44.71			
7	191.65	1.36539E-02	55.67			
8	209.54	2.84277E-02	33.49	Tol.	GA-67 CM-243	
11	269.78	2.53498E-02	36.19			
14	328.44	2.09035E-02	35.28	Tol.	LA-140	
17	410.46	1.54562E-02	35.45	Tol.	HO-166M	
18	511.12	1.76650E-02	42.06			
19	544.21	1.01207E-02	50.20			
20	560.77	8.33333E-03	50.99			
24	769.12	1.02212E-02	45.72	Sum		
M	25	791.58	5.97639E-03	46.83	Sum	
m	26	795.59	9.44222E-03	39.69	Sum	
	28	840.61	4.21498E-03	64.40		
	29	861.79	1.47520E-02	32.18		
	30	879.14	6.91239E-03	41.76	Sum	
	34	1155.30	1.97142E-02	33.93	Sum	
	35	1222.52	6.11111E-03	63.80		
	36	1334.09	6.90025E-03	41.71		
	37	1377.68	5.50300E-03	43.13		
M	38	1402.83	2.46750E-03	52.80		
m	39	1407.61	4.10497E-03	70.77	Tol.	EU-152
	41	1513.30	2.32026E-03	68.51		
	42	1525.61	2.79514E-03	52.59	Sum	
	43	1551.77	3.48684E-03	46.58	Sum	
	45	1631.85	1.85764E-03	49.74		
	46	1709.37	1.94444E-03	37.80		
	47	1729.25	2.94444E-03	47.29	Sum	
	49	1779.39	2.06790E-03	46.65		
	50	1848.16	4.17989E-03	41.50	Sum	
	51	2102.92	4.06566E-03	43.61	S-Esc	
	53	2446.38	1.60494E-03	67.31	Sum	

Analysis Report for 1510088-09
CP1804S05-06

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

NUCLIDE MDA REPORT

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

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
+	BE-7	477.59	10.42	-3.12E-01	1.07E+00	1.07E+00
+	NA-22	1274.54	99.94	2.35E-02	1.07E-01	1.07E-01
+	NA-24	1368.53	99.99	-5.34E+13	2.60E+14	3.54E+14
		2754.09	99.86	2.16E+13		2.60E+14
+	AL-26	1808.65	99.76	-3.67E-03	7.87E-02	7.87E-02
+	K-40	1460.81	* 10.67	1.86E+01	1.20E+00	1.20E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-5.83E-04	7.84E-02	7.84E-02
		78.34	96.00	3.30E-01		1.02E-01
+	SC-46	889.25	99.98	-8.37E-02	1.19E-01	1.19E-01
		1120.51	99.99	3.83E-01		2.27E-01
+	V-48	983.52	99.98	-6.43E-02	3.66E-01	3.66E-01
		1312.10	97.50	4.32E-02		4.77E-01
+	CR-51	320.08	9.83	1.43E-01	1.72E+00	1.72E+00
+	MN-54	834.83	* 99.97	6.13E-02	9.76E-02	9.76E-02
+	CO-56	846.75	99.96	6.54E-02	1.24E-01	1.24E-01
		1037.75	14.03	5.14E-01		9.77E-01
		1238.25	67.00	5.94E-02		2.73E-01
		1771.40	15.51	-5.30E-02		5.61E-01
		2598.48	16.90	-1.23E-01		4.30E-01
+	CO-57	122.06	85.51	-1.26E-02	6.77E-02	6.77E-02
		136.48	10.60	-5.21E-02		5.74E-01
+	CO-58	810.76	99.40	2.76E-02	1.26E-01	1.26E-01
+	FE-59	1099.22	56.50	-9.53E-02	3.29E-01	3.29E-01
		1291.56	43.20	2.99E-02		4.48E-01
+	CO-60	1173.22	100.00	-1.66E-02	1.14E-01	1.35E-01
		1332.49	100.00	5.58E-02		1.14E-01
+	ZN-65	1115.52	50.75	3.20E-02	2.32E-01	2.32E-01
+	GA-67	93.31	35.70	2.71E+02	1.92E+02	1.92E+02
		208.95	2.24	2.88E+03		3.30E+03
		300.22	16.00	-2.01E+03		4.63E+02
+	SE-75	121.11	16.70	2.05E-02	1.14E-01	3.82E-01

Analysis Report for 1510088-09
CP1804S05-06

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
	SE-75	136.00	59.20	-1.83E-02	1.14E-01	1.14E-01
		264.65	59.80	-1.12E-02		1.31E-01
		279.53	25.20	1.50E-01		3.58E-01
		400.65	11.40	1.64E-01		8.41E-01
+	RB-82	776.52	13.00	5.03E-01	1.74E+00	1.74E+00
+	RB-83	520.41	46.00	2.28E-02	2.06E-01	2.06E-01
		529.64	30.30	7.34E-02		3.36E-01
		552.65	16.40	9.14E-02		5.97E-01
+	KR-85	513.99	0.43	2.35E+01	2.48E+01	2.48E+01
+	SR-85	513.99	99.27	1.44E-01	1.52E-01	1.52E-01
+	Y-88	898.02	93.40	-5.20E-02	9.37E-02	1.19E-01
		1836.01	99.38	2.22E-03		9.37E-02
+	NB-93M	16.57	9.43	1.93E+01	8.67E+01	8.67E+01
+	NB-94	702.63	100.00	3.22E-03	9.37E-02	9.37E-02
		871.10	100.00	4.85E-02		9.68E-02
+	NB-95	765.79	99.81	-6.83E-03	1.90E-01	1.90E-01
+	NB-95M	235.69	25.00	7.22E+02	2.54E+02	2.54E+02
+	ZR-95	724.18	43.70	-1.33E-01	2.36E-01	3.42E-01
		756.72	55.30	2.45E-02		2.36E-01
+	MO-99	181.06	6.20	-9.74E+02	2.63E+03	3.28E+03
		739.58	12.80	1.01E+03		2.63E+03
		778.00	4.50	3.39E+02		7.00E+03
+	RU-103	497.08	89.00	1.52E-02	1.51E-01	1.51E-01
+	RU-106	621.84	9.80	4.39E-02	8.66E-01	8.66E-01
+	AG-108M	433.93	89.90	3.08E-02	9.17E-02	9.17E-02
		614.37	90.40	9.82E-03		1.10E-01
		722.95	90.50	-3.05E-03		1.02E-01
+	CD-109	88.03	3.72	1.30E+00	2.13E+00	2.13E+00
+	AG-110M	657.75	93.14	-4.27E-02	1.03E-01	1.03E-01
		677.61	10.53	-1.97E-01		9.25E-01
		706.67	16.46	2.46E-01		6.74E-01
		763.93	21.98	3.18E-03		4.34E-01
		884.67	71.63	2.05E-02		1.39E-01
		1384.27	23.94	2.99E-01		4.88E-01
+	CD-113M	263.70	0.02	-7.68E+01	2.72E+02	2.72E+02
+	SN-113	255.12	1.93	5.34E-01	1.48E-01	4.47E+00
		391.69	64.90	-1.96E-02		1.48E-01
+	TE123M	159.00	84.10	-1.08E-02	8.20E-02	8.20E-02
+	SB-124	602.71	97.87	9.28E-03	1.18E-01	1.18E-01
		645.85	7.26	-6.90E-01		1.59E+00
		722.78	11.10	-3.60E-02		1.21E+00
		1691.02	49.00	7.38E-03		2.21E-01
+	I-125	35.49	6.49	-4.25E-02	3.34E+00	3.34E+00
+	SB-125	176.33	6.89	-1.46E-01	2.72E-01	8.54E-01
		427.89	29.33	-1.21E-01		2.72E-01
		463.38	10.35	4.12E-01		9.02E-01
		600.56	17.80	2.97E-01		4.89E-01
		635.90	11.32	-9.02E-02		7.26E-01

Analysis Report for 1510088-09
CP1804S05-06

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	8.46E-02	5.56E-01	5.56E-01
		666.33	99.60	2.53E-01		6.31E-01
		695.00	99.60	2.85E-01		5.87E-01
		720.50	53.80	1.04E-01		1.03E+00
+	SN-126	87.57	37.00	1.25E-01	2.04E-01	2.04E-01
+	SB-127	473.00	25.00	-3.42E+01	8.70E+01	9.88E+01
		685.20	35.70	2.76E+01		8.70E+01
		783.80	14.70	5.07E+01		2.06E+02
+	I-129	29.78	57.00	-1.36E-01	4.83E-01	4.83E-01
		33.60	13.20	8.10E-01		1.40E+00
		39.58	7.52	1.54E+00		1.66E+00
+	I-131	284.30	6.05	3.18E+00	1.52E+00	1.98E+01
		364.48	81.20	8.16E-01		1.52E+00
		636.97	7.26	-4.24E+00		1.77E+01
		722.89	1.80	-2.48E+00		8.30E+01
+	TE-132	49.72	13.10	8.97E+00	7.96E+01	6.03E+02
		228.16	88.00	-4.32E+01		7.96E+01
+	BA-133	81.00	33.00	-1.36E+00	1.72E-01	1.96E-01
		302.84	17.80	9.26E-03		4.31E-01
		356.01	60.00	1.32E-02		1.72E-01
+	I-133	529.87	86.30	3.27E+09	1.50E+10	1.50E+10
+	XE-133	81.00	38.00	-8.36E+01	1.21E+01	1.21E+01
+	CS-134	563.23	8.38	-6.63E-02	9.84E-02	1.01E+00
		569.32	15.43	-4.89E-02		5.58E-01
		604.70	97.60	3.63E-03		9.84E-02
		795.84	85.40	6.42E-02		1.34E-01
		801.93	8.73	-7.31E-01		1.02E+00
+	CS-135	268.24	16.00	5.60E-01	4.86E-01	4.86E-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	2.74E+00	4.73E-01	4.34E+00
		163.89	4.61	1.98E+00		7.16E+00
		176.55	13.56	-5.04E-02		2.33E+00
		273.65	12.66	-5.54E-01		3.28E+00
		340.57	48.50	1.68E+00		1.05E+00
		818.50	99.70	6.21E-02		4.73E-01
		1048.07	79.60	-4.06E-02		6.71E-01
		1235.34	19.70	2.70E+00		4.01E+00
+	CS-137	661.65	85.12	-2.84E-02	1.11E-01	1.11E-01
+	LA-138	788.74	34.00	2.35E-02	1.41E-01	2.64E-01
		1435.80	66.00	1.98E-02		1.41E-01
+	CE-139	165.85	80.35	2.44E-02	8.88E-02	8.88E-02
+	BA-140	162.64	6.70	5.16E-01	1.76E+00	5.08E+00
		304.84	4.50	1.83E+00		8.73E+00
		423.70	3.20	-1.64E+00		1.37E+01
		437.55	2.00	6.36E-01		2.25E+01
		537.32	25.00	-6.11E-01		1.76E+00
+	LA-140	328.77	20.50	1.90E+00	6.48E-01	2.45E+00

Analysis Report for 1510088-09
CP1804S05-06

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	487.03	45.50	3.11E-01	6.48E-01	9.86E-01
		815.85	23.50	-1.15E-01		2.04E+00
		1596.49	95.49	1.98E-01		6.48E-01
+	CE-141	145.44	48.40	6.96E-02	2.38E-01	2.38E-01
+	CE-143	57.36	11.80	3.11E+06	3.00E+06	8.01E+06
		293.26	42.00	7.60E+04		3.00E+06
		664.55	5.20	1.43E+07		2.35E+07
+	CE-144	133.54	10.80	-3.27E-02	5.63E-01	5.63E-01
+	PM-144	476.78	42.00	1.12E-01	9.42E-02	1.99E-01
		618.01	98.60	3.53E-02		9.42E-02
		696.49	99.49	3.58E-02		1.04E-01
+	PM-145	36.85	21.70	8.00E-02	3.46E-01	6.38E-01
		37.36	39.70	-4.98E-02		3.46E-01
		42.30	15.10	-1.00E+00		7.11E-01
		72.40	2.31	-5.72E+00		3.90E+00
+	PM-146	453.90	39.94	-6.40E-02	1.89E-01	1.89E-01
		735.90	14.01	3.18E-01		7.13E-01
		747.13	13.10	-5.72E-02		6.76E-01
+	ND-147	91.11	28.90	-9.94E-01	1.99E+00	1.99E+00
		531.02	13.10	1.86E+00		4.71E+00
+	PM-149	285.90	3.10	1.81E+04	6.02E+04	6.02E+04
+	EU-152	121.78	20.50	-4.87E-02	2.61E-01	2.61E-01
		244.69	5.40	6.12E-03		1.63E+00
		344.27	19.13	2.43E-02		3.77E-01
		778.89	9.20	-1.33E-01		9.68E-01
		964.01	10.40	-5.52E-02		1.02E+00
		1085.78	7.22	2.20E-02		1.51E+00
		1112.02	9.60	2.84E-01		1.10E+00
		1407.95	14.94	-2.03E-02		7.51E-01
+	GD-153	97.43	31.30	-1.38E-01	1.99E-01	1.99E-01
		103.18	22.20	-1.61E-01		2.69E-01
+	EU-154	123.07	40.50	2.78E-04	1.34E-01	1.34E-01
		723.30	19.70	-1.41E-02		4.72E-01
		873.19	11.50	1.19E-01		7.73E-01
		996.32	10.30	-5.89E-01		9.13E-01
		1004.76	17.90	-2.60E-01		5.71E-01
		1274.45	35.50	6.50E-02		2.97E-01
+	EU-155	86.50	30.90	7.37E-02	2.43E-01	2.43E-01
		105.30	20.70	8.38E-02		2.74E-01
+	EU-156	811.77	10.40	-7.97E-01	3.76E+00	3.76E+00
		1153.47	7.20	8.82E-01		8.22E+00
		1230.71	8.90	-1.69E+00		5.71E+00
+	HO-166M	184.41	72.60	2.33E-01	1.08E-01	1.08E-01
		280.45	29.60	-6.52E-02		2.49E-01
		410.94	11.10	3.11E-01		7.30E-01
		711.69	54.10	3.08E-03		1.83E-01
+	TM-171	66.72	0.14	-1.33E+00	5.53E+01	5.53E+01
+	HF-172	81.75	4.52	-5.64E+00	5.07E-01	1.49E+00
		125.81	11.30	-6.09E-01		5.07E-01

Analysis Report for 1510088-09

CP1804S05-06

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	-3.95E-01	5.57E+00	8.25E+00
		810.06	16.63	6.81E+00		1.62E+01
		912.12	15.25	7.82E+01		3.44E+01
		1093.66	62.50	2.82E+00		5.57E+00
+	LU-173	100.72	5.24	9.11E-02	3.89E-01	1.12E+00
		272.11	21.20	2.00E-01		3.89E-01
+	HF-175	343.40	84.00	-1.26E-02	1.18E-01	1.18E-01
+	LU-176	88.34	13.30	1.94E-01	7.28E-02	5.82E-01
		201.83	86.00	6.90E-02		8.63E-02
		306.78	94.00	-1.65E-02		7.28E-02
+	TA-182	67.75	41.20	-1.63E-03	2.19E-01	2.19E-01
		1121.30	34.90	8.40E-01		5.90E-01
		1189.05	16.23	3.34E-01		8.39E-01
		1221.41	26.98	1.85E-01		5.79E-01
		1231.02	11.44	2.38E-02		1.29E+00
+	IR-192	308.46	29.68	8.29E-02	2.23E-01	3.22E-01
		468.07	48.10	-8.08E-02		2.23E-01
+	HG-203	279.19	77.30	5.62E-02	1.56E-01	1.56E-01
+	BI-207	569.67	97.72	4.13E-04	8.72E-02	8.72E-02
		1063.62	74.90	-1.19E-01		1.29E-01
+	TL-208	583.14	* 30.22	1.48E+00	1.94E-01	3.27E-01
		860.37	4.48	1.59E+00		2.55E+00
		2614.66	* 35.85	9.47E-01		1.94E-01
+	BI-210M	262.00	45.00	4.84E-03	1.43E-01	1.43E-01
		300.00	23.00	-1.46E+00		3.36E-01
+	PB-210	46.50	* 4.25	1.98E+00	2.96E+00	2.96E+00
+	PB-211	404.84	2.90	3.58E-01	2.64E+00	2.64E+00
		831.96	2.90	-3.38E-02		3.10E+00
+	BI-212	727.17	* 11.80	1.58E+00	4.28E-01	9.58E-01
		1620.62	* 2.75	3.00E+00		4.28E-01
+	PB-212	238.63	* 44.60	1.66E+00	2.80E-01	2.80E-01
		300.09	* 3.41	1.70E+00		1.96E+00
+	BI-214	609.31	* 46.30	1.34E+00	2.82E-01	2.82E-01
		1120.29	* 15.10	1.92E+00		1.05E+00
		1764.49	* 15.80	1.99E+00		6.17E-01
		2204.22	* 4.98	2.81E+00		1.96E+00
+	PB-214	295.21	* 19.19	1.60E+00	2.44E-01	4.15E-01
		351.92	* 37.19	1.59E+00		2.44E-01
+	RN-219	401.80	6.50	9.25E-02	1.20E+00	1.20E+00
+	RA-223	323.87	3.88	2.87E-02	2.01E+00	2.01E+00
+	RA-224	240.98	* 3.95	5.91E+00	3.21E+00	3.21E+00
+	RA-225	40.00	* 31.00	1.27E+00	2.23E+00	2.23E+00
+	RA-226	186.21	* 3.28	4.98E+00	2.72E+00	2.72E+00
+	TH-227	50.10	8.40	1.44E-02	9.67E-01	9.67E-01
		236.00	11.50	3.19E+00		1.12E+00
		256.20	6.30	-3.48E-02		1.11E+00
+	AC-228	338.32	* 11.40	1.18E+00	4.44E-01	9.21E-01
		911.07	* 27.70	1.39E+00		4.44E-01

Analysis Report for 1510088-09
CP1804S05-06

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.68E+00	4.44E-01	9.90E-01
+	TH-230	48.44		16.90	1.33E-01	5.49E-01	5.49E-01
		62.85		4.60	2.29E+00		1.84E+00
		67.67		0.37	-1.49E-01		2.00E+01
+	PA-231	283.67		1.60	7.41E-01	3.31E+00	4.62E+00
		302.67		2.30	7.12E-02		3.31E+00
+	TH-231	25.64		14.70	1.22E+00	1.03E+00	3.58E+00
		84.21		6.40	-9.67E-01		1.03E+00
+	PA-233	311.98		38.60	-1.99E-01	4.13E-01	4.13E-01
+	PA-234	131.20		20.40	3.05E-01	3.06E-01	3.06E-01
		733.99		8.80	-1.46E-01		1.03E+00
		946.00		12.00	1.92E-02		8.58E-01
+	PA-234M	1001.03		0.92	7.56E-01	1.13E+01	1.13E+01
+	TH-234	63.29	*	3.80	1.41E+00	2.54E+00	2.54E+00
+	U-235	143.76		10.50	4.21E-01	5.70E-01	5.70E-01
		163.35		4.70	3.54E-01		1.28E+00
		205.31		4.70	3.46E-01		1.53E+00
+	NP-237	86.50		12.60	1.79E-01	5.89E-01	5.89E-01
+	NP-239	106.10		22.70	1.53E+03	3.34E+03	3.34E+03
		228.18		10.70	-4.95E+03		9.12E+03
		277.60		14.10	1.65E+03		7.10E+03
+	AM-241	59.54		35.90	2.80E-02	2.23E-01	2.23E-01
+	AM-243	74.67		66.00	3.19E-01	1.60E-01	1.60E-01
+	CM-243	209.75		3.29	2.36E+00	5.34E-01	2.33E+00
		228.14		10.60	-3.73E-01		6.88E-01
		277.60		14.00	1.24E-01		5.34E-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

: 00659

Analysis Report for 1510088-09
CP1804S05-06

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	-3.12E-01	5.07E-01
NA-22	1274.54	99.94	1.07E-01	1.07E-01	2.35E-02	4.86E-02
NA-24	1368.53	99.99	3.54E+14	2.60E+14	-5.34E+13	1.58E+14
	2754.09	99.86	2.60E+14		2.16E+13	1.01E+14
AL-26	1808.65	99.76	7.87E-02	7.87E-02	-3.67E-03	3.29E-02
+ K-40	1460.81	* 10.67	1.20E+00	1.20E+00	1.86E+01	5.48E-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	7.84E-02	7.84E-02	-5.83E-04	3.84E-02
	78.34	96.00	1.02E-01		3.30E-01	5.01E-02
SC-46	889.25	99.98	1.19E-01	1.19E-01	-8.37E-02	5.50E-02
	1120.51	99.99	2.27E-01		3.83E-01	1.08E-01
V-48	983.52	99.98	3.66E-01	3.66E-01	-6.43E-02	1.67E-01
	1312.10	97.50	4.77E-01		4.32E-02	2.18E-01
CR-51	320.08	9.83	1.72E+00	1.72E+00	1.43E-01	8.26E-01
+ MN-54	834.83	* 99.97	9.76E-02	9.76E-02	6.13E-02	4.51E-02
CO-56	846.75	99.96	1.24E-01	1.24E-01	6.54E-02	5.76E-02
	1037.75	14.03	9.77E-01		5.14E-01	4.50E-01
	1238.25	67.00	2.73E-01		5.94E-02	1.27E-01
	1771.40	15.51	5.61E-01		-5.30E-02	2.27E-01
	2598.48	16.90	4.30E-01		-1.23E-01	1.52E-01
CO-57	122.06	85.51	6.77E-02	6.77E-02	-1.26E-02	3.28E-02
	136.48	10.60	5.74E-01		-5.21E-02	2.79E-01
CO-58	810.76	99.40	1.26E-01	1.26E-01	2.76E-02	5.82E-02
FE-59	1099.22	56.50	3.29E-01	3.29E-01	-9.53E-02	1.52E-01
	1291.56	43.20	4.48E-01		2.99E-02	2.05E-01
CO-60	1173.22	100.00	1.35E-01	1.14E-01	-1.66E-02	6.29E-02
	1332.49	100.00	1.14E-01		5.58E-02	5.20E-02
ZN-65	1115.52	50.75	2.32E-01	2.32E-01	3.20E-02	1.06E-01
GA-67	93.31	35.70	1.92E+02	1.92E+02	2.71E+02	9.39E+01
	208.95	2.24	3.30E+03		2.88E+03	1.60E+03
	300.22	16.00	4.63E+02		-2.01E+03	2.23E+02
SE-75	121.11	16.70	3.82E-01	1.14E-01	2.05E-02	1.86E-01
	136.00	59.20	1.14E-01		-1.83E-02	5.53E-02
	264.65	59.80	1.31E-01		-1.12E-02	6.27E-02
	279.53	25.20	3.58E-01		1.50E-01	1.73E-01
	400.65	11.40	8.41E-01		1.64E-01	4.01E-01
RB-82	776.52	13.00	1.74E+00	1.74E+00	5.03E-01	8.10E-01
RB-83	520.41	46.00	2.06E-01	2.06E-01	2.28E-02	9.65E-02
	529.64	30.30	3.36E-01		7.34E-02	1.58E-01
	552.65	16.40	5.97E-01		9.14E-02	2.80E-01
KR-85	513.99	0.43	2.48E+01	2.48E+01	2.35E+01	1.19E+01
SR-85	513.99	99.27	1.52E-01	1.52E-01	1.44E-01	7.31E-02
Y-88	898.02	93.40	1.19E-01	9.37E-02	-5.20E-02	5.49E-02
	1836.01	99.38	9.37E-02		2.22E-03	3.89E-02
NB-93M	16.57	9.43	8.67E+01	8.67E+01	1.93E+01	4.22E+01
NB-94	702.63	100.00	9.37E-02	9.37E-02	3.22E-03	4.39E-02
	871.10	100.00	9.68E-02		4.85E-02	4.48E-02
NB-95	765.79	99.81	1.90E-01	1.90E-01	-6.83E-03	8.91E-02
NB-95M	235.69	25.00	2.54E+02	2.54E+02	7.22E+02	1.25E+02
ZR-95	724.18	43.70	3.42E-01	2.36E-01	-1.33E-01	1.61E-01
	756.72	55.30	2.36E-01		2.45E-02	1.10E-01

Analysis Report for 1510088-09

CP1804S05-06

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
MO-99	181.06	6.20	3.28E+03	2.63E+03	-9.74E+02	1.58E+03
	739.58	12.80	2.63E+03		1.01E+03	1.23E+03
	778.00	4.50	7.00E+03		3.39E+02	3.26E+03
RU-103	497.08	89.00	1.51E-01	1.51E-01	1.52E-02	7.10E-02
RU-106	621.84	9.80	8.66E-01	8.66E-01	4.39E-02	4.04E-01
AG-108M	433.93	89.90	9.17E-02	9.17E-02	3.08E-02	4.37E-02
	614.37	90.40	1.10E-01		9.82E-03	5.23E-02
	722.95	90.50	1.02E-01		-3.05E-03	4.77E-02
CD-109	88.03	3.72	2.13E+00	2.13E+00	1.30E+00	1.04E+00
AG-110M	657.75	93.14	1.03E-01	1.03E-01	-4.27E-02	4.83E-02
	677.61	10.53	9.25E-01		-1.97E-01	4.33E-01
	706.67	16.46	6.74E-01		2.46E-01	3.18E-01
	763.93	21.98	4.34E-01		3.18E-03	2.01E-01
	884.67	71.63	1.39E-01		2.05E-02	6.40E-02
	1384.27	23.94	4.88E-01		2.99E-01	2.20E-01
CD-113M	263.70	0.02	2.72E+02	2.72E+02	-7.68E+01	1.31E+02
SN-113	255.12	1.93	4.47E+00	1.48E-01	5.34E-01	2.16E+00
	391.69	64.90	1.48E-01		-1.96E-02	7.06E-02
	TE123M	159.00	84.10		8.20E-02	8.20E-02	-1.08E-02	3.97E-02
SB-124	602.71	97.87	1.18E-01	1.18E-01	9.28E-03	5.54E-02
	645.85	7.26	1.59E+00		-6.90E-01	7.41E-01
	722.78	11.10	1.21E+00		-3.60E-02	5.64E-01
	1691.02	49.00	2.21E-01		7.38E-03	9.27E-02
	I-125	35.49	6.49		3.34E+00	3.34E+00	-4.25E-02	1.62E+00
SB-125	176.33	6.89	8.54E-01	2.72E-01	-1.46E-01	4.13E-01
	427.89	29.33	2.72E-01		-1.21E-01	1.29E-01
	463.38	10.35	9.02E-01		4.12E-01	4.31E-01
	600.56	17.80	4.89E-01		2.97E-01	2.30E-01
	635.90	11.32	7.26E-01		-9.02E-02	3.38E-01
	SB-126	414.70	83.30		5.56E-01	5.56E-01	8.46E-02	2.64E-01
SB-126	666.33	99.60	6.31E-01	5.56E-01	2.53E-01	2.98E-01
	695.00	99.60	5.87E-01		2.85E-01	2.76E-01
	720.50	53.80	1.03E+00		1.04E-01	4.83E-01
	SN-126	87.57	37.00		2.04E-01	2.04E-01	1.25E-01	1.00E-01
SB-127	473.00	25.00	9.88E+01	8.70E+01	-3.42E+01	4.66E+01
	685.20	35.70	8.70E+01		2.76E+01	4.08E+01
	783.80	14.70	2.06E+02		5.07E+01	9.58E+01
I-129	29.78	57.00	4.83E-01	4.83E-01	-1.36E-01	2.35E-01
	33.60	13.20	1.40E+00		8.10E-01	6.79E-01
	39.58	7.52	1.66E+00		1.54E+00	8.09E-01
I-131	284.30	6.05	1.98E+01	1.52E+00	3.18E+00	9.54E+00
	364.48	81.20	1.52E+00		8.16E-01	7.25E-01
	636.97	7.26	1.77E+01		-4.24E+00	8.23E+00
	722.89	1.80	8.30E+01		-2.48E+00	3.88E+01
TE-132	49.72	13.10	6.03E+02	7.96E+01	8.97E+00	2.94E+02
	228.16	88.00	7.96E+01		-4.32E+01	3.85E+01
BA-133	81.00	33.00	1.96E-01	1.72E-01	-1.36E+00	9.60E-02
	302.84	17.80	4.31E-01		9.26E-03	2.07E-01
	356.01	60.00	1.72E-01		1.32E-02	8.30E-02
I-133	529.87	86.30	1.50E+10	1.50E+10	3.27E+09	7.04E+09
XE-133	81.00	38.00	1.21E+01	1.21E+01	-8.36E+01	5.92E+00
CS-134	563.23	8.38	1.01E+00	9.84E-02	-6.63E-02	4.77E-01
	569.32	15.43	5.58E-01		-4.89E-02	2.63E-01

Analysis Report for 1510088-09
CP1804S05-06

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	9.84E-02	9.84E-02	3.63E-03	4.65E-02
	795.84	85.40	1.34E-01		6.42E-02	6.32E-02
	801.93	8.73	1.02E+00		-7.31E-01	4.69E-01
CS-135	268.24	16.00	4.86E-01	4.86E-01	5.60E-01	2.35E-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	4.34E+00	4.73E-01	2.74E+00	2.11E+00
	163.89	4.61	7.16E+00		1.98E+00	3.47E+00
	176.55	13.56	2.33E+00		-5.04E-02	1.13E+00
	273.65	12.66	3.28E+00		-5.54E-01	1.59E+00
	340.57	48.50	1.05E+00		1.68E+00	5.09E-01
	818.50	99.70	4.73E-01		6.21E-02	2.18E-01
	1048.07	79.60	6.71E-01		-4.06E-02	3.07E-01
	1235.34	19.70	4.01E+00		2.70E+00	1.88E+00
CS-137	661.65	85.12	1.11E-01	1.11E-01	-2.84E-02	5.22E-02
LA-138	788.74	34.00	2.64E-01	1.41E-01	2.35E-02	1.22E-01
	1435.80	66.00	1.41E-01		1.98E-02	6.25E-02
CE-139	165.85	80.35	8.88E-02	8.88E-02	2.44E-02	4.31E-02
BA-140	162.64	6.70	5.08E+00	1.76E+00	5.16E-01	2.46E+00
	304.84	4.50	8.73E+00		1.83E+00	4.18E+00
	423.70	3.20	1.37E+01		-1.64E+00	6.51E+00
	437.55	2.00	2.25E+01		6.36E-01	1.07E+01
	537.32	25.00	1.76E+00		-6.11E-01	8.26E-01
LA-140	328.77	20.50	2.45E+00	6.48E-01	1.90E+00	1.18E+00
	487.03	45.50	9.86E-01		3.11E-01	4.66E-01
	815.85	23.50	2.04E+00		-1.15E-01	9.37E-01
	1596.49	95.49	6.48E-01		1.98E-01	2.89E-01
CE-141	145.44	48.40	2.38E-01	2.38E-01	6.96E-02	1.16E-01
CE-143	57.36	11.80	8.01E+06	3.00E+06	3.11E+06	3.91E+06
	293.26	42.00	3.00E+06		7.60E+04	1.46E+06
	664.55	5.20	2.35E+07		1.43E+07	1.11E+07
CE-144	133.54	10.80	5.63E-01	5.63E-01	-3.27E-02	2.73E-01
PM-144	476.78	42.00	1.99E-01	9.42E-02	1.12E-01	9.43E-02
	618.01	98.60	9.42E-02		3.53E-02	4.43E-02
	696.49	99.49	1.04E-01		3.58E-02	4.87E-02
PM-145	36.85	21.70	6.38E-01	3.46E-01	8.00E-02	3.10E-01
	37.36	39.70	3.46E-01		-4.98E-02	1.68E-01
	42.30	15.10	7.11E-01		-1.00E+00	3.46E-01
	72.40	2.31	3.90E+00		-5.72E+00	1.92E+00
PM-146	453.90	39.94	1.89E-01	1.89E-01	-6.40E-02	8.94E-02
	735.90	14.01	7.13E-01		3.18E-01	3.34E-01
	747.13	13.10	6.76E-01		-5.72E-02	3.14E-01
ND-147	91.11	28.90	1.99E+00	1.99E+00	-9.94E-01	9.73E-01
	531.02	13.10	4.71E+00		1.86E+00	2.22E+00
PM-149	285.90	3.10	6.02E+04	6.02E+04	1.81E+04	2.90E+04
EU-152	121.78	20.50	2.61E-01	2.61E-01	-4.87E-02	1.27E-01
	244.69	5.40	1.63E+00		6.12E-03	7.94E-01
	344.27	19.13	3.77E-01		2.43E-02	1.80E-01
	778.89	9.20	9.68E-01		-1.33E-01	4.49E-01
	964.01	10.40	1.02E+00		-5.52E-02	4.72E-01
	1085.78	7.22	1.51E+00		2.20E-02	6.94E-01
	1112.02	9.60	1.10E+00		2.84E-01	5.02E-01

Analysis Report for 1510088-09
 CP1804S05-06

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	7.51E-01	2.61E-01	-2.03E-02	3.40E-01
GD-153	97.43	31.30	1.99E-01	1.99E-01	-1.38E-01	9.68E-02
	103.18	22.20	2.69E-01		-1.61E-01	1.31E-01
EU-154	123.07	40.50	1.34E-01	1.34E-01	2.78E-04	6.49E-02
	723.30	19.70	4.72E-01		-1.41E-02	2.21E-01
	873.19	11.50	7.73E-01		1.19E-01	3.55E-01
	996.32	10.30	9.13E-01		-5.89E-01	4.18E-01
	1004.76	17.90	5.71E-01		-2.60E-01	2.63E-01
	1274.45	35.50	2.97E-01		6.50E-02	1.35E-01
EU-155	86.50	30.90	2.43E-01	2.43E-01	7.37E-02	1.19E-01
	105.30	20.70	2.74E-01		8.38E-02	1.34E-01
EU-156	811.77	10.40	3.76E+00	3.76E+00	-7.97E-01	1.74E+00
	1153.47	7.20	8.22E+00		8.82E-01	3.84E+00
	1230.71	8.90	5.71E+00		-1.69E+00	2.62E+00
HO-166M	184.41	72.60	1.08E-01	1.08E-01	2.33E-01	5.27E-02
	280.45	29.60	2.49E-01		-6.52E-02	1.20E-01
	410.94	11.10	7.30E-01		3.11E-01	3.48E-01
	711.69	54.10	1.83E-01		3.08E-03	8.58E-02
TM-171	66.72	0.14	5.53E+01	5.53E+01	-1.33E+00	2.71E+01
HF-172	81.75	4.52	1.49E+00	5.07E-01	-5.64E+00	7.28E-01
	125.81	11.30	5.07E-01		-6.09E-01	2.46E-01
LU-172	181.53	20.60	8.25E+00	5.57E+00	-3.95E-01	3.99E+00
	810.06	16.63	1.62E+01		6.81E+00	7.54E+00
	912.12	15.25	3.44E+01		7.82E+01	1.65E+01
	1093.66	62.50	5.57E+00		2.82E+00	2.59E+00
LU-173	100.72	5.24	1.12E+00	3.89E-01	9.11E-02	5.44E-01
	272.11	21.20	3.89E-01		2.00E-01	1.88E-01
HF-175	343.40	84.00	1.18E-01	1.18E-01	-1.26E-02	5.63E-02
LU-176	88.34	13.30	5.82E-01	7.28E-02	1.94E-01	2.85E-01
	201.83	86.00	8.63E-02		6.90E-02	4.20E-02
	306.78	94.00	7.28E-02		-1.65E-02	3.49E-02
TA-182	67.75	41.20	2.19E-01	2.19E-01	-1.63E-03	1.07E-01
	1121.30	34.90	5.90E-01		8.40E-01	2.80E-01
	1189.05	16.23	8.39E-01		3.34E-01	3.85E-01
	1221.41	26.98	5.79E-01		1.85E-01	2.68E-01
	1231.02	11.44	1.29E+00		2.38E-02	5.94E-01
IR-192	308.46	29.68	3.22E-01	2.23E-01	8.29E-02	1.54E-01
	468.07	48.10	2.23E-01		-8.08E-02	1.06E-01
HG-203	279.19	77.30	1.56E-01	1.56E-01	5.62E-02	7.50E-02
BI-207	569.67	97.72	8.72E-02	8.72E-02	4.13E-04	4.11E-02
	1063.62	74.90	1.29E-01		-1.19E-01	5.88E-02
+ TL-208	583.14	*	30.22	1.94E-01	1.48E+00	1.55E-01
	860.37		4.48		1.59E+00	1.20E+00
	2614.66	*	35.85		9.47E-01	7.46E-02
BI-210M	262.00		45.00	1.43E-01	4.84E-03	6.86E-02
	300.00		23.00		-1.46E+00	1.62E-01
+ PB-210	46.50	*	4.25	2.96E+00	1.98E+00	1.45E+00
PB-211	404.84		2.90	2.64E+00	3.58E-01	1.26E+00
	831.96		2.90	3.10E+00	-3.38E-02	1.43E+00
+ BI-212	727.17	*	11.80	4.28E-01	1.58E+00	4.53E-01
	1620.62	*	2.75		3.00E+00	0.00E+00
+ PB-212	238.63	*	44.60	2.80E-01	1.66E+00	1.37E-01
	300.09	*	3.41	1.96E+00	1.70E+00	9.40E-01

Analysis Report for 1510088-09
CP1804S05-06

	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	2.82E-01	2.82E-01	1.34E+00	1.35E-01
		1120.29 *		15.10	1.05E+00		1.92E+00	4.95E-01
		1764.49 *		15.80	6.17E-01		1.99E+00	2.69E-01
		2204.22 *		4.98	1.96E+00		2.81E+00	8.35E-01
+	PB-214	295.21 *		19.19	4.15E-01	2.44E-01	1.60E+00	2.00E-01
		351.92 *		37.19	2.44E-01		1.59E+00	1.18E-01
	RN-219	401.80		6.50	1.20E+00	1.20E+00	9.25E-02	5.73E-01
	RA-223	323.87		3.88	2.01E+00	2.01E+00	2.87E-02	9.68E-01
+	RA-224	240.98 *		3.95	3.21E+00	3.21E+00	5.91E+00	1.58E+00
+	RA-225	40.00 *		31.00	2.23E+00	2.23E+00	1.27E+00	1.09E+00
+	RA-226	186.21 *		3.28	2.72E+00	2.72E+00	4.98E+00	1.33E+00
	TH-227	50.10		8.40	9.67E-01	9.67E-01	1.44E-02	4.71E-01
		236.00		11.50	1.12E+00		3.19E+00	5.50E-01
		256.20		6.30	1.11E+00		-3.48E-02	5.33E-01
+	AC-228	338.32 *		11.40	9.21E-01	4.44E-01	1.18E+00	4.47E-01
		911.07 *		27.70	4.44E-01		1.39E+00	2.09E-01
		969.11 *		16.60	9.90E-01		1.68E+00	4.72E-01
	TH-230	48.44		16.90	5.49E-01	5.49E-01	1.33E-01	2.68E-01
		62.85		4.60	1.84E+00		2.29E+00	9.03E-01
		67.67		0.37	2.00E+01		-1.49E-01	9.80E+00
	PA-231	283.67		1.60	4.62E+00	3.31E+00	7.41E-01	2.22E+00
		302.67		2.30	3.31E+00		7.12E-02	1.59E+00
	TH-231	25.64		14.70	3.58E+00	1.03E+00	1.22E+00	1.74E+00
		84.21		6.40	1.03E+00		-9.67E-01	5.04E-01
	PA-233	311.98		38.60	4.13E-01	4.13E-01	-1.99E-01	1.98E-01
	PA-234	131.20		20.40	3.06E-01	3.06E-01	3.05E-01	1.49E-01
		733.99		8.80	1.03E+00		-1.46E-01	4.79E-01
		946.00		12.00	8.58E-01		1.92E-02	3.97E-01
	PA-234M	1001.03		0.92	1.13E+01	1.13E+01	7.56E-01	5.23E+00
+	TH-234	63.29 *		3.80	2.54E+00	2.54E+00	1.41E+00	1.25E+00
	U-235	143.76		10.50	5.70E-01	5.70E-01	4.21E-01	2.77E-01
		163.35		4.70	1.28E+00		3.54E-01	6.21E-01
		205.31		4.70	1.53E+00		3.46E-01	7.42E-01
	NP-237	86.50		12.60	5.89E-01	5.89E-01	1.79E-01	2.89E-01
	NP-239	106.10		22.70	3.34E+03	3.34E+03	1.53E+03	1.62E+03
		228.18		10.70	9.12E+03		-4.95E+03	4.42E+03
		277.60		14.10	7.10E+03		1.65E+03	3.42E+03
	AM-241	59.54		35.90	2.23E-01	2.23E-01	2.80E-02	1.09E-01
	AM-243	74.67		66.00	1.60E-01	1.60E-01	3.19E-01	7.87E-02
	CM-243	209.75		3.29	2.33E+00	5.34E-01	2.36E+00	1.13E+00
		228.14		10.60	6.88E-01		-3.73E-01	3.33E-01
		277.60		14.00	5.34E-01		1.24E-01	2.58E-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

Analysis Report for 1510088-09
CP1804S05-06

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: CP1804S05-06

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	159	162	148	115	104	111	
17:	98	88	81	78	69	78	98	80	
25:	100	87	85	92	71	78	78	99	
33:	92	76	77	78	70	81	93	100	
41:	95	97	77	82	104	133	180	104	
49:	81	87	105	92	101	124	99	116	
57:	122	122	141	142	134	143	175	233	
65:	156	128	147	134	146	151	155	169	
73:	148	198	448	290	503	491	155	119	
81:	135	108	94	172	162	114	190	255	
89:	111	192	159	135	249	206	95	89	
97:	82	94	111	102	83	78	87	91	
105:	93	94	91	92	84	82	87	93	
113:	81	67	81	85	69	74	77	66	
121:	83	78	69	79	71	90	74	83	
129:	119	125	83	78	83	76	75	75	
137:	83	68	76	78	73	78	77	86	
145:	91	77	58	66	71	61	70	66	
153:	66	91	78	60	60	77	68	73	
161:	54	66	71	77	78	64	66	70	
169:	63	66	60	74	63	48	55	63	
177:	65	63	48	65	58	63	69	55	
185:	81	180	138	61	48	48	71	65	
193:	52	50	42	49	42	53	80	58	
201:	51	56	58	62	45	47	48	58	
209:	73	89	50	57	37	50	38	53	
217:	43	47	53	48	47	57	51	49	
225:	55	55	36	52	49	37	42	58	
233:	53	36	61	37	60	202	549	210	
241:	94	156	89	40	42	32	32	38	
249:	35	33	32	46	33	30	40	38	
257:	31	41	34	42	24	27	24	26	
265:	24	26	36	38	31	61	71	29	
273:	32	30	34	36	32	55	29	32	
281:	31	30	39	22	34	43	36	33	
289:	33	26	37	26	32	44	150	167	
297:	45	19	25	45	56	18	27	24	
305:	24	30	22	31	23	21	31	27	
313:	18	30	26	32	32	21	24	33	
321:	23	35	31	26	27	30	38	50	
329:	48	30	36	26	26	33	28	17	
337:	31	75	85	26	24	30	15	23	
345:	21	20	25	23	18	27	67	302	
353:	181	29	13	20	25	22	21	19	
361:	21	25	21	24	24	24	24	19	

369: 16 18 17 18 24 18 22 22

Sample Title: CP1804S05-06

Channel	1	2	3	4	5	6	7	8
377:	25	14	22	16	29	15	22	22
385:	21	22	26	20	24	23	22	27
393:	7	25	25	22	24	25	18	21
401:	19	21	15	30	19	15	17	18
409:	23	33	22	23	18	11	13	24
417:	19	20	20	17	17	16	23	17
425:	18	17	15	17	20	20	20	20
433:	26	16	18	18	21	15	15	19
441:	16	13	16	16	20	13	16	15
449:	13	16	11	24	14	17	20	13
457:	5	17	21	12	16	21	34	33
465:	20	17	14	20	20	11	10	12
473:	7	25	17	12	15	9	14	14
481:	11	13	16	10	9	21	18	12
489:	12	18	11	9	18	12	18	9
497:	10	21	14	7	14	9	17	9
505:	4	16	8	14	18	42	60	50
513:	21	14	13	12	7	10	15	15
521:	9	7	14	17	8	7	11	7
529:	15	14	13	11	16	15	13	10
537:	14	12	9	7	24	10	10	7
545:	12	13	18	14	7	11	12	9
553:	12	6	14	10	7	11	14	13
561:	20	10	15	8	9	11	10	13
569:	15	15	13	10	14	19	11	11
577:	13	10	14	9	5	27	137	97
585:	19	16	16	9	14	11	14	8
593:	10	11	8	5	9	16	13	16
601:	8	9	11	9	7	11	9	42
609:	139	143	37	13	13	8	9	19
617:	11	10	14	8	11	9	8	9
625:	8	8	9	16	12	15	10	10
633:	9	7	13	9	3	13	11	7
641:	13	9	7	9	10	14	8	9
649:	5	15	8	9	13	12	15	10
657:	10	11	8	7	13	15	12	14
665:	16	18	16	12	14	10	10	10
673:	7	19	12	6	14	11	7	12
681:	10	8	13	9	11	18	9	9
689:	8	7	11	8	12	5	11	16
697:	18	11	9	7	12	9	8	9
705:	9	21	11	11	14	13	11	12
713:	13	11	8	11	13	7	13	13
721:	4	8	10	9	9	16	35	24
729:	15	12	5	7	10	12	9	14
737:	7	11	14	7	13	10	8	6
745:	6	10	8	4	10	14	8	9
753:	6	10	12	11	7	6	8	9
761:	8	10	7	8	4	12	6	22
769:	15	15	8	10	12	4	12	4
777:	12	9	10	8	5	7	10	8
785:	11	10	6	6	4	6	15	8
793:	11	8	21	16	9	11	10	6

801: 9 6 6 8 4 11 11 8

Sample Title: CP1804S05-06

Channel	1	2	3	4	5	6	7	8
809:	13	10	3	9	6	5	6	2
817:	14	8	3	7	7	5	8	10
825:	8	8	8	7	6	7	5	3
833:	8	13	8	13	7	8	5	18
841:	9	7	4	3	6	9	6	12
849:	5	12	9	4	12	5	9	3
857:	11	3	10	15	23	10	7	6
865:	11	11	2	6	12	6	5	8
873:	11	6	3	5	6	11	12	5
881:	8	2	3	13	7	6	7	8
889:	6	7	4	8	9	11	6	4
897:	9	5	5	6	9	7	7	12
905:	6	5	6	7	9	22	87	53
913:	11	3	13	6	6	12	8	3
921:	7	10	8	6	2	1	5	9
929:	1	4	7	7	13	9	7	10
937:	8	9	11	5	7	10	5	5
945:	8	8	12	6	9	8	5	12
953:	7	6	6	7	10	13	9	6
961:	5	10	4	14	8	6	7	20
969:	49	36	9	5	4	3	6	9
977:	4	3	6	8	7	3	5	5
985:	5	4	6	8	6	6	11	6
993:	5	5	3	8	9	6	3	6
1001:	11	9	5	9	5	5	10	3
1009:	11	7	4	4	4	5	7	7
1017:	5	13	7	4	11	3	4	4
1025:	4	4	4	9	5	8	9	5
1033:	4	6	6	6	5	8	6	9
1041:	5	3	3	5	2	5	7	9
1049:	5	3	8	6	9	3	4	5
1057:	5	11	9	5	6	6	7	5
1065:	5	3	6	12	5	6	4	6
1073:	3	5	10	2	8	9	7	4
1081:	8	5	7	6	9	4	9	5
1089:	6	6	7	8	10	10	11	8
1097:	11	1	9	4	9	7	7	7
1105:	5	5	5	9	6	4	10	7
1113:	7	4	3	4	11	7	22	37
1121:	26	13	3	5	4	5	4	7
1129:	10	7	11	8	5	4	9	5
1137:	7	8	3	2	3	8	8	2
1145:	4	1	1	6	9	6	10	7
1153:	6	6	15	17	5	16	7	10
1161:	7	5	7	6	8	4	7	11
1169:	9	10	7	11	14	8	10	3
1177:	8	11	3	6	11	6	11	3
1185:	3	7	6	7	3	5	5	9
1193:	4	6	5	7	6	7	9	4
1201:	3	5	4	10	6	6	8	5
1209:	12	6	11	4	6	7	6	6
1217:	4	3	8	4	12	11	8	8
1225:	9	5	5	8	3	7	6	8

1233: 6 9 7 9 9 20 4 6

Sample Title: CP1804S05-06

Channel	6	7	8	9	9	20	4	6
1241:	6	7	8	5	6	4	10	5
1249:	2	3	4	8	6	4	3	2
1257:	5	5	5	8	4	3	4	5
1265:	8	4	4	2	2	3	5	3
1273:	4	3	3	5	3	3	2	5
1281:	9	7	6	5	3	6	5	5
1289:	5	4	3	6	7	3	2	4
1297:	4	4	13	4	6	2	2	3
1305:	4	6	4	2	1	7	5	1
1313:	3	8	4	6	4	1	4	4
1321:	3	6	5	4	3	2	2	4
1329:	3	1	1	6	4	8	5	3
1337:	2	3	2	0	5	3	2	2
1345:	2	2	4	2	4	5	1	4
1353:	5	6	3	3	2	2	1	5
1361:	4	4	4	5	2	2	2	1
1369:	2	2	3	6	1	4	4	3
1377:	13	9	3	0	2	6	2	2
1385:	3	8	3	3	2	1	2	4
1393:	3	1	2	1	1	4	4	4
1401:	1	9	2	4	0	5	3	7
1409:	5	2	2	3	3	1	0	5
1417:	3	3	3	6	1	2	0	3
1425:	4	3	2	2	4	2	3	2
1433:	2	2	2	2	3	3	1	0
1441:	2	4	0	0	2	2	0	1
1449:	0	1	2	3	1	3	4	3
1457:	3	6	40	173	173	83	11	4
1465:	3	4	0	1	1	1	1	1
1473:	3	2	3	3	0	3	2	4
1481:	2	4	0	3	4	1	1	1
1489:	5	3	3	1	1	5	1	2
1497:	5	2	1	1	4	0	1	1
1505:	0	2	2	2	5	3	2	7
1513:	2	5	1	0	2	2	0	2
1521:	0	1	3	2	3	5	2	0
1529:	1	2	3	2	1	1	2	4
1537:	3	2	4	1	1	3	2	3
1545:	1	1	1	1	2	4	4	3
1553:	2	2	0	1	1	2	3	3
1561:	1	0	3	1	2	3	2	2
1569:	3	1	0	1	1	0	3	4
1577:	1	1	2	2	3	2	1	3
1585:	2	4	3	6	4	3	3	3
1593:	6	3	1	1	3	4	1	1
1601:	1	1	1	1	2	1	1	2
1609:	3	2	3	1	2	0	0	2
1617:	2	1	3	4	4	1	2	0
1625:	0	0	0	0	0	2	1	5
1633:	0	1	3	1	2	1	1	0
1641:	0	1	0	2	2	1	1	0
1649:	2	2	0	3	2	1	2	2
1657:	1	1	0	2	1	2	0	1

1665: 3 1 2 2 1 2 2 1

Sample Title: CP1804S05-06

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1673:	0	2	2	0	2	0	0	0
1681:	2	1	0	1	0	0	1	2
1689:	1	0	1	1	2	1	0	2
1697:	2	0	1	1	0	2	2	0
1705:	0	0	0	2	4	1	0	0
1713:	0	1	0	1	3	0	2	1
1721:	1	3	2	0	1	0	3	4
1729:	3	3	1	0	0	5	0	0
1737:	1	0	2	1	1	0	2	1
1745:	2	0	2	2	1	1	0	2
1753:	1	0	2	0	1	0	3	0
1761:	2	2	14	23	24	6	1	1
1769:	3	0	0	1	0	0	0	1
1777:	0	2	2	4	0	1	2	2
1785:	1	2	3	0	3	1	0	1
1793:	1	1	2	0	1	0	1	0
1801:	0	2	0	3	0	0	1	1
1809:	1	3	0	0	1	1	2	1
1817:	1	0	0	0	2	0	2	0
1825:	1	1	0	2	0	1	1	0
1833:	0	1	1	2	0	2	1	2
1841:	0	0	2	0	0	4	3	3
1849:	2	3	2	2	0	2	0	1
1857:	0	0	0	2	2	0	2	1
1865:	0	0	0	1	2	1	1	2
1873:	0	0	1	0	0	0	1	1
1881:	3	0	1	2	0	1	2	0
1889:	2	0	0	1	1	0	0	2
1897:	0	0	3	0	2	2	0	0
1905:	0	0	0	1	0	1	2	2
1913:	1	0	1	1	3	0	0	1
1921:	0	1	0	2	0	0	0	2
1929:	1	2	0	0	1	1	0	0
1937:	0	3	1	1	1	2	0	1
1945:	0	1	0	0	3	2	1	1
1953:	1	0	0	2	3	0	0	1
1961:	1	2	0	3	0	0	1	0
1969:	1	1	1	2	1	0	3	0
1977:	0	1	1	2	1	3	1	2
1985:	0	1	0	1	0	0	0	1
1993:	2	1	1	0	1	0	3	2
2001:	1	1	1	1	0	2	2	3
2009:	1	4	2	1	0	0	1	1
2017:	2	1	2	1	0	0	2	0
2025:	1	0	0	0	1	0	2	0
2033:	1	1	2	0	0	2	2	0
2041:	0	0	0	1	0	1	0	0
2049:	1	0	0	1	1	2	1	1
2057:	0	1	0	1	1	0	1	2
2065:	4	1	1	1	1	0	0	0
2073:	0	0	0	1	1	2	2	1
2081:	1	0	2	0	0	0	0	0
2089:	0	0	2	1	0	0	1	1

2097: 0 1 2 0 4 4 4 5

Sample Title: CP1804S05-06

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

2529: 0 1 1 0 0 0 0 0

Sample Title: CP1804S05-06

Channel	1	2	3	4	5	6	7	8	9
2537:	1	1	0	0	0	0	0	0	0
2545:	2	0	0	0	0	0	1	0	1
2553:	0	0	0	0	0	2	0	0	0
2561:	0	0	0	0	1	1	0	0	1
2569:	0	0	0	2	0	0	0	0	1
2577:	0	1	0	0	0	0	0	0	1
2585:	0	1	0	0	1	0	0	0	0
2593:	0	0	0	0	0	0	0	1	1
2601:	0	0	2	1	1	1	0	0	1
2609:	0	1	1	3	11	24	15	0	5
2617:	0	0	0	2	1	0	0	0	0
2625:	0	0	0	0	0	0	0	1	0
2633:	0	0	0	0	0	0	0	0	1
2641:	0	1	0	0	0	0	0	0	0
2649:	0	0	0	0	0	0	0	1	1
2657:	1	1	0	0	0	0	0	0	1
2665:	0	0	1	0	0	0	0	0	0
2673:	0	0	0	0	0	0	0	0	2
2681:	0	0	0	0	0	0	0	1	0
2689:	0	0	1	0	1	0	0	1	0
2697:	0	0	0	1	0	1	0	0	0
2705:	2	0	1	0	0	0	0	0	0
2713:	0	1	0	2	0	0	0	0	0
2721:	1	0	0	1	0	0	0	0	0
2729:	0	1	0	0	0	0	0	0	0
2737:	1	0	0	0	0	0	0	0	0
2745:	0	0	1	0	1	2	0	0	1
2753:	0	0	0	0	0	0	0	1	0
2761:	0	0	0	1	0	0	0	0	0
2769:	0	0	0	1	0	0	0	1	1
2777:	0	0	1	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0	0
2793:	0	1	1	0	1	0	0	0	2
2801:	0	0	1	0	0	1	1	1	0
2809:	0	0	0	0	0	1	0	0	0
2817:	0	0	0	0	0	0	0	0	2
2825:	0	0	0	0	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0	0
2841:	0	0	0	0	0	1	0	0	0
2849:	0	0	0	0	0	0	0	0	1
2857:	1	0	0	0	1	0	0	0	0
2865:	0	0	0	0	1	0	0	0	0
2873:	0	0	0	1	0	0	0	1	0
2881:	1	1	0	0	1	0	0	0	0
2889:	0	0	0	0	0	0	0	0	0
2897:	0	0	0	0	0	1	0	0	0
2905:	1	0	1	1	0	0	0	0	1
2913:	0	0	0	0	0	0	0	0	1
2921:	0	0	0	0	0	0	0	1	0
2929:	0	1	0	1	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0	1
2945:	0	0	0	0	0	0	0	0	0
2953:	1	1	0	1	0	1	0	0	0

2961: 0 0 1 0 0 0 0 0

Sample Title: CP1804S05-06

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

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP1804S05-06

Channel	1	0	0	0	0	0	1	0
3401:	1	0	0	0	0	0	1	0
3409:	0	0	0	0	0	1	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	1	0	0	0	0	0
3433:	0	0	1	0	0	0	0	0
3441:	0	0	0	0	0	0	1	0
3449:	0	0	0	1	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	1	0	0	0
3473:	2	0	0	0	1	0	0	0
3481:	0	0	1	0	0	0	0	0
3489:	0	0	0	0	0	1	0	0
3497:	0	0	0	0	0	0	1	0
3505:	0	0	0	0	0	0	1	0
3513:	0	0	0	0	0	0	0	1
3521:	0	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:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	1	0	0	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	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	1	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	1	0	0	0	1	0	0
3625:	0	0	0	0	0	0	1	1
3633:	0	0	0	0	0	1	0	0
3641:	0	1	0	0	0	1	0	0
3649:	0	0	0	0	0	0	1	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	1	0	0
3681:	1	0	0	0	1	0	0	1
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	1
3729:	0	1	0	0	0	0	0	0
3737:	0	0	0	0	0	0	1	0
3745:	0	0	0	0	0	0	1	0
3753:	0	0	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:	0	0	0	0	1	0	0	0
3793:	0	0	0	1	0	0	0	1
3801:	0	0	0	0	0	0	1	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	1	0	0	0

3825: 0 0 1 0 0 0 0 0 0

Sample Title: CP1804S05-06

Channel	1	2	3	4	5	6	7	8	9
3833:	0	0	0	0	0	0	0	0	0
3841:	0	0	1	0	0	0	0	0	0
3849:	1	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0	0
3881:	0	0	0	1	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0	1
3897:	0	0	1	0	0	1	0	0	0
3905:	0	0	0	0	1	0	0	0	0
3913:	0	0	0	0	0	0	0	0	0
3921:	1	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	1	0	0
3945:	0	0	1	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0	1
3961:	0	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0	0
3985:	0	0	0	0	1	0	0	0	0
3993:	1	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0	0
4025:	1	0	0	0	0	0	1	0	0
4033:	0	0	0	0	0	1	0	0	0
4041:	0	0	0	0	0	0	2	0	0
4049:	0	0	0	0	0	0	0	0	0
4057:	1	0	0	0	0	0	0	0	0
4065:	0	1	0	1	0	0	0	0	0
4073:	0	0	0	1	0	0	0	0	0
4081:	0	0	0	0	0	0	1	0	0
4089:	0	1	0	0	0	0	0	1	0

KCS
11/9/15Analysis Report for 1510088-10
CP1804S08-09

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-10
Sample Description : CP1804S08-09
Sample Type : SOIL

Sample Size : 6.029E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 9:00:31AM
Acquisition Started : 11/9/2015 3:35:07PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.5 seconds

Dead Time : 0.04 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 19 - 4096
Identification Energy Tolerance : 1.000 keV

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

Sample Number : 29351

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

Analysis Report for 1510088-10
 CP1804S08-09

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 4:35:12PM
 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	46.51	46.86	0.0000	0.00
2	63.59	63.94	0.0000	0.00
3	74.94	75.28	0.0000	0.00
4	77.38	77.72	0.0000	0.00
5	88.10	88.44	0.0000	0.00
6	93.04	93.38	0.0000	0.00
7	130.04	130.36	0.0000	0.00
8	186.26	186.56	0.0000	0.00
9	208.96	209.25	0.0000	0.00
10	238.72	239.01	0.0000	0.00
11	241.86	242.15	0.0000	0.00
12	270.62	270.90	0.0000	0.00
13	277.42	277.70	0.0000	0.00
14	287.84	288.11	0.0000	0.00
15	295.51	295.78	0.0000	0.00
16	300.71	300.98	0.0000	0.00
17	327.54	327.80	0.0000	0.00
18	338.73	338.98	0.0000	0.00
19	352.07	352.32	0.0000	0.00
20	463.29	463.50	0.0000	0.00
21	511.34	511.54	0.0000	0.00
22	583.37	583.54	0.0000	0.00
23	609.68	609.84	0.0000	0.00
24	664.69	664.83	0.0000	0.00
25	727.62	727.74	0.0000	0.00
26	861.17	861.24	0.0000	0.00
27	907.53	907.59	0.0000	0.00
28	911.36	911.41	0.0000	0.00
29	935.46	935.51	0.0000	0.00
30	969.49	969.52	0.0000	0.00
31	992.11	992.13	0.0000	0.00
32	1120.67	1120.65	0.0000	0.00
33	1239.18	1239.11	0.0000	0.00
34	1378.20	1378.09	0.0000	0.00
35	1385.40	1385.29	0.0000	0.00
36	1401.43	1401.31	0.0000	0.00
37	1409.19	1409.06	0.0000	0.00
38	1435.86	1435.73	0.0000	0.00
39	1457.00	1456.85	0.0000	0.00
40	1461.38	1461.24	0.0000	0.00
41	1496.38	1496.22	0.0000	0.00
42	1501.94	1501.78	0.0000	0.00

Analysis Report for 1510088-10
CP1804S08-09

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1509.94	1509.78	0.0000	0.00
44	1625.57	1625.37	0.0000	0.00
45	1631.19	1630.99	0.0000	0.00
46	1664.13	1663.91	0.0000	0.00
47	1726.26	1726.02	0.0000	0.00
48	1730.01	1729.77	0.0000	0.00
49	1765.20	1764.95	0.0000	0.00
50	1847.29	1847.00	0.0000	0.00
51	1851.05	1850.77	0.0000	0.00
52	1858.10	1857.80	0.0000	0.00
53	1906.94	1906.63	0.0000	0.00
54	1914.56	1914.25	0.0000	0.00
55	1965.96	1965.63	0.0000	0.00
56	2105.36	2104.98	0.0000	0.00
57	2204.72	2204.29	0.0000	0.00
58	2295.40	2294.94	0.0000	0.00
59	2302.86	2302.40	0.0000	0.00
60	2313.55	2313.08	0.0000	0.00
61	2448.45	2447.93	0.0000	0.00
62	2615.32	2614.73	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510088-10
CP1804S08-09

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 4:35:12PM

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	46.51	43 - 50	46.86	1.65E+02	95.83	1.43E+03	1.22
	2	63.59	60 - 67	63.94	2.01E+02	122.29	2.37E+03	1.23
M	3	74.94	72 - 81	75.28	5.59E+02	104.51	1.56E+03	1.60
m	4	77.38	72 - 81	77.72	8.73E+02	112.29	1.44E+03	1.61
	5	88.10	86 - 91	88.44	2.91E+02	104.90	1.97E+03	1.30
	6	93.04	91 - 97	93.38	2.47E+02	112.77	2.01E+03	1.70
	7	130.04	127 - 133	130.36	8.08E+01	86.87	1.30E+03	1.76
	8	186.26	182 - 190	186.56	2.35E+02	99.10	1.36E+03	1.84
	9	208.96	204 - 213	209.25	1.58E+02	95.04	1.19E+03	1.82
M	10	238.72	233 - 245	239.01	1.12E+03	83.55	5.51E+02	1.63
m	11	241.86	233 - 245	242.15	2.59E+02	65.58	5.05E+02	1.68
	12	270.62	267 - 274	270.90	8.47E+01	63.02	6.01E+02	2.19
	13	277.42	275 - 282	277.70	5.29E+01	62.06	6.12E+02	2.76
	14	287.84	285 - 291	288.11	6.04E+01	51.06	4.29E+02	4.16
M	15	295.51	292 - 305	295.78	4.53E+02	59.96	3.48E+02	1.91
m	16	300.71	292 - 305	300.98	9.42E+01	46.34	3.36E+02	1.91
	17	327.54	325 - 331	327.80	6.33E+01	50.50	4.19E+02	1.34
	18	338.73	335 - 343	338.98	2.24E+02	69.81	6.12E+02	1.47
	19	352.07	347 - 357	352.32	6.80E+02	84.73	5.95E+02	1.94
	20	463.29	460 - 467	463.50	7.66E+01	44.36	2.79E+02	1.81
	21	511.34	506 - 517	511.54	2.24E+02	62.16	3.69E+02	2.47
	22	583.37	578 - 589	583.54	4.11E+02	62.42	2.79E+02	1.95
	23	609.68	606 - 614	609.84	5.14E+02	62.55	2.81E+02	1.73
	24	664.69	662 - 668	664.83	2.74E+01	29.70	1.41E+02	2.01
	25	727.62	724 - 732	727.74	9.70E+01	39.01	1.72E+02	1.52
	26	861.17	856 - 865	861.24	4.28E+01	35.78	1.55E+02	1.64
M	27	907.53	905 - 916	907.59	1.67E+01	19.14	7.75E+01	2.37
m	28	911.36	905 - 916	911.41	2.52E+02	39.43	9.02E+01	2.37
	29	935.46	930 - 942	935.51	5.77E+01	37.86	1.37E+02	2.29
	30	969.49	966 - 973	969.52	1.10E+02	40.74	1.95E+02	2.03
	31	992.11	988 - 997	992.13	2.46E+01	29.15	1.01E+02	4.84
	32	1120.67	1115 - 1125	1120.65	1.15E+02	41.18	1.65E+02	1.94
	33	1239.18	1235 - 1245	1239.11	7.06E+01	37.56	1.41E+02	2.37
	34	1378.20	1374 - 1381	1378.09	3.80E+01	21.54	5.19E+01	2.23
	35	1385.40	1383 - 1388	1385.29	1.44E+01	14.39	2.52E+01	2.82
	36	1401.43	1399 - 1404	1401.31	1.18E+01	14.53	3.24E+01	3.05
	37	1409.19	1406 - 1412	1409.06	1.28E+01	13.48	2.24E+01	2.33
	38	1435.86	1433 - 1438	1435.73	1.34E+01	12.29	1.71E+01	2.19
M	39	1457.00	1455 - 1466	1456.85	1.36E+01	11.31	2.40E+01	2.66
m	40	1461.38	1455 - 1466	1461.24	7.70E+02	57.51	4.20E+01	2.25

Analysis Report for 1510088-10

CP1804S08-09

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	1496.38	1495 - 1512		1496.22	1.38E+01	6.58	6.24E+00	2.43
m	42	1501.94	1495 - 1512		1501.78	1.34E+01	12.38	1.64E+01	2.43
m	43	1509.94	1495 - 1512		1509.78	1.81E+01	13.61	1.96E+01	2.44
M	44	1625.57	1624 - 1634		1625.37	1.04E+01	5.50	2.58E+00	3.64
m	45	1631.19	1624 - 1634		1630.99	2.25E+01	10.95	3.06E+00	2.74
	46	1664.13	1659 - 1669		1663.91	1.27E+01	15.98	2.67E+01	5.92
M	47	1726.26	1724 - 1734		1726.02	8.03E+00	6.32	4.77E+00	2.52
m	48	1730.01	1724 - 1734		1729.77	1.88E+01	13.42	1.70E+01	2.52
	49	1765.20	1760 - 1768		1764.95	8.16E+01	21.10	1.89E+01	1.73
M	50	1847.29	1840 - 1854		1847.00	1.24E+01	7.48	0.00E+00	2.34
m	51	1851.05	1840 - 1854		1850.77	9.80E+00	8.94	0.00E+00	2.57
	52	1858.10	1855 - 1860		1857.80	5.43E+00	6.08	3.14E+00	2.71
	53	1906.94	1903 - 1910		1906.63	1.13E+01	8.25	3.38E+00	1.21
	54	1914.56	1911 - 1917		1914.25	8.00E+00	5.66	0.00E+00	2.75
	55	1965.96	1962 - 1968		1965.63	8.00E+00	5.66	0.00E+00	1.12
	56	2105.36	2099 - 2114		2104.98	3.12E+01	14.42	9.58E+00	5.87
	57	2204.72	2200 - 2207		2204.29	2.10E+01	13.42	1.59E+01	2.27
	58	2295.40	2290 - 2298		2294.94	1.09E+01	11.35	1.22E+01	3.72
	59	2302.86	2300 - 2304		2302.40	4.50E+00	6.36	5.00E+00	1.02
	60	2313.55	2308 - 2317		2313.08	1.10E+01	10.68	1.00E+01	1.10
	61	2448.45	2443 - 2451		2447.93	1.06E+01	10.02	8.80E+00	1.79
	62	2615.32	2611 - 2619		2614.73	1.54E+02	26.47	1.27E+01	3.09

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 4:35:12PM

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	46.51	43 -	50	1.65E+02	95.83	1.43E+03	7.59E+01
	2	63.59	60 -	67	2.01E+02	122.29	2.37E+03	9.78E+01
M	3	74.94	72 -	81	5.59E+02	104.51	1.56E+03	6.49E+01
m	4	77.38	72 -	81	8.73E+02	112.29	1.44E+03	6.24E+01
	5	88.10	86 -	91	2.91E+02	104.90	1.97E+03	8.15E+01
	6	93.04	91 -	97	2.47E+02	112.77	2.01E+03	8.90E+01

Analysis Report for 1510088-10

CP1804S08-09

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	7	130.04	127 -	133	8.08E+01	86.87	1.30E+03	6.99E+01
	8	186.26	182 -	190	2.35E+02	99.10	1.36E+03	7.75E+01
	9	208.96	204 -	213	1.58E+02	95.04	1.19E+03	7.53E+01
M	10	238.72	233 -	245	1.12E+03	83.55	5.51E+02	3.86E+01
m	11	241.86	233 -	245	2.59E+02	65.58	5.05E+02	3.70E+01
	12	270.62	267 -	274	8.47E+01	63.02	6.01E+02	4.95E+01
	13	277.42	275 -	282	5.29E+01	62.06	6.12E+02	4.96E+01
	14	287.84	285 -	291	6.04E+01	51.06	4.29E+02	4.00E+01
M	15	295.51	292 -	305	4.53E+02	59.96	3.48E+02	3.07E+01
m	16	300.71	292 -	305	9.42E+01	46.34	3.36E+02	3.01E+01
	17	327.54	325 -	331	6.33E+01	50.50	4.19E+02	3.94E+01
	18	338.73	335 -	343	2.24E+02	69.81	6.12E+02	5.18E+01
	19	352.07	347 -	357	6.80E+02	84.73	5.95E+02	5.49E+01
	20	463.29	460 -	467	7.66E+01	44.36	2.79E+02	3.35E+01
	21	511.34	506 -	517	2.24E+02	62.16	3.69E+02	4.48E+01
	22	583.37	578 -	589	4.11E+02	62.42	2.79E+02	3.90E+01
	23	609.68	606 -	614	5.14E+02	62.55	2.81E+02	3.54E+01
	24	664.69	662 -	668	2.74E+01	29.70	1.41E+02	2.28E+01
	25	727.62	724 -	732	9.70E+01	39.01	1.72E+02	2.77E+01
	26	861.17	856 -	865	4.28E+01	35.78	1.55E+02	2.74E+01
M	27	907.53	905 -	916	1.67E+01	19.14	7.75E+01	1.45E+01
m	28	911.36	905 -	916	2.52E+02	39.43	9.02E+01	1.56E+01
	29	935.46	930 -	942	5.77E+01	37.86	1.37E+02	2.85E+01
	30	969.49	966 -	973	1.10E+02	40.74	1.95E+02	2.87E+01
	31	992.11	988 -	997	2.46E+01	29.15	1.01E+02	2.25E+01
	32	1120.67	1115 -	1125	1.15E+02	41.18	1.65E+02	2.89E+01
	33	1239.18	1235 -	1245	7.06E+01	37.56	1.41E+02	2.76E+01
	34	1378.20	1374 -	1381	3.80E+01	21.54	5.19E+01	1.45E+01
	35	1385.40	1383 -	1388	1.44E+01	14.39	2.52E+01	1.00E+01
	36	1401.43	1399 -	1404	1.18E+01	14.53	3.24E+01	1.05E+01
	37	1409.19	1406 -	1412	1.28E+01	13.48	2.24E+01	9.39E+00
	38	1435.86	1433 -	1438	1.34E+01	12.29	1.71E+01	8.11E+00
M	39	1457.00	1455 -	1466	1.36E+01	11.31	2.40E+01	8.05E+00
m	40	1461.38	1455 -	1466	7.70E+02	57.51	4.20E+01	1.07E+01
M	41	1496.38	1495 -	1512	1.38E+01	6.58	6.24E+00	4.11E+00
m	42	1501.94	1495 -	1512	1.34E+01	12.38	1.64E+01	6.66E+00
m	43	1509.94	1495 -	1512	1.81E+01	13.61	1.96E+01	7.27E+00
M	44	1625.57	1624 -	1634	1.04E+01	5.50	2.58E+00	2.64E+00
m	45	1631.19	1624 -	1634	2.25E+01	10.95	3.06E+00	2.88E+00
	46	1664.13	1659 -	1669	1.27E+01	15.98	2.67E+01	1.18E+01
M	47	1726.26	1724 -	1734	8.03E+00	6.32	4.77E+00	3.59E+00
m	48	1730.01	1724 -	1734	1.88E+01	13.42	1.70E+01	6.77E+00
	49	1765.20	1760 -	1768	8.16E+01	21.10	1.89E+01	8.96E+00
M	50	1847.29	1840 -	1854	1.24E+01	7.48	0.00E+00	0.00E+00
m	51	1851.05	1840 -	1854	9.80E+00	8.94	0.00E+00	0.00E+00
	52	1858.10	1855 -	1860	5.43E+00	6.08	3.14E+00	3.21E+00
	53	1906.94	1903 -	1910	1.13E+01	8.25	3.38E+00	3.92E+00
	54	1914.56	1911 -	1917	8.00E+00	5.66	0.00E+00	0.00E+00
	55	1965.96	1962 -	1968	8.00E+00	5.66	0.00E+00	0.00E+00
	56	2105.36	2099 -	2114	3.12E+01	14.42	9.58E+00	7.50E+00
	57	2204.72	2200 -	2207	2.10E+01	13.42	1.59E+01	8.05E+00

Analysis Report for 1510088-10

CP1804S08-09

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
58	2295.40	2290 -	2298	1.09E+01	11.35	1.22E+01	7.58E+00
59	2302.86	2300 -	2304	4.50E+00	6.36	5.00E+00	3.90E+00
60	2313.55	2308 -	2317	1.10E+01	10.68	1.00E+01	6.88E+00
61	2448.45	2443 -	2451	1.06E+01	10.02	8.80E+00	6.27E+00
62	2615.32	2611 -	2619	1.54E+02	26.47	1.27E+01	7.63E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 4:35:12PM

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	46.51	43 -	50	46.86	1.65E+02	95.83	1.43E+03	PB-210
2	63.59	60 -	67	63.94	2.01E+02	122.29	2.37E+03	TH-234 TH-230
M 3	74.94	72 -	81	75.28	5.59E+02	104.51	1.56E+03	AM-243
m 4	77.38	72 -	81	77.72	8.73E+02	112.29	1.44E+03	TI-44
5	88.10	86 -	91	88.44	2.91E+02	104.90	1.97E+03	CD-109 LU-176 SN-126
6	93.04	91 -	97	93.38	2.47E+02	112.77	2.01E+03	GA-67
7	130.04	127 -	133	130.36	8.08E+01	86.87	1.30E+03	.....
8	186.26	182 -	190	186.56	2.35E+02	99.10	1.36E+03	RA-226
9	208.96	204 -	213	209.25	1.58E+02	95.04	1.19E+03	GA-67 CM-243
M 10	238.72	233 -	245	239.01	1.12E+03	83.55	5.51E+02	PB-212
m 11	241.86	233 -	245	242.15	2.59E+02	65.58	5.05E+02	RA-224
12	270.62	267 -	274	270.90	8.47E+01	63.02	6.01E+02	.....
13	277.42	275 -	282	277.70	5.29E+01	62.06	6.12E+02	CM-243 NP-239
14	287.84	285 -	291	288.11	6.04E+01	51.06	4.29E+02	.....
M 15	295.51	292 -	305	295.78	4.53E+02	59.96	3.48E+02	PB-214
m 16	300.71	292 -	305	300.98	9.42E+01	46.34	3.36E+02	GA-67

Analysis Report for 1510088-10

CP1804S08-09

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
								PB-212
								BI-210M
17	327.54	325 -	331	327.80	6.33E+01	50.50	4.19E+02	.....
18	338.73	335 -	343	338.98	2.24E+02	69.81	6.12E+02	AC-228
19	352.07	347 -	357	352.32	6.80E+02	84.73	5.95E+02	PB-214
20	463.29	460 -	467	463.50	7.66E+01	44.36	2.79E+02	SB-125
21	511.34	506 -	517	511.54	2.24E+02	62.16	3.69E+02	.....
22	583.37	578 -	589	583.54	4.11E+02	62.42	2.79E+02	TL-208
23	609.68	606 -	614	609.84	5.14E+02	62.55	2.81E+02	BI-214
24	664.69	662 -	668	664.83	2.74E+01	29.70	1.41E+02	CE-143
25	727.62	724 -	732	727.74	9.70E+01	39.01	1.72E+02	BI-212
26	861.17	856 -	865	861.24	4.28E+01	35.78	1.55E+02	TL-208
M 27	907.53	905 -	916	907.59	1.67E+01	19.14	7.75E+01	.....
m 28	911.36	905 -	916	911.41	2.52E+02	39.43	9.02E+01	AC-228
								LU-172
29	935.46	930 -	942	935.51	5.77E+01	37.86	1.37E+02	.....
30	969.49	966 -	973	969.52	1.10E+02	40.74	1.95E+02	AC-228
31	992.11	988 -	997	992.13	2.46E+01	29.15	1.01E+02	.....
32	1120.67	1115 -	1125	1120.65	1.15E+02	41.18	1.65E+02	SC-46
								BI-214
								TA-182
33	1239.18	1235 -	1245	1239.11	7.06E+01	37.56	1.41E+02	CO-56
34	1378.20	1374 -	1381	1378.09	3.80E+01	21.54	5.19E+01	.....
35	1385.40	1383 -	1388	1385.29	1.44E+01	14.39	2.52E+01	.....
36	1401.43	1399 -	1404	1401.31	1.18E+01	14.53	3.24E+01	.....
37	1409.19	1406 -	1412	1409.06	1.28E+01	13.48	2.24E+01	.....
38	1435.86	1433 -	1438	1435.73	1.34E+01	12.29	1.71E+01	LA-138
M 39	1457.00	1455 -	1466	1456.85	1.36E+01	11.31	2.40E+01	.....
m 40	1461.38	1455 -	1466	1461.24	7.70E+02	57.51	4.20E+01	K-40
M 41	1496.38	1495 -	1512	1496.22	1.38E+01	6.58	6.24E+00	.....
m 42	1501.94	1495 -	1512	1501.78	1.34E+01	12.38	1.64E+01	.....
m 43	1509.94	1495 -	1512	1509.78	1.81E+01	13.61	1.96E+01	.....
M 44	1625.57	1624 -	1634	1625.37	1.04E+01	5.50	2.58E+00	.....
m 45	1631.19	1624 -	1634	1630.99	2.25E+01	10.95	3.06E+00	.....
46	1664.13	1659 -	1669	1663.91	1.27E+01	15.98	2.67E+01	.....
M 47	1726.26	1724 -	1734	1726.02	8.03E+00	6.32	4.77E+00	.....
m 48	1730.01	1724 -	1734	1729.77	1.88E+01	13.42	1.70E+01	.....
49	1765.20	1760 -	1768	1764.95	8.16E+01	21.10	1.89E+01	BI-214
M 50	1847.29	1840 -	1854	1847.00	1.24E+01	7.48	0.00E+00	.....
m 51	1851.05	1840 -	1854	1850.77	9.80E+00	8.94	0.00E+00	.....
52	1858.10	1855 -	1860	1857.80	5.43E+00	6.08	3.14E+00	.....
53	1906.94	1903 -	1910	1906.63	1.13E+01	8.25	3.38E+00	.....
54	1914.56	1911 -	1917	1914.25	8.00E+00	5.66	0.00E+00	.....
55	1965.96	1962 -	1968	1965.63	8.00E+00	5.66	0.00E+00	.....
56	2105.36	2099 -	2114	2104.98	3.12E+01	14.42	9.58E+00	.....
57	2204.72	2200 -	2207	2204.29	2.10E+01	13.42	1.59E+01	BI-214
58	2295.40	2290 -	2298	2294.94	1.09E+01	11.35	1.22E+01	.....
59	2302.86	2300 -	2304	2302.40	4.50E+00	6.36	5.00E+00	.....
60	2313.55	2308 -	2317	2313.08	1.10E+01	10.68	1.00E+01	.....
61	2448.45	2443 -	2451	2447.93	1.06E+01	10.02	8.80E+00	.....
62	2615.32	2611 -	2619	2614.73	1.54E+02	26.47	1.27E+01	TL-208

Analysis Report for 1510088-10
CP1804S08-09

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 : 11/9/2015 4:35:12PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.51	1.65E+02	95.83	1.68E-02	1.78E-03
	2	63.59	2.01E+02	122.29	2.50E-02	1.92E-03
M	3	74.94	5.59E+02	104.51	2.75E-02	2.30E-03
m	4	77.38	8.73E+02	112.29	2.78E-02	2.38E-03
	5	88.10	2.91E+02	104.90	2.85E-02	2.74E-03
	6	93.04	2.47E+02	112.77	2.86E-02	2.64E-03
	7	130.04	8.08E+01	86.87	2.66E-02	2.09E-03
	8	186.26	2.35E+02	99.10	2.24E-02	2.03E-03
	9	208.96	1.58E+02	95.04	2.09E-02	1.86E-03
M	10	238.72	1.12E+03	83.55	1.92E-02	1.64E-03
m	11	241.86	2.59E+02	65.58	1.91E-02	1.61E-03
	12	270.62	8.47E+01	63.02	1.77E-02	1.40E-03
	13	277.42	5.29E+01	62.06	1.74E-02	1.35E-03
	14	287.84	6.04E+01	51.06	1.70E-02	1.32E-03
M	15	295.51	4.53E+02	59.96	1.67E-02	1.31E-03
m	16	300.71	9.42E+01	46.34	1.65E-02	1.30E-03
	17	327.54	6.33E+01	50.50	1.55E-02	1.24E-03
	18	338.73	2.24E+02	69.81	1.52E-02	1.22E-03
	19	352.07	6.80E+02	84.73	1.48E-02	1.19E-03
	20	463.29	7.66E+01	44.36	1.21E-02	1.04E-03
	21	511.34	2.24E+02	62.16	1.12E-02	9.90E-04
	22	583.37	4.11E+02	62.42	1.02E-02	9.15E-04
	23	609.68	5.14E+02	62.55	9.82E-03	8.88E-04
	24	664.69	2.74E+01	29.70	9.18E-03	8.31E-04
	25	727.62	9.70E+01	39.01	8.55E-03	7.75E-04
	26	861.17	4.28E+01	35.78	7.48E-03	6.55E-04
M	27	907.53	1.67E+01	19.14	7.17E-03	6.17E-04
m	28	911.36	2.52E+02	39.43	7.15E-03	6.15E-04
	29	935.46	5.77E+01	37.86	7.00E-03	6.03E-04
	30	969.49	1.10E+02	40.74	6.80E-03	5.85E-04
	31	992.11	2.46E+01	29.15	6.68E-03	5.73E-04
	32	1120.67	1.15E+02	41.18	6.06E-03	5.06E-04
	33	1239.18	7.06E+01	37.56	5.61E-03	4.68E-04
	34	1378.20	3.80E+01	21.54	5.18E-03	4.40E-04

Analysis Report for 1510088-10
 CP1804S08-09

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	35	1385.40	1.44E+01	14.39	5.16E-03	4.38E-04
	36	1401.43	1.18E+01	14.53	5.12E-03	4.34E-04
	37	1409.19	1.28E+01	13.48	5.10E-03	4.32E-04
	38	1435.86	1.34E+01	12.29	5.03E-03	4.25E-04
M	39	1457.00	1.36E+01	11.31	4.98E-03	4.20E-04
m	40	1461.38	7.70E+02	57.51	4.97E-03	4.19E-04
M	41	1496.38	1.38E+01	6.58	4.89E-03	4.10E-04
m	42	1501.94	1.34E+01	12.38	4.88E-03	4.09E-04
m	43	1509.94	1.81E+01	13.61	4.86E-03	4.07E-04
M	44	1625.57	1.04E+01	5.50	4.62E-03	3.78E-04
m	45	1631.19	2.25E+01	10.95	4.61E-03	3.77E-04
	46	1664.13	1.27E+01	15.98	4.56E-03	3.69E-04
M	47	1726.26	8.03E+00	6.32	4.45E-03	3.53E-04
m	48	1730.01	1.88E+01	13.42	4.45E-03	3.52E-04
	49	1765.20	8.16E+01	21.10	4.39E-03	3.43E-04
M	50	1847.29	1.24E+01	7.48	4.28E-03	3.26E-04
m	51	1851.05	9.80E+00	8.94	4.28E-03	3.26E-04
	52	1858.10	5.43E+00	6.08	4.27E-03	3.26E-04
	53	1906.94	1.13E+01	8.25	4.21E-03	3.26E-04
	54	1914.56	8.00E+00	5.66	4.20E-03	3.26E-04
	55	1965.96	8.00E+00	5.66	4.15E-03	3.26E-04
	56	2105.36	3.12E+01	14.42	4.02E-03	3.26E-04
	57	2204.72	2.10E+01	13.42	3.95E-03	3.26E-04
	58	2295.40	1.09E+01	11.35	3.90E-03	3.26E-04
	59	2302.86	4.50E+00	6.36	3.89E-03	3.26E-04
	60	2313.55	1.10E+01	10.68	3.89E-03	3.26E-04
	61	2448.45	1.06E+01	10.02	3.83E-03	3.26E-04
	62	2615.32	1.54E+02	26.47	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 : 11/9/2015 4:35:12PM

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	46.51	1.65E+02	95.83	4.50E+01	8.46E+00	1.20E+02	9.62E+01
2	63.59	2.01E+02	122.29	7.80E+01	1.33E+01	1.23E+02	1.23E+02

Analysis Report for 1510088-10

CP1804S08-09

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	3	74.94	5.59E+02	104.51	5.09E+00	4.37E+00	5.54E+02	1.05E+02
m	4	77.38	8.73E+02	112.29	9.75E+00	8.28E+00	8.63E+02	1.13E+02
	5	88.10	2.91E+02	104.90			2.91E+02	1.05E+02
	6	93.04	2.47E+02	112.77	1.34E+02	9.83E+00	1.13E+02	1.13E+02
	7	130.04	8.08E+01	86.87			8.08E+01	8.69E+01
	8	186.26	2.35E+02	99.10	6.41E+01	7.38E+00	1.71E+02	9.94E+01
	9	208.96	1.58E+02	95.04			1.58E+02	9.50E+01
M	10	238.72	1.12E+03	83.55	2.34E+01	6.34E+00	1.09E+03	8.38E+01
m	11	241.86	2.59E+02	65.58			2.59E+02	6.56E+01
	12	270.62	8.47E+01	63.02			8.47E+01	6.30E+01
	13	277.42	5.29E+01	62.06			5.29E+01	6.21E+01
	14	287.84	6.04E+01	51.06			6.04E+01	5.11E+01
M	15	295.51	4.53E+02	59.96	4.17E+00	5.50E+00	4.48E+02	6.02E+01
m	16	300.71	9.42E+01	46.34			9.42E+01	4.63E+01
	17	327.54	6.33E+01	50.50			6.33E+01	5.05E+01
	18	338.73	2.24E+02	69.81	2.22E-01	4.54E+00	2.24E+02	7.00E+01
	19	352.07	6.80E+02	84.73	8.83E+00	4.91E+00	6.72E+02	8.49E+01
	20	463.29	7.66E+01	44.36			7.66E+01	4.44E+01
	21	511.34	2.24E+02	62.16	8.12E+01	5.49E+00	1.42E+02	6.24E+01
	22	583.37	4.11E+02	62.42	6.34E+00	3.74E+00	4.05E+02	6.25E+01
	23	609.68	5.14E+02	62.55	5.20E+00	3.69E+00	5.08E+02	6.27E+01
	24	664.69	2.74E+01	29.70			2.74E+01	2.97E+01
	25	727.62	9.70E+01	39.01			9.70E+01	3.90E+01
	26	861.17	4.28E+01	35.78			4.28E+01	3.58E+01
M	27	907.53	1.67E+01	19.14			1.67E+01	1.91E+01
m	28	911.36	2.52E+02	39.43	3.28E+00	2.53E+00	2.49E+02	3.95E+01
	29	935.46	5.77E+01	37.86			5.77E+01	3.79E+01
	30	969.49	1.10E+02	40.74			1.10E+02	4.07E+01
	31	992.11	2.46E+01	29.15			2.46E+01	2.92E+01
	32	1120.67	1.15E+02	41.18	2.28E+00	2.55E+00	1.12E+02	4.13E+01
	33	1239.18	7.06E+01	37.56			7.06E+01	3.76E+01
	34	1378.20	3.80E+01	21.54			3.80E+01	2.15E+01
	35	1385.40	1.44E+01	14.39			1.44E+01	1.44E+01
	36	1401.43	1.18E+01	14.53			1.18E+01	1.45E+01
	37	1409.19	1.28E+01	13.48			1.28E+01	1.35E+01
	38	1435.86	1.34E+01	12.29			1.34E+01	1.23E+01
M	39	1457.00	1.36E+01	11.31			1.36E+01	1.13E+01
m	40	1461.38	7.70E+02	57.51	6.46E+00	2.33E+00	7.64E+02	5.76E+01
M	41	1496.38	1.38E+01	6.58			1.38E+01	6.58E+00
m	42	1501.94	1.34E+01	12.38			1.34E+01	1.24E+01
m	43	1509.94	1.81E+01	13.61			1.81E+01	1.36E+01
M	44	1625.57	1.04E+01	5.50			1.04E+01	5.50E+00
m	45	1631.19	2.25E+01	10.95			2.25E+01	1.10E+01
	46	1664.13	1.27E+01	15.98			1.27E+01	1.60E+01
M	47	1726.26	8.03E+00	6.32			8.03E+00	6.32E+00
m	48	1730.01	1.88E+01	13.42			1.88E+01	1.34E+01
	49	1765.20	8.16E+01	21.10			8.16E+01	2.11E+01
M	50	1847.29	1.24E+01	7.48			1.24E+01	7.48E+00
m	51	1851.05	9.80E+00	8.94			9.80E+00	8.94E+00
	52	1858.10	5.43E+00	6.08			5.43E+00	6.08E+00
	53	1906.94	1.13E+01	8.25			1.13E+01	8.25E+00
	54	1914.56	8.00E+00	5.66			8.00E+00	5.66E+00
	55	1965.96	8.00E+00	5.66			8.00E+00	5.66E+00
	56	2105.36	3.12E+01	14.42			3.12E+01	1.44E+01

Analysis Report for 1510088-10

CP1804S08-09

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
57	2204.72	2.10E+01	13.42			2.10E+01	1.34E+01
58	2295.40	1.09E+01	11.35			1.09E+01	1.13E+01
59	2302.86	4.50E+00	6.36			4.50E+00	6.36E+00
60	2313.55	1.10E+01	10.68			1.10E+01	1.07E+01
61	2448.45	1.06E+01	10.02			1.06E+01	1.00E+01
62	2615.32	1.54E+02	26.47	3.47E+00	1.48E+00	1.50E+02	2.65E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 4:35:12PM
 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	46.51	1.65E+02	95.83	4.50E+01	8.46E+00	1.20E+02	9.62E+01
	2	63.59	2.01E+02	122.29	7.80E+01	1.33E+01	1.23E+02	1.23E+02
M	3	74.94	5.59E+02	104.51	5.09E+00	4.37E+00	5.54E+02	1.05E+02
m	4	77.38	8.73E+02	112.29	9.75E+00	8.28E+00	8.63E+02	1.13E+02
	5	88.10	2.91E+02	104.90			2.91E+02	1.05E+02
	6	93.04	2.47E+02	112.77	1.34E+02	9.83E+00	1.13E+02	1.13E+02
	7	130.04	8.08E+01	86.87			8.08E+01	8.69E+01
	8	186.26	2.35E+02	99.10	6.41E+01	7.38E+00	1.71E+02	9.94E+01
	9	208.96	1.58E+02	95.04			1.58E+02	9.50E+01
M	10	238.72	1.12E+03	83.55	2.34E+01	6.34E+00	1.09E+03	8.38E+01
m	11	241.86	2.59E+02	65.58			2.59E+02	6.56E+01
	12	270.62	8.47E+01	63.02			8.47E+01	6.30E+01
	13	277.42	5.29E+01	62.06			5.29E+01	6.21E+01
	14	287.84	6.04E+01	51.06			6.04E+01	5.11E+01
M	15	295.51	4.53E+02	59.96	4.17E+00	5.50E+00	4.48E+02	6.02E+01
m	16	300.71	9.42E+01	46.34			9.42E+01	4.63E+01
	17	327.54	6.33E+01	50.50			6.33E+01	5.05E+01
	18	338.73	2.24E+02	69.81	2.22E-01	4.54E+00	2.24E+02	7.00E+01
	19	352.07	6.80E+02	84.73	8.83E+00	4.91E+00	6.72E+02	8.49E+01
	20	463.29	7.66E+01	44.36			7.66E+01	4.44E+01
	21	511.34	2.24E+02	62.16	8.12E+01	5.49E+00	1.42E+02	6.24E+01
	22	583.37	4.11E+02	62.42	6.34E+00	3.74E+00	4.05E+02	6.25E+01

Analysis Report for 1510088-10

CP1804S08-09

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	23	609.68	5.14E+02	62.55	5.20E+00	3.69E+00	5.08E+02	6.27E+01
	24	664.69	2.74E+01	29.70			2.74E+01	2.97E+01
	25	727.62	9.70E+01	39.01			9.70E+01	3.90E+01
	26	861.17	4.28E+01	35.78			4.28E+01	3.58E+01
M	27	907.53	1.67E+01	19.14			1.67E+01	1.91E+01
m	28	911.36	2.52E+02	39.43	3.28E+00	2.53E+00	2.49E+02	3.95E+01
	29	935.46	5.77E+01	37.86			5.77E+01	3.79E+01
	30	969.49	1.10E+02	40.74			1.10E+02	4.07E+01
	31	992.11	2.46E+01	29.15			2.46E+01	2.92E+01
	32	1120.67	1.15E+02	41.18	2.28E+00	2.55E+00	1.12E+02	4.13E+01
	33	1239.18	7.06E+01	37.56			7.06E+01	3.76E+01
	34	1378.20	3.80E+01	21.54			3.80E+01	2.15E+01
	35	1385.40	1.44E+01	14.39			1.44E+01	1.44E+01
	36	1401.43	1.18E+01	14.53			1.18E+01	1.45E+01
	37	1409.19	1.28E+01	13.48			1.28E+01	1.35E+01
	38	1435.86	1.34E+01	12.29			1.34E+01	1.23E+01
M	39	1457.00	1.36E+01	11.31			1.36E+01	1.13E+01
m	40	1461.38	7.70E+02	57.51	6.46E+00	2.33E+00	7.64E+02	5.76E+01
M	41	1496.38	1.38E+01	6.58			1.38E+01	6.58E+00
m	42	1501.94	1.34E+01	12.38			1.34E+01	1.24E+01
m	43	1509.94	1.81E+01	13.61			1.81E+01	1.36E+01
M	44	1625.57	1.04E+01	5.50			1.04E+01	5.50E+00
m	45	1631.19	2.25E+01	10.95			2.25E+01	1.10E+01
	46	1664.13	1.27E+01	15.98			1.27E+01	1.60E+01
M	47	1726.26	8.03E+00	6.32			8.03E+00	6.32E+00
m	48	1730.01	1.88E+01	13.42			1.88E+01	1.34E+01
	49	1765.20	8.16E+01	21.10			8.16E+01	2.11E+01
M	50	1847.29	1.24E+01	7.48			1.24E+01	7.48E+00
m	51	1851.05	9.80E+00	8.94			9.80E+00	8.94E+00
	52	1858.10	5.43E+00	6.08			5.43E+00	6.08E+00
	53	1906.94	1.13E+01	8.25			1.13E+01	8.25E+00
	54	1914.56	8.00E+00	5.66			8.00E+00	5.66E+00
	55	1965.96	8.00E+00	5.66			8.00E+00	5.66E+00
	56	2105.36	3.12E+01	14.42			3.12E+01	1.44E+01
	57	2204.72	2.10E+01	13.42			2.10E+01	1.34E+01
	58	2295.40	1.09E+01	11.35			1.09E+01	1.13E+01
	59	2302.86	4.50E+00	6.36			4.50E+00	6.36E+00
	60	2313.55	1.10E+01	10.68			1.10E+01	1.07E+01
	61	2448.45	1.06E+01	10.02			1.06E+01	1.00E+01
	62	2615.32	1.54E+02	26.47	3.47E+00	1.48E+00	1.50E+02	2.65E+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 1510088-10
CP1804S08-09

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.949	1460.81 *	10.67	1.79E+01	2.06E+00
GA-67	0.601	93.31 *	35.70	1.32E+02	5.88E+02
		208.95 *	2.24	4.03E+03	1.71E+04
		300.22 *	16.00	4.26E+02	1.87E+03
CD-109	0.999	88.03 *	3.72	3.58E+00	1.35E+00
SN-126	0.956	87.57 *	37.00	3.43E-01	1.28E-01
LA-138	0.369	788.74	34.00		
		1435.80 *	66.00	5.04E-02	4.63E-02
		583.14 *	30.22	1.64E+00	2.94E-01
TL-208	0.956	860.37 *	4.48	1.59E+00	1.34E+00
		2614.66 *	35.85	1.37E+00	2.70E-01
		46.50 *	4.25	2.11E+00	1.70E+00
PB-210	1.000	46.50 *	4.25	2.11E+00	1.70E+00
BI-212	0.739	727.17 *	11.80	1.20E+00	4.93E-01
		1620.62	2.75		
		238.63 *	44.60	1.59E+00	1.82E-01
PB-212	0.994	300.09 *	3.41	2.09E+00	1.04E+00
		609.31 *	46.30	1.39E+00	2.13E-01
		1120.29 *	15.10	1.53E+00	5.75E-01
BI-214	0.967	1764.49 *	15.80	1.46E+00	3.95E-01
		2204.22 *	4.98	1.33E+00	8.57E-01
		295.21 *	19.19	1.74E+00	2.71E-01
		351.92 *	37.19	1.52E+00	2.29E-01
RA-224	0.883	240.98 *	3.95	4.28E+00	1.14E+00
RA-226	1.000	186.21 *	3.28	2.90E+00	5.57E+00
AC-228	0.981	338.32 *	11.40	1.61E+00	5.20E-01
		911.07 *	27.70	1.56E+00	2.83E-01
		969.11 *	16.60	1.21E+00	4.61E-01
TH-234	0.986	63.29 *	3.80	1.62E+00	1.62E+00
AM-243	0.989	74.67 *	66.00	3.80E-01	7.86E-02
CM-243	0.360	209.75 *	3.29	2.87E+00	1.74E+00
		228.14	10.60		
		277.60 *	14.00	2.71E-01	3.19E-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 1510088-10
CP1804S08-09

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 4:35:12PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 4	77.38	2.39843E-01	6.52	Tol.	TI-44
7	130.04	2.24402E-02	53.77		
12	270.62	2.35390E-02	37.19		
14	287.84	1.67753E-02	42.27	Sum	
17	327.54	1.75778E-02	39.90	Sum	
20	463.29	2.12706E-02	28.97	Sum	
21	511.34	3.95498E-02	21.91		
24	664.69	7.62472E-03	54.10	Tol.	CE-143
M 27	907.53	4.63519E-03	57.36	Sum	
29	935.46	1.60185E-02	32.83	Sum	
31	992.11	6.84444E-03	59.16		
33	1239.18	1.96149E-02	26.60	Tol.	CO-56
34	1378.20	1.05686E-02	28.31		
35	1385.40	3.99691E-03	50.00		
36	1401.43	3.27877E-03	61.53		
37	1409.19	3.55903E-03	52.61		
M 39	1457.00	3.77944E-03	41.58		
M 41	1496.38	3.82738E-03	23.86		
m 42	1501.94	3.72391E-03	46.17		
m 43	1509.94	5.03660E-03	37.53	Sum	
M 44	1625.57	2.90115E-03	26.33		
m 45	1631.19	6.24255E-03	24.37		
46	1664.13	3.51496E-03	63.13		
M 47	1726.26	2.23056E-03	39.38		
m 48	1730.01	5.21002E-03	35.77	Sum	
M 50	1847.29	3.43708E-03	30.24		
m 51	1851.05	2.72340E-03	45.61		
52	1858.10	1.50794E-03	56.03	Sum	
53	1906.94	3.14103E-03	36.46		
54	1914.56	2.22222E-03	35.36		
55	1965.96	2.22222E-03	35.36		
56	2105.36	8.66898E-03	23.11		
58	2295.40	3.03105E-03	51.99		
59	2302.86	1.25000E-03	70.71		
60	2313.55	3.05556E-03	48.53		
61	2448.45	2.94444E-03	47.29		

Analysis Report for 1510088-10

CP1804S08-09

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	1.79E+01	2.06E+00
GA-67	0.60	93.31 *	35.70	1.32E+02	5.88E+02
		208.95 *	2.24	4.03E+03	1.71E+04
		300.22 *	16.00	4.26E+02	1.87E+03
CD-109	0.99	88.03 *	3.72	3.58E+00	1.35E+00
SN-126	0.95	87.57 *	37.00	3.43E-01	1.28E-01
LA-138	0.36	788.74 *	34.00		
		1435.80 *	66.00	5.04E-02	4.63E-02
		583.14 *	30.22	1.64E+00	2.94E-01
TL-208	0.95	860.37 *	4.48	1.59E+00	1.34E+00
		2614.66 *	35.85	1.37E+00	2.70E-01
		46.50 *	4.25	2.11E+00	1.70E+00
PB-210	1.00	46.50 *	4.25	2.11E+00	1.70E+00
BI-212	0.73	727.17 *	11.80	1.20E+00	4.93E-01
		1620.62 *	2.75		
		238.63 *	44.60	1.59E+00	1.82E-01
PB-212	0.99	300.09 *	3.41	2.09E+00	1.04E+00
		609.31 *	46.30	1.39E+00	2.13E-01
		1120.29 *	15.10	1.53E+00	5.75E-01
BI-214	0.96	1764.49 *	15.80	1.46E+00	3.95E-01
		2204.22 *	4.98	1.33E+00	8.57E-01
		295.21 *	19.19	1.74E+00	2.71E-01
		351.92 *	37.19	1.52E+00	2.29E-01
RA-224	0.88	240.98 *	3.95	4.28E+00	1.14E+00
RA-226	1.00	186.21 *	3.28	2.90E+00	5.57E+00
AC-228	0.98	338.32 *	11.40	1.61E+00	5.20E-01
		911.07 *	27.70	1.56E+00	2.83E-01
		969.11 *	16.60	1.21E+00	4.61E-01
		63.29 *	3.80	1.62E+00	1.62E+00
TH-234	0.98	63.29 *	3.80	1.62E+00	1.62E+00
AM-243	0.98	74.67 *	66.00	3.80E-01	7.86E-02
CM-243	0.36	209.75 *	3.29	2.87E+00	1.74E+00
		228.14 *	10.60		
		277.60 *	14.00	2.71E-01	3.19E-01

Analysis Report for 1510088-10

CP1804S08-09

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.949	1.79E+01	2.06E+00	
GA-67	0.601	1.31E+02	5.61E+02	
? CD-109	0.999	3.58E+00	1.35E+00	
? SN-126	0.956	3.43E-01	1.28E-01	
LA-138	0.369	5.04E-02	4.63E-02	
TL-208	0.956	1.50E+00	1.97E-01	
PB-210	1.000	2.11E+00	1.70E+00	
BI-212	0.739	1.20E+00	4.93E-01	
PB-212	0.994	1.59E+00	1.80E-01	
BI-214	0.967	1.42E+00	1.74E-01	
PB-214	0.993	1.62E+00	1.75E-01	
RA-224	0.883	4.28E+00	1.14E+00	
RA-226	1.000	2.90E+00	5.57E+00	
AC-228	0.981	1.49E+00	2.19E-01	
TH-234	0.986	1.62E+00	1.62E+00	
AM-243	0.989	3.80E-01	7.86E-02	
CM-243	0.360	3.52E-01	3.13E-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 1510088-10
CP1804S08-09

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 4:35:12PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 4	77.38	2.39843E-01	6.52	Tol.	TI-44
7	130.04	2.24402E-02	53.77		
12	270.62	2.35390E-02	37.19		
14	287.84	1.67753E-02	42.27	Sum	
17	327.54	1.75778E-02	39.90	Sum	
20	463.29	2.12706E-02	28.97	Sum	
21	511.34	3.95498E-02	21.91		
24	664.69	7.62472E-03	54.10	Tol.	CE-143
M 27	907.53	4.63519E-03	57.36	Sum	
29	935.46	1.60185E-02	32.83	Sum	
31	992.11	6.84444E-03	59.16		
33	1239.18	1.96149E-02	26.60	Tol.	CO-56
34	1378.20	1.05686E-02	28.31		
35	1385.40	3.99691E-03	50.00		
36	1401.43	3.27877E-03	61.53		
37	1409.19	3.55903E-03	52.61		
M 39	1457.00	3.77944E-03	41.58		
M 41	1496.38	3.82738E-03	23.86		
m 42	1501.94	3.72391E-03	46.17		
m 43	1509.94	5.03660E-03	37.53	Sum	
M 44	1625.57	2.90115E-03	26.33		
m 45	1631.19	6.24255E-03	24.37		
46	1664.13	3.51496E-03	63.13		
M 47	1726.26	2.23056E-03	39.38		
m 48	1730.01	5.21002E-03	35.77	Sum	
M 50	1847.29	3.43708E-03	30.24		
m 51	1851.05	2.72340E-03	45.61		
52	1858.10	1.50794E-03	56.03	Sum	
53	1906.94	3.14103E-03	36.46		
54	1914.56	2.22222E-03	35.36		
55	1965.96	2.22222E-03	35.36		
56	2105.36	8.66898E-03	23.11		
58	2295.40	3.03105E-03	51.99		
59	2302.86	1.25000E-03	70.71		
60	2313.55	3.05556E-03	48.53		

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
61	2448.45	2.944444E-03	47.29		

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	-9.78E-02	8.69E-01	8.69E-01
+	NA-22	1274.54	99.94	3.15E-02	7.88E-02	7.88E-02
+	NA-24	1368.53	99.99	-1.49E+13	1.27E+14	2.06E+14
		2754.09	99.86	2.10E+13		1.27E+14
+	AL-26	1808.65	99.76	-2.34E-03	4.57E-02	4.57E-02
+	K-40	1460.81	* 10.67	1.79E+01	9.67E-01	9.67E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-2.12E-02	6.81E-02	6.81E-02
		78.34	96.00	2.82E-01		8.76E-02
+	SC-46	889.25	99.98	-5.91E-02	7.72E-02	7.72E-02
		1120.51	99.99	2.77E-01		1.67E-01
+	V-48	983.52	99.98	-2.96E-02	2.84E-01	2.98E-01
		1312.10	97.50	1.86E-02		2.84E-01
+	CR-51	320.08	9.83	-9.00E-03	1.06E+00	1.06E+00
+	MN-54	834.83	99.97	2.16E-02	8.22E-02	8.22E-02
+	CO-56	846.75	99.96	1.99E-02	8.40E-02	8.40E-02
		1037.75	14.03	-1.19E-01		6.69E-01
		1238.25	67.00	2.68E-01		2.28E-01
		1771.40	15.51	-8.76E-02		3.19E-01
		2598.48	16.90	8.60E-03		1.90E-01
+	CO-57	122.06	85.51	4.94E-03	6.03E-02	6.03E-02
		136.48	10.60	4.05E-01		5.06E-01
+	CO-58	810.76	99.40	-5.41E-03	9.12E-02	9.12E-02
+	FE-59	1099.22	56.50	2.42E-02	2.38E-01	2.38E-01
		1291.56	43.20	-1.32E-01		2.81E-01
+	CO-60	1173.22	100.00	-1.97E-03	7.71E-02	7.87E-02
		1332.49	100.00	1.66E-02		7.71E-02
+	ZN-65	1115.52	50.75	5.15E-03	1.76E-01	1.76E-01

Analysis Report for 1510088-10
CP1804S08-09

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	GA-67	93.31	*	35.70	1.32E+02	2.17E+02	2.17E+02
		208.95	*	2.24	4.03E+03		3.91E+03
		300.22	*	16.00	4.26E+02		6.03E+02
+	SE-75	121.11		16.70	1.61E-01	9.84E-02	3.45E-01
		136.00		59.20	-5.62E-03		9.88E-02
		264.65		59.80	2.31E-02		9.84E-02
		279.53		25.20	-9.14E-03		2.51E-01
		400.65		11.40	1.05E-01		5.82E-01
+	RB-82	776.52		13.00	-7.18E-01	1.16E+00	1.16E+00
+	RB-83	520.41		46.00	-1.55E-02	1.67E-01	1.67E-01
		529.64		30.30	-2.02E-02		2.52E-01
		552.65		16.40	4.28E-02		4.64E-01
+	KR-85	513.99		0.43	3.44E+01	2.07E+01	2.07E+01
+	SR-85	513.99		99.27	2.11E-01	1.27E-01	1.27E-01
+	Y-88	898.02		93.40	1.94E-02	6.27E-02	9.72E-02
		1836.01		99.38	1.08E-02		6.27E-02
+	NB-93M	16.57		9.43	-3.75E+01	6.42E+01	6.42E+01
+	NB-94	702.63		100.00	7.15E-05	6.71E-02	6.94E-02
		871.10		100.00	3.25E-02		6.71E-02
+	NB-95	765.79		99.81	8.25E-02	1.52E-01	1.52E-01
+	NB-95M	235.69		25.00	-1.10E+03	1.30E+02	1.30E+02
+	ZR-95	724.18		43.70	4.74E-02	1.79E-01	2.54E-01
		756.72		55.30	-2.15E-02		1.79E-01
+	MO-99	181.06		6.20	8.38E+02	1.65E+03	2.80E+03
		739.58		12.80	-7.04E+02		1.65E+03
		778.00		4.50	-9.44E+02		4.73E+03
+	RU-103	497.08		89.00	-3.07E-02	1.10E-01	1.10E-01
+	RU-106	621.84		9.80	1.74E-01	6.64E-01	6.64E-01
+	AG-108M	433.93		89.90	-8.18E-03	6.43E-02	6.43E-02
		614.37		90.40	-1.87E-02		6.47E-02
		722.95		90.50	2.03E-02		7.88E-02
+	CD-109	88.03	*	3.72	3.58E+00	2.04E+00	2.04E+00
+	AG-110M	657.75		93.14	-1.34E-02	6.96E-02	6.96E-02
		677.61		10.53	-1.06E-01		6.45E-01
		706.67		16.46	1.68E-02		4.70E-01
		763.93		21.98	-3.55E-01		3.47E-01
		884.67		71.63	1.73E-02		1.01E-01
		1384.27		23.94	-5.57E-02		3.29E-01
+	CD-113M	263.70		0.02	2.62E+01	2.13E+02	2.13E+02
+	SN-113	255.12		1.93	8.98E-01	9.94E-02	3.17E+00
		391.69		64.90	9.07E-03		9.94E-02
+	TE123M	159.00		84.10	2.09E-03	6.89E-02	6.89E-02
+	SB-124	602.71		97.87	-2.99E-02	9.47E-02	9.47E-02
		645.85		7.26	8.67E-01		1.36E+00
		722.78		11.10	2.40E-01		9.32E-01
		1691.02		49.00	4.27E-02		1.36E-01
+	I-125	35.49		6.49	1.83E+00	3.15E+00	3.15E+00
+	SB-125	176.33		6.89	-4.96E-01	2.08E-01	7.16E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	427.89	29.33	1.77E-02	2.08E-01	2.08E-01
		463.38	10.35	7.33E-01		6.95E-01
		600.56	17.80	-1.11E-01		3.66E-01
		635.90	11.32	-1.77E-02		5.66E-01
+	SB-126	414.70	83.30	-9.70E-02	4.00E-01	4.41E-01
		666.33	99.60	-6.92E-02		4.05E-01
		695.00	99.60	-2.86E-02		4.00E-01
		720.50	53.80	1.36E-01		7.36E-01
+	SN-126	87.57	* 37.00	3.43E-01	1.96E-01	1.96E-01
+	SB-127	473.00	25.00	5.49E+01	6.17E+01	8.62E+01
		685.20	35.70	1.70E+01		6.17E+01
		783.80	14.70	2.62E+01		1.59E+02
+	I-129	29.78	57.00	6.21E-03	4.51E-01	4.51E-01
		33.60	13.20	-3.16E-01		1.25E+00
		39.58	7.52	-7.59E-01		1.32E+00
+	I-131	284.30	6.05	3.19E+00	9.85E-01	1.34E+01
		364.48	81.20	-1.32E-01		9.85E-01
		636.97	7.26	9.29E+00		1.46E+01
		722.89	1.80	1.65E+01		6.41E+01
+	TE-132	49.72	13.10	-2.58E+02	5.86E+01	5.26E+02
		228.16	88.00	1.09E+01		5.86E+01
+	BA-133	81.00	33.00	-5.67E-02	8.85E-02	1.70E-01
		302.84	17.80	2.00E-01		3.01E-01
		356.01	60.00	-7.39E-01		8.85E-02
+	I-133	529.87	86.30	-9.04E+08	1.13E+10	1.13E+10
+	XE-133	81.00	38.00	-3.50E+00	1.05E+01	1.05E+01
+	CS-134	563.23	8.38	5.96E-01	7.16E-02	8.44E-01
		569.32	15.43	-4.18E-02		4.21E-01
		604.70	97.60	8.86E-04		7.16E-02
		795.84	85.40	6.84E-02		9.59E-02
		801.93	8.73	-3.25E-01		7.36E-01
+	CS-135	268.24	16.00	2.02E-01	3.39E-01	3.39E-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	1.22E+00	3.85E-01	3.71E+00
		163.89	4.61	-1.30E+00		5.80E+00
		176.55	13.56	-1.35E+00		1.95E+00
		273.65	12.66	-3.23E+00		2.12E+00
		340.57	48.50	1.57E+00		8.19E-01
		818.50	99.70	2.01E-02		3.85E-01
		1048.07	79.60	9.57E-02		4.82E-01
		1235.34	19.70	-1.02E-01		2.96E+00
+	CS-137	661.65	85.12	-8.95E-03	7.41E-02	7.41E-02
+	LA-138	788.74	34.00	9.58E-02	7.10E-02	2.22E-01
		1435.80	* 66.00	5.04E-02		7.10E-02
+	CE-139	165.85	80.35	-9.15E-04	7.30E-02	7.30E-02
+	BA-140	162.64	6.70	-2.71E-01	1.43E+00	4.15E+00
		304.84	4.50	-9.30E-01		5.90E+00

Analysis Report for 1510088-10
CP1804S08-09

	<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>
	BA-140	423.70	3.20	2.69E-01	1.43E+00	1.08E+01
		437.55	2.00	-5.09E+00		1.63E+01
		537.32	25.00	3.63E-01		1.43E+00
+	LA-140	328.77	20.50	5.47E-01	4.38E-01	1.55E+00
		487.03	45.50	4.91E-01		7.37E-01
		815.85	23.50	-7.26E-01		1.60E+00
		1596.49	95.49	5.70E-02		4.38E-01
+	CE-141	145.44	48.40	1.86E-01	2.20E-01	2.20E-01
+	CE-143	57.36	11.80	-1.74E+06	2.33E+06	6.39E+06
		293.26	42.00	6.84E+06		2.33E+06
		664.55	5.20	1.75E+06		1.49E+07
+	CE-144	133.54	10.80	-1.01E-01	4.90E-01	4.90E-01
+	PM-144	476.78	42.00	-3.37E-02	6.67E-02	1.52E-01
		618.01	98.60	9.68E-03		6.67E-02
		696.49	99.49	-5.29E-03		6.90E-02
+	PM-145	36.85	21.70	2.09E-01	3.11E-01	5.89E-01
		37.36	39.70	5.01E-02		3.11E-01
		42.30	15.10	-1.62E-01		5.85E-01
		72.40	2.31	-4.37E+00		3.28E+00
+	PM-146	453.90	39.94	3.14E-02	1.51E-01	1.51E-01
		735.90	14.01	-8.50E-02		4.44E-01
		747.13	13.10	-3.67E-02		5.29E-01
+	ND-147	91.11	28.90	-5.63E+00	1.76E+00	1.76E+00
		531.02	13.10	-2.91E-01		3.49E+00
+	PM-149	285.90	3.10	-6.49E+03	3.96E+04	3.96E+04
+	EU-152	121.78	20.50	1.90E-02	2.32E-01	2.32E-01
		244.69	5.40	2.65E-01		1.04E+00
		344.27	19.13	-4.11E-02		2.49E-01
		778.89	9.20	1.94E-01		6.89E-01
		964.01	10.40	3.52E-01		7.98E-01
		1085.78	7.22	-5.82E-01		9.92E-01
		1112.02	9.60	2.09E-01		7.88E-01
		1407.95	14.94	1.53E-01		4.34E-01
+	GD-153	97.43	31.30	1.77E-02	1.70E-01	1.70E-01
		103.18	22.20	1.15E-02		2.38E-01
+	EU-154	123.07	40.50	-8.84E-02	1.17E-01	1.17E-01
		723.30	19.70	9.39E-02		3.65E-01
		873.19	11.50	1.94E-01		5.84E-01
		996.32	10.30	-2.46E-01		6.01E-01
		1004.76	17.90	-9.31E-02		3.74E-01
		1274.45	35.50	8.73E-02		2.18E-01
+	EU-155	86.50	30.90	1.25E-01	2.19E-01	2.19E-01
		105.30	20.70	-1.68E-02		2.39E-01
+	EU-156	811.77	10.40	-1.90E-01	2.74E+00	2.74E+00
		1153.47	7.20	2.10E+00		5.01E+00
		1230.71	8.90	-1.32E+00		4.57E+00
+	HO-166M	184.41	72.60	1.80E-01	9.04E-02	9.04E-02
		280.45	29.60	1.34E-02		1.73E-01
		410.94	11.10	-1.36E-01		5.63E-01

Analysis Report for 1510088-10
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	HO-166M	711.69	54.10	1.83E-02	9.04E-02	1.24E-01
+	TM-171	66.72	0.14	-1.06E+01	4.80E+01	4.80E+01
+	HF-172	81.75	4.52	-6.74E-01	4.37E-01	1.26E+00
		125.81	11.30	-7.14E-03		4.37E-01
+	LU-172	181.53	20.60	3.06E+00	3.74E+00	7.12E+00
		810.06	16.63	7.50E-01		1.12E+01
		912.12	15.25	8.16E+01		2.72E+01
		1093.66	62.50	-1.82E-01		3.74E+00
+	LU-173	100.72	5.24	1.13E-01	2.72E-01	9.63E-01
		272.11	21.20	2.11E-01		2.72E-01
+	HF-175	343.40	84.00	-1.28E-02	8.31E-02	8.31E-02
+	LU-176	88.34	13.30	6.63E-01	4.85E-02	5.24E-01
		201.83	86.00	0.00E+00		6.10E-02
		306.78	94.00	4.01E-03		4.85E-02
+	TA-182	67.75	41.20	-5.92E-02	1.90E-01	1.90E-01
		1121.30	34.90	6.96E-01		4.42E-01
		1189.05	16.23	7.25E-02		6.04E-01
		1221.41	26.98	-2.09E-01		3.59E-01
		1231.02	11.44	-2.87E-01		9.90E-01
+	IR-192	308.46	29.68	4.90E-02	1.76E-01	2.09E-01
		468.07	48.10	3.06E-03		1.76E-01
+	HG-203	279.19	77.30	6.63E-02	1.14E-01	1.14E-01
+	BI-207	569.67	97.72	-1.74E-03	6.38E-02	6.38E-02
		1063.62	74.90	5.30E-02		1.05E-01
+	TL-208	583.14	* 30.22	1.64E+00	1.77E-01	3.30E-01
		860.37	* 4.48	1.59E+00		2.14E+00
		2614.66	* 35.85	1.37E+00		1.77E-01
+	BI-210M	262.00	45.00	1.94E-04	1.09E-01	1.09E-01
		300.00	23.00	-6.38E-01		2.48E-01
+	PB-210	46.50	* 4.25	2.11E+00	2.74E+00	2.74E+00
+	PB-211	404.84	2.90	-2.58E-01	1.88E+00	1.88E+00
		831.96	2.90	-1.62E+00		2.18E+00
+	BI-212	727.17	* 11.80	1.20E+00	7.17E-01	7.17E-01
		1620.62	2.75	-1.50E-01		2.08E+00
+	PB-212	238.63	* 44.60	1.59E+00	2.50E-01	2.50E-01
		300.09	* 3.41	2.09E+00		2.95E+00
+	BI-214	609.31	* 46.30	1.39E+00	2.03E-01	2.03E-01
		1120.29	* 15.10	1.53E+00		8.28E-01
		1764.49	* 15.80	1.46E+00		3.70E-01
		2204.22	* 4.98	1.33E+00		1.19E+00
+	PB-214	295.21	* 19.19	1.74E+00	2.57E-01	5.22E-01
		351.92	* 37.19	1.52E+00		2.57E-01
+	RN-219	401.80	6.50	4.96E-02	8.60E-01	8.60E-01
+	RA-223	323.87	3.88	-2.71E-01	1.28E+00	1.28E+00
+	RA-224	240.98	* 3.95	4.28E+00	2.81E+00	2.81E+00
+	RA-225	40.00	31.00	-8.14E-01	1.42E+00	1.42E+00
+	RA-226	186.21	* 3.28	2.90E+00	2.72E+00	2.72E+00
+	TH-227	50.10	8.40	-4.14E-01	5.74E-01	8.42E-01

Analysis Report for 1510088-10
CP1804S08-09

<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>	
	TH-227	236.00	11.50	-4.84E+00	5.74E-01	5.74E-01
		256.20	6.30	-2.95E-02		7.77E-01
+	AC-228	338.32	* 11.40	1.61E+00	3.66E-01	7.69E-01
		911.07	* 27.70	1.56E+00		3.66E-01
		969.11	* 16.60	1.21E+00		6.64E-01
+	TH-230	48.44	16.90	3.67E-01	4.75E-01	4.75E-01
		62.85	4.60	1.47E+00		1.56E+00
		67.67	0.37	-5.43E+00		1.74E+01
+	PA-231	283.67	1.60	7.43E-01	2.31E+00	3.03E+00
		302.67	2.30	1.54E+00		2.31E+00
+	TH-231	25.64	14.70	1.96E+00	9.42E-01	3.86E+00
		84.21	6.40	3.98E-01		9.42E-01
+	PA-233	311.98	38.60	-1.56E-01	2.58E-01	2.58E-01
+	PA-234	131.20	20.40	-1.75E-01	2.43E-01	2.43E-01
		733.99	8.80	6.29E-02		7.16E-01
		946.00	12.00	2.65E-01		5.88E-01
+	PA-234M	1001.03	0.92	3.86E+00	7.85E+00	7.85E+00
+	TH-234	63.29	* 3.80	1.62E+00	2.64E+00	2.64E+00
+	U-235	143.76	10.50	3.48E-01	4.97E-01	4.97E-01
		163.35	4.70	-2.32E-01		1.04E+00
		205.31	4.70	-1.55E+00		1.11E+00
+	NP-237	86.50	12.60	3.02E-01	5.30E-01	5.30E-01
+	NP-239	106.10	22.70	-2.03E+02	2.90E+03	2.90E+03
		228.18	10.70	1.26E+03		6.72E+03
		277.60	14.10	4.19E+03		5.20E+03
+	AM-241	59.54	35.90	-3.56E-02	1.80E-01	1.80E-01
+	AM-243	74.67	* 66.00	3.80E-01	1.54E-01	1.54E-01
+	CM-243	209.75	* 3.29	2.87E+00	5.06E-01	2.79E+00
		228.14	10.60	9.46E-02		5.06E-01
		277.60	* 14.00	2.71E-01		5.22E-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

Analysis Report for 1510088-10
CP1804S08-09

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	8.69E-01	8.69E-01	-9.78E-02	4.14E-01	
NA-22	1274.54	99.94	7.88E-02	7.88E-02	3.15E-02	3.62E-02	
NA-24	1368.53	99.99	2.06E+14	1.27E+14	-1.49E+13	9.14E+13	
	2754.09	99.86	1.27E+14		2.10E+13	4.76E+13	
AL-26	1808.65	99.76	4.57E-02	4.57E-02	-2.34E-03	1.90E-02	
+ K-40	1460.81	*	10.67	9.67E-01	9.67E-01	1.79E+01	4.52E-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	6.81E-02	6.81E-02	-2.12E-02	3.34E-02	
	78.34	96.00	8.76E-02		2.82E-01	4.32E-02	
SC-46	889.25	99.98	7.72E-02	7.72E-02	-5.91E-02	3.56E-02	
	1120.51	99.99	1.67E-01		2.77E-01	7.96E-02	
V-48	983.52	99.98	2.98E-01	2.84E-01	-2.96E-02	1.39E-01	
	1312.10	97.50	2.84E-01		1.86E-02	1.29E-01	
CR-51	320.08	9.83	1.06E+00	1.06E+00	-9.00E-03	5.08E-01	
MN-54	834.83	99.97	8.22E-02	8.22E-02	2.16E-02	3.87E-02	
CO-56	846.75	99.96	8.40E-02	8.40E-02	1.99E-02	3.90E-02	
	1037.75	14.03	6.69E-01		-1.19E-01	3.10E-01	
	1238.25	67.00	2.28E-01		2.68E-01	1.08E-01	
	1771.40	15.51	3.19E-01		-8.76E-02	1.27E-01	
	2598.48	16.90	1.90E-01		8.60E-03	6.00E-02	
CO-57	122.06	85.51	6.03E-02	6.03E-02	4.94E-03	2.93E-02	
	136.48	10.60	5.06E-01		4.05E-01	2.47E-01	
CO-58	810.76	99.40	9.12E-02	9.12E-02	-5.41E-03	4.26E-02	
FE-59	1099.22	56.50	2.38E-01	2.38E-01	2.42E-02	1.11E-01	
	1291.56	43.20	2.81E-01		-1.32E-01	1.29E-01	
CO-60	1173.22	100.00	7.87E-02	7.71E-02	-1.97E-03	3.65E-02	
	1332.49	100.00	7.71E-02		1.66E-02	3.53E-02	
ZN-65	1115.52	50.75	1.76E-01	1.76E-01	5.15E-03	8.22E-02	
+ GA-67	93.31	*	35.70	2.17E+02	2.17E+02	1.32E+02	1.07E+02
	208.95	*	2.24	3.91E+03		4.03E+03	1.92E+03
	300.22	*	16.00	6.03E+02		4.26E+02	2.95E+02
SE-75	121.11	16.70	3.45E-01	9.84E-02	1.61E-01	1.68E-01	
	136.00	59.20	9.88E-02		-5.62E-03	4.81E-02	
	264.65	59.80	9.84E-02		2.31E-02	4.73E-02	
	279.53	25.20	2.51E-01		-9.14E-03	1.21E-01	
	400.65	11.40	5.82E-01		1.05E-01	2.78E-01	
RB-82	776.52	13.00	1.16E+00	1.16E+00	-7.18E-01	5.43E-01	
RB-83	520.41	46.00	1.67E-01	1.67E-01	-1.55E-02	7.93E-02	
	529.64	30.30	2.52E-01		-2.02E-02	1.19E-01	
	552.65	16.40	4.64E-01		4.28E-02	2.19E-01	
KR-85	513.99	0.43	2.07E+01	2.07E+01	3.44E+01	1.00E+01	
SR-85	513.99	99.27	1.27E-01	1.27E-01	2.11E-01	6.15E-02	
Y-88	898.02	93.40	9.72E-02	6.27E-02	1.94E-02	4.55E-02	
	1836.01	99.38	6.27E-02		1.08E-02	2.65E-02	
NB-93M	16.57	9.43	6.42E+01	6.42E+01	-3.75E+01	2.99E+01	

Analysis Report for 1510088-10
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94	702.63	100.00	6.94E-02	6.71E-02	7.15E-05	3.28E-02
	871.10	100.00	6.71E-02		3.25E-02	3.13E-02
NB-95	765.79	99.81	1.52E-01	1.52E-01	8.25E-02	7.21E-02
NB-95M	235.69	25.00	1.30E+02	1.30E+02	-1.10E+03	6.33E+01
ZR-95	724.18	43.70	2.54E-01	1.79E-01	4.74E-02	1.21E-01
	756.72	55.30	1.79E-01		-2.15E-02	8.41E-02
MO-99	181.06	6.20	2.80E+03	1.65E+03	8.38E+02	1.36E+03
	739.58	12.80	1.65E+03		-7.04E+02	7.73E+02
	778.00	4.50	4.73E+03		-9.44E+02	2.21E+03
RU-103	497.08	89.00	1.10E-01	1.10E-01	-3.07E-02	5.23E-02
RU-106	621.84	9.80	6.64E-01	6.64E-01	1.74E-01	3.13E-01
AG-108M	433.93	89.90	6.43E-02	6.43E-02	-8.18E-03	3.07E-02
	614.37	90.40	6.47E-02		-1.87E-02	3.04E-02
	722.95	90.50	7.88E-02		2.03E-02	3.73E-02
+ CD-109	88.03	*	2.04E+00	2.04E+00	3.58E+00	1.01E+00
AG-110M	657.75	93.14	6.96E-02	6.96E-02	-1.34E-02	3.27E-02
	677.61	10.53	6.45E-01		-1.06E-01	3.03E-01
	706.67	16.46	4.70E-01		1.68E-02	2.22E-01
	763.93	21.98	3.47E-01		-3.55E-01	1.63E-01
	884.67	71.63	1.01E-01		1.73E-02	4.68E-02
	1384.27	23.94	3.29E-01		-5.57E-02	1.49E-01
CD-113M	263.70	0.02	2.13E+02	2.13E+02	2.62E+01	1.03E+02
SN-113	255.12	1.93	3.17E+00	9.94E-02	8.98E-01	1.53E+00
	391.69	64.90	9.94E-02		9.07E-03	4.74E-02
TE123M	159.00	84.10	6.89E-02	6.89E-02	2.09E-03	3.34E-02
SB-124	602.71	97.87	9.47E-02	9.47E-02	-2.99E-02	4.48E-02
	645.85	7.26	1.36E+00		8.67E-01	6.43E-01
	722.78	11.10	9.32E-01		2.40E-01	4.40E-01
	1691.02	49.00	1.36E-01		4.27E-02	5.70E-02
I-125	35.49	6.49	3.15E+00	3.15E+00	1.83E+00	1.53E+00
SB-125	176.33	6.89	7.16E-01	2.08E-01	-4.96E-01	3.47E-01
	427.89	29.33	2.08E-01		1.77E-02	9.96E-02
	463.38	10.35	6.95E-01		7.33E-01	3.34E-01
	600.56	17.80	3.66E-01		-1.11E-01	1.73E-01
	635.90	11.32	5.66E-01		-1.77E-02	2.67E-01
SB-126	414.70	83.30	4.41E-01	4.00E-01	-9.70E-02	2.11E-01
	666.33	99.60	4.05E-01		-6.92E-02	1.91E-01
	695.00	99.60	4.00E-01		-2.86E-02	1.88E-01
	720.50	53.80	7.36E-01		1.36E-01	3.46E-01
+ SN-126	87.57	*	1.96E-01	1.96E-01	3.43E-01	9.63E-02
SB-127	473.00	25.00	8.62E+01	6.17E+01	5.49E+01	4.12E+01
	685.20	35.70	6.17E+01		1.70E+01	2.91E+01
	783.80	14.70	1.59E+02		2.62E+01	7.46E+01
I-129	29.78	57.00	4.51E-01	4.51E-01	6.21E-03	2.19E-01
	33.60	13.20	1.25E+00		-3.16E-01	6.08E-01
	39.58	7.52	1.32E+00		-7.59E-01	6.43E-01
I-131	284.30	6.05	1.34E+01	9.85E-01	3.19E+00	6.43E+00
	364.48	81.20	9.85E-01		-1.32E-01	4.69E-01
	636.97	7.26	1.46E+01		9.29E+00	6.90E+00
	722.89	1.80	6.41E+01		1.65E+01	3.03E+01
TE-132	49.72	13.10	5.26E+02	5.86E+01	-2.58E+02	2.56E+02
	228.16	88.00	5.86E+01		1.09E+01	2.84E+01
BA-133	81.00	33.00	1.70E-01	8.85E-02	-5.67E-02	8.31E-02

Analysis Report for 1510088-10

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-133	302.84	17.80	3.01E-01	8.85E-02	2.00E-01	1.45E-01
	356.01	60.00	8.85E-02		-7.39E-01	4.23E-02
I-133	529.87	86.30	1.13E+10	1.13E+10	-9.04E+08	5.33E+09
XE-133	81.00	38.00	1.05E+01	1.05E+01	-3.50E+00	5.13E+00
CS-134	563.23	8.38	8.44E-01	7.16E-02	5.96E-01	4.02E-01
	569.32	15.43	4.21E-01		-4.18E-02	1.99E-01
	604.70	97.60	7.16E-02		8.86E-04	3.40E-02
	795.84	85.40	9.59E-02		6.84E-02	4.54E-02
	801.93	8.73	7.36E-01		-3.25E-01	3.43E-01
	268.24	16.00	3.39E-01	3.39E-01	2.02E-01	1.64E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.71E+00	3.85E-01	1.22E+00	1.80E+00
	163.89	4.61	5.80E+00		-1.30E+00	2.82E+00
	176.55	13.56	1.95E+00		-1.35E+00	9.46E-01
	273.65	12.66	2.12E+00		-3.23E+00	1.02E+00
	340.57	48.50	8.19E-01		1.57E+00	3.97E-01
	818.50	99.70	3.85E-01		2.01E-02	1.81E-01
	1048.07	79.60	4.82E-01		9.57E-02	2.23E-01
	1235.34	19.70	2.96E+00		-1.02E-01	1.40E+00
CS-137	661.65	85.12	7.41E-02	7.41E-02	-8.95E-03	3.49E-02
+ LA-138	788.74	34.00	2.22E-01	7.10E-02	9.58E-02	1.05E-01
	1435.80	* 66.00	7.10E-02		5.04E-02	3.04E-02
CE-139	165.85	80.35	7.30E-02	7.30E-02	-9.15E-04	3.54E-02
BA-140	162.64	6.70	4.15E+00	1.43E+00	-2.71E-01	2.02E+00
	304.84	4.50	5.90E+00		-9.30E-01	2.82E+00
	423.70	3.20	1.08E+01		2.69E-01	5.15E+00
	437.55	2.00	1.63E+01		-5.09E+00	7.79E+00
	537.32	25.00	1.43E+00		3.63E-01	6.78E-01
LA-140	328.77	20.50	1.55E+00	4.38E-01	5.47E-01	7.44E-01
	487.03	45.50	7.37E-01		4.91E-01	3.50E-01
	815.85	23.50	1.60E+00		-7.26E-01	7.49E-01
	1596.49	95.49	4.38E-01		5.70E-02	1.97E-01
CE-141	145.44	48.40	2.20E-01	2.20E-01	1.86E-01	1.07E-01
CE-143	57.36	11.80	6.39E+06	2.33E+06	-1.74E+06	3.12E+06
	293.26	42.00	2.33E+06		6.84E+06	1.14E+06
	664.55	5.20	1.49E+07		1.75E+06	7.06E+06
CE-144	133.54	10.80	4.90E-01	4.90E-01	-1.01E-01	2.39E-01
PM-144	476.78	42.00	1.52E-01	6.67E-02	-3.37E-02	7.25E-02
	618.01	98.60	6.67E-02		9.68E-03	3.15E-02
	696.49	99.49	6.90E-02		-5.29E-03	3.24E-02
PM-145	36.85	21.70	5.89E-01	3.11E-01	2.09E-01	2.86E-01
	37.36	39.70	3.11E-01		5.01E-02	1.51E-01
	42.30	15.10	5.85E-01		-1.62E-01	2.85E-01
	72.40	2.31	3.28E+00		-4.37E+00	1.61E+00
PM-146	453.90	39.94	1.51E-01	1.51E-01	3.14E-02	7.19E-02
	735.90	14.01	4.44E-01		-8.50E-02	2.08E-01
	747.13	13.10	5.29E-01		-3.67E-02	2.49E-01
ND-147	91.11	28.90	1.76E+00	1.76E+00	-5.63E+00	8.62E-01
	531.02	13.10	3.49E+00		-2.91E-01	1.65E+00
PM-149	285.90	3.10	3.96E+04	3.96E+04	-6.49E+03	1.90E+04
EU-152	121.78	20.50	2.32E-01	2.32E-01	1.90E-02	1.13E-01

Analysis Report for 1510088-10

CP1804S08-09

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	1.04E+00	2.32E-01	2.65E-01	5.02E-01
	344.27	19.13	2.49E-01		-4.11E-02	1.19E-01
	778.89	9.20	6.89E-01		1.94E-01	3.22E-01
	964.01	10.40	7.98E-01		3.52E-01	3.75E-01
	1085.78	7.22	9.92E-01		-5.82E-01	4.58E-01
	1112.02	9.60	7.88E-01		2.09E-01	3.65E-01
	1407.95	14.94	4.34E-01		1.53E-01	1.95E-01
GD-153	97.43	31.30	1.70E-01	1.70E-01	1.77E-02	8.30E-02
	103.18	22.20	2.38E-01		1.15E-02	1.16E-01
EU-154	123.07	40.50	1.17E-01	1.17E-01	-8.84E-02	5.69E-02
	723.30	19.70	3.65E-01		9.39E-02	1.72E-01
	873.19	11.50	5.84E-01		1.94E-01	2.72E-01
	996.32	10.30	6.01E-01		-2.46E-01	2.76E-01
	1004.76	17.90	3.74E-01		-9.31E-02	1.73E-01
	1274.45	35.50	2.18E-01		8.73E-02	1.00E-01
EU-155	86.50	30.90	2.19E-01	2.19E-01	1.25E-01	1.07E-01
	105.30	20.70	2.39E-01		-1.68E-02	1.17E-01
EU-156	811.77	10.40	2.74E+00	2.74E+00	-1.90E-01	1.28E+00
	1153.47	7.20	5.01E+00		2.10E+00	2.33E+00
	1230.71	8.90	4.57E+00		-1.32E+00	2.14E+00
HO-166M	184.41	72.60	9.04E-02	9.04E-02	1.80E-01	4.42E-02
	280.45	29.60	1.73E-01		1.34E-02	8.31E-02
	410.94	11.10	5.63E-01		-1.36E-01	2.70E-01
	711.69	54.10	1.24E-01		1.83E-02	5.84E-02
TM-171	66.72	0.14	4.80E+01	4.80E+01	-1.06E+01	2.35E+01
HF-172	81.75	4.52	1.26E+00	4.37E-01	-6.74E-01	6.17E-01
	125.81	11.30	4.37E-01		-7.14E-03	2.13E-01
LU-172	181.53	20.60	7.12E+00	3.74E+00	3.06E+00	3.46E+00
	810.06	16.63	1.12E+01		7.50E-01	5.24E+00
	912.12	15.25	2.72E+01		8.16E+01	1.31E+01
	1093.66	62.50	3.74E+00		-1.82E-01	1.75E+00
LU-173	100.72	5.24	9.63E-01	2.72E-01	1.13E-01	4.70E-01
	272.11	21.20	2.72E-01		2.11E-01	1.31E-01
HF-175	343.40	84.00	8.31E-02	8.31E-02	-1.28E-02	3.97E-02
LU-176	88.34	13.30	5.24E-01	4.85E-02	6.63E-01	2.58E-01
	201.83	86.00	6.10E-02		0.00E+00	2.96E-02
	306.78	94.00	4.85E-02		4.01E-03	2.31E-02
TA-182	67.75	41.20	1.90E-01	1.90E-01	-5.92E-02	9.30E-02
	1121.30	34.90	4.42E-01		6.96E-01	2.11E-01
	1189.05	16.23	6.04E-01		7.25E-02	2.80E-01
	1221.41	26.98	3.59E-01		-2.09E-01	1.66E-01
	1231.02	11.44	9.90E-01		-2.87E-01	4.63E-01
IR-192	308.46	29.68	2.09E-01	1.76E-01	4.90E-02	9.99E-02
	468.07	48.10	1.76E-01		3.06E-03	8.42E-02
HG-203	279.19	77.30	1.14E-01	1.14E-01	6.63E-02	5.49E-02
BI-207	569.67	97.72	6.38E-02	6.38E-02	-1.74E-03	3.02E-02
	1063.62	74.90	1.05E-01		5.30E-02	4.90E-02
+ TL-208	583.14	*	30.22	1.77E-01	1.64E+00	1.60E-01
	860.37	*	4.48		1.59E+00	1.02E+00
	2614.66	*	35.85		1.37E+00	7.61E-02
BI-210M	262.00		1.09E-01	1.09E-01	1.94E-04	5.24E-02
	300.00		2.48E-01		-6.38E-01	1.20E-01
+ PB-210	46.50	*	4.25	2.74E+00	2.11E+00	1.35E+00

Analysis Report for 1510088-10

CP1804S08-09

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	1.88E+00	1.88E+00	-2.58E-01	8.97E-01
	831.96		2.90	2.18E+00		-1.62E+00	1.01E+00
+ BI-212	727.17	*	11.80	7.17E-01	7.17E-01	1.20E+00	3.42E-01
	1620.62		2.75	2.08E+00		-1.50E-01	9.09E-01
+ PB-212	238.63	*	44.60	2.50E-01	2.50E-01	1.59E+00	1.23E-01
	300.09	*	3.41	2.95E+00		2.09E+00	1.45E+00
+ BI-214	609.31	*	46.30	2.03E-01	2.03E-01	1.39E+00	9.80E-02
	1120.29	*	15.10	8.28E-01		1.53E+00	3.96E-01
	1764.49	*	15.80	3.70E-01		1.46E+00	1.61E-01
	2204.22	*	4.98	1.19E+00		1.33E+00	5.10E-01
+ PB-214	295.21	*	19.19	5.22E-01	2.57E-01	1.74E+00	2.56E-01
	351.92	*	37.19	2.57E-01		1.52E+00	1.25E-01
RN-219	401.80		6.50	8.60E-01	8.60E-01	4.96E-02	4.10E-01
RA-223	323.87		3.88	1.28E+00	1.28E+00	-2.71E-01	6.11E-01
+ RA-224	240.98	*	3.95	2.81E+00	2.81E+00	4.28E+00	1.38E+00
RA-225	40.00		31.00	1.42E+00	1.42E+00	-8.14E-01	6.89E-01
+ RA-226	186.21	*	3.28	2.72E+00	2.72E+00	2.90E+00	1.34E+00
TH-227	50.10		8.40	8.42E-01	5.74E-01	-4.14E-01	4.10E-01
	236.00		11.50	5.74E-01		-4.84E+00	2.79E-01
	256.20		6.30	7.77E-01		-2.95E-02	3.74E-01
+ AC-228	338.32	*	11.40	7.69E-01	3.66E-01	1.61E+00	3.75E-01
	911.07	*	27.70	3.66E-01		1.56E+00	1.74E-01
	969.11	*	16.60	6.64E-01		1.21E+00	3.17E-01
TH-230	48.44		16.90	4.75E-01	4.75E-01	3.67E-01	2.32E-01
	62.85		4.60	1.56E+00		1.47E+00	7.66E-01
	67.67		0.37	1.74E+01		-5.43E+00	8.53E+00
PA-231	283.67		1.60	3.03E+00	2.31E+00	7.43E-01	1.45E+00
	302.67		2.30	2.31E+00		1.54E+00	1.11E+00
TH-231	25.64		14.70	3.86E+00	9.42E-01	1.96E+00	1.88E+00
	84.21		6.40	9.42E-01		3.98E-01	4.62E-01
PA-233	311.98		38.60	2.58E-01	2.58E-01	-1.56E-01	1.23E-01
PA-234	131.20		20.40	2.43E-01	2.43E-01	-1.75E-01	1.19E-01
	733.99		8.80	7.16E-01		6.29E-02	3.36E-01
	946.00		12.00	5.88E-01		2.65E-01	2.74E-01
PA-234M	1001.03		0.92	7.85E+00	7.85E+00	3.86E+00	3.65E+00
+ TH-234	63.29	*	3.80	2.64E+00	2.64E+00	1.62E+00	1.30E+00
U-235	143.76		10.50	4.97E-01	4.97E-01	3.48E-01	2.42E-01
	163.35		4.70	1.04E+00		-2.32E-01	5.03E-01
	205.31		4.70	1.11E+00		-1.55E+00	5.39E-01
NP-237	86.50		12.60	5.30E-01	5.30E-01	3.02E-01	2.60E-01
NP-239	106.10		22.70	2.90E+03	2.90E+03	-2.03E+02	1.41E+03
	228.18		10.70	6.72E+03		1.26E+03	3.25E+03
	277.60		14.10	5.20E+03		4.19E+03	2.51E+03
AM-241	59.54		35.90	1.80E-01	1.80E-01	-3.56E-02	8.82E-02
+ AM-243	74.67	*	66.00	1.54E-01	1.54E-01	3.80E-01	7.61E-02
+ CM-243	209.75	*	3.29	2.79E+00	5.06E-01	2.87E+00	1.37E+00
	228.14		10.60	5.06E-01		9.46E-02	2.45E-01
	277.60	*	14.00	5.22E-01		2.71E-01	2.54E-01

Analysis Report for 1510088-10

CP1804S08-09

-
- + = 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

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: CP1804S08-09

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	62	85	101	80	93	91	
25:	79	100	83	73	64	82	78	75	
33:	68	62	83	106	88	75	74	88	
41:	83	66	88	88	93	105	180	108	
49:	107	111	89	99	124	118	101	107	
57:	116	118	124	139	146	139	177	278	
65:	168	167	173	152	152	165	169	171	
73:	187	190	488	409	519	631	168	143	
81:	130	130	130	158	179	140	229	331	
89:	158	214	205	131	314	278	118	104	
97:	100	111	104	124	114	99	93	100	
105:	127	110	98	107	121	105	94	78	
113:	98	107	111	110	88	86	97	101	
121:	108	74	102	87	90	112	94	86	
129:	131	127	94	100	100	71	104	96	
137:	96	89	87	82	85	76	97	112	
145:	118	100	86	106	79	100	91	91	
153:	78	99	95	80	76	60	96	85	
161:	68	74	76	84	79	72	90	72	
169:	82	68	76	73	59	80	66	62	
177:	86	71	62	83	92	69	69	78	
185:	71	212	190	85	68	74	69	79	
193:	63	75	64	77	70	69	81	82	
201:	78	54	71	66	65	81	73	56	
209:	107	126	67	57	54	50	63	64	
217:	57	44	43	56	69	48	56	59	
225:	61	55	55	65	78	60	47	71	
233:	52	58	52	67	77	207	750	260	
241:	106	203	115	46	38	60	51	49	
249:	42	44	41	37	59	42	34	41	
257:	61	45	47	39	48	36	44	50	
265:	34	49	35	43	44	68	69	46	
273:	41	39	29	49	53	62	46	40	
281:	46	34	49	38	25	43	47	42	
289:	44	38	36	24	42	48	182	255	
297:	64	49	28	56	73	40	32	40	
305:	25	30	27	33	34	21	35	34	
313:	20	22	39	27	28	19	32	35	
321:	31	30	39	23	34	38	29	69	
329:	47	32	24	38	32	36	32	32	
337:	38	92	167	55	34	41	39	29	
345:	18	31	20	27	31	34	81	358	
353:	291	48	29	29	30	27	34	36	
361:	30	32	24	25	36	25	27	32	

369: 23 27 33 27 22 18 28 25

Sample Title: CP1804S08-09

Channel	1	2	3	4	5	6	7	8
377:	18	28	30	27	24	34	30	23
385:	20	21	28	27	36	22	27	31
393:	31	32	27	22	20	33	25	26
401:	34	38	26	29	28	33	28	22
409:	31	37	27	28	21	21	26	30
417:	21	25	23	22	23	21	27	19
425:	26	21	26	24	23	22	18	22
433:	21	25	22	18	20	20	23	19
441:	17	24	20	21	22	21	21	22
449:	15	28	16	12	24	37	24	16
457:	16	20	14	17	16	20	56	43
465:	25	18	21	17	23	32	18	23
473:	25	26	22	14	16	15	22	22
481:	23	16	15	15	25	16	17	22
489:	18	11	7	14	19	15	12	17
497:	14	14	25	12	17	20	13	29
505:	22	12	23	19	23	52	80	90
513:	31	22	14	24	18	10	20	21
521:	21	13	17	14	14	15	14	12
529:	15	23	20	9	18	16	20	17
537:	10	17	21	13	23	11	17	15
545:	9	6	17	8	18	12	9	16
553:	20	12	13	21	15	15	17	18
561:	21	13	27	17	23	20	16	9
569:	25	19	11	14	17	13	11	19
577:	11	15	18	21	17	26	161	196
585:	41	15	19	10	12	9	11	9
593:	8	15	16	20	12	16	21	11
601:	16	18	8	17	20	17	17	24
609:	173	300	83	11	12	17	10	13
617:	10	13	13	17	20	11	11	10
625:	11	10	13	14	9	10	11	10
633:	12	15	14	15	10	14	14	21
641:	11	8	17	8	16	18	19	19
649:	12	8	16	8	12	13	16	9
657:	8	15	11	13	7	12	13	12
665:	21	20	11	9	12	19	19	7
673:	15	9	17	11	13	12	8	11
681:	11	16	11	13	8	14	12	18
689:	9	14	18	15	10	12	11	11
697:	18	12	12	10	13	13	18	10
705:	20	15	20	12	16	9	19	8
713:	15	11	12	8	10	7	10	11
721:	22	11	14	8	18	16	32	58
729:	18	11	12	10	7	11	12	15
737:	8	10	8	11	12	9	13	11
745:	13	10	8	16	14	15	8	21
753:	10	8	15	26	9	11	11	8
761:	13	11	14	11	10	17	11	17
769:	36	15	11	16	17	11	11	9
777:	9	4	14	10	9	13	3	8
785:	10	22	18	10	9	11	13	14
793:	8	16	29	24	16	7	7	9

801: 7 15 6 12 7 11 12 10

Sample Title: CP1804S08-09

Channel	1	2	3	4	5	6	7	8	9
809:	11	12	9	5	11	12	8	11	
817:	8	9	9	18	14	9	13	10	
825:	7	14	11	9	3	5	12	8	
833:	10	7	16	19	13	18	8	20	
841:	16	12	5	8	8	7	8	9	
849:	10	9	7	5	7	6	10	12	
857:	10	3	6	17	32	17	8	10	
865:	5	5	4	11	6	9	6	8	
873:	11	13	6	10	5	7	6	11	
881:	11	14	4	9	12	6	10	5	
889:	5	6	6	9	9	12	11	11	
897:	8	12	13	8	11	7	10	6	
905:	10	9	7	16	9	18	109	101	
913:	40	16	13	3	7	6	8	8	
921:	9	14	5	5	6	8	8	3	
929:	12	2	8	8	13	24	21	9	
937:	9	6	11	8	6	1	7	9	
945:	6	6	12	8	14	12	6	7	
953:	8	6	5	5	9	8	9	8	
961:	11	8	8	13	25	11	8	23	
969:	69	67	17	5	7	9	8	7	
977:	6	5	11	10	9	15	9	7	
985:	9	9	5	10	8	10	5	8	
993:	11	11	6	4	2	5	3	17	
1001:	8	10	9	7	9	7	1	6	
1009:	7	5	6	9	6	8	4	7	
1017:	4	4	8	11	7	9	11	8	
1025:	4	4	12	6	8	4	12	9	
1033:	7	10	6	9	7	6	10	7	
1041:	8	11	6	4	11	9	9	2	
1049:	7	8	5	6	8	6	6	2	
1057:	7	7	9	7	6	11	11	9	
1065:	13	6	8	2	8	6	9	8	
1073:	4	6	6	4	6	6	7	7	
1081:	9	14	8	7	7	5	4	8	
1089:	11	9	9	10	4	10	14	10	
1097:	11	14	6	4	11	9	6	7	
1105:	11	9	1	8	5	6	11	8	
1113:	8	10	6	10	14	9	7	46	
1121:	57	18	12	12	6	8	11	8	
1129:	5	13	7	4	10	2	9	7	
1137:	3	7	6	5	13	6	6	9	
1145:	12	9	2	5	8	3	9	6	
1153:	13	8	9	14	3	10	7	4	
1161:	8	9	4	10	12	9	8	11	
1169:	5	10	7	4	10	8	11	3	
1177:	6	9	12	9	8	8	8	6	
1185:	11	6	8	10	10	7	8	7	
1193:	5	8	4	4	6	9	11	7	
1201:	12	10	7	11	9	10	11	10	
1209:	7	10	9	10	10	11	8	14	
1217:	8	7	4	10	8	6	9	8	
1225:	9	11	16	12	8	8	13	17	

1233: 7 7 12 10 13 29 26 15

Sample Title: CP1804S08-09

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	7	6	9	9	5	4	12	9
1249:	11	4	3	10	5	8	4	8
1257:	9	4	7	4	10	6	6	9
1265:	4	5	4	4	2	6	5	2
1273:	6	9	4	10	9	5	5	7
1281:	17	15	5	6	3	11	6	8
1289:	6	7	5	6	6	2	9	6
1297:	3	6	8	4	5	6	2	5
1305:	2	6	8	5	3	8	2	7
1313:	5	6	2	2	4	4	6	3
1321:	6	3	6	4	6	4	5	3
1329:	4	7	6	7	8	3	6	5
1337:	6	5	3	4	6	2	2	5
1345:	5	6	2	4	5	5	3	3
1353:	3	7	2	4	2	3	2	3
1361:	0	3	4	3	4	1	1	2
1369:	6	2	5	2	4	2	0	7
1377:	10	20	15	7	3	4	5	6
1385:	6	7	3	0	2	3	3	0
1393:	3	1	1	4	4	4	2	6
1401:	9	3	6	2	3	2	4	4
1409:	5	6	2	1	1	3	3	5
1417:	2	4	4	4	2	1	4	1
1425:	3	3	5	3	3	3	5	3
1433:	3	2	7	7	3	0	1	7
1441:	4	2	5	6	1	2	2	3
1449:	3	7	5	5	3	3	3	3
1457:	9	5	20	145	305	253	51	11
1465:	7	2	4	3	4	4	5	6
1473:	2	2	3	4	4	1	3	3
1481:	2	2	2	3	0	2	4	2
1489:	5	1	3	3	2	2	0	7
1497:	1	3	2	5	3	7	2	1
1505:	1	4	2	4	8	9	4	0
1513:	3	3	3	6	1	3	1	3
1521:	0	4	2	3	2	2	1	1
1529:	0	0	3	3	0	1	1	4
1537:	1	3	3	4	0	2	5	2
1545:	1	3	3	1	2	4	2	2
1553:	1	0	0	2	4	0	4	3
1561:	1	2	1	2	0	3	0	2
1569:	0	3	4	1	2	3	1	1
1577:	2	3	4	2	7	5	2	2
1585:	7	3	5	6	10	7	5	8
1593:	8	5	3	3	3	3	3	2
1601:	2	0	2	3	3	2	1	2
1609:	2	3	2	0	4	1	1	2
1617:	4	1	4	1	5	1	0	1
1625:	5	1	0	2	1	6	7	9
1633:	1	0	0	1	2	2	3	2
1641:	1	1	2	1	1	1	1	0
1649:	2	0	1	4	1	1	1	2
1657:	0	2	1	1	3	5	4	1

1665: 3 4 3 1 0 2 1 1

Sample Title: CP1804S08-09

Channel	1	2	3	4	5	6	7	8	9
1673:	2	0	1	4	0	3	2	3	
1681:	0	1	1	2	0	0	2	2	
1689:	0	0	2	0	2	3	0	0	
1697:	1	0	0	1	3	1	0	2	
1705:	3	0	4	1	1	1	1	1	
1713:	3	0	0	2	0	0	1	0	
1721:	2	1	1	0	1	4	1	1	
1729:	6	9	5	2	1	1	2	2	
1737:	0	1	2	4	3	3	1	2	
1745:	1	3	2	2	0	1	2	1	
1753:	1	2	3	1	0	0	2	2	
1761:	1	1	6	21	41	14	5	0	
1769:	0	2	0	0	3	0	1	0	
1777:	1	1	0	0	2	3	2	0	
1785:	1	3	0	0	2	0	1	3	
1793:	2	0	2	3	2	1	1	4	
1801:	1	2	2	0	1	0	2	1	
1809:	1	2	1	1	2	1	1	1	
1817:	2	0	2	1	2	0	4	3	
1825:	0	1	2	4	1	3	2	0	
1833:	2	4	0	1	0	3	0	0	
1841:	2	1	2	1	0	0	5	5	
1849:	1	2	4	1	2	0	0	0	
1857:	4	0	3	0	1	3	0	2	
1865:	1	1	2	1	1	0	1	1	
1873:	5	2	0	0	1	0	0	0	
1881:	1	2	2	0	1	1	2	0	
1889:	1	0	1	2	0	2	0	0	
1897:	2	2	1	1	4	0	1	2	
1905:	1	0	6	2	1	0	0	0	
1913:	2	3	2	1	0	0	2	0	
1921:	0	0	0	1	0	0	0	0	
1929:	1	1	1	2	1	2	3	0	
1937:	1	0	0	0	0	2	1	2	
1945:	0	1	3	1	1	1	2	0	
1953:	1	1	1	2	0	1	2	0	
1961:	0	0	0	0	5	1	2	0	
1969:	0	2	3	0	3	1	0	2	
1977:	1	2	1	2	0	1	1	2	
1985:	3	1	1	0	1	2	0	0	
1993:	0	3	1	0	1	0	0	3	
2001:	1	2	5	2	0	3	2	2	
2009:	0	0	4	2	3	2	2	4	
2017:	1	1	2	1	2	2	1	3	
2025:	0	0	0	1	1	1	0	1	
2033:	0	2	1	2	1	2	0	2	
2041:	1	0	1	1	0	3	0	0	
2049:	1	0	0	3	0	1	0	1	
2057:	1	0	2	0	1	1	0	2	
2065:	2	1	2	1	1	2	3	0	
2073:	0	2	1	1	1	0	0	0	
2081:	1	1	2	0	1	0	1	2	
2089:	2	2	0	1	0	1	1	0	

2097: 1 0 0 2 0 3 6 7

Sample Title: CP1804S08-09

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

2529: 0 1 1 0 0 0 0 0 1

Sample Title: CP1804S08-09

Channel	1	2	3	4	5	6	7	8	9
2537:	0	1	1	1	1	1	0	0	
2545:	1	0	0	1	1	0	0	2	
2553:	1	1	0	1	3	1	0	0	
2561:	0	0	0	2	1	0	1	0	
2569:	1	0	0	1	1	1	0	0	
2577:	1	0	1	0	0	1	0	0	
2585:	0	1	1	1	0	0	1	1	
2593:	0	0	1	0	0	0	0	0	
2601:	0	0	0	0	0	0	1	1	
2609:	0	2	0	4	26	38	51	28	
2617:	9	4	0	1	0	0	0	0	
2625:	0	0	1	0	0	0	2	0	
2633:	0	1	0	0	0	0	0	0	
2641:	1	0	0	0	0	0	1	0	
2649:	0	0	0	1	1	1	0	0	
2657:	0	1	0	0	0	0	0	0	
2665:	1	1	1	0	0	0	1	0	
2673:	0	0	2	0	0	1	0	0	
2681:	0	1	0	0	0	1	1	0	
2689:	0	1	0	1	0	0	1	0	
2697:	1	1	2	1	2	0	0	0	
2705:	0	0	0	0	0	0	0	0	
2713:	0	0	1	0	0	0	0	1	
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	0	1	0	0	1	1	
2753:	0	0	1	0	0	0	0	0	
2761:	0	0	0	0	0	0	1	1	
2769:	1	0	2	2	0	0	0	1	
2777:	0	0	0	1	1	0	0	0	
2785:	0	1	0	0	1	0	0	0	
2793:	1	1	0	0	0	0	0	1	
2801:	0	0	0	0	0	0	1	1	
2809:	0	0	0	2	0	0	0	0	
2817:	0	0	0	0	0	0	1	0	
2825:	1	0	0	2	0	1	0	0	
2833:	0	0	0	0	0	1	0	0	
2841:	1	0	0	1	0	0	0	1	
2849:	0	0	0	0	0	0	0	0	
2857:	0	0	0	0	1	0	0	1	
2865:	0	0	0	0	1	0	1	1	
2873:	1	1	0	0	0	0	0	1	
2881:	0	1	0	0	1	0	0	0	
2889:	1	0	1	0	0	0	0	0	
2897:	1	0	0	0	0	1	0	0	
2905:	0	1	0	0	0	0	0	1	
2913:	0	1	0	0	0	0	1	0	
2921:	0	0	0	0	0	0	1	0	
2929:	0	2	0	0	1	0	0	0	
2937:	0	1	2	0	0	0	0	0	
2945:	0	0	0	0	0	0	0	0	
2953:	0	0	0	0	0	0	0	0	

2961: 0 0 0 0 0 0 0 0 1

Sample Title: CP1804S08-09

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

Sample Title: CP1804S08-09

Channel	1	2	3	4	5	6	7	8	9
3401:	0	2	1	1	0	0	0	0	0
3409:	0	1	1	0	0	0	0	0	1
3417:	0	1	0	1	1	0	0	0	0
3425:	0	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0	1
3441:	0	0	0	1	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	1	0	0	0
3465:	1	0	0	0	0	1	1	0	0
3473:	1	1	0	0	1	0	0	0	0
3481:	1	0	1	0	0	0	1	0	0
3489:	0	0	0	1	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0	0
3505:	0	0	0	1	0	0	1	1	1
3513:	0	0	0	1	0	0	0	0	0
3521:	1	0	0	0	0	0	0	0	0
3529:	0	0	0	0	1	1	0	0	0
3537:	0	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	1	0	0
3561:	1	0	0	0	0	0	1	0	0
3569:	0	0	0	1	0	0	0	0	0
3577:	1	0	0	0	0	1	0	0	0
3585:	0	0	0	0	0	1	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	1	0	0	0	0	0	1
3617:	0	0	0	0	1	0	0	0	0
3625:	0	0	0	0	0	0	0	0	1
3633:	0	0	0	0	0	0	0	0	0
3641:	0	0	1	0	0	0	0	0	0
3649:	1	0	0	0	1	0	0	0	0
3657:	0	0	0	1	0	0	0	0	0
3665:	1	0	0	0	1	1	0	0	0
3673:	0	0	0	0	0	0	1	0	0
3681:	0	0	0	0	0	0	0	0	1
3689:	0	0	0	0	0	0	0	0	0
3697:	0	1	0	0	0	0	0	0	2
3705:	0	0	1	0	1	0	0	0	0
3713:	0	0	0	0	1	0	0	0	0
3721:	0	0	0	0	0	0	0	0	0
3729:	1	0	0	0	0	1	0	0	0
3737:	0	0	0	0	0	0	1	0	0
3745:	0	0	0	0	0	0	0	0	1
3753:	0	0	0	0	0	0	0	0	1
3761:	0	0	0	0	0	2	0	0	0
3769:	0	0	0	0	0	0	0	0	0
3777:	0	0	0	1	0	1	0	0	0
3785:	0	0	0	0	0	0	0	0	0
3793:	0	0	1	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0	0

3825: 0 0 0 0 0 1 0 1

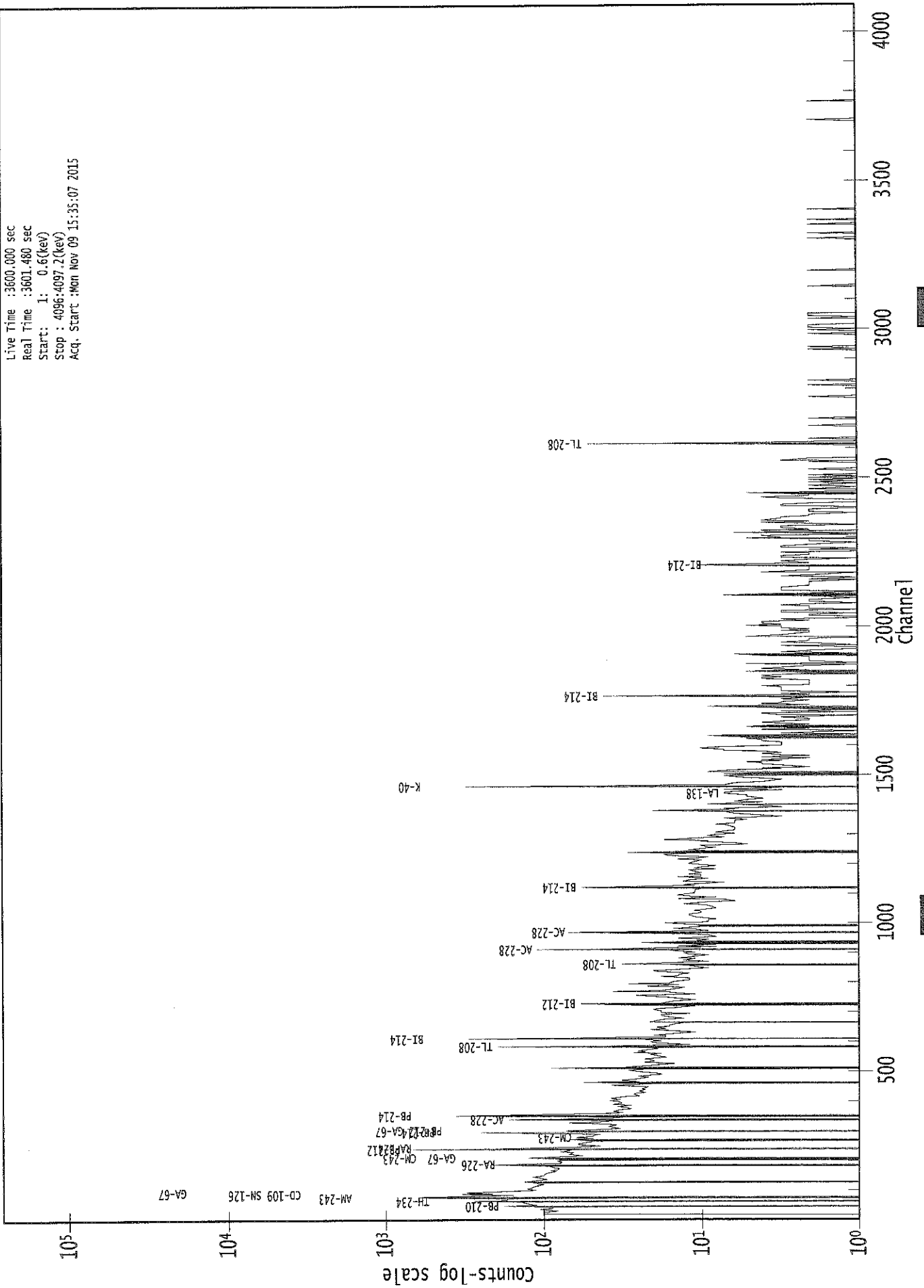
Sample Title: CP1804S08-09

Channel	1	2	3	4	5	6	7	8	9
3833:	0	1	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0	0
3849:	0	1	0	1	1	0	0	0	0
3857:	0	0	0	0	0	0	0	0	0
3865:	1	0	0	0	0	0	0	0	1
3873:	0	0	1	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0	0
3889:	1	1	0	1	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0	0
3905:	0	1	0	1	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0	0
3921:	0	0	1	0	0	0	0	0	0
3929:	0	1	0	0	1	0	0	0	0
3937:	0	0	0	0	1	1	0	0	0
3945:	0	0	0	0	1	1	0	0	0
3953:	1	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	1	0	0
3985:	0	0	0	0	0	0	0	0	0
3993:	0	1	0	0	0	0	1	1	1
4001:	0	0	1	0	0	0	0	0	1
4009:	0	0	0	0	1	0	0	0	0
4017:	0	0	0	0	0	0	0	0	0
4025:	0	0	0	0	1	0	0	0	0
4033:	0	0	0	0	0	0	0	0	0
4041:	0	0	1	0	0	0	0	0	0
4049:	1	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0	0
4081:	0	0	0	1	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0	1

0715A

0000029351.CNF

Live Time : 3600.000 sec
Real Time : 3601.480 sec
Start: 1: 0.6(keV)
Stop : 4096.4097.2(keV)
Acq. Start : Mon Nov 09 15:35:07 2015



91700

KCB
11/9/15Analysis Report for 1510088-11
CP1804S10-11

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-11
Sample Description : CP1804S10-11
Sample Type : SOIL

Sample Size : 5.927E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 9:01:02AM
Acquisition Started : 11/9/2015 4:02:14PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3643.6 seconds

Dead Time : 1.20 %

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 : 29352

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

Analysis Report for 1510088-11
 CP1804S10-11

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 5:02:59PM
 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	46.22	45.47	0.0000	0.00
2	63.53	62.79	0.0000	0.00
3	76.23	75.50	0.0000	0.00
4	87.52	86.79	0.0000	0.00
5	92.42	91.70	0.0000	0.00
6	100.19	99.46	0.0000	0.00
7	122.82	122.11	0.0000	0.00
8	151.86	151.16	0.0000	0.00
9	160.63	159.93	0.0000	0.00
10	186.19	185.51	0.0000	0.00
11	239.04	238.38	0.0000	0.00
12	295.90	295.26	0.0000	0.00
13	338.16	337.54	0.0000	0.00
14	352.16	351.54	0.0000	0.00
15	401.13	400.54	0.0000	0.00
16	463.16	462.60	0.0000	0.00
17	583.33	582.83	0.0000	0.00
18	609.52	609.02	0.0000	0.00
19	727.56	727.13	0.0000	0.00
20	750.50	750.08	0.0000	0.00
21	859.04	858.68	0.0000	0.00
22	895.17	894.82	0.0000	0.00
23	911.62	911.28	0.0000	0.00
24	923.05	922.71	0.0000	0.00
25	933.04	932.71	0.0000	0.00
26	939.61	939.29	0.0000	0.00
27	968.36	968.05	0.0000	0.00
28	1301.75	1301.62	0.0000	0.00
29	1325.75	1325.64	0.0000	0.00
30	1461.27	1461.25	0.0000	0.00
31	1532.92	1532.94	0.0000	0.00
32	1542.98	1543.00	0.0000	0.00
33	1551.00	1551.03	0.0000	0.00
34	1661.80	1661.89	0.0000	0.00
35	1765.14	1765.31	0.0000	0.00
36	2387.40	2388.00	0.0000	0.00
37	2449.17	2449.81	0.0000	0.00
38	2615.64	2616.41	0.0000	0.00

? = Adjacent peak noted
 Errors quoted at 2.000sigma

Analysis Report for 1510088-11
 CP1804S10-11

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 5:02:59PM

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	46.22	40 -	49	45.47	1.02E+02	98.29	1.33E+03	2.22
2	63.53	59 -	67	62.79	2.25E+02	108.00	1.67E+03	2.60
M 3	76.23	68 -	96	75.50	9.11E+02	141.59	2.16E+03	4.15
m 4	87.52	68 -	96	86.79	2.89E+02	115.33	1.49E+03	3.32
m 5	92.42	68 -	96	91.70	3.76E+02	124.24	1.53E+03	4.17
6	100.19	97 -	102	99.46	6.10E+01	62.08	7.16E+02	2.53
7	122.82	118 -	125	122.11	7.92E+01	75.50	9.00E+02	1.42
8	151.86	147 -	155	151.16	7.65E+01	74.03	7.95E+02	5.19
9	160.63	157 -	162	159.93	4.47E+01	53.42	5.37E+02	1.73
10	186.19	181 -	189	185.51	1.31E+02	73.58	7.44E+02	4.50
11	239.04	231 -	245	238.38	6.34E+02	107.33	9.47E+02	2.62
12	295.90	291 -	300	295.26	1.61E+02	62.16	4.60E+02	2.69
13	338.16	333 -	343	337.54	9.94E+01	57.02	3.83E+02	2.79
14	352.16	346 -	358	351.54	2.51E+02	66.95	4.07E+02	2.37
15	401.13	396 -	406	400.54	5.93E+01	43.52	2.23E+02	7.49
16	463.16	457 -	466	462.60	4.57E+01	38.38	1.83E+02	3.37
17	583.33	578 -	586	582.83	1.03E+02	37.31	1.77E+02	2.88
18	609.52	603 -	614	609.02	2.26E+02	42.61	1.14E+02	2.63
19	727.56	721 -	730	727.13	3.50E+01	32.40	1.30E+02	2.02
20	750.50	745 -	755	750.08	3.08E+01	28.74	9.45E+01	7.99
21	859.04	853 -	865	858.68	3.21E+01	30.06	9.17E+01	7.85
22	895.17	885 -	904	894.82	6.43E+01	33.11	6.94E+01	14.80
M 23	911.62	906 -	927	911.28	8.86E+01	25.50	4.40E+01	3.14
m 24	923.05	906 -	927	922.71	1.61E+01	19.45	3.03E+01	3.14
M 25	933.04	928 -	945	932.71	1.49E+01	18.28	3.39E+01	3.14
m 26	939.61	928 -	945	939.29	1.93E+01	18.50	4.57E+01	3.14
27	968.36	962 -	975	968.05	5.15E+01	33.02	9.90E+01	1.63
28	1301.75	1298 -	1304	1301.62	8.89E+00	12.23	2.02E+01	1.84
29	1325.75	1322 -	1330	1325.64	1.46E+01	15.15	2.47E+01	3.04
30	1461.27	1453 -	1468	1461.25	2.25E+02	36.06	3.98E+01	2.70
31	1532.92	1530 -	1535	1532.94	5.50E+00	6.08	3.00E+00	2.37
32	1542.98	1539 -	1546	1543.00	8.00E+00	5.66	0.00E+00	3.49
33	1551.00	1547 -	1554	1551.03	1.50E+01	9.17	3.94E+00	5.48
34	1661.80	1656 -	1664	1661.89	7.50E+00	9.41	9.00E+00	1.60
35	1765.14	1760 -	1769	1765.31	2.84E+01	12.21	5.19E+00	1.79
36	2387.40	2385 -	2390	2388.00	5.00E+00	4.47	0.00E+00	1.50
37	2449.17	2446 -	2453	2449.81	9.18E+00	7.75	3.64E+00	2.64
38	2615.64	2612 -	2622	2616.41	3.68E+01	13.65	4.33E+00	3.04

Analysis Report for 1510088-11
CP1804S10-11

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 5:02:59PM

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	46.22	40 - 49	1.02E+02	98.29	1.33E+03	7.91E+01
	2	63.53	59 - 67	2.25E+02	108.00	1.67E+03	8.53E+01
M	3	76.23	68 - 96	9.11E+02	141.59	2.16E+03	7.65E+01
m	4	87.52	68 - 96	2.89E+02	115.33	1.49E+03	6.35E+01
m	5	92.42	68 - 96	3.76E+02	124.24	1.53E+03	6.43E+01
	6	100.19	97 - 102	6.10E+01	62.08	7.16E+02	4.94E+01
	7	122.82	118 - 125	7.92E+01	75.50	9.00E+02	6.03E+01
	8	151.86	147 - 155	7.65E+01	74.03	7.95E+02	5.91E+01
	9	160.63	157 - 162	4.47E+01	53.42	5.37E+02	4.25E+01
	10	186.19	181 - 189	1.31E+02	73.58	7.44E+02	5.75E+01
	11	239.04	231 - 245	6.34E+02	107.33	9.47E+02	7.79E+01
	12	295.90	291 - 300	1.61E+02	62.16	4.60E+02	4.66E+01
	13	338.16	333 - 343	9.94E+01	57.02	3.83E+02	4.39E+01
	14	352.16	346 - 358	2.51E+02	66.95	4.07E+02	4.85E+01
	15	401.13	396 - 406	5.93E+01	43.52	2.23E+02	3.35E+01
	16	463.16	457 - 466	4.57E+01	38.38	1.83E+02	2.95E+01
	17	583.33	578 - 586	1.03E+02	37.31	1.77E+02	3.95E+01
	18	609.52	603 - 614	2.26E+02	42.61	1.14E+02	2.48E+01
	19	727.56	721 - 730	3.50E+01	32.40	1.30E+02	2.48E+01
	20	750.50	745 - 755	3.08E+01	28.74	9.45E+01	2.18E+01
	21	859.04	853 - 865	3.21E+01	30.06	9.17E+01	2.29E+01
	22	895.17	885 - 904	6.43E+01	33.11	6.94E+01	2.38E+01
M	23	911.62	906 - 927	8.86E+01	25.50	4.40E+01	1.09E+01
m	24	923.05	906 - 927	1.61E+01	19.45	3.03E+01	9.05E+00
M	25	933.04	928 - 945	1.49E+01	18.28	3.39E+01	9.58E+00
m	26	939.61	928 - 945	1.93E+01	18.50	4.57E+01	1.11E+01
	27	968.36	962 - 975	5.15E+01	33.02	9.90E+01	2.44E+01
	28	1301.75	1298 - 1304	8.89E+00	12.23	2.02E+01	8.77E+00
	29	1325.75	1322 - 1330	1.46E+01	15.15	2.47E+01	1.07E+01
	30	1461.27	1453 - 1468	2.25E+02	36.06	3.98E+01	1.64E+01
	31	1532.92	1530 - 1535	5.50E+00	6.08	3.00E+00	3.18E+00

Analysis Report for 1510088-11
 CP1804S10-11

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	1542.98	1539 -	1546	8.00E+00	5.66	0.00E+00	0.00E+00
33	1551.00	1547 -	1554	1.50E+01	9.17	3.94E+00	4.02E+00
34	1661.80	1656 -	1664	7.50E+00	9.41	9.00E+00	6.29E+00
35	1765.14	1760 -	1769	2.84E+01	12.21	5.19E+00	4.89E+00
36	2387.40	2385 -	2390	5.00E+00	4.47	0.00E+00	0.00E+00
37	2449.17	2446 -	2453	9.18E+00	7.75	3.64E+00	3.97E+00
38	2615.64	2612 -	2622	3.68E+01	13.65	4.33E+00	5.13E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 5:02:59PM

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	46.22	40 -	49	45.47	1.02E+02	98.29	1.33E+03	PB-210
2	63.53	59 -	67	62.79	2.25E+02	108.00	1.67E+03	TH-234
								TH-230
M 3	76.23	68 -	96	75.50	9.11E+02	141.59	2.16E+03	.....
m 4	87.52	68 -	96	86.79	2.89E+02	115.33	1.49E+03	SN-126
								CD-109
								LU-176
m 5	92.42	68 -	96	91.70	3.76E+02	124.24	1.53E+03	GA-67
6	100.19	97 -	102	99.46	6.10E+01	62.08	7.16E+02	LU-173
7	122.82	118 -	125	122.11	7.92E+01	75.50	9.00E+02	EU-154
								CO-57
8	151.86	147 -	155	151.16	7.65E+01	74.03	7.95E+02	.....
9	160.63	157 -	162	159.93	4.47E+01	53.42	5.37E+02	.....
10	186.19	181 -	189	185.51	1.31E+02	73.58	7.44E+02	RA-226
11	239.04	231 -	245	238.38	6.34E+02	107.33	9.47E+02	PB-212
12	295.90	291 -	300	295.26	1.61E+02	62.16	4.60E+02	PB-214
13	338.16	333 -	343	337.54	9.94E+01	57.02	3.83E+02	AC-228
14	352.16	346 -	358	351.54	2.51E+02	66.95	4.07E+02	PB-214
15	401.13	396 -	406	400.54	5.93E+01	43.52	2.23E+02	SE-75

Analysis Report for 1510088-11

CP1804S10-11

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
								RN-219
16	463.16	457 -	466	462.60	4.57E+01	38.38	1.83E+02	SB-125
17	583.33	578 -	586	582.83	1.03E+02	37.31	1.77E+02	TL-208
18	609.52	603 -	614	609.02	2.26E+02	42.61	1.14E+02	BI-214
19	727.56	721 -	730	727.13	3.50E+01	32.40	1.30E+02	BI-212
20	750.50	745 -	755	750.08	3.08E+01	28.74	9.45E+01	.....
21	859.04	853 -	865	858.68	3.21E+01	30.06	9.17E+01	.....
22	895.17	885 -	904	894.82	6.43E+01	33.11	6.94E+01	.....
M 23	911.62	906 -	927	911.28	8.86E+01	25.50	4.40E+01	LU-172 AC-228
m 24	923.05	906 -	927	922.71	1.61E+01	19.45	3.03E+01	.....
M 25	933.04	928 -	945	932.71	1.49E+01	18.28	3.39E+01	.....
m 26	939.61	928 -	945	939.29	1.93E+01	18.50	4.57E+01	.....
27	968.36	962 -	975	968.05	5.15E+01	33.02	9.90E+01	AC-228
28	1301.75	1298 -	1304	1301.62	8.89E+00	12.23	2.02E+01	.....
29	1325.75	1322 -	1330	1325.64	1.46E+01	15.15	2.47E+01	.....
30	1461.27	1453 -	1468	1461.25	2.25E+02	36.06	3.98E+01	K-40
31	1532.92	1530 -	1535	1532.94	5.50E+00	6.08	3.00E+00	.....
32	1542.98	1539 -	1546	1543.00	8.00E+00	5.66	0.00E+00	.....
33	1551.00	1547 -	1554	1551.03	1.50E+01	9.17	3.94E+00	.....
34	1661.80	1656 -	1664	1661.89	7.50E+00	9.41	9.00E+00	.....
35	1765.14	1760 -	1769	1765.31	2.84E+01	12.21	5.19E+00	BI-214
36	2387.40	2385 -	2390	2388.00	5.00E+00	4.47	0.00E+00	.....
37	2449.17	2446 -	2453	2449.81	9.18E+00	7.75	3.64E+00	.....
38	2615.64	2612 -	2622	2616.41	3.68E+01	13.65	4.33E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 5:02:59PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	46.22	1.02E+02	98.29	2.64E-02	1.78E-03
2	63.53	2.25E+02	108.00	2.32E-02	1.76E-03
M 3	76.23	9.11E+02	141.59	2.12E-02	1.69E-03
m 4	87.52	2.89E+02	115.33	1.97E-02	1.63E-03
m 5	92.42	3.76E+02	124.24	1.91E-02	1.62E-03

Analysis Report for 1510088-11
CP1804S10-11

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
6	100.19	6.10E+01	62.08	1.82E-02	1.59E-03	
7	122.82	7.92E+01	75.50	1.59E-02	1.52E-03	
8	151.86	7.65E+01	74.03	1.36E-02	1.31E-03	
9	160.63	4.47E+01	53.42	1.31E-02	1.25E-03	
10	186.19	1.31E+02	73.58	1.16E-02	1.15E-03	
11	239.04	6.34E+02	107.33	9.40E-03	9.86E-04	
12	295.90	1.61E+02	62.16	7.77E-03	8.42E-04	
13	338.16	9.94E+01	57.02	6.86E-03	7.95E-04	
14	352.16	2.51E+02	66.95	6.61E-03	7.80E-04	
15	401.13	5.93E+01	43.52	5.83E-03	7.22E-04	
16	463.16	4.57E+01	38.38	5.08E-03	6.31E-04	
17	583.33	1.03E+02	37.31	4.05E-03	4.55E-04	
18	609.52	2.26E+02	42.61	3.87E-03	4.17E-04	
19	727.56	3.50E+01	32.40	3.25E-03	3.03E-04	
20	750.50	3.08E+01	28.74	3.16E-03	2.91E-04	
21	859.04	3.21E+01	30.06	2.76E-03	2.30E-04	
22	895.17	6.43E+01	33.11	2.66E-03	2.10E-04	
M	23	911.62	8.86E+01	25.50	2.61E-03	2.06E-04
m	24	923.05	1.61E+01	19.45	2.58E-03	2.05E-04
M	25	933.04	1.49E+01	18.28	2.55E-03	2.03E-04
m	26	939.61	1.93E+01	18.50	2.53E-03	2.03E-04
27	968.36	5.15E+01	33.02	2.46E-03	1.99E-04	
28	1301.75	8.89E+00	12.23	1.87E-03	2.07E-04	
29	1325.75	1.46E+01	15.15	1.84E-03	2.14E-04	
30	1461.27	2.25E+02	36.06	1.68E-03	1.89E-04	
31	1532.92	5.50E+00	6.08	1.61E-03	1.74E-04	
32	1542.98	8.00E+00	5.66	1.61E-03	1.72E-04	
33	1551.00	1.50E+01	9.17	1.60E-03	1.70E-04	
34	1661.80	7.50E+00	9.41	1.51E-03	1.47E-04	
35	1765.14	2.84E+01	12.21	1.43E-03	1.26E-04	
36	2387.40	5.00E+00	4.47	1.14E-03	1.11E-04	
37	2449.17	9.18E+00	7.75	1.12E-03	1.11E-04	
38	2615.64	3.68E+01	13.65	1.07E-03	1.11E-04	

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 5:02:59PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

: 00723

Analysis Report for 1510088-11

CP1804S10-11

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.22	1.02E+02	98.29	2.00E+01	7.38E+00	8.17E+01	9.86E+01
	2	63.53	2.25E+02	108.00	5.38E+01	9.34E+00	1.71E+02	1.08E+02
M	3	76.23	9.11E+02	141.59			9.11E+02	1.42E+02
m	4	87.52	2.89E+02	115.33			2.89E+02	1.15E+02
m	5	92.42	3.76E+02	124.24	5.44E+01	8.36E+00	3.22E+02	1.25E+02
	6	100.19	6.10E+01	62.08			6.10E+01	6.21E+01
	7	122.82	7.92E+01	75.50			7.92E+01	7.55E+01
	8	151.86	7.65E+01	74.03			7.65E+01	7.40E+01
	9	160.63	4.47E+01	53.42			4.47E+01	5.34E+01
	10	186.19	1.31E+02	73.58	1.43E+01	7.33E+00	1.17E+02	7.39E+01
	11	239.04	6.34E+02	107.33	1.09E+01	6.39E+00	6.24E+02	1.08E+02
	12	295.90	1.61E+02	62.16			1.61E+02	6.22E+01
	13	338.16	9.94E+01	57.02			9.94E+01	5.70E+01
	14	352.16	2.51E+02	66.95	8.07E+00	5.01E+00	2.43E+02	6.71E+01
	15	401.13	5.93E+01	43.52			5.93E+01	4.35E+01
	16	463.16	4.57E+01	38.38			4.57E+01	3.84E+01
	17	583.33	1.03E+02	37.31			1.03E+02	3.73E+01
	18	609.52	2.26E+02	42.61	5.16E+00	1.63E+00	2.21E+02	4.26E+01
	19	727.56	3.50E+01	32.40			3.50E+01	3.24E+01
	20	750.50	3.08E+01	28.74			3.08E+01	2.87E+01
	21	859.04	3.21E+01	30.06			3.21E+01	3.01E+01
	22	895.17	6.43E+01	33.11			6.43E+01	3.31E+01
M	23	911.62	8.86E+01	25.50	1.01E+00	2.85E+00	8.76E+01	2.57E+01
m	24	923.05	1.61E+01	19.45			1.61E+01	1.94E+01
M	25	933.04	1.49E+01	18.28			1.49E+01	1.83E+01
m	26	939.61	1.93E+01	18.50			1.93E+01	1.85E+01
	27	968.36	5.15E+01	33.02			5.15E+01	3.30E+01
	28	1301.75	8.89E+00	12.23			8.89E+00	1.22E+01
	29	1325.75	1.46E+01	15.15			1.46E+01	1.51E+01
	30	1461.27	2.25E+02	36.06			2.25E+02	3.61E+01
	31	1532.92	5.50E+00	6.08			5.50E+00	6.08E+00
	32	1542.98	8.00E+00	5.66			8.00E+00	5.66E+00
	33	1551.00	1.50E+01	9.17			1.50E+01	9.17E+00
	34	1661.80	7.50E+00	9.41			7.50E+00	9.41E+00
	35	1765.14	2.84E+01	12.21	1.11E-01	9.77E-01	2.83E+01	1.22E+01
	36	2387.40	5.00E+00	4.47			5.00E+00	4.47E+00
	37	2449.17	9.18E+00	7.75			9.18E+00	7.75E+00
	38	2615.64	3.68E+01	13.65			3.68E+01	1.36E+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 1510088-11

CP1804S10-11

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 5:02:59PM

Ref. Peak Energy : 0.00 Reference Date :

Peak Ratio : 0.00 Uncertainty : 0.00

Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.22	1.02E+02	98.29	2.00E+01	7.38E+00	8.17E+01	9.86E+01
	2	63.53	2.25E+02	108.00	5.38E+01	9.34E+00	1.71E+02	1.08E+02
M	3	76.23	9.11E+02	141.59			9.11E+02	1.42E+02
m	4	87.52	2.89E+02	115.33			2.89E+02	1.15E+02
m	5	92.42	3.76E+02	124.24	5.44E+01	8.36E+00	3.22E+02	1.25E+02
	6	100.19	6.10E+01	62.08			6.10E+01	6.21E+01
	7	122.82	7.92E+01	75.50			7.92E+01	7.55E+01
	8	151.86	7.65E+01	74.03			7.65E+01	7.40E+01
	9	160.63	4.47E+01	53.42			4.47E+01	5.34E+01
	10	186.19	1.31E+02	73.58	1.43E+01	7.33E+00	1.17E+02	7.39E+01
	11	239.04	6.34E+02	107.33	1.09E+01	6.39E+00	6.24E+02	1.08E+02
	12	295.90	1.61E+02	62.16			1.61E+02	6.22E+01
	13	338.16	9.94E+01	57.02			9.94E+01	5.70E+01
	14	352.16	2.51E+02	66.95	8.07E+00	5.01E+00	2.43E+02	6.71E+01
	15	401.13	5.93E+01	43.52			5.93E+01	4.35E+01
	16	463.16	4.57E+01	38.38			4.57E+01	3.84E+01
	17	583.33	1.03E+02	37.31			1.03E+02	3.73E+01
	18	609.52	2.26E+02	42.61	5.16E+00	1.63E+00	2.21E+02	4.26E+01
	19	727.56	3.50E+01	32.40			3.50E+01	3.24E+01
	20	750.50	3.08E+01	28.74			3.08E+01	2.87E+01
	21	859.04	3.21E+01	30.06			3.21E+01	3.01E+01
	22	895.17	6.43E+01	33.11			6.43E+01	3.31E+01
M	23	911.62	8.86E+01	25.50	1.01E+00	2.85E+00	8.76E+01	2.57E+01
m	24	923.05	1.61E+01	19.45			1.61E+01	1.94E+01
M	25	933.04	1.49E+01	18.28			1.49E+01	1.83E+01
m	26	939.61	1.93E+01	18.50			1.93E+01	1.85E+01
	27	968.36	5.15E+01	33.02			5.15E+01	3.30E+01
	28	1301.75	8.89E+00	12.23			8.89E+00	1.22E+01
	29	1325.75	1.46E+01	15.15			1.46E+01	1.51E+01
	30	1461.27	2.25E+02	36.06			2.25E+02	3.61E+01
	31	1532.92	5.50E+00	6.08			5.50E+00	6.08E+00
	32	1542.98	8.00E+00	5.66			8.00E+00	5.66E+00
	33	1551.00	1.50E+01	9.17			1.50E+01	9.17E+00
	34	1661.80	7.50E+00	9.41			7.50E+00	9.41E+00
	35	1765.14	2.84E+01	12.21	1.11E-01	9.77E-01	2.83E+01	1.22E+01
	36	2387.40	5.00E+00	4.47			5.00E+00	4.47E+00
	37	2449.17	9.18E+00	7.75			9.18E+00	7.75E+00
	38	2615.64	3.68E+01	13.65			3.68E+01	1.36E+01

: 00725

Analysis Report for 1510088-11
CP1804S10-11

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

<i>Nuclide Name</i>	<i>Id Confidence</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Activity Uncertainty</i>
K-40	0.966	1460.81 *	10.67	1.59E+01	3.12E+00
CO-57	0.752	122.06 *	85.51	8.03E-02	7.69E-02
		136.48	10.60		
GA-67	0.319	93.31 *	35.70	5.76E+02	2.52E+03
		208.95	2.24		
		300.22	16.00		
CD-109	0.959	88.03 *	3.72	5.24E+00	2.16E+00
SN-126	1.000	87.57 *	37.00	5.02E-01	2.05E-01
TL-208	0.810	583.14 *	30.22	1.06E+00	4.05E-01
		860.37	4.48		
		2614.66 *	35.85	1.21E+00	4.67E-01
PB-210	0.987	46.50 *	4.25	9.26E-01	1.12E+00
BI-212	0.759	727.17 *	11.80	1.15E+00	1.07E+00
		1620.62	2.75		
PB-212	0.872	238.63 *	44.60	1.88E+00	3.80E-01
		300.09	3.41		
BI-214	0.663	609.31 *	46.30	1.56E+00	3.45E-01
		1120.29	15.10		
		1764.49 *	15.80	1.58E+00	6.98E-01
		2204.22	4.98		
PB-214	0.969	295.21 *	19.19	1.37E+00	5.49E-01
		351.92 *	37.19	1.25E+00	3.77E-01
RN-219	0.930	401.80 *	6.50	1.98E+00	1.47E+00
RA-226	1.000	186.21 *	3.28	3.88E+00	7.53E+00
AC-228	0.950	338.32 *	11.40	1.61E+00	9.42E-01
		911.07 *	27.70	1.54E+00	4.66E-01
		969.11 *	16.60	1.60E+00	1.03E+00
TH-234	0.991	63.29 *	3.80	2.45E+00	1.57E+00

Analysis Report for 1510088-11
 CP1804S10-11

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 5:02:59PM
 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	76.23	2.53176E-01	7.77		
6	100.19	1.69345E-02	50.92	Tol.	LU-173
8	151.86	2.12403E-02	48.41	Sum	
9	160.63	1.24263E-02	59.71		
16	463.16	1.27017E-02	41.97	Tol.	SB-125
20	750.50	8.54167E-03	46.74		
21	859.04	8.92806E-03	46.76		
22	895.17	1.78634E-02	25.74		
m 24	923.05	4.47027E-03	60.43		
M 25	933.04	4.14089E-03	61.32		
m 26	939.61	5.35415E-03	47.99		
28	1301.75	2.47076E-03	68.73		
29	1325.75	4.06379E-03	51.78		
31	1532.92	1.52778E-03	55.30		
32	1542.98	2.22222E-03	35.36		
33	1551.00	4.17484E-03	30.49	Sum	
34	1661.80	2.08333E-03	62.72		
36	2387.40	1.38889E-03	44.72		
37	2449.17	2.55051E-03	42.18		

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 1510088-11
CP1804S10-11

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.96	1460.81 *	10.67	1.59E+01	3.12E+00
CO-57	0.75	122.06 *	85.51	8.03E-02	7.69E-02
		136.48	10.60		
GA-67	0.31	93.31 *	35.70	5.76E+02	2.52E+03
		208.95	2.24		
		300.22	16.00		
CD-109	0.95	88.03 *	3.72	5.24E+00	2.16E+00
SN-126	1.00	87.57 *	37.00	5.02E-01	2.05E-01
TL-208	0.81	583.14 *	30.22	1.06E+00	4.05E-01
		860.37	4.48		
		2614.66 *	35.85	1.21E+00	4.67E-01
PB-210	0.98	46.50 *	4.25	9.26E-01	1.12E+00
BI-212	0.75	727.17 *	11.80	1.15E+00	1.07E+00
		1620.62	2.75		
PB-212	0.87	238.63 *	44.60	1.88E+00	3.80E-01
		300.09	3.41		
BI-214	0.66	609.31 *	46.30	1.56E+00	3.45E-01
		1120.29	15.10		
		1764.49 *	15.80	1.58E+00	6.98E-01
		2204.22	4.98		
PB-214	0.96	295.21 *	19.19	1.37E+00	5.49E-01
		351.92 *	37.19	1.25E+00	3.77E-01
RN-219	0.93	401.80 *	6.50	1.98E+00	1.47E+00
RA-226	1.00	186.21 *	3.28	3.88E+00	7.53E+00
AC-228	0.95	338.32 *	11.40	1.61E+00	9.42E-01
		911.07 *	27.70	1.54E+00	4.66E-01
		969.11 *	16.60	1.60E+00	1.03E+00
TH-234	0.99	63.29 *	3.80	2.45E+00	1.57E+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 1510088-11

CP1804S10-11

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.966	1.59E+01	3.12E+00	
CO-57	0.752	8.03E-02	7.69E-02	
GA-67	0.319	5.76E+02	2.52E+03	
? CD-109	0.959	5.24E+00	2.16E+00	
? SN-126	1.000	5.02E-01	2.05E-01	
TL-208	0.810	1.13E+00	3.06E-01	
PB-210	0.987	9.26E-01	1.12E+00	
BI-212	0.759	1.15E+00	1.07E+00	
PB-212	0.872	1.88E+00	3.80E-01	
BI-214	0.663	1.56E+00	3.09E-01	
PB-214	0.969	1.29E+00	3.10E-01	
RN-219	0.930	1.98E+00	1.47E+00	
RA-226	1.000	3.88E+00	7.53E+00	
AC-228	0.950	1.56E+00	3.87E-01	
TH-234	0.991	2.45E+00	1.57E+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 1510088-11
CP1804S10-11

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 5:02:59PM
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	76.23	2.53176E-01		
	6	100.19	1.69345E-02	Tol.	LU-173
	8	151.86	2.12403E-02	Sum	
	9	160.63	1.24263E-02		
	16	463.16	1.27017E-02	Tol.	SB-125
	20	750.50	8.54167E-03		
	21	859.04	8.92806E-03		
	22	895.17	1.78634E-02		
m	24	923.05	4.47027E-03		
M	25	933.04	4.14089E-03		
m	26	939.61	5.35415E-03		
	28	1301.75	2.47076E-03		
	29	1325.75	4.06379E-03		
	31	1532.92	1.52778E-03		
	32	1542.98	2.22222E-03		
	33	1551.00	4.17484E-03	Sum	
	34	1661.80	2.08333E-03		
	36	2387.40	1.38889E-03		
	37	2449.17	2.55051E-03		

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

: 00730

Analysis Report for 1510088-11
CP1804S10-11

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	3.64E-01	1.92E+00	1.92E+00
+	NA-22	1274.54	99.94	-9.13E-02	1.86E-01	1.86E-01
+	NA-24	1368.53	99.99	-3.65E+13	4.82E+14	5.98E+14
		2754.09	99.86	-4.98E+12		4.82E+14
+	AL-26	1808.65	99.76	-2.26E-03	1.08E-01	1.08E-01
+	K-40	1460.81	* 10.67	1.59E+01	2.51E+00	2.51E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-2.31E-01	9.05E-02	9.05E-02
		78.34	96.00	2.96E-01		1.18E-01
+	SC-46	889.25	99.98	1.03E-02	2.10E-01	2.10E-01
		1120.51	99.99	1.24E-01		2.92E-01
+	V-48	983.52	99.98	5.66E-02	7.40E-01	7.42E-01
		1312.10	97.50	-1.77E-01		7.40E-01
+	CR-51	320.08	9.83	-1.75E-01	2.70E+00	2.70E+00
+	MN-54	834.83	99.97	-5.15E-02	1.59E-01	1.59E-01
+	CO-56	846.75	99.96	4.64E-02	2.02E-01	2.02E-01
		1037.75	14.03	5.21E-02		1.49E+00
		1238.25	67.00	1.69E-01		5.02E-01
		1771.40	15.51	-1.77E-01		1.48E+00
		2598.48	16.90	-1.54E-01		8.59E-01
+	CO-57	122.06	* 85.51	8.03E-02	1.25E-01	1.25E-01
		136.48	10.60	-9.53E-02		9.56E-01
+	CO-58	810.76	99.40	7.00E-02	2.17E-01	2.17E-01
+	FE-59	1099.22	56.50	-2.39E-01	5.45E-01	5.45E-01
		1291.56	43.20	-9.63E-02		6.45E-01
+	CO-60	1173.22	100.00	-2.10E-02	1.41E-01	2.01E-01
		1332.49	100.00	-1.87E-03		1.41E-01
+	ZN-65	1115.52	50.75	-5.07E-01	4.18E-01	4.18E-01
+	GA-67	93.31	* 35.70	5.76E+02	7.73E+02	7.99E+02
		208.95	2.24	2.06E+03		5.02E+03
		300.22	16.00	-5.36E+01		7.73E+02
+	SE-75	121.11	16.70	-7.73E-02	1.92E-01	6.51E-01
		136.00	59.20	2.09E-02		1.92E-01
		264.65	59.80	-1.35E-01		2.18E-01
		279.53	25.20	4.37E-01		5.83E-01
		400.65	11.40	8.67E-01		1.37E+00
+	RB-82	776.52	13.00	6.37E-01	2.90E+00	2.90E+00
+	RB-83	520.41	46.00	5.32E-03	3.62E-01	3.62E-01
		529.64	30.30	-9.88E-02		5.43E-01
		552.65	16.40	-1.36E-01		1.05E+00
+	KR-85	513.99	0.43	5.45E+01	4.16E+01	4.16E+01
+	SR-85	513.99	99.27	3.35E-01	2.55E-01	2.55E-01
+	Y-88	898.02	93.40	3.65E-02	1.89E-01	2.17E-01
		1836.01	99.38	1.01E-02		1.89E-01
+	NB-93M	16.57	9.43	9.94E-01	4.26E-01	4.26E-01
+	NB-94	702.63	100.00	-1.66E-02	1.54E-01	1.58E-01
		871.10	100.00	1.86E-02		1.54E-01

Analysis Report for 1510088-11
CP1804S10-11

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-95	765.79	99.81	1.79E-01	3.36E-01	3.36E-01
+	NB-95M	235.69	25.00	8.99E+02	3.48E+02	3.48E+02
+	ZR-95	724.18	43.70	1.08E-01	4.18E-01	5.99E-01
		756.72	55.30	-1.11E-01		4.18E-01
+	MO-99	181.06	6.20	2.10E+02	4.15E+03	6.05E+03
		739.58	12.80	2.64E+03		4.15E+03
		778.00	4.50	-6.18E+03		1.11E+04
+	RU-103	497.08	89.00	-9.08E-02	2.47E-01	2.47E-01
+	RU-106	621.84	9.80	2.91E-01	1.49E+00	1.49E+00
+	AG-108M	433.93	89.90	-6.92E-04	1.30E-01	1.30E-01
		614.37	90.40	-3.27E-02		2.03E-01
		722.95	90.50	1.72E-02		1.92E-01
+	CD-109	88.03	* 3.72	5.24E+00	8.08E+00	8.08E+00
+	AG-110M	657.75	93.14	-2.32E-02	1.71E-01	1.71E-01
		677.61	10.53	-8.28E-01		1.44E+00
		706.67	16.46	-6.84E-02		1.07E+00
		763.93	21.98	3.10E-01		8.69E-01
		884.67	71.63	-2.88E-02		1.94E-01
		1384.27	23.94	9.83E-02		7.35E-01
+	CD-113M	263.70	0.02	-3.31E+02	4.65E+02	4.65E+02
+	SN-113	255.12	1.93	-2.87E-01	2.29E-01	6.73E+00
		391.69	64.90	4.10E-02		2.29E-01
+	TE123M	159.00	84.10	-4.45E-02	1.41E-01	1.41E-01
+	SB-124	602.71	97.87	7.56E-02	2.05E-01	2.05E-01
		645.85	7.26	-7.58E-01		2.57E+00
		722.78	11.10	4.40E-01		2.19E+00
		1691.02	49.00	-8.41E-02		3.56E-01
+	I-125	35.49	6.49	3.39E-01	1.12E+00	1.12E+00
+	SB-125	176.33	6.89	-7.02E-01	4.32E-01	1.52E+00
		427.89	29.33	1.01E-01		4.32E-01
		463.38	10.35	1.33E+00		1.37E+00
		600.56	17.80	2.50E-01		7.70E-01
		635.90	11.32	-4.72E-01		1.17E+00
+	SB-126	414.70	83.30	1.31E-01	8.76E-01	8.76E-01
		666.33	99.60	1.11E-01		9.21E-01
		695.00	99.60	1.36E-01		9.96E-01
		720.50	53.80	6.77E-01		1.92E+00
+	SN-126	87.57	* 37.00	5.02E-01	7.74E-01	7.74E-01
+	SB-127	473.00	25.00	9.91E+00	1.48E+02	1.63E+02
		685.20	35.70	3.59E+01		1.48E+02
		783.80	14.70	9.14E+01		3.68E+02
+	I-129	29.78	57.00	-3.55E-02	8.22E-02	8.22E-02
		33.60	13.20	2.83E-02		3.72E-01
		39.58	7.52	8.35E-02		6.96E-01
+	I-131	284.30	6.05	-4.28E+00	2.16E+00	3.05E+01
		364.48	81.20	-7.83E-01		2.16E+00
		636.97	7.26	-4.13E+00		2.95E+01
		722.89	1.80	3.03E+01		1.51E+02

Analysis Report for 1510088-11
CP1804S10-11

	<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>
+	TE-132	49.72	13.10	-1.34E+02	1.19E+02	4.74E+02
		228.16	88.00	-2.12E+01		1.19E+02
+	BA-133	81.00	33.00	-4.23E-01	2.89E-01	3.19E-01
		302.84	17.80	3.68E-02		6.69E-01
		356.01	60.00	6.04E-01		2.89E-01
+	I-133	529.87	86.30	-4.48E+09	2.46E+10	2.46E+10
+	XE-133	81.00	38.00	-2.62E+01	1.97E+01	1.97E+01
+	CS-134	563.23	8.38	5.06E-01	1.88E-01	1.78E+00
		569.32	15.43	-2.52E-01		8.99E-01
		604.70	97.60	2.31E-02		1.88E-01
		795.84	85.40	3.87E-02		2.03E-01
		801.93	8.73	-4.84E-01		1.83E+00
+	CS-135	268.24	16.00	2.26E-01	7.31E-01	7.31E-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	5.19E-01	8.40E-01	7.11E+00
		163.89	4.61	-9.64E-01		1.22E+01
		176.55	13.56	-1.91E+00		4.15E+00
		273.65	12.66	3.04E+00		5.36E+00
		340.57	48.50	2.07E+00		1.63E+00
		818.50	99.70	-3.61E-01		8.40E-01
		1048.07	79.60	-3.42E-02		1.16E+00
		1235.34	19.70	5.69E-01		6.81E+00
+	CS-137	661.65	85.12	7.00E-02	1.82E-01	1.82E-01
+	LA-138	788.74	34.00	-1.17E-01	2.11E-01	4.69E-01
		1435.80	66.00	2.43E-02		2.11E-01
+	CE-139	165.85	80.35	-2.16E-02	1.49E-01	1.49E-01
+	BA-140	162.64	6.70	-1.67E-01	3.17E+00	8.77E+00
		304.84	4.50	3.21E+00		1.47E+01
		423.70	3.20	-1.48E+00		2.19E+01
		437.55	2.00	-2.70E+01		3.12E+01
		537.32	25.00	1.59E+00		3.17E+00
+	LA-140	328.77	20.50	1.64E+00	1.02E+00	3.58E+00
		487.03	45.50	-6.17E-01		1.60E+00
		815.85	23.50	-9.31E-01		3.73E+00
		1596.49	95.49	-1.27E-01		1.02E+00
+	CE-141	145.44	48.40	1.16E-01	3.96E-01	3.96E-01
+	CE-143	57.36	11.80	-1.01E+05	4.12E+06	7.19E+06
		293.26	42.00	1.52E+04		4.12E+06
		664.55	5.20	6.71E+06		3.52E+07
+	CE-144	133.54	10.80	-8.89E-02	9.32E-01	9.32E-01
+	PM-144	476.78	42.00	6.09E-02	1.42E-01	3.29E-01
		618.01	98.60	-2.63E-02		1.42E-01
		696.49	99.49	-3.71E-02		1.69E-01
+	PM-145	36.85	21.70	9.57E-02	1.29E-01	2.35E-01
		37.36	39.70	3.09E-02		1.29E-01
		42.30	15.10	-2.56E-02		3.75E-01
		72.40	2.31	7.67E+00		4.66E+00

Analysis Report for 1510088-11
CP1804S10-11

	<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	8.25E-02	3.31E-01	3.31E-01
		735.90	14.01	-1.37E+00		9.44E-01
		747.13	13.10	-1.37E-01		1.16E+00
+	ND-147	91.11	28.90	7.37E+00	2.90E+00	2.90E+00
		531.02	13.10	-7.88E-02		7.64E+00
+	PM-149	285.90	3.10	-9.22E+03	9.19E+04	9.19E+04
+	EU-152	121.78	20.50	-2.03E-02	4.46E-01	4.46E-01
		244.69	5.40	5.78E-02		2.55E+00
		344.27	19.13	9.54E-02		6.18E-01
		778.89	9.20	-8.85E-01		1.59E+00
		964.01	10.40	-4.12E-02		1.75E+00
		1085.78	7.22	-2.79E-01		2.32E+00
		1112.02	9.60	7.83E-01		2.15E+00
		1407.95	14.94	5.22E-01		1.20E+00
+	GD-153	97.43	31.30	-1.60E-01	3.13E-01	3.13E-01
		103.18	22.20	2.27E-02		4.17E-01
+	EU-154	123.07	40.50	-2.59E-02	2.28E-01	2.28E-01
		723.30	19.70	7.95E-02		8.87E-01
		873.19	11.50	-8.15E-02		1.29E+00
		996.32	10.30	4.61E-02		1.72E+00
		1004.76	17.90	-3.87E-02		1.03E+00
		1274.45	35.50	-2.53E-01		5.16E-01
+	EU-155	86.50	30.90	1.46E-01	3.33E-01	3.33E-01
		105.30	20.70	-4.87E-03		4.10E-01
+	EU-156	811.77	10.40	1.02E+00	6.55E+00	6.55E+00
		1153.47	7.20	9.94E-01		1.21E+01
		1230.71	8.90	-5.17E+00		1.07E+01
+	HO-166M	184.41	72.60	1.86E-01	1.62E-01	1.62E-01
		280.45	29.60	9.04E-02		3.99E-01
		410.94	11.10	-2.00E-02		1.04E+00
		711.69	54.10	-6.82E-02		2.89E-01
+	TM-171	66.72	0.14	-8.68E+00	6.41E+01	6.41E+01
+	HF-172	81.75	4.52	-8.40E+00	8.76E-01	2.24E+00
		125.81	11.30	2.28E-01		8.76E-01
+	LU-172	181.53	20.60	2.05E-01	8.78E+00	1.54E+01
		810.06	16.63	8.62E+00		2.67E+01
		912.12	15.25	6.32E+01		4.76E+01
		1093.66	62.50	3.66E+00		8.78E+00
+	LU-173	100.72	5.24	-2.35E+00	5.98E-01	1.64E+00
		272.11	21.20	2.05E-01		5.98E-01
+	HF-175	343.40	84.00	2.97E-02	2.06E-01	2.06E-01
+	LU-176	88.34	13.30	1.43E+00	1.17E-01	8.00E-01
		201.83	86.00	-7.29E-02		1.23E-01
		306.78	94.00	-8.58E-02		1.17E-01
+	TA-182	67.75	41.20	-6.42E-01	2.52E-01	2.52E-01
		1121.30	34.90	5.05E-01		7.80E-01
		1189.05	16.23	-1.70E-01		1.54E+00
		1221.41	26.98	4.04E-01		1.06E+00
		1231.02	11.44	-1.12E+00		2.33E+00

Analysis Report for 1510088-11
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	IR-192	308.46	29.68	-1.26E-01	3.32E-01	5.03E-01
		468.07	48.10	-1.30E-01		3.32E-01
+	HG-203	279.19	77.30	1.91E-01	2.55E-01	2.55E-01
+	BI-207	569.67	97.72	-3.87E-02	1.38E-01	1.38E-01
		1063.62	74.90	9.59E-03		2.25E-01
+	TL-208	583.14	* 30.22	1.06E+00	4.28E-01	8.48E-01
		860.37	4.48	1.27E+00		3.94E+00
		2614.66	* 35.85	1.21E+00		4.28E-01
+	BI-210M	262.00	45.00	2.73E-03	2.37E-01	2.37E-01
		300.00	23.00	3.30E-02		6.22E-01
+	PB-210	46.50	* 4.25	9.26E-01	1.84E+00	1.84E+00
+	PB-211	404.84	2.90	-2.31E-01	4.30E+00	4.30E+00
		831.96	2.90	-2.97E+00		4.86E+00
+	BI-212	727.17	* 11.80	1.15E+00	1.73E+00	1.73E+00
		1620.62	2.75	1.35E+00		5.63E+00
+	PB-212	238.63	* 44.60	1.88E+00	4.81E-01	4.81E-01
		300.09	3.41	2.23E-01		4.19E+00
+	BI-214	609.31	* 46.30	1.56E+00	3.74E-01	3.74E-01
		1120.29	15.10	6.27E-01		1.48E+00
		1764.49	* 15.80	1.58E+00		7.09E-01
		2204.22	4.98	2.38E+00		4.37E+00
+	PB-214	295.21	* 19.19	1.37E+00	5.18E-01	8.16E-01
		351.92	* 37.19	1.25E+00		5.18E-01
+	RN-219	401.80	* 6.50	1.98E+00	2.33E+00	2.33E+00
+	RA-223	323.87	3.88	-1.00E+00	3.14E+00	3.14E+00
+	RA-224	240.98	3.95	1.99E+01	4.87E+00	4.87E+00
+	RA-225	40.00	31.00	9.23E-02	7.69E-01	7.69E-01
+	RA-226	186.21	* 3.28	3.88E+00	3.96E+00	3.96E+00
+	TH-227	50.10	8.40	-2.16E-01	7.66E-01	7.66E-01
		236.00	11.50	3.95E+00		1.53E+00
		256.20	6.30	-2.63E-02		1.70E+00
+	AC-228	338.32	* 11.40	1.61E+00	1.04E+00	1.47E+00
		911.07	* 27.70	1.54E+00		1.04E+00
		969.11	* 16.60	1.60E+00		1.60E+00
+	TH-230	48.44	16.90	-5.98E-02	3.75E-01	3.75E-01
		62.85	4.60	1.73E+00		1.79E+00
		67.67	0.37	-5.87E+01		2.30E+01
+	PA-231	283.67	1.60	-1.00E+00	5.15E+00	7.15E+00
		302.67	2.30	2.83E-01		5.15E+00
+	TH-231	25.64	14.70	-8.24E-02	3.19E-01	3.19E-01
		84.21	6.40	-6.09E+00		1.47E+00
+	PA-233	311.98	38.60	-2.69E-02	6.60E-01	6.60E-01
+	PA-234	131.20	20.40	7.06E-02	4.62E-01	4.62E-01
		733.99	8.80	-1.63E+00		1.50E+00
		946.00	12.00	-6.06E-02		1.20E+00
+	PA-234M	1001.03	0.92	1.10E+01	2.11E+01	2.11E+01
+	TH-234	63.29	* 3.80	2.45E+00	2.52E+00	2.52E+00

Analysis Report for 1510088-11
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	U-235	143.76	10.50	2.00E-01	9.07E-01	9.07E-01
		163.35	4.70	-1.72E-01		2.18E+00
		205.31	4.70	8.63E-01		2.43E+00
+	NP-237	86.50	12.60	3.54E-01	8.06E-01	8.06E-01
+	NP-239	106.10	22.70	-5.95E+01	5.01E+03	5.01E+03
		228.18	10.70	-2.78E+03		1.34E+04
		277.60	14.10	5.95E+02		1.15E+04
+	AM-241	59.54	35.90	-2.45E-02	2.17E-01	2.17E-01
+	AM-243	74.67	66.00	7.85E-01	1.76E-01	1.76E-01
+	CM-243	209.75	3.29	1.35E+00	8.58E-01	3.59E+00
		228.14	10.60	-1.82E-01		1.02E+00
		277.60	14.00	4.44E-02		8.58E-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
- ? = 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	1.92E+00	1.92E+00	3.64E-01	9.07E-01
	NA-22	1274.54	99.94	1.86E-01	1.86E-01	-9.13E-02	8.40E-02
	NA-24	1368.53	99.99	5.98E+14	4.82E+14	-3.65E+13	2.64E+14
		2754.09	99.86	4.82E+14		-4.98E+12	1.81E+14
	AL-26	1808.65	99.76	1.08E-01	1.08E-01	-2.26E-03	4.20E-02
+	K-40	1460.81	* 10.67	2.51E+00	2.51E+00	1.59E+01	1.16E+00
@	AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88	94.40	9.05E-02	9.05E-02	-2.31E-01	4.45E-02
		78.34	96.00	1.18E-01		2.96E-01	5.82E-02
	SC-46	889.25	99.98	2.10E-01	2.10E-01	1.03E-02	9.66E-02

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Analysis Report for 1510088-11
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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	2.92E-01	2.10E-01	1.24E-01	1.36E-01
V-48	983.52	99.98	7.42E-01	7.40E-01	5.66E-02	3.42E-01
	1312.10	97.50	7.40E-01		-1.77E-01	3.31E-01
CR-51	320.08	9.83	2.70E+00	2.70E+00	-1.75E-01	1.30E+00
MN-54	834.83	99.97	1.59E-01	1.59E-01	-5.15E-02	7.30E-02
CO-56	846.75	99.96	2.02E-01	2.02E-01	4.64E-02	9.27E-02
	1037.75	14.03	1.49E+00		5.21E-02	6.74E-01
	1238.25	67.00	5.02E-01		1.69E-01	2.34E-01
	1771.40	15.51	1.48E+00		-1.77E-01	6.37E-01
	2598.48	16.90	8.59E-01		-1.54E-01	3.04E-01
+ CO-57	122.06	* 85.51	1.25E-01	1.25E-01	8.03E-02	6.11E-02
	136.48	10.60	9.56E-01		-9.53E-02	4.66E-01
CO-58	810.76	99.40	2.17E-01	2.17E-01	7.00E-02	1.00E-01
FE-59	1099.22	56.50	5.45E-01	5.45E-01	-2.39E-01	2.50E-01
	1291.56	43.20	6.45E-01		-9.63E-02	2.87E-01
CO-60	1173.22	100.00	2.01E-01	1.41E-01	-2.10E-02	9.18E-02
	1332.49	100.00	1.41E-01		-1.87E-03	6.10E-02
ZN-65	1115.52	50.75	4.18E-01	4.18E-01	-5.07E-01	1.92E-01
+ GA-67	93.31	* 35.70	7.99E+02	7.73E+02	5.76E+02	3.97E+02
	208.95	2.24	5.02E+03		2.06E+03	2.44E+03
	300.22	16.00	7.73E+02		-5.36E+01	3.73E+02
SE-75	121.11	16.70	6.51E-01	1.92E-01	-7.73E-02	3.18E-01
	136.00	59.20	1.92E-01		2.09E-02	9.35E-02
	264.65	59.80	2.18E-01		-1.35E-01	1.05E-01
	279.53	25.20	5.83E-01		4.37E-01	2.82E-01
	400.65	11.40	1.37E+00		8.67E-01	6.53E-01
RB-82	776.52	13.00	2.90E+00	2.90E+00	6.37E-01	1.35E+00
RB-83	520.41	46.00	3.62E-01	3.62E-01	5.32E-03	1.70E-01
	529.64	30.30	5.43E-01		-9.88E-02	2.55E-01
	552.65	16.40	1.05E+00		-1.36E-01	4.94E-01
KR-85	513.99	0.43	4.16E+01	4.16E+01	5.45E+01	1.99E+01
SR-85	513.99	99.27	2.55E-01	2.55E-01	3.35E-01	1.22E-01
Y-88	898.02	93.40	2.17E-01	1.89E-01	3.65E-02	9.97E-02
	1836.01	99.38	1.89E-01		1.01E-02	7.90E-02
NB-93M	16.57	9.43	4.26E-01	4.26E-01	9.94E-01	2.07E-01
NB-94	702.63	100.00	1.58E-01	1.54E-01	-1.66E-02	7.37E-02
	871.10	100.00	1.54E-01		1.86E-02	7.09E-02
NB-95	765.79	99.81	3.36E-01	3.36E-01	1.79E-01	1.58E-01
NB-95M	235.69	25.00	3.48E+02	3.48E+02	8.99E+02	1.70E+02
ZR-95	724.18	43.70	5.99E-01	4.18E-01	1.08E-01	2.82E-01
	756.72	55.30	4.18E-01		-1.11E-01	1.95E-01
MO-99	181.06	6.20	6.05E+03	4.15E+03	2.10E+02	2.94E+03
	739.58	12.80	4.15E+03		2.64E+03	1.93E+03
	778.00	4.50	1.11E+04		-6.18E+03	5.12E+03
RU-103	497.08	89.00	2.47E-01	2.47E-01	-9.08E-02	1.17E-01
RU-106	621.84	9.80	1.49E+00	1.49E+00	2.91E-01	6.94E-01
AG-108M	433.93	89.90	1.30E-01	1.30E-01	-6.92E-04	6.15E-02
	614.37	90.40	2.03E-01		-3.27E-02	9.67E-02
	722.95	90.50	1.92E-01		1.72E-02	9.01E-02
+ CD-109	88.03	* 3.72	8.08E+00	8.08E+00	5.24E+00	4.02E+00
AG-110M	657.75	93.14	1.71E-01	1.71E-01	-2.32E-02	8.00E-02
	677.61	10.53	1.44E+00		-8.28E-01	6.68E-01
	706.67	16.46	1.07E+00		-6.84E-02	5.00E-01

Analysis Report for 1510088-11
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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	8.69E-01	1.71E-01	3.10E-01	4.07E-01
	884.67	71.63	1.94E-01		-2.88E-02	8.70E-02
	1384.27	23.94	7.35E-01		9.83E-02	3.23E-01
CD-113M	263.70	0.02	4.65E+02	4.65E+02	-3.31E+02	2.24E+02
SN-113	255.12	1.93	6.73E+00	2.29E-01	-2.87E-01	3.24E+00
	391.69	64.90	2.29E-01		4.10E-02	1.09E-01
TE123M	159.00	84.10	1.41E-01	1.41E-01	-4.45E-02	6.84E-02
SB-124	602.71	97.87	2.05E-01	2.05E-01	7.56E-02	9.59E-02
	645.85	7.26	2.57E+00		-7.58E-01	1.19E+00
	722.78	11.10	2.19E+00		4.40E-01	1.03E+00
	1691.02	49.00	3.56E-01		-8.41E-02	1.44E-01
I-125	35.49	6.49	1.12E+00	1.12E+00	3.39E-01	5.45E-01
SB-125	176.33	6.89	1.52E+00	4.32E-01	-7.02E-01	7.40E-01
	427.89	29.33	4.32E-01		1.01E-01	2.05E-01
	463.38	10.35	1.37E+00		1.33E+00	6.49E-01
	600.56	17.80	7.70E-01		2.50E-01	3.60E-01
	635.90	11.32	1.17E+00		-4.72E-01	5.46E-01
SB-126	414.70	83.30	8.76E-01	8.76E-01	1.31E-01	4.16E-01
	666.33	99.60	9.21E-01		1.11E-01	4.31E-01
	695.00	99.60	9.96E-01		1.36E-01	4.67E-01
	720.50	53.80	1.92E+00		6.77E-01	9.02E-01
+ SN-126	87.57	* 37.00	7.74E-01	7.74E-01	5.02E-01	3.85E-01
SB-127	473.00	25.00	1.63E+02	1.48E+02	9.91E+00	7.69E+01
	685.20	35.70	1.48E+02		3.59E+01	6.92E+01
	783.80	14.70	3.68E+02		9.14E+01	1.71E+02
I-129	29.78	57.00	8.22E-02	8.22E-02	-3.55E-02	4.01E-02
	33.60	13.20	3.72E-01		2.83E-02	1.81E-01
	39.58	7.52	6.96E-01		8.35E-02	3.40E-01
I-131	284.30	6.05	3.05E+01	2.16E+00	-4.28E+00	1.47E+01
	364.48	81.20	2.16E+00		-7.83E-01	1.02E+00
	636.97	7.26	2.95E+01		-4.13E+00	1.37E+01
	722.89	1.80	1.51E+02		3.03E+01	7.07E+01
TE-132	49.72	13.10	4.74E+02	1.19E+02	-1.34E+02	2.32E+02
	228.16	88.00	1.19E+02		-2.12E+01	5.76E+01
BA-133	81.00	33.00	3.19E-01	2.89E-01	-4.23E-01	1.57E-01
	302.84	17.80	6.69E-01		3.68E-02	3.22E-01
	356.01	60.00	2.89E-01		6.04E-01	1.40E-01
I-133	529.87	86.30	2.46E+10	2.46E+10	-4.48E+09	1.16E+10
XE-133	81.00	38.00	1.97E+01	1.97E+01	-2.62E+01	9.70E+00
CS-134	563.23	8.38	1.78E+00	1.88E-01	5.06E-01	8.39E-01
	569.32	15.43	8.99E-01		-2.52E-01	4.22E-01
	604.70	97.60	1.88E-01		2.31E-02	8.94E-02
	795.84	85.40	2.03E-01		3.87E-02	9.47E-02
	801.93	8.73	1.83E+00		-4.84E-01	8.48E-01
CS-135	268.24	16.00	7.31E-01	7.31E-01	2.26E-01	3.53E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	7.11E+00	8.40E-01	5.19E-01	3.46E+00
	163.89	4.61	1.22E+01		-9.64E-01	5.96E+00
	176.55	13.56	4.15E+00		-1.91E+00	2.02E+00
	273.65	12.66	5.36E+00		3.04E+00	2.59E+00
	340.57	48.50	1.63E+00		2.07E+00	7.87E-01

Analysis Report for 1510088-11
CP1804S10-11

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-136	818.50	99.70	8.40E-01	8.40E-01	-3.61E-01	3.88E-01
	1048.07	79.60	1.16E+00		-3.42E-02	5.26E-01
	1235.34	19.70	6.81E+00		5.69E-01	3.16E+00
CS-137	661.65	85.12	1.82E-01	1.82E-01	7.00E-02	8.52E-02
	LA-138	788.74	34.00		4.69E-01	2.11E-01	-1.17E-01	2.18E-01
CE-139	1435.80	66.00	2.11E-01	1.49E-01	2.43E-02	9.05E-02
	165.85	80.35	1.49E-01		1.49E-01	-2.16E-02	7.27E-02
BA-140	162.64	6.70	8.77E+00	3.17E+00	-1.67E-01	4.27E+00
	304.84	4.50	1.47E+01		3.21E+00	7.08E+00
	423.70	3.20	2.19E+01		-1.48E+00	1.04E+01
	437.55	2.00	3.12E+01		-2.70E+01	1.47E+01
	537.32	25.00	3.17E+00		1.59E+00	1.49E+00
LA-140	328.77	20.50	3.58E+00	1.02E+00	1.64E+00	1.72E+00
	487.03	45.50	1.60E+00		-6.17E-01	7.57E-01
	815.85	23.50	3.73E+00		-9.31E-01	1.72E+00
	1596.49	95.49	1.02E+00		-1.27E-01	4.42E-01
CE-141	145.44	48.40	3.96E-01	3.96E-01	1.16E-01	1.93E-01
CE-143	57.36	11.80	7.19E+06	4.12E+06	-1.01E+05	3.52E+06
	293.26	42.00	4.12E+06		1.52E+04	2.00E+06
	664.55	5.20	3.52E+07		6.71E+06	1.65E+07
CE-144	133.54	10.80	9.32E-01	9.32E-01	-8.89E-02	4.54E-01
PM-144	476.78	42.00	3.29E-01	1.42E-01	6.09E-02	1.56E-01
	618.01	98.60	1.42E-01		-2.63E-02	6.60E-02
	696.49	99.49	1.69E-01		-3.71E-02	7.93E-02
PM-145	36.85	21.70	2.35E-01	1.29E-01	9.57E-02	1.15E-01
	37.36	39.70	1.29E-01		3.09E-02	6.27E-02
	42.30	15.10	3.75E-01		-2.56E-02	1.83E-01
	72.40	2.31	4.66E+00		7.67E+00	2.30E+00
PM-146	453.90	39.94	3.31E-01	3.31E-01	8.25E-02	1.57E-01
	735.90	14.01	9.44E-01		-1.37E+00	4.34E-01
	747.13	13.10	1.16E+00		-1.37E-01	5.37E-01
ND-147	91.11	28.90	2.90E+00	2.90E+00	7.37E+00	1.43E+00
	531.02	13.10	7.64E+00		-7.88E-02	3.59E+00
PM-149	285.90	3.10	9.19E+04	9.19E+04	-9.22E+03	4.42E+04
EU-152	121.78	20.50	4.46E-01	4.46E-01	-2.03E-02	2.18E-01
	244.69	5.40	2.55E+00		5.78E-02	1.24E+00
	344.27	19.13	6.18E-01		9.54E-02	2.95E-01
	778.89	9.20	1.59E+00		-8.85E-01	7.33E-01
	964.01	10.40	1.75E+00		-4.12E-02	8.06E-01
	1085.78	7.22	2.32E+00		-2.79E-01	1.05E+00
	1112.02	9.60	2.15E+00		7.83E-01	9.90E-01
GD-153	1407.95	14.94	1.20E+00	3.13E-01	5.22E-01	5.34E-01
	97.43	31.30	3.13E-01		-1.60E-01	1.53E-01
	103.18	22.20	4.17E-01		2.27E-02	2.04E-01
EU-154	123.07	40.50	2.28E-01	2.28E-01	-2.59E-02	1.11E-01
	723.30	19.70	8.87E-01		7.95E-02	4.17E-01
	873.19	11.50	1.29E+00		-8.15E-02	5.92E-01
	996.32	10.30	1.72E+00		4.61E-02	7.89E-01
	1004.76	17.90	1.03E+00		-3.87E-02	4.73E-01
	1274.45	35.50	5.16E-01		-2.53E-01	2.32E-01
EU-155	86.50	30.90	3.33E-01	3.33E-01	1.46E-01	1.64E-01
	105.30	20.70	4.10E-01		-4.87E-03	2.00E-01
EU-156	811.77	10.40	6.55E+00	6.55E+00	1.02E+00	3.03E+00

Analysis Report for 1510088-11

CP1804S10-11

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
EU-156	1153.47	7.20	1.21E+01	6.55E+00	9.94E-01	5.55E+00	
	1230.71	8.90	1.07E+01		-5.17E+00	4.94E+00	
HO-166M	184.41	72.60	1.62E-01	1.62E-01	1.86E-01	7.91E-02	
	280.45	29.60	3.99E-01		9.04E-02	1.93E-01	
	410.94	11.10	1.04E+00		-2.00E-02	4.93E-01	
	711.69	54.10	2.89E-01		-6.82E-02	1.35E-01	
TM-171	66.72	0.14	6.41E+01	6.41E+01	-8.68E+00	3.15E+01	
HF-172	81.75	4.52	2.24E+00	8.76E-01	-8.40E+00	1.10E+00	
	125.81	11.30	8.76E-01		2.28E-01	4.28E-01	
LU-172	181.53	20.60	1.54E+01	8.78E+00	2.05E-01	7.52E+00	
	810.06	16.63	2.67E+01		8.62E+00	1.24E+01	
	912.12	15.25	4.76E+01		6.32E+01	2.26E+01	
	1093.66	62.50	8.78E+00		3.66E+00	4.04E+00	
LU-173	100.72	5.24	1.64E+00	5.98E-01	-2.35E+00	8.03E-01	
	272.11	21.20	5.98E-01		2.05E-01	2.89E-01	
HF-175	343.40	84.00	2.06E-01	2.06E-01	2.97E-02	9.87E-02	
LU-176	88.34	13.30	8.00E-01	1.17E-01	1.43E+00	3.94E-01	
	201.83	86.00	1.23E-01		-7.29E-02	5.96E-02	
	306.78	94.00	1.17E-01		-8.58E-02	5.63E-02	
TA-182	67.75	41.20	2.52E-01	2.52E-01	-6.42E-01	1.24E-01	
	1121.30	34.90	7.80E-01		5.05E-01	3.62E-01	
	1189.05	16.23	1.54E+00		-1.70E-01	7.06E-01	
	1221.41	26.98	1.06E+00		4.04E-01	4.89E-01	
	1231.02	11.44	2.33E+00		-1.12E+00	1.07E+00	
IR-192	308.46	29.68	5.03E-01	3.32E-01	-1.26E-01	2.41E-01	
	468.07	48.10	3.32E-01		-1.30E-01	1.57E-01	
HG-203	279.19	77.30	2.55E-01	2.55E-01	1.91E-01	1.23E-01	
BI-207	569.67	97.72	1.38E-01	1.38E-01	-3.87E-02	6.48E-02	
	1063.62	74.90	2.25E-01		9.59E-03	1.02E-01	
+ TL-208	583.14	*	30.22	4.28E-01	1.06E+00	4.10E-01	
	860.37		4.48		3.94E+00	1.27E+00	1.83E+00
	2614.66	*	35.85		4.28E-01	1.21E+00	1.69E-01
BI-210M	262.00	45.00	2.37E-01	2.37E-01	2.73E-03	1.14E-01	
	300.00	23.00	6.22E-01		3.30E-02	3.01E-01	
+ PB-210	46.50	*	1.84E+00	1.84E+00	9.26E-01	9.04E-01	
	404.84		2.90		4.30E+00	-2.31E-01	2.05E+00
+ BI-212	831.96		2.90	1.73E+00	4.86E+00	2.22E+00	
	727.17	*	11.80		1.73E+00	1.15E+00	8.19E-01
+ PB-212	1620.62		2.75	4.81E-01	5.63E+00	2.41E+00	
	238.63	*	44.60		4.81E-01	1.88E+00	2.37E-01
+ BI-214	300.09		3.41	3.74E-01	4.19E+00	2.03E+00	
	609.31	*	46.30		3.74E-01	1.56E+00	1.78E-01
+ PB-214	1120.29		15.10	5.18E-01	1.48E+00	6.87E-01	
	1764.49	*	15.80		7.09E-01	1.58E+00	2.79E-01
	2204.22		4.98		4.37E+00	2.38E+00	1.90E+00
+ RN-219	295.21	*	19.19	2.33E+00	8.16E-01	3.97E-01	
	351.92	*	37.19		5.18E-01	1.25E+00	2.52E-01
+ RA-223	401.80	*	6.50	3.14E+00	2.33E+00	1.12E+00	
	323.87		3.88		3.14E+00	-1.00E+00	1.51E+00
RA-224	240.98	3.95	4.87E+00	4.87E+00	1.99E+01	2.39E+00	
RA-225	40.00	31.00	7.69E-01	7.69E-01	9.23E-02	3.75E-01	
+ RA-226	186.21	*	3.28	3.96E+00	3.88E+00	1.93E+00	
TH-227	50.10	8.40	7.66E-01	7.66E-01	-2.16E-01	3.75E-01	

Analysis Report for 1510088-11
 CP1804S10-11

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	1.53E+00	7.66E-01	3.95E+00	7.49E-01
	256.20	6.30	1.70E+00		-2.63E-02	8.17E-01
+ AC-228	338.32 *	11.40	1.47E+00	1.04E+00	1.61E+00	7.11E-01
	911.07 *	27.70	1.04E+00		1.54E+00	4.97E-01
	969.11 *	16.60	1.60E+00		1.60E+00	7.58E-01
TH-230	48.44	16.90	3.75E-01	3.75E-01	-5.98E-02	1.84E-01
	62.85	4.60	1.79E+00		1.73E+00	8.81E-01
	67.67	0.37	2.30E+01		-5.87E+01	1.13E+01
PA-231	283.67	1.60	7.15E+00	5.15E+00	-1.00E+00	3.44E+00
	302.67	2.30	5.15E+00		2.83E-01	2.47E+00
TH-231	25.64	14.70	3.19E-01	3.19E-01	-8.24E-02	1.56E-01
	84.21	6.40	1.47E+00		-6.09E+00	7.23E-01
PA-233	311.98	38.60	6.60E-01	6.60E-01	-2.69E-02	3.16E-01
PA-234	131.20	20.40	4.62E-01	4.62E-01	7.06E-02	2.25E-01
	733.99	8.80	1.50E+00		-1.63E+00	6.89E-01
	946.00	12.00	1.20E+00		-6.06E-02	5.43E-01
PA-234M	1001.03	0.92	2.11E+01	2.11E+01	1.10E+01	9.78E+00
+ TH-234	63.29 *	3.80	2.52E+00	2.52E+00	2.45E+00	1.24E+00
U-235	143.76	10.50	9.07E-01	9.07E-01	2.00E-01	4.42E-01
	163.35	4.70	2.18E+00		-1.72E-01	1.06E+00
	205.31	4.70	2.43E+00		8.63E-01	1.18E+00
NP-237	86.50	12.60	8.06E-01	8.06E-01	3.54E-01	3.96E-01
NP-239	106.10	22.70	5.01E+03	5.01E+03	-5.95E+01	2.44E+03
	228.18	10.70	1.34E+04		-2.78E+03	6.49E+03
	277.60	14.10	1.15E+04		5.95E+02	5.54E+03
AM-241	59.54	35.90	2.17E-01	2.17E-01	-2.45E-02	1.06E-01
AM-243	74.67	66.00	1.76E-01	1.76E-01	7.85E-01	8.68E-02
CM-243	209.75	3.29	3.59E+00	8.58E-01	1.35E+00	1.74E+00
	228.14	10.60	1.02E+00		-1.82E-01	4.95E-01
	277.60	14.00	8.58E-01		4.44E-02	4.14E-01

- + = Nuclide identified during the nuclide identification
- * = Energy line found in the spectrum
- v = 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 1510088-11
CP1804S10-11

No Data Review Comments Entered.


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*****  S P E C T R A L  D A T A  R E P O R T  *****
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Sample Title: CP1804S10-11

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Elapsed Live time: 3600
Elapsed Real Time: 3644

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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																																																																																																																																																																																																																																																																																																																																																													
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17:	80	82	73	68	65	49	54	83	25:	52	82	52	51	58	52	48	67	33:	59	59	59	74	70	60	57	57	41:	64	62	71	76	90	106	86	84	49:	69	81	74	80	81	98	85	97	57:	97	80	86	93	116	165	142	130	65:	117	102	107	94	108	118	108	119	73:	191	232	283	278	255	156	103	91	81:	71	100	118	115	109	152	139	144	89:	138	112	136	164	128	109	82	59	97:	70	64	88	78	72	47	66	66	105:	64	78	71	78	54	68	69	74	113:	81	69	69	59	52	55	57	65	121:	64	89	68	65	66	51	77	66	129:	69	50	64	44	80	58	49	60	137:	57	61	57	52	56	55	60	65	145:	65	48	42	50	59	60	64	41	153:	56	54	48	39	47	44	50	69	161:	59	44	48	58	57	45	47	46	169:	56	47	59	44	48	45	41	49	177:	52	46	47	49	46	53	51	65	185:	76	64	56	60	32	41	47	47	193:	44	45	49	44	36	41	31	39	201:	42	50	37	35	46	40	49	47	209:	61	50	37	49	39	50	32	49	217:	37	43	36	44	34	38	41	32	225:	29	31	40	39	34	27	30	30	233:	42	43	38	58	132	223	177	91	241:	60	71	48	35	30	39	27	32	249:	30	30	28	30	28	32	26	21	257:	23	23	25	31	20	29	25	27	265:	25	21	22	30	40	41	27	32	273:	22	28	36	30	30	32	28	25	281:	30	29	27	18	19	23	29	24	289:	23	23	23	24	19	73	81	65	297:	23	26	33	24	22	22	29	17	305:	23	20	22	22	8	19	17	32	313:	26	14	19	20	20	21	20	28	321:	18	22	26	23	17	21	26	33	329:	30	22	22	20	11	25	20	26	337:	43	51	40	18	20	23	14	24	345:	19	14	19	15	27	52	83	110	353:	49	21	16	15	19	15	15	12	361:	14	13	10	15	17	9	21	13

369: 18 17 12 19 16 19 18 15

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Channel	1	2	3	4	5	6	7	8
377:	11	16	12	14	20	16	16	15
385:	13	17	21	15	12	19	18	15
393:	15	18	7	10	21	11	17	21
401:	8	23	21	18	12	9	14	10
409:	13	15	13	6	16	16	13	14
417:	12	14	12	12	13	13	9	16
425:	12	14	17	12	14	15	11	20
433:	10	4	11	8	10	10	10	9
441:	14	21	7	10	18	11	17	15
449:	14	14	12	17	13	14	13	11
457:	11	8	11	14	15	21	22	17
465:	13	5	10	9	6	6	13	11
473:	13	10	15	10	14	9	9	15
481:	13	9	16	10	15	10	10	12
489:	6	8	9	14	16	7	11	15
497:	10	8	11	7	4	11	10	17
505:	13	13	11	13	32	39	33	24
513:	15	11	7	12	6	12	13	4
521:	11	9	13	6	6	10	9	13
529:	10	10	8	10	5	10	9	12
537:	10	8	13	7	19	5	6	7
545:	9	9	13	14	7	9	8	9
553:	10	6	11	8	9	8	11	13
561:	14	12	9	10	7	10	8	11
569:	10	7	8	6	12	15	8	7
577:	10	6	11	7	17	43	48	35
585:	20	4	11	12	6	13	12	12
593:	8	11	8	8	7	15	6	16
601:	4	5	4	5	7	12	22	51
609:	80	56	15	19	7	5	5	4
617:	10	9	8	7	10	5	4	9
625:	6	12	4	8	5	9	6	11
633:	3	9	8	8	7	3	3	8
641:	9	9	5	5	6	6	6	5
649:	4	7	13	7	8	7	6	6
657:	12	6	4	9	11	7	7	9
665:	12	9	7	5	7	9	7	7
673:	7	8	9	6	9	6	2	6
681:	5	10	13	6	8	7	8	8
689:	9	7	12	8	7	8	9	12
697:	8	7	7	7	9	8	10	10
705:	8	5	6	7	9	10	7	13
713:	7	4	5	5	12	11	11	8
721:	7	8	6	11	4	10	17	22
729:	10	5	6	5	3	2	4	9
737:	5	5	4	11	6	8	9	2
745:	5	7	11	6	4	5	7	8
753:	12	9	4	6	6	8	5	7
761:	12	8	6	12	7	7	10	5
769:	9	6	5	5	9	6	4	4
777:	9	6	5	9	1	4	8	8
785:	9	5	10	5	6	3	5	6
793:	7	10	11	5	9	4	6	7

801: 9 6 2 7 5 6 7 2

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Channel	1	2	3	4	5	6	7	8
809:	8	6	7	6	8	2	5	6
817:	2	5	7	7	9	5	7	10
825:	4	6	8	4	5	2	3	2
833:	4	6	6	7	10	3	8	7
841:	4	7	4	5	5	6	3	4
849:	4	6	2	4	1	9	5	5
857:	5	2	10	5	15	8	5	4
865:	4	5	7	5	5	1	6	2
873:	11	4	2	3	5	5	5	1
881:	4	6	2	2	2	3	4	3
889:	11	5	8	4	5	3	9	7
897:	4	7	5	2	6	3	8	0
905:	3	3	3	4	10	22	32	23
913:	12	9	2	2	5	8	6	4
921:	3	8	7	5	5	3	2	1
929:	4	3	3	9	7	5	4	2
937:	3	5	9	6	3	3	5	3
945:	2	4	3	1	5	5	3	7
953:	3	6	4	3	6	3	3	1
961:	5	1	2	6	11	6	8	9
969:	25	14	6	3	3	3	4	4
977:	8	7	1	7	7	7	8	4
985:	4	6	4	3	4	5	3	5
993:	2	4	6	3	5	7	5	6
1001:	8	6	2	10	4	3	2	5
1009:	2	4	9	4	5	2	2	6
1017:	3	3	6	4	4	4	1	4
1025:	1	6	7	3	3	1	5	4
1033:	2	5	3	4	9	4	0	4
1041:	0	2	2	6	6	1	5	5
1049:	2	4	3	3	5	6	6	1
1057:	1	10	3	4	4	5	2	5
1065:	3	3	5	3	2	5	3	7
1073:	5	3	4	3	3	3	4	6
1081:	4	3	3	6	1	4	4	2
1089:	6	3	3	4	3	8	9	3
1097:	5	6	2	2	3	5	5	7
1105:	8	5	1	7	7	2	5	4
1113:	7	4	8	4	2	5	3	18
1121:	13	4	7	1	4	2	3	2
1129:	3	4	7	3	5	3	9	3
1137:	2	8	8	8	0	4	8	3
1145:	5	4	3	5	4	6	2	5
1153:	8	4	3	5	5	5	2	7
1161:	6	3	4	6	4	4	6	5
1169:	3	5	3	4	7	5	7	3
1177:	3	6	3	5	2	3	7	3
1185:	5	4	4	6	6	3	4	4
1193:	6	6	3	8	6	5	3	6
1201:	8	3	6	7	9	9	4	8
1209:	3	4	3	6	3	6	4	3
1217:	7	6	6	6	5	4	3	9
1225:	7	5	4	4	8	3	3	8

1233: 6 7 2 6 4 10 11 10

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Channel	1	2	3	4	5	6	7	8	9
1241:	7	4	5	4	6	3	6	6	6
1249:	3	6	5	4	3	5	3	5	5
1257:	3	4	2	1	2	5	8	5	5
1265:	4	5	2	3	4	3	6	4	4
1273:	0	4	3	3	2	3	6	5	5
1281:	6	1	7	6	5	3	3	3	3
1289:	1	2	3	3	5	2	1	1	1
1297:	2	2	2	1	5	6	2	1	1
1305:	1	2	3	0	2	5	4	4	4
1313:	4	3	1	2	4	5	5	2	2
1321:	0	4	2	2	6	4	5	2	2
1329:	2	0	2	2	1	1	1	3	3
1337:	2	3	1	2	4	0	2	1	1
1345:	3	5	4	3	4	1	3	2	2
1353:	2	3	3	2	4	3	4	1	1
1361:	4	4	1	2	3	1	1	2	2
1369:	4	2	3	1	1	2	2	2	2
1377:	2	1	2	3	2	2	2	2	2
1385:	3	1	2	1	0	2	3	0	0
1393:	1	2	1	2	2	3	2	5	5
1401:	0	2	4	3	1	3	2	3	3
1409:	2	4	3	1	1	1	0	1	1
1417:	1	1	2	3	2	1	2	1	1
1425:	3	0	2	0	1	1	0	2	2
1433:	2	2	2	0	1	0	2	1	1
1441:	1	1	2	1	0	4	3	1	1
1449:	3	2	3	2	0	2	3	2	2
1457:	3	2	13	41	76	57	28	8	8
1465:	4	3	3	0	3	3	2	0	0
1473:	1	0	2	0	3	0	5	1	1
1481:	1	1	0	3	0	1	5	2	2
1489:	1	0	2	0	1	0	2	1	1
1497:	0	1	2	1	2	0	3	1	1
1505:	2	2	1	2	4	1	2	0	0
1513:	0	3	2	1	0	0	4	4	4
1521:	4	2	0	1	1	2	1	1	1
1529:	0	0	0	2	3	2	0	1	1
1537:	0	0	0	0	1	3	0	3	3
1545:	1	0	0	3	2	1	2	3	3
1553:	6	0	1	0	3	1	1	2	2
1561:	3	2	1	0	3	2	0	1	1
1569:	2	1	2	1	1	2	1	1	1
1577:	2	2	1	1	2	1	2	3	3
1585:	2	2	3	2	2	2	2	4	4
1593:	2	2	3	3	3	2	0	0	0
1601:	0	2	2	1	0	2	1	0	0
1609:	0	1	2	0	1	0	0	1	1
1617:	0	1	1	1	3	3	1	1	1
1625:	1	3	0	1	2	3	3	1	1
1633:	2	2	1	2	3	0	2	0	0
1641:	1	0	1	1	0	1	1	1	1
1649:	1	1	3	1	1	0	1	0	0
1657:	1	0	1	0	2	3	5	0	0

1665: 1 1 3 1 0 0 0 0

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Channel	1	2	3	4	5	6	7	8	9
1673:	0	1	0	1	1	1	2	1	
1681:	0	0	2	1	2	1	0	0	
1689:	2	0	0	1	1	1	1	0	
1697:	1	1	1	1	0	1	0	3	
1705:	3	0	3	0	1	1	0	1	
1713:	0	0	0	0	1	0	3	0	
1721:	2	2	0	1	3	1	1	0	
1729:	1	2	1	3	1	1	1	1	
1737:	0	0	0	0	0	1	1	1	
1745:	0	0	2	1	0	3	0	0	
1753:	1	0	1	1	1	0	1	0	
1761:	2	0	1	5	11	5	5	2	
1769:	0	0	3	0	0	2	0	1	
1777:	0	0	1	0	0	1	2	0	
1785:	0	2	0	0	0	2	1	0	
1793:	2	1	1	0	3	1	1	0	
1801:	0	1	2	0	0	1	0	1	
1809:	1	1	0	0	0	0	0	0	
1817:	0	1	0	1	1	0	2	0	
1825:	0	0	0	0	1	0	1	1	
1833:	1	0	3	0	1	0	1	0	
1841:	1	3	0	0	0	1	2	1	
1849:	2	0	2	0	0	2	1	0	
1857:	0	1	1	1	0	0	1	0	
1865:	2	0	1	3	0	0	1	1	
1873:	1	0	0	0	1	1	2	0	
1881:	0	1	0	0	1	0	1	1	
1889:	1	0	0	2	0	1	1	0	
1897:	2	1	1	2	1	0	1	0	
1905:	0	2	1	0	0	0	0	0	
1913:	0	2	1	0	1	0	1	1	
1921:	1	1	1	1	1	0	0	0	
1929:	0	3	1	1	0	0	1	0	
1937:	1	1	0	1	1	2	0	1	
1945:	1	0	1	0	0	0	0	1	
1953:	0	1	0	2	0	0	0	1	
1961:	2	1	0	1	2	1	0	1	
1969:	0	1	0	1	2	2	1	0	
1977:	1	0	1	0	0	0	0	0	
1985:	0	0	0	0	0	0	0	0	
1993:	2	0	2	1	2	0	0	1	
2001:	0	0	1	0	1	1	1	1	
2009:	0	1	1	1	0	1	0	0	
2017:	0	3	1	1	1	1	0	0	
2025:	0	0	2	1	2	2	0	0	
2033:	0	0	2	0	1	0	1	1	
2041:	1	1	0	0	2	0	1	0	
2049:	1	0	0	1	0	1	2	1	
2057:	0	0	0	2	0	0	2	0	
2065:	1	2	0	0	1	1	0	0	
2073:	1	0	2	0	2	0	1	1	
2081:	0	1	0	1	1	1	0	2	
2089:	1	1	1	0	1	1	2	3	

2097: 1 1 0 0 1 1 3 1

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

2529: 1 0 0 0 1 0 0 1

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	1	0	1	2	0	0
2545:	0	0	0	0	0	0	0	0
2553:	0	0	0	0	0	0	0	0
2561:	0	0	0	0	1	0	0	0
2569:	0	0	0	1	0	0	0	0
2577:	0	0	0	0	0	0	0	0
2585:	0	0	0	0	0	0	1	0
2593:	0	0	0	1	0	0	1	0
2601:	0	0	0	0	0	1	0	1
2609:	0	0	1	0	2	4	6	9
2617:	10	4	2	1	1	0	0	1
2625:	0	0	0	1	1	0	0	0
2633:	0	0	0	1	0	0	0	0
2641:	0	0	0	0	0	0	0	0
2649:	0	0	0	0	0	0	1	1
2657:	0	0	0	0	0	0	0	0
2665:	1	0	0	0	1	0	0	0
2673:	0	0	1	0	0	0	1	0
2681:	0	0	1	1	0	0	0	0
2689:	0	0	1	0	1	0	0	0
2697:	0	0	0	0	0	0	0	0
2705:	0	1	0	0	0	0	0	0
2713:	0	0	1	0	0	1	0	0
2721:	0	0	1	0	0	0	0	0
2729:	1	1	1	0	1	0	0	0
2737:	0	0	0	0	1	0	0	0
2745:	1	0	0	0	0	0	1	2
2753:	0	0	0	0	0	0	0	0
2761:	1	0	0	0	0	0	0	0
2769:	0	0	0	1	1	0	0	0
2777:	0	0	0	2	0	0	0	0
2785:	0	0	1	0	0	0	0	0
2793:	0	1	0	0	0	0	0	0
2801:	0	0	0	0	1	0	1	1
2809:	1	0	0	0	1	0	0	0
2817:	0	1	1	1	0	0	1	0
2825:	0	1	0	0	0	0	0	0
2833:	0	1	0	0	0	0	0	0
2841:	2	0	0	0	0	1	0	0
2849:	0	0	0	0	0	0	0	0
2857:	0	0	0	1	0	0	0	0
2865:	0	0	0	0	0	1	0	0
2873:	0	0	0	1	0	1	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	0	0	0	1	1
2913:	0	0	1	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	0	1	0	0	0
2937:	0	1	0	0	0	0	1	0
2945:	0	0	1	1	1	0	0	0
2953:	0	0	0	0	0	0	0	0

2961: 0 0 1 0 1 0 0 0

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Channel	1	2	3	4	5	6	7	8
2969:	0	1	1	0	0	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	0
3001:	1	0	0	0	0	0	0	0
3009:	0	0	1	1	0	0	0	1
3017:	0	0	0	0	0	1	0	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	0	0	0	0	1	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	1	0	0	0	0	1	0
3065:	0	0	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	1	1	1	0	0
3097:	0	0	0	0	0	0	1	0
3105:	1	0	0	0	0	0	0	0
3113:	1	0	0	0	0	0	0	0
3121:	0	0	1	0	0	0	0	0
3129:	0	0	0	0	0	1	0	0
3137:	1	0	0	0	0	0	0	0
3145:	0	0	0	0	2	0	0	1
3153:	0	0	0	0	0	0	0	0
3161:	0	1	0	0	0	0	0	1
3169:	0	0	1	0	1	1	0	0
3177:	0	0	0	0	0	1	0	0
3185:	0	0	0	1	0	0	0	0
3193:	0	0	0	0	0	0	0	0
3201:	0	0	1	1	0	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	1	0	1	1	0	1	0
3225:	0	1	0	0	0	0	1	0
3233:	0	1	1	0	0	0	0	0
3241:	1	0	0	0	0	0	0	0
3249:	1	0	1	0	0	0	0	1
3257:	0	0	0	0	0	0	0	1
3265:	0	1	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	1
3281:	0	0	0	0	0	0	0	0
3289:	1	0	0	1	0	0	0	0
3297:	0	0	0	1	0	0	0	0
3305:	0	0	0	1	0	0	0	0
3313:	0	0	0	0	1	0	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	1	0	0	1	0	1	1
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	1
3361:	0	1	0	0	0	1	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	1	0	0	0	1	0
3385:	0	0	0	0	0	1	0	0

3393: 0 1 0 0 0 0 0 0

Sample Title: CP1804S10-11

Channel	1	2	3	4	5	6	7	8
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	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	1	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	1	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	1	1
3489:	0	0	0	0	0	1	0	0
3497:	0	0	0	0	0	1	0	0
3505:	0	0	0	0	0	1	0	0
3513:	0	0	0	0	0	0	1	0
3521:	0	0	0	0	1	0	0	0
3529:	0	0	1	0	0	0	0	0
3537:	0	1	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	1	0	0
3569:	0	0	0	1	0	1	0	0
3577:	0	0	0	0	0	1	0	0
3585:	1	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	1	0	0	0	0	0
3609:	1	0	0	0	0	0	1	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	2	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:	1	0	0	0	1	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	1	0	0	0	0	0	0	0
3697:	0	0	0	0	1	1	0	0
3705:	1	0	0	0	0	0	0	0
3713:	0	0	0	0	1	0	0	0
3721:	0	0	0	1	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	1	0	0	0	0	0	2	0
3745:	0	1	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	1
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	1	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	1	0	0	1	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	1	0	0	0	0
3817:	0	0	0	0	0	0	0	0

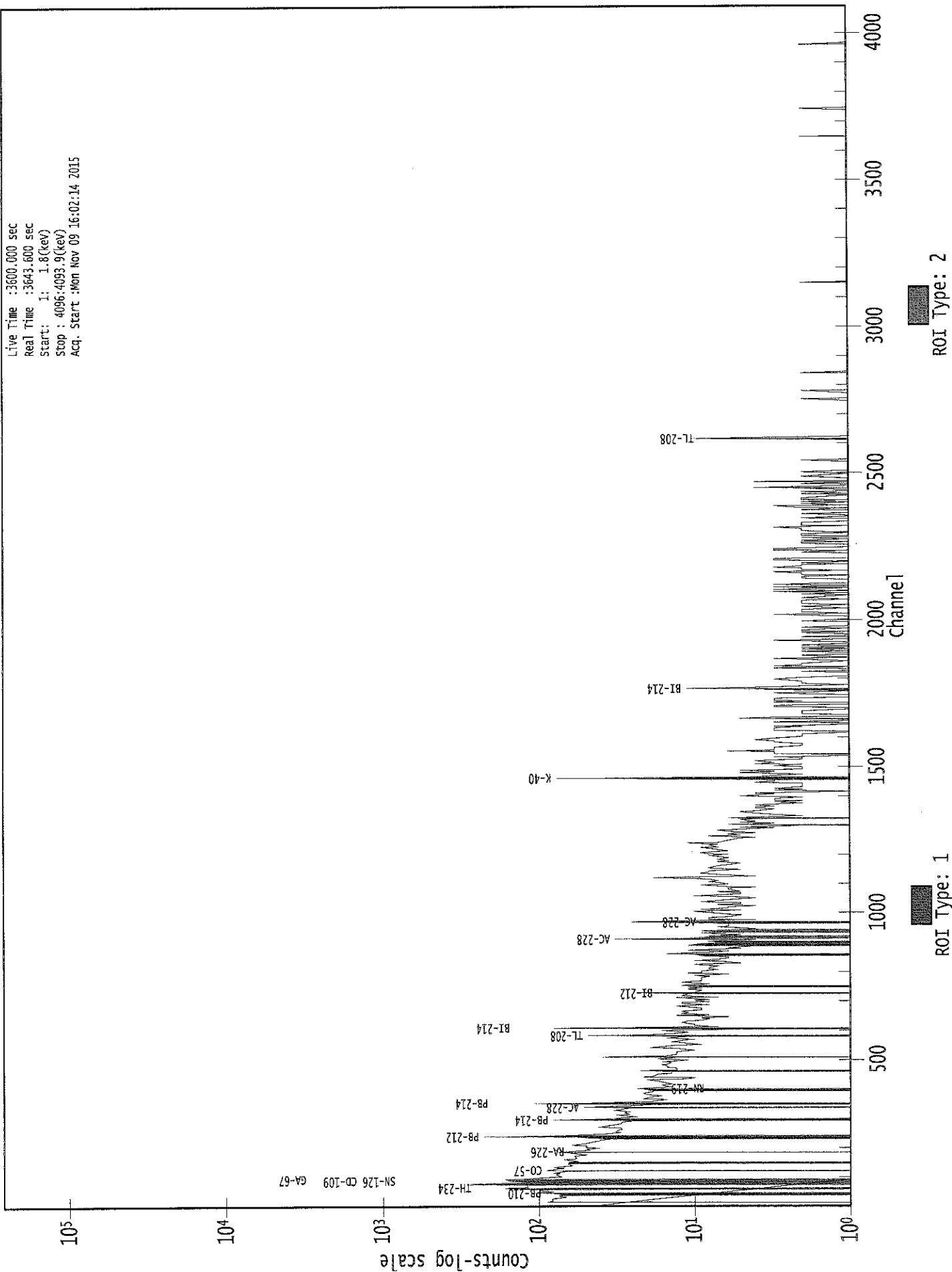
3825: 0 1 0 1 0 0 0 0

Sample Title: CP1804S10-11

Channel	1	0	0	0	0	0	1	0
3833:	1	0	0	0	0	0	1	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	1	0
3865:	0	0	0	0	1	0	0	0
3873:	0	1	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	0	0	0	0	0
3905:	0	1	0	0	0	0	0	0
3913:	0	0	0	0	0	1	0	1
3921:	0	0	0	0	0	0	1	0
3929:	0	0	0	0	0	0	0	0
3937:	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:	2	0	0	0	0	0	1	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	1	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	1	0
4009:	1	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	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	1
4089:	1	0	0	0	0	0	0	0

0000029352.CNF

Live Time : 3600.000 sec
Real Time : 3643.600 sec
Start: I: 1.8(keV)
Stop : 4096.4093.9(keV)
Acq. Start : Mon Nov 09 16:02:14 2015



11/9/15



Analysis Report for 1510088-12
CP1804S12-13

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-12
 Sample Description : CP1804S12-13
 Sample Type : SOIL

Sample Size : 6.104E+02 grams
 Facility : Countroom

Sample Taken On : 10/8/2015 9:01:30AM
 Acquisition Started : 11/9/2015 4:25:50PM

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) : 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 : 29353

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Ag
11/10/15

Analysis Report for 1510088-12
CP1804S12-13

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 5:25:54PM
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	46.61	46.71	0.0000	0.00
2	63.49	63.58	0.0000	0.00
3	72.91	73.00	0.0000	0.00
4	76.41	76.50	0.0000	0.00
5	87.43	87.51	0.0000	0.00
6	92.59	92.67	0.0000	0.00
7	99.48	99.55	0.0000	0.00
8	129.51	129.57	0.0000	0.00
9	183.09	183.12	0.0000	0.00
10	186.09	186.12	0.0000	0.00
11	209.44	209.46	0.0000	0.00
12	215.88	215.88	0.0000	0.00
13	238.77	238.76	0.0000	0.00
14	241.75	241.74	0.0000	0.00
15	270.42	270.40	0.0000	0.00
16	295.32	295.29	0.0000	0.00
17	300.14	300.11	0.0000	0.00
18	327.92	327.87	0.0000	0.00
19	338.31	338.25	0.0000	0.00
20	352.02	351.95	0.0000	0.00
21	409.82	409.73	0.0000	0.00
22	463.44	463.32	0.0000	0.00
23	495.47	495.33	0.0000	0.00
24	510.91	510.76	0.0000	0.00
25	583.31	583.13	0.0000	0.00
26	609.47	609.28	0.0000	0.00
27	727.29	727.04	0.0000	0.00
28	783.86	783.59	0.0000	0.00
29	796.07	795.79	0.0000	0.00
30	836.00	835.71	0.0000	0.00
31	861.07	860.77	0.0000	0.00
32	911.36	911.04	0.0000	0.00
33	964.38	964.04	0.0000	0.00
34	969.17	968.82	0.0000	0.00
35	1002.48	1002.12	0.0000	0.00
36	1099.67	1099.27	0.0000	0.00
37	1120.43	1120.03	0.0000	0.00
38	1238.30	1237.85	0.0000	0.00
39	1342.04	1341.56	0.0000	0.00
40	1375.70	1375.20	0.0000	0.00
41	1378.50	1378.00	0.0000	0.00
42	1408.42	1407.91	0.0000	0.00

Analysis Report for 1510088-12
CP1804S12-13

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1437.90	1437.38	0.0000	0.00
44	1461.04	1460.52	0.0000	0.00
45	1509.60	1509.06	0.0000	0.00
46	1539.28	1538.74	0.0000	0.00
47	1587.67	1587.11	0.0000	0.00
48	1591.82	1591.26	0.0000	0.00
49	1764.72	1764.12	0.0000	0.00
50	1984.72	1984.06	0.0000	0.00
51	2033.22	2032.56	0.0000	0.00
52	2051.95	2051.29	0.0000	0.00
53	2103.04	2102.37	0.0000	0.00
54	2117.26	2116.58	0.0000	0.00
55	2163.44	2162.75	0.0000	0.00
56	2171.63	2170.95	0.0000	0.00
57	2181.35	2180.66	0.0000	0.00
58	2272.66	2271.96	0.0000	0.00
59	2430.45	2429.73	0.0000	0.00
60	2614.25	2613.51	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510088-12
CP1804S12-13

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 5:25:54PM

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	46.61	43 -	50	46.71	1.63E+02	106.98	1.79E+03	1.67
2	63.49	61 -	65	63.58	1.19E+02	76.17	1.18E+03	1.43
M 3	72.91	71 -	82	73.00	4.79E+01	52.68	7.07E+02	1.00
m 4	76.41	71 -	82	76.50	9.93E+02	124.77	1.75E+03	2.60
5	87.43	86 -	89	87.51	1.17E+02	67.35	1.02E+03	1.62
6	92.59	90 -	97	92.67	3.01E+02	105.09	1.57E+03	1.56
7	99.48	98 -	102	99.55	6.54E+01	59.42	7.19E+02	2.04
8	129.51	126 -	133	129.57	1.26E+02	83.45	1.08E+03	1.84
M 9	183.09	182 -	190	183.12	3.55E+01	27.55	2.21E+02	1.32
m 10	186.09	182 -	190	186.12	1.61E+02	49.76	4.38E+02	1.32
11	209.44	208 -	212	209.46	8.18E+01	48.60	4.48E+02	1.64
12	215.88	213 -	219	215.88	5.55E+01	57.69	5.61E+02	1.43
M 13	238.77	234 -	246	238.76	9.98E+02	70.51	3.19E+02	1.48
m 14	241.75	234 -	246	241.74	2.47E+02	86.97	4.65E+02	2.28
15	270.42	266 -	274	270.40	8.54E+01	63.65	5.69E+02	2.58
M 16	295.32	291 -	303	295.29	2.84E+02	47.69	2.52E+02	1.65
m 17	300.14	291 -	303	300.11	7.65E+01	37.02	2.27E+02	1.66
18	327.92	324 -	331	327.87	4.53E+01	53.29	4.41E+02	1.85
19	338.31	333 -	342	338.25	2.32E+02	66.20	4.90E+02	1.83
20	352.02	348 -	355	351.95	4.90E+02	63.84	3.53E+02	1.35
21	409.82	408 -	413	409.73	3.30E+01	34.81	2.16E+02	1.34
22	463.44	460 -	467	463.32	6.02E+01	41.76	2.48E+02	1.43
23	495.47	492 -	498	495.33	3.39E+01	28.72	1.24E+02	1.92
24	510.91	507 -	515	510.76	1.85E+02	47.55	2.34E+02	1.83
25	583.31	578 -	586	583.13	2.93E+02	49.91	2.05E+02	1.67
26	609.47	605 -	613	609.28	3.71E+02	52.06	1.88E+02	1.90
27	727.29	723 -	730	727.04	6.35E+01	36.11	1.73E+02	1.54
28	783.86	779 -	787	783.59	4.91E+01	31.41	1.22E+02	4.42
29	796.07	792 -	800	795.79	4.52E+01	31.48	1.22E+02	1.88
30	836.00	833 -	839	835.71	2.23E+01	25.20	1.01E+02	2.20
31	861.07	857 -	868	860.77	4.27E+01	32.25	1.11E+02	2.59
32	911.36	904 -	914	911.04	1.82E+02	45.01	1.80E+02	2.22
M 33	964.38	959 -	975	964.04	4.60E+01	21.26	6.70E+01	1.87
m 34	969.17	959 -	975	968.82	1.25E+02	28.28	3.94E+01	2.19
35	1002.48	998 -	1007	1002.12	2.37E+01	27.62	9.67E+01	5.67
36	1099.67	1096 -	1102	1099.27	2.40E+01	20.10	5.60E+01	4.57
37	1120.43	1115 -	1124	1120.03	6.73E+01	36.30	1.49E+02	1.50
38	1238.30	1233 -	1241	1237.85	2.97E+01	29.02	1.09E+02	2.78
39	1342.04	1338 -	1345	1341.56	1.65E+01	18.76	4.70E+01	1.60
M 40	1375.70	1373 -	1382	1375.20	1.05E+01	12.08	1.73E+01	4.26

Analysis Report for 1510088-12

CP1804S12-13

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
m	41	1378.50	1373 - 1382		1378.00	3.05E+01	16.31	3.01E+01	2.26
	42	1408.42	1405 - 1411		1407.91	1.90E+01	13.91	2.20E+01	4.65
	43	1437.90	1433 - 1441		1437.38	1.10E+01	13.76	2.21E+01	6.35
	44	1461.04	1455 - 1464		1460.52	6.17E+02	51.79	3.18E+01	2.41
	45	1509.60	1506 - 1511		1509.06	9.06E+00	11.05	1.59E+01	1.97
	46	1539.28	1534 - 1545		1538.74	1.80E+01	16.25	2.40E+01	2.96
M	47	1587.67	1584 - 1595		1587.11	2.11E+01	15.03	3.52E+01	3.49
m	48	1591.82	1584 - 1595		1591.26	1.27E+01	19.46	3.62E+01	2.89
	49	1764.72	1760 - 1768		1764.12	8.66E+01	19.40	4.85E+00	2.96
	50	1984.72	1980 - 1987		1984.06	6.50E+00	8.49	7.00E+00	2.48
	51	2033.22	2028 - 2035		2032.56	8.17E+00	8.94	7.67E+00	1.34
	52	2051.95	2048 - 2053		2051.29	7.00E+00	5.29	0.00E+00	2.09
	53	2103.04	2098 - 2109		2102.37	2.03E+01	16.61	2.55E+01	2.29
	54	2117.26	2112 - 2124		2116.58	1.07E+01	12.51	1.47E+01	6.22
	55	2163.44	2158 - 2167		2162.75	1.60E+01	8.00	0.00E+00	6.38
	56	2171.63	2168 - 2173		2170.95	6.50E+00	6.40	3.00E+00	1.89
	57	2181.35	2176 - 2184		2180.66	9.79E+00	8.26	4.42E+00	1.81
	58	2272.66	2267 - 2275		2271.96	6.45E+00	9.19	9.09E+00	2.61
	59	2430.45	2426 - 2432		2429.73	6.25E+00	6.65	3.50E+00	2.40
	60	2614.25	2608 - 2618		2613.51	1.20E+02	21.91	0.00E+00	3.37

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 5:25:54PM

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	46.61	43 -	50	1.63E+02	106.98	1.79E+03	8.54E+01
	2	63.49	61 -	65	1.19E+02	76.17	1.18E+03	6.00E+01
M	3	72.91	71 -	82	4.79E+01	52.68	7.07E+02	4.37E+01
m	4	76.41	71 -	82	9.93E+02	124.77	1.75E+03	6.88E+01
	5	87.43	86 -	89	1.17E+02	67.35	1.02E+03	5.24E+01
	6	92.59	90 -	97	3.01E+02	105.09	1.57E+03	8.15E+01
	7	99.48	98 -	102	6.54E+01	59.42	7.19E+02	4.70E+01
	8	129.51	126 -	133	1.26E+02	83.45	1.08E+03	6.61E+01

Analysis Report for 1510088-12

CP1804S12-13

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	9	183.09	182 -	190	3.55E+01	27.55	2.21E+02	2.45E+01
m	10	186.09	182 -	190	1.61E+02	49.76	4.38E+02	3.44E+01
	11	209.44	208 -	212	8.18E+01	48.60	4.48E+02	3.71E+01
	12	215.88	213 -	219	5.55E+01	57.69	5.61E+02	4.58E+01
M	13	238.77	234 -	246	9.98E+02	70.51	3.19E+02	2.94E+01
m	14	241.75	234 -	246	2.47E+02	86.97	4.65E+02	3.54E+01
	15	270.42	266 -	274	8.54E+01	63.65	5.69E+02	5.01E+01
M	16	295.32	291 -	303	2.84E+02	47.69	2.52E+02	2.61E+01
m	17	300.14	291 -	303	7.65E+01	37.02	2.27E+02	2.48E+01
	18	327.92	324 -	331	4.53E+01	53.29	4.41E+02	4.24E+01
	19	338.31	333 -	342	2.32E+02	66.20	4.90E+02	4.83E+01
	20	352.02	348 -	355	4.90E+02	63.84	3.53E+02	3.78E+01
	21	409.82	408 -	413	3.30E+01	34.81	2.16E+02	2.70E+01
	22	463.44	460 -	467	6.02E+01	41.76	2.48E+02	3.19E+01
	23	495.47	492 -	498	3.39E+01	28.72	1.24E+02	2.16E+01
	24	510.91	507 -	515	1.85E+02	47.55	2.34E+02	3.21E+01
	25	583.31	578 -	586	2.93E+02	49.91	2.05E+02	2.99E+01
	26	609.47	605 -	613	3.71E+02	52.06	1.88E+02	2.88E+01
	27	727.29	723 -	730	6.35E+01	36.11	1.73E+02	2.66E+01
	28	783.86	779 -	787	4.91E+01	31.41	1.22E+02	2.31E+01
	29	796.07	792 -	800	4.52E+01	31.48	1.22E+02	2.34E+01
	30	836.00	833 -	839	2.23E+01	25.20	1.01E+02	1.92E+01
	31	861.07	857 -	868	4.27E+01	32.25	1.11E+02	1.19E+01
	32	911.36	904 -	914	1.82E+02	45.01	1.80E+02	2.96E+01
M	33	964.38	959 -	975	4.60E+01	21.26	6.70E+01	1.35E+01
m	34	969.17	959 -	975	1.25E+02	28.28	3.94E+01	1.03E+01
	35	1002.48	998 -	1007	2.37E+01	27.62	9.67E+01	2.13E+01
	36	1099.67	1096 -	1102	2.40E+01	20.10	5.60E+01	1.44E+01
	37	1120.43	1115 -	1124	6.73E+01	36.30	1.49E+02	2.66E+01
	38	1238.30	1233 -	1241	2.97E+01	29.02	1.09E+02	2.21E+01
	39	1342.04	1338 -	1345	1.65E+01	18.76	4.70E+01	1.39E+01
M	40	1375.70	1373 -	1382	1.05E+01	12.08	1.73E+01	6.83E+00
m	41	1378.50	1373 -	1382	3.05E+01	16.31	3.01E+01	9.02E+00
	42	1408.42	1405 -	1411	1.90E+01	13.91	2.20E+01	8.91E+00
	43	1437.90	1433 -	1441	1.10E+01	13.76	2.21E+01	9.91E+00
	44	1461.04	1455 -	1464	6.17E+02	51.79	3.18E+01	1.20E+01
	45	1509.60	1506 -	1511	9.06E+00	11.05	1.59E+01	7.61E+00
	46	1539.28	1534 -	1545	1.80E+01	16.25	2.40E+01	1.14E+01
M	47	1587.67	1584 -	1595	2.11E+01	15.03	3.52E+01	9.75E+00
m	48	1591.82	1584 -	1595	1.27E+01	19.46	3.62E+01	9.90E+00
	49	1764.72	1760 -	1768	8.66E+01	19.40	4.85E+00	4.50E+00
	50	1984.72	1980 -	1987	6.50E+00	8.49	7.00E+00	5.58E+00
	51	2033.22	2028 -	2035	8.17E+00	8.94	7.67E+00	5.66E+00
	52	2051.95	2048 -	2053	7.00E+00	5.29	0.00E+00	0.00E+00
	53	2103.04	2098 -	2109	2.03E+01	16.61	2.55E+01	1.15E+01
	54	2117.26	2112 -	2124	1.07E+01	12.51	1.47E+01	8.77E+00
	55	2163.44	2158 -	2167	1.60E+01	8.00	0.00E+00	0.00E+00
	56	2171.63	2168 -	2173	6.50E+00	6.40	3.00E+00	3.18E+00
	57	2181.35	2176 -	2184	9.79E+00	8.26	4.42E+00	4.43E+00
	58	2272.66	2267 -	2275	6.45E+00	9.19	9.09E+00	6.30E+00
	59	2430.45	2426 -	2432	6.25E+00	6.65	3.50E+00	3.61E+00

Analysis Report for 1510088-12

CP1804S12-13

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
60	2614.25	2608 -	2618	1.20E+02	21.91	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 5:25:54PM

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	46.61	43 -	50	46.71	1.63E+02	106.98	1.79E+03	PB-210	
2	63.49	61 -	65	63.58	1.19E+02	76.17	1.18E+03	TH-234 TH-230	
M	3	72.91	71 -	82	73.00	4.79E+01	52.68	7.07E+02	PM-145
m	4	76.41	71 -	82	76.50	9.93E+02	124.77	1.75E+03
5	87.43	86 -	89	87.51	1.17E+02	67.35	1.02E+03	SN-126 CD-109 LU-176 NP-237 EU-155	
6	92.59	90 -	97	92.67	3.01E+02	105.09	1.57E+03	GA-67	
7	99.48	98 -	102	99.55	6.54E+01	59.42	7.19E+02	.....
8	129.51	126 -	133	129.57	1.26E+02	83.45	1.08E+03	.....
M	9	183.09	182 -	190	183.12	3.55E+01	27.55	2.21E+02
m	10	186.09	182 -	190	186.12	1.61E+02	49.76	4.38E+02	RA-226
11	209.44	208 -	212	209.46	8.18E+01	48.60	4.48E+02	CM-243 GA-67	
12	215.88	213 -	219	215.88	5.55E+01	57.69	5.61E+02	.....
M	13	238.77	234 -	246	238.76	9.98E+02	70.51	3.19E+02	PB-212
m	14	241.75	234 -	246	241.74	2.47E+02	86.97	4.65E+02	RA-224
15	270.42	266 -	274	270.40	8.54E+01	63.65	5.69E+02	.....
M	16	295.32	291 -	303	295.29	2.84E+02	47.69	2.52E+02	PB-214
m	17	300.14	291 -	303	300.11	7.65E+01	37.02	2.27E+02	PB-212 GA-67 BI-210M

Analysis Report for 1510088-12

CP1804S12-13

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
18	327.92	324 -	331	327.87	4.53E+01	53.29	4.41E+02	LA-140
19	338.31	333 -	342	338.25	2.32E+02	66.20	4.90E+02	AC-228
20	352.02	348 -	355	351.95	4.90E+02	63.84	3.53E+02	PB-214
21	409.82	408 -	413	409.73	3.30E+01	34.81	2.16E+02	.....
22	463.44	460 -	467	463.32	6.02E+01	41.76	2.48E+02	SB-125
23	495.47	492 -	498	495.33	3.39E+01	28.72	1.24E+02	.....
24	510.91	507 -	515	510.76	1.85E+02	47.55	2.34E+02	.....
25	583.31	578 -	586	583.13	2.93E+02	49.91	2.05E+02	TL-208
26	609.47	605 -	613	609.28	3.71E+02	52.06	1.88E+02	BI-214
27	727.29	723 -	730	727.04	6.35E+01	36.11	1.73E+02	BI-212
28	783.86	779 -	787	783.59	4.91E+01	31.41	1.22E+02	SB-127
29	796.07	792 -	800	795.79	4.52E+01	31.48	1.22E+02	CS-134
30	836.00	833 -	839	835.71	2.23E+01	25.20	1.01E+02	.....
31	861.07	857 -	868	860.77	4.27E+01	32.25	1.11E+02	TL-208
32	911.36	904 -	914	911.04	1.82E+02	45.01	1.80E+02	AC-228 LU-172
M	33	959 -	975	964.04	4.60E+01	21.26	6.70E+01	EU-152
m	34	959 -	975	968.82	1.25E+02	28.28	3.94E+01	AC-228
	35	998 -	1007	1002.12	2.37E+01	27.62	9.67E+01	.....
	36	1096 -	1102	1099.27	2.40E+01	20.10	5.60E+01	FE-59
	37	1115 -	1124	1120.03	6.73E+01	36.30	1.49E+02	SC-46 BI-214 TA-182
	38	1233 -	1241	1237.85	2.97E+01	29.02	1.09E+02	CO-56
	39	1338 -	1345	1341.56	1.65E+01	18.76	4.70E+01	.....
M	40	1375 -	1382	1375.20	1.05E+01	12.08	1.73E+01	.....
m	41	1373 -	1382	1378.00	3.05E+01	16.31	3.01E+01	.....
	42	1405 -	1411	1407.91	1.90E+01	13.91	2.20E+01	EU-152
	43	1433 -	1441	1437.38	1.10E+01	13.76	2.21E+01	.....
	44	1455 -	1464	1460.52	6.17E+02	51.79	3.18E+01	K-40
	45	1506 -	1511	1509.06	9.06E+00	11.05	1.59E+01	.....
	46	1534 -	1545	1538.74	1.80E+01	16.25	2.40E+01	.....
M	47	1584 -	1595	1587.11	2.11E+01	15.03	3.52E+01	.....
m	48	1584 -	1595	1591.26	1.27E+01	19.46	3.62E+01	.....
	49	1760 -	1768	1764.12	8.66E+01	19.40	4.85E+00	BI-214
	50	1980 -	1987	1984.06	6.50E+00	8.49	7.00E+00	.....
	51	2028 -	2035	2032.56	8.17E+00	8.94	7.67E+00	.....
	52	2048 -	2053	2051.29	7.00E+00	5.29	0.00E+00	.....
	53	2098 -	2109	2102.37	2.03E+01	16.61	2.55E+01	.....
	54	2112 -	2124	2116.58	1.07E+01	12.51	1.47E+01	.....
	55	2158 -	2167	2162.75	1.60E+01	8.00	0.00E+00	.....
	56	2168 -	2173	2170.95	6.50E+00	6.40	3.00E+00	.....
	57	2176 -	2184	2180.66	9.79E+00	8.26	4.42E+00	.....
	58	2267 -	2275	2271.96	6.45E+00	9.19	9.09E+00	.....
	59	2426 -	2432	2429.73	6.25E+00	6.65	3.50E+00	.....
	60	2608 -	2618	2613.51	1.20E+02	21.91	0.00E+00	TL-208

Analysis Report for 1510088-12
CP1804S12-13

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 5:25:54PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.61	1.63E+02	106.98	1.35E-02	1.68E-03
	2	63.49	1.19E+02	76.17	2.38E-02	2.07E-03
M	3	72.91	4.79E+01	52.68	2.67E-02	3.01E-03
m	4	76.41	9.93E+02	124.77	2.74E-02	3.35E-03
	5	87.43	1.17E+02	67.35	2.84E-02	4.45E-03
	6	92.59	3.01E+02	105.09	2.85E-02	4.30E-03
	7	99.48	6.54E+01	59.42	2.83E-02	3.99E-03
	8	129.51	1.26E+02	83.45	2.60E-02	2.76E-03
M	9	183.09	3.55E+01	27.55	2.13E-02	1.66E-03
m	10	186.09	1.61E+02	49.76	2.11E-02	1.65E-03
	11	209.44	8.18E+01	48.60	1.95E-02	1.63E-03
	12	215.88	5.55E+01	57.69	1.91E-02	1.62E-03
M	13	238.77	9.98E+02	70.51	1.79E-02	1.60E-03
m	14	241.75	2.47E+02	86.97	1.77E-02	1.60E-03
	15	270.42	8.54E+01	63.65	1.64E-02	1.57E-03
M	16	295.32	2.84E+02	47.69	1.55E-02	1.48E-03
m	17	300.14	7.65E+01	37.02	1.53E-02	1.46E-03
	18	327.92	4.53E+01	53.29	1.44E-02	1.32E-03
	19	338.31	2.32E+02	66.20	1.41E-02	1.27E-03
	20	352.02	4.90E+02	63.84	1.37E-02	1.21E-03
	21	409.82	3.30E+01	34.81	1.24E-02	1.00E-03
	22	463.44	6.02E+01	41.76	1.13E-02	9.47E-04
	23	495.47	3.39E+01	28.72	1.08E-02	9.14E-04
	24	510.91	1.85E+02	47.55	1.06E-02	8.98E-04
	25	583.31	2.93E+02	49.91	9.58E-03	8.25E-04
	26	609.47	3.71E+02	52.06	9.27E-03	7.98E-04
	27	727.29	6.35E+01	36.11	8.09E-03	7.03E-04
	28	783.86	4.91E+01	31.41	7.62E-03	6.67E-04
	29	796.07	4.52E+01	31.48	7.52E-03	6.59E-04
	30	836.00	2.23E+01	25.20	7.23E-03	6.33E-04
	31	861.07	4.27E+01	32.25	7.06E-03	6.17E-04
	32	911.36	1.82E+02	45.01	6.74E-03	5.87E-04
M	33	964.38	4.60E+01	21.26	6.44E-03	5.59E-04
m	34	969.17	1.25E+02	28.28	6.41E-03	5.57E-04

Analysis Report for 1510088-12

CP1804S12-13

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	35	1002.48	2.37E+01	27.62	6.24E-03	5.40E-04
	36	1099.67	2.40E+01	20.10	5.79E-03	4.90E-04
	37	1120.43	6.73E+01	36.30	5.70E-03	4.80E-04
	38	1238.30	2.97E+01	29.02	5.27E-03	4.83E-04
	39	1342.04	1.65E+01	18.76	4.96E-03	5.22E-04
M	40	1375.70	1.05E+01	12.08	4.87E-03	5.09E-04
m	41	1378.50	3.05E+01	16.31	4.87E-03	5.07E-04
	42	1408.42	1.90E+01	13.91	4.79E-03	4.95E-04
	43	1437.90	1.10E+01	13.76	4.72E-03	4.83E-04
	44	1461.04	6.17E+02	51.79	4.67E-03	4.73E-04
	45	1509.60	9.06E+00	11.05	4.57E-03	4.53E-04
	46	1539.28	1.80E+01	16.25	4.52E-03	4.41E-04
M	47	1587.67	2.11E+01	15.03	4.43E-03	4.21E-04
m	48	1591.82	1.27E+01	19.46	4.42E-03	4.19E-04
	49	1764.72	8.66E+01	19.40	4.18E-03	3.47E-04
	50	1984.72	6.50E+00	8.49	4.00E-03	3.18E-04
	51	2033.22	8.17E+00	8.94	3.98E-03	3.18E-04
	52	2051.95	7.00E+00	5.29	3.97E-03	3.18E-04
	53	2103.04	2.03E+01	16.61	3.95E-03	3.18E-04
	54	2117.26	1.07E+01	12.51	3.95E-03	3.18E-04
	55	2163.44	1.60E+01	8.00	3.94E-03	3.18E-04
	56	2171.63	6.50E+00	6.40	3.94E-03	3.18E-04
	57	2181.35	9.79E+00	8.26	3.93E-03	3.18E-04
	58	2272.66	6.45E+00	9.19	3.93E-03	3.18E-04
	59	2430.45	6.25E+00	6.65	3.96E-03	3.18E-04
	60	2614.25	1.20E+02	21.91	4.05E-03	3.18E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 5:25:54PM

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	46.61	1.63E+02	106.98	6.46E+01	1.16E+01	9.83E+01	1.08E+02
	2	63.49	1.19E+02	76.17	4.34E+01	1.15E+01	7.57E+01	7.70E+01
M	3	72.91	4.79E+01	52.68			4.79E+01	5.27E+01
m	4	76.41	9.93E+02	124.77			9.93E+02	1.25E+02

: 00762

Analysis Report for 1510088-12

CP1804S12-13

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
5	87.43	1.17E+02	67.35	1.46E+00	7.88E+00	1.16E+02	6.78E+01
6	92.59	3.01E+02	105.09	5.70E+01	9.03E+00	2.44E+02	1.05E+02
7	99.48	6.54E+01	59.42			6.54E+01	5.94E+01
8	129.51	1.26E+02	83.45			1.26E+02	8.35E+01
M	9	183.09	3.55E+01	27.55		3.55E+01	2.75E+01
m	10	186.09	1.61E+02	49.76	4.72E+01	7.97E+00	1.13E+02
	11	209.44	8.18E+01	48.60			8.18E+01
	12	215.88	5.55E+01	57.69			5.55E+01
M	13	238.77	9.98E+02	70.51	2.36E+01	1.35E+01	9.74E+02
m	14	241.75	2.47E+02	86.97	6.38E+00	3.91E+00	2.41E+02
	15	270.42	8.54E+01	63.65			8.54E+01
M	16	295.32	2.84E+02	47.69	8.57E+00	6.10E+00	2.75E+02
m	17	300.14	7.65E+01	37.02			7.65E+01
	18	327.92	4.53E+01	53.29	0.00E+00	0.00E+00	4.53E+01
	19	338.31	2.32E+02	66.20			2.32E+02
	20	352.02	4.90E+02	63.84	1.40E+01	5.55E+00	4.76E+02
	21	409.82	3.30E+01	34.81			3.30E+01
	22	463.44	6.02E+01	41.76			6.02E+01
	23	495.47	3.39E+01	28.72			3.39E+01
	24	510.91	1.85E+02	47.55	8.41E+01	5.50E+00	1.01E+02
	25	583.31	2.93E+02	49.91	7.32E+00	4.08E+00	2.85E+02
	26	609.47	3.71E+02	52.06	1.30E+01	3.89E+00	3.58E+02
	27	727.29	6.35E+01	36.11			6.35E+01
	28	783.86	4.91E+01	31.41			4.91E+01
	29	796.07	4.52E+01	31.48			4.52E+01
	30	836.00	2.23E+01	25.20			2.23E+01
	31	861.07	4.27E+01	32.25			4.27E+01
	32	911.36	1.82E+02	45.01	5.60E+00	3.32E+00	1.76E+02
M	33	964.38	4.60E+01	21.26			4.60E+01
m	34	969.17	1.25E+02	28.28			1.25E+02
	35	1002.48	2.37E+01	27.62			2.37E+01
	36	1099.67	2.40E+01	20.10			2.40E+01
	37	1120.43	6.73E+01	36.30	3.93E+00	2.96E+00	6.34E+01
	38	1238.30	2.97E+01	29.02			2.97E+01
	39	1342.04	1.65E+01	18.76			1.65E+01
M	40	1375.70	1.05E+01	12.08			1.05E+01
m	41	1378.50	3.05E+01	16.31			3.05E+01
	42	1408.42	1.90E+01	13.91			1.90E+01
	43	1437.90	1.10E+01	13.76			1.10E+01
	44	1461.04	6.17E+02	51.79	1.12E+01	2.55E+00	6.06E+02
	45	1509.60	9.06E+00	11.05			9.06E+00
	46	1539.28	1.80E+01	16.25			1.80E+01
M	47	1587.67	2.11E+01	15.03			2.11E+01
m	48	1591.82	1.27E+01	19.46			1.27E+01
	49	1764.72	8.66E+01	19.40	4.23E+00	2.21E+00	8.23E+01
	50	1984.72	6.50E+00	8.49			6.50E+00
	51	2033.22	8.17E+00	8.94			8.17E+00
	52	2051.95	7.00E+00	5.29			7.00E+00
	53	2103.04	2.03E+01	16.61			2.03E+01
	54	2117.26	1.07E+01	12.51			1.07E+01
	55	2163.44	1.60E+01	8.00			1.60E+01
	56	2171.63	6.50E+00	6.40			6.50E+00
	57	2181.35	9.79E+00	8.26			9.79E+00
	58	2272.66	6.45E+00	9.19			6.45E+00

Analysis Report for 1510088-12

CP1804S12-13

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
59	2430.45	6.25E+00	6.65			6.25E+00	6.65E+00
60	2614.25	1.20E+02	21.91	7.38E+00	1.57E+00	1.13E+02	2.20E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 5:25:54PM
 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	46.61	1.63E+02	106.98	6.46E+01	1.16E+01	9.83E+01	1.08E+02
	2	63.49	1.19E+02	76.17	4.34E+01	1.15E+01	7.57E+01	7.70E+01
M	3	72.91	4.79E+01	52.68			4.79E+01	5.27E+01
m	4	76.41	9.93E+02	124.77			9.93E+02	1.25E+02
	5	87.43	1.17E+02	67.35	1.46E+00	7.88E+00	1.16E+02	6.78E+01
	6	92.59	3.01E+02	105.09	5.70E+01	9.03E+00	2.44E+02	1.05E+02
	7	99.48	6.54E+01	59.42			6.54E+01	5.94E+01
	8	129.51	1.26E+02	83.45			1.26E+02	8.35E+01
M	9	183.09	3.55E+01	27.55			3.55E+01	2.75E+01
m	10	186.09	1.61E+02	49.76	4.72E+01	7.97E+00	1.13E+02	5.04E+01
	11	209.44	8.18E+01	48.60			8.18E+01	4.86E+01
	12	215.88	5.55E+01	57.69			5.55E+01	5.77E+01
M	13	238.77	9.98E+02	70.51	2.36E+01	1.35E+01	9.74E+02	7.18E+01
m	14	241.75	2.47E+02	86.97	6.38E+00	3.91E+00	2.41E+02	8.71E+01
	15	270.42	8.54E+01	63.65			8.54E+01	6.37E+01
M	16	295.32	2.84E+02	47.69	8.57E+00	6.10E+00	2.75E+02	4.81E+01
m	17	300.14	7.65E+01	37.02			7.65E+01	3.70E+01
	18	327.92	4.53E+01	53.29	0.00E+00	0.00E+00	4.53E+01	5.33E+01
	19	338.31	2.32E+02	66.20			2.32E+02	6.62E+01
	20	352.02	4.90E+02	63.84	1.40E+01	5.55E+00	4.76E+02	6.41E+01
	21	409.82	3.30E+01	34.81			3.30E+01	3.48E+01
	22	463.44	6.02E+01	41.76			6.02E+01	4.18E+01
	23	495.47	3.39E+01	28.72			3.39E+01	2.87E+01
	24	510.91	1.85E+02	47.55	8.41E+01	5.50E+00	1.01E+02	4.79E+01
	25	583.31	2.93E+02	49.91	7.32E+00	4.08E+00	2.85E+02	5.01E+01
	26	609.47	3.71E+02	52.06	1.30E+01	3.89E+00	3.58E+02	5.22E+01

Analysis Report for 1510088-12

CP1804S12-13

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
27	727.29	6.35E+01	36.11			6.35E+01	3.61E+01
28	783.86	4.91E+01	31.41			4.91E+01	3.14E+01
29	796.07	4.52E+01	31.48			4.52E+01	3.15E+01
30	836.00	2.23E+01	25.20			2.23E+01	2.52E+01
31	861.07	4.27E+01	32.25			4.27E+01	3.22E+01
32	911.36	1.82E+02	45.01	5.60E+00	3.32E+00	1.76E+02	4.51E+01
M 33	964.38	4.60E+01	21.26			4.60E+01	2.13E+01
m 34	969.17	1.25E+02	28.28			1.25E+02	2.83E+01
35	1002.48	2.37E+01	27.62			2.37E+01	2.76E+01
36	1099.67	2.40E+01	20.10			2.40E+01	2.01E+01
37	1120.43	6.73E+01	36.30	3.93E+00	2.96E+00	6.34E+01	3.64E+01
38	1238.30	2.97E+01	29.02			2.97E+01	2.90E+01
39	1342.04	1.65E+01	18.76			1.65E+01	1.88E+01
M 40	1375.70	1.05E+01	12.08			1.05E+01	1.21E+01
m 41	1378.50	3.05E+01	16.31			3.05E+01	1.63E+01
42	1408.42	1.90E+01	13.91			1.90E+01	1.39E+01
43	1437.90	1.10E+01	13.76			1.10E+01	1.38E+01
44	1461.04	6.17E+02	51.79	1.12E+01	2.55E+00	6.06E+02	5.19E+01
45	1509.60	9.06E+00	11.05			9.06E+00	1.10E+01
46	1539.28	1.80E+01	16.25			1.80E+01	1.62E+01
M 47	1587.67	2.11E+01	15.03			2.11E+01	1.50E+01
m 48	1591.82	1.27E+01	19.46			1.27E+01	1.95E+01
49	1764.72	8.66E+01	19.40	4.23E+00	2.21E+00	8.23E+01	1.95E+01
50	1984.72	6.50E+00	8.49			6.50E+00	8.49E+00
51	2033.22	8.17E+00	8.94			8.17E+00	8.94E+00
52	2051.95	7.00E+00	5.29			7.00E+00	5.29E+00
53	2103.04	2.03E+01	16.61			2.03E+01	1.66E+01
54	2117.26	1.07E+01	12.51			1.07E+01	1.25E+01
55	2163.44	1.60E+01	8.00			1.60E+01	8.00E+00
56	2171.63	6.50E+00	6.40			6.50E+00	6.40E+00
57	2181.35	9.79E+00	8.26			9.79E+00	8.26E+00
58	2272.66	6.45E+00	9.19			6.45E+00	9.19E+00
59	2430.45	6.25E+00	6.65			6.25E+00	6.65E+00
60	2614.25	1.20E+02	21.91	7.38E+00	1.57E+00	1.13E+02	2.20E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1510088-12
 CP1804S12-13

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.991	1460.81 *	10.67	1.49E+01	2.01E+00
FE-59	0.313	1099.22 *	56.50	1.49E-01	1.26E-01
		1291.56	43.20		
GA-67	0.579	93.31 *	35.70	2.85E+02	1.25E+03
		208.95 *	2.24	2.22E+03	9.45E+03
		300.22 *	16.00	3.71E+02	1.63E+03
CD-109	0.944	88.03 *	3.72	1.42E+00	8.61E-01
SN-126	0.997	87.57 *	37.00	1.36E-01	8.21E-02
TL-208	0.979	583.14 *	30.22	1.21E+00	2.37E-01
		860.37 *	4.48	1.66E+00	1.26E+00
		2614.66 *	35.85	9.54E-01	2.00E-01
PB-210	0.998	46.50 *	4.25	2.12E+00	2.33E+00
BI-212	0.764	727.17 *	11.80	8.18E-01	4.71E-01
		1620.62	2.75		
PB-212	0.997	238.63 *	44.60	1.50E+00	1.74E-01
		300.09 *	3.41	1.80E+00	8.90E-01
BI-214	0.923	609.31 *	46.30	1.03E+00	1.74E-01
		1120.29 *	15.10	9.05E-01	5.26E-01
		1764.49 *	15.80	1.53E+00	3.85E-01
		2204.22	4.98		
PB-214	0.998	295.21 *	19.19	1.14E+00	2.27E-01
		351.92 *	37.19	1.15E+00	1.85E-01
RA-224	0.911	240.98 *	3.95	4.23E+00	1.58E+00
RA-226	0.998	186.21 *	3.28	2.02E+00	3.80E+00
AC-228	0.993	338.32 *	11.40	1.78E+00	5.31E-01
		911.07 *	27.70	1.16E+00	3.14E-01
		969.11 *	16.60	1.44E+00	3.50E-01
TH-234	0.994	63.29 *	3.80	1.03E+00	1.05E+00
NP-237	0.871	86.50 *	12.60	3.98E-01	2.41E-01

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 5:25:54PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
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Analysis Report for 1510088-12
CP1804S12-13

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
M	3	72.91	1.33090E-02	54.97	Tol.	PM-145
m	4	76.41	2.75889E-01	6.28		
	7	99.48	1.81758E-02	45.41		
	8	129.51	3.49666E-02	33.15		
M	9	183.09	9.86145E-03	38.80		
	12	215.88	1.54266E-02	51.94		
	15	270.42	2.37331E-02	37.25		
	18	327.92	1.25721E-02	58.87	Tol.	LA-140
	21	409.82	9.16667E-03	52.75		
	22	463.44	1.67135E-02	34.70	Tol.	SB-125
	23	495.47	9.41551E-03	42.37		
	24	510.91	2.80208E-02	23.73		
	28	783.86	1.36477E-02	31.97		
	29	796.07	1.25577E-02	34.82	Sum	
	30	836.00	6.18151E-03	56.62		
M	33	964.38	1.27832E-02	23.10	Tol.	EU-152
	35	1002.48	6.57407E-03	58.36		
	38	1238.30	8.24405E-03	48.89	Tol.	CO-56
	39	1342.04	4.58333E-03	56.85	Sum	
M	40	1375.70	2.91906E-03	57.49		
m	41	1378.50	8.47237E-03	26.74		
	42	1408.42	5.27778E-03	36.61	Tol.	EU-152
	43	1437.90	3.04293E-03	62.79	Sum	
	45	1509.60	2.51634E-03	60.96		
	46	1539.28	5.00000E-03	45.13		
M	47	1587.67	5.86947E-03	35.57	Sum	
m	48	1591.82	3.53864E-03	76.36	D-Esc	
	50	1984.72	1.80556E-03	65.27		
	51	2033.22	2.26852E-03	54.76		
	52	2051.95	1.94444E-03	37.80		
	53	2103.04	5.63131E-03	40.97	S-Esc	
	54	2117.26	2.96296E-03	58.64	Sum	
	55	2163.44	4.44444E-03	25.00		
	56	2171.63	1.80556E-03	49.25		
	57	2181.35	2.71991E-03	42.19		
	58	2272.66	1.79293E-03	71.21		
	59	2430.45	1.73611E-03	53.22	Sum	

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 1510088-12
CP1804S12-13

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	1.49E+01	2.01E+00
FE-59	0.31	1099.22 *	56.50	1.49E-01	1.26E-01
		1291.56	43.20		
GA-67	0.57	93.31 *	35.70	2.85E+02	1.25E+03
		208.95 *	2.24	2.22E+03	9.45E+03
		300.22 *	16.00	3.71E+02	1.63E+03
CD-109	0.94	88.03 *	3.72	1.42E+00	8.61E-01
SN-126	0.99	87.57 *	37.00	1.36E-01	8.21E-02
TL-208	0.97	583.14 *	30.22	1.21E+00	2.37E-01
		860.37 *	4.48	1.66E+00	1.26E+00
		2614.66 *	35.85	9.54E-01	2.00E-01
PB-210	0.99	46.50 *	4.25	2.12E+00	2.33E+00
BI-212	0.76	727.17 *	11.80	8.18E-01	4.71E-01
		1620.62	2.75		
PB-212	0.99	238.63 *	44.60	1.50E+00	1.74E-01
		300.09 *	3.41	1.80E+00	8.90E-01
BI-214	0.92	609.31 *	46.30	1.03E+00	1.74E-01
		1120.29 *	15.10	9.05E-01	5.26E-01
		1764.49 *	15.80	1.53E+00	3.85E-01
		2204.22	4.98		
PB-214	0.99	295.21 *	19.19	1.14E+00	2.27E-01
		351.92 *	37.19	1.15E+00	1.85E-01
RA-224	0.91	240.98 *	3.95	4.23E+00	1.58E+00
RA-226	0.99	186.21 *	3.28	2.02E+00	3.80E+00
AC-228	0.99	338.32 *	11.40	1.78E+00	5.31E-01
		911.07 *	27.70	1.16E+00	3.14E-01
		969.11 *	16.60	1.44E+00	3.50E-01
TH-234	0.99	63.29 *	3.80	1.03E+00	1.05E+00
NP-237	0.87	86.50 *	12.60	3.98E-01	2.41E-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 1510088-12
CP1804S12-13

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.991	1.49E+01	2.01E+00	
FE-59	0.313	1.49E-01	1.26E-01	
GA-67	0.579	2.24E+02	9.51E+02	
? CD-109	0.944	1.42E+00	8.61E-01	
? SN-126	0.997	1.36E-01	8.21E-02	
TL-208	0.979	1.07E+00	1.52E-01	
PB-210	0.998	2.12E+00	2.33E+00	
BI-212	0.764	8.18E-01	4.71E-01	
PB-212	0.997	1.47E+00	1.72E-01	
BI-214	0.923	1.09E+00	1.52E-01	
PB-214	0.998	1.15E+00	1.43E-01	
RA-224	0.911	4.23E+00	1.58E+00	
RA-226	0.998	2.02E+00	3.80E+00	
AC-228	0.993	1.37E+00	2.14E-01	
TH-234	0.994	1.03E+00	1.05E+00	
? NP-237	0.871	3.98E-01	2.41E-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 1510088-12
CP1804S12-13

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 5:25:54PM
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	72.91	1.33090E-02	54.97	Tol.	PM-145
m	4	76.41	2.75889E-01	6.28		
	7	99.48	1.81758E-02	45.41		
	8	129.51	3.49666E-02	33.15		
M	9	183.09	9.86145E-03	38.80		
	12	215.88	1.54266E-02	51.94		
	15	270.42	2.37331E-02	37.25		
	18	327.92	1.25721E-02	58.87	Tol.	LA-140
	21	409.82	9.16667E-03	52.75		
	22	463.44	1.67135E-02	34.70	Tol.	SB-125
	23	495.47	9.41551E-03	42.37		
	24	510.91	2.80208E-02	23.73		
	28	783.86	1.36477E-02	31.97		
	29	796.07	1.25577E-02	34.82	Sum	
	30	836.00	6.18151E-03	56.62		
M	33	964.38	1.27832E-02	23.10	Tol.	EU-152
	35	1002.48	6.57407E-03	58.36		
	38	1238.30	8.24405E-03	48.89	Tol.	CO-56
	39	1342.04	4.58333E-03	56.85	Sum	
M	40	1375.70	2.91906E-03	57.49		
m	41	1378.50	8.47237E-03	26.74		
	42	1408.42	5.27778E-03	36.61	Tol.	EU-152
	43	1437.90	3.04293E-03	62.79	Sum	
	45	1509.60	2.51634E-03	60.96		
	46	1539.28	5.00000E-03	45.13		
M	47	1587.67	5.86947E-03	35.57	Sum	
m	48	1591.82	3.53864E-03	76.36	D-Esc	
	50	1984.72	1.80556E-03	65.27		
	51	2033.22	2.26852E-03	54.76		
	52	2051.95	1.94444E-03	37.80		
	53	2103.04	5.63131E-03	40.97	S-Esc	
	54	2117.26	2.96296E-03	58.64	Sum	
	55	2163.44	4.44444E-03	25.00		
	56	2171.63	1.80556E-03	49.25		
	57	2181.35	2.71991E-03	42.19		

Analysis Report for 1510088-12
CP1804S12-13

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
58	2272.66	1.79293E-03	71.21		
59	2430.45	1.73611E-03	53.22	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	2.97E-02	6.83E-01	6.83E-01
+	NA-22	1274.54	99.94	1.00E-03	7.19E-02	7.19E-02
+	NA-24	1368.53	99.99	1.12E+14	8.11E+13	2.43E+14
		2754.09	99.86	1.10E+13		8.11E+13
+	AL-26	1808.65	99.76	2.98E-03	5.80E-02	5.80E-02
+	K-40	1460.81	* 10.67	1.49E+01	7.28E-01	7.28E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	1.69E-02	4.82E-02	4.82E-02
		78.34	96.00	2.94E-01		7.01E-02
+	SC-46	889.25	99.98	-3.86E-02	7.59E-02	7.59E-02
		1120.51	99.99	2.11E-01		1.54E-01
+	V-48	983.52	99.98	3.51E-02	2.48E-01	2.48E-01
		1312.10	97.50	-1.91E-02		2.78E-01
+	CR-51	320.08	9.83	7.31E-02	1.11E+00	1.11E+00
+	MN-54	834.83	99.97	-1.05E-02	7.50E-02	7.50E-02
+	CO-56	846.75	99.96	-1.08E-02	8.06E-02	8.06E-02
		1037.75	14.03	-4.28E-01		5.73E-01
		1238.25	67.00	1.28E-01		1.94E-01
		1771.40	15.51	-1.05E-01		4.39E-01
		2598.48	16.90	2.39E-02		2.88E-01
+	CO-57	122.06	85.51	1.47E-02	5.42E-02	5.42E-02
		136.48	10.60	-8.70E-02		4.52E-01
+	CO-58	810.76	99.40	-1.12E-02	8.38E-02	8.38E-02
+	FE-59	1099.22	* 56.50	1.49E-01	1.96E-01	1.96E-01
		1291.56	43.20	-1.12E-01		2.52E-01
+	CO-60	1173.22	100.00	2.90E-02	7.54E-02	8.35E-02
		1332.49	100.00	3.10E-02		7.54E-02

Analysis Report for 1510088-12
CP1804S12-13

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZN-65	1115.52		50.75	-8.19E-03	1.56E-01	1.56E-01
+	GA-67	93.31	*	35.70	2.85E+02	1.97E+02	1.97E+02
		208.95	*	2.24	2.22E+03		2.09E+03
		300.22	*	16.00	3.71E+02		5.56E+02
+	SE-75	121.11		16.70	1.77E-01	8.89E-02	3.12E-01
		136.00		59.20	-7.90E-03		8.89E-02
		264.65		59.80	4.50E-03		9.19E-02
		279.53		25.20	8.91E-02		2.47E-01
		400.65		11.40	3.88E-01		5.56E-01
+	RB-82	776.52		13.00	-6.06E-01	1.13E+00	1.13E+00
+	RB-83	520.41		46.00	-4.94E-02	1.30E-01	1.30E-01
		529.64		30.30	-8.76E-02		2.04E-01
		552.65		16.40	1.04E-01		4.27E-01
+	KR-85	513.99		0.43	-2.05E+01	1.31E+01	1.31E+01
+	SR-85	513.99		99.27	-1.26E-01	8.04E-02	8.04E-02
+	Y-88	898.02		93.40	-2.37E-02	7.23E-02	8.40E-02
		1836.01		99.38	1.74E-02		7.23E-02
+	NB-93M	16.57		9.43	-7.35E+03	4.85E+03	4.85E+03
+	NB-94	702.63		100.00	-8.79E-03	5.24E-02	6.48E-02
		871.10		100.00	-1.86E-02		5.24E-02
+	NB-95	765.79		99.81	1.35E-01	1.56E-01	1.56E-01
+	NB-95M	235.69		25.00	-1.29E+03	1.42E+02	1.42E+02
+	ZR-95	724.18		43.70	-1.33E-02	1.70E-01	2.71E-01
		756.72		55.30	4.75E-02		1.70E-01
+	MO-99	181.06		6.20	9.86E+02	1.84E+03	2.79E+03
		739.58		12.80	1.54E+02		1.84E+03
		778.00		4.50	-1.35E+03		4.66E+03
+	RU-103	497.08		89.00	-1.47E-02	9.18E-02	9.18E-02
+	RU-106	621.84		9.80	1.82E-01	7.12E-01	7.12E-01
+	AG-108M	433.93		89.90	1.56E-02	5.40E-02	5.40E-02
		614.37		90.40	2.04E-02		7.38E-02
		722.95		90.50	-8.11E-03		7.80E-02
+	CD-109	88.03	*	3.72	1.42E+00	1.32E+00	1.32E+00
+	AG-110M	657.75		93.14	-1.79E-02	6.40E-02	6.40E-02
		677.61		10.53	1.25E-01		6.51E-01
		706.67		16.46	0.00E+00		4.30E-01
		763.93		21.98	-4.57E-01		3.34E-01
		884.67		71.63	2.41E-02		9.41E-02
		1384.27		23.94	1.47E-01		3.01E-01
+	CD-113M	263.70		0.02	-6.84E+01	1.99E+02	1.99E+02
+	SN-113	255.12		1.93	8.06E-01	8.72E-02	2.97E+00
		391.69		64.90	-4.58E-02		8.72E-02
+	TE123M	159.00		84.10	4.07E-02	6.74E-02	6.74E-02
+	SB-124	602.71		97.87	2.08E-03	8.80E-02	8.80E-02
		645.85		7.26	2.14E-01		1.17E+00
		722.78		11.10	-9.59E-02		9.22E-01
		1691.02		49.00	-4.54E-02		1.42E-01
+	I-125	35.49		6.49	-3.74E-01	5.10E+00	5.10E+00

Analysis Report for 1510088-12
CP1804S12-13

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-125	176.33	6.89	1.29E-01	1.58E-01	7.01E-01
		427.89	29.33	-5.95E-02		1.58E-01
		463.38	10.35	4.93E-01		6.02E-01
		600.56	17.80	-4.16E-02		3.30E-01
		635.90	11.32	-1.77E-03		5.15E-01
+	SB-126	414.70	83.30	4.05E-02	3.60E-01	3.60E-01
		666.33	99.60	-3.28E-02		3.67E-01
		695.00	99.60	9.32E-02		4.12E-01
		720.50	53.80	-3.40E-01		7.53E-01
+	SN-126	87.57	* 37.00	1.36E-01	1.27E-01	1.27E-01
+	SB-127	473.00	25.00	-1.05E+01	5.39E+01	6.31E+01
		685.20	35.70	-7.13E+00		5.39E+01
		783.80	14.70	8.85E+01		1.73E+02
+	I-129	29.78	57.00	-5.52E-01	1.07E+00	1.07E+00
		33.60	13.20	-1.66E+00		2.22E+00
		39.58	7.52	3.79E-01		1.96E+00
+	I-131	284.30	6.05	-2.70E+00	9.78E-01	1.28E+01
		364.48	81.20	2.77E-01		9.78E-01
		636.97	7.26	-1.38E+00		1.27E+01
		722.89	1.80	-6.62E+00		6.36E+01
+	TE-132	49.72	13.10	-2.76E+02	5.23E+01	4.93E+02
		228.16	88.00	-2.70E+01		5.23E+01
+	BA-133	81.00	33.00	-5.38E-02	8.44E-02	1.12E-01
		302.84	17.80	3.70E-02		2.67E-01
		356.01	60.00	1.05E-02		8.44E-02
+	I-133	529.87	86.30	1.06E+09	9.78E+09	9.78E+09
+	XE-133	81.00	38.00	-3.33E+00	6.93E+00	6.93E+00
+	CS-134	563.23	8.38	2.23E-01	7.68E-02	6.49E-01
		569.32	15.43	7.75E-02		3.69E-01
		604.70	97.60	7.15E-04		7.68E-02
		795.84	85.40	9.44E-02		9.47E-02
		801.93	8.73	-1.60E-01		7.10E-01
+	CS-135	268.24	16.00	-1.69E-01	3.26E-01	3.26E-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	1.76E+00	3.18E-01	3.42E+00
		163.89	4.61	7.06E-01		5.61E+00
		176.55	13.56	-1.17E+00		1.92E+00
		273.65	12.66	-7.62E-01		2.00E+00
		340.57	48.50	-4.29E-01		6.80E-01
		818.50	99.70	-7.65E-02		3.18E-01
		1048.07	79.60	-1.25E-01		4.09E-01
		1235.34	19.70	8.44E-01		2.70E+00
+	CS-137	661.65	85.12	-4.30E-02	6.78E-02	6.78E-02
+	LA-138	788.74	34.00	3.44E-02	8.17E-02	2.15E-01
		1435.80	66.00	-1.06E-02		8.17E-02
+	CE-139	165.85	80.35	-7.01E-03	6.90E-02	6.90E-02
+	BA-140	162.64	6.70	-5.12E-01	1.19E+00	4.07E+00

Analysis Report for 1510088-12
CP1804S12-13

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	304.84	4.50	5.12E+00	1.19E+00	5.95E+00
		423.70	3.20	6.10E-01		8.74E+00
		437.55	2.00	4.76E+00		1.39E+01
		537.32	25.00	2.22E-01		1.19E+00
+	LA-140	328.77	20.50	8.49E-01	3.87E-01	1.58E+00
		487.03	45.50	-5.56E-02		6.17E-01
		815.85	23.50	5.93E-01		1.50E+00
		1596.49	95.49	2.52E-02		3.87E-01
+	CE-141	145.44	48.40	3.27E-02	1.93E-01	1.93E-01
+	CE-143	57.36	11.80	-3.31E+05	1.89E+06	4.93E+06
		293.26	42.00	-1.01E+06		1.89E+06
		664.55	5.20	9.23E+06		1.46E+07
+	CE-144	133.54	10.80	5.16E-02	4.40E-01	4.40E-01
+	PM-144	476.78	42.00	5.14E-03	6.85E-02	1.18E-01
		618.01	98.60	-1.79E-02		6.85E-02
		696.49	99.49	1.48E-02		7.05E-02
+	PM-145	36.85	21.70	-1.50E-02	4.66E-01	9.07E-01
		37.36	39.70	-7.73E-03		4.66E-01
		42.30	15.10	-6.65E-02		7.40E-01
		72.40	2.31	-5.00E-01		1.94E+00
+	PM-146	453.90	39.94	-8.97E-03	1.19E-01	1.19E-01
		735.90	14.01	1.51E-01		4.79E-01
		747.13	13.10	-7.84E-02		5.12E-01
+	ND-147	91.11	28.90	-1.93E+00	1.51E+00	1.51E+00
		531.02	13.10	1.13E+00		2.99E+00
+	PM-149	285.90	3.10	2.40E+04	3.93E+04	3.93E+04
+	EU-152	121.78	20.50	5.67E-02	2.09E-01	2.09E-01
		244.69	5.40	-1.67E+00		8.86E-01
		344.27	19.13	1.92E-02		2.38E-01
		778.89	9.20	-1.10E-01		7.00E-01
		964.01	10.40	-2.65E+00		8.36E-01
		1085.78	7.22	-1.10E-01		1.02E+00
		1112.02	9.60	-2.05E-01		7.21E-01
		1407.95	14.94	2.46E-01		5.01E-01
+	GD-153	97.43	31.30	-1.11E-02	1.51E-01	1.51E-01
		103.18	22.20	3.78E-02		2.05E-01
+	EU-154	123.07	40.50	2.28E-02	1.05E-01	1.05E-01
		723.30	19.70	-3.75E-02		3.61E-01
		873.19	11.50	2.86E-02		5.07E-01
		996.32	10.30	1.63E-01		6.16E-01
		1004.76	17.90	1.56E-01		4.10E-01
		1274.45	35.50	2.77E-03		1.99E-01
+	EU-155	86.50	30.90	-5.92E-02	1.87E-01	1.87E-01
		105.30	20.70	9.94E-02		2.07E-01
+	EU-156	811.77	10.40	-7.99E-01	2.49E+00	2.49E+00
		1153.47	7.20	5.23E-01		4.77E+00
		1230.71	8.90	4.56E-01		4.14E+00
+	HO-166M	184.41	72.60	5.82E-02	8.03E-02	8.03E-02
		280.45	29.60	6.30E-02		1.75E-01

Analysis Report for 1510088-12

CP1804S12-13

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
HO-166M	410.94	11.10	3.17E-01	8.03E-02	4.96E-01
	711.69	54.10	-8.57E-02		1.10E-01
+ TM-171	66.72	0.14	3.16E+00	3.37E+01	3.37E+01
+ HF-172	81.75	4.52	-1.17E+00	3.78E-01	8.36E-01
	125.81	11.30	-2.59E-02		3.78E-01
+ LU-172	181.53	20.60	1.66E+00	3.19E+00	6.91E+00
	810.06	16.63	-1.38E+00		1.03E+01
	912.12	15.25	6.98E+01		2.57E+01
	1093.66	62.50	2.53E-01		3.19E+00
+ LU-173	100.72	5.24	1.01E-01	2.69E-01	8.43E-01
	272.11	21.20	1.12E-01		2.69E-01
+ HF-175	343.40	84.00	3.94E-02	7.91E-02	7.91E-02
+ LU-176	88.34	13.30	2.38E-01	4.98E-02	4.35E-01
	201.83	86.00	-8.50E-03		5.81E-02
	306.78	94.00	8.05E-04		4.98E-02
+ TA-182	67.75	41.20	4.71E-02	1.35E-01	1.35E-01
	1121.30	34.90	5.49E-01		4.07E-01
	1189.05	16.23	-1.95E-01		4.63E-01
	1221.41	26.98	-8.56E-02		3.53E-01
	1231.02	11.44	1.09E-02		8.63E-01
+ IR-192	308.46	29.68	-6.78E-02	1.32E-01	2.08E-01
	468.07	48.10	-2.79E-02		1.32E-01
+ HG-203	279.19	77.30	7.36E-02	1.11E-01	1.11E-01
+ BI-207	569.67	97.72	1.19E-02	5.66E-02	5.66E-02
	1063.62	74.90	3.90E-02		9.76E-02
+ TL-208	583.14	* 30.22	1.21E+00	1.02E-01	2.70E-01
	860.37	* 4.48	1.66E+00		1.99E+00
	2614.66	* 35.85	9.54E-01		1.02E-01
+ BI-210M	262.00	45.00	-9.88E-03	1.06E-01	1.06E-01
	300.00	23.00	3.00E-01		2.32E-01
+ PB-210	46.50	* 4.25	2.12E+00	3.81E+00	3.81E+00
+ PB-211	404.84	2.90	5.72E-01	1.74E+00	1.74E+00
	831.96	2.90	3.29E-01		2.30E+00
+ BI-212	727.17	* 11.80	8.18E-01	7.22E-01	7.22E-01
	1620.62	2.75	1.25E+00		2.51E+00
+ PB-212	238.63	* 44.60	1.50E+00	2.24E-01	2.24E-01
	300.09	* 3.41	1.80E+00		2.71E+00
+ BI-214	609.31	* 46.30	1.03E+00	1.77E-01	1.77E-01
	1120.29	* 15.10	9.05E-01		8.08E-01
	1764.49	* 15.80	1.53E+00		2.70E-01
	2204.22	4.98	1.52E+00		1.80E+00
+ PB-214	295.21	* 19.19	1.14E+00	1.93E-01	4.81E-01
	351.92	* 37.19	1.15E+00		1.93E-01
+ RN-219	401.80	6.50	-1.19E-01	7.78E-01	7.78E-01
+ RA-223	323.87	3.88	4.17E-02	1.26E+00	1.26E+00
+ RA-224	240.98	* 3.95	4.23E+00	2.56E+00	2.56E+00
+ RA-225	40.00	31.00	4.01E-01	2.08E+00	2.08E+00
+ RA-226	186.21	* 3.28	2.02E+00	2.23E+00	2.23E+00

Analysis Report for 1510088-12
CP1804S12-13

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-227	50.10		8.40	-4.37E-01	6.24E-01	7.79E-01
		236.00		11.50	-5.63E+00		6.24E-01
		256.20		6.30	-4.84E-01		7.28E-01
+	AC-228	338.32	*	11.40	1.78E+00	4.13E-01	7.61E-01
		911.07	*	27.70	1.16E+00		4.13E-01
		969.11	*	16.60	1.44E+00		6.99E-01
+	TH-230	48.44		16.90	-2.35E-01	4.40E-01	4.40E-01
		62.85		4.60	1.67E+00		1.19E+00
		67.67		0.37	4.32E+00		1.23E+01
+	PA-231	283.67		1.60	-6.28E-01	2.05E+00	2.99E+00
		302.67		2.30	2.85E-01		2.05E+00
+	TH-231	25.64		14.70	-2.14E+00	6.54E-01	1.33E+01
		84.21		6.40	6.85E-01		6.54E-01
+	PA-233	311.98		38.60	1.57E-01	2.95E-01	2.95E-01
+	PA-234	131.20		20.40	2.36E-01	2.37E-01	2.37E-01
		733.99		8.80	-3.07E-01		7.25E-01
		946.00		12.00	1.67E-01		5.73E-01
+	PA-234M	1001.03		0.92	8.66E-01	7.69E+00	7.69E+00
+	TH-234	63.29	*	3.80	1.03E+00	1.71E+00	1.71E+00
+	U-235	143.76		10.50	2.73E-02	4.39E-01	4.39E-01
		163.35		4.70	-1.27E-01		1.01E+00
		205.31		4.70	1.85E-01		1.05E+00
+	NP-237	86.50	*	12.60	3.98E-01	3.73E-01	3.73E-01
+	NP-239	106.10		22.70	7.98E+02	2.56E+03	2.56E+03
		228.18		10.70	-3.11E+03		6.02E+03
		277.60		14.10	1.81E+03		4.95E+03
+	AM-241	59.54		35.90	1.11E-02	1.38E-01	1.38E-01
+	AM-243	74.67		66.00	-1.77E-01	9.38E-02	9.38E-02
+	CM-243	209.75		3.29	1.52E+00	3.68E-01	1.62E+00
		228.14		10.60	-2.32E-01		4.49E-01
		277.60		14.00	1.34E-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

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

Analysis Report for 1510088-12
CP1804S12-13

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	6.83E-01	6.83E-01	2.97E-02	3.20E-01	
NA-22	1274.54	99.94	7.19E-02	7.19E-02	1.00E-03	3.27E-02	
NA-24	1368.53	99.99	2.43E+14	8.11E+13	1.12E+14	1.09E+14	
	2754.09	99.86	8.11E+13		1.10E+13	2.56E+13	
AL-26	1808.65	99.76	5.80E-02	5.80E-02	2.98E-03	2.50E-02	
+ K-40	1460.81	*	10.67	7.28E-01	7.28E-01	1.49E+01	3.30E-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	4.82E-02	4.82E-02	1.69E-02	2.34E-02	
	78.34	96.00	7.01E-02		2.94E-01	3.44E-02	
SC-46	889.25	99.98	7.59E-02	7.59E-02	-3.86E-02	3.48E-02	
	1120.51	99.99	1.54E-01		2.11E-01	7.30E-02	
V-48	983.52	99.98	2.48E-01	2.48E-01	3.51E-02	1.13E-01	
	1312.10	97.50	2.78E-01		-1.91E-02	1.25E-01	
CR-51	320.08	9.83	1.11E+00	1.11E+00	7.31E-02	5.30E-01	
MN-54	834.83	99.97	7.50E-02	7.50E-02	-1.05E-02	3.50E-02	
CO-56	846.75	99.96	8.06E-02	8.06E-02	-1.08E-02	3.72E-02	
	1037.75	14.03	5.73E-01		-4.28E-01	2.61E-01	
	1238.25	67.00	1.94E-01		1.28E-01	9.07E-02	
	1771.40	15.51	4.39E-01		-1.05E-01	1.86E-01	
	2598.48	16.90	2.88E-01		2.39E-02	1.11E-01	
CO-57	122.06	85.51	5.42E-02	5.42E-02	1.47E-02	2.63E-02	
	136.48	10.60	4.52E-01		-8.70E-02	2.19E-01	
CO-58	810.76	99.40	8.38E-02	8.38E-02	-1.12E-02	3.88E-02	
+ FE-59	1099.22	*	56.50	1.96E-01	1.96E-01	1.49E-01	8.97E-02
	1291.56	43.20	2.52E-01		-1.12E-01	1.13E-01	
CO-60	1173.22	100.00	8.35E-02	7.54E-02	2.90E-02	3.87E-02	
	1332.49	100.00	7.54E-02		3.10E-02	3.43E-02	
ZN-65	1115.52	50.75	1.56E-01	1.56E-01	-8.19E-03	7.16E-02	
+ GA-67	93.31	*	35.70	1.97E+02	1.97E+02	2.85E+02	9.67E+01
	208.95	*	2.24	2.09E+03		2.22E+03	1.01E+03
	300.22	*	16.00	5.56E+02		3.71E+02	2.72E+02
SE-75	121.11	16.70	3.12E-01	8.89E-02	1.77E-01	1.51E-01	
	136.00	59.20	8.89E-02		-7.90E-03	4.31E-02	
	264.65	59.80	9.19E-02		4.50E-03	4.39E-02	
	279.53	25.20	2.47E-01		8.91E-02	1.19E-01	
	400.65	11.40	5.56E-01		3.88E-01	2.64E-01	
RB-82	776.52	13.00	1.13E+00	1.13E+00	-6.06E-01	5.25E-01	
RB-83	520.41	46.00	1.30E-01	1.30E-01	-4.94E-02	6.05E-02	
	529.64	30.30	2.04E-01		-8.76E-02	9.52E-02	
	552.65	16.40	4.27E-01		1.04E-01	2.00E-01	
KR-85	513.99	0.43	1.31E+01	1.31E+01	-2.05E+01	6.18E+00	
SR-85	513.99	99.27	8.04E-02	8.04E-02	-1.26E-01	3.79E-02	
Y-88	898.02	93.40	8.40E-02	7.23E-02	-2.37E-02	3.88E-02	
	1836.01	99.38	7.23E-02		1.74E-02	3.12E-02	
NB-93M	16.57	9.43	4.85E+03	4.85E+03	-7.35E+03	2.36E+03	

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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	6.48E-02	5.24E-02	-8.79E-03	3.04E-02
	871.10	100.00	5.24E-02		-1.86E-02	2.38E-02
NB-95	765.79	99.81	1.56E-01	1.56E-01	1.35E-01	7.37E-02
NB-95M	235.69	25.00	1.42E+02	1.42E+02	-1.29E+03	6.94E+01
ZR-95	724.18	43.70	2.71E-01	1.70E-01	-1.33E-02	1.29E-01
	756.72	55.30	1.70E-01		4.75E-02	7.95E-02
MO-99	181.06	6.20	2.79E+03	1.84E+03	9.86E+02	1.35E+03
	739.58	12.80	1.84E+03		1.54E+02	8.65E+02
	778.00	4.50	4.66E+03		-1.35E+03	2.16E+03
RU-103	497.08	89.00	9.18E-02	9.18E-02	-1.47E-02	4.28E-02
RU-106	621.84	9.80	7.12E-01	7.12E-01	1.82E-01	3.36E-01
AG-108M	433.93	89.90	5.40E-02	5.40E-02	1.56E-02	2.55E-02
	614.37	90.40	7.38E-02		2.04E-02	3.49E-02
	722.95	90.50	7.80E-02		-8.11E-03	3.67E-02
	88.03	3.72	1.32E+00	1.32E+00	1.42E+00	6.46E-01
+ AG-110M	657.75	93.14	6.40E-02	6.40E-02	-1.79E-02	2.98E-02
	677.61	10.53	6.51E-01		1.25E-01	3.05E-01
	706.67	16.46	4.30E-01		0.00E+00	2.02E-01
	763.93	21.98	3.34E-01		-4.57E-01	1.56E-01
	884.67	71.63	9.41E-02		2.41E-02	4.34E-02
	1384.27	23.94	3.01E-01		1.47E-01	1.35E-01
CD-113M	263.70	0.02	1.99E+02	1.99E+02	-6.84E+01	9.52E+01
SN-113	255.12	1.93	2.97E+00	8.72E-02	8.06E-01	1.42E+00
	391.69	64.90	8.72E-02		-4.58E-02	4.12E-02
TE123M	159.00	84.10	6.74E-02	6.74E-02	4.07E-02	3.27E-02
SB-124	602.71	97.87	8.80E-02	8.80E-02	2.08E-03	4.13E-02
	645.85	7.26	1.17E+00		2.14E-01	5.47E-01
	722.78	11.10	9.22E-01		-9.59E-02	4.34E-01
	1691.02	49.00	1.42E-01		-4.54E-02	5.95E-02
	35.49	6.49	5.10E+00	5.10E+00	-3.74E-01	2.47E+00
SB-125	176.33	6.89	7.01E-01	1.58E-01	1.29E-01	3.39E-01
	427.89	29.33	1.58E-01		-5.95E-02	7.40E-02
	463.38	10.35	6.02E-01		4.93E-01	2.87E-01
	600.56	17.80	3.30E-01		-4.16E-02	1.55E-01
	635.90	11.32	5.15E-01		-1.77E-03	2.41E-01
SB-126	414.70	83.30	3.60E-01	3.60E-01	4.05E-02	1.70E-01
	666.33	99.60	3.67E-01		-3.28E-02	1.72E-01
	695.00	99.60	4.12E-01		9.32E-02	1.94E-01
	720.50	53.80	7.53E-01		-3.40E-01	3.54E-01
+ SN-126	87.57	37.00	1.27E-01	1.27E-01	1.36E-01	6.19E-02
	473.00	25.00	6.31E+01	5.39E+01	-1.05E+01	2.95E+01
	685.20	35.70	5.39E+01		-7.13E+00	2.51E+01
I-129	783.80	14.70	1.73E+02		8.85E+01	8.17E+01
	29.78	57.00	1.07E+00	1.07E+00	-5.52E-01	5.18E-01
	33.60	13.20	2.22E+00		-1.66E+00	1.07E+00
I-131	39.58	7.52	1.96E+00		3.79E-01	9.53E-01
	284.30	6.05	1.28E+01	9.78E-01	-2.70E+00	6.14E+00
	364.48	81.20	9.78E-01		2.77E-01	4.64E-01
	636.97	7.26	1.27E+01		-1.38E+00	5.93E+00
TE-132	722.89	1.80	6.36E+01		-6.62E+00	3.00E+01
	49.72	13.10	4.93E+02	5.23E+01	-2.76E+02	2.39E+02
	228.16	88.00	5.23E+01		-2.70E+01	2.52E+01
BA-133	81.00	33.00	1.12E-01	8.44E-02	-5.38E-02	5.40E-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	2.67E-01	8.44E-02	3.70E-02	1.27E-01
	356.01	60.00	8.44E-02		1.05E-02	4.02E-02
I-133	529.87	86.30	9.78E+09	9.78E+09	1.06E+09	4.57E+09
XE-133	81.00	38.00	6.93E+00	6.93E+00	-3.33E+00	3.35E+00
CS-134	563.23	8.38	6.49E-01	7.68E-02	2.23E-01	3.04E-01
	569.32	15.43	3.69E-01		7.75E-02	1.73E-01
	604.70	97.60	7.68E-02		7.15E-04	3.65E-02
	795.84	85.40	9.47E-02		9.44E-02	4.47E-02
	801.93	8.73	7.10E-01		-1.60E-01	3.29E-01
CS-135	268.24	16.00	3.26E-01	3.26E-01	-1.69E-01	1.57E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.42E+00	3.18E-01	1.76E+00	1.66E+00
	163.89	4.61	5.61E+00		7.06E-01	2.72E+00
	176.55	13.56	1.92E+00		-1.17E+00	9.30E-01
	273.65	12.66	2.00E+00		-7.62E-01	9.57E-01
	340.57	48.50	6.80E-01		-4.29E-01	3.26E-01
	818.50	99.70	3.18E-01		-7.65E-02	1.47E-01
	1048.07	79.60	4.09E-01		-1.25E-01	1.85E-01
	1235.34	19.70	2.70E+00		8.44E-01	1.26E+00
CS-137	661.65	85.12	6.78E-02	6.78E-02	-4.30E-02	3.17E-02
LA-138	788.74	34.00	2.15E-01	8.17E-02	3.44E-02	1.01E-01
	1435.80	66.00	8.17E-02		-1.06E-02	3.55E-02
CE-139	165.85	80.35	6.90E-02	6.90E-02	-7.01E-03	3.34E-02
BA-140	162.64	6.70	4.07E+00	1.19E+00	-5.12E-01	1.97E+00
	304.84	4.50	5.95E+00		5.12E+00	2.84E+00
	423.70	3.20	8.74E+00		6.10E-01	4.12E+00
	437.55	2.00	1.39E+01		4.76E+00	6.52E+00
	537.32	25.00	1.19E+00		2.22E-01	5.58E-01
LA-140	328.77	20.50	1.58E+00	3.87E-01	8.49E-01	7.55E-01
	487.03	45.50	6.17E-01		-5.56E-02	2.89E-01
	815.85	23.50	1.50E+00		5.93E-01	6.93E-01
	1596.49	95.49	3.87E-01		2.52E-02	1.71E-01
CE-141	145.44	48.40	1.93E-01	1.93E-01	3.27E-02	9.36E-02
CE-143	57.36	11.80	4.93E+06	1.89E+06	-3.31E+05	2.38E+06
	293.26	42.00	1.89E+06		-1.01E+06	9.14E+05
	664.55	5.20	1.46E+07		9.23E+06	6.87E+06
CE-144	133.54	10.80	4.40E-01	4.40E-01	5.16E-02	2.14E-01
PM-144	476.78	42.00	1.18E-01	6.85E-02	5.14E-03	5.54E-02
	618.01	98.60	6.85E-02		-1.79E-02	3.23E-02
	696.49	99.49	7.05E-02		1.48E-02	3.31E-02
PM-145	36.85	21.70	9.07E-01	4.66E-01	-1.50E-02	4.40E-01
	37.36	39.70	4.66E-01		-7.73E-03	2.26E-01
	42.30	15.10	7.40E-01		-6.65E-02	3.59E-01
	72.40	2.31	1.94E+00		-5.00E-01	9.44E-01
PM-146	453.90	39.94	1.19E-01	1.19E-01	-8.97E-03	5.60E-02
	735.90	14.01	4.79E-01		1.51E-01	2.25E-01
	747.13	13.10	5.12E-01		-7.84E-02	2.40E-01
ND-147	91.11	28.90	1.51E+00	1.51E+00	-1.93E+00	7.42E-01
	531.02	13.10	2.99E+00		1.13E+00	1.40E+00
PM-149	285.90	3.10	3.93E+04	3.93E+04	2.40E+04	1.88E+04
EU-152	121.78	20.50	2.09E-01	2.09E-01	5.67E-02	1.01E-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)
EU-152	244.69	5.40	8.86E-01	2.09E-01	-1.67E+00	4.25E-01
	344.27	19.13	2.38E-01		1.92E-02	1.13E-01
	778.89	9.20	7.00E-01		-1.10E-01	3.26E-01
	964.01	10.40	8.36E-01		-2.65E+00	3.93E-01
	1085.78	7.22	1.02E+00		-1.10E-01	4.72E-01
	1112.02	9.60	7.21E-01		-2.05E-01	3.30E-01
	1407.95	14.94	5.01E-01		2.46E-01	2.27E-01
GD-153	97.43	31.30	1.51E-01	1.51E-01	-1.11E-02	7.34E-02
	103.18	22.20	2.05E-01		3.78E-02	9.95E-02
EU-154	123.07	40.50	1.05E-01	1.05E-01	2.28E-02	5.10E-02
	723.30	19.70	3.61E-01		-3.75E-02	1.70E-01
	873.19	11.50	5.07E-01		2.86E-02	2.33E-01
	996.32	10.30	6.16E-01		1.63E-01	2.82E-01
	1004.76	17.90	4.10E-01		1.56E-01	1.90E-01
EU-155	1274.45	35.50	1.99E-01	1.87E-01	2.77E-03	9.04E-02
	86.50	30.90	1.87E-01		-5.92E-02	9.15E-02
	105.30	20.70	2.07E-01		9.94E-02	1.01E-01
EU-156	811.77	10.40	2.49E+00	2.49E+00	-7.99E-01	1.15E+00
	1153.47	7.20	4.77E+00		5.23E-01	2.20E+00
	1230.71	8.90	4.14E+00		4.56E-01	1.91E+00
HO-166M	184.41	72.60	8.03E-02	8.03E-02	5.82E-02	3.91E-02
	280.45	29.60	1.75E-01		6.30E-02	8.40E-02
	410.94	11.10	4.96E-01		3.17E-01	2.36E-01
	711.69	54.10	1.10E-01		-8.57E-02	5.10E-02
TM-171	66.72	0.14	3.37E+01	3.37E+01	3.16E+00	1.64E+01
HF-172	81.75	4.52	8.36E-01	3.78E-01	-1.17E+00	4.04E-01
	125.81	11.30	3.78E-01		-2.59E-02	1.83E-01
LU-172	181.53	20.60	6.91E+00	3.19E+00	1.66E+00	3.35E+00
	810.06	16.63	1.03E+01		-1.38E+00	4.79E+00
	912.12	15.25	2.57E+01		6.98E+01	1.24E+01
	1093.66	62.50	3.19E+00		2.53E-01	1.46E+00
LU-173	100.72	5.24	8.43E-01	2.69E-01	1.01E-01	4.10E-01
	272.11	21.20	2.69E-01		1.12E-01	1.29E-01
HF-175	343.40	84.00	7.91E-02	7.91E-02	3.94E-02	3.76E-02
LU-176	88.34	13.30	4.35E-01	4.98E-02	2.38E-01	2.13E-01
	201.83	86.00	5.81E-02		-8.50E-03	2.81E-02
	306.78	94.00	4.98E-02		8.05E-04	2.37E-02
TA-182	67.75	41.20	1.35E-01	1.35E-01	4.71E-02	6.53E-02
	1121.30	34.90	4.07E-01		5.49E-01	1.93E-01
	1189.05	16.23	4.63E-01		-1.95E-01	2.09E-01
	1221.41	26.98	3.53E-01		-8.56E-02	1.62E-01
	1231.02	11.44	8.63E-01		1.09E-02	3.98E-01
IR-192	308.46	29.68	2.08E-01	1.32E-01	-6.78E-02	9.91E-02
	468.07	48.10	1.32E-01		-2.79E-02	6.20E-02
HG-203	279.19	77.30	1.11E-01	1.11E-01	7.36E-02	5.31E-02
BI-207	569.67	97.72	5.66E-02	5.66E-02	1.19E-02	2.66E-02
	1063.62	74.90	9.76E-02		3.90E-02	4.50E-02
	583.14	30.22	2.70E-01		1.21E+00	1.29E-01
+ TL-208	860.37	* 4.48	1.99E+00	1.02E-01	1.66E+00	9.43E-01
	2614.66	* 35.85	1.02E-01		9.54E-01	3.94E-02
	262.00	45.00	1.06E-01		1.06E-01	-9.88E-03	5.08E-02
BI-210M	300.00	23.00	2.32E-01	1.06E-01	3.00E-01	1.11E-01
	46.50	* 4.25	3.81E+00		3.81E+00	2.12E+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)
PB-211	404.84	2.90	1.74E+00	1.74E+00	5.72E-01	8.23E-01
	831.96	2.90	2.30E+00		3.29E-01	1.07E+00
+ BI-212	727.17 *	11.80	7.22E-01	7.22E-01	8.18E-01	3.44E-01
	1620.62	2.75	2.51E+00		1.25E+00	1.11E+00
+ PB-212	238.63 *	44.60	2.24E-01	2.24E-01	1.50E+00	1.10E-01
	300.09 *	3.41	2.71E+00		1.80E+00	1.32E+00
+ BI-214	609.31 *	46.30	1.77E-01	1.77E-01	1.03E+00	8.48E-02
	1120.29 *	15.10	8.08E-01		9.05E-01	3.85E-01
	1764.49 *	15.80	2.70E-01		1.53E+00	1.10E-01
	2204.22	4.98	1.80E+00		1.52E+00	8.14E-01
+ PB-214	295.21 *	19.19	4.81E-01	1.93E-01	1.14E+00	2.35E-01
	351.92 *	37.19	1.93E-01		1.15E+00	9.30E-02
RN-219	401.80	6.50	7.78E-01	7.78E-01	-1.19E-01	3.69E-01
RA-223	323.87	3.88	1.26E+00	1.26E+00	4.17E-02	6.03E-01
+ RA-224	240.98 *	3.95	2.56E+00	2.56E+00	4.23E+00	1.26E+00
RA-225	40.00	31.00	2.08E+00	2.08E+00	4.01E-01	1.01E+00
+ RA-226	186.21 *	3.28	2.23E+00	2.23E+00	2.02E+00	1.09E+00
TH-227	50.10	8.40	7.79E-01	6.24E-01	-4.37E-01	3.77E-01
	236.00	11.50	6.24E-01		-5.63E+00	3.04E-01
	256.20	6.30	7.28E-01		-4.84E-01	3.49E-01
+ AC-228	338.32 *	11.40	7.61E-01	4.13E-01	1.78E+00	3.70E-01
	911.07 *	27.70	4.13E-01		1.16E+00	1.98E-01
	969.11 *	16.60	6.99E-01		1.44E+00	3.34E-01
TH-230	48.44	16.90	4.40E-01	4.40E-01	-2.35E-01	2.13E-01
	62.85	4.60	1.19E+00		1.67E+00	5.82E-01
	67.67	0.37	1.23E+01		4.32E+00	5.99E+00
PA-231	283.67	1.60	2.99E+00	2.05E+00	-6.28E-01	1.43E+00
	302.67	2.30	2.05E+00		2.85E-01	9.78E-01
TH-231	25.64	14.70	1.33E+01	6.54E-01	-2.14E+00	6.45E+00
	84.21	6.40	6.54E-01		6.85E-01	3.18E-01
PA-233	311.98	38.60	2.95E-01	2.95E-01	1.57E-01	1.41E-01
PA-234	131.20	20.40	2.37E-01	2.37E-01	2.36E-01	1.15E-01
	733.99	8.80	7.25E-01		-3.07E-01	3.39E-01
	946.00	12.00	5.73E-01		1.67E-01	2.65E-01
PA-234M	1001.03	0.92	7.69E+00	7.69E+00	8.66E-01	3.56E+00
+ TH-234	63.29 *	3.80	1.71E+00	1.71E+00	1.03E+00	8.39E-01
U-235	143.76	10.50	4.39E-01	4.39E-01	2.73E-02	2.13E-01
	163.35	4.70	1.01E+00		-1.27E-01	4.89E-01
	205.31	4.70	1.05E+00		1.85E-01	5.08E-01
+ NP-237	86.50 *	12.60	3.73E-01	3.73E-01	3.98E-01	1.82E-01
NP-239	106.10	22.70	2.56E+03	2.56E+03	7.98E+02	1.24E+03
	228.18	10.70	6.02E+03		-3.11E+03	2.90E+03
	277.60	14.10	4.95E+03		1.81E+03	2.38E+03
AM-241	59.54	35.90	1.38E-01	1.38E-01	1.11E-02	6.70E-02
AM-243	74.67	66.00	9.38E-02	9.38E-02	-1.77E-01	4.60E-02
CM-243	209.75	3.29	1.62E+00	3.68E-01	1.52E+00	7.82E-01
	228.14	10.60	4.49E-01		-2.32E-01	2.16E-01
	277.60	14.00	3.68E-01		1.34E-01	1.77E-01

Analysis Report for 1510088-12
CP1804S12-13

- + = 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: CP1804S12-13

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	1	157
9:	544	1183	1065	459	590	1745	304	140
17:	140	114	123	144	109	126	108	115
25:	116	118	99	116	102	112	111	127
33:	114	107	105	132	113	125	133	135
41:	117	121	119	113	140	144	190	141
49:	108	102	109	113	105	118	97	76
57:	107	110	101	129	112	126	159	200
65:	113	120	119	138	128	116	126	120
73:	163	161	463	202	468	424	128	107
81:	99	95	107	156	140	104	210	218
89:	96	166	147	124	236	161	102	77
97:	72	85	95	103	77	65	71	77
105:	102	85	72	77	80	80	79	76
113:	85	82	77	94	70	78	70	78
121:	80	80	76	58	69	63	70	80
129:	124	101	78	77	72	65	75	75
137:	66	71	72	82	67	70	69	96
145:	73	63	77	74	57	59	77	59
153:	64	77	73	62	71	58	67	78
161:	69	55	74	83	56	64	61	63
169:	63	61	62	47	53	59	54	57
177:	81	53	61	80	55	56	79	62
185:	69	176	93	70	53	57	51	61
193:	54	49	50	53	59	50	54	62
201:	46	65	50	62	63	44	53	43
209:	97	78	43	45	41	51	50	68
217:	47	45	34	42	44	44	45	52
225:	55	56	35	50	43	32	48	47
233:	59	41	57	40	34	312	649	92
241:	113	143	62	42	37	23	33	28
249:	33	39	40	31	45	31	33	38
257:	35	34	41	34	50	33	36	27
265:	35	31	32	34	48	64	62	40
273:	33	26	35	24	45	46	27	52
281:	33	36	27	33	30	35	36	30
289:	24	28	27	27	33	40	177	134
297:	30	24	34	65	46	19	14	30
305:	34	33	26	21	24	26	27	32
313:	31	36	24	32	22	28	28	30
321:	29	26	31	27	31	26	43	52
329:	34	31	22	31	27	30	38	34
337:	33	134	105	26	28	22	19	24
345:	32	12	20	20	24	23	112	341
353:	97	29	21	27	27	26	26	20
361:	17	23	22	28	20	25	23	14

369: 21 17 19 20 29 16 24 29

Sample Title: CP1804S12-13

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	28	23	21	27	21	22	25	21
385:	21	23	35	19	29	15	22	23
393:	16	20	21	31	24	14	28	26
401:	22	24	20	18	21	27	22	14
409:	41	29	15	24	18	18	19	24
417:	20	17	18	20	22	21	13	21
425:	27	11	13	19	14	22	11	19
433:	18	18	17	18	14	15	23	12
441:	11	21	15	14	15	17	22	15
449:	19	15	12	17	10	18	21	13
457:	9	28	17	18	13	27	50	25
465:	17	18	16	12	11	18	18	15
473:	11	9	20	10	24	12	6	15
481:	17	11	15	26	18	13	11	20
489:	14	15	11	9	14	15	14	21
497:	15	8	8	16	13	21	12	15
505:	16	17	9	17	25	64	106	42
513:	19	9	11	15	16	15	14	13
521:	11	8	15	15	13	16	9	17
529:	8	17	13	15	20	7	13	15
537:	16	15	15	11	15	7	9	11
545:	16	13	10	9	13	10	17	13
553:	19	19	14	17	13	6	13	10
561:	14	15	13	15	15	7	16	15
569:	18	16	13	15	16	14	18	11
577:	14	13	19	14	12	51	169	90
585:	21	6	12	14	10	16	12	7
593:	13	14	8	17	11	10	12	10
601:	13	13	9	14	9	15	9	58
609:	198	129	29	11	7	12	15	16
617:	13	12	11	15	10	18	19	12
625:	13	12	12	14	12	21	9	10
633:	11	5	6	10	14	12	12	10
641:	11	10	8	7	9	13	11	14
649:	10	7	9	13	7	17	8	6
657:	8	10	9	8	11	13	4	12
665:	16	20	6	4	10	9	11	14
673:	9	9	9	12	18	9	8	12
681:	10	7	7	14	7	9	9	9
689:	5	12	16	15	12	12	11	11
697:	11	14	11	6	7	15	12	7
705:	20	10	13	9	6	13	9	4
713:	9	13	13	17	10	10	12	10
721:	11	12	14	13	7	22	48	25
729:	12	9	9	13	10	11	7	7
737:	13	12	16	7	7	18	10	15
745:	11	10	10	12	10	6	12	8
753:	5	11	15	13	7	12	9	8
761:	7	10	13	12	6	10	15	36
769:	19	7	14	15	12	8	7	11
777:	7	4	9	11	8	14	12	13
785:	20	17	6	8	10	12	10	7
793:	5	18	26	14	11	10	11	4

801: 7 5 13 4 9 10 11 9

Sample Title: CP1804S12-13

Channel	1	2	3	4	5	6	7	8
809:	8	5	6	5	9	8	7	8
817:	6	9	6	5	6	7	8	10
825:	8	13	7	6	7	13	10	3
833:	6	8	15	12	12	12	8	11
841:	16	6	7	7	5	11	2	7
849:	10	5	5	5	7	7	6	4
857:	4	7	13	14	21	6	6	5
865:	10	4	5	3	7	4	4	4
873:	7	5	11	7	5	8	5	7
881:	7	6	5	7	7	7	8	7
889:	3	5	5	6	10	8	8	7
897:	7	6	7	7	7	6	10	11
905:	8	4	5	4	13	57	97	57
913:	13	3	7	7	6	8	7	4
921:	3	7	5	5	2	8	6	8
929:	6	7	8	11	9	8	22	4
937:	7	3	3	8	7	0	10	8
945:	7	4	4	9	11	11	5	4
953:	10	6	4	9	8	6	8	10
961:	7	6	14	29	18	3	7	45
969:	55	25	8	8	6	6	1	1
977:	10	2	4	8	1	7	8	6
985:	4	4	4	8	4	4	4	5
993:	4	12	6	5	4	4	5	9
1001:	12	9	7	5	12	5	4	7
1009:	3	5	9	7	11	8	6	4
1017:	9	9	3	5	8	12	5	3
1025:	7	4	5	5	4	9	3	6
1033:	6	7	5	2	4	6	6	4
1041:	11	8	3	7	4	4	2	4
1049:	14	1	3	8	5	4	4	2
1057:	11	6	6	2	8	4	8	12
1065:	9	6	2	6	4	6	4	5
1073:	4	5	7	4	5	7	8	6
1081:	5	6	15	6	2	8	7	4
1089:	5	12	2	4	10	7	4	4
1097:	10	8	7	7	14	2	6	3
1105:	6	4	5	7	3	4	6	4
1113:	7	6	10	4	6	7	19	52
1121:	25	10	5	4	10	6	3	7
1129:	7	2	4	6	4	9	10	8
1137:	3	5	10	7	8	4	11	5
1145:	6	5	10	5	2	3	10	3
1153:	8	7	12	7	10	9	6	3
1161:	3	3	5	6	6	4	5	7
1169:	3	4	13	7	11	4	11	4
1177:	8	5	4	5	6	6	5	8
1185:	7	1	4	3	1	9	4	6
1193:	3	4	5	8	11	7	7	8
1201:	6	13	5	3	5	10	7	9
1209:	2	10	7	9	8	11	7	8
1217:	10	7	5	6	6	7	8	6
1225:	6	7	8	8	6	5	8	8

1233: 9 4 5 10 16 18 12 8

Sample Title: CP1804S12-13

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	2	6	6	10	5	6	8	5
1249:	10	2	3	6	5	5	5	4
1257:	4	1	11	8	7	6	2	5
1265:	7	5	6	5	4	7	6	5
1273:	4	3	3	5	7	4	4	8
1281:	7	4	1	8	2	8	4	4
1289:	3	4	4	2	7	4	4	7
1297:	8	6	6	6	4	7	6	3
1305:	1	4	3	5	2	5	3	4
1313:	7	2	5	4	5	4	4	2
1321:	1	5	1	2	6	1	4	3
1329:	3	3	8	8	3	4	6	2
1337:	4	3	2	8	11	3	4	6
1345:	3	2	6	3	3	2	4	3
1353:	3	4	5	3	3	2	4	2
1361:	2	4	5	0	5	4	2	7
1369:	2	2	3	2	1	7	1	6
1377:	9	15	5	2	4	0	5	4
1385:	7	4	1	0	3	3	5	1
1393:	4	3	5	2	3	1	4	5
1401:	6	3	3	2	0	6	7	5
1409:	5	7	0	4	6	4	4	1
1417:	2	2	1	6	2	3	5	4
1425:	6	3	2	0	2	2	1	1
1433:	2	3	1	4	0	4	4	3
1441:	1	1	1	4	1	1	6	3
1449:	0	4	4	2	3	2	3	2
1457:	2	12	83	216	222	73	20	0
1465:	1	0	4	4	1	1	2	2
1473:	4	2	0	1	0	2	5	1
1481:	6	3	1	2	2	3	0	1
1489:	2	1	2	4	2	2	2	3
1497:	3	3	1	3	2	6	4	1
1505:	2	3	1	3	5	5	0	1
1513:	4	2	3	0	2	1	3	1
1521:	3	0	1	3	4	4	2	0
1529:	3	2	4	1	1	1	3	3
1537:	1	6	4	5	2	2	1	2
1545:	0	2	0	1	0	3	2	0
1553:	2	1	0	2	3	3	3	2
1561:	1	2	1	1	2	2	0	1
1569:	0	2	1	2	3	0	1	2
1577:	1	3	2	5	4	2	4	3
1585:	1	7	6	8	9	4	7	4
1593:	3	1	2	1	5	1	1	1
1601:	1	2	1	0	2	3	1	1
1609:	0	2	1	0	0	0	1	2
1617:	2	3	5	2	2	3	1	2
1625:	2	1	0	1	1	5	1	1
1633:	2	5	1	2	1	1	1	4
1641:	2	2	3	0	4	0	2	1
1649:	1	1	3	1	1	2	0	0
1657:	2	2	0	2	5	2	1	2

1665: 1 1 1 3 1 0 1 2

Sample Title: CP1804S12-13

Channel	1	2	3	4	5	6	7	8
1673:	0	1	4	3	1	5	2	1
1681:	1	0	5	1	1	1	2	0
1689:	1	2	0	1	2	0	2	2
1697:	3	1	1	2	2	1	2	0
1705:	2	2	1	1	1	2	0	1
1713:	1	0	1	1	4	2	2	1
1721:	1	1	0	3	2	0	1	1
1729:	4	5	0	2	1	1	1	0
1737:	1	1	0	4	0	1	0	0
1745:	1	1	2	0	2	0	1	2
1753:	0	3	1	2	1	1	0	0
1761:	1	5	23	28	19	9	4	0
1769:	1	1	1	0	1	0	2	2
1777:	0	1	0	3	1	1	1	1
1785:	0	1	1	1	0	1	0	2
1793:	2	0	0	2	1	2	0	1
1801:	1	2	1	1	3	2	0	1
1809:	2	2	1	1	2	1	1	0
1817:	1	0	0	2	3	0	1	3
1825:	0	1	1	1	0	0	2	0
1833:	1	3	3	1	1	2	0	0
1841:	4	0	1	1	1	3	5	2
1849:	2	2	0	3	1	1	0	0
1857:	0	0	2	1	1	1	0	2
1865:	2	1	2	1	2	2	0	1
1873:	1	1	0	0	0	0	0	0
1881:	1	1	1	1	1	0	2	0
1889:	0	0	2	0	2	1	1	2
1897:	0	2	1	1	2	1	1	1
1905:	4	0	2	0	1	1	0	3
1913:	0	2	2	3	1	2	1	0
1921:	2	1	3	1	2	1	2	0
1929:	2	1	1	1	1	1	1	2
1937:	1	0	2	1	0	1	2	0
1945:	2	0	0	1	2	0	0	1
1953:	3	0	0	0	2	0	1	3
1961:	1	1	0	1	1	2	1	0
1969:	0	2	0	1	1	0	0	0
1977:	1	1	1	1	2	0	0	4
1985:	1	2	0	0	1	3	1	0
1993:	0	0	2	0	2	1	1	2
2001:	2	0	1	0	3	0	2	0
2009:	0	0	1	1	1	0	0	2
2017:	1	0	2	1	3	1	0	2
2025:	2	1	1	1	2	1	0	2
2033:	2	4	0	0	1	0	0	1
2041:	0	0	1	2	1	0	0	0
2049:	0	1	3	3	0	0	1	0
2057:	1	1	0	0	2	3	0	0
2065:	2	1	0	0	3	2	0	0
2073:	0	0	0	1	1	0	2	1
2081:	0	1	1	1	0	1	0	2
2089:	1	2	2	1	1	0	0	1

2097: 0 0 2 0 2 8 8 4

Sample Title: CP1804S12-13

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

2529: 0 0 0 0 0 2 0 0

Sample Title: CP1804S12-13

Channel	1	0	0	1	0	0	1	0
2537:	1	0	0	1	0	0	1	0
2545:	0	0	0	1	0	0	0	0
2553:	0	0	2	0	1	1	0	0
2561:	0	0	1	0	1	0	0	0
2569:	1	0	1	0	1	0	0	0
2577:	3	1	0	1	0	1	0	1
2585:	0	1	0	1	0	4	0	0
2593:	1	0	1	1	0	0	0	0
2601:	1	1	0	0	1	1	0	0
2609:	1	0	5	23	32	33	18	3
2617:	5	0	0	1	0	1	0	0
2625:	0	0	0	0	0	1	1	1
2633:	0	0	1	0	1	0	0	0
2641:	1	0	0	1	0	0	0	0
2649:	1	0	0	0	0	0	0	1
2657:	0	1	2	0	1	1	0	0
2665:	0	0	0	1	0	0	0	1
2673:	0	1	0	0	0	0	0	0
2681:	0	0	0	0	0	0	0	0
2689:	0	0	0	0	1	0	0	0
2697:	0	1	0	0	0	1	0	0
2705:	0	1	0	1	0	0	0	0
2713:	0	0	0	1	0	0	0	2
2721:	1	0	1	0	0	0	0	1
2729:	0	0	0	0	0	1	0	1
2737:	1	0	0	0	0	0	0	0
2745:	0	0	0	0	0	0	0	0
2753:	0	0	0	0	1	0	0	0
2761:	0	0	0	1	0	0	0	0
2769:	0	0	0	0	0	0	2	2
2777:	0	1	1	0	0	0	1	0
2785:	0	0	0	0	1	0	0	0
2793:	0	0	0	2	0	0	1	0
2801:	0	0	0	0	0	0	0	1
2809:	0	0	0	0	0	1	1	0
2817:	0	1	0	0	1	0	0	1
2825:	0	0	1	0	0	1	0	0
2833:	0	0	0	1	0	0	1	1
2841:	0	1	0	0	0	0	0	0
2849:	0	2	0	1	0	0	0	0
2857:	1	0	0	0	0	0	1	0
2865:	0	0	0	0	0	0	0	1
2873:	0	0	0	0	0	1	0	1
2881:	1	0	1	0	0	0	1	1
2889:	2	0	0	2	0	0	0	2
2897:	0	0	0	0	2	0	0	0
2905:	1	1	1	0	0	0	0	0
2913:	0	0	0	0	0	0	1	0
2921:	0	0	0	0	0	1	0	0
2929:	0	0	0	0	1	0	1	1
2937:	1	0	0	1	0	1	0	1
2945:	0	0	0	1	1	0	0	0
2953:	1	1	0	0	1	0	0	0

2961: 0 0 1 0 1 1 0 0

Sample Title: CP1804S12-13

Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	0	0	0	0	0
2977:	1	2	0	0	0	0	0	0
2985:	0	1	1	1	0	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	1	0	0	0	0	1	0
3009:	0	0	1	0	0	1	0	0
3017:	1	0	0	0	0	0	0	1
3025:	0	0	0	0	1	0	1	0
3033:	0	3	1	0	1	0	0	2
3041:	0	0	0	1	0	0	0	0
3049:	0	0	0	1	0	0	2	0
3057:	1	0	1	0	0	1	0	0
3065:	0	0	1	0	0	1	0	0
3073:	1	1	0	1	1	0	0	0
3081:	1	0	0	0	0	0	0	0
3089:	0	0	0	0	1	0	0	2
3097:	0	0	0	0	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	1	0	0	0
3129:	2	0	1	0	0	0	0	0
3137:	1	0	1	0	1	0	1	0
3145:	0	0	0	0	0	1	1	0
3153:	0	1	1	0	2	1	0	0
3161:	0	1	0	1	1	0	1	0
3169:	0	0	0	0	1	0	1	0
3177:	0	0	0	0	0	0	0	0
3185:	0	1	0	0	0	0	0	1
3193:	0	1	1	1	1	0	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	1	0	0	0	0	1	0
3217:	0	0	0	0	0	0	1	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	1	0	1	0
3241:	0	1	1	2	0	1	1	0
3249:	0	0	0	0	0	0	0	1
3257:	0	0	0	0	1	0	0	0
3265:	0	1	1	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	1	0	0	1	1	2	0	0
3289:	0	0	0	0	0	0	1	0
3297:	0	0	0	0	0	0	0	0
3305:	1	0	0	2	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	1	0	0	1	1	0
3337:	0	0	0	0	0	1	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	1	0	1	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	0	0	0	0	0
3385:	1	0	0	0	0	0	0	0

3393: 0 0 1 0 0 0 0 1

Sample Title: CP1804S12-13

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	1	0	0	0	1	0
3409:	0	0	0	0	2	0	0	1
3417:	1	0	0	0	0	0	0	0
3425:	0	0	0	2	0	1	0	0
3433:	0	0	0	0	1	0	0	0
3441:	0	0	0	0	1	1	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	1	0	1
3473:	0	0	0	1	0	0	0	0
3481:	0	1	0	1	0	0	0	0
3489:	0	0	0	0	0	0	0	1
3497:	0	2	0	0	1	1	0	0
3505:	0	1	1	1	0	0	0	0
3513:	0	0	0	1	0	0	0	1
3521:	0	0	0	0	0	1	0	0
3529:	0	1	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	1	0	0	0	0	0	1	1
3553:	1	1	0	0	0	0	0	0
3561:	0	0	0	0	1	0	0	0
3569:	0	0	0	0	0	0	1	0
3577:	0	0	0	0	0	1	0	1
3585:	0	1	0	0	0	0	0	0
3593:	0	1	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	1
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	1	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	1	1	0	0
3649:	0	0	0	1	0	0	0	0
3657:	0	0	0	0	0	0	1	1
3665:	0	0	0	0	0	0	0	1
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	1	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	1
3705:	0	0	1	2	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	0	0	0
3737:	0	0	0	0	0	0	1	1
3745:	1	0	0	0	0	0	0	0
3753:	0	0	1	0	0	1	0	0
3761:	0	0	0	0	0	1	0	0
3769:	0	1	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	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	1

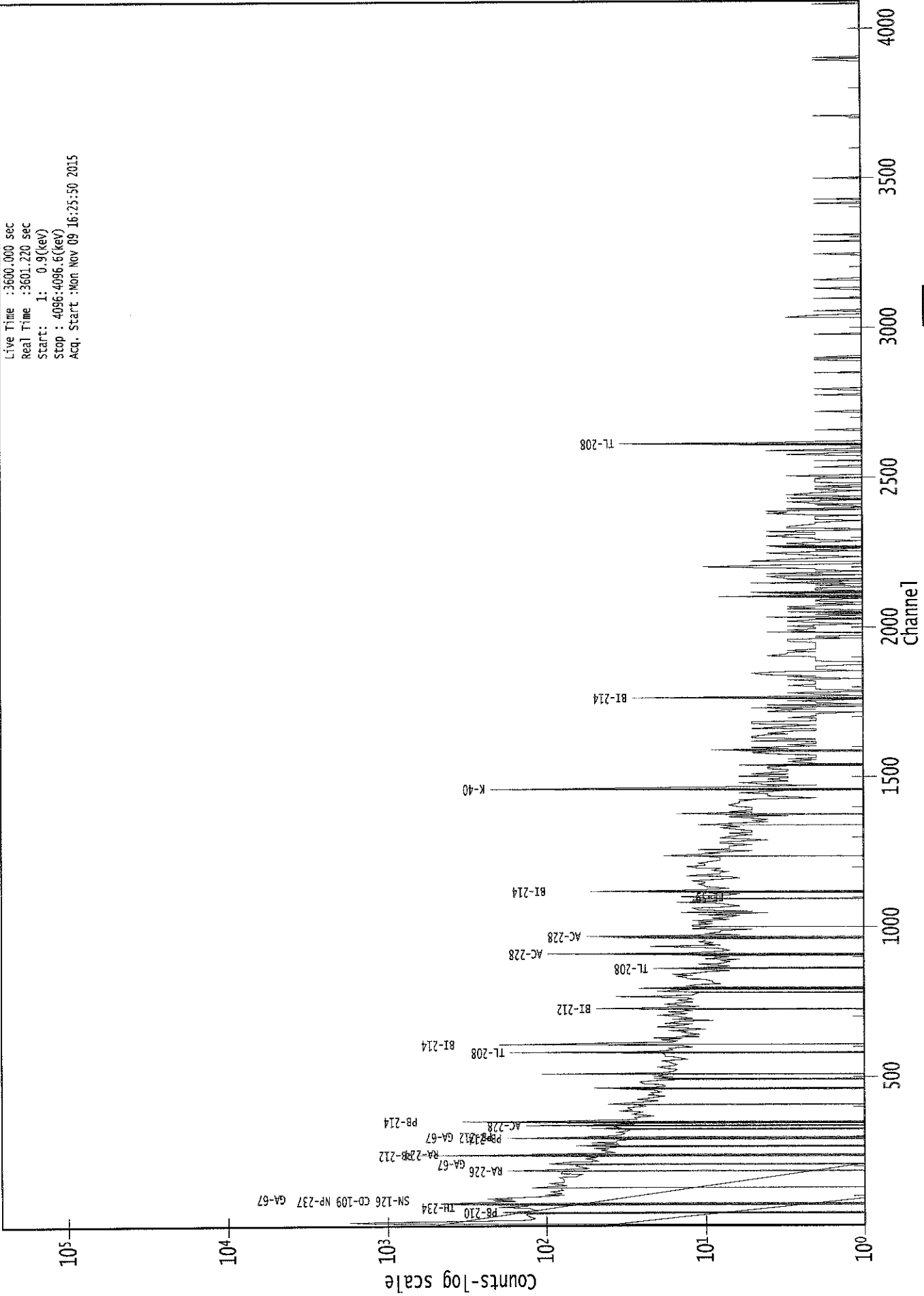
3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP1804S12-13

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

0000029353.CNF

Live Time : 3600.000 sec
Real Time : 3601.220 sec
Start : 1: 0.9(keV)
Stop : 4096.4096.6(keV)
Acq. Start : Mon Nov 09 16:25:50 2015



KCS
11/9/15Analysis Report for 1510088-13
CP1804S15-16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-13
Sample Description : CP1804S15-16
Sample Type : SOIL

Sample Size : 5.991E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 9:01:57AM
Acquisition Started : 11/9/2015 4:28:53PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3617.1 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 : 29354

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

KCS
11/10/15

Analysis Report for 1510088-13
CP1804S15-16

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 5:29:12PM
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	76.34	0.0000	0.00
2	87.62	87.82	0.0000	0.00
3	92.98	93.19	0.0000	0.00
4	143.78	143.96	0.0000	0.00
5	154.14	154.31	0.0000	0.00
6	181.19	181.35	0.0000	0.00
7	186.06	186.21	0.0000	0.00
8	208.84	208.99	0.0000	0.00
9	238.78	238.91	0.0000	0.00
10	242.04	242.17	0.0000	0.00
11	270.30	270.42	0.0000	0.00
12	276.96	277.07	0.0000	0.00
13	295.44	295.54	0.0000	0.00
14	328.20	328.28	0.0000	0.00
15	335.09	335.16	0.0000	0.00
16	338.86	338.94	0.0000	0.00
17	352.20	352.27	0.0000	0.00
18	411.52	411.56	0.0000	0.00
19	441.72	441.74	0.0000	0.00
20	463.00	463.01	0.0000	0.00
21	479.87	479.88	0.0000	0.00
22	511.32	511.31	0.0000	0.00
23	528.03	528.02	0.0000	0.00
24	583.38	583.33	0.0000	0.00
25	609.45	609.40	0.0000	0.00
26	639.20	639.13	0.0000	0.00
27	727.10	726.98	0.0000	0.00
28	769.97	769.83	0.0000	0.00
29	795.84	795.69	0.0000	0.00
30	817.45	817.29	0.0000	0.00
31	860.92	860.75	0.0000	0.00
32	911.49	911.29	0.0000	0.00
33	965.76	965.54	0.0000	0.00
34	969.22	969.00	0.0000	0.00
35	1119.47	1119.19	0.0000	0.00
36	1236.80	1236.46	0.0000	0.00
37	1363.77	1363.39	0.0000	0.00
38	1377.25	1376.86	0.0000	0.00
39	1383.29	1382.89	0.0000	0.00
40	1408.62	1408.22	0.0000	0.00
41	1429.61	1429.20	0.0000	0.00
42	1435.32	1434.91	0.0000	0.00

Analysis Report for 1510088-13
CP1804S15-16

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1461.02	1460.60	0.0000	0.00
44	1508.68	1508.24	0.0000	0.00
45	1591.09	1590.62	0.0000	0.00
46	1622.31	1621.83	0.0000	0.00
47	1630.68	1630.20	0.0000	0.00
48	1764.65	1764.12	0.0000	0.00
49	1947.57	1946.98	0.0000	0.00
50	2103.68	2103.04	0.0000	0.00
51	2204.48	2203.81	0.0000	0.00
52	2274.50	2273.81	0.0000	0.00
53	2388.02	2387.30	0.0000	0.00
54	2614.94	2614.16	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510088-13
CP1804S15-16

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 5:29:12PM

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	76.34	1.09E+03	180.28	3.30E+03	3.91	
2	87.62	86 -	91	87.82	1.17E+02	92.87	1.64E+03	1.53	
3	92.98	91 -	97	93.19	1.94E+02	98.07	1.52E+03	1.55	
4	143.78	142 -	146	143.96	6.66E+01	53.36	5.69E+02	2.60	
5	154.14	150 -	158	154.31	8.78E+01	84.32	1.03E+03	4.12	
M	6	181.19	180 -	193	181.35	4.79E+01	40.40	3.60E+02	1.87
m	7	186.06	180 -	193	186.21	1.97E+02	59.77	5.40E+02	2.00
8	208.84	206 -	211	208.99	9.32E+01	55.59	5.40E+02	1.84	
M	9	238.78	234 -	245	238.91	9.09E+02	74.47	3.92E+02	1.89
m	10	242.04	234 -	245	242.17	1.92E+02	73.39	3.78E+02	1.89
M	11	270.30	267 -	280	270.42	1.15E+02	47.32	3.30E+02	2.33
m	12	276.96	267 -	280	277.07	6.06E+01	49.23	3.65E+02	2.82
13	295.44	292 -	299	295.54	1.37E+02	61.87	5.52E+02	1.73	
14	328.20	324 -	332	328.28	7.48E+01	51.34	3.58E+02	1.64	
M	15	335.09	333 -	343	335.16	2.50E+01	30.36	1.87E+02	2.18
m	16	338.86	333 -	343	338.94	1.83E+02	47.22	2.48E+02	2.19
17	352.20	346 -	357	352.27	4.48E+02	72.44	4.31E+02	1.90	
18	411.52	406 -	417	411.56	6.87E+01	56.50	3.61E+02	4.05	
19	441.72	436 -	448	441.74	5.40E+01	55.09	3.32E+02	10.50	
20	463.00	459 -	466	463.01	7.44E+01	35.04	1.53E+02	2.06	
21	479.87	477 -	484	479.88	3.37E+01	33.47	1.65E+02	2.22	
22	511.32	505 -	517	511.31	1.65E+02	51.39	2.30E+02	2.57	
23	528.03	525 -	531	528.02	3.36E+01	26.98	1.07E+02	4.35	
24	583.38	580 -	588	583.33	2.19E+02	44.42	1.65E+02	1.87	
25	609.45	605 -	614	609.40	2.68E+02	51.55	2.29E+02	2.02	
26	639.20	633 -	644	639.13	4.58E+01	39.50	1.66E+02	6.57	
27	727.10	723 -	730	726.98	5.50E+01	32.19	1.36E+02	2.09	
28	769.97	762 -	775	769.83	4.64E+01	42.68	1.81E+02	6.69	
29	795.84	792 -	799	795.69	2.81E+01	28.28	1.12E+02	1.94	
30	817.45	814 -	820	817.29	2.00E+01	21.47	6.80E+01	3.93	
31	860.92	855 -	867	860.75	5.25E+01	37.03	1.37E+02	2.51	
32	911.49	906 -	916	911.29	1.39E+02	41.87	1.60E+02	1.80	
M	33	965.76	962 -	973	965.54	3.13E+01	29.33	7.31E+01	2.58
m	34	969.22	962 -	973	969.00	1.01E+02	27.73	7.47E+01	2.20
35	1119.47	1111 -	1125	1119.19	4.55E+01	42.64	1.71E+02	2.92	
36	1236.80	1230 -	1240	1236.46	2.97E+01	35.11	1.49E+02	1.23	
37	1363.77	1356 -	1371	1363.39	3.11E+01	20.98	2.98E+01	6.04	
M	38	1377.25	1372 -	1390	1376.86	2.81E+01	15.30	1.00E+01	3.49
m	39	1383.29	1372 -	1390	1382.89	1.58E+01	14.49	1.00E+01	3.49
40	1408.62	1404 -	1412	1408.22	1.77E+01	13.60	1.66E+01	4.64	

Analysis Report for 1510088-13

CP1804S15-16

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	1429.61	1425 - 1438		1429.20	1.45E+01	12.49	1.40E+01	3.20
m	42	1435.32	1425 - 1438		1434.91	1.05E+01	12.65	2.62E+01	3.20
	43	1461.02	1454 - 1467		1460.60	4.52E+02	48.71	6.26E+01	2.29
	44	1508.68	1505 - 1511		1508.24	1.24E+01	9.41	7.25E+00	1.53
	45	1591.09	1584 - 1596		1590.62	2.94E+01	16.82	1.93E+01	5.49
	46	1622.31	1618 - 1626		1621.83	1.75E+01	10.01	5.05E+00	5.20
	47	1630.68	1627 - 1634		1630.20	1.20E+01	9.80	8.00E+00	1.01
	48	1764.65	1759 - 1767		1764.12	4.85E+01	14.97	5.00E+00	2.45
	49	1947.57	1943 - 1951		1946.98	6.36E+00	9.19	9.27E+00	0.92
	50	2103.68	2098 - 2108		2103.04	1.82E+01	13.96	1.57E+01	4.08
	51	2204.48	2200 - 2209		2203.81	1.11E+01	9.00	5.86E+00	2.95
	52	2274.50	2271 - 2276		2273.81	5.43E+00	6.08	3.14E+00	3.01
	53	2388.02	2384 - 2390		2387.30	5.21E+00	6.34	3.57E+00	1.85
	54	2614.94	2610 - 2619		2614.16	8.20E+01	18.11	0.00E+00	2.32

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 5:29:12PM

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	1.09E+03	180.28	3.30E+03	1.38E+02
	2	87.62	86 -	91	1.17E+02	92.87	1.64E+03	7.42E+01
	3	92.98	91 -	97	1.94E+02	98.07	1.52E+03	7.73E+01
	4	143.78	142 -	146	6.66E+01	53.36	5.69E+02	4.18E+01
	5	154.14	150 -	158	8.78E+01	84.32	1.03E+03	6.76E+01
M	6	181.19	180 -	193	4.79E+01	40.40	3.60E+02	3.12E+01
m	7	186.06	180 -	193	1.97E+02	59.77	5.40E+02	3.82E+01
	8	208.84	206 -	211	9.32E+01	55.59	5.40E+02	4.28E+01
M	9	238.78	234 -	245	9.09E+02	74.47	3.92E+02	3.26E+01
m	10	242.04	234 -	245	1.92E+02	73.39	3.78E+02	3.20E+01
M	11	270.30	267 -	280	1.15E+02	47.32	3.30E+02	2.98E+01
m	12	276.96	267 -	280	6.06E+01	49.23	3.65E+02	3.14E+01
	13	295.44	292 -	299	1.37E+02	61.87	5.52E+02	4.71E+01
	14	328.20	324 -	332	7.48E+01	51.34	3.58E+02	3.97E+01

Analysis Report for 1510088-13
CP1804S15-16

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	15	335.09	333 -	343	2.50E+01	30.36	1.87E+02	2.25E+01
m	16	338.86	333 -	343	1.83E+02	47.22	2.48E+02	2.59E+01
	17	352.20	346 -	357	4.48E+02	72.44	4.31E+02	4.83E+01
	18	411.52	406 -	417	6.87E+01	56.50	3.61E+02	4.44E+01
	19	441.72	436 -	448	5.40E+01	55.09	3.32E+02	4.36E+01
	20	463.00	459 -	466	7.44E+01	35.04	1.53E+02	2.51E+01
	21	479.87	477 -	484	3.37E+01	33.47	1.65E+02	2.58E+01
	22	511.32	505 -	517	1.65E+02	51.39	2.30E+02	3.66E+01
	23	528.03	525 -	531	3.36E+01	26.98	1.07E+02	2.00E+01
	24	583.38	580 -	588	2.19E+02	44.42	1.65E+02	2.72E+01
	25	609.45	605 -	614	2.68E+02	51.55	2.29E+02	3.27E+01
	26	639.20	633 -	644	4.58E+01	39.50	1.66E+02	3.05E+01
	27	727.10	723 -	730	5.50E+01	32.19	1.36E+02	2.35E+01
	28	769.97	762 -	775	4.64E+01	42.68	1.81E+02	3.33E+01
	29	795.84	792 -	799	2.81E+01	28.28	1.12E+02	2.16E+01
	30	817.45	814 -	820	2.00E+01	21.47	6.80E+01	1.60E+01
	31	860.92	855 -	867	5.25E+01	37.03	1.37E+02	2.80E+01
	32	911.49	906 -	916	1.39E+02	41.87	1.60E+02	2.84E+01
M	33	965.76	962 -	973	3.13E+01	29.33	7.31E+01	1.41E+01
m	34	969.22	962 -	973	1.01E+02	27.73	7.47E+01	1.42E+01
	35	1119.47	1111 -	1125	4.55E+01	42.64	1.71E+02	3.32E+01
	36	1236.80	1230 -	1240	2.97E+01	35.11	1.49E+02	2.74E+01
	37	1363.77	1356 -	1371	3.11E+01	20.98	2.98E+01	1.46E+01
M	38	1377.25	1372 -	1390	2.81E+01	15.30	1.00E+01	5.20E+00
m	39	1383.29	1372 -	1390	1.58E+01	14.49	1.00E+01	5.20E+00
	40	1408.62	1404 -	1412	1.77E+01	13.60	1.66E+01	8.79E+00
M	41	1429.61	1425 -	1438	1.45E+01	12.49	1.40E+01	6.15E+00
m	42	1435.32	1425 -	1438	1.05E+01	12.65	2.62E+01	8.41E+00
	43	1461.02	1454 -	1467	4.52E+02	48.71	6.26E+01	1.96E+01
	44	1508.68	1505 -	1511	1.24E+01	9.41	7.25E+00	5.13E+00
	45	1591.09	1584 -	1596	2.94E+01	16.82	1.93E+01	1.06E+01
	46	1622.31	1618 -	1626	1.75E+01	10.01	5.05E+00	4.53E+00
	47	1630.68	1627 -	1634	1.20E+01	9.80	8.00E+00	5.70E+00
	48	1764.65	1759 -	1767	4.85E+01	14.97	5.00E+00	4.52E+00
	49	1947.57	1943 -	1951	6.36E+00	9.19	9.27E+00	6.32E+00
	50	2103.68	2098 -	2108	1.82E+01	13.96	1.57E+01	9.08E+00
	51	2204.48	2200 -	2209	1.11E+01	9.00	5.86E+00	4.98E+00
	52	2274.50	2271 -	2276	5.43E+00	6.08	3.14E+00	3.21E+00
	53	2388.02	2384 -	2390	5.21E+00	6.34	3.57E+00	3.62E+00
	54	2614.94	2610 -	2619	8.20E+01	18.11	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 1510088-13

CP1804S15-16

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 5:29:12PM

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	76.34	1.09E+03	180.28	3.30E+03	.....
2	87.62	86 -	91	87.82	1.17E+02	92.87	1.64E+03	SN-126 CD-109 LU-176
3	92.98	91 -	97	93.19	1.94E+02	98.07	1.52E+03	GA-67
4	143.78	142 -	146	143.96	6.66E+01	53.36	5.69E+02	U-235
5	154.14	150 -	158	154.31	8.78E+01	84.32	1.03E+03	CS-136
M 6	181.19	180 -	193	181.35	4.79E+01	40.40	3.60E+02	MO-99 LU-172
m 7	186.06	180 -	193	186.21	1.97E+02	59.77	5.40E+02	RA-226
8	208.84	206 -	211	208.99	9.32E+01	55.59	5.40E+02	GA-67 CM-243
M 9	238.78	234 -	245	238.91	9.09E+02	74.47	3.92E+02	PB-212
m 10	242.04	234 -	245	242.17	1.92E+02	73.39	3.78E+02	.....
M 11	270.30	267 -	280	270.42	1.15E+02	47.32	3.30E+02	.....
m 12	276.96	267 -	280	277.07	6.06E+01	49.23	3.65E+02	CM-243 NP-239
13	295.44	292 -	299	295.54	1.37E+02	61.87	5.52E+02	PB-214
14	328.20	324 -	332	328.28	7.48E+01	51.34	3.58E+02	LA-140
M 15	335.09	333 -	343	335.16	2.50E+01	30.36	1.87E+02	.....
m 16	338.86	333 -	343	338.94	1.83E+02	47.22	2.48E+02	AC-228
17	352.20	346 -	357	352.27	4.48E+02	72.44	4.31E+02	PB-214
18	411.52	406 -	417	411.56	6.87E+01	56.50	3.61E+02	HO-166M
19	441.72	436 -	448	441.74	5.40E+01	55.09	3.32E+02	.....
20	463.00	459 -	466	463.01	7.44E+01	35.04	1.53E+02	SB-125
21	479.87	477 -	484	479.88	3.37E+01	33.47	1.65E+02	.....
22	511.32	505 -	517	511.31	1.65E+02	51.39	2.30E+02	.....
23	528.03	525 -	531	528.02	3.36E+01	26.98	1.07E+02	.....
24	583.38	580 -	588	583.33	2.19E+02	44.42	1.65E+02	TL-208
25	609.45	605 -	614	609.40	2.68E+02	51.55	2.29E+02	BI-214
26	639.20	633 -	644	639.13	4.58E+01	39.50	1.66E+02	.....
27	727.10	723 -	730	726.98	5.50E+01	32.19	1.36E+02	BI-212
28	769.97	762 -	775	769.83	4.64E+01	42.68	1.81E+02	.....
29	795.84	792 -	799	795.69	2.81E+01	28.28	1.12E+02	CS-134
30	817.45	814 -	820	817.29	2.00E+01	21.47	6.80E+01	.....
31	860.92	855 -	867	860.75	5.25E+01	37.03	1.37E+02	TL-208
32	911.49	906 -	916	911.29	1.39E+02	41.87	1.60E+02	AC-228 LU-172
M 33	965.76	962 -	973	965.54	3.13E+01	29.33	7.31E+01	.....
m 34	969.22	962 -	973	969.00	1.01E+02	27.73	7.47E+01	AC-228
35	1119.47	1111 -	1125	1119.19	4.55E+01	42.64	1.71E+02	BI-214

Analysis Report for 1510088-13

CP1804S15-16

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	36	1236.80	1230 -	1240	1236.46	2.97E+01	35.11	1.49E+02	.....
	37	1363.77	1356 -	1371	1363.39	3.11E+01	20.98	2.98E+01	.....
M	38	1377.25	1372 -	1390	1376.86	2.81E+01	15.30	1.00E+01	.....
m	39	1383.29	1372 -	1390	1382.89	1.58E+01	14.49	1.00E+01	AG-110M
	40	1408.62	1404 -	1412	1408.22	1.77E+01	13.60	1.66E+01	EU-152
M	41	1429.61	1425 -	1438	1429.20	1.45E+01	12.49	1.40E+01	.....
m	42	1435.32	1425 -	1438	1434.91	1.05E+01	12.65	2.62E+01	LA-138
	43	1461.02	1454 -	1467	1460.60	4.52E+02	48.71	6.26E+01	K-40
	44	1508.68	1505 -	1511	1508.24	1.24E+01	9.41	7.25E+00	.....
	45	1591.09	1584 -	1596	1590.62	2.94E+01	16.82	1.93E+01	.....
	46	1622.31	1618 -	1626	1621.83	1.75E+01	10.01	5.05E+00	.....
	47	1630.68	1627 -	1634	1630.20	1.20E+01	9.80	8.00E+00	.....
	48	1764.65	1759 -	1767	1764.12	4.85E+01	14.97	5.00E+00	BI-214
	49	1947.57	1943 -	1951	1946.98	6.36E+00	9.19	9.27E+00	.....
	50	2103.68	2098 -	2108	2103.04	1.82E+01	13.96	1.57E+01	.....
	51	2204.48	2200 -	2209	2203.81	1.11E+01	9.00	5.86E+00	BI-214
	52	2274.50	2271 -	2276	2273.81	5.43E+00	6.08	3.14E+00	.....
	53	2388.02	2384 -	2390	2387.30	5.21E+00	6.34	3.57E+00	.....
	54	2614.94	2610 -	2619	2614.16	8.20E+01	18.11	0.00E+00	TL-208

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 5:29:12PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.13	1.09E+03	180.28	2.38E-02	2.13E-03
	2	87.62	1.17E+02	92.87	2.44E-02	2.51E-03
	3	92.98	1.94E+02	98.07	2.44E-02	2.41E-03
	4	143.78	6.66E+01	53.36	2.14E-02	1.62E-03
	5	154.14	8.78E+01	84.32	2.06E-02	1.57E-03
M	6	181.19	4.79E+01	40.40	1.86E-02	1.44E-03
m	7	186.06	1.97E+02	59.77	1.83E-02	1.42E-03
	8	208.84	9.32E+01	55.59	1.68E-02	1.32E-03
M	9	238.78	9.09E+02	74.47	1.52E-02	1.18E-03
m	10	242.04	1.92E+02	73.39	1.51E-02	1.17E-03
M	11	270.30	1.15E+02	47.32	1.38E-02	1.04E-03

: 00801

Analysis Report for 1510088-13
CP1804S15-16

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	12	276.96	6.06E+01	49.23	1.35E-02	1.01E-03
	13	295.44	1.37E+02	61.87	1.28E-02	9.74E-04
	14	328.20	7.48E+01	51.34	1.17E-02	9.27E-04
M	15	335.09	2.50E+01	30.36	1.15E-02	9.18E-04
m	16	338.86	1.83E+02	47.22	1.14E-02	9.12E-04
	17	352.20	4.48E+02	72.44	1.11E-02	8.93E-04
	18	411.52	6.87E+01	56.50	9.67E-03	8.17E-04
	19	441.72	5.40E+01	55.09	9.09E-03	7.87E-04
	20	463.00	7.44E+01	35.04	8.73E-03	7.66E-04
	21	479.87	3.37E+01	33.47	8.46E-03	7.49E-04
	22	511.32	1.65E+02	51.39	8.01E-03	7.18E-04
	23	528.03	3.36E+01	26.98	7.79E-03	7.01E-04
	24	583.38	2.19E+02	44.42	7.14E-03	6.46E-04
	25	609.45	2.68E+02	51.55	6.87E-03	6.20E-04
	26	639.20	4.58E+01	39.50	6.59E-03	5.90E-04
	27	727.10	5.50E+01	32.19	5.89E-03	5.14E-04
	28	769.97	4.64E+01	42.68	5.61E-03	4.79E-04
	29	795.84	2.81E+01	28.28	5.45E-03	4.58E-04
	30	817.45	2.00E+01	21.47	5.33E-03	4.41E-04
	31	860.92	5.25E+01	37.03	5.09E-03	4.05E-04
	32	911.49	1.39E+02	41.87	4.85E-03	3.72E-04
M	33	965.76	3.13E+01	29.33	4.62E-03	3.62E-04
m	34	969.22	1.01E+02	27.73	4.60E-03	3.61E-04
	35	1119.47	4.55E+01	42.64	4.08E-03	3.33E-04
	36	1236.80	2.97E+01	35.11	3.76E-03	3.10E-04
	37	1363.77	3.11E+01	20.98	3.47E-03	2.84E-04
M	38	1377.25	2.81E+01	15.30	3.45E-03	2.82E-04
m	39	1383.29	1.58E+01	14.49	3.44E-03	2.81E-04
	40	1408.62	1.77E+01	13.60	3.39E-03	2.77E-04
M	41	1429.61	1.45E+01	12.49	3.35E-03	2.74E-04
m	42	1435.32	1.05E+01	12.65	3.34E-03	2.73E-04
	43	1461.02	4.52E+02	48.71	3.29E-03	2.69E-04
	44	1508.68	1.24E+01	9.41	3.21E-03	2.62E-04
	45	1591.09	2.94E+01	16.82	3.08E-03	2.50E-04
	46	1622.31	1.75E+01	10.01	3.04E-03	2.45E-04
	47	1630.68	1.20E+01	9.80	3.03E-03	2.44E-04
	48	1764.65	4.85E+01	14.97	2.86E-03	2.24E-04
	49	1947.57	6.36E+00	9.19	2.67E-03	2.13E-04
	50	2103.68	1.82E+01	13.96	2.54E-03	2.13E-04
	51	2204.48	1.11E+01	9.00	2.46E-03	2.13E-04
	52	2274.50	5.43E+00	6.08	2.42E-03	2.13E-04
	53	2388.02	5.21E+00	6.34	2.35E-03	2.13E-04
	54	2614.94	8.20E+01	18.11	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 1510088-13

CP1804S15-16

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 5:29:12PM

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	1.09E+03	180.28			1.09E+03	1.80E+02
2	87.62	1.17E+02	92.87	1.52E+01	5.37E+00	1.02E+02	9.30E+01
3	92.98	1.94E+02	98.07	9.04E+01	2.62E+01	1.03E+02	1.02E+02
4	143.78	6.66E+01	53.36	8.84E+00	8.51E+00	5.78E+01	5.40E+01
5	154.14	8.78E+01	84.32			8.78E+01	8.43E+01
M	6	181.19	4.79E+01	40.40		4.79E+01	4.04E+01
m	7	186.06	1.97E+02	59.77	3.93E+01	6.56E+00	1.58E+02
8	208.84	9.32E+01	55.59			9.32E+01	5.56E+01
M	9	238.78	9.09E+02	74.47	1.34E+01	2.14E+00	8.96E+02
m	10	242.04	1.92E+02	73.39	2.69E+00	1.46E+00	1.89E+02
M	11	270.30	1.15E+02	47.32		1.15E+02	4.73E+01
m	12	276.96	6.06E+01	49.23		6.06E+01	4.92E+01
13	295.44	1.37E+02	61.87			1.37E+02	6.19E+01
14	328.20	7.48E+01	51.34			7.48E+01	5.13E+01
M	15	335.09	2.50E+01	30.36		2.50E+01	3.04E+01
m	16	338.86	1.83E+02	47.22		1.83E+02	4.72E+01
17	352.20	4.48E+02	72.44	3.99E+00	4.73E+00	4.44E+02	7.26E+01
18	411.52	6.87E+01	56.50			6.87E+01	5.65E+01
19	441.72	5.40E+01	55.09			5.40E+01	5.51E+01
20	463.00	7.44E+01	35.04			7.44E+01	3.50E+01
21	479.87	3.37E+01	33.47			3.37E+01	3.35E+01
22	511.32	1.65E+02	51.39	5.78E+01	4.60E+00	1.07E+02	5.16E+01
23	528.03	3.36E+01	26.98			3.36E+01	2.70E+01
24	583.38	2.19E+02	44.42	5.96E+00	3.46E+00	2.13E+02	4.46E+01
25	609.45	2.68E+02	51.55	6.71E+00	3.44E+00	2.62E+02	5.17E+01
26	639.20	4.58E+01	39.50			4.58E+01	3.95E+01
27	727.10	5.50E+01	32.19			5.50E+01	3.22E+01
28	769.97	4.64E+01	42.68			4.64E+01	4.27E+01
29	795.84	2.81E+01	28.28			2.81E+01	2.83E+01
30	817.45	2.00E+01	21.47			2.00E+01	2.15E+01
31	860.92	5.25E+01	37.03			5.25E+01	3.70E+01
32	911.49	1.39E+02	41.87	2.32E+00	2.73E+00	1.37E+02	4.20E+01
M	33	965.76	3.13E+01	29.33		3.13E+01	2.93E+01
m	34	969.22	1.01E+02	27.73		1.01E+02	2.77E+01
35	1119.47	4.55E+01	42.64	2.00E+00	2.20E+00	4.35E+01	4.27E+01
36	1236.80	2.97E+01	35.11			2.97E+01	3.51E+01
37	1363.77	3.11E+01	20.98			3.11E+01	2.10E+01
M	38	1377.25	2.81E+01	15.30		2.81E+01	1.53E+01
m	39	1383.29	1.58E+01	14.49		1.58E+01	1.45E+01
40	1408.62	1.77E+01	13.60			1.77E+01	1.36E+01
M	41	1429.61	1.45E+01	12.49		1.45E+01	1.25E+01
m	42	1435.32	1.05E+01	12.65		1.05E+01	1.26E+01
43	1461.02	4.52E+02	48.71	2.36E+00	1.83E+00	4.49E+02	4.87E+01
44	1508.68	1.24E+01	9.41			1.24E+01	9.41E+00

Analysis Report for 1510088-13
 CP1804S15-16

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
45	1591.09	2.94E+01	16.82			2.94E+01	1.68E+01
46	1622.31	1.75E+01	10.01			1.75E+01	1.00E+01
47	1630.68	1.20E+01	9.80			1.20E+01	9.80E+00
48	1764.65	4.85E+01	14.97	1.45E+00	1.16E+00	4.70E+01	1.50E+01
49	1947.57	6.36E+00	9.19			6.36E+00	9.19E+00
50	2103.68	1.82E+01	13.96			1.82E+01	1.40E+01
51	2204.48	1.11E+01	9.00			1.11E+01	9.00E+00
52	2274.50	5.43E+00	6.08			5.43E+00	6.08E+00
53	2388.02	5.21E+00	6.34			5.21E+00	6.34E+00
54	2614.94	8.20E+01	18.11			8.20E+01	1.81E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 5:29:12PM
 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	1.09E+03	180.28			1.09E+03	1.80E+02	
2	87.62	1.17E+02	92.87	1.52E+01	5.37E+00	1.02E+02	9.30E+01	
3	92.98	1.94E+02	98.07	9.04E+01	2.62E+01	1.03E+02	1.02E+02	
4	143.78	6.66E+01	53.36	8.84E+00	8.51E+00	5.78E+01	5.40E+01	
5	154.14	8.78E+01	84.32			8.78E+01	8.43E+01	
M	6	181.19	4.79E+01	40.40		4.79E+01	4.04E+01	
m	7	186.06	1.97E+02	59.77	3.93E+01	6.56E+00	1.58E+02	6.01E+01
8	208.84	9.32E+01	55.59			9.32E+01	5.56E+01	
M	9	238.78	9.09E+02	74.47	1.34E+01	2.14E+00	8.96E+02	7.45E+01
m	10	242.04	1.92E+02	73.39	2.69E+00	1.46E+00	1.89E+02	7.34E+01
M	11	270.30	1.15E+02	47.32			1.15E+02	4.73E+01
m	12	276.96	6.06E+01	49.23			6.06E+01	4.92E+01
13	295.44	1.37E+02	61.87			1.37E+02	6.19E+01	
14	328.20	7.48E+01	51.34			7.48E+01	5.13E+01	
M	15	335.09	2.50E+01	30.36			2.50E+01	3.04E+01
m	16	338.86	1.83E+02	47.22			1.83E+02	4.72E+01
17	352.20	4.48E+02	72.44	3.99E+00	4.73E+00	4.44E+02	7.26E+01	
18	411.52	6.87E+01	56.50			6.87E+01	5.65E+01	

Analysis Report for 1510088-13
 CP1804S15-16

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
19	441.72	5.40E+01	55.09			5.40E+01	5.51E+01
20	463.00	7.44E+01	35.04			7.44E+01	3.50E+01
21	479.87	3.37E+01	33.47			3.37E+01	3.35E+01
22	511.32	1.65E+02	51.39	5.78E+01	4.60E+00	1.07E+02	5.16E+01
23	528.03	3.36E+01	26.98			3.36E+01	2.70E+01
24	583.38	2.19E+02	44.42	5.96E+00	3.46E+00	2.13E+02	4.46E+01
25	609.45	2.68E+02	51.55	6.71E+00	3.44E+00	2.62E+02	5.17E+01
26	639.20	4.58E+01	39.50			4.58E+01	3.95E+01
27	727.10	5.50E+01	32.19			5.50E+01	3.22E+01
28	769.97	4.64E+01	42.68			4.64E+01	4.27E+01
29	795.84	2.81E+01	28.28			2.81E+01	2.83E+01
30	817.45	2.00E+01	21.47			2.00E+01	2.15E+01
31	860.92	5.25E+01	37.03			5.25E+01	3.70E+01
32	911.49	1.39E+02	41.87	2.32E+00	2.73E+00	1.37E+02	4.20E+01
M 33	965.76	3.13E+01	29.33			3.13E+01	2.93E+01
m 34	969.22	1.01E+02	27.73			1.01E+02	2.77E+01
35	1119.47	4.55E+01	42.64	2.00E+00	2.20E+00	4.35E+01	4.27E+01
36	1236.80	2.97E+01	35.11			2.97E+01	3.51E+01
37	1363.77	3.11E+01	20.98			3.11E+01	2.10E+01
M 38	1377.25	2.81E+01	15.30			2.81E+01	1.53E+01
m 39	1383.29	1.58E+01	14.49			1.58E+01	1.45E+01
40	1408.62	1.77E+01	13.60			1.77E+01	1.36E+01
M 41	1429.61	1.45E+01	12.49			1.45E+01	1.25E+01
m 42	1435.32	1.05E+01	12.65			1.05E+01	1.26E+01
43	1461.02	4.52E+02	48.71	2.36E+00	1.83E+00	4.49E+02	4.87E+01
44	1508.68	1.24E+01	9.41			1.24E+01	9.41E+00
45	1591.09	2.94E+01	16.82			2.94E+01	1.68E+01
46	1622.31	1.75E+01	10.01			1.75E+01	1.00E+01
47	1630.68	1.20E+01	9.80			1.20E+01	9.80E+00
48	1764.65	4.85E+01	14.97	1.45E+00	1.16E+00	4.70E+01	1.50E+01
49	1947.57	6.36E+00	9.19			6.36E+00	9.19E+00
50	2103.68	1.82E+01	13.96			1.82E+01	1.40E+01
51	2204.48	1.11E+01	9.00			1.11E+01	9.00E+00
52	2274.50	5.43E+00	6.08			5.43E+00	6.08E+00
53	2388.02	5.21E+00	6.34			5.21E+00	6.34E+00
54	2614.94	8.20E+01	18.11			8.20E+01	1.81E+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 1510088-13
CP1804S15-16

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.993	1460.81 *	10.67	1.60E+01	2.20E+00
GA-67	0.375	93.31 *	35.70	1.43E+02	6.40E+02
		208.95 *	2.24	2.99E+03	1.27E+04
		300.22	16.00		
CD-109	0.973	88.03 *	3.72	1.48E+00	1.36E+00
SN-126	1.000	87.57 *	37.00	1.41E-01	1.30E-01
LA-138	0.339	788.74	34.00		
		1435.80 *	66.00	5.99E-02	7.21E-02
TL-208	0.987	583.14 *	30.22	1.24E+00	2.82E-01
		860.37 *	4.48	2.88E+00	2.05E+00
		2614.66 *	35.85	1.28E+00	3.08E-01
BI-212	0.770	727.17 *	11.80	9.91E-01	5.87E-01
		1620.62	2.75		
PB-212	0.892	238.63 *	44.60	1.65E+00	1.88E-01
		300.09	3.41		
BI-214	0.978	609.31 *	46.30	1.03E+00	2.24E-01
		1120.29 *	15.10	8.85E-01	8.72E-01
		1764.49 *	15.80	1.31E+00	4.29E-01
		2204.22 *	4.98	1.13E+00	9.25E-01
PB-214	0.989	295.21 *	19.19	6.97E-01	3.20E-01
		351.92 *	37.19	1.35E+00	2.47E-01
RA-226	0.996	186.21 *	3.28	3.30E+00	6.17E+00
AC-228	0.976	338.32 *	11.40	1.76E+00	4.76E-01
		911.07 *	27.70	1.28E+00	4.03E-01
		969.11 *	16.60	1.66E+00	4.73E-01
CM-243	0.323	209.75 *	3.29	2.11E+00	1.27E+00
		228.14	10.60		
		277.60 *	14.00	4.03E-01	3.28E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 5:29:12PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1510088-13
CP1804S15-16

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	76.13	3.01619E-01	8.30		
4	143.78	1.60487E-02	46.77	Tol.	U-235
5	154.14	2.43823E-02	48.03		
M 6	181.19	1.33137E-02	42.14	Sum	
m 10	242.04	5.25339E-02	19.41		
M 11	270.30	3.18965E-02	20.61		
14	328.20	2.07830E-02	34.31	Tol.	LA-140
M 15	335.09	6.93456E-03	60.82		
18	411.52	1.90752E-02	41.14	Tol.	HO-166M
19	441.72	1.49867E-02	51.05		
20	463.00	2.06705E-02	23.55	Sum	
21	479.87	9.34986E-03	49.71		
22	511.32	2.98245E-02	24.03		
23	528.03	9.32950E-03	40.16		
26	639.20	1.27089E-02	43.16		
28	769.97	1.28954E-02	45.97	Sum	
29	795.84	7.81250E-03	50.28	Sum	
30	817.45	5.55556E-03	53.68	Sum	
M 33	965.76	8.70481E-03	46.79	Sum	
36	1236.80	8.24653E-03	59.13		
37	1363.77	8.64130E-03	33.71		
M 38	1377.25	7.81766E-03	27.18		
m 39	1383.29	4.38233E-03	45.93		
40	1408.62	4.91453E-03	38.44	Tol.	EU-152
M 41	1429.61	4.02025E-03	43.15		
44	1508.68	3.43750E-03	38.01		
45	1591.09	8.15527E-03	28.64		
46	1622.31	4.85417E-03	28.65	Sum	
47	1630.68	3.33333E-03	40.82		
49	1947.57	1.76768E-03	72.23		
50	2103.68	5.04274E-03	38.44	S-Esc	
52	2274.50	1.50794E-03	56.03		
53	2388.02	1.44841E-03	60.84		

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 1510088-13
CP1804S15-16

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	1.60E+01	2.20E+00
GA-67	0.37	93.31 *	35.70	1.43E+02	6.40E+02
		208.95 *	2.24	2.99E+03	1.27E+04
		300.22	16.00		
CD-109	0.97	88.03 *	3.72	1.48E+00	1.36E+00
SN-126	1.00	87.57 *	37.00	1.41E-01	1.30E-01
LA-138	0.33	788.74	34.00		
		1435.80 *	66.00	5.99E-02	7.21E-02
TL-208	0.98	583.14 *	30.22	1.24E+00	2.82E-01
		860.37 *	4.48	2.88E+00	2.05E+00
BI-212	0.77	2614.66 *	35.85	1.28E+00	3.08E-01
		727.17 *	11.80	9.91E-01	5.87E-01
		1620.62	2.75		
PB-212	0.89	238.63 *	44.60	1.65E+00	1.88E-01
		300.09	3.41		
BI-214	0.97	609.31 *	46.30	1.03E+00	2.24E-01
		1120.29 *	15.10	8.85E-01	8.72E-01
		1764.49 *	15.80	1.31E+00	4.29E-01
		2204.22 *	4.98	1.13E+00	9.25E-01
PB-214	0.98	295.21 *	19.19	6.97E-01	3.20E-01
		351.92 *	37.19	1.35E+00	2.47E-01
RA-226	0.99	186.21 *	3.28	3.30E+00	6.17E+00
AC-228	0.97	338.32 *	11.40	1.76E+00	4.76E-01
		911.07 *	27.70	1.28E+00	4.03E-01
		969.11 *	16.60	1.66E+00	4.73E-01
CM-243	0.32	209.75 *	3.29	2.11E+00	1.27E+00
		228.14	10.60		
		277.60 *	14.00	4.03E-01	3.28E-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 1510088-13

CP1804S15-16

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.993	1.60E+01	2.20E+00	
GA-67	0.375	1.56E+02	6.74E+02	
? CD-109	0.973	1.48E+00	1.36E+00	
? SN-126	1.000	1.41E-01	1.30E-01	
LA-138	0.339	5.99E-02	7.21E-02	
TL-208	0.987	1.27E+00	2.07E-01	
BI-212	0.770	9.91E-01	5.87E-01	
PB-212	0.892	1.65E+00	1.88E-01	
BI-214	0.978	1.08E+00	1.89E-01	
PB-214	0.989	1.11E+00	1.95E-01	
RA-226	0.996	3.30E+00	6.17E+00	
AC-228	0.976	1.53E+00	2.58E-01	
CM-243	0.323	5.03E-01	3.18E-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 1510088-13
CP1804S15-16

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 5:29:12PM
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	3.01619E-01	8.30		
4	143.78	1.60487E-02	46.77	Tol.	U-235
5	154.14	2.43823E-02	48.03		
M 6	181.19	1.33137E-02	42.14	Sum	
m 10	242.04	5.25339E-02	19.41		
M 11	270.30	3.18965E-02	20.61		
14	328.20	2.07830E-02	34.31	Tol.	LA-140
M 15	335.09	6.93456E-03	60.82		
18	411.52	1.90752E-02	41.14	Tol.	HO-166M
19	441.72	1.49867E-02	51.05		
20	463.00	2.06705E-02	23.55	Sum	
21	479.87	9.34986E-03	49.71		
22	511.32	2.98245E-02	24.03		
23	528.03	9.32950E-03	40.16		
26	639.20	1.27089E-02	43.16		
28	769.97	1.28954E-02	45.97	Sum	
29	795.84	7.81250E-03	50.28	Sum	
30	817.45	5.55556E-03	53.68	Sum	
M 33	965.76	8.70481E-03	46.79	Sum	
36	1236.80	8.24653E-03	59.13		
37	1363.77	8.64130E-03	33.71		
M 38	1377.25	7.81766E-03	27.18		
m 39	1383.29	4.38233E-03	45.93		
40	1408.62	4.91453E-03	38.44	Tol.	EU-152
M 41	1429.61	4.02025E-03	43.15		
44	1508.68	3.43750E-03	38.01		
45	1591.09	8.15527E-03	28.64		
46	1622.31	4.85417E-03	28.65	Sum	
47	1630.68	3.33333E-03	40.82		
49	1947.57	1.76768E-03	72.23		
50	2103.68	5.04274E-03	38.44	S-Esc	
52	2274.50	1.50794E-03	56.03		
53	2388.02	1.44841E-03	60.84		

Analysis Report for 1510088-13
CP1804S15-16

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

NUCLIDE MDA REPORT

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

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
+	BE-7	477.59	10.42	4.31E-02	1.12E+00	1.12E+00
+	NA-22	1274.54	99.94	8.80E-02	1.35E-01	1.35E-01
+	NA-24	1368.53	99.99	-9.49E+13	2.31E+14	3.11E+14
		2754.09	99.86	6.44E+13		2.31E+14
+	AL-26	1808.65	99.76	3.58E-02	8.11E-02	8.11E-02
+	K-40	1460.81	* 10.67	1.60E+01	1.51E+00	1.51E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-3.76E-02	7.08E-02	7.08E-02
		78.34	96.00	2.18E-01		9.03E-02
+	SC-46	889.25	99.98	-1.02E-02	1.21E-01	1.21E-01
		1120.51	99.99	1.70E-01		1.77E-01
+	V-48	983.52	99.98	3.36E-02	3.60E-01	3.60E-01
		1312.10	97.50	-1.64E-01		3.79E-01
+	CR-51	320.08	9.83	1.09E+00	1.60E+00	1.60E+00
+	MN-54	834.83	99.97	-2.72E-02	9.25E-02	9.25E-02
+	CO-56	846.75	99.96	-7.03E-02	9.88E-02	9.88E-02
		1037.75	14.03	3.41E-03		7.93E-01
		1238.25	67.00	-4.94E-03		2.66E-01
		1771.40	15.51	-1.21E+00		4.53E-01
		2598.48	16.90	0.00E+00		1.19E-01
+	CO-57	122.06	85.51	-9.86E-03	6.40E-02	6.40E-02
		136.48	10.60	1.18E-01		5.35E-01
+	CO-58	810.76	99.40	1.94E-02	1.07E-01	1.07E-01
+	FE-59	1099.22	56.50	1.78E-01	2.97E-01	2.97E-01
		1291.56	43.20	-9.63E-02		3.78E-01
+	CO-60	1173.22	100.00	-5.03E-02	9.47E-02	1.08E-01
		1332.49	100.00	-5.46E-02		9.47E-02
+	ZN-65	1115.52	50.75	-3.79E-01	2.20E-01	2.20E-01
+	GA-67	93.31	* 35.70	1.43E+02	2.31E+02	2.31E+02
		208.95	* 2.24	2.99E+03		2.84E+03
		300.22	16.00	6.52E+01		4.37E+02
+	SE-75	121.11	16.70	-4.75E-02	1.05E-01	3.58E-01

Analysis Report for 1510088-13
CP1804S15-16

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	-1.42E-02	1.05E-01
		264.65	59.80	8.75E-02	1.29E-01
		279.53	25.20	-8.10E-02	3.01E-01
		400.65	11.40	5.97E-01	8.44E-01
+	RB-82	776.52	13.00	3.28E-01	1.65E+00
+	RB-83	520.41	46.00	5.31E-02	1.99E-01
		529.64	30.30	-4.65E-02	3.06E-01
		552.65	16.40	-4.38E-01	5.77E-01
+	KR-85	513.99	0.43	2.39E+01	2.28E+01
+	SR-85	513.99	99.27	1.47E-01	1.40E-01
+	Y-88	898.02	93.40	2.62E-02	1.05E-01
		1836.01	99.38	3.36E-02	1.05E-01
+	NB-93M	16.57	9.43	2.53E+01	7.77E+01
+	NB-94	702.63	100.00	2.71E-02	8.26E-02
		871.10	100.00	1.99E-02	8.26E-02
+	NB-95	765.79	99.81	1.03E-01	1.84E-01
+	NB-95M	235.69	25.00	7.26E+02	2.34E+02
+	ZR-95	724.18	43.70	-3.24E-02	2.26E-01
		756.72	55.30	1.04E-01	2.26E-01
+	MO-99	181.06	6.20	-1.44E+03	2.09E+03
		739.58	12.80	-8.17E+02	2.09E+03
		778.00	4.50	-2.10E+03	6.16E+03
+	RU-103	497.08	89.00	3.03E-03	1.38E-01
+	RU-106	621.84	9.80	3.09E-01	8.71E-01
+	AG-108M	433.93	89.90	-1.68E-02	7.71E-02
		614.37	90.40	1.91E-02	9.96E-02
		722.95	90.50	-3.03E-04	1.03E-01
+	CD-109	88.03	* 3.72	1.48E+00	2.20E+00
+	AG-110M	657.75	93.14	-3.45E-03	9.72E-02
		677.61	10.53	-6.96E-01	7.93E-01
		706.67	16.46	2.11E-01	6.15E-01
		763.93	21.98	-2.41E-01	4.28E-01
		884.67	71.63	-5.33E-02	1.28E-01
		1384.27	23.94	2.02E-01	4.91E-01
+	CD-113M	263.70	0.02	1.96E+02	2.80E+02
+	SN-113	255.12	1.93	2.59E-01	1.35E-01
		391.69	64.90	7.00E-02	1.35E-01
+	TE123M	159.00	84.10	-1.30E-02	7.28E-02
+	SB-124	602.71	97.87	-1.42E-03	1.13E-01
		645.85	7.26	-8.21E-01	1.44E+00
		722.78	11.10	-3.59E-03	1.22E+00
		1691.02	49.00	1.01E-01	2.53E-01
+	I-125	35.49	6.49	1.95E+00	3.45E+00
+	SB-125	176.33	6.89	4.39E-01	2.39E-01
		427.89	29.33	-5.33E-02	2.39E-01
		463.38	10.35	8.15E-01	8.20E-01
		600.56	17.80	4.88E-03	4.34E-01
		635.90	11.32	1.37E-01	7.67E-01

Analysis Report for 1510088-13
CP1804S15-16

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-2.84E-01	5.47E-01	5.47E-01
		666.33	99.60	-3.66E-02		5.47E-01
		695.00	99.60	3.19E-01		5.48E-01
		720.50	53.80	-4.69E-02		9.47E-01
+	SN-126	87.57	* 37.00	1.41E-01	2.11E-01	2.11E-01
+	SB-127	473.00	25.00	7.89E+00	7.39E+01	9.48E+01
		685.20	35.70	1.05E+01		7.39E+01
		783.80	14.70	4.41E+01		2.00E+02
+	I-129	29.78	57.00	-3.17E-01	4.40E-01	4.40E-01
		33.60	13.20	8.63E-02		1.34E+00
		39.58	7.52	3.32E-01		1.52E+00
+	I-131	284.30	6.05	-3.20E+00	1.31E+00	1.67E+01
		364.48	81.20	2.51E-01		1.31E+00
		636.97	7.26	4.18E+00		1.92E+01
		722.89	1.80	-2.47E-01		8.41E+01
+	TE-132	49.72	13.10	-1.10E+03	7.31E+01	5.94E+02
		228.16	88.00	9.87E+00		7.31E+01
+	BA-133	81.00	33.00	-1.06E+00	1.54E-01	1.83E-01
		302.84	17.80	1.58E-01		4.13E-01
		356.01	60.00	-8.82E-03		1.54E-01
+	I-133	529.87	86.30	-2.14E+09	1.41E+10	1.41E+10
+	XE-133	81.00	38.00	-6.55E+01	1.13E+01	1.13E+01
+	CS-134	563.23	8.38	-1.50E-01	9.05E-02	9.70E-01
		569.32	15.43	4.44E-02		5.12E-01
		604.70	97.60	-2.16E-04		9.05E-02
		795.84	85.40	5.37E-02		1.20E-01
		801.93	8.73	7.10E-02		9.36E-01
+	CS-135	268.24	16.00	1.19E-01	4.60E-01	4.60E-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	2.39E+00	4.83E-01	4.09E+00
		163.89	4.61	1.07E+00		6.56E+00
		176.55	13.56	2.85E-01		2.21E+00
		273.65	12.66	-1.67E+00		3.02E+00
		340.57	48.50	2.02E+00		1.07E+00
		818.50	99.70	8.27E-02		4.83E-01
		1048.07	79.60	-3.42E-01		5.39E-01
		1235.34	19.70	1.90E+00		3.97E+00
+	CS-137	661.65	85.12	4.67E-02	1.04E-01	1.04E-01
+	LA-138	788.74	34.00	-1.53E-03	1.77E-01	2.48E-01
		1435.80	* 66.00	5.99E-02		1.77E-01
+	CE-139	165.85	80.35	-1.29E-02	7.95E-02	7.95E-02
+	BA-140	162.64	6.70	1.11E+00	1.65E+00	4.71E+00
		304.84	4.50	-1.28E-01		8.79E+00
		423.70	3.20	-5.16E+00		1.25E+01
		437.55	2.00	7.42E+00		2.16E+01
		537.32	25.00	7.29E-01		1.65E+00
+	LA-140	328.77	20.50	2.10E+00	5.66E-01	2.10E+00

Analysis Report for 1510088-13
CP1804S15-16

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	487.03	45.50	8.09E-02	5.66E-01	8.38E-01
		815.85	23.50	1.88E+00		2.22E+00
		1596.49	95.49	-3.52E-03		5.66E-01
+	CE-141	145.44	48.40	-2.49E-02	2.11E-01	2.11E-01
+	CE-143	57.36	11.80	6.07E+06	2.57E+06	7.76E+06
		293.26	42.00	-2.16E+05		2.57E+06
		664.55	5.20	-1.14E+06		2.03E+07
+	CE-144	133.54	10.80	-2.33E-01	5.12E-01	5.12E-01
+	PM-144	476.78	42.00	1.12E-02	9.18E-02	1.87E-01
		618.01	98.60	4.70E-02		9.48E-02
		696.49	99.49	-1.04E-02		9.18E-02
+	PM-145	36.85	21.70	-2.74E-01	3.40E-01	6.31E-01
		37.36	39.70	1.63E-01		3.40E-01
		42.30	15.10	-7.72E-01		6.38E-01
		72.40	2.31	-3.57E+00		3.52E+00
+	PM-146	453.90	39.94	5.57E-02	1.78E-01	1.78E-01
		735.90	14.01	-2.14E-01		5.72E-01
		747.13	13.10	-2.54E-01		5.52E-01
+	ND-147	91.11	28.90	-2.24E-01	1.84E+00	1.84E+00
		531.02	13.10	-7.81E-02		4.19E+00
+	PM-149	285.90	3.10	2.01E+04	5.28E+04	5.28E+04
+	EU-152	121.78	20.50	-3.80E-02	2.46E-01	2.46E-01
		244.69	5.40	-8.36E-02		1.44E+00
		344.27	19.13	7.72E-02		3.63E-01
		778.89	9.20	1.21E-01		9.33E-01
		964.01	10.40	-2.06E+00		1.04E+00
		1085.78	7.22	-2.78E-01		1.28E+00
		1112.02	9.60	-1.58E-01		1.13E+00
		1407.95	14.94	3.75E-01		6.57E-01
+	GD-153	97.43	31.30	6.65E-02	1.80E-01	1.80E-01
		103.18	22.20	-4.96E-02		2.46E-01
+	EU-154	123.07	40.50	-2.93E-02	1.27E-01	1.27E-01
		723.30	19.70	-1.40E-03		4.77E-01
		873.19	11.50	1.78E-01		7.01E-01
		996.32	10.30	-5.08E-02		9.14E-01
		1004.76	17.90	-2.19E-02		5.07E-01
		1274.45	35.50	2.44E-01		3.73E-01
+	EU-155	86.50	30.90	1.33E-01	2.23E-01	2.23E-01
		105.30	20.70	3.07E-02		2.47E-01
+	EU-156	811.77	10.40	4.43E-01	3.27E+00	3.27E+00
		1153.47	7.20	1.30E-01		6.49E+00
		1230.71	8.90	2.32E+00		6.56E+00
+	HO-166M	184.41	72.60	1.21E-01	9.30E-02	9.30E-02
		280.45	29.60	2.71E-02		2.15E-01
		410.94	11.10	4.68E-01		7.33E-01
		711.69	54.10	1.18E-02		1.55E-01
+	TM-171	66.72	0.14	-6.88E+01	5.03E+01	5.03E+01
+	HF-172	81.75	4.52	-4.32E+00	4.88E-01	1.38E+00
		125.81	11.30	-1.40E-01		4.88E-01

Analysis Report for 1510088-13
CP1804S15-16

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	-1.42E+01	4.87E+00	7.42E+00
		810.06	16.63	2.40E+00		1.32E+01
		912.12	15.25	6.50E+01		3.20E+01
		1093.66	62.50	8.69E-01		4.87E+00
+	LU-173	100.72	5.24	-5.09E-02	3.62E-01	1.01E+00
		272.11	21.20	2.25E-01		3.62E-01
+	HF-175	343.40	84.00	2.40E-02	1.19E-01	1.19E-01
+	LU-176	88.34	13.30	5.00E-01	7.03E-02	5.28E-01
		201.83	86.00	-2.07E-02		7.73E-02
		306.78	94.00	8.10E-03		7.03E-02
+	TA-182	67.75	41.20	-1.05E-01	1.97E-01	1.97E-01
		1121.30	34.90	5.09E-01		4.72E-01
		1189.05	16.23	2.88E-01		8.53E-01
		1221.41	26.98	3.22E-02		4.61E-01
		1231.02	11.44	2.17E-01		1.39E+00
+	IR-192	308.46	29.68	-2.31E-01	1.87E-01	2.89E-01
		468.07	48.10	-3.42E-03		1.87E-01
+	HG-203	279.19	77.30	-2.47E-02	1.37E-01	1.37E-01
+	BI-207	569.67	97.72	9.97E-03	7.72E-02	7.72E-02
		1063.62	74.90	-1.38E-02		1.08E-01
+	TL-208	583.14	* 30.22	1.24E+00	4.22E-02	3.38E-01
		860.37	* 4.48	2.88E+00		3.23E+00
		2614.66	* 35.85	1.28E+00		4.22E-02
+	BI-210M	262.00	45.00	6.40E-02	1.45E-01	1.45E-01
		300.00	23.00	4.69E-02		3.15E-01
+	PB-210	46.50	4.25	9.07E-01	2.23E+00	2.23E+00
+	PB-211	404.84	2.90	-3.58E-01	2.53E+00	2.53E+00
		831.96	2.90	8.92E-01		2.96E+00
+	BI-212	727.17	* 11.80	9.91E-01	8.96E-01	8.96E-01
		1620.62	2.75	0.00E+00		3.60E+00
+	PB-212	238.63	* 44.60	1.65E+00	2.31E-01	2.31E-01
		300.09	3.41	3.17E-01		2.12E+00
+	BI-214	609.31	* 46.30	1.03E+00	2.72E-01	2.72E-01
		1120.29	* 15.10	8.85E-01		1.41E+00
		1764.49	* 15.80	1.31E+00		3.54E-01
		2204.22	* 4.98	1.13E+00		1.29E+00
+	PB-214	295.21	* 19.19	6.97E-01	3.05E-01	4.94E-01
		351.92	* 37.19	1.35E+00		3.05E-01
+	RN-219	401.80	6.50	-6.34E-04	1.18E+00	1.18E+00
+	RA-223	323.87	3.88	1.56E-01	1.73E+00	1.73E+00
+	RA-224	240.98	3.95	2.11E+01	3.51E+00	3.51E+00
+	RA-225	40.00	31.00	3.58E-01	1.64E+00	1.64E+00
+	RA-226	186.21	* 3.28	3.30E+00	3.51E+00	3.51E+00
+	TH-227	50.10	8.40	-1.74E+00	9.45E-01	9.45E-01
		236.00	11.50	3.18E+00		1.03E+00
		256.20	6.30	1.32E-01		9.80E-01
+	AC-228	338.32	* 11.40	1.76E+00	5.60E-01	8.45E-01
		911.07	* 27.70	1.28E+00		5.60E-01

Analysis Report for 1510088-13
CP1804S15-16

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.66E+00	5.60E-01	8.40E-01
+	TH-230	48.44		16.90	2.77E-01	5.31E-01	5.31E-01
		62.85		4.60	2.25E+00		1.70E+00
		67.67		0.37	-9.59E+00		1.81E+01
+	PA-231	283.67		1.60	-7.44E-01	3.18E+00	3.88E+00
		302.67		2.30	1.22E+00		3.18E+00
+	TH-231	25.64		14.70	5.12E-01	9.51E-01	3.32E+00
		84.21		6.40	5.38E-02		9.51E-01
+	PA-233	311.98		38.60	-1.24E-02	3.79E-01	3.79E-01
+	PA-234	131.20		20.40	1.55E-01	2.70E-01	2.70E-01
		733.99		8.80	7.08E-01		9.94E-01
		946.00		12.00	-1.24E-01		6.26E-01
+	PA-234M	1001.03		0.92	-5.17E+00	9.88E+00	9.88E+00
+	TH-234	63.29		3.80	1.57E+00	2.03E+00	2.03E+00
+	U-235	143.76		10.50	1.87E-01	5.01E-01	5.01E-01
		163.35		4.70	1.91E-01		1.17E+00
		205.31		4.70	6.01E-02		1.45E+00
+	NP-237	86.50		12.60	3.23E-01	5.41E-01	5.41E-01
+	NP-239	106.10		22.70	4.51E+02	3.02E+03	3.02E+03
		228.18		10.70	1.14E+03		8.40E+03
		277.60		14.10	4.96E+03		6.32E+03
+	AM-241	59.54		35.90	-1.05E-01	2.10E-01	2.10E-01
+	AM-243	74.67		66.00	2.67E-01	1.43E-01	1.43E-01
+	CM-243	209.75	*	3.29	2.11E+00	6.26E-01	2.00E+00
		228.14		10.60	8.46E-02		6.26E-01
		277.60	*	14.00	4.03E-01		8.12E-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

: 00816

Analysis Report for 1510088-13
CP1804S15-16

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	1.12E+00	1.12E+00	4.31E-02	5.32E-01
NA-22	1274.54	99.94	1.35E-01	1.35E-01	8.80E-02	6.25E-02
NA-24	1368.53	99.99	3.11E+14	2.31E+14	-9.49E+13	1.37E+14
	2754.09	99.86	2.31E+14		6.44E+13	8.64E+13
AL-26	1808.65	99.76	8.11E-02	8.11E-02	3.58E-02	3.45E-02
+ K-40	1460.81	* 10.67	1.51E+00	1.51E+00	1.60E+01	7.06E-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	7.08E-02	7.08E-02	-3.76E-02	3.46E-02
	78.34	96.00	9.03E-02		2.18E-01	4.44E-02
SC-46	889.25	99.98	1.21E-01	1.21E-01	-1.02E-02	5.60E-02
	1120.51	99.99	1.77E-01		1.70E-01	8.31E-02
V-48	983.52	99.98	3.60E-01	3.60E-01	3.36E-02	1.65E-01
	1312.10	97.50	3.79E-01		-1.64E-01	1.70E-01
CR-51	320.08	9.83	1.60E+00	1.60E+00	1.09E+00	7.70E-01
MN-54	834.83	99.97	9.25E-02	9.25E-02	-2.72E-02	4.28E-02
CO-56	846.75	99.96	9.88E-02	9.88E-02	-7.03E-02	4.50E-02
	1037.75	14.03	7.93E-01		3.41E-03	3.59E-01
	1238.25	67.00	2.66E-01		-4.94E-03	1.24E-01
	1771.40	15.51	4.53E-01		-1.21E+00	1.75E-01
	2598.48	16.90	1.19E-01		0.00E+00	0.00E+00
CO-57	122.06	85.51	6.40E-02	6.40E-02	-9.86E-03	3.10E-02
	136.48	10.60	5.35E-01		1.18E-01	2.60E-01
CO-58	810.76	99.40	1.07E-01	1.07E-01	1.94E-02	4.92E-02
FE-59	1099.22	56.50	2.97E-01	2.97E-01	1.78E-01	1.37E-01
	1291.56	43.20	3.78E-01		-9.63E-02	1.71E-01
CO-60	1173.22	100.00	1.08E-01	9.47E-02	-5.03E-02	4.99E-02
	1332.49	100.00	9.47E-02		-5.46E-02	4.25E-02
ZN-65	1115.52	50.75	2.20E-01	2.20E-01	-3.79E-01	1.01E-01
+ GA-67	93.31	* 35.70	2.31E+02	2.31E+02	1.43E+02	1.13E+02
	208.95	* 2.24	2.84E+03		2.99E+03	1.37E+03
	300.22	16.00	4.37E+02		6.52E+01	2.10E+02
SE-75	121.11	16.70	3.58E-01	1.05E-01	-4.75E-02	1.74E-01
	136.00	59.20	1.05E-01		-1.42E-02	5.11E-02
	264.65	59.80	1.29E-01		8.75E-02	6.22E-02
	279.53	25.20	3.01E-01		-8.10E-02	1.44E-01
	400.65	11.40	8.44E-01		5.97E-01	4.04E-01
RB-82	776.52	13.00	1.65E+00	1.65E+00	3.28E-01	7.69E-01
RB-83	520.41	46.00	1.99E-01	1.99E-01	5.31E-02	9.32E-02
	529.64	30.30	3.06E-01		-4.65E-02	1.44E-01
	552.65	16.40	5.77E-01		-4.38E-01	2.70E-01
KR-85	513.99	0.43	2.28E+01	2.28E+01	2.39E+01	1.09E+01
SR-85	513.99	99.27	1.40E-01	1.40E-01	1.47E-01	6.71E-02
Y-88	898.02	93.40	1.20E-01	1.05E-01	2.62E-02	5.54E-02
	1836.01	99.38	1.05E-01		3.36E-02	4.51E-02
NB-93M	16.57	9.43	7.77E+01	7.77E+01	2.53E+01	3.78E+01
NB-94	702.63	100.00	9.26E-02	8.26E-02	2.71E-02	4.35E-02
	871.10	100.00	8.26E-02		1.99E-02	3.79E-02
NB-95	765.79	99.81	1.84E-01	1.84E-01	1.03E-01	8.62E-02
NB-95M	235.69	25.00	2.34E+02	2.34E+02	7.26E+02	1.15E+02
ZR-95	724.18	43.70	3.24E-01	2.26E-01	-3.24E-02	1.53E-01
	756.72	55.30	2.26E-01		1.04E-01	1.05E-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)	
MO-99	181.06	6.20	2.98E+03	2.09E+03	-1.44E+03	1.44E+03	
	739.58	12.80	2.09E+03		-8.17E+02	9.67E+02	
	778.00	4.50	6.16E+03		-2.10E+03	2.85E+03	
RU-103	497.08	89.00	1.38E-01	1.38E-01	3.03E-03	6.50E-02	
RU-106	621.84	9.80	8.71E-01	8.71E-01	3.09E-01	4.08E-01	
AG-108M	433.93	89.90	7.71E-02	7.71E-02	-1.68E-02	3.65E-02	
	614.37	90.40	9.96E-02		1.91E-02	4.71E-02	
	722.95	90.50	1.03E-01		-3.03E-04	4.84E-02	
+ CD-109	88.03	* 3.72	2.20E+00	2.20E+00	1.48E+00	1.08E+00	
AG-110M	657.75	93.14	9.72E-02	9.72E-02	-3.45E-03	4.55E-02	
	677.61	10.53	7.93E-01		-6.96E-01	3.68E-01	
	706.67	16.46	6.15E-01		2.11E-01	2.89E-01	
	763.93	21.98	4.28E-01		-2.41E-01	1.99E-01	
	884.67	71.63	1.28E-01		-5.33E-02	5.87E-02	
	1384.27	23.94	4.91E-01		2.02E-01	2.23E-01	
CD-113M	263.70	0.02	2.80E+02	2.80E+02	1.96E+02	1.35E+02	
SN-113	255.12	1.93	3.88E+00	1.35E-01	2.59E-01	1.86E+00	
	391.69	64.90	1.35E-01		7.00E-02	6.44E-02	
TE123M	159.00	84.10	7.28E-02	7.28E-02	-1.30E-02	3.52E-02	
SB-124	602.71	97.87	1.13E-01	1.13E-01	-1.42E-03	5.29E-02	
	645.85	7.26	1.44E+00		-8.21E-01	6.68E-01	
	722.78	11.10	1.22E+00		-3.59E-03	5.72E-01	
	1691.02	49.00	2.53E-01		1.01E-01	1.10E-01	
	35.49	6.49	3.45E+00		3.45E+00	1.95E+00	1.68E+00
SB-125	176.33	6.89	8.29E-01	2.39E-01	4.39E-01	4.01E-01	
	427.89	29.33	2.39E-01		-5.33E-02	1.13E-01	
	463.38	10.35	8.20E-01		8.15E-01	3.91E-01	
	600.56	17.80	4.34E-01		4.88E-03	2.03E-01	
	635.90	11.32	7.67E-01		1.37E-01	3.60E-01	
	414.70	83.30	5.47E-01		5.47E-01	-2.84E-01	2.61E-01
SB-126	666.33	99.60	5.47E-01	5.47E-01	-3.66E-02	2.57E-01	
	695.00	99.60	5.48E-01		3.19E-01	2.57E-01	
	720.50	53.80	9.47E-01		-4.69E-02	4.41E-01	
	87.57	* 37.00	2.11E-01		2.11E-01	1.41E-01	1.04E-01
SN-126	473.00	25.00	9.48E+01	7.39E+01	7.89E+00	4.47E+01	
	685.20	35.70	7.39E+01		1.05E+01	3.44E+01	
	783.80	14.70	2.00E+02		4.41E+01	9.30E+01	
	29.78	57.00	4.40E-01		4.40E-01	-3.17E-01	2.14E-01
I-129	33.60	13.20	1.34E+00	4.40E-01	8.63E-02	6.54E-01	
	39.58	7.52	1.52E+00		3.32E-01	7.40E-01	
	284.30	6.05	1.67E+01		1.31E+00	-3.20E+00	8.00E+00
I-131	364.48	81.20	1.31E+00	1.31E+00	2.51E-01	6.22E-01	
	636.97	7.26	1.92E+01		4.18E+00	9.04E+00	
	722.89	1.80	8.41E+01		-2.47E-01	3.95E+01	
	49.72	13.10	5.94E+02		7.31E+01	-1.10E+03	2.90E+02
TE-132	228.16	88.00	7.31E+01	7.31E+01	9.87E+00	3.53E+01	
	81.00	33.00	1.83E-01		1.54E-01	-1.06E+00	8.93E-02
	302.84	17.80	4.13E-01		1.58E-01	1.99E-01	
BA-133	356.01	60.00	1.54E-01	1.54E-01	-8.82E-03	7.44E-02	
	529.87	86.30	1.41E+10		1.41E+10	-2.14E+09	6.61E+09
	81.00	38.00	1.13E+01		1.13E+01	-6.55E+01	5.54E+00
XE-133	563.23	8.38	9.70E-01	9.05E-02	-1.50E-01	4.57E-01	
CS-134	569.32	15.43	5.12E-01		4.44E-02	2.40E-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-134	604.70	97.60	9.05E-02	9.05E-02	-2.16E-04	4.27E-02		
	795.84	85.40	1.20E-01		5.37E-02	5.63E-02		
	801.93	8.73	9.36E-01		7.10E-02	4.31E-01		
CS-135	268.24	16.00	4.60E-01	4.60E-01	1.19E-01	2.22E-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	4.09E+00	4.83E-01	2.39E+00	1.98E+00		
	163.89	4.61	6.56E+00		1.07E+00	3.18E+00		
	176.55	13.56	2.21E+00		2.85E-01	1.07E+00		
	273.65	12.66	3.02E+00		-1.67E+00	1.46E+00		
	340.57	48.50	1.07E+00		2.02E+00	5.19E-01		
	818.50	99.70	4.83E-01		8.27E-02	2.24E-01		
	1048.07	79.60	5.39E-01		-3.42E-01	2.42E-01		
	1235.34	19.70	3.97E+00		1.90E+00	1.86E+00		
	CS-137	661.65	85.12		1.04E-01	1.04E-01	4.67E-02	4.89E-02
	+ LA-138	788.74	34.00		2.48E-01	1.77E-01	-1.53E-03	1.15E-01
1435.80		* 66.00	1.77E-01	5.99E-02	8.07E-02			
CE-139	165.85	80.35	7.95E-02	7.95E-02	-1.29E-02	3.85E-02		
BA-140	162.64	6.70	4.71E+00	1.65E+00	1.11E+00	2.28E+00		
	304.84	4.50	8.79E+00		-1.28E-01	4.22E+00		
	423.70	3.20	1.25E+01		-5.16E+00	5.95E+00		
	437.55	2.00	2.16E+01		7.42E+00	1.03E+01		
	537.32	25.00	1.65E+00		7.29E-01	7.75E-01		
	LA-140	328.77	20.50		2.10E+00	5.66E-01	2.10E+00	1.01E+00
LA-140	487.03	45.50	8.38E-01		8.09E-02	3.93E-01		
	815.85	23.50	2.22E+00		1.88E+00	1.03E+00		
	1596.49	95.49	5.66E-01		-3.52E-03	2.50E-01		
	CE-141	145.44	48.40	2.11E-01	2.11E-01	-2.49E-02	1.02E-01	
CE-143	57.36	11.80	7.76E+06	2.57E+06	6.07E+06	3.79E+06		
	293.26	42.00	2.57E+06		-2.16E+05	1.25E+06		
	664.55	5.20	2.03E+07		-1.14E+06	9.54E+06		
CE-144	133.54	10.80	5.12E-01	5.12E-01	-2.33E-01	2.48E-01		
PM-144	476.78	42.00	1.87E-01	9.18E-02	1.12E-02	8.85E-02		
	618.01	98.60	9.48E-02		4.70E-02	4.47E-02		
	696.49	99.49	9.18E-02		-1.04E-02	4.29E-02		
PM-145	36.85	21.70	6.31E-01	3.40E-01	-2.74E-01	3.07E-01		
	37.36	39.70	3.40E-01		1.63E-01	1.66E-01		
	42.30	15.10	6.38E-01		-7.72E-01	3.10E-01		
	72.40	2.31	3.52E+00		-3.57E+00	1.73E+00		
PM-146	453.90	39.94	1.78E-01	1.78E-01	5.57E-02	8.39E-02		
	735.90	14.01	5.72E-01		-2.14E-01	2.65E-01		
	747.13	13.10	5.52E-01		-2.54E-01	2.53E-01		
ND-147	91.11	28.90	1.84E+00	1.84E+00	-2.24E-01	9.03E-01		
	531.02	13.10	4.19E+00		-7.81E-02	1.97E+00		
PM-149	285.90	3.10	5.28E+04	5.28E+04	2.01E+04	2.53E+04		
EU-152	121.78	20.50	2.46E-01	2.46E-01	-3.80E-02	1.20E-01		
	244.69	5.40	1.44E+00		-8.36E-02	6.99E-01		
	344.27	19.13	3.63E-01		7.72E-02	1.73E-01		
	778.89	9.20	9.33E-01		1.21E-01	4.33E-01		
	964.01	10.40	1.04E+00		-2.06E+00	4.87E-01		
	1085.78	7.22	1.28E+00		-2.78E-01	5.82E-01		
	1112.02	9.60	1.13E+00		-1.58E-01	5.21E-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-152	1407.95	14.94	6.57E-01	2.46E-01	3.75E-01	2.95E-01	
GD-153	97.43	31.30	1.80E-01	1.80E-01	6.65E-02	8.74E-02	
	103.18	22.20	2.46E-01		-4.96E-02	1.20E-01	
EU-154	123.07	40.50	1.27E-01	1.27E-01	-2.93E-02	6.15E-02	
	723.30	19.70	4.77E-01		-1.40E-03	2.24E-01	
	873.19	11.50	7.01E-01		1.78E-01	3.21E-01	
	996.32	10.30	9.14E-01		-5.08E-02	4.20E-01	
	1004.76	17.90	5.07E-01		-2.19E-02	2.32E-01	
	1274.45	35.50	3.73E-01		2.44E-01	1.73E-01	
EU-155	86.50	30.90	2.23E-01	2.23E-01	1.33E-01	1.09E-01	
	105.30	20.70	2.47E-01		3.07E-02	1.20E-01	
EU-156	811.77	10.40	3.27E+00	3.27E+00	4.43E-01	1.50E+00	
	1153.47	7.20	6.49E+00		1.30E-01	2.98E+00	
	1230.71	8.90	6.56E+00		2.32E+00	3.06E+00	
HO-166M	184.41	72.60	9.30E-02	9.30E-02	1.21E-01	4.52E-02	
	280.45	29.60	2.15E-01		2.71E-02	1.03E-01	
	410.94	11.10	7.33E-01		4.68E-01	3.51E-01	
	711.69	54.10	1.55E-01		1.18E-02	7.24E-02	
TM-171	66.72	0.14	5.03E+01	5.03E+01	-6.88E+01	2.46E+01	
HF-172	81.75	4.52	1.38E+00	4.88E-01	-4.32E+00	6.73E-01	
	125.81	11.30	4.88E-01		-1.40E-01	2.37E-01	
LU-172	181.53	20.60	7.42E+00	4.87E+00	-1.42E+01	3.59E+00	
	810.06	16.63	1.32E+01		2.40E+00	6.07E+00	
	912.12	15.25	3.20E+01		6.50E+01	1.54E+01	
	1093.66	62.50	4.87E+00		8.69E-01	2.25E+00	
LU-173	100.72	5.24	1.01E+00	3.62E-01	-5.09E-02	4.89E-01	
	272.11	21.20	3.62E-01		2.25E-01	1.75E-01	
HF-175	343.40	84.00	1.19E-01	1.19E-01	2.40E-02	5.73E-02	
LU-176	88.34	13.30	5.28E-01	7.03E-02	5.00E-01	2.59E-01	
	201.83	86.00	7.73E-02		-2.07E-02	3.75E-02	
	306.78	94.00	7.03E-02		8.10E-03	3.37E-02	
TA-182	67.75	41.20	1.97E-01	1.97E-01	-1.05E-01	9.64E-02	
	1121.30	34.90	4.72E-01		5.09E-01	2.22E-01	
	1189.05	16.23	8.53E-01		2.88E-01	3.94E-01	
	1221.41	26.98	4.61E-01		3.22E-02	2.11E-01	
	1231.02	11.44	1.39E+00		2.17E-01	6.47E-01	
IR-192	308.46	29.68	2.89E-01	1.87E-01	-2.31E-01	1.38E-01	
	468.07	48.10	1.87E-01		-3.42E-03	8.80E-02	
HG-203	279.19	77.30	1.37E-01	1.37E-01	-2.47E-02	6.59E-02	
BI-207	569.67	97.72	7.72E-02	7.72E-02	9.97E-03	3.62E-02	
	1063.62	74.90	1.08E-01		-1.38E-02	4.85E-02	
+ TL-208	583.14	*	30.22	3.38E-01	4.22E-02	1.24E+00	1.61E-01
	860.37	*	4.48	3.23E+00		2.88E+00	1.54E+00
	2614.66	*	35.85	4.22E-02		1.28E+00	0.00E+00
BI-210M	262.00		45.00	1.45E-01	1.45E-01	6.40E-02	6.97E-02
	300.00		23.00	3.15E-01		4.69E-02	1.52E-01
PB-210	46.50		4.25	2.23E+00	2.23E+00	9.07E-01	1.09E+00
PB-211	404.84		2.90	2.53E+00	2.53E+00	-3.58E-01	1.20E+00
	831.96		2.90	2.96E+00		8.92E-01	1.37E+00
+ BI-212	727.17	*	11.80	8.96E-01	8.96E-01	9.91E-01	4.23E-01
	1620.62		2.75	3.60E+00		0.00E+00	1.60E+00
+ PB-212	238.63	*	44.60	2.31E-01	2.31E-01	1.65E+00	1.13E-01
	300.09		3.41	2.12E+00		3.17E-01	1.02E+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)
+	BI-214	609.31	*	46.30	2.72E-01	2.72E-01	1.03E+00	1.31E-01
		1120.29	*	15.10	1.41E+00		8.85E-01	6.79E-01
		1764.49	*	15.80	3.54E-01		1.31E+00	1.40E-01
		2204.22	*	4.98	1.29E+00		1.13E+00	5.09E-01
+	PB-214	295.21	*	19.19	4.94E-01	3.05E-01	6.97E-01	2.40E-01
		351.92	*	37.19	3.05E-01		1.35E+00	1.48E-01
	RN-219	401.80		6.50	1.18E+00	1.18E+00	-6.34E-04	5.64E-01
	RA-223	323.87		3.88	1.73E+00	1.73E+00	1.56E-01	8.28E-01
	RA-224	240.98		3.95	3.51E+00	3.51E+00	2.11E+01	1.73E+00
	RA-225	40.00		31.00	1.64E+00	1.64E+00	3.58E-01	7.97E-01
+	RA-226	186.21	*	3.28	3.51E+00	3.51E+00	3.30E+00	1.73E+00
		TH-227	50.10		8.40	9.45E-01	9.45E-01	-1.74E+00	4.60E-01
		236.00		11.50	1.03E+00		3.18E+00	5.04E-01
		256.20		6.30	9.80E-01		1.32E-01	4.71E-01
+	AC-228	338.32	*	11.40	8.45E-01	5.60E-01	1.76E+00	4.09E-01
		911.07	*	27.70	5.60E-01		1.28E+00	2.67E-01
		969.11	*	16.60	8.40E-01		1.66E+00	3.98E-01
	TH-230	48.44		16.90	5.31E-01	5.31E-01	2.77E-01	2.59E-01
		62.85		4.60	1.70E+00		2.25E+00	8.31E-01
		67.67		0.37	1.81E+01		-9.59E+00	8.83E+00
	PA-231	283.67		1.60	3.88E+00	3.18E+00	-7.44E-01	1.86E+00
		302.67		2.30	3.18E+00		1.22E+00	1.53E+00
	TH-231	25.64		14.70	3.32E+00	9.51E-01	5.12E-01	1.61E+00
		84.21		6.40	9.51E-01		5.38E-02	4.65E-01
	PA-233	311.98		38.60	3.79E-01	3.79E-01	-1.24E-02	1.81E-01
	PA-234	131.20		20.40	2.70E-01	2.70E-01	1.55E-01	1.31E-01
		733.99		8.80	9.94E-01		7.08E-01	4.64E-01
		946.00		12.00	6.26E-01		-1.24E-01	2.83E-01
	PA-234M	1001.03		0.92	9.88E+00	9.88E+00	-5.17E+00	4.53E+00
	TH-234	63.29		3.80	2.03E+00	2.03E+00	1.57E+00	9.97E-01
	U-235	143.76		10.50	5.01E-01	5.01E-01	1.87E-01	2.43E-01
		163.35		4.70	1.17E+00		1.91E-01	5.66E-01
		205.31		4.70	1.45E+00		6.01E-02	7.06E-01
	NP-237	86.50		12.60	5.41E-01	5.41E-01	3.23E-01	2.65E-01
	NP-239	106.10		22.70	3.02E+03	3.02E+03	4.51E+02	1.47E+03
		228.18		10.70	8.40E+03		1.14E+03	4.07E+03
		277.60		14.10	6.32E+03		4.96E+03	3.04E+03
	AM-241	59.54		35.90	2.10E-01	2.10E-01	-1.05E-01	1.03E-01
	AM-243	74.67		66.00	1.43E-01	1.43E-01	2.67E-01	7.05E-02
+	CM-243	209.75	*	3.29	2.00E+00	6.26E-01	2.11E+00	9.72E-01
		228.14		10.60	6.26E-01		8.46E-02	3.03E-01
		277.60	*	14.00	8.12E-01		4.03E-01	3.97E-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 1510088-13
CP1804S15-16

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.

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

Sample Title: CP1804S15-16

Elapsed Live time: 3600
 Elapsed Real Time: 3617

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	13	167	200	146	125	74	91	100
17:	71	86	82	83	67	89	93	88
25:	88	90	83	76	75	78	80	77
33:	96	89	80	94	90	103	68	100
41:	82	82	78	81	84	108	183	103
49:	87	119	88	102	110	133	90	119
57:	106	140	153	128	125	126	172	240
65:	129	119	144	136	127	113	148	140
73:	145	194	385	277	419	441	135	121
81:	111	116	106	143	142	108	189	222
89:	118	155	147	144	243	168	92	84
97:	78	93	77	102	72	82	82	68
105:	98	86	75	81	81	72	71	78
113:	87	69	66	87	72	66	70	73
121:	73	70	78	79	80	88	85	79
129:	103	91	77	80	71	58	78	69
137:	77	76	64	82	61	62	79	85
145:	76	49	59	58	68	60	60	74
153:	73	80	78	66	56	56	48	63
161:	67	78	60	68	56	68	63	61
169:	66	62	61	68	61	59	65	61
177:	61	63	45	45	65	53	65	48
185:	77	138	101	59	63	57	60	55
193:	47	43	62	38	55	58	48	42
201:	58	61	57	57	42	56	54	50
209:	80	84	39	45	47	55	48	51
217:	66	37	48	45	52	39	34	58
225:	55	37	49	40	40	36	43	42
233:	34	34	37	49	45	195	537	180
241:	88	131	80	38	22	40	24	35
249:	43	31	33	28	33	32	22	33
257:	36	31	28	29	28	37	42	24
265:	43	28	20	26	43	63	63	39
273:	21	24	25	40	35	41	27	21
281:	24	22	23	39	24	27	24	34
289:	28	24	28	31	28	32	104	128
297:	28	29	33	44	42	25	28	37
305:	28	26	31	24	15	21	27	21
313:	31	28	21	15	26	32	28	27
321:	29	25	25	17	29	25	21	53
329:	39	22	26	22	16	19	32	26
337:	25	76	104	47	38	21	14	20
345:	31	12	27	25	17	27	66	237
353:	170	23	19	25	16	13	12	11
361:	15	17	12	21	25	20	19	17

369: 18 23 23 15 14 16 27 16

Sample Title: CP1804S15-16

Channel	1	2	3	4	5	6	7	8
377:	16	21	17	21	15	21	17	16
385:	18	20	13	13	12	22	23	15
393:	27	24	19	15	22	29	16	25
401:	31	23	16	28	15	19	20	17
409:	18	35	20	29	26	22	15	19
417:	9	18	15	29	18	19	16	17
425:	12	12	20	14	21	18	11	18
433:	17	17	13	12	20	16	21	25
441:	18	10	17	13	18	12	27	11
449:	15	12	15	11	13	26	12	12
457:	13	12	11	18	13	19	39	27
465:	17	7	9	15	11	11	16	14
473:	12	14	19	9	11	15	16	20
481:	23	10	11	10	11	7	17	13
489:	12	9	9	13	11	13	8	14
497:	16	13	8	13	13	11	15	12
505:	10	12	12	16	20	44	61	39
513:	18	10	15	14	9	5	12	13
521:	19	12	10	9	8	14	14	18
529:	12	14	7	7	8	13	9	9
537:	18	10	10	9	10	8	16	16
545:	12	16	8	17	9	9	8	13
553:	9	17	10	11	20	16	17	10
561:	8	13	19	11	6	21	11	11
569:	9	7	10	12	18	7	8	16
577:	11	12	16	6	14	32	123	84
585:	18	11	5	8	8	8	7	10
593:	14	9	18	7	12	10	10	7
601:	13	14	10	7	11	10	5	35
609:	128	137	21	15	9	12	15	20
617:	7	7	15	18	11	10	9	6
625:	7	10	9	12	18	10	13	14
633:	6	11	13	6	24	15	7	8
641:	8	14	15	2	7	13	8	5
649:	6	11	17	6	9	9	11	10
657:	8	11	8	10	15	11	13	11
665:	15	11	6	11	17	11	13	12
673:	14	19	10	9	12	6	9	6
681:	6	15	7	6	5	12	2	13
689:	8	10	5	13	12	11	9	11
697:	13	9	6	9	15	14	10	12
705:	15	7	15	8	13	11	7	8
713:	5	8	13	8	6	11	10	13
721:	6	8	9	8	15	20	25	34
729:	7	5	12	11	4	13	8	8
737:	11	8	2	7	10	5	9	8
745:	3	6	10	2	7	6	13	5
753:	5	11	7	13	12	7	4	10
761:	9	6	8	7	8	6	16	13
769:	19	6	9	10	13	11	5	6
777:	9	10	9	6	5	12	9	5
785:	11	10	7	6	8	5	10	8
793:	7	11	20	15	8	9	6	5

801: 10 9 7 6 3 7 4 7

Sample Title: CP1804S15-16

Channel	1	2	3	4	5	6	7	8
809:	5	12	4	3	8	4	7	11
817:	10	10	9	3	5	5	10	8
825:	8	10	8	3	1	6	11	6
833:	7	8	12	8	4	6	5	13
841:	10	5	11	4	3	4	8	4
849:	6	7	12	5	5	7	3	6
857:	8	6	11	21	17	12	13	7
865:	7	5	5	6	7	4	7	6
873:	5	8	2	8	5	1	10	8
881:	8	6	3	8	7	5	6	8
889:	7	6	12	9	7	10	5	7
897:	8	8	7	7	8	3	5	6
905:	7	7	8	8	8	26	75	45
913:	15	12	8	7	8	7	1	7
921:	10	5	6	9	3	3	5	7
929:	7	7	10	7	5	13	12	5
937:	6	3	4	3	5	4	6	1
945:	7	4	4	3	5	6	5	3
953:	4	7	3	3	4	7	2	6
961:	6	2	6	11	15	16	8	28
969:	49	16	9	5	7	5	10	6
977:	5	9	7	9	5	10	7	3
985:	4	2	5	3	5	5	4	3
993:	6	7	6	11	5	6	3	5
1001:	12	6	4	5	9	8	2	6
1009:	3	5	4	4	6	2	2	4
1017:	5	4	4	1	5	6	7	3
1025:	6	5	6	3	3	4	3	4
1033:	4	4	4	6	5	4	1	4
1041:	8	4	6	6	4	5	4	1
1049:	4	7	2	7	6	9	5	11
1057:	6	1	8	4	6	5	4	3
1065:	3	3	7	2	6	5	6	3
1073:	6	5	4	4	6	5	6	5
1081:	3	5	7	5	5	6	3	4
1089:	6	9	6	12	7	5	3	8
1097:	8	6	4	2	10	6	1	5
1105:	10	2	4	5	6	5	9	9
1113:	9	4	7	4	5	5	17	20
1121:	17	9	6	5	5	4	3	11
1129:	7	3	4	4	6	9	5	5
1137:	7	9	4	9	6	6	6	5
1145:	6	3	4	8	7	9	8	2
1153:	8	5	3	10	7	4	4	8
1161:	2	5	5	5	7	7	3	6
1169:	7	5	6	3	15	4	8	3
1177:	10	10	6	8	5	9	4	3
1185:	5	5	8	4	7	7	8	10
1193:	8	5	8	7	6	6	5	8
1201:	1	6	6	4	2	4	8	6
1209:	6	10	2	4	8	8	5	2
1217:	4	2	3	5	9	5	7	6
1225:	4	10	12	10	9	5	5	12

1233: 12 9 5 5 8 23 11 9

Sample Title: CP1804S15-16

Channel	1	2	3	4	5	6	7	8	9	10	11
1241:	4	7	10	6	1	8	9	6			
1249:	4	3	7	5	4	4	7	5			
1257:	6	2	6	2	5	4	3	2			
1265:	9	3	2	2	2	5	10	11			
1273:	3	8	5	5	5	7	2	8			
1281:	7	4	4	3	4	5	3	1			
1289:	4	2	4	4	5	3	5	5			
1297:	3	6	7	1	3	2	2	4			
1305:	6	2	5	3	4	3	1	1			
1313:	2	2	5	4	6	3	3	5			
1321:	4	5	3	1	2	4	4	4			
1329:	3	5	0	2	4	1	5	2			
1337:	6	4	3	0	5	2	3	1			
1345:	4	0	3	3	6	2	1	2			
1353:	3	1	1	2	3	1	1	4			
1361:	8	7	2	2	2	5	2	2			
1369:	3	2	0	1	2	2	6	6			
1377:	10	7	3	5	4	3	3	7			
1385:	3	1	4	3	1	0	1	2			
1393:	2	4	2	2	4	3	2	2			
1401:	3	2	1	2	2	1	8	5			
1409:	2	1	5	0	1	1	3	1			
1417:	5	0	1	2	2	1	2	0			
1425:	1	0	2	3	2	7	2	2			
1433:	3	1	6	3	3	0	4	1			
1441:	3	4	3	1	3	3	5	1			
1449:	1	3	1	2	3	2	3	2			
1457:	1	9	40	166	180	66	4	4			
1465:	3	2	1	3	3	2	1	4			
1473:	3	3	1	2	0	1	2	2			
1481:	3	2	2	1	1	0	1	1			
1489:	2	2	1	0	1	3	7	1			
1497:	4	2	1	5	1	1	1	0			
1505:	0	0	2	8	4	2	0	2			
1513:	1	5	0	4	1	2	2	2			
1521:	1	1	2	4	3	3	1	2			
1529:	1	4	4	1	3	0	2	4			
1537:	1	3	1	1	0	3	4	2			
1545:	2	2	0	2	1	1	0	0			
1553:	3	0	1	1	0	0	1	2			
1561:	1	2	1	1	1	1	2	3			
1569:	0	2	1	1	0	0	0	1			
1577:	0	0	0	1	1	2	0	2			
1585:	1	0	1	5	5	5	8	3			
1593:	5	3	1	0	1	3	2	1			
1601:	2	3	0	2	4	1	3	2			
1609:	1	1	0	2	1	0	1	2			
1617:	0	0	2	5	1	2	5	4			
1625:	1	0	1	3	0	6	1	3			
1633:	1	1	0	1	2	3	1	3			
1641:	1	0	3	0	2	1	1	0			
1649:	1	2	3	2	2	1	1	0			
1657:	2	0	0	1	4	2	0	4			

1665: 1 3 1 1 1 2 1 0

Sample Title: CP1804S15-16

Channel	1	2	3	4	5	6	7	8
1673:	0	0	1	0	2	0	1	0
1681:	1	2	3	1	1	0	4	0
1689:	0	0	2	1	2	3	2	1
1697:	1	0	2	3	0	0	0	1
1705:	1	2	0	2	1	1	3	0
1713:	1	1	0	2	4	0	0	1
1721:	0	0	0	0	1	1	1	1
1729:	3	0	0	0	2	2	0	2
1737:	0	2	2	0	1	0	0	0
1745:	1	1	0	1	0	1	1	0
1753:	0	2	1	2	1	0	1	1
1761:	0	2	10	16	19	2	0	0
1769:	0	1	1	0	0	1	1	2
1777:	1	1	0	0	1	0	1	0
1785:	2	0	2	1	2	0	1	0
1793:	0	0	0	3	0	1	1	2
1801:	1	0	0	3	0	2	0	2
1809:	0	1	1	2	0	0	1	2
1817:	0	0	0	2	2	1	0	1
1825:	0	2	2	0	0	2	2	0
1833:	0	3	0	0	1	1	5	0
1841:	1	1	1	2	2	2	3	1
1849:	0	1	1	1	0	0	0	2
1857:	0	1	0	0	0	1	1	2
1865:	0	1	3	1	1	2	1	0
1873:	0	0	0	0	0	0	1	2
1881:	0	0	2	0	1	0	1	1
1889:	3	1	1	1	0	3	0	2
1897:	0	0	2	1	0	1	1	0
1905:	0	1	1	0	1	1	1	1
1913:	1	0	0	0	2	0	0	1
1921:	2	2	1	0	2	1	1	0
1929:	2	2	1	3	3	3	1	1
1937:	1	2	0	1	0	0	0	1
1945:	1	0	5	0	3	1	0	2
1953:	0	1	1	2	0	0	2	0
1961:	2	1	0	1	2	0	1	0
1969:	0	1	1	3	1	0	0	4
1977:	0	2	0	2	0	1	4	1
1985:	0	0	2	0	1	1	1	1
1993:	0	0	1	2	1	0	0	0
2001:	0	1	0	1	3	1	1	0
2009:	1	0	3	1	3	2	0	2
2017:	0	1	1	3	0	1	0	1
2025:	2	0	0	0	2	1	1	0
2033:	1	2	0	0	1	1	1	1
2041:	0	0	2	0	0	0	0	1
2049:	1	1	2	0	0	1	0	2
2057:	0	1	1	1	0	1	0	1
2065:	1	1	1	2	0	0	0	0
2073:	1	0	1	2	0	1	1	0
2081:	0	0	1	1	1	0	2	0
2089:	1	1	1	0	1	2	2	2

2097: 1 1 1 2 3 5 6 1

Sample Title: CP1804S15-16

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

2529: 0 0 0 0 1 0 0 0

Sample Title: CP1804S15-16

Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	0	0	1	1	0	0	0
2545:	2	1	0	0	0	0	0	0	0
2553:	2	0	1	0	1	0	1	0	0
2561:	0	1	1	0	0	0	0	1	0
2569:	0	1	0	1	0	0	0	0	1
2577:	1	0	0	0	0	0	0	0	1
2585:	0	1	1	0	2	0	3	0	0
2593:	0	0	0	0	0	0	0	0	0
2601:	0	0	1	0	0	1	0	0	0
2609:	0	0	1	10	10	28	23	8	0
2617:	1	1	0	0	1	2	0	0	0
2625:	0	0	0	0	0	0	0	0	0
2633:	0	1	0	0	0	0	0	3	0
2641:	0	0	0	0	0	1	0	0	0
2649:	1	0	0	1	1	0	0	0	0
2657:	1	0	0	0	0	0	0	0	0
2665:	0	1	0	0	1	0	0	0	0
2673:	0	0	0	0	0	0	0	0	0
2681:	0	1	1	2	0	0	1	0	0
2689:	0	0	1	0	0	1	0	0	0
2697:	0	1	0	0	0	0	0	0	0
2705:	1	1	0	0	0	1	0	1	0
2713:	1	0	0	0	0	0	0	0	0
2721:	1	0	0	0	0	2	0	3	0
2729:	0	1	0	0	0	1	1	0	0
2737:	0	2	0	0	0	0	1	0	0
2745:	0	0	0	0	1	1	0	1	0
2753:	0	0	0	0	0	0	0	0	0
2761:	0	0	0	0	0	0	1	0	0
2769:	0	0	0	1	1	0	0	0	0
2777:	0	0	1	0	0	0	0	0	0
2785:	0	0	0	0	1	0	0	0	0
2793:	0	0	0	0	1	0	0	1	0
2801:	1	0	0	0	0	0	0	0	0
2809:	1	0	1	0	0	0	0	1	0
2817:	0	0	0	1	0	0	0	0	0
2825:	1	0	1	0	0	0	0	0	0
2833:	0	0	0	0	2	0	0	0	0
2841:	0	1	0	0	1	0	0	0	0
2849:	0	1	0	0	0	0	1	0	0
2857:	0	0	0	0	1	0	1	1	0
2865:	1	0	0	0	1	0	0	0	0
2873:	0	0	0	0	0	0	0	0	0
2881:	0	1	0	1	0	0	0	0	0
2889:	0	0	0	0	0	0	0	0	0
2897:	0	0	1	1	0	0	0	1	0
2905:	1	0	0	0	1	0	0	0	0
2913:	0	0	0	1	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0	0
2937:	0	0	0	1	0	1	0	1	0
2945:	0	0	1	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0	0

2961: 0 0 0 0 0 0 1 0

Sample Title: CP1804S15-16

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

3393: 0 0 0 0 0 0 0 0

Sample Title: CP1804S15-16

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	1
3417:	0	0	0	1	0	0	0	0
3425:	0	0	0	0	0	1	0	0
3433:	0	1	0	0	0	0	0	0
3441:	0	2	0	0	1	0	0	0
3449:	1	0	0	0	1	0	1	0
3457:	0	0	0	0	1	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	1	2	0
3481:	0	0	0	0	0	0	0	1
3489:	0	0	0	0	0	1	0	1
3497:	0	0	1	0	0	0	0	0
3505:	1	0	0	0	0	0	0	0
3513:	1	0	0	0	0	0	0	1
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	1	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	1	0	0	0	0	0	0	0
3553:	2	0	0	0	0	1	0	0
3561:	0	0	0	1	0	0	0	0
3569:	0	0	0	0	0	0	0	2
3577:	1	0	0	0	0	0	0	0
3585:	0	0	0	2	0	0	0	2
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	0
3617:	0	0	1	0	0	0	0	1
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	1	0	1	0	0	0	0	1
3649:	0	1	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	1	0	0	0	0
3697:	0	1	0	0	0	0	0	0
3705:	0	1	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	1
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	1	0	0
3745:	0	0	0	0	1	0	0	0
3753:	1	0	0	1	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	1	0	0	0	0
3777:	0	1	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	1	0
3801:	0	0	0	0	1	0	0	0
3809:	0	0	0	1	0	0	0	1
3817:	0	0	0	0	0	0	0	0

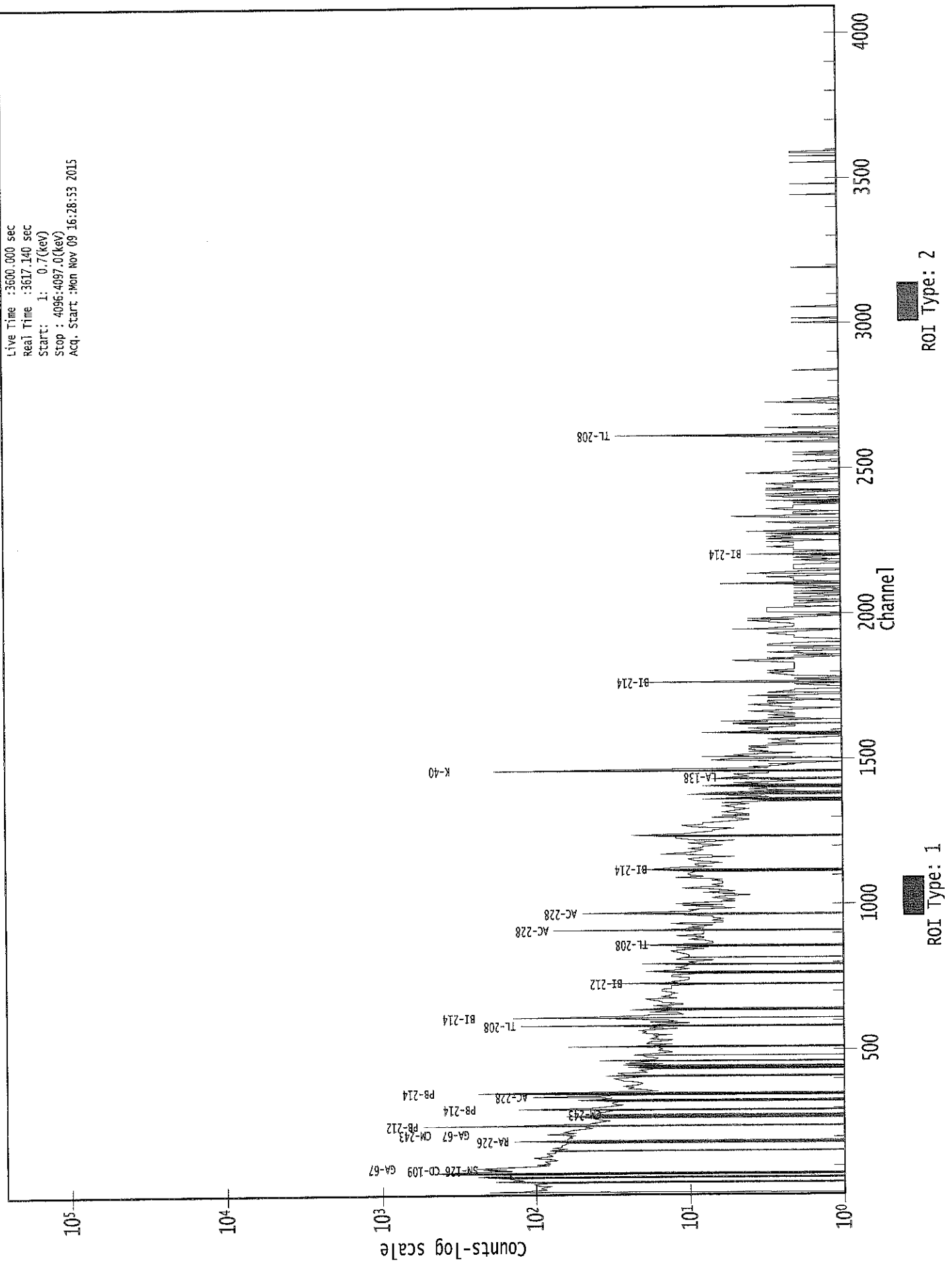
3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP1804S15-16

Channel								
3833:	0	0	0	1	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	1
3857:	1	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
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	1	0	0	0	0
3921:	0	0	1	0	0	0	0	0
3929:	1	0	0	1	0	0	0	0
3937:	1	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	1
3961:	0	0	0	0	0	0	0	0
3969:	0	1	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	0	1	0	0	0	0
4017:	0	0	0	1	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	1	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	1	0	0	0	0	0	0	0
4057:	0	1	0	0	0	0	0	1
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	1	1	0	0	0	0	1
4089:	1	0	0	0	1	0	0	0

0000029354.CNF

Live Time :3600.000 sec
Real Time :3617.140 sec
Start: 1: 0.7(keV)
Stop : 4096.4097.0(keV)
Acq. Start :Mon Nov 09 16:28:53 2015



KCB
11/9/15Analysis Report for 1510088-14
CP1804S17-18

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-14
Sample Description : CP1804S17-18
Sample Type : SOIL

Sample Size : 6.454E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 9:02:25AM
Acquisition Started : 11/9/2015 4:35:56PM

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) : 18 - 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 : 29355

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

Analysis Report for 1510088-14
CP1804S17-18

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 5:36:00PM
 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	46.73	47.08	0.0000	0.00
2	63.09	63.44	0.0000	0.00
3	74.94	75.28	0.0000	0.00
4	77.47	77.82	0.0000	0.00
5	84.70	85.03	0.0000	0.00
6	87.57	87.91	0.0000	0.00
7	92.98	93.31	0.0000	0.00
8	99.63	99.97	0.0000	0.00
9	129.30	129.63	0.0000	0.00
10	186.07	186.37	0.0000	0.00
11	209.23	209.53	0.0000	0.00
12	238.76	239.05	0.0000	0.00
13	241.92	242.21	0.0000	0.00
14	248.56	248.85	0.0000	0.00
15	270.54	270.81	0.0000	0.00
16	277.18	277.45	0.0000	0.00
17	295.52	295.79	0.0000	0.00
18	300.07	300.33	0.0000	0.00
19	338.70	338.95	0.0000	0.00
20	352.14	352.39	0.0000	0.00
21	390.32	390.55	0.0000	0.00
22	463.75	463.96	0.0000	0.00
23	473.11	473.32	0.0000	0.00
24	511.32	511.52	0.0000	0.00
25	562.95	563.12	0.0000	0.00
26	583.51	583.68	0.0000	0.00
27	609.54	609.70	0.0000	0.00
28	678.81	678.94	0.0000	0.00
29	727.78	727.90	0.0000	0.00
30	790.74	790.84	0.0000	0.00
31	806.06	806.15	0.0000	0.00
32	860.21	860.28	0.0000	0.00
33	911.67	911.72	0.0000	0.00
34	950.80	950.84	0.0000	0.00
35	969.46	969.50	0.0000	0.00
36	1121.10	1121.08	0.0000	0.00
37	1197.90	1197.86	0.0000	0.00
38	1238.76	1238.70	0.0000	0.00
39	1248.37	1248.30	0.0000	0.00
40	1281.55	1281.47	0.0000	0.00
41	1289.11	1289.03	0.0000	0.00
42	1346.91	1346.80	0.0000	0.00

Analysis Report for 1510088-14
CP1804S17-18

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1378.89	1378.78	0.0000	0.00
44	1394.11	1393.99	0.0000	0.00
45	1401.68	1401.56	0.0000	0.00
46	1413.03	1412.91	0.0000	0.00
47	1461.34	1461.20	0.0000	0.00
48	1509.16	1509.00	0.0000	0.00
49	1513.16	1513.00	0.0000	0.00
50	1589.95	1589.76	0.0000	0.00
51	1683.92	1683.69	0.0000	0.00
52	1705.35	1705.11	0.0000	0.00
53	1730.35	1730.11	0.0000	0.00
54	1764.96	1764.70	0.0000	0.00
55	1806.49	1806.22	0.0000	0.00
56	1812.63	1812.35	0.0000	0.00
57	1857.95	1857.66	0.0000	0.00
58	1927.64	1927.32	0.0000	0.00
59	1936.05	1935.73	0.0000	0.00
60	1981.34	1981.00	0.0000	0.00
61	2020.03	2019.68	0.0000	0.00
62	2035.56	2035.20	0.0000	0.00
63	2104.17	2103.79	0.0000	0.00
64	2118.91	2118.52	0.0000	0.00
65	2145.73	2145.33	0.0000	0.00
66	2376.16	2375.67	0.0000	0.00
67	2388.00	2387.51	0.0000	0.00
68	2615.48	2614.90	0.0000	0.00
69	3197.77	3196.95	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510088-14
CP1804S17-18

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 5:36:00PM

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	46.73	44 -	49	47.08	1.76E+02	71.87	8.90E+02	1.93
2	63.09	59 -	66	63.44	2.38E+02	118.86	2.20E+03	1.37
M 3	74.94	72 -	83	75.28	4.95E+02	101.18	1.52E+03	1.60
m 4	77.47	72 -	83	77.82	8.01E+02	108.94	1.47E+03	1.61
M 5	84.70	83 -	97	85.03	1.98E+02	52.28	6.58E+02	2.36
m 6	87.57	83 -	97	87.91	3.62E+02	101.11	1.46E+03	2.39
m 7	92.98	83 -	97	93.31	5.02E+02	100.83	1.29E+03	2.40
8	99.63	98 -	103	99.97	7.02E+01	73.32	1.02E+03	1.77
9	129.30	126 -	133	129.63	1.26E+02	91.72	1.32E+03	1.86
10	186.07	183 -	190	186.37	1.92E+02	83.90	1.05E+03	1.54
11	209.23	206 -	213	209.53	1.11E+02	80.00	9.85E+02	1.78
M 12	238.76	235 -	246	239.05	1.07E+03	79.79	4.47E+02	1.66
m 13	241.92	235 -	246	242.21	2.91E+02	88.73	5.18E+02	2.25
14	248.56	247 -	251	248.85	3.46E+01	42.51	3.75E+02	2.91
15	270.54	266 -	274	270.81	1.12E+02	68.82	6.55E+02	1.46
16	277.18	275 -	282	277.45	5.13E+01	60.03	5.71E+02	3.73
M 17	295.52	290 -	307	295.79	3.45E+02	49.60	2.93E+02	1.48
m 18	300.07	290 -	307	300.33	7.31E+01	49.31	4.04E+02	1.91
19	338.70	334 -	343	338.95	2.45E+02	68.21	5.24E+02	1.70
20	352.14	349 -	355	352.39	5.86E+02	65.59	3.55E+02	1.86
21	390.32	387 -	394	390.55	6.48E+01	43.73	2.74E+02	3.77
22	463.75	460 -	468	463.96	6.51E+01	45.82	2.82E+02	1.97
23	473.11	469 -	477	473.32	4.36E+01	41.44	2.35E+02	3.19
24	511.32	506 -	517	511.52	2.14E+02	59.33	3.23E+02	2.08
25	562.95	559 -	566	563.12	3.50E+01	38.73	2.24E+02	1.41
26	583.51	579 -	589	583.68	3.47E+02	58.07	2.67E+02	2.06
27	609.54	606 -	612	609.70	4.11E+02	52.71	2.07E+02	1.76
28	678.81	677 -	682	678.94	2.17E+01	21.95	8.05E+01	1.85
29	727.78	722 -	732	727.90	8.39E+01	44.09	2.14E+02	2.06
30	790.74	780 -	800	790.84	1.22E+02	65.52	3.05E+02	10.55
31	806.06	803 -	810	806.15	2.47E+01	27.35	1.09E+02	3.68
32	860.21	855 -	865	860.28	5.99E+01	35.07	1.32E+02	2.04
33	911.67	906 -	915	911.72	2.35E+02	44.65	1.52E+02	2.08
34	950.80	947 -	953	950.84	1.99E+01	22.39	7.62E+01	2.51
35	969.46	966 -	973	969.50	1.20E+02	41.76	1.83E+02	2.07
36	1121.10	1117 -	1126	1121.08	1.02E+02	35.21	1.17E+02	2.06
37	1197.90	1194 -	1200	1197.86	2.13E+01	21.66	6.94E+01	2.63
M 38	1238.76	1235 -	1251	1238.70	3.59E+01	23.62	9.23E+01	2.80
m 39	1248.37	1235 -	1251	1248.30	1.44E+01	25.69	7.64E+01	2.81
40	1281.55	1278 -	1285	1281.47	2.34E+01	23.49	7.72E+01	1.16

Analysis Report for 1510088-14

CP1804S17-18

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1289.11	1287 - 1291		1289.03	1.33E+01	15.17	3.54E+01	2.72
	42	1346.91	1341 - 1351		1346.80	1.74E+01	19.85	4.13E+01	1.89
M	43	1378.89	1375 - 1397		1378.78	2.13E+01	18.65	5.17E+01	3.17
m	44	1394.11	1375 - 1397		1393.99	1.49E+01	16.97	2.15E+01	3.18
	45	1401.68	1398 - 1406		1401.56	1.93E+01	15.01	2.34E+01	2.75
	46	1413.03	1406 - 1426		1412.91	2.54E+01	32.06	7.72E+01	13.10
	47	1461.34	1455 - 1466		1461.20	7.08E+02	56.71	4.80E+01	2.08
M	48	1509.16	1504 - 1517		1509.00	1.05E+01	11.88	2.00E+01	2.21
m	49	1513.16	1504 - 1517		1513.00	1.08E+01	12.38	7.37E+00	2.22
	50	1589.95	1584 - 1595		1589.76	3.91E+01	22.18	4.18E+01	2.13
	51	1683.92	1679 - 1688		1683.69	9.90E+00	13.42	2.02E+01	2.20
	52	1705.35	1702 - 1707		1705.11	4.58E+00	5.74	2.83E+00	1.84
	53	1730.35	1726 - 1734		1730.11	2.16E+01	13.14	1.29E+01	2.19
	54	1764.96	1759 - 1770		1764.70	1.07E+02	21.82	6.23E+00	2.61
M	55	1806.49	1803 - 1820		1806.22	8.42E+00	8.99	8.41E+00	3.09
m	56	1812.63	1803 - 1820		1812.35	7.04E+00	10.99	1.41E+01	3.09
	57	1857.95	1855 - 1860		1857.66	5.85E+00	8.19	8.30E+00	1.37
	58	1927.64	1922 - 1932		1927.32	2.20E+01	9.38	0.00E+00	6.33
	59	1936.05	1933 - 1940		1935.73	1.50E+01	7.75	0.00E+00	3.49
	60	1981.34	1979 - 1983		1981.00	6.00E+00	4.90	0.00E+00	3.00
	61	2020.03	2018 - 2022		2019.68	5.56E+00	7.12	4.88E+00	1.83
	62	2035.56	2031 - 2038		2035.20	9.14E+00	7.75	3.73E+00	1.16
	63	2104.17	2100 - 2108		2103.79	1.30E+01	13.00	1.80E+01	1.24
	64	2118.91	2113 - 2123		2118.52	1.20E+01	14.59	2.20E+01	1.26
	65	2145.73	2143 - 2147		2145.33	9.00E+00	6.00	0.00E+00	2.02
	66	2376.16	2372 - 2378		2375.67	1.43E+01	8.73	3.31E+00	3.50
	67	2388.00	2382 - 2391		2387.51	1.14E+01	9.00	5.14E+00	2.08
	68	2615.48	2611 - 2620		2614.90	1.34E+02	25.28	1.39E+01	2.14
	69	3197.77	3193 - 3200		3196.95	6.06E+00	6.93	3.88E+00	1.06

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 5:36:00PM

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

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
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: 00838

Analysis Report for 1510088-14

CP1804S17-18

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.73	44 -	49	1.76E+02	71.87	8.90E+02	5.49E+01
	2	63.09	59 -	66	2.38E+02	118.86	2.20E+03	9.44E+01
M	3	74.94	72 -	83	4.95E+02	101.18	1.52E+03	6.40E+01
m	4	77.47	72 -	83	8.01E+02	108.94	1.47E+03	6.30E+01
M	5	84.70	83 -	97	1.98E+02	52.28	6.58E+02	4.22E+01
m	6	87.57	83 -	97	3.62E+02	101.11	1.46E+03	6.27E+01
m	7	92.98	83 -	97	5.02E+02	100.83	1.29E+03	5.90E+01
	8	99.63	98 -	103	7.02E+01	73.32	1.02E+03	5.87E+01
	9	129.30	126 -	133	1.26E+02	91.72	1.32E+03	7.31E+01
	10	186.07	183 -	190	1.92E+02	83.90	1.05E+03	6.51E+01
	11	209.23	206 -	213	1.11E+02	80.00	9.85E+02	6.34E+01
M	12	238.76	235 -	246	1.07E+03	79.79	4.47E+02	3.48E+01
m	13	241.92	235 -	246	2.91E+02	88.73	5.18E+02	3.74E+01
	14	248.56	247 -	251	3.46E+01	42.51	3.75E+02	3.36E+01
	15	270.54	266 -	274	1.12E+02	68.82	6.55E+02	5.38E+01
	16	277.18	275 -	282	5.13E+01	60.03	5.71E+02	2.34E+01
M	17	295.52	290 -	307	3.45E+02	49.60	2.93E+02	2.81E+01
m	18	300.07	290 -	307	7.31E+01	49.31	4.04E+02	3.31E+01
	19	338.70	334 -	343	2.45E+02	68.21	5.24E+02	4.98E+01
	20	352.14	349 -	355	5.86E+02	65.59	3.55E+02	3.64E+01
	21	390.32	387 -	394	6.48E+01	43.73	2.74E+02	3.34E+01
	22	463.75	460 -	468	6.51E+01	45.82	2.82E+02	3.53E+01
	23	473.11	469 -	477	4.36E+01	41.44	2.35E+02	3.23E+01
	24	511.32	506 -	517	2.14E+02	59.33	3.23E+02	4.24E+01
	25	562.95	559 -	566	3.50E+01	38.73	2.24E+02	3.03E+01
	26	583.51	579 -	589	3.47E+02	58.07	2.67E+02	3.66E+01
	27	609.54	606 -	612	4.11E+02	52.71	2.07E+02	2.77E+01
	28	678.81	677 -	682	2.17E+01	21.95	8.05E+01	1.63E+01
	29	727.78	722 -	732	8.39E+01	44.09	2.14E+02	3.30E+01
	30	790.74	780 -	800	1.22E+02	65.52	3.05E+02	5.07E+01
	31	806.06	803 -	810	2.47E+01	27.35	1.09E+02	2.09E+01
	32	860.21	855 -	865	5.99E+01	35.07	1.32E+02	2.59E+01
	33	911.67	906 -	915	2.35E+02	44.65	1.52E+02	2.67E+01
	34	950.80	947 -	953	1.99E+01	22.39	7.62E+01	1.69E+01
	35	969.46	966 -	973	1.20E+02	41.76	1.83E+02	2.92E+01
	36	1121.10	1117 -	1126	1.02E+02	35.21	1.17E+02	2.37E+01
	37	1197.90	1194 -	1200	2.13E+01	21.66	6.94E+01	1.61E+01
M	38	1238.76	1235 -	1251	3.59E+01	23.62	9.23E+01	1.58E+01
m	39	1248.37	1235 -	1251	1.44E+01	25.69	7.64E+01	1.44E+01
	40	1281.55	1278 -	1285	2.34E+01	23.49	7.72E+01	1.76E+01
	41	1289.11	1287 -	1291	1.33E+01	15.17	3.54E+01	1.09E+01
	42	1346.91	1341 -	1351	1.74E+01	19.85	4.13E+01	1.48E+01
M	43	1378.89	1375 -	1397	2.13E+01	18.65	5.17E+01	1.18E+01
m	44	1394.11	1375 -	1397	1.49E+01	16.97	2.15E+01	7.63E+00
	45	1401.68	1398 -	1406	1.93E+01	15.01	2.34E+01	1.00E+01
	46	1413.03	1406 -	1426	2.54E+01	32.06	7.72E+01	2.50E+01
	47	1461.34	1455 -	1466	7.08E+02	56.71	4.80E+01	1.61E+01
M	48	1509.16	1504 -	1517	1.05E+01	11.88	2.00E+01	7.35E+00
m	49	1513.16	1504 -	1517	1.08E+01	12.38	7.37E+00	4.46E+00
	50	1589.95	1584 -	1595	3.91E+01	22.18	4.18E+01	1.51E+01
	51	1683.92	1679 -	1688	9.90E+00	13.42	2.02E+01	9.74E+00

Analysis Report for 1510088-14

CP1804S17-18

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
52	1705.35	1702 -	1707	4.58E+00	5.74	2.83E+00	3.15E+00
53	1730.35	1726 -	1734	2.16E+01	13.14	1.29E+01	7.64E+00
54	1764.96	1759 -	1770	1.07E+02	21.82	6.23E+00	5.72E+00
M	55	1806.49	1803 - 1820	8.42E+00	8.99	8.41E+00	4.77E+00
m	56	1812.63	1803 - 1820	7.04E+00	10.99	1.41E+01	6.18E+00
57	1857.95	1855 -	1860	5.85E+00	8.19	8.30E+00	5.43E+00
58	1927.64	1922 -	1932	2.20E+01	9.38	0.00E+00	0.00E+00
59	1936.05	1933 -	1940	1.50E+01	7.75	0.00E+00	0.00E+00
60	1981.34	1979 -	1983	6.00E+00	4.90	0.00E+00	0.00E+00
61	2020.03	2018 -	2022	5.56E+00	7.12	4.88E+00	4.39E+00
62	2035.56	2031 -	2038	9.14E+00	7.75	3.73E+00	3.98E+00
63	2104.17	2100 -	2108	1.30E+01	13.00	1.80E+01	8.89E+00
64	2118.91	2113 -	2123	1.20E+01	14.59	2.20E+01	1.06E+01
65	2145.73	2143 -	2147	9.00E+00	6.00	0.00E+00	0.00E+00
66	2376.16	2372 -	2378	1.43E+01	8.73	3.31E+00	3.57E+00
67	2388.00	2382 -	2391	1.14E+01	9.00	5.14E+00	4.88E+00
68	2615.48	2611 -	2620	1.34E+02	25.28	1.39E+01	8.34E+00
69	3197.77	3193 -	3200	6.06E+00	6.93	3.88E+00	4.01E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 5:36:00PM

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	46.73	44 -	49	47.08	1.76E+02	71.87	8.90E+02	PB-210
2	63.09	59 -	66	63.44	2.38E+02	118.86	2.20E+03	TH-234
								TH-230
M	3	74.94	72 - 83	75.28	4.95E+02	101.18	1.52E+03	AM-243
m	4	77.47	72 - 83	77.82	8.01E+02	108.94	1.47E+03	TI-44
M	5	84.70	83 - 97	85.03	1.98E+02	52.28	6.58E+02	TH-231
m	6	87.57	83 - 97	87.91	3.62E+02	101.11	1.46E+03	SN-126

: 00840

Analysis Report for 1510088-14

CP1804S17-18

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									CD-109
									LU-176
m	7	92.98	83 -	97	93.31	5.02E+02	100.83	1.29E+03	GA-67
	8	99.63	98 -	103	99.97	7.02E+01	73.32	1.02E+03	.....
	9	129.30	126 -	133	129.63	1.26E+02	91.72	1.32E+03	.....
	10	186.07	183 -	190	186.37	1.92E+02	83.90	1.05E+03	RA-226
	11	209.23	206 -	213	209.53	1.11E+02	80.00	9.85E+02	GA-67
									CM-243
M	12	238.76	235 -	246	239.05	1.07E+03	79.79	4.47E+02	PB-212
m	13	241.92	235 -	246	242.21	2.91E+02	88.73	5.18E+02	RA-224
	14	248.56	247 -	251	248.85	3.46E+01	42.51	3.75E+02	.....
	15	270.54	266 -	274	270.81	1.12E+02	68.82	6.55E+02	.....
	16	277.18	275 -	282	277.45	5.13E+01	60.03	5.71E+02	CM-243
									NP-239
M	17	295.52	290 -	307	295.79	3.45E+02	49.60	2.93E+02	PB-214
m	18	300.07	290 -	307	300.33	7.31E+01	49.31	4.04E+02	PB-212
									BI-210M
									GA-67
	19	338.70	334 -	343	338.95	2.45E+02	68.21	5.24E+02	AC-228
	20	352.14	349 -	355	352.39	5.86E+02	65.59	3.55E+02	PB-214
	21	390.32	387 -	394	390.55	6.48E+01	43.73	2.74E+02	.....
	22	463.75	460 -	468	463.96	6.51E+01	45.82	2.82E+02	SB-125
	23	473.11	469 -	477	473.32	4.36E+01	41.44	2.35E+02	SB-127
	24	511.32	506 -	517	511.52	2.14E+02	59.33	3.23E+02	.....
	25	562.95	559 -	566	563.12	3.50E+01	38.73	2.24E+02	CS-134
	26	583.51	579 -	589	583.68	3.47E+02	58.07	2.67E+02	TL-208
	27	609.54	606 -	612	609.70	4.11E+02	52.71	2.07E+02	BI-214
	28	678.81	677 -	682	678.94	2.17E+01	21.95	8.05E+01	.....
	29	727.78	722 -	732	727.90	8.39E+01	44.09	2.14E+02	BI-212
	30	790.74	780 -	800	790.84	1.22E+02	65.52	3.05E+02	.....
	31	806.06	803 -	810	806.15	2.47E+01	27.35	1.09E+02	.....
	32	860.21	855 -	865	860.28	5.99E+01	35.07	1.32E+02	TL-208
	33	911.67	906 -	915	911.72	2.35E+02	44.65	1.52E+02	LU-172
									AC-228
	34	950.80	947 -	953	950.84	1.99E+01	22.39	7.62E+01	.....
	35	969.46	966 -	973	969.50	1.20E+02	41.76	1.83E+02	AC-228
	36	1121.10	1117 -	1126	1121.08	1.02E+02	35.21	1.17E+02	TA-182
									SC-46
									BI-214
	37	1197.90	1194 -	1200	1197.86	2.13E+01	21.66	6.94E+01	.....
M	38	1238.76	1235 -	1251	1238.70	3.59E+01	23.62	9.23E+01	CO-56
m	39	1248.37	1235 -	1251	1248.30	1.44E+01	25.69	7.64E+01	.....
	40	1281.55	1278 -	1285	1281.47	2.34E+01	23.49	7.72E+01	.....
	41	1289.11	1287 -	1291	1289.03	1.33E+01	15.17	3.54E+01	.....
	42	1346.91	1341 -	1351	1346.80	1.74E+01	19.85	4.13E+01	.....
M	43	1378.89	1375 -	1397	1378.78	2.13E+01	18.65	5.17E+01	.....
m	44	1394.11	1375 -	1397	1393.99	1.49E+01	16.97	2.15E+01	.....
	45	1401.68	1398 -	1406	1401.56	1.93E+01	15.01	2.34E+01	.....
	46	1413.03	1406 -	1426	1412.91	2.54E+01	32.06	7.72E+01	.....
	47	1461.34	1455 -	1466	1461.20	7.08E+02	56.71	4.80E+01	K-40
M	48	1509.16	1504 -	1517	1509.00	1.05E+01	11.88	2.00E+01	.....
m	49	1513.16	1504 -	1517	1513.00	1.08E+01	12.38	7.37E+00	.....
	50	1589.95	1584 -	1595	1589.76	3.91E+01	22.18	4.18E+01	.....
	51	1683.92	1679 -	1688	1683.69	9.90E+00	13.42	2.02E+01	.....

Analysis Report for 1510088-14
 CP1804S17-18

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
52	1705.35	1702 -	1707	1705.11	4.58E+00	5.74	2.83E+00	.....
53	1730.35	1726 -	1734	1730.11	2.16E+01	13.14	1.29E+01	.....
54	1764.96	1759 -	1770	1764.70	1.07E+02	21.82	6.23E+00	BI-214
M 55	1806.49	1803 -	1820	1806.22	8.42E+00	8.99	8.41E+00	.....
m 56	1812.63	1803 -	1820	1812.35	7.04E+00	10.99	1.41E+01	.....
57	1857.95	1855 -	1860	1857.66	5.85E+00	8.19	8.30E+00	.....
58	1927.64	1922 -	1932	1927.32	2.20E+01	9.38	0.00E+00	.....
59	1936.05	1933 -	1940	1935.73	1.50E+01	7.75	0.00E+00	.....
60	1981.34	1979 -	1983	1981.00	6.00E+00	4.90	0.00E+00	.....
61	2020.03	2018 -	2022	2019.68	5.56E+00	7.12	4.88E+00	.....
62	2035.56	2031 -	2038	2035.20	9.14E+00	7.75	3.73E+00	.....
63	2104.17	2100 -	2108	2103.79	1.30E+01	13.00	1.80E+01	.....
64	2118.91	2113 -	2123	2118.52	1.20E+01	14.59	2.20E+01	.....
65	2145.73	2143 -	2147	2145.33	9.00E+00	6.00	0.00E+00	.....
66	2376.16	2372 -	2378	2375.67	1.43E+01	8.73	3.31E+00	.....
67	2388.00	2382 -	2391	2387.51	1.14E+01	9.00	5.14E+00	.....
68	2615.48	2611 -	2620	2614.90	1.34E+02	25.28	1.39E+01	TL-208
69	3197.77	3193 -	3200	3196.95	6.06E+00	6.93	3.88E+00	.....

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 5:36:00PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	46.73	1.76E+02	71.87	1.69E-02	1.78E-03
2	63.09	2.38E+02	118.86	2.49E-02	1.90E-03
M 3	74.94	4.95E+02	101.18	2.75E-02	2.30E-03
m 4	77.47	8.01E+02	108.94	2.78E-02	2.39E-03
M 5	84.70	1.98E+02	52.28	2.84E-02	2.63E-03
m 6	87.57	3.62E+02	101.11	2.85E-02	2.72E-03
m 7	92.98	5.02E+02	100.83	2.86E-02	2.64E-03
8	99.63	7.02E+01	73.32	2.85E-02	2.51E-03
9	129.30	1.26E+02	91.72	2.67E-02	2.09E-03
10	186.07	1.92E+02	83.90	2.24E-02	2.03E-03
11	209.23	1.11E+02	80.00	2.09E-02	1.86E-03
M 12	238.76	1.07E+03	79.79	1.92E-02	1.64E-03

Analysis Report for 1510088-14
CP1804S17-18

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	13	241.92	2.91E+02	88.73	1.91E-02	1.61E-03
	14	248.56	3.46E+01	42.51	1.87E-02	1.57E-03
	15	270.54	1.12E+02	68.82	1.77E-02	1.40E-03
	16	277.18	5.13E+01	60.03	1.74E-02	1.35E-03
M	17	295.52	3.45E+02	49.60	1.67E-02	1.31E-03
m	18	300.07	7.31E+01	49.31	1.65E-02	1.30E-03
	19	338.70	2.45E+02	68.21	1.52E-02	1.22E-03
	20	352.14	5.86E+02	65.59	1.48E-02	1.19E-03
	21	390.32	6.48E+01	43.73	1.37E-02	1.12E-03
	22	463.75	6.51E+01	45.82	1.21E-02	1.04E-03
	23	473.11	4.36E+01	41.44	1.19E-02	1.03E-03
	24	511.32	2.14E+02	59.33	1.12E-02	9.90E-04
	25	562.95	3.50E+01	38.73	1.04E-02	9.36E-04
	26	583.51	3.47E+02	58.07	1.02E-02	9.15E-04
	27	609.54	4.11E+02	52.71	9.82E-03	8.88E-04
	28	678.81	2.17E+01	21.95	9.03E-03	8.19E-04
	29	727.78	8.39E+01	44.09	8.55E-03	7.75E-04
	30	790.74	1.22E+02	65.52	8.00E-03	7.18E-04
	31	806.06	2.47E+01	27.35	7.88E-03	7.05E-04
	32	860.21	5.99E+01	35.07	7.48E-03	6.56E-04
	33	911.67	2.35E+02	44.65	7.14E-03	6.15E-04
	34	950.80	1.99E+01	22.39	6.91E-03	5.95E-04
	35	969.46	1.20E+02	41.76	6.80E-03	5.85E-04
	36	1121.10	1.02E+02	35.21	6.06E-03	5.06E-04
	37	1197.90	2.13E+01	21.66	5.76E-03	4.75E-04
M	38	1238.76	3.59E+01	23.62	5.61E-03	4.68E-04
m	39	1248.37	1.44E+01	25.69	5.58E-03	4.66E-04
	40	1281.55	2.34E+01	23.49	5.47E-03	4.60E-04
	41	1289.11	1.33E+01	15.17	5.45E-03	4.59E-04
	42	1346.91	1.74E+01	19.85	5.27E-03	4.48E-04
M	43	1378.89	2.13E+01	18.65	5.18E-03	4.40E-04
m	44	1394.11	1.49E+01	16.97	5.14E-03	4.36E-04
	45	1401.68	1.93E+01	15.01	5.12E-03	4.34E-04
	46	1413.03	2.54E+01	32.06	5.09E-03	4.31E-04
	47	1461.34	7.08E+02	56.71	4.97E-03	4.19E-04
M	48	1509.16	1.05E+01	11.88	4.86E-03	4.07E-04
m	49	1513.16	1.08E+01	12.38	4.85E-03	4.06E-04
	50	1589.95	3.91E+01	22.18	4.69E-03	3.87E-04
	51	1683.92	9.90E+00	13.42	4.52E-03	3.64E-04
	52	1705.35	4.58E+00	5.74	4.49E-03	3.58E-04
	53	1730.35	2.16E+01	13.14	4.45E-03	3.52E-04
	54	1764.96	1.07E+02	21.82	4.40E-03	3.44E-04
M	55	1806.49	8.42E+00	8.99	4.34E-03	3.33E-04
m	56	1812.63	7.04E+00	10.99	4.33E-03	3.32E-04
	57	1857.95	5.85E+00	8.19	4.27E-03	3.26E-04
	58	1927.64	2.20E+01	9.38	4.19E-03	3.26E-04
	59	1936.05	1.50E+01	7.75	4.18E-03	3.26E-04
	60	1981.34	6.00E+00	4.90	4.13E-03	3.26E-04
	61	2020.03	5.56E+00	7.12	4.09E-03	3.26E-04
	62	2035.56	9.14E+00	7.75	4.08E-03	3.26E-04
	63	2104.17	1.30E+01	13.00	4.02E-03	3.26E-04
	64	2118.91	1.20E+01	14.59	4.01E-03	3.26E-04
	65	2145.73	9.00E+00	6.00	3.99E-03	3.26E-04

Analysis Report for 1510088-14
CP1804S17-18

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
66	2376.16	1.43E+01	8.73	3.86E-03	3.26E-04
67	2388.00	1.14E+01	9.00	3.85E-03	3.26E-04
68	2615.48	1.34E+02	25.28	3.79E-03	3.26E-04
69	3197.77	6.06E+00	6.93	3.88E-03	3.26E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 5:36:00PM

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	46.73	1.76E+02	71.87	4.50E+01	8.46E+00	1.31E+02	7.24E+01
	2	63.09	2.38E+02	118.86	7.80E+01	1.33E+01	1.60E+02	1.20E+02
M	3	74.94	4.95E+02	101.18	5.09E+00	4.37E+00	4.90E+02	1.01E+02
m	4	77.47	8.01E+02	108.94	9.75E+00	8.28E+00	7.91E+02	1.09E+02
M	5	84.70	1.98E+02	52.28	2.38E+00	8.92E+00	1.96E+02	5.30E+01
m	6	87.57	3.62E+02	101.11			3.62E+02	1.01E+02
m	7	92.98	5.02E+02	100.83	1.34E+02	9.83E+00	3.68E+02	1.01E+02
	8	99.63	7.02E+01	73.32			7.02E+01	7.33E+01
	9	129.30	1.26E+02	91.72			1.26E+02	9.17E+01
	10	186.07	1.92E+02	83.90	6.41E+01	7.38E+00	1.28E+02	8.42E+01
	11	209.23	1.11E+02	80.00			1.11E+02	8.00E+01
M	12	238.76	1.07E+03	79.79	2.34E+01	6.34E+00	1.05E+03	8.00E+01
m	13	241.92	2.91E+02	88.73			2.91E+02	8.87E+01
	14	248.56	3.46E+01	42.51			3.46E+01	4.25E+01
	15	270.54	1.12E+02	68.82			1.12E+02	6.88E+01
	16	277.18	5.13E+01	60.03			5.13E+01	6.00E+01
M	17	295.52	3.45E+02	49.60	4.17E+00	5.50E+00	3.41E+02	4.99E+01
m	18	300.07	7.31E+01	49.31			7.31E+01	4.93E+01
	19	338.70	2.45E+02	68.21	2.22E-01	4.54E+00	2.45E+02	6.84E+01
	20	352.14	5.86E+02	65.59	8.83E+00	4.91E+00	5.77E+02	6.58E+01
	21	390.32	6.48E+01	43.73			6.48E+01	4.37E+01
	22	463.75	6.51E+01	45.82			6.51E+01	4.58E+01
	23	473.11	4.36E+01	41.44			4.36E+01	4.14E+01
	24	511.32	2.14E+02	59.33	8.12E+01	5.49E+00	1.33E+02	5.96E+01
	25	562.95	3.50E+01	38.73			3.50E+01	3.87E+01
	26	583.51	3.47E+02	58.07	6.34E+00	3.74E+00	3.40E+02	5.82E+01

Analysis Report for 1510088-14

CP1804S17-18

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
27	609.54	4.11E+02	52.71	5.20E+00	3.69E+00	4.05E+02	5.28E+01
28	678.81	2.17E+01	21.95			2.17E+01	2.20E+01
29	727.78	8.39E+01	44.09			8.39E+01	4.41E+01
30	790.74	1.22E+02	65.52			1.22E+02	6.55E+01
31	806.06	2.47E+01	27.35			2.47E+01	2.73E+01
32	860.21	5.99E+01	35.07			5.99E+01	3.51E+01
33	911.67	2.35E+02	44.65	3.28E+00	2.53E+00	2.32E+02	4.47E+01
34	950.80	1.99E+01	22.39			1.99E+01	2.24E+01
35	969.46	1.20E+02	41.76			1.20E+02	4.18E+01
36	1121.10	1.02E+02	35.21	2.28E+00	2.55E+00	9.94E+01	3.53E+01
37	1197.90	2.13E+01	21.66			2.13E+01	2.17E+01
M 38	1238.76	3.59E+01	23.62			3.59E+01	2.36E+01
m 39	1248.37	1.44E+01	25.69			1.44E+01	2.57E+01
40	1281.55	2.34E+01	23.49			2.34E+01	2.35E+01
41	1289.11	1.33E+01	15.17			1.33E+01	1.52E+01
42	1346.91	1.74E+01	19.85			1.74E+01	1.98E+01
M 43	1378.89	2.13E+01	18.65			2.13E+01	1.87E+01
m 44	1394.11	1.49E+01	16.97			1.49E+01	1.70E+01
45	1401.68	1.93E+01	15.01			1.93E+01	1.50E+01
46	1413.03	2.54E+01	32.06			2.54E+01	3.21E+01
47	1461.34	7.08E+02	56.71	6.46E+00	2.33E+00	7.02E+02	5.68E+01
M 48	1509.16	1.05E+01	11.88			1.05E+01	1.19E+01
m 49	1513.16	1.08E+01	12.38			1.08E+01	1.24E+01
50	1589.95	3.91E+01	22.18			3.91E+01	2.22E+01
51	1683.92	9.90E+00	13.42			9.90E+00	1.34E+01
52	1705.35	4.58E+00	5.74			4.58E+00	5.74E+00
53	1730.35	2.16E+01	13.14			2.16E+01	1.31E+01
54	1764.96	1.07E+02	21.82			1.07E+02	2.18E+01
M 55	1806.49	8.42E+00	8.99			8.42E+00	8.99E+00
m 56	1812.63	7.04E+00	10.99			7.04E+00	1.10E+01
57	1857.95	5.85E+00	8.19			5.85E+00	8.19E+00
58	1927.64	2.20E+01	9.38			2.20E+01	9.38E+00
59	1936.05	1.50E+01	7.75			1.50E+01	7.75E+00
60	1981.34	6.00E+00	4.90			6.00E+00	4.90E+00
61	2020.03	5.56E+00	7.12			5.56E+00	7.12E+00
62	2035.56	9.14E+00	7.75			9.14E+00	7.75E+00
63	2104.17	1.30E+01	13.00			1.30E+01	1.30E+01
64	2118.91	1.20E+01	14.59			1.20E+01	1.46E+01
65	2145.73	9.00E+00	6.00			9.00E+00	6.00E+00
66	2376.16	1.43E+01	8.73			1.43E+01	8.73E+00
67	2388.00	1.14E+01	9.00			1.14E+01	9.00E+00
68	2615.48	1.34E+02	25.28	3.47E+00	1.48E+00	1.31E+02	2.53E+01
69	3197.77	6.06E+00	6.93			6.06E+00	6.93E+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 1510088-14

CP1804S17-18

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 5:36:00PM
 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	1.76E+02	71.87	4.50E+01	8.46E+00	1.31E+02	7.24E+01
	2	2.38E+02	118.86	7.80E+01	1.33E+01	1.60E+02	1.20E+02
M	3	4.95E+02	101.18	5.09E+00	4.37E+00	4.90E+02	1.01E+02
m	4	8.01E+02	108.94	9.75E+00	8.28E+00	7.91E+02	1.09E+02
M	5	1.98E+02	52.28	2.38E+00	8.92E+00	1.96E+02	5.30E+01
m	6	3.62E+02	101.11			3.62E+02	1.01E+02
m	7	5.02E+02	100.83	1.34E+02	9.83E+00	3.68E+02	1.01E+02
	8	7.02E+01	73.32			7.02E+01	7.33E+01
	9	1.26E+02	91.72			1.26E+02	9.17E+01
	10	1.92E+02	83.90	6.41E+01	7.38E+00	1.28E+02	8.42E+01
	11	1.11E+02	80.00			1.11E+02	8.00E+01
M	12	1.07E+03	79.79	2.34E+01	6.34E+00	1.05E+03	8.00E+01
m	13	2.91E+02	88.73			2.91E+02	8.87E+01
	14	3.46E+01	42.51			3.46E+01	4.25E+01
	15	1.12E+02	68.82			1.12E+02	6.88E+01
	16	5.13E+01	60.03			5.13E+01	6.00E+01
M	17	3.45E+02	49.60	4.17E+00	5.50E+00	3.41E+02	4.99E+01
m	18	7.31E+01	49.31			7.31E+01	4.93E+01
	19	2.45E+02	68.21	2.22E-01	4.54E+00	2.45E+02	6.84E+01
	20	5.86E+02	65.59	8.83E+00	4.91E+00	5.77E+02	6.58E+01
	21	6.48E+01	43.73			6.48E+01	4.37E+01
	22	6.51E+01	45.82			6.51E+01	4.58E+01
	23	4.36E+01	41.44			4.36E+01	4.14E+01
	24	2.14E+02	59.33	8.12E+01	5.49E+00	1.33E+02	5.96E+01
	25	3.50E+01	38.73			3.50E+01	3.87E+01
	26	3.47E+02	58.07	6.34E+00	3.74E+00	3.40E+02	5.82E+01
	27	4.11E+02	52.71	5.20E+00	3.69E+00	4.05E+02	5.28E+01
	28	2.17E+01	21.95			2.17E+01	2.20E+01
	29	8.39E+01	44.09			8.39E+01	4.41E+01
	30	1.22E+02	65.52			1.22E+02	6.55E+01
	31	2.47E+01	27.35			2.47E+01	2.73E+01
	32	5.99E+01	35.07			5.99E+01	3.51E+01
	33	2.35E+02	44.65	3.28E+00	2.53E+00	2.32E+02	4.47E+01
	34	1.99E+01	22.39			1.99E+01	2.24E+01
	35	1.20E+02	41.76			1.20E+02	4.18E+01
	36	1.02E+02	35.21	2.28E+00	2.55E+00	9.94E+01	3.53E+01
	37	2.13E+01	21.66			2.13E+01	2.17E+01
M	38	3.59E+01	23.62			3.59E+01	2.36E+01
m	39	1.44E+01	25.69			1.44E+01	2.57E+01
	40	2.34E+01	23.49			2.34E+01	2.35E+01
	41	1.33E+01	15.17			1.33E+01	1.52E+01

Analysis Report for 1510088-14

CP1804S17-18

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	42 1346.91	1.74E+01	19.85			1.74E+01	1.98E+01
M	43 1378.89	2.13E+01	18.65			2.13E+01	1.87E+01
m	44 1394.11	1.49E+01	16.97			1.49E+01	1.70E+01
	45 1401.68	1.93E+01	15.01			1.93E+01	1.50E+01
	46 1413.03	2.54E+01	32.06			2.54E+01	3.21E+01
	47 1461.34	7.08E+02	56.71	6.46E+00	2.33E+00	7.02E+02	5.68E+01
M	48 1509.16	1.05E+01	11.88			1.05E+01	1.19E+01
m	49 1513.16	1.08E+01	12.38			1.08E+01	1.24E+01
	50 1589.95	3.91E+01	22.18			3.91E+01	2.22E+01
	51 1683.92	9.90E+00	13.42			9.90E+00	1.34E+01
	52 1705.35	4.58E+00	5.74			4.58E+00	5.74E+00
	53 1730.35	2.16E+01	13.14			2.16E+01	1.31E+01
	54 1764.96	1.07E+02	21.82			1.07E+02	2.18E+01
M	55 1806.49	8.42E+00	8.99			8.42E+00	8.99E+00
m	56 1812.63	7.04E+00	10.99			7.04E+00	1.10E+01
	57 1857.95	5.85E+00	8.19			5.85E+00	8.19E+00
	58 1927.64	2.20E+01	9.38			2.20E+01	9.38E+00
	59 1936.05	1.50E+01	7.75			1.50E+01	7.75E+00
	60 1981.34	6.00E+00	4.90			6.00E+00	4.90E+00
	61 2020.03	5.56E+00	7.12			5.56E+00	7.12E+00
	62 2035.56	9.14E+00	7.75			9.14E+00	7.75E+00
	63 2104.17	1.30E+01	13.00			1.30E+01	1.30E+01
	64 2118.91	1.20E+01	14.59			1.20E+01	1.46E+01
	65 2145.73	9.00E+00	6.00			9.00E+00	6.00E+00
	66 2376.16	1.43E+01	8.73			1.43E+01	8.73E+00
	67 2388.00	1.14E+01	9.00			1.14E+01	9.00E+00
	68 2615.48	1.34E+02	25.28	3.47E+00	1.48E+00	1.31E+02	2.53E+01
	69 3197.77	6.06E+00	6.93			6.06E+00	6.93E+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	0.955	1460.81	* 10.67	1.54E+01	1.83E+00
GA-67	0.604	93.31	* 35.70	4.06E+02	1.77E+03
		208.95	* 2.24	2.67E+03	1.14E+04

Analysis Report for 1510088-14
 CP1804S17-18

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
GA-67	0.604	300.22 *	16.00	3.11E+02	1.37E+03
CD-109	0.966	88.03 *	3.72	4.17E+00	1.26E+00
SN-126	1.000	87.57 *	37.00	4.00E-01	1.18E-01
TL-208	0.938	583.14 *	30.22	1.29E+00	2.49E-01
		860.37 *	4.48	2.08E+00	1.23E+00
		2614.66 *	35.85	1.12E+00	2.37E-01
PB-210	0.992	46.50 *	4.25	2.13E+00	1.19E+00
BI-212	0.719	727.17 *	11.80	9.68E-01	5.16E-01
		1620.62	2.75		
PB-212	0.997	238.63 *	44.60	1.43E+00	1.63E-01
		300.09 *	3.41	1.51E+00	1.03E+00
BI-214	0.900	609.31 *	46.30	1.04E+00	1.64E-01
		1120.29 *	15.10	1.26E+00	4.61E-01
		1764.49 *	15.80	1.79E+00	3.91E-01
		2204.22	4.98		
PB-214	0.990	295.21 *	19.19	1.24E+00	2.06E-01
		351.92 *	37.19	1.22E+00	1.71E-01
RA-224	0.867	240.98 *	3.95	4.50E+00	1.42E+00
RA-226	0.997	186.21 *	3.28	2.03E+00	3.95E+00
AC-228	0.962	338.32 *	11.40	1.65E+00	4.78E-01
		911.07 *	27.70	1.36E+00	2.88E-01
		969.11 *	16.60	1.24E+00	4.43E-01
TH-231	0.367	25.64	14.70		
		84.21 *	6.40	1.25E+00	3.59E-01
TH-234	0.994	63.29 *	3.80	1.97E+00	1.48E+00
AM-243	0.989	74.67 *	66.00	3.14E-01	7.01E-02
CM-243	0.355	209.75 *	3.29	1.89E+00	1.37E+00
		228.14	10.60		
		277.60 *	14.00	2.45E-01	2.88E-01

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 5:36:00PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
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Analysis Report for 1510088-14
CP1804S17-18

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	4	77.47	2.19675E-01	6.91	
	8	99.63	1.95035E-02	52.21	D-Esc
	9	129.30	3.48793E-02	36.52	
	14	248.56	9.61649E-03	61.39	Sum
	15	270.54	3.12326E-02	30.61	Sum
	21	390.32	1.79964E-02	33.75	
	22	463.75	1.80879E-02	35.19	Sum
	23	473.11	1.21196E-02	47.49	Tol. SB-127
	24	511.32	3.70167E-02	22.36	
	25	562.95	9.71939E-03	55.34	Tol. CS-134
	28	678.81	6.03943E-03	50.49	
	30	790.74	3.37936E-02	26.93	Sum
	31	806.06	6.86357E-03	55.34	
	34	950.80	5.53161E-03	56.23	S-Esc
	37	1197.90	5.91270E-03	50.87	
M	38	1238.76	9.97945E-03	32.88	
m	39	1248.37	4.00047E-03	89.19	
	40	1281.55	6.50538E-03	50.16	
	41	1289.11	3.69624E-03	57.02	
	42	1346.91	4.82456E-03	57.14	
M	43	1378.89	5.92561E-03	43.72	
m	44	1394.11	4.12688E-03	57.11	
	45	1401.68	5.36738E-03	38.84	
	46	1413.03	7.06163E-03	63.05	
M	48	1509.16	2.92423E-03	56.45	
m	49	1513.16	3.00348E-03	57.25	
	50	1589.95	1.08681E-02	28.35	
	51	1683.92	2.75000E-03	67.76	
	52	1705.35	1.27315E-03	62.67	Sum
	53	1730.35	5.99206E-03	30.46	Sum
M	55	1806.49	2.33927E-03	53.35	
m	56	1812.63	1.95501E-03	78.07	Sum
	57	1857.95	1.62500E-03	69.96	Sum
	58	1927.64	6.11111E-03	21.32	
	59	1936.05	4.16667E-03	25.82	
	60	1981.34	1.66667E-03	40.82	Sum
	61	2020.03	1.54514E-03	64.04	
	62	2035.56	2.53788E-03	42.39	
	63	2104.17	3.61111E-03	50.00	S-Esc
	64	2118.91	3.32729E-03	60.92	
	65	2145.73	2.50000E-03	33.33	
	66	2376.16	3.98437E-03	30.44	
	67	2388.00	3.17460E-03	39.38	
	69	3197.77	1.68403E-03	57.14	

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 1510088-14
CP1804S17-18

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.95	1460.81 *	10.67	1.54E+01	1.83E+00
GA-67	0.60	93.31 *	35.70	4.06E+02	1.77E+03
		208.95 *	2.24	2.67E+03	1.14E+04
		300.22 *	16.00	3.11E+02	1.37E+03
CD-109	0.96	88.03 *	3.72	4.17E+00	1.26E+00
SN-126	1.00	87.57 *	37.00	4.00E-01	1.18E-01
TL-208	0.93	583.14 *	30.22	1.29E+00	2.49E-01
		860.37 *	4.48	2.08E+00	1.23E+00
		2614.66 *	35.85	1.12E+00	2.37E-01
PB-210	0.99	46.50 *	4.25	2.13E+00	1.19E+00
BI-212	0.71	727.17 *	11.80	9.68E-01	5.16E-01
		1620.62	2.75		
PB-212	0.99	238.63 *	44.60	1.43E+00	1.63E-01
		300.09 *	3.41	1.51E+00	1.03E+00
BI-214	0.90	609.31 *	46.30	1.04E+00	1.64E-01
		1120.29 *	15.10	1.26E+00	4.61E-01
		1764.49 *	15.80	1.79E+00	3.91E-01
PB-214	0.99	2204.22	4.98		
		295.21 *	19.19	1.24E+00	2.06E-01
		351.92 *	37.19	1.22E+00	1.71E-01
RA-224	0.86	240.98 *	3.95	4.50E+00	1.42E+00
RA-226	0.99	186.21 *	3.28	2.03E+00	3.95E+00
AC-228	0.96	338.32 *	11.40	1.65E+00	4.78E-01
		911.07 *	27.70	1.36E+00	2.88E-01
		969.11 *	16.60	1.24E+00	4.43E-01
TH-231	0.36	25.64	14.70		
		84.21 *	6.40	1.25E+00	3.59E-01
TH-234	0.99	63.29 *	3.80	1.97E+00	1.48E+00
AM-243	0.98	74.67 *	66.00	3.14E-01	7.01E-02
CM-243	0.35	209.75 *	3.29	1.89E+00	1.37E+00
		228.14	10.60		
		277.60 *	14.00	2.45E-01	2.88E-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 1510088-14
CP1804S17-18

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.955	1.54E+01	1.83E+00	
GA-67	0.604	3.21E+02	1.36E+03	
? CD-109	0.966	4.17E+00	1.26E+00	
? SN-126	1.000	4.00E-01	1.18E-01	
TL-208	0.938	1.22E+00	1.70E-01	
PB-210	0.992	2.13E+00	1.19E+00	
BI-212	0.719	9.68E-01	5.16E-01	
PB-212	0.997	1.39E+00	1.61E-01	
BI-214	0.900	1.16E+00	1.44E-01	
PB-214	0.990	1.23E+00	1.31E-01	
RA-224	0.867	4.50E+00	1.42E+00	
RA-226	0.997	2.03E+00	3.95E+00	
AC-228	0.962	1.39E+00	2.16E-01	
TH-231	0.367	1.25E+00	3.59E-01	
TH-234	0.994	1.97E+00	1.48E+00	
AM-243	0.989	3.14E-01	7.01E-02	
CM-243	0.355	3.05E-01	2.82E-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 1510088-14
CP1804S17-18

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 5:36:00PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 4	77.47	2.19675E-01	6.91		
8	99.63	1.95035E-02	52.21	D-Esc	
9	129.30	3.48793E-02	36.52		
14	248.56	9.61649E-03	61.39	Sum	
15	270.54	3.12326E-02	30.61	Sum	
21	390.32	1.79964E-02	33.75		
22	463.75	1.80879E-02	35.19	Sum	
23	473.11	1.21196E-02	47.49	Tol.	SB-127
24	511.32	3.70167E-02	22.36		
25	562.95	9.71939E-03	55.34	Tol.	CS-134
28	678.81	6.03943E-03	50.49		
30	790.74	3.37936E-02	26.93	Sum	
31	806.06	6.86357E-03	55.34		
34	950.80	5.53161E-03	56.23	S-Esc	
37	1197.90	5.91270E-03	50.87		
M 38	1238.76	9.97945E-03	32.88		
m 39	1248.37	4.00047E-03	89.19		
40	1281.55	6.50538E-03	50.16		
41	1289.11	3.69624E-03	57.02		
42	1346.91	4.82456E-03	57.14		
M 43	1378.89	5.92561E-03	43.72		
m 44	1394.11	4.12688E-03	57.11		
45	1401.68	5.36738E-03	38.84		
46	1413.03	7.06163E-03	63.05		
M 48	1509.16	2.92423E-03	56.45		
m 49	1513.16	3.00348E-03	57.25		
50	1589.95	1.08681E-02	28.35		
51	1683.92	2.75000E-03	67.76		
52	1705.35	1.27315E-03	62.67	Sum	
53	1730.35	5.99206E-03	30.46	Sum	
M 55	1806.49	2.33927E-03	53.35		
m 56	1812.63	1.95501E-03	78.07	Sum	
57	1857.95	1.62500E-03	69.96	Sum	
58	1927.64	6.11111E-03	21.32		
59	1936.05	4.16667E-03	25.82		

Analysis Report for 1510088-14
 CP1804S17-18

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
60	1981.34	1.66667E-03	40.82	Sum	
61	2020.03	1.54514E-03	64.04		
62	2035.56	2.53788E-03	42.39		
63	2104.17	3.61111E-03	50.00	S-Esc	
64	2118.91	3.32729E-03	60.92		
65	2145.73	2.50000E-03	33.33		
66	2376.16	3.98437E-03	30.44		
67	2388.00	3.17460E-03	39.38		
69	3197.77	1.68403E-03	57.14		

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	1.25E-01	7.36E-01	7.36E-01
+	NA-22	1274.54	99.94	-7.41E-03	6.64E-02	6.64E-02
+	NA-24	1368.53	99.99	-2.79E+13	1.39E+14	1.88E+14
		2754.09	99.86	-6.64E+13		1.39E+14
+	AL-26	1808.65	99.76	-1.32E-02	4.88E-02	4.88E-02
+	K-40	1460.81	* 10.67	1.54E+01	7.95E-01	7.95E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.27E-02	6.21E-02	6.21E-02
		78.34	96.00	2.68E-01		7.99E-02
+	SC-46	889.25	99.98	-4.90E-02	6.93E-02	6.93E-02
		1120.51	99.99	2.12E-01		1.43E-01
+	V-48	983.52	99.98	-5.00E-02	2.34E-01	2.34E-01
		1312.10	97.50	-7.04E-02		2.70E-01
+	CR-51	320.08	9.83	-1.95E-01	9.52E-01	9.52E-01
+	MN-54	834.83	99.97	3.59E-02	7.44E-02	7.44E-02
+	CO-56	846.75	99.96	1.66E-02	7.97E-02	7.97E-02
		1037.75	14.03	7.87E-02		5.98E-01
		1238.25	67.00	1.80E-01		1.95E-01
		1771.40	15.51	3.64E-02		3.96E-01

Analysis Report for 1510088-14
CP1804S17-18

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CO-56	2598.48	16.90	-4.02E-02	7.97E-02	1.77E-01
+	CO-57	122.06	85.51	1.02E-02	5.39E-02	5.39E-02
		136.48	10.60	-1.03E-02		4.60E-01
+	CO-58	810.76	99.40	1.27E-02	7.49E-02	7.49E-02
+	FE-59	1099.22	56.50	-3.87E-02	1.95E-01	1.95E-01
		1291.56	43.20	-5.93E-02		2.41E-01
+	CO-60	1173.22	100.00	-7.04E-03	5.65E-02	6.82E-02
		1332.49	100.00	-1.24E-02		5.65E-02
+	ZN-65	1115.52	50.75	1.49E-02	1.55E-01	1.55E-01
+	GA-67	93.31	* 35.70	4.06E+02	2.93E+02	2.93E+02
		208.95	* 2.24	2.67E+03		3.11E+03
		300.22	* 16.00	3.11E+02		7.91E+02
+	SE-75	121.11	16.70	-6.41E-02	8.92E-02	3.03E-01
		136.00	59.20	-2.29E-04		9.10E-02
		264.65	59.80	-2.56E-03		8.92E-02
		279.53	25.20	2.93E-02		2.22E-01
		400.65	11.40	5.12E-03		5.00E-01
+	RB-82	776.52	13.00	-6.86E-01	1.08E+00	1.08E+00
+	RB-83	520.41	46.00	8.22E-03	1.50E-01	1.50E-01
		529.64	30.30	-1.61E-02		2.33E-01
		552.65	16.40	-1.61E-01		4.21E-01
+	KR-85	513.99	0.43	3.31E+01	1.88E+01	1.88E+01
+	SR-85	513.99	99.27	2.03E-01	1.15E-01	1.15E-01
+	Y-88	898.02	93.40	-8.83E-03	5.85E-02	7.91E-02
		1836.01	99.38	2.91E-02		5.85E-02
+	NB-93M	16.57	9.43	-4.33E+01	6.22E+01	6.22E+01
+	NB-94	702.63	100.00	4.62E-02	6.22E-02	6.99E-02
		871.10	100.00	2.12E-02		6.22E-02
+	NB-95	765.79	99.81	9.11E-02	1.27E-01	1.27E-01
+	NB-95M	235.69	25.00	-1.04E+03	1.17E+02	1.17E+02
+	ZR-95	724.18	43.70	-1.49E-01	1.58E-01	2.21E-01
		756.72	55.30	1.12E-01		1.58E-01
+	MO-99	181.06	6.20	-3.24E+02	1.71E+03	2.48E+03
		739.58	12.80	5.09E+02		1.71E+03
		778.00	4.50	-1.00E+03		4.65E+03
+	RU-103	497.08	89.00	1.08E-03	1.05E-01	1.05E-01
+	RU-106	621.84	9.80	1.34E-01	6.33E-01	6.33E-01
+	AG-108M	433.93	89.90	-5.02E-03	5.58E-02	5.58E-02
		614.37	90.40	-6.22E-02		6.37E-02
		722.95	90.50	1.23E-02		6.59E-02
+	CD-109	88.03	* 3.72	4.17E+00	3.04E+00	3.04E+00
+	AG-110M	657.75	93.14	-1.51E-02	6.88E-02	6.88E-02
		677.61	10.53	-2.14E-02		5.82E-01
		706.67	16.46	-7.68E-02		4.43E-01
		763.93	21.98	-2.59E-01		2.70E-01
		884.67	71.63	-3.64E-03		8.80E-02
		1384.27	23.94	-2.31E-02		2.90E-01
+	CD-113M	263.70	0.02	3.80E+01	1.93E+02	1.93E+02

Analysis Report for 1510088-14
CP1804S17-18

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SN-113	255.12	1.93	-3.36E-01	8.81E-02	2.66E+00
		391.69	64.90	2.31E-02		8.81E-02
+	TE123M	159.00	84.10	5.16E-02	6.48E-02	6.48E-02
+	SB-124	602.71	97.87	3.17E-02	9.49E-02	9.49E-02
		645.85	7.26	-6.01E-02		1.21E+00
		722.78	11.10	1.46E-01		7.79E-01
		1691.02	49.00	4.58E-02		1.21E-01
+	I-125	35.49	6.49	1.30E+00	2.84E+00	2.84E+00
+	SB-125	176.33	6.89	3.59E-01	1.79E-01	6.77E-01
		427.89	29.33	-1.74E-02		1.79E-01
		463.38	10.35	6.70E-01		6.19E-01
		600.56	17.80	1.02E-01		3.58E-01
		635.90	11.32	1.19E-01		5.07E-01
+	SB-126	414.70	83.30	-3.66E-02	3.60E-01	3.91E-01
		666.33	99.60	-2.15E-02		3.71E-01
		695.00	99.60	5.69E-02		3.60E-01
		720.50	53.80	6.92E-02		6.53E-01
+	SN-126	87.57	* 37.00	4.00E-01	2.91E-01	2.91E-01
+	SB-127	473.00	25.00	5.09E+01	5.14E+01	7.35E+01
		685.20	35.70	2.01E+01		5.14E+01
		783.80	14.70	9.08E+01		1.61E+02
+	I-129	29.78	57.00	4.21E-02	4.18E-01	4.18E-01
		33.60	13.20	2.21E-01		1.16E+00
		39.58	7.52	-2.86E-01		1.22E+00
+	I-131	284.30	6.05	-1.53E+00	8.50E-01	1.19E+01
		364.48	81.20	-1.63E-01		8.50E-01
		636.97	7.26	3.00E+00		1.28E+01
		722.89	1.80	1.01E+01		5.38E+01
+	TE-132	49.72	13.10	1.15E+02	5.29E+01	4.77E+02
		228.16	88.00	3.53E+01		5.29E+01
+	BA-133	81.00	33.00	-6.98E-01	7.82E-02	1.56E-01
		302.84	17.80	8.67E-02		2.77E-01
		356.01	60.00	-7.73E-03		7.82E-02
+	I-133	529.87	86.30	-7.45E+08	1.08E+10	1.08E+10
+	XE-133	81.00	38.00	-4.33E+01	9.66E+00	9.66E+00
+	CS-134	563.23	8.38	3.38E-01	7.05E-02	7.75E-01
		569.32	15.43	3.52E-02		3.86E-01
		604.70	97.60	9.53E-03		7.05E-02
		795.84	85.40	8.70E-02		9.04E-02
		801.93	8.73	-4.08E-03		6.77E-01
+	CS-135	268.24	16.00	2.64E-01	3.29E-01	3.29E-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	1.39E+00	3.21E-01	3.55E+00
		163.89	4.61	-2.10E+00		5.18E+00
		176.55	13.56	9.79E-01		1.85E+00
		273.65	12.66	-2.74E+00		2.01E+00
		340.57	48.50	1.03E+00		7.27E-01

Analysis Report for 1510088-14
CP1804S17-18

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-136	818.50	99.70	8.46E-02	3.21E-01	3.21E-01
		1048.07	79.60	2.40E-01		4.71E-01
		1235.34	19.70	2.31E-01		2.60E+00
+	CS-137	661.65	85.12	-2.15E-02	7.18E-02	7.18E-02
+	LA-138	788.74	34.00	1.20E-01	7.47E-02	2.08E-01
		1435.80	66.00	-1.38E-02		7.47E-02
+	CE-139	165.85	80.35	1.93E-02	6.57E-02	6.57E-02
+	BA-140	162.64	6.70	-1.56E+00	1.23E+00	3.72E+00
		304.84	4.50	-3.34E+00		5.62E+00
		423.70	3.20	2.46E+00		9.87E+00
		437.55	2.00	6.03E+00		1.51E+01
		537.32	25.00	3.06E-02		1.23E+00
+	LA-140	328.77	20.50	8.08E-01	3.45E-01	1.36E+00
		487.03	45.50	-2.22E-01		6.46E-01
		815.85	23.50	-6.85E-01		1.31E+00
		1596.49	95.49	-1.86E-01		3.45E-01
+	CE-141	145.44	48.40	5.39E-03	1.84E-01	1.84E-01
+	CE-143	57.36	11.80	1.44E+04	2.08E+06	6.18E+06
		293.26	42.00	5.80E+06		2.08E+06
		664.55	5.20	6.85E+06		1.43E+07
+	CE-144	133.54	10.80	1.39E-02	4.52E-01	4.52E-01
+	PM-144	476.78	42.00	-5.81E-03	6.50E-02	1.30E-01
		618.01	98.60	3.67E-02		6.50E-02
		696.49	99.49	-6.45E-03		6.55E-02
+	PM-145	36.85	21.70	-3.70E-01	2.75E-01	5.14E-01
		37.36	39.70	1.16E-01		2.75E-01
		42.30	15.10	-4.49E-02		5.26E-01
		72.40	2.31	-3.09E+00		2.95E+00
+	PM-146	453.90	39.94	-9.59E-03	1.26E-01	1.26E-01
		735.90	14.01	-1.16E-01		4.34E-01
		747.13	13.10	3.40E-02		4.52E-01
+	ND-147	91.11	28.90	-3.53E+00	1.63E+00	1.63E+00
		531.02	13.10	-7.80E-01		3.14E+00
+	PM-149	285.90	3.10	-1.34E+04	3.54E+04	3.54E+04
+	EU-152	121.78	20.50	3.93E-02	2.08E-01	2.08E-01
		244.69	5.40	-1.11E+00		8.96E-01
		344.27	19.13	-1.55E-02		2.34E-01
		778.89	9.20	2.62E-02		6.57E-01
		964.01	10.40	-1.15E-01		7.66E-01
		1085.78	7.22	1.14E-01		8.36E-01
		1112.02	9.60	-1.20E-01		6.90E-01
		1407.95	14.94	4.60E-02		3.91E-01
+	GD-153	97.43	31.30	-4.70E-02	1.53E-01	1.53E-01
		103.18	22.20	1.34E-01		2.12E-01
+	EU-154	123.07	40.50	4.15E-02	1.06E-01	1.06E-01
		723.30	19.70	5.70E-02		3.05E-01
		873.19	11.50	8.75E-03		5.29E-01
		996.32	10.30	1.48E-01		6.19E-01
		1004.76	17.90	2.21E-01		3.86E-01

Analysis Report for 1510088-14

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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>
	EU-154	1274.45	35.50	-2.05E-02	1.06E-01	1.84E-01
+	EU-155	86.50	30.90	1.32E-01	1.99E-01	1.99E-01
		105.30	20.70	2.09E-02		2.10E-01
+	EU-156	811.77	10.40	7.74E-01	2.26E+00	2.26E+00
		1153.47	7.20	2.14E+00		5.03E+00
		1230.71	8.90	1.03E+00		3.99E+00
+	HO-166M	184.41	72.60	1.09E-01	7.66E-02	7.66E-02
		280.45	29.60	8.69E-03		1.54E-01
		410.94	11.10	1.98E-01		5.06E-01
		711.69	54.10	3.20E-02		1.17E-01
+	TM-171	66.72	0.14	4.50E+00	4.39E+01	4.39E+01
+	HF-172	81.75	4.52	-1.70E+00	3.93E-01	1.17E+00
		125.81	11.30	5.38E-02		3.93E-01
+	LU-172	181.53	20.60	-4.95E-01	2.96E+00	6.03E+00
		810.06	16.63	1.43E-01		9.87E+00
		912.12	15.25	7.17E+01		2.46E+01
		1093.66	62.50	6.51E-01		2.96E+00
+	LU-173	100.72	5.24	2.49E-01	2.63E-01	8.60E-01
		272.11	21.20	2.41E-01		2.63E-01
+	HF-175	343.40	84.00	-1.33E-02	7.43E-02	7.43E-02
+	LU-176	88.34	13.30	8.22E-01	4.64E-02	4.66E-01
		201.83	86.00	-1.70E-02		5.46E-02
		306.78	94.00	1.33E-02		4.64E-02
+	TA-182	67.75	41.20	-3.55E-02	1.73E-01	1.73E-01
		1121.30	34.90	5.32E-01		3.82E-01
		1189.05	16.23	1.25E-01		5.51E-01
		1221.41	26.98	9.75E-02		3.44E-01
		1231.02	11.44	2.22E-01		8.63E-01
+	IR-192	308.46	29.68	8.64E-02	1.46E-01	1.89E-01
		468.07	48.10	-2.41E-01		1.46E-01
+	HG-203	279.19	77.30	2.80E-02	1.00E-01	1.00E-01
+	BI-207	569.67	97.72	8.16E-03	6.04E-02	6.04E-02
		1063.62	74.90	1.11E-02		8.18E-02
+	TL-208	583.14	* 30.22	1.29E+00	1.77E-01	2.91E-01
		860.37	* 4.48	2.08E+00		1.89E+00
		2614.66	* 35.85	1.12E+00		1.77E-01
+	BI-210M	262.00	45.00	-2.99E-02	9.33E-02	9.33E-02
		300.00	23.00	-5.31E-01		2.29E-01
+	PB-210	46.50	* 4.25	2.13E+00	1.87E+00	1.87E+00
+	PB-211	404.84	2.90	-4.79E-01	1.52E+00	1.52E+00
		831.96	2.90	-7.01E-01		2.13E+00
+	BI-212	727.17	* 11.80	9.68E-01	7.92E-01	7.92E-01
		1620.62	2.75	1.96E-01		2.28E+00
+	PB-212	238.63	* 44.60	1.43E+00	1.96E-01	1.96E-01
		300.09	* 3.41	1.51E+00		3.84E+00
+	BI-214	609.31	* 46.30	1.04E+00	1.51E-01	1.51E-01
		1120.29	* 15.10	1.26E+00		6.43E-01
		1764.49	* 15.80	1.79E+00		2.37E-01

Analysis Report for 1510088-14
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	2204.22		4.98	9.50E-01	1.51E-01	1.76E+00
+	PB-214	295.21	*	19.19	1.24E+00	1.62E-01	6.71E-01
		351.92	*	37.19	1.22E+00		1.62E-01
+	RN-219	401.80		6.50	3.64E-01	7.40E-01	7.40E-01
+	RA-223	323.87		3.88	-5.21E-01	1.10E+00	1.10E+00
+	RA-224	240.98	*	3.95	4.50E+00	2.23E+00	2.23E+00
+	RA-225	40.00		31.00	-3.07E-01	1.31E+00	1.31E+00
+	RA-226	186.21	*	3.28	2.03E+00	2.16E+00	2.16E+00
+	TH-227	50.10		8.40	1.82E-01	5.14E-01	7.56E-01
		236.00		11.50	-4.54E+00		5.14E-01
		256.20		6.30	6.62E-02		6.81E-01
+	AC-228	338.32	*	11.40	1.65E+00	3.33E-01	6.91E-01
		911.07	*	27.70	1.36E+00		3.33E-01
		969.11	*	16.60	1.24E+00		6.30E-01
+	TH-230	48.44		16.90	-1.10E-02	4.22E-01	4.22E-01
		62.85		4.60	2.09E+00		1.47E+00
		67.67		0.37	-3.25E+00		1.58E+01
+	PA-231	283.67		1.60	-2.36E-01	2.13E+00	2.72E+00
		302.67		2.30	6.67E-01		2.13E+00
+	TH-231	25.64		14.70	1.66E-02	1.64E+00	3.50E+00
		84.21	*	6.40	1.25E+00		1.64E+00
+	PA-233	311.98		38.60	-1.75E-01	2.35E-01	2.35E-01
+	PA-234	131.20		20.40	2.43E-02	2.31E-01	2.31E-01
		733.99		8.80	-1.31E-01		6.78E-01
		946.00		12.00	1.40E-01		4.93E-01
+	PA-234M	1001.03		0.92	7.66E-01	7.10E+00	7.10E+00
+	TH-234	63.29	*	3.80	1.97E+00	2.40E+00	2.40E+00
+	U-235	143.76		10.50	5.20E-02	4.23E-01	4.23E-01
		163.35		4.70	-3.74E-01		9.24E-01
		205.31		4.70	6.22E-03		1.02E+00
+	NP-237	86.50		12.60	3.19E-01	4.83E-01	4.83E-01
+	NP-239	106.10		22.70	2.56E+02	2.58E+03	2.58E+03
		228.18		10.70	4.07E+03		6.09E+03
		277.60		14.10	4.39E+03		4.79E+03
+	AM-241	59.54		35.90	-1.90E-01	1.69E-01	1.69E-01
+	AM-243	74.67	*	66.00	3.14E-01	1.67E-01	1.67E-01
+	CM-243	209.75	*	3.29	1.89E+00	4.53E-01	2.20E+00
		228.14		10.60	3.03E-01		4.53E-01
		277.60	*	14.00	2.45E-01		4.71E-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

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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	7.36E-01	7.36E-01	1.25E-01	3.49E-01
NA-22	1274.54	99.94	6.64E-02	6.64E-02	-7.41E-03	3.03E-02
NA-24	1368.53	99.99	1.88E+14	1.39E+14	-2.79E+13	8.27E+13
	2754.09	99.86	1.39E+14		-6.64E+13	5.37E+13
AL-26	1808.65	99.76	4.88E-02	4.88E-02	-1.32E-02	2.08E-02
+ K-40	1460.81	*	7.95E-01	7.95E-01	1.54E+01	3.68E-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	6.21E-02	6.21E-02	-1.27E-02	3.04E-02
	78.34	96.00	7.99E-02		2.68E-01	3.94E-02
SC-46	889.25	99.98	6.93E-02	6.93E-02	-4.90E-02	3.18E-02
	1120.51	99.99	1.43E-01		2.12E-01	6.82E-02
V-48	983.52	99.98	2.34E-01	2.34E-01	-5.00E-02	1.07E-01
	1312.10	97.50	2.70E-01		-7.04E-02	1.23E-01
CR-51	320.08	9.83	9.52E-01	9.52E-01	-1.95E-01	4.53E-01
MN-54	834.83	99.97	7.44E-02	7.44E-02	3.59E-02	3.50E-02
CO-56	846.75	99.96	7.97E-02	7.97E-02	1.66E-02	3.71E-02
	1037.75	14.03	5.98E-01		7.87E-02	2.76E-01
	1238.25	67.00	1.95E-01		1.80E-01	9.17E-02
	1771.40	15.51	3.96E-01		3.64E-02	1.67E-01
	2598.48	16.90	1.77E-01		-4.02E-02	5.61E-02
CO-57	122.06	85.51	5.39E-02	5.39E-02	1.02E-02	2.62E-02
	136.48	10.60	4.60E-01		-1.03E-02	2.24E-01
CO-58	810.76	99.40	7.49E-02	7.49E-02	1.27E-02	3.47E-02
FE-59	1099.22	56.50	1.95E-01	1.95E-01	-3.87E-02	9.00E-02
	1291.56	43.20	2.41E-01		-5.93E-02	1.09E-01
CO-60	1173.22	100.00	6.82E-02	5.65E-02	-7.04E-03	3.14E-02
	1332.49	100.00	5.65E-02		-1.24E-02	2.52E-02
ZN-65	1115.52	50.75	1.55E-01	1.55E-01	1.49E-02	7.19E-02
+ GA-67	93.31	*	2.93E+02	2.93E+02	4.06E+02	1.45E+02
	208.95	*	3.11E+03		2.67E+03	1.52E+03
	300.22	*	7.91E+02		3.11E+02	3.90E+02
SE-75	121.11	16.70	3.03E-01	8.92E-02	-6.41E-02	1.48E-01
	136.00	59.20	9.10E-02		-2.29E-04	4.43E-02
	264.65	59.80	8.92E-02		-2.56E-03	4.29E-02
	279.53	25.20	2.22E-01		2.93E-02	1.07E-01
	400.65	11.40	5.00E-01		5.12E-03	2.38E-01
RB-82	776.52	13.00	1.08E+00	1.08E+00	-6.86E-01	5.04E-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	1.50E-01	1.50E-01	8.22E-03	7.12E-02	
	529.64	30.30	2.33E-01		-1.61E-02	1.11E-01	
	552.65	16.40	4.21E-01		-1.61E-01	1.99E-01	
KR-85	513.99	0.43	1.88E+01	1.88E+01	3.31E+01	9.05E+00	
	SR-85	513.99	99.27	1.15E-01	1.15E-01	2.03E-01	5.56E-02
Y-88	898.02	93.40	7.91E-02	5.85E-02	-8.83E-03	3.67E-02	
	1836.01	99.38	5.85E-02		2.91E-02	2.47E-02	
NB-93M	16.57	9.43	6.22E+01	6.22E+01	-4.33E+01	2.90E+01	
NB-94	702.63	100.00	6.99E-02	6.22E-02	4.62E-02	3.32E-02	
	871.10	100.00	6.22E-02		2.12E-02	2.90E-02	
NB-95	765.79	99.81	1.27E-01	1.27E-01	9.11E-02	6.00E-02	
NB-95M	235.69	25.00	1.17E+02	1.17E+02	-1.04E+03	5.71E+01	
ZR-95	724.18	43.70	2.21E-01	1.58E-01	-1.49E-01	1.04E-01	
	756.72	55.30	1.58E-01		1.12E-01	7.40E-02	
MO-99	181.06	6.20	2.48E+03	1.71E+03	-3.24E+02	1.20E+03	
	739.58	12.80	1.71E+03		5.09E+02	8.03E+02	
	778.00	4.50	4.65E+03		-1.00E+03	2.17E+03	
RU-103	497.08	89.00	1.05E-01	1.05E-01	1.08E-03	5.00E-02	
RU-106	621.84	9.80	6.33E-01	6.33E-01	1.34E-01	2.99E-01	
AG-108M	433.93	89.90	5.58E-02	5.58E-02	-5.02E-03	2.65E-02	
	614.37	90.40	6.37E-02		-6.22E-02	3.01E-02	
	722.95	90.50	6.59E-02		1.23E-02	3.09E-02	
+ CD-109	88.03	*	3.04E+00	3.04E+00	4.17E+00	1.51E+00	
	AG-110M	657.75	93.14	6.88E-02	6.88E-02	-1.51E-02	3.24E-02
		677.61	10.53	5.82E-01		-2.14E-02	2.73E-01
		706.67	16.46	4.43E-01		-7.68E-02	2.10E-01
		763.93	21.98	2.70E-01		-2.59E-01	1.26E-01
		884.67	71.63	8.80E-02		-3.64E-03	4.07E-02
1384.27	23.94	2.90E-01		-2.31E-02	1.31E-01		
CD-113M	263.70	0.02	1.93E+02	1.93E+02	3.80E+01	9.26E+01	
SN-113	255.12	1.93	2.66E+00	8.81E-02	-3.36E-01	1.28E+00	
	391.69	64.90	8.81E-02		2.31E-02	4.19E-02	
TE123M	159.00	84.10	6.48E-02	6.48E-02	5.16E-02	3.15E-02	
SB-124	602.71	97.87	9.49E-02	9.49E-02	3.17E-02	4.51E-02	
	645.85	7.26	1.21E+00		-6.01E-02	5.73E-01	
	722.78	11.10	7.79E-01		1.46E-01	3.66E-01	
	1691.02	49.00	1.21E-01		4.58E-02	5.03E-02	
	I-125	35.49	6.49	2.84E+00	2.84E+00	1.30E+00	1.38E+00
SB-125	176.33	6.89	6.77E-01	1.79E-01	3.59E-01	3.28E-01	
	427.89	29.33	1.79E-01		-1.74E-02	8.51E-02	
	463.38	10.35	6.19E-01		6.70E-01	2.97E-01	
	600.56	17.80	3.58E-01		1.02E-01	1.70E-01	
	635.90	11.32	5.07E-01		1.19E-01	2.38E-01	
SB-126	414.70	83.30	3.91E-01	3.60E-01	-3.66E-02	1.87E-01	
	666.33	99.60	3.71E-01		-2.15E-02	1.75E-01	
	695.00	99.60	3.60E-01		5.69E-02	1.69E-01	
	720.50	53.80	6.53E-01		6.92E-02	3.06E-01	
+ SN-126	87.57	*	2.91E-01	2.91E-01	4.00E-01	1.44E-01	
	SB-127	473.00	25.00	7.35E+01	5.14E+01	5.09E+01	3.50E+01
		685.20	35.70	5.14E+01		2.01E+01	2.40E+01
I-129	783.80	14.70	1.61E+02		9.08E+01	7.59E+01	
	29.78	57.00	4.18E-01	4.18E-01	4.21E-02	2.03E-01	
	33.60	13.20	1.16E+00		2.21E-01	5.65E-01	

Analysis Report for 1510088-14
CP1804S17-18

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	1.22E+00	4.18E-01	-2.86E-01	5.93E-01
I-131	284.30	6.05	1.19E+01	8.50E-01	-1.53E+00	5.68E+00
	364.48	81.20	8.50E-01		-1.63E-01	4.03E-01
	636.97	7.26	1.28E+01		3.00E+00	6.02E+00
	722.89	1.80	5.38E+01		1.01E+01	2.53E+01
TE-132	49.72	13.10	4.77E+02	5.29E+01	1.15E+02	2.32E+02
	228.16	88.00	5.29E+01		3.53E+01	2.56E+01
BA-133	81.00	33.00	1.56E-01	7.82E-02	-6.98E-01	7.61E-02
	302.84	17.80	2.77E-01		8.67E-02	1.33E-01
	356.01	60.00	7.82E-02		-7.73E-03	3.73E-02
I-133	529.87	86.30	1.08E+10	1.08E+10	-7.45E+08	5.10E+09
XE-133	81.00	38.00	9.66E+00	9.66E+00	-4.33E+01	4.72E+00
CS-134	563.23	8.38	7.75E-01	7.05E-02	3.38E-01	3.69E-01
	569.32	15.43	3.86E-01		3.52E-02	1.83E-01
	604.70	97.60	7.05E-02		9.53E-03	3.36E-02
	795.84	85.40	9.04E-02		8.70E-02	4.28E-02
	801.93	8.73	6.77E-01		-4.08E-03	3.15E-01
CS-135	268.24	16.00	3.29E-01	3.29E-01	2.64E-01	1.59E-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	3.55E+00	3.21E-01	1.39E+00	1.73E+00
	163.89	4.61	5.18E+00		-2.10E+00	2.51E+00
	176.55	13.56	1.85E+00		9.79E-01	8.97E-01
	273.65	12.66	2.01E+00		-2.74E+00	9.66E-01
	340.57	48.50	7.27E-01		1.03E+00	3.52E-01
	818.50	99.70	3.21E-01		8.46E-02	1.49E-01
	1048.07	79.60	4.71E-01		2.40E-01	2.18E-01
	1235.34	19.70	2.60E+00		2.31E-01	1.22E+00
CS-137	661.65	85.12	7.18E-02	7.18E-02	-2.15E-02	3.39E-02
LA-138	788.74	34.00	2.08E-01	7.47E-02	1.20E-01	9.82E-02
	1435.80	66.00	7.47E-02		-1.38E-02	3.26E-02
CE-139	165.85	80.35	6.57E-02	6.57E-02	1.93E-02	3.19E-02
BA-140	162.64	6.70	3.72E+00	1.23E+00	-1.56E+00	1.80E+00
	304.84	4.50	5.62E+00		-3.34E+00	2.69E+00
	423.70	3.20	9.87E+00		2.46E+00	4.72E+00
	437.55	2.00	1.51E+01		6.03E+00	7.19E+00
	537.32	25.00	1.23E+00		3.06E-02	5.83E-01
LA-140	328.77	20.50	1.36E+00	3.45E-01	8.08E-01	6.52E-01
	487.03	45.50	6.46E-01		-2.22E-01	3.06E-01
	815.85	23.50	1.31E+00		-6.85E-01	6.08E-01
	1596.49	95.49	3.45E-01		-1.86E-01	1.52E-01
CE-141	145.44	48.40	1.84E-01	1.84E-01	5.39E-03	8.94E-02
CE-143	57.36	11.80	6.18E+06	2.08E+06	1.44E+04	3.02E+06
	293.26	42.00	2.08E+06		5.80E+06	1.01E+06
	664.55	5.20	1.43E+07		6.85E+06	6.77E+06
CE-144	133.54	10.80	4.52E-01	4.52E-01	1.39E-02	2.20E-01
PM-144	476.78	42.00	1.30E-01	6.50E-02	-5.81E-03	6.15E-02
	618.01	98.60	6.50E-02		3.67E-02	3.08E-02
	696.49	99.49	6.55E-02		-6.45E-03	3.08E-02
PM-145	36.85	21.70	5.14E-01	2.75E-01	-3.70E-01	2.49E-01
	37.36	39.70	2.75E-01		1.16E-01	1.34E-01
	42.30	15.10	5.26E-01		-4.49E-02	2.55E-01

Analysis Report for 1510088-14

CP1804S17-18

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-145	72.40	2.31	2.95E+00	2.75E-01	-3.09E+00	1.45E+00
PM-146	453.90	39.94	1.26E-01	1.26E-01	-9.59E-03	5.98E-02
	735.90	14.01	4.34E-01		-1.16E-01	2.04E-01
	747.13	13.10	4.52E-01		3.40E-02	2.12E-01
ND-147	91.11	28.90	1.63E+00	1.63E+00	-3.53E+00	8.00E-01
	531.02	13.10	3.14E+00		-7.80E-01	1.49E+00
PM-149	285.90	3.10	3.54E+04	3.54E+04	-1.34E+04	1.70E+04
EU-152	121.78	20.50	2.08E-01	2.08E-01	3.93E-02	1.01E-01
	244.69	5.40	8.96E-01		-1.11E+00	4.32E-01
	344.27	19.13	2.34E-01		-1.55E-02	1.11E-01
	778.89	9.20	6.57E-01		2.62E-02	3.07E-01
	964.01	10.40	7.66E-01		-1.15E-01	3.61E-01
	1085.78	7.22	8.36E-01		1.14E-01	3.83E-01
	1112.02	9.60	6.90E-01		-1.20E-01	3.18E-01
	1407.95	14.94	3.91E-01		4.60E-02	1.75E-01
GD-153	97.43	31.30	1.53E-01	1.53E-01	-4.70E-02	7.44E-02
	103.18	22.20	2.12E-01		1.34E-01	1.03E-01
EU-154	123.07	40.50	1.06E-01	1.06E-01	4.15E-02	5.14E-02
	723.30	19.70	3.05E-01		5.70E-02	1.43E-01
	873.19	11.50	5.29E-01		8.75E-03	2.46E-01
	996.32	10.30	6.19E-01		1.48E-01	2.87E-01
	1004.76	17.90	3.86E-01		2.21E-01	1.80E-01
	1274.45	35.50	1.84E-01		-2.05E-02	8.38E-02
EU-155	86.50	30.90	1.99E-01	1.99E-01	1.32E-01	9.79E-02
	105.30	20.70	2.10E-01		2.09E-02	1.02E-01
EU-156	811.77	10.40	2.26E+00	2.26E+00	7.74E-01	1.05E+00
	1153.47	7.20	5.03E+00		2.14E+00	2.35E+00
	1230.71	8.90	3.99E+00		1.03E+00	1.86E+00
HO-166M	184.41	72.60	7.66E-02	7.66E-02	1.09E-01	3.73E-02
	280.45	29.60	1.54E-01		8.69E-03	7.41E-02
	410.94	11.10	5.06E-01		1.98E-01	2.42E-01
	711.69	54.10	1.17E-01		3.20E-02	5.51E-02
TM-171	66.72	0.14	4.39E+01	4.39E+01	4.50E+00	2.15E+01
HF-172	81.75	4.52	1.17E+00	3.93E-01	-1.70E+00	5.73E-01
	125.81	11.30	3.93E-01		5.38E-02	1.91E-01
LU-172	181.53	20.60	6.03E+00	2.96E+00	-4.95E-01	2.92E+00
	810.06	16.63	9.87E+00		1.43E-01	4.59E+00
	912.12	15.25	2.46E+01		7.17E+01	1.19E+01
	1093.66	62.50	2.96E+00		6.51E-01	1.36E+00
LU-173	100.72	5.24	8.60E-01	2.63E-01	2.49E-01	4.19E-01
	272.11	21.20	2.63E-01		2.41E-01	1.27E-01
HF-175	343.40	84.00	7.43E-02	7.43E-02	-1.33E-02	3.54E-02
LU-176	88.34	13.30	4.66E-01	4.64E-02	8.22E-01	2.29E-01
	201.83	86.00	5.46E-02		-1.70E-02	2.65E-02
	306.78	94.00	4.64E-02		1.33E-02	2.22E-02
TA-182	67.75	41.20	1.73E-01	1.73E-01	-3.55E-02	8.47E-02
	1121.30	34.90	3.82E-01		5.32E-01	1.82E-01
	1189.05	16.23	5.51E-01		1.25E-01	2.55E-01
	1221.41	26.98	3.44E-01		9.75E-02	1.59E-01
	1231.02	11.44	8.63E-01		2.22E-01	4.02E-01
IR-192	308.46	29.68	1.89E-01	1.46E-01	8.64E-02	8.99E-02
	468.07	48.10	1.46E-01		-2.41E-01	6.95E-02
HG-203	279.19	77.30	1.00E-01	1.00E-01	2.80E-02	4.82E-02

Analysis Report for 1510088-14
CP1804S17-18

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	6.04E-02	6.04E-02	8.16E-03	2.86E-02
	1063.62	74.90	8.18E-02		1.11E-02	3.76E-02
+ TL-208	583.14 *	30.22	2.91E-01	1.77E-01	1.29E+00	1.40E-01
	860.37 *	4.48	1.89E+00		2.08E+00	8.98E-01
	2614.66 *	35.85	1.77E-01		1.12E+00	7.67E-02
BI-210M	262.00	45.00	9.33E-02	9.33E-02	-2.99E-02	4.47E-02
	300.00	23.00	2.29E-01		-5.31E-01	1.10E-01
+ PB-210	46.50 *	4.25	1.87E+00	1.87E+00	2.13E+00	9.15E-01
PB-211	404.84	2.90	1.52E+00	1.52E+00	-4.79E-01	7.19E-01
	831.96	2.90	2.13E+00		-7.01E-01	9.94E-01
+ BI-212	727.17 *	11.80	7.92E-01	7.92E-01	9.68E-01	3.80E-01
	1620.62	2.75	2.28E+00		1.96E-01	1.02E+00
+ PB-212	238.63 *	44.60	1.96E-01	1.96E-01	1.43E+00	9.60E-02
	300.09 *	3.41	3.84E+00		1.51E+00	1.89E+00
+ BI-214	609.31 *	46.30	1.51E-01	1.51E-01	1.04E+00	7.20E-02
	1120.29 *	15.10	6.43E-01		1.26E+00	3.04E-01
	1764.49 *	15.80	2.37E-01		1.79E+00	9.59E-02
	2204.22	4.98	1.76E+00		9.50E-01	8.02E-01
+ PB-214	295.21 *	19.19	6.71E-01	1.62E-01	1.24E+00	3.30E-01
	351.92 *	37.19	1.62E-01		1.22E+00	7.83E-02
RN-219	401.80	6.50	7.40E-01	7.40E-01	3.64E-01	3.52E-01
RA-223	323.87	3.88	1.10E+00	1.10E+00	-5.21E-01	5.23E-01
+ RA-224	240.98 *	3.95	2.23E+00	2.23E+00	4.50E+00	1.09E+00
RA-225	40.00	31.00	1.31E+00	1.31E+00	-3.07E-01	6.37E-01
+ RA-226	186.21 *	3.28	2.16E+00	2.16E+00	2.03E+00	1.06E+00
TH-227	50.10	8.40	7.56E-01	5.14E-01	1.82E-01	3.68E-01
	236.00	11.50	5.14E-01		-4.54E+00	2.50E-01
	256.20	6.30	6.81E-01		6.62E-02	3.27E-01
+ AC-228	338.32 *	11.40	6.91E-01	3.33E-01	1.65E+00	3.36E-01
	911.07 *	27.70	3.33E-01		1.36E+00	1.58E-01
	969.11 *	16.60	6.30E-01		1.24E+00	3.01E-01
TH-230	48.44	16.90	4.22E-01	4.22E-01	-1.10E-02	2.06E-01
	62.85	4.60	1.47E+00		2.09E+00	7.23E-01
	67.67	0.37	1.58E+01		-3.25E+00	7.76E+00
PA-231	283.67	1.60	2.72E+00	2.13E+00	-2.36E-01	1.30E+00
	302.67	2.30	2.13E+00		6.67E-01	1.02E+00
+ TH-231	25.64	14.70	3.50E+00	1.64E+00	1.66E-02	1.70E+00
	84.21 *	6.40	1.64E+00		1.25E+00	8.12E-01
PA-233	311.98	38.60	2.35E-01	2.35E-01	-1.75E-01	1.11E-01
PA-234	131.20	20.40	2.31E-01	2.31E-01	2.43E-02	1.12E-01
	733.99	8.80	6.78E-01		-1.31E-01	3.18E-01
	946.00	12.00	4.93E-01		1.40E-01	2.28E-01
PA-234M	1001.03	0.92	7.10E+00	7.10E+00	7.66E-01	3.29E+00
+ TH-234	63.29 *	3.80	2.40E+00	2.40E+00	1.97E+00	1.18E+00
U-235	143.76	10.50	4.23E-01	4.23E-01	5.20E-02	2.06E-01
	163.35	4.70	9.24E-01		-3.74E-01	4.48E-01
	205.31	4.70	1.02E+00		6.22E-03	4.94E-01
NP-237	86.50	12.60	4.83E-01	4.83E-01	3.19E-01	2.37E-01
NP-239	106.10	22.70	2.58E+03	2.58E+03	2.56E+02	1.25E+03
	228.18	10.70	6.09E+03		4.07E+03	2.94E+03
	277.60	14.10	4.79E+03		4.39E+03	2.31E+03
AM-241	59.54	35.90	1.69E-01	1.69E-01	-1.90E-01	8.26E-02
+ AM-243	74.67 *	66.00	1.67E-01	1.67E-01	3.14E-01	8.25E-02

Analysis Report for 1510088-14
 CP1804S17-18

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+ CM-243	209.75 *	3.29	2.20E+00	4.53E-01	1.89E+00	1.08E+00
	228.14	10.60	4.53E-01		3.03E-01	2.19E-01
	277.60 *	14.00	4.71E-01		2.45E-01	2.29E-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: CP1804S17-18

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		
	0	0	0	91	67	66	70	115	154	171	129	155	79	94	100	89	106	93	75	76	79	79	67	75	72	63	68	100	59	40	57	98	49	28	46	43	35	43	47	35	18	23	46	36	32	244	32	
	0	0	1	77	83	84	73	117	158	192	115	184	93	129	107	73	131	74	78	115	60	165	54	42	36	57	118	62	58	64	165	54	42	36	34	34	33	31	37	28	31	94	26	50	23			
	0	0	66	78	74	81	105	127	146	441	110	185	98	85	89	95	104	90	80	115	70	114	30	37	128	64	70	70	75	61	69	44	46	114	30	37	45	31	42	38	24	28	29	151	29	19	25	
	0	0	94	76	81	74	99	127	156	371	169	154	120	79	95	92	98	91	76	68	68	44	50	81	51	61	60	60	58	60	59	62	44	62	44	50	43	54	23	32	38	38	37	20	52	34	27	23
	0	0	117	62	78	81	92	149	162	456	181	325	102	103	76	81	86	82	83	81	64	39	37	64	59	69	58	60	59	65	65	39	66	39	42	35	48	41	26	59	29	33	33	37	22	27	24	
	0	0	88	75	68	106	125	149	146	611	148	255	88	110	85	75	87	74	83	83	81	29	42	61	63	65	65	57	45	54	72	29	185	29	42	61	50	34	41	40	20	32	20	35	30	22	24	
	0	0	109	69	69	163	113	196	160	160	225	113	78	105	85	96	95	82	91	77	76	38	40	66	71	76	76	41	56	44	71	38	696	38	40	96	54	39	140	38	28	28	34	27	26	64	28	19
	0	0	80	85	90	127	136	280	155	160	278	110	90	96	83	91	93	107	91	71	72	51	43	56	85	57	50	51	270	51	43	29	47	31	36	36	244	32	21	23	28	28	25	334	20	25		

369: 22 22 27 23 23 26 27 23

Sample Title: CP1804S17-18

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	27	28	25	25	21	19	16	28
385:	24	17	19	22	33	29	31	25
393:	23	20	13	27	34	28	22	31
401:	26	24	22	26	16	19	23	26
409:	22	32	26	24	21	21	23	19
417:	24	21	17	19	25	23	25	28
425:	19	19	17	25	18	14	22	12
433:	18	17	18	22	16	23	18	28
441:	10	7	23	16	16	16	11	21
449:	17	17	16	10	25	13	12	20
457:	19	15	19	14	16	18	38	47
465:	24	21	16	12	18	17	12	19
473:	25	22	19	16	13	10	16	17
481:	18	13	11	20	12	17	17	17
489:	8	17	22	22	15	10	18	21
497:	22	15	13	15	15	14	15	14
505:	19	17	20	18	20	40	101	75
513:	29	17	16	14	9	11	18	18
521:	17	10	17	16	17	18	17	15
529:	16	13	12	21	15	12	18	14
537:	16	13	14	15	12	12	18	16
545:	16	12	19	14	22	15	17	15
553:	14	10	12	14	11	20	13	17
561:	17	19	32	19	18	12	12	18
569:	14	16	20	18	16	16	15	13
577:	12	11	11	10	13	25	149	166
585:	48	20	11	15	12	14	12	13
593:	13	10	10	10	14	14	14	14
601:	21	17	18	20	19	15	17	29
609:	152	239	50	12	13	14	16	11
617:	22	8	19	12	17	8	10	11
625:	20	8	13	8	10	10	8	8
633:	11	11	8	17	15	11	13	14
641:	12	13	12	16	13	17	12	16
649:	13	18	14	10	11	14	5	16
657:	16	15	16	8	13	17	14	15
665:	13	10	22	8	12	10	16	9
673:	10	18	12	8	3	17	17	9
681:	11	5	10	9	9	13	12	13
689:	7	10	7	10	8	13	12	16
697:	14	9	12	13	14	19	18	15
705:	15	22	17	8	13	14	22	7
713:	13	14	9	13	8	10	7	14
721:	12	9	9	13	9	13	39	44
729:	18	13	16	8	10	8	13	10
737:	12	14	11	18	9	8	14	10
745:	9	12	15	9	6	11	9	9
753:	10	12	13	13	15	13	4	8
761:	5	5	10	9	6	12	12	23
769:	20	12	12	17	24	8	11	10
777:	14	10	7	7	13	10	7	11
785:	13	21	22	16	10	9	12	8
793:	5	13	32	32	10	5	12	6

801: 9 8 5 12 9 15 16 9

Sample Title: CP1804S17-18

Channel	1	2	3	4	5	6	7	8
809:	5	8	6	10	7	8	8	4
817:	5	13	6	12	11	10	6	7
825:	3	10	12	9	5	7	7	15
833:	9	9	15	13	12	12	8	13
841:	5	6	8	8	8	10	10	6
849:	6	13	5	11	7	8	2	7
857:	12	9	9	19	28	15	8	9
865:	8	6	7	8	11	8	9	11
873:	5	11	7	8	4	11	7	8
881:	6	8	11	12	7	2	6	6
889:	8	8	6	7	7	12	7	7
897:	5	10	6	8	12	9	6	13
905:	8	11	8	8	12	11	92	115
913:	42	8	4	7	5	7	6	7
921:	5	7	8	3	2	10	6	8
929:	8	6	8	4	14	10	19	6
937:	5	6	6	4	6	4	8	7
945:	5	10	3	7	9	11	10	15
953:	3	6	6	5	7	4	10	9
961:	5	6	8	14	23	26	7	26
969:	65	63	16	6	3	4	7	4
977:	9	6	5	11	4	7	8	3
985:	11	4	6	9	4	5	6	4
993:	9	6	11	6	7	5	8	6
1001:	8	11	6	11	10	6	8	9
1009:	5	4	11	4	7	5	4	1
1017:	4	7	8	8	4	7	6	9
1025:	7	4	4	11	14	7	6	8
1033:	9	4	7	9	5	10	5	7
1041:	5	6	6	4	7	4	14	6
1049:	5	7	13	7	4	4	6	7
1057:	5	5	5	6	5	7	4	9
1065:	7	6	5	4	7	6	7	2
1073:	8	6	8	11	5	8	7	7
1081:	3	3	9	5	4	2	9	8
1089:	3	6	7	7	4	7	9	6
1097:	7	4	9	5	9	9	8	8
1105:	10	5	9	8	11	6	7	4
1113:	5	10	4	9	5	8	15	36
1121:	45	14	14	5	12	6	4	10
1129:	7	9	10	6	6	4	9	11
1137:	2	8	7	7	6	7	6	7
1145:	7	4	6	9	10	10	8	8
1153:	6	10	14	16	5	7	6	12
1161:	7	8	7	5	11	3	7	7
1169:	8	6	7	4	9	6	9	4
1177:	7	6	5	4	10	7	7	7
1185:	8	6	7	9	7	7	12	5
1193:	6	5	7	6	11	10	14	3
1201:	6	3	8	7	9	4	9	11
1209:	10	7	7	6	7	9	12	11
1217:	3	11	12	8	6	8	3	7
1225:	6	6	5	10	3	8	10	14

1233: 10 7 11 7 10 24 16 13

Sample Title: CP1804S17-18

Channel	1	2	3	4	5	6	7	8	9
1241:	11	6	5	9	7	8	9	5	
1249:	11	6	6	2	6	10	6	2	
1257:	9	6	6	7	8	5	8	5	
1265:	3	9	7	5	9	4	5	6	
1273:	4	7	4	5	5	3	7	6	
1281:	18	7	7	10	4	7	6	8	
1289:	8	7	2	2	2	4	6	5	
1297:	3	7	4	4	4	7	6	4	
1305:	4	3	2	5	4	9	7	3	
1313:	1	5	5	6	9	6	5	3	
1321:	7	5	3	6	6	5	3	6	
1329:	1	3	5	5	3	6	1	3	
1337:	5	1	5	4	2	3	5	2	
1345:	5	4	4	5	7	1	0	2	
1353:	4	5	4	2	4	4	4	8	
1361:	1	2	3	1	5	3	3	2	
1369:	3	1	1	5	2	5	3	4	
1377:	4	13	12	5	5	1	4	2	
1385:	7	8	3	1	1	4	4	5	
1393:	5	5	7	1	1	1	2	6	
1401:	4	10	3	3	2	0	3	6	
1409:	6	3	4	1	5	4	3	4	
1417:	1	3	2	6	2	1	2	2	
1425:	4	2	3	2	5	4	0	5	
1433:	2	3	6	2	2	1	0	4	
1441:	2	0	2	2	3	2	3	2	
1449:	7	4	2	3	2	2	2	3	
1457:	4	6	14	123	318	207	42	6	
1465:	6	1	3	3	0	1	2	2	
1473:	1	1	6	1	1	2	1	1	
1481:	1	2	5	0	1	4	3	0	
1489:	1	1	2	3	5	1	3	3	
1497:	5	2	3	1	3	5	1	4	
1505:	3	1	1	0	6	5	6	1	
1513:	5	1	1	4	0	0	2	1	
1521:	2	1	1	2	1	0	2	1	
1529:	2	2	1	2	3	4	3	2	
1537:	2	2	3	3	3	4	2	4	
1545:	3	1	3	1	1	0	1	2	
1553:	3	4	1	3	4	4	2	2	
1561:	1	0	0	1	2	1	4	2	
1569:	0	0	4	1	2	2	4	2	
1577:	1	3	3	1	5	0	0	2	
1585:	1	3	0	12	13	6	2	6	
1593:	6	6	3	2	1	1	0	6	
1601:	2	1	1	2	1	4	3	1	
1609:	5	2	3	4	4	3	4	3	
1617:	1	4	5	0	5	5	3	2	
1625:	3	2	1	1	3	9	3	3	
1633:	3	2	1	3	0	3	3	1	
1641:	2	2	1	2	6	0	2	2	
1649:	1	0	2	2	2	0	2	0	
1657:	0	0	3	1	1	1	1	0	

1665: 1 1 4 1 2 2 1 1

Sample Title: CP1804S17-18

Channel	1	2	3	4	5	6	7	8	9
1673:	2	0	1	1	2	0	1	0	
1681:	1	2	4	5	2	3	2	0	
1689:	3	1	0	2	1	1	0	0	
1697:	3	1	0	1	0	0	0	1	
1705:	3	2	0	1	0	2	0	1	
1713:	3	2	2	0	0	3	0	2	
1721:	0	1	1	2	1	1	1	1	
1729:	7	10	5	2	1	0	1	1	
1737:	2	3	0	1	1	1	0	0	
1745:	2	0	0	3	2	0	3	3	
1753:	1	2	2	1	2	0	0	2	
1761:	2	2	6	33	37	21	2	2	
1769:	2	1	0	4	0	1	1	0	
1777:	1	0	2	3	1	3	0	1	
1785:	2	1	5	2	0	0	1	0	
1793:	0	0	0	1	3	2	0	2	
1801:	0	0	1	1	0	4	3	1	
1809:	1	1	1	4	2	1	3	1	
1817:	1	1	2	1	1	2	1	1	
1825:	0	1	1	0	0	1	1	0	
1833:	1	2	1	3	1	2	0	0	
1841:	0	2	0	1	2	1	4	7	
1849:	5	0	4	2	1	1	1	1	
1857:	4	2	2	0	1	1	1	1	
1865:	1	1	2	0	1	1	2	0	
1873:	0	1	0	2	2	1	3	1	
1881:	1	1	1	0	2	0	1	3	
1889:	1	1	3	2	0	2	0	1	
1897:	1	0	1	0	1	0	0	0	
1905:	1	2	1	1	1	0	2	1	
1913:	0	1	1	1	0	0	1	1	
1921:	0	0	2	0	3	5	2	2	
1929:	3	2	3	0	0	4	3	4	
1937:	2	1	1	0	0	2	1	1	
1945:	1	1	1	1	0	3	1	3	
1953:	1	2	0	0	1	1	1	0	
1961:	3	0	1	1	2	2	2	1	
1969:	1	1	1	0	4	2	3	1	
1977:	1	0	0	3	0	3	0	0	
1985:	1	0	1	0	1	3	0	2	
1993:	0	0	2	0	0	1	0	0	
2001:	1	1	0	1	2	1	1	0	
2009:	1	0	1	1	1	1	2	2	
2017:	3	0	4	3	1	0	0	0	
2025:	1	1	1	1	2	0	0	1	
2033:	2	0	0	6	2	0	1	1	
2041:	1	2	2	0	2	1	0	1	
2049:	1	0	0	2	0	0	0	2	
2057:	3	0	1	2	1	0	2	1	
2065:	1	0	1	2	1	4	0	2	
2073:	0	2	2	1	0	1	2	0	
2081:	2	2	1	0	0	0	2	0	
2089:	1	2	0	1	0	2	0	1	

2097: 2 2 1 1 2 2 3 9

Sample Title: CP1804S17-18

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

2529: 3 0 0 0 0 0 0 2

Sample Title: CP1804S17-18

Channel	1	2	3	4	5	6	7	8
2537:	0	1	0	1	0	0	0	0
2545:	1	1	0	0	0	1	0	0
2553:	1	1	1	1	0	1	0	1
2561:	0	0	1	0	1	0	1	0
2569:	1	0	0	1	0	0	1	0
2577:	0	1	0	1	1	0	0	2
2585:	0	0	0	0	0	0	1	0
2593:	0	0	0	0	0	0	0	0
2601:	0	1	0	0	0	0	0	0
2609:	0	2	0	5	17	24	52	32
2617:	7	2	1	1	0	0	0	0
2625:	0	0	1	0	0	1	1	1
2633:	0	0	0	0	2	0	1	1
2641:	1	0	0	0	1	0	0	0
2649:	0	1	1	1	0	0	0	1
2657:	0	0	0	0	0	0	1	0
2665:	0	0	0	0	1	0	3	0
2673:	0	0	0	0	1	1	0	0
2681:	0	1	0	0	0	0	0	0
2689:	0	1	0	0	1	0	2	1
2697:	0	0	0	0	0	2	0	0
2705:	0	1	0	1	0	0	0	0
2713:	2	0	0	0	0	0	0	1
2721:	1	0	0	1	0	0	0	0
2729:	0	0	1	0	0	0	0	1
2737:	0	1	0	0	0	0	1	1
2745:	0	0	0	1	0	1	2	0
2753:	1	0	0	0	0	2	1	1
2761:	0	0	0	0	0	0	0	1
2769:	1	2	0	0	0	0	0	1
2777:	2	0	0	1	0	0	0	0
2785:	0	0	0	0	0	0	0	0
2793:	0	0	0	0	0	1	0	1
2801:	2	0	1	1	1	0	1	0
2809:	0	0	0	0	0	0	1	0
2817:	0	0	0	1	0	0	0	0
2825:	0	0	0	1	0	0	0	1
2833:	0	0	0	0	2	0	0	0
2841:	1	0	0	0	0	0	0	0
2849:	0	0	0	0	1	0	1	0
2857:	0	0	0	0	0	0	0	2
2865:	0	1	1	0	0	0	0	1
2873:	0	0	0	0	0	0	0	0
2881:	2	0	0	0	0	1	0	1
2889:	0	0	2	0	0	0	0	1
2897:	0	0	0	0	1	0	1	0
2905:	0	0	1	1	0	0	0	0
2913:	0	0	0	1	1	0	0	0
2921:	1	0	1	0	1	0	0	0
2929:	0	0	0	1	0	0	0	0
2937:	1	0	0	0	0	0	1	0
2945:	0	0	1	2	1	0	0	0
2953:	0	0	0	1	0	0	0	0

2961: 0 0 0 0 1 1 0 1

Sample Title: CP1804S17-18

Channel	1	2	3	4	5	6	7	8
2969:	1	0	0	0	0	0	0	0
2977:	0	0	0	0	1	0	0	2
2985:	0	0	0	1	1	0	0	0
2993:	0	0	0	0	0	0	0	1
3001:	0	1	0	0	0	0	0	0
3009:	0	0	1	0	0	0	0	0
3017:	1	0	0	0	0	0	0	0
3025:	0	1	0	0	0	0	1	0
3033:	0	0	0	1	0	0	1	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	1	0	0	0	0	1
3065:	0	1	0	1	0	0	0	0
3073:	0	1	0	0	1	0	0	0
3081:	0	1	0	0	0	1	0	0
3089:	0	0	1	0	0	0	1	0
3097:	1	1	0	0	0	0	0	1
3105:	0	0	1	2	0	0	0	0
3113:	0	2	0	1	0	0	0	0
3121:	0	2	1	0	1	2	0	0
3129:	0	0	1	0	0	1	0	0
3137:	0	0	0	0	1	0	0	0
3145:	0	0	0	0	1	1	0	1
3153:	0	0	0	0	1	0	0	1
3161:	0	1	0	0	0	0	0	0
3169:	0	0	0	0	1	0	0	0
3177:	1	0	0	0	0	0	0	0
3185:	0	0	0	0	0	1	0	0
3193:	0	0	1	0	5	1	1	0
3201:	1	1	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	0	1	0	0	0
3233:	1	0	0	0	0	2	0	0
3241:	0	0	1	0	0	0	0	0
3249:	0	0	0	0	1	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	1	0	1	0	0	0	0
3273:	0	0	1	0	0	0	0	0
3281:	0	0	0	0	0	0	0	1
3289:	0	0	0	0	0	0	0	0
3297:	0	0	1	0	0	0	0	0
3305:	0	0	0	0	1	1	2	0
3313:	1	1	0	0	0	1	0	0
3321:	0	0	0	0	1	0	0	0
3329:	0	0	0	0	1	0	0	0
3337:	0	0	1	0	0	0	0	0
3345:	0	1	0	0	0	0	0	0
3353:	0	0	1	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	1	0	1	0	1	0
3385:	0	1	1	0	0	0	0	1

3393: 0 0 0 0 0 0 0 0

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	1	1
3417:	0	1	0	0	1	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	0	0	0	1
3449:	0	1	0	0	0	0	0	1
3457:	0	0	0	0	0	0	0	0
3465:	1	0	0	0	0	0	0	0
3473:	0	1	0	1	1	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	1	0	0	1	1	0	0
3497:	0	1	0	0	0	0	0	0
3505:	0	0	0	0	1	0	0	0
3513:	0	0	0	1	0	1	0	0
3521:	0	0	0	0	1	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	1	1	0	1	0	0
3545:	0	0	1	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	1	0
3569:	1	0	1	0	0	0	0	0
3577:	0	1	1	0	0	2	0	1
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	1	0
3601:	0	0	0	0	0	1	0	0
3609:	0	0	0	1	0	0	0	0
3617:	1	0	0	0	0	1	0	0
3625:	0	0	0	1	0	0	0	0
3633:	0	0	0	1	1	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	1	0	0	0	1	0	1	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	1	1	0	0	0	0
3681:	0	1	0	0	0	0	0	0
3689:	1	0	0	0	0	0	0	0
3697:	0	1	0	0	0	1	0	0
3705:	1	0	0	1	0	0	0	0
3713:	0	0	0	0	0	0	0	1
3721:	0	0	0	0	1	0	0	0
3729:	0	0	1	0	0	0	0	0
3737:	0	0	1	0	0	0	0	1
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	1	1	0	0	0	0	1
3769:	0	1	0	0	0	0	0	0
3777:	0	0	0	0	0	1	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	1	0	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	0	0	0	1

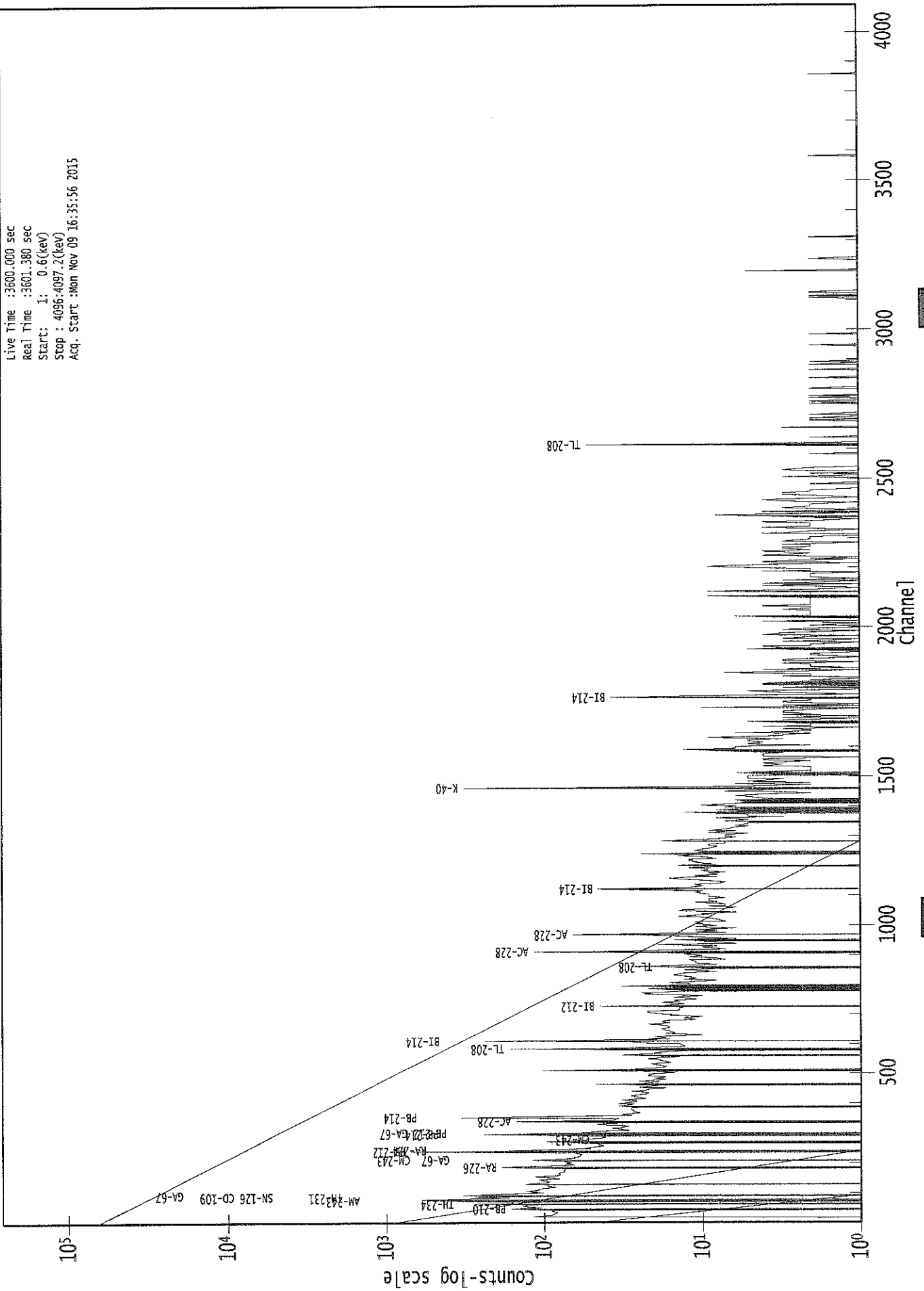
3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP1804S17-18

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

0000029355.CNF

Live Time : 3600.000 sec
Real Time : 3601.380 sec
Start: 1: 0.6(keV)
Stop : 4096:4097.2(keV)
Acq. Start : Mon Nov 09 16:35:56 2015



KB
11/9/15



Analysis Report for 1510088-15
CP5008S03-04

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-15
Sample Description : CP5008S03-04
Sample Type : SOIL

Sample Size : 5.850E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 9:02:51AM
Acquisition Started : 11/9/2015 5:03:53PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3644.6 seconds

Dead Time : 1.22 %

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 : 29356

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

Analysis Report for 1510088-15
CP5008S03-04

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 6:04:39PM
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	46.65	45.91	0.0000	0.00
2	62.87	62.13	0.0000	0.00
3	75.96	75.23	0.0000	0.00
4	93.44	92.72	0.0000	0.00
5	185.81	185.13	0.0000	0.00
6	239.33	238.67	0.0000	0.00
7	270.60	269.95	0.0000	0.00
8	295.50	294.86	0.0000	0.00
9	338.11	337.49	0.0000	0.00
10	352.05	351.44	0.0000	0.00
11	463.37	462.80	0.0000	0.00
12	511.07	510.53	0.0000	0.00
13	569.81	569.29	0.0000	0.00
14	583.40	582.89	0.0000	0.00
15	597.99	597.49	0.0000	0.00
16	609.40	608.90	0.0000	0.00
17	710.51	710.06	0.0000	0.00
18	725.91	725.48	0.0000	0.00
19	740.82	740.39	0.0000	0.00
20	791.81	791.41	0.0000	0.00
21	811.47	811.08	0.0000	0.00
22	817.77	817.38	0.0000	0.00
23	860.61	860.24	0.0000	0.00
24	871.08	870.72	0.0000	0.00
25	912.51	912.17	0.0000	0.00
26	969.94	969.63	0.0000	0.00
27	1120.73	1120.51	0.0000	0.00
28	1225.33	1225.17	0.0000	0.00
29	1461.38	1461.35	0.0000	0.00
30	1510.70	1510.71	0.0000	0.00
31	1592.70	1592.75	0.0000	0.00
32	1765.01	1765.17	0.0000	0.00
33	2357.88	2358.46	0.0000	0.00
34	2368.37	2368.96	0.0000	0.00
35	2414.83	2415.44	0.0000	0.00
36	2615.42	2616.19	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510088-15
CP5008S03-04

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 6:04:39PM

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	46.65	43 -	48	45.91	7.16E+01	62.59	7.27E+02	2.67
2	62.87	58 -	66	62.13	1.60E+02	103.68	1.56E+03	3.52
3	75.96	70 -	81	75.23	7.37E+02	142.37	2.16E+03	4.77
4	93.44	90 -	97	92.72	1.80E+02	89.22	1.13E+03	2.58
5	185.81	180 -	191	185.13	1.59E+02	93.85	1.03E+03	3.04
6	239.33	231 -	246	238.67	6.05E+02	105.17	8.64E+02	2.79
7	270.60	266 -	273	269.95	5.75E+01	46.56	3.13E+02	2.65
8	295.50	289 -	298	294.86	1.30E+02	63.69	5.05E+02	2.16
9	338.11	333 -	342	337.49	6.52E+01	51.74	3.46E+02	3.02
10	352.05	346 -	356	351.44	2.72E+02	58.94	3.16E+02	2.02
11	463.37	456 -	469	462.80	5.47E+01	50.49	2.59E+02	4.23
12	511.07	506 -	516	510.53	1.01E+02	42.53	1.89E+02	3.46
13	569.81	565 -	573	569.29	3.16E+01	28.24	1.03E+02	3.22
14	583.40	578 -	587	582.89	1.16E+02	38.91	1.50E+02	1.91
15	597.99	592 -	602	597.49	3.37E+01	32.09	1.15E+02	5.76
16	609.40	603 -	616	608.90	1.93E+02	47.92	1.74E+02	2.61
17	710.51	704 -	715	710.06	3.47E+01	34.58	1.33E+02	3.86
18	725.91	721 -	730	725.48	4.16E+01	31.75	1.21E+02	5.75
19	740.82	738 -	743	740.39	1.38E+01	16.70	4.43E+01	2.90
20	791.81	782 -	798	791.41	3.98E+01	38.67	1.26E+02	9.22
21	811.47	806 -	814	811.08	2.14E+01	20.76	5.12E+01	4.04
22	817.77	815 -	822	817.38	1.65E+01	16.37	3.69E+01	3.77
M 23	860.61	855 -	881	860.24	1.79E+01	22.07	5.40E+01	3.12
m 24	871.08	855 -	881	870.72	1.79E+01	20.86	5.40E+01	3.13
25	912.51	906 -	919	912.17	9.26E+01	34.25	8.28E+01	2.61
26	969.94	965 -	977	969.63	2.93E+01	35.26	1.19E+02	3.10
27	1120.73	1116 -	1124	1120.51	4.22E+01	23.99	6.16E+01	2.53
28	1225.33	1221 -	1228	1225.17	1.80E+01	19.90	5.00E+01	3.32
29	1461.38	1453 -	1468	1461.35	2.39E+02	39.95	6.45E+01	2.87
30	1510.70	1508 -	1513	1510.71	8.11E+00	10.05	1.18E+01	1.07
31	1592.70	1590 -	1596	1592.75	8.38E+00	10.05	9.23E+00	1.83
32	1765.01	1759 -	1768	1765.17	2.44E+01	13.04	1.12E+01	2.31
33	2357.88	2356 -	2361	2358.46	5.29E+00	6.08	3.43E+00	2.14
34	2368.37	2363 -	2374	2368.96	1.00E+01	11.66	1.20E+01	5.90
35	2414.83	2410 -	2419	2415.44	9.00E+00	6.00	0.00E+00	1.00
36	2615.42	2612 -	2621	2616.19	4.80E+01	13.86	0.00E+00	4.18

Analysis Report for 1510088-15

CP5008S03-04

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 6:04:39PM

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	46.65	43 -	48	7.16E+01	62.59	7.27E+02	4.95E+01	
2	62.87	58 -	66	1.60E+02	103.68	1.56E+03	8.27E+01	
3	75.96	70 -	81	7.37E+02	142.37	2.16E+03	1.08E+02	
4	93.44	90 -	97	1.80E+02	89.22	1.13E+03	6.99E+01	
5	185.81	180 -	191	1.59E+02	93.85	1.03E+03	7.43E+01	
6	239.33	231 -	246	6.05E+02	105.17	8.64E+02	7.64E+01	
7	270.60	266 -	273	5.75E+01	46.56	3.13E+02	3.62E+01	
8	295.50	289 -	298	1.30E+02	63.69	5.05E+02	4.89E+01	
9	338.11	333 -	342	6.52E+01	51.74	3.46E+02	4.04E+01	
10	352.05	346 -	356	2.72E+02	58.94	3.16E+02	4.02E+01	
11	463.37	456 -	469	5.47E+01	50.49	2.59E+02	3.97E+01	
12	511.07	506 -	516	1.01E+02	42.53	1.89E+02	3.08E+01	
13	569.81	565 -	573	3.16E+01	28.24	1.03E+02	2.13E+01	
14	583.40	578 -	587	1.16E+02	38.91	1.50E+02	2.66E+01	
15	597.99	592 -	602	3.37E+01	32.09	1.15E+02	2.46E+01	
16	609.40	603 -	616	1.93E+02	47.92	1.74E+02	3.21E+01	
17	710.51	704 -	715	3.47E+01	34.58	1.33E+02	2.67E+01	
18	725.91	721 -	730	4.16E+01	31.75	1.21E+02	2.38E+01	
19	740.82	738 -	743	1.38E+01	16.70	4.43E+01	1.23E+01	
20	791.81	782 -	798	3.98E+01	38.67	1.26E+02	3.01E+01	
21	811.47	806 -	814	2.14E+01	20.76	5.12E+01	1.53E+01	
22	817.77	815 -	822	1.65E+01	16.37	3.69E+01	1.17E+01	
M	23	860.61	855 -	881	1.79E+01	22.07	5.40E+01	1.21E+01
m	24	871.08	855 -	881	1.79E+01	20.86	5.40E+01	1.21E+01
	25	912.51	906 -	919	9.26E+01	34.25	8.28E+01	2.33E+01
	26	969.94	965 -	977	2.93E+01	35.26	1.19E+02	2.76E+01
	27	1120.73	1116 -	1124	4.22E+01	23.99	6.16E+01	1.66E+01
	28	1225.33	1221 -	1228	1.80E+01	19.90	5.00E+01	1.48E+01
	29	1461.38	1453 -	1468	2.39E+02	39.95	6.45E+01	2.08E+01
	30	1510.70	1508 -	1513	8.11E+00	10.05	1.18E+01	6.81E+00
	31	1592.70	1590 -	1596	8.38E+00	10.05	9.23E+00	6.75E+00

Analysis Report for 1510088-15

CP5008S03-04

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	1765.01	1759 -	1768	2.44E+01	13.04	1.12E+01	6.99E+00
33	2357.88	2356 -	2361	5.29E+00	6.08	3.43E+00	3.27E+00
34	2368.37	2363 -	2374	1.00E+01	11.66	1.20E+01	8.05E+00
35	2414.83	2410 -	2419	9.00E+00	6.00	0.00E+00	0.00E+00
36	2615.42	2612 -	2621	4.80E+01	13.86	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 6:04:39PM

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	46.65	43 -	48	45.91	7.16E+01	62.59	7.27E+02	PB-210
2	62.87	58 -	66	62.13	1.60E+02	103.68	1.56E+03	TH-230 TH-234
3	75.96	70 -	81	75.23	7.37E+02	142.37	2.16E+03	.....
4	93.44	90 -	97	92.72	1.80E+02	89.22	1.13E+03	GA-67
5	185.81	180 -	191	185.13	1.59E+02	93.85	1.03E+03	RA-226
6	239.33	231 -	246	238.67	6.05E+02	105.17	8.64E+02	PB-212
7	270.60	266 -	273	269.95	5.75E+01	46.56	3.13E+02	.....
8	295.50	289 -	298	294.86	1.30E+02	63.69	5.05E+02	PB-214
9	338.11	333 -	342	337.49	6.52E+01	51.74	3.46E+02	AC-228
10	352.05	346 -	356	351.44	2.72E+02	58.94	3.16E+02	PB-214
11	463.37	456 -	469	462.80	5.47E+01	50.49	2.59E+02	SB-125
12	511.07	506 -	516	510.53	1.01E+02	42.53	1.89E+02	.....
13	569.81	565 -	573	569.29	3.16E+01	28.24	1.03E+02	BI-207 CS-134
14	583.40	578 -	587	582.89	1.16E+02	38.91	1.50E+02	TL-208
15	597.99	592 -	602	597.49	3.37E+01	32.09	1.15E+02	.....
16	609.40	603 -	616	608.90	1.93E+02	47.92	1.74E+02	BI-214
17	710.51	704 -	715	710.06	3.47E+01	34.58	1.33E+02	.....
18	725.91	721 -	730	725.48	4.16E+01	31.75	1.21E+02	.....
19	740.82	738 -	743	740.39	1.38E+01	16.70	4.43E+01	.....

Analysis Report for 1510088-15

CP5008S03-04

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
20	791.81	782 -	798	791.41	3.98E+01	38.67	1.26E+02	.....
21	811.47	806 -	814	811.08	2.14E+01	20.76	5.12E+01	EU-156 CO-58
22	817.77	815 -	822	817.38	1.65E+01	16.37	3.69E+01	CS-136
M 23	860.61	855 -	881	860.24	1.79E+01	22.07	5.40E+01	TL-208
m 24	871.08	855 -	881	870.72	1.79E+01	20.86	5.40E+01	NB-94
25	912.51	906 -	919	912.17	9.26E+01	34.25	8.28E+01	LU-172
26	969.94	965 -	977	969.63	2.93E+01	35.26	1.19E+02	AC-228
27	1120.73	1116 -	1124	1120.51	4.22E+01	23.99	6.16E+01	SC-46 BI-214 TA-182
28	1225.33	1221 -	1228	1225.17	1.80E+01	19.90	5.00E+01	.....
29	1461.38	1453 -	1468	1461.35	2.39E+02	39.95	6.45E+01	K-40
30	1510.70	1508 -	1513	1510.71	8.11E+00	10.05	1.18E+01	.....
31	1592.70	1590 -	1596	1592.75	8.38E+00	10.05	9.23E+00	.....
32	1765.01	1759 -	1768	1765.17	2.44E+01	13.04	1.12E+01	BI-214
33	2357.88	2356 -	2361	2358.46	5.29E+00	6.08	3.43E+00	.....
34	2368.37	2363 -	2374	2368.96	1.00E+01	11.66	1.20E+01	.....
35	2414.83	2410 -	2419	2415.44	9.00E+00	6.00	0.00E+00	.....
36	2615.42	2612 -	2621	2616.19	4.80E+01	13.86	0.00E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 6:04:39PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	46.65	7.16E+01	62.59	2.63E-02	1.78E-03
2	62.87	1.60E+02	103.68	2.33E-02	1.76E-03
3	75.96	7.37E+02	142.37	2.13E-02	1.69E-03
4	93.44	1.80E+02	89.22	1.89E-02	1.61E-03
5	185.81	1.59E+02	93.85	1.16E-02	1.15E-03
6	239.33	6.05E+02	105.17	9.39E-03	9.85E-04
7	270.60	5.75E+01	46.56	8.42E-03	8.88E-04
8	295.50	1.30E+02	63.69	7.78E-03	8.43E-04
9	338.11	6.52E+01	51.74	6.86E-03	7.96E-04
10	352.05	2.72E+02	58.94	6.61E-03	7.80E-04

: 00881

Analysis Report for 1510088-15
CP5008S03-04

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
11	463.37	5.47E+01	50.49	5.07E-03	6.31E-04
12	511.07	1.01E+02	42.53	4.61E-03	5.61E-04
13	569.81	3.16E+01	28.24	4.14E-03	4.75E-04
14	583.40	1.16E+02	38.91	4.05E-03	4.55E-04
15	597.99	3.37E+01	32.09	3.95E-03	4.34E-04
16	609.40	1.93E+02	47.92	3.87E-03	4.17E-04
17	710.51	3.47E+01	34.58	3.33E-03	3.13E-04
18	725.91	4.16E+01	31.75	3.26E-03	3.04E-04
19	740.82	1.38E+01	16.70	3.20E-03	2.96E-04
20	791.81	3.98E+01	38.67	2.99E-03	2.67E-04
21	811.47	2.14E+01	20.76	2.92E-03	2.56E-04
22	817.77	1.65E+01	16.37	2.90E-03	2.53E-04
M	23	860.61	1.79E+01	2.76E-03	2.29E-04
m	24	871.08	1.79E+01	2.73E-03	2.23E-04
25	912.51	9.26E+01	34.25	2.61E-03	2.06E-04
26	969.94	2.93E+01	35.26	2.46E-03	1.99E-04
27	1120.73	4.22E+01	23.99	2.14E-03	1.79E-04
28	1225.33	1.80E+01	19.90	1.97E-03	1.87E-04
29	1461.38	2.39E+02	39.95	1.68E-03	1.89E-04
30	1510.70	8.11E+00	10.05	1.64E-03	1.79E-04
31	1592.70	8.38E+00	10.05	1.56E-03	1.62E-04
32	1765.01	2.44E+01	13.04	1.43E-03	1.26E-04
33	2357.88	5.29E+00	6.08	1.15E-03	1.11E-04
34	2368.37	1.00E+01	11.66	1.15E-03	1.11E-04
35	2414.83	9.00E+00	6.00	1.13E-03	1.11E-04
36	2615.42	4.80E+01	13.86	1.07E-03	1.11E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 6:04:39PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	46.65	7.16E+01	62.59	2.00E+01	7.38E+00	5.15E+01	6.30E+01
2	62.87	1.60E+02	103.68	5.38E+01	9.34E+00	1.06E+02	1.04E+02
3	75.96	7.37E+02	142.37			7.37E+02	1.42E+02
4	93.44	1.80E+02	89.22	5.44E+01	8.36E+00	1.26E+02	8.96E+01

: 00882

Analysis Report for 1510088-15

CP5008S03-04

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
5	185.81	1.59E+02	93.85	1.43E+01	7.33E+00	1.45E+02	9.41E+01
6	239.33	6.05E+02	105.17	1.09E+01	6.39E+00	5.94E+02	1.05E+02
7	270.60	5.75E+01	46.56			5.75E+01	4.66E+01
8	295.50	1.30E+02	63.69			1.30E+02	6.37E+01
9	338.11	6.52E+01	51.74			6.52E+01	5.17E+01
10	352.05	2.72E+02	58.94	8.07E+00	5.01E+00	2.64E+02	5.92E+01
11	463.37	5.47E+01	50.49			5.47E+01	5.05E+01
12	511.07	1.01E+02	42.53	4.21E+01	4.92E+00	5.85E+01	4.28E+01
13	569.81	3.16E+01	28.24			3.16E+01	2.82E+01
14	583.40	1.16E+02	38.91			1.16E+02	3.89E+01
15	597.99	3.37E+01	32.09			3.37E+01	3.21E+01
16	609.40	1.93E+02	47.92	5.16E+00	1.63E+00	1.88E+02	4.79E+01
17	710.51	3.47E+01	34.58			3.47E+01	3.46E+01
18	725.91	4.16E+01	31.75			4.16E+01	3.17E+01
19	740.82	1.38E+01	16.70			1.38E+01	1.67E+01
20	791.81	3.98E+01	38.67			3.98E+01	3.87E+01
21	811.47	2.14E+01	20.76			2.14E+01	2.08E+01
22	817.77	1.65E+01	16.37			1.65E+01	1.64E+01
M	23	860.61	1.79E+01	22.07		1.79E+01	2.21E+01
m	24	871.08	1.79E+01	20.86		1.79E+01	2.09E+01
25	912.51	9.26E+01	34.25			9.26E+01	3.42E+01
26	969.94	2.93E+01	35.26			2.93E+01	3.53E+01
27	1120.73	4.22E+01	23.99			4.22E+01	2.40E+01
28	1225.33	1.80E+01	19.90			1.80E+01	1.99E+01
29	1461.38	2.39E+02	39.95			2.39E+02	3.99E+01
30	1510.70	8.11E+00	10.05			8.11E+00	1.00E+01
31	1592.70	8.38E+00	10.05			8.38E+00	1.00E+01
32	1765.01	2.44E+01	13.04	1.11E-01	9.77E-01	2.43E+01	1.31E+01
33	2357.88	5.29E+00	6.08			5.29E+00	6.08E+00
34	2368.37	1.00E+01	11.66			1.00E+01	1.17E+01
35	2414.83	9.00E+00	6.00			9.00E+00	6.00E+00
36	2615.42	4.80E+01	13.86			4.80E+01	1.39E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 6:04:39PM
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

: 00883

Analysis Report for 1510088-15

CP5008S03-04

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	46.65	7.16E+01	62.59	2.00E+01	7.38E+00	5.15E+01	6.30E+01
2	62.87	1.60E+02	103.68	5.38E+01	9.34E+00	1.06E+02	1.04E+02
3	75.96	7.37E+02	142.37			7.37E+02	1.42E+02
4	93.44	1.80E+02	89.22	5.44E+01	8.36E+00	1.26E+02	8.96E+01
5	185.81	1.59E+02	93.85	1.43E+01	7.33E+00	1.45E+02	9.41E+01
6	239.33	6.05E+02	105.17	1.09E+01	6.39E+00	5.94E+02	1.05E+02
7	270.60	5.75E+01	46.56			5.75E+01	4.66E+01
8	295.50	1.30E+02	63.69			1.30E+02	6.37E+01
9	338.11	6.52E+01	51.74			6.52E+01	5.17E+01
10	352.05	2.72E+02	58.94	8.07E+00	5.01E+00	2.64E+02	5.92E+01
11	463.37	5.47E+01	50.49			5.47E+01	5.05E+01
12	511.07	1.01E+02	42.53	4.21E+01	4.92E+00	5.85E+01	4.28E+01
13	569.81	3.16E+01	28.24			3.16E+01	2.82E+01
14	583.40	1.16E+02	38.91			1.16E+02	3.89E+01
15	597.99	3.37E+01	32.09			3.37E+01	3.21E+01
16	609.40	1.93E+02	47.92	5.16E+00	1.63E+00	1.88E+02	4.79E+01
17	710.51	3.47E+01	34.58			3.47E+01	3.46E+01
18	725.91	4.16E+01	31.75			4.16E+01	3.17E+01
19	740.82	1.38E+01	16.70			1.38E+01	1.67E+01
20	791.81	3.98E+01	38.67			3.98E+01	3.87E+01
21	811.47	2.14E+01	20.76			2.14E+01	2.08E+01
22	817.77	1.65E+01	16.37			1.65E+01	1.64E+01
M	23	860.61	1.79E+01			1.79E+01	2.21E+01
m	24	871.08	1.79E+01			1.79E+01	2.09E+01
	25	912.51	9.26E+01			9.26E+01	3.42E+01
	26	969.94	2.93E+01			2.93E+01	3.53E+01
	27	1120.73	4.22E+01			4.22E+01	2.40E+01
	28	1225.33	1.80E+01			1.80E+01	1.99E+01
	29	1461.38	2.39E+02			2.39E+02	3.99E+01
	30	1510.70	8.11E+00			8.11E+00	1.00E+01
	31	1592.70	8.38E+00			8.38E+00	1.00E+01
	32	1765.01	2.44E+01	1.11E-01	9.77E-01	2.43E+01	1.31E+01
	33	2357.88	5.29E+00			5.29E+00	6.08E+00
	34	2368.37	1.00E+01			1.00E+01	1.17E+01
	35	2414.83	9.00E+00			9.00E+00	6.00E+00
	36	2615.42	4.80E+01			4.80E+01	1.39E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

: 00884

Analysis Report for 1510088-15
CP5008S03-04

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.950	1460.81 *	10.67	1.71E+01	3.45E+00
CO-58	0.921	810.76 *	99.40	1.30E-01	1.26E-01
GA-67	0.367	93.31 *	35.70	2.31E+02	1.02E+03
		208.95	2.24		
		300.22	16.00		
BI-207	0.421	569.67 *	97.72	1.00E-01	9.05E-02
		1063.62	74.90		
TL-208	0.950	583.14 *	30.22	1.22E+00	4.31E-01
		860.37 *	4.48	1.86E+00	2.30E+00
		2614.66 *	35.85	1.60E+00	4.92E-01
PB-210	0.996	46.50 *	4.25	5.94E-01	7.27E-01
PB-212	0.826	238.63 *	44.60	1.82E+00	3.75E-01
		300.09	3.41		
BI-214	0.922	609.31 *	46.30	1.34E+00	3.72E-01
		1120.29 *	15.10	1.67E+00	9.62E-01
		1764.49 *	15.80	1.38E+00	7.50E-01
		2204.22	4.98		
PB-214	0.994	295.21 *	19.19	1.12E+00	5.61E-01
		351.92 *	37.19	1.38E+00	3.49E-01
RA-226	0.975	186.21 *	3.28	4.88E+00	9.48E+00
TH-234	0.972	63.29 *	3.80	1.53E+00	1.51E+00

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 6:04:39PM
 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	75.96	2.04608E-01	9.66		
7	270.60	1.59735E-02	40.49		
9	338.11	1.81011E-02	39.70	Tol.	AC-228
11	463.37	1.51872E-02	46.17	Tol.	SB-125
12	511.07	1.62577E-02	36.57		

Analysis Report for 1510088-15

CP5008S03-04

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
15	597.99	9.36966E-03	47.56		
17	710.51	9.64796E-03	49.78		
18	725.91	1.15468E-02	38.19		
19	740.82	3.84645E-03	60.31		
20	791.81	1.10612E-02	48.56		
22	817.77	4.59524E-03	49.48	Tol.	CS-136
m 24	871.08	4.97200E-03	58.26	Tol.	NB-94
25	912.51	2.57224E-02	18.49	Tol.	LU-172
26	969.94	8.14451E-03	60.13	Tol.	AC-228
28	1225.33	4.99354E-03	55.35		
30	1510.70	2.25198E-03	61.98		
31	1592.70	2.32906E-03	59.93	D-Esc	
33	2357.88	1.46825E-03	57.54		
34	2368.37	2.77778E-03	58.31		
35	2414.83	2.50000E-03	33.33		

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	0.95	1460.81 *	10.67	1.71E+01	3.45E+00
CO-58	0.92	810.76 *	99.40	1.30E-01	1.26E-01
GA-67	0.36	93.31 *	35.70	2.31E+02	1.02E+03
		208.95	2.24		
		300.22	16.00		
BI-207	0.42	569.67 *	97.72	1.00E-01	9.05E-02
		1063.62	74.90		
TL-208	0.95	583.14 *	30.22	1.22E+00	4.31E-01
		860.37 *	4.48	1.86E+00	2.30E+00
		2614.66 *	35.85	1.60E+00	4.92E-01
PB-210	0.99	46.50 *	4.25	5.94E-01	7.27E-01
PB-212	0.82	238.63 *	44.60	1.82E+00	3.75E-01
		300.09	3.41		

: 00886

Analysis Report for 1510088-15
CP5008S03-04

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.92	609.31 *	46.30	1.34E+00	3.72E-01
		1120.29 *	15.10	1.67E+00	9.62E-01
		1764.49 *	15.80	1.38E+00	7.50E-01
		2204.22	4.98		
PB-214	0.99	295.21 *	19.19	1.12E+00	5.61E-01
		351.92 *	37.19	1.38E+00	3.49E-01
RA-226	0.97	186.21 *	3.28	4.88E+00	9.48E+00
TH-234	0.97	63.29 *	3.80	1.53E+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	0.950	1.71E+01	3.45E+00	
CO-58	0.921	1.30E-01	1.26E-01	
GA-67	0.367	2.31E+02	1.02E+03	
BI-207	0.421	1.00E-01	9.05E-02	
TL-208	0.950	1.39E+00	3.21E-01	
PB-210	0.996	5.94E-01	7.27E-01	
PB-212	0.826	1.82E+00	3.75E-01	
BI-214	0.922	1.38E+00	3.15E-01	
PB-214	0.994	1.31E+00	2.96E-01	
RA-226	0.975	4.88E+00	9.48E+00	
TH-234	0.972	1.53E+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 1510088-15
CP5008S03-04

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 6:04:39PM
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	75.96	2.04608E-01	9.66		
7	270.60	1.59735E-02	40.49		
9	338.11	1.81011E-02	39.70	Tol.	AC-228
11	463.37	1.51872E-02	46.17	Tol.	SB-125
12	511.07	1.62577E-02	36.57		
15	597.99	9.36966E-03	47.56		
17	710.51	9.64796E-03	49.78		
18	725.91	1.15468E-02	38.19		
19	740.82	3.84645E-03	60.31		
20	791.81	1.10612E-02	48.56		
22	817.77	4.59524E-03	49.48	Tol.	CS-136
m 24	871.08	4.97200E-03	58.26	Tol.	NB-94
25	912.51	2.57224E-02	18.49	Tol.	LU-172
26	969.94	8.14451E-03	60.13	Tol.	AC-228
28	1225.33	4.99354E-03	55.35		
30	1510.70	2.25198E-03	61.98		
31	1592.70	2.32906E-03	59.93	D-Esc	
33	2357.88	1.46825E-03	57.54		
34	2368.37	2.77778E-03	58.31		
35	2414.83	2.50000E-03	33.33		

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

: 00888

Analysis Report for 1510088-15
CP5008S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	7.45E-01	1.82E+00	1.82E+00
+	NA-22	1274.54	99.94	1.86E-02	2.06E-01	2.06E-01
+	NA-24	1368.53	99.99	0.00E+00	4.41E+14	5.72E+14
		2754.09	99.86	9.51E+13		4.41E+14
+	AL-26	1808.65	99.76	-7.62E-03	1.45E-01	1.45E-01
+	K-40	1460.81	* 10.67	1.71E+01	3.17E+00	3.17E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	3.97E-03	8.74E-02	8.74E-02
		78.34	96.00	2.64E-01		1.14E-01
+	SC-46	889.25	99.98	6.76E-02	2.21E-01	2.21E-01
		1120.51	99.99	3.13E-01		3.32E-01
+	V-48	983.52	99.98	2.24E-01	6.68E-01	6.68E-01
		1312.10	97.50	2.08E-01		7.51E-01
+	CR-51	320.08	9.83	3.73E-01	2.51E+00	2.51E+00
+	MN-54	834.83	99.97	-3.78E-02	1.61E-01	1.61E-01
+	CO-56	846.75	99.96	-4.90E-02	2.06E-01	2.06E-01
		1037.75	14.03	5.38E-01		1.71E+00
		1238.25	67.00	2.57E-02		4.38E-01
		1771.40	15.51	-4.87E-01		1.22E+00
		2598.48	16.90	-1.04E-02		1.01E+00
+	CO-57	122.06	85.51	-5.46E-02	1.06E-01	1.06E-01
		136.48	10.60	3.02E-01		9.58E-01
+	CO-58	810.76	* 99.40	1.30E-01	2.02E-01	2.02E-01
+	FE-59	1099.22	56.50	-6.09E-02	5.13E-01	5.13E-01
		1291.56	43.20	-2.09E-01		6.90E-01
+	CO-60	1173.22	100.00	3.63E-02	1.96E-01	1.96E-01
		1332.49	100.00	9.99E-02		2.12E-01
+	ZN-65	1115.52	50.75	6.28E-02	4.32E-01	4.32E-01
+	GA-67	93.31	* 35.70	2.31E+02	2.68E+02	2.68E+02
		208.95	2.24	1.71E+03		4.92E+03
		300.22	16.00	4.92E+01		7.95E+02
+	SE-75	121.11	16.70	-6.07E-01	1.91E-01	5.84E-01
		136.00	59.20	4.78E-02		1.91E-01
		264.65	59.80	1.22E-02		2.19E-01
		279.53	25.20	4.26E-01		5.28E-01
		400.65	11.40	2.95E-01		1.37E+00
+	RB-82	776.52	13.00	1.56E-01	2.99E+00	2.99E+00
+	RB-83	520.41	46.00	-5.74E-02	3.37E-01	3.37E-01
		529.64	30.30	7.66E-02		5.57E-01
		552.65	16.40	1.52E-01		1.02E+00
+	KR-85	513.99	0.43	5.80E+01	4.12E+01	4.12E+01
+	SR-85	513.99	99.27	3.56E-01	2.53E-01	2.53E-01
+	Y-88	898.02	93.40	-8.60E-02	1.94E-01	1.94E-01
		1836.01	99.38	4.86E-02		2.00E-01
+	NB-93M	16.57	9.43	8.47E-01	4.28E-01	4.28E-01
+	NB-94	702.63	100.00	6.67E-03	1.55E-01	1.55E-01
		871.10	100.00	1.11E-02		1.64E-01

Analysis Report for 1510088-15
CP5008S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-95	765.79	99.81	3.21E-02	3.21E-01	3.21E-01
+	NB-95M	235.69	25.00	6.84E+02	3.34E+02	3.34E+02
+	ZR-95	724.18	43.70	1.67E-01	3.85E-01	5.91E-01
		756.72	55.30	4.40E-02		3.85E-01
+	MO-99	181.06	6.20	5.96E+02	3.98E+03	6.04E+03
		739.58	12.80	-3.90E+02		3.98E+03
		778.00	4.50	-1.20E+03		1.16E+04
+	RU-103	497.08	89.00	-5.94E-02	2.44E-01	2.44E-01
+	RU-106	621.84	9.80	1.24E-01	1.56E+00	1.56E+00
+	AG-108M	433.93	89.90	-3.56E-02	1.26E-01	1.26E-01
		614.37	90.40	6.98E-03		2.08E-01
		722.95	90.50	-2.16E-02		2.04E-01
+	CD-109	88.03	3.72	9.36E-01	2.78E+00	2.78E+00
+	AG-110M	657.75	93.14	-1.04E-02	1.67E-01	1.67E-01
		677.61	10.53	5.84E-01		1.61E+00
		706.67	16.46	-5.68E-02		1.02E+00
		763.93	21.98	1.94E-01		8.46E-01
		884.67	71.63	-1.43E-02		2.29E-01
		1384.27	23.94	-1.07E-01		6.68E-01
+	CD-113M	263.70	0.02	-1.53E+01	4.73E+02	4.73E+02
+	SN-113	255.12	1.93	1.01E+00	2.36E-01	6.72E+00
		391.69	64.90	8.13E-02		2.36E-01
+	TE123M	159.00	84.10	5.83E-02	1.46E-01	1.46E-01
+	SB-124	602.71	97.87	-9.59E-01	2.00E-01	2.00E-01
		645.85	7.26	1.72E-01		2.67E+00
		722.78	11.10	-1.64E-02		2.36E+00
		1691.02	49.00	-1.22E-01		3.61E-01
+	I-125	35.49	6.49	2.28E-01	1.10E+00	1.10E+00
+	SB-125	176.33	6.89	-1.46E-01	4.13E-01	1.46E+00
		427.89	29.33	7.02E-02		4.13E-01
		463.38	10.35	1.37E+00		1.44E+00
		600.56	17.80	-3.73E-01		7.86E-01
		635.90	11.32	4.76E-01		1.35E+00
+	SB-126	414.70	83.30	4.87E-01	9.29E-01	1.02E+00
		666.33	99.60	2.25E-01		9.76E-01
		695.00	99.60	3.92E-02		9.29E-01
		720.50	53.80	-2.27E-01		1.93E+00
+	SN-126	87.57	37.00	8.94E-02	2.66E-01	2.66E-01
+	SB-127	473.00	25.00	-1.61E+01	1.37E+02	1.56E+02
		685.20	35.70	-4.52E+01		1.37E+02
		783.80	14.70	-8.69E+00		3.61E+02
+	I-129	29.78	57.00	-9.28E-02	8.00E-02	8.00E-02
		33.60	13.20	1.13E-01		3.65E-01
		39.58	7.52	-3.18E-01		6.72E-01
+	I-131	284.30	6.05	-3.52E-01	2.27E+00	2.86E+01
		364.48	81.20	-8.70E-02		2.27E+00
		636.97	7.26	-4.24E+00		3.16E+01
		722.89	1.80	-1.14E+00		1.63E+02

Analysis Report for 1510088-15
CP5008S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE-132	49.72	13.10	-5.72E-01	1.21E+02	4.66E+02
		228.16	88.00	9.69E+00		1.21E+02
+	BA-133	81.00	33.00	-9.48E-02	2.95E-01	3.09E-01
		302.84	17.80	8.43E-03		6.82E-01
		356.01	60.00	-1.62E-02		2.95E-01
+	I-133	529.87	86.30	3.59E+09	2.61E+10	2.61E+10
+	XE-133	81.00	38.00	-5.90E+00	1.92E+01	1.92E+01
+	CS-134	563.23	8.38	7.15E-01	1.80E-01	1.72E+00
		569.32	15.43	3.20E-02		9.32E-01
		604.70	97.60	-3.54E-01		1.80E-01
		795.84	85.40	8.73E-02		2.01E-01
		801.93	8.73	6.17E-01		1.66E+00
+	CS-135	268.24	16.00	5.43E-02	7.27E-01	7.27E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	1.83E+00	7.38E-01	7.33E+00
		163.89	4.61	3.75E+00		1.18E+01
		176.55	13.56	-4.00E-01		3.99E+00
		273.65	12.66	-2.67E-02		4.87E+00
		340.57	48.50	5.46E-02		1.53E+00
		818.50	99.70	-2.09E-01		7.38E-01
		1048.07	79.60	-3.94E-01		1.03E+00
		1235.34	19.70	-1.10E+00		5.74E+00
+	CS-137	661.65	85.12	-8.20E-02	1.66E-01	1.66E-01
+	LA-138	788.74	34.00	-2.49E-01	2.49E-01	4.47E-01
		1435.80	66.00	6.85E-02		2.49E-01
+	CE-139	165.85	80.35	-9.66E-02	1.40E-01	1.40E-01
+	BA-140	162.64	6.70	2.15E+00	2.92E+00	8.56E+00
		304.84	4.50	7.84E+00		1.56E+01
		423.70	3.20	1.45E+00		2.27E+01
		437.55	2.00	1.50E+01		3.46E+01
		537.32	25.00	8.29E-01		2.92E+00
+	LA-140	328.77	20.50	-4.27E-01	9.02E-01	3.23E+00
		487.03	45.50	-5.19E-01		1.50E+00
		815.85	23.50	7.19E-01		3.79E+00
		1596.49	95.49	1.33E-01		9.02E-01
+	CE-141	145.44	48.40	-8.30E-02	3.83E-01	3.83E-01
+	CE-143	57.36	11.80	-1.60E+06	4.36E+06	7.25E+06
		293.26	42.00	7.57E+06		4.36E+06
		664.55	5.20	1.12E+07		3.62E+07
+	CE-144	133.54	10.80	-2.79E-01	9.17E-01	9.17E-01
+	PM-144	476.78	42.00	7.91E-02	1.57E-01	3.09E-01
		618.01	98.60	-9.93E-03		1.59E-01
		696.49	99.49	-2.88E-02		1.57E-01
+	PM-145	36.85	21.70	-1.14E-03	1.27E-01	2.28E-01
		37.36	39.70	2.69E-02		1.27E-01
		42.30	15.10	-1.07E-01		3.62E-01
		72.40	2.31	-7.63E-02		4.48E+00

Analysis Report for 1510088-15
CP5008S03-04

	<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>
+	PM-146	453.90	39.94	9.54E-02	3.03E-01	3.03E-01
		735.90	14.01	-2.19E-02		1.12E+00
		747.13	13.10	8.65E-03		1.10E+00
+	ND-147	91.11	28.90	3.14E-01	2.73E+00	2.73E+00
		531.02	13.10	1.12E+00		7.72E+00
+	PM-149	285.90	3.10	-4.83E+03	8.81E+04	8.81E+04
+	EU-152	121.78	20.50	-2.10E-01	4.08E-01	4.08E-01
		244.69	5.40	-2.94E-01		2.48E+00
		344.27	19.13	-2.12E-02		6.09E-01
		778.89	9.20	-1.70E-01		1.64E+00
		964.01	10.40	-6.27E-02		2.02E+00
		1085.78	7.22	2.12E-01		2.41E+00
		1112.02	9.60	-2.50E-02		1.86E+00
		1407.95	14.94	4.33E-01		1.31E+00
+	GD-153	97.43	31.30	2.30E-02	2.93E-01	2.93E-01
		103.18	22.20	4.12E-03		4.03E-01
+	EU-154	123.07	40.50	-1.07E-01	2.07E-01	2.07E-01
		723.30	19.70	-9.98E-02		9.44E-01
		873.19	11.50	-3.16E-01		1.39E+00
		996.32	10.30	5.66E-03		1.62E+00
		1004.76	17.90	-9.20E-02		9.18E-01
		1274.45	35.50	5.16E-02		5.71E-01
+	EU-155	86.50	30.90	5.99E-02	3.15E-01	3.15E-01
		105.30	20.70	-7.59E-02		4.02E-01
+	EU-156	811.77	10.40	-1.47E+00	6.33E+00	6.33E+00
		1153.47	7.20	8.48E-01		1.22E+01
		1230.71	8.90	8.99E-01		9.84E+00
+	HO-166M	184.41	72.60	2.79E-01	1.69E-01	1.69E-01
		280.45	29.60	1.98E-01		3.65E-01
		410.94	11.10	-7.52E-01		1.14E+00
		711.69	54.10	2.93E-02		3.13E-01
+	TM-171	66.72	0.14	2.74E+00	6.09E+01	6.09E+01
+	HF-172	81.75	4.52	-4.93E-01	8.01E-01	2.20E+00
		125.81	11.30	4.79E-03		8.01E-01
+	LU-172	181.53	20.60	-1.15E+00	7.62E+00	1.56E+01
		810.06	16.63	-9.25E-01		2.59E+01
		912.12	15.25	5.10E+01		4.64E+01
		1093.66	62.50	-4.81E+00		7.62E+00
+	LU-173	100.72	5.24	5.91E-02	5.56E-01	1.58E+00
		272.11	21.20	-1.03E-02		5.56E-01
+	HF-175	343.40	84.00	-6.61E-03	1.98E-01	1.98E-01
+	LU-176	88.34	13.30	2.87E-01	1.23E-01	7.61E-01
		201.83	86.00	-5.65E-03		1.24E-01
		306.78	94.00	-6.06E-03		1.23E-01
+	TA-182	67.75	41.20	1.10E-02	2.43E-01	2.43E-01
		1121.30	34.90	8.36E-01		8.81E-01
		1189.05	16.23	-1.73E-01		1.47E+00
		1221.41	26.98	-5.85E-02		1.03E+00
		1231.02	11.44	1.95E-01		2.13E+00

Analysis Report for 1510088-15
CP5008S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	IR-192	308.46	29.68	-1.31E-01	3.61E-01	5.02E-01
		468.07	48.10	-1.36E-02		3.61E-01
+	HG-203	279.19	77.30	1.86E-01	2.31E-01	2.31E-01
+	BI-207	569.67	* 97.72	1.00E-01	1.44E-01	1.44E-01
		1063.62	74.90	4.24E-02		2.24E-01
+	TL-208	583.14	* 30.22	1.22E+00	9.04E-02	5.88E-01
		860.37	* 4.48	1.86E+00		8.46E+00
		2614.66	* 35.85	1.60E+00		9.04E-02
+	BI-210M	262.00	45.00	-3.87E-02	2.35E-01	2.35E-01
		300.00	23.00	1.20E-01		6.44E-01
+	PB-210	46.50	* 4.25	5.94E-01	1.19E+00	1.19E+00
+	PB-211	404.84	2.90	-1.69E+00	4.31E+00	4.31E+00
		831.96	2.90	4.87E-01		5.21E+00
+	BI-212	727.17	11.80	2.64E-01	1.54E+00	1.54E+00
		1620.62	2.75	2.04E+00		5.28E+00
+	PB-212	238.63	* 44.60	1.82E+00	4.79E-01	4.79E-01
		300.09	3.41	8.09E-01		4.34E+00
+	BI-214	609.31	* 46.30	1.34E+00	4.82E-01	4.82E-01
		1120.29	* 15.10	1.67E+00		1.42E+00
		1764.49	* 15.80	1.38E+00		9.54E-01
		2204.22	4.98	-1.33E-01		3.39E+00
+	PB-214	295.21	* 19.19	1.12E+00	4.39E-01	8.64E-01
		351.92	* 37.19	1.38E+00		4.39E-01
+	RN-219	401.80	6.50	9.17E-01	2.02E+00	2.02E+00
+	RA-223	323.87	3.88	-3.79E-02	2.95E+00	2.95E+00
+	RA-224	240.98	3.95	2.00E+01	4.75E+00	4.75E+00
+	RA-225	40.00	31.00	-3.52E-01	7.44E-01	7.44E-01
+	RA-226	186.21	* 3.28	4.88E+00	5.13E+00	5.13E+00
+	TH-227	50.10	8.40	-9.17E-04	7.48E-01	7.48E-01
		236.00	11.50	2.99E+00		1.46E+00
		256.20	6.30	3.53E-01		1.71E+00
+	AC-228	338.32	11.40	1.01E+00	9.22E-01	1.17E+00
		911.07	27.70	1.16E+00		9.22E-01
		969.11	16.60	1.15E+00		1.38E+00
+	TH-230	48.44	16.90	-5.33E-02	3.60E-01	3.60E-01
		62.85	4.60	1.38E+00		1.74E+00
		67.67	0.37	1.01E+00		2.22E+01
+	PA-231	283.67	1.60	-2.99E+00	5.25E+00	6.54E+00
		302.67	2.30	6.48E-02		5.25E+00
+	TH-231	25.64	14.70	-4.16E-03	3.21E-01	3.21E-01
		84.21	6.40	8.04E-01		1.45E+00
+	PA-233	311.98	38.60	-1.18E-01	6.42E-01	6.42E-01
+	PA-234	131.20	20.40	6.99E-02	4.51E-01	4.51E-01
		733.99	8.80	-3.45E-02		1.81E+00
		946.00	12.00	-2.60E-01		1.30E+00
+	PA-234M	1001.03	0.92	5.85E+00	1.88E+01	1.88E+01
+	TH-234	63.29	* 3.80	1.53E+00	2.47E+00	2.47E+00

Analysis Report for 1510088-15
CP5008S03-04

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	U-235	143.76	10.50	1.57E-01	8.97E-01	8.97E-01
		163.35	4.70	6.68E-01		2.09E+00
		205.31	4.70	5.39E-01		2.37E+00
+	NP-237	86.50	12.60	1.45E-01	7.64E-01	7.64E-01
+	NP-239	106.10	22.70	-9.39E+02	4.97E+03	4.97E+03
		228.18	10.70	3.26E+02		1.40E+04
		277.60	14.10	3.05E+03		1.04E+04
+	AM-241	59.54	35.90	-3.43E-02	2.11E-01	2.11E-01
+	AM-243	74.67	66.00	6.06E-01	1.68E-01	1.68E-01
+	CM-243	209.75	3.29	1.46E+00	7.64E-01	3.51E+00
		228.14	10.60	8.26E-02		1.03E+00
		277.60	14.00	2.25E-01		7.64E-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	1.82E+00	1.82E+00	7.45E-01	8.58E-01
	NA-22	1274.54	99.94	2.06E-01	2.06E-01	1.86E-02	9.37E-02
	NA-24	1368.53	99.99	5.72E+14	4.41E+14	0.00E+00	2.49E+14
		2754.09	99.86	4.41E+14		9.51E+13	1.56E+14
	AL-26	1808.65	99.76	1.45E-01	1.45E-01	-7.62E-03	6.02E-02
+	K-40	1460.81	* 10.67	3.17E+00	3.17E+00	1.71E+01	1.49E+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	8.74E-02	8.74E-02	3.97E-03	4.29E-02
		78.34	96.00	1.14E-01		2.64E-01	5.62E-02
	SC-46	889.25	99.98	2.21E-01	2.21E-01	6.76E-02	1.02E-01

Analysis Report for 1510088-15

CP5008S03-04

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SC-46	1120.51	99.99	3.32E-01	2.21E-01	3.13E-01	1.56E-01
V-48	983.52	99.98	6.68E-01	6.68E-01	2.24E-01	3.05E-01
	1312.10	97.50	7.51E-01		2.08E-01	3.36E-01
CR-51	320.08	9.83	2.51E+00	2.51E+00	3.73E-01	1.20E+00
MN-54	834.83	99.97	1.61E-01	1.61E-01	-3.78E-02	7.40E-02
CO-56	846.75	99.96	2.06E-01	2.06E-01	-4.90E-02	9.50E-02
	1037.75	14.03	1.71E+00		5.38E-01	7.86E-01
	1238.25	67.00	4.38E-01		2.57E-02	2.01E-01
	1771.40	15.51	1.22E+00		-4.87E-01	5.06E-01
	2598.48	16.90	1.01E+00		-1.04E-02	3.78E-01
CO-57	122.06	85.51	1.06E-01	1.06E-01	-5.46E-02	5.17E-02
	136.48	10.60	9.58E-01		3.02E-01	4.67E-01
+ CO-58	810.76	* 99.40	2.02E-01	2.02E-01	1.30E-01	9.27E-02
FE-59	1099.22	56.50	5.13E-01	5.13E-01	-6.09E-02	2.33E-01
	1291.56	43.20	6.90E-01		-2.09E-01	3.10E-01
CO-60	1173.22	100.00	1.96E-01	1.96E-01	3.63E-02	8.95E-02
	1332.49	100.00	2.12E-01		9.99E-02	9.64E-02
ZN-65	1115.52	50.75	4.32E-01	4.32E-01	6.28E-02	1.99E-01
+ GA-67	93.31	* 35.70	2.68E+02	2.68E+02	2.31E+02	1.31E+02
	208.95	2.24	4.92E+03		1.71E+03	2.39E+03
	300.22	16.00	7.95E+02		4.92E+01	3.84E+02
SE-75	121.11	16.70	5.84E-01	1.91E-01	-6.07E-01	2.84E-01
	136.00	59.20	1.91E-01		4.78E-02	9.33E-02
	264.65	59.80	2.19E-01		1.22E-02	1.05E-01
	279.53	25.20	5.28E-01		4.26E-01	2.54E-01
	400.65	11.40	1.37E+00		2.95E-01	6.56E-01
RB-82	776.52	13.00	2.99E+00	2.99E+00	1.56E-01	1.39E+00
RB-83	520.41	46.00	3.37E-01	3.37E-01	-5.74E-02	1.58E-01
	529.64	30.30	5.57E-01		7.66E-02	2.62E-01
	552.65	16.40	1.02E+00		1.52E-01	4.76E-01
KR-85	513.99	0.43	4.12E+01	4.12E+01	5.80E+01	1.97E+01
SR-85	513.99	99.27	2.53E-01	2.53E-01	3.56E-01	1.21E-01
Y-88	898.02	93.40	1.94E-01	1.94E-01	-8.60E-02	8.81E-02
	1836.01	99.38	2.00E-01		4.86E-02	8.44E-02
NB-93M	16.57	9.43	4.28E-01	4.28E-01	8.47E-01	2.08E-01
NB-94	702.63	100.00	1.55E-01	1.55E-01	6.67E-03	7.26E-02
	871.10	100.00	1.64E-01		1.11E-02	7.58E-02
NB-95	765.79	99.81	3.21E-01	3.21E-01	3.21E-02	1.50E-01
NB-95M	235.69	25.00	3.34E+02	3.34E+02	6.84E+02	1.64E+02
ZR-95	724.18	43.70	5.91E-01	3.85E-01	1.67E-01	2.78E-01
	756.72	55.30	3.85E-01		4.40E-02	1.78E-01
MO-99	181.06	6.20	6.04E+03	3.98E+03	5.96E+02	2.94E+03
	739.58	12.80	3.98E+03		-3.90E+02	1.84E+03
	778.00	4.50	1.16E+04		-1.20E+03	5.35E+03
RU-103	497.08	89.00	2.44E-01	2.44E-01	-5.94E-02	1.15E-01
RU-106	621.84	9.80	1.56E+00	1.56E+00	1.24E-01	7.28E-01
AG-108M	433.93	89.90	1.26E-01	1.26E-01	-3.56E-02	5.92E-02
	614.37	90.40	2.08E-01		6.98E-03	9.91E-02
	722.95	90.50	2.04E-01		-2.16E-02	9.62E-02
CD-109	88.03	3.72	2.78E+00	2.78E+00	9.36E-01	1.37E+00
AG-110M	657.75	93.14	1.67E-01	1.67E-01	-1.04E-02	7.81E-02
	677.61	10.53	1.61E+00		5.84E-01	7.54E-01
	706.67	16.46	1.02E+00		-5.68E-02	4.74E-01

Analysis Report for 1510088-15
CP5008S03-04

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AG-110M	763.93	21.98	8.46E-01	1.67E-01	1.94E-01	3.95E-01
	884.67	71.63	2.29E-01		-1.43E-02	1.05E-01
	1384.27	23.94	6.68E-01		-1.07E-01	2.89E-01
CD-113M	263.70	0.02	4.73E+02	4.73E+02	-1.53E+01	2.28E+02
SN-113	255.12	1.93	6.72E+00	2.36E-01	1.01E+00	3.24E+00
	391.69	64.90	2.36E-01		8.13E-02	1.12E-01
TE123M	159.00	84.10	1.46E-01	1.46E-01	5.83E-02	7.12E-02
SB-124	602.71	97.87	2.00E-01	2.00E-01	-9.59E-01	9.32E-02
	645.85	7.26	2.67E+00		1.72E-01	1.24E+00
	722.78	11.10	2.36E+00		-1.64E-02	1.11E+00
	1691.02	49.00	3.61E-01		-1.22E-01	1.46E-01
I-125	35.49	6.49	1.10E+00	1.10E+00	2.28E-01	5.38E-01
SB-125	176.33	6.89	1.46E+00	4.13E-01	-1.46E-01	7.09E-01
	427.89	29.33	4.13E-01		7.02E-02	1.95E-01
	463.38	10.35	1.44E+00		1.37E+00	6.88E-01
	600.56	17.80	7.86E-01		-3.73E-01	3.68E-01
	635.90	11.32	1.35E+00		4.76E-01	6.33E-01
SB-126	414.70	83.30	1.02E+00	9.29E-01	4.87E-01	4.87E-01
	666.33	99.60	9.76E-01		2.25E-01	4.58E-01
	695.00	99.60	9.29E-01		3.92E-02	4.33E-01
	720.50	53.80	1.93E+00		-2.27E-01	9.05E-01
SN-126	87.57	37.00	2.66E-01	2.66E-01	8.94E-02	1.30E-01
SB-127	473.00	25.00	1.56E+02	1.37E+02	-1.61E+01	7.32E+01
	685.20	35.70	1.37E+02		-4.52E+01	6.36E+01
	783.80	14.70	3.61E+02		-8.69E+00	1.67E+02
I-129	29.78	57.00	8.00E-02	8.00E-02	-9.28E-02	3.90E-02
	33.60	13.20	3.65E-01		1.13E-01	1.78E-01
	39.58	7.52	6.72E-01		-3.18E-01	3.28E-01
I-131	284.30	6.05	2.86E+01	2.27E+00	-3.52E-01	1.37E+01
	364.48	81.20	2.27E+00		-8.70E-02	1.08E+00
	636.97	7.26	3.16E+01		-4.24E+00	1.48E+01
	722.89	1.80	1.63E+02		-1.14E+00	7.69E+01
TE-132	49.72	13.10	4.66E+02	1.21E+02	-5.72E-01	2.28E+02
	228.16	88.00	1.21E+02		9.69E+00	5.84E+01
BA-133	81.00	33.00	3.09E-01	2.95E-01	-9.48E-02	1.52E-01
	302.84	17.80	6.82E-01		8.43E-03	3.28E-01
	356.01	60.00	2.95E-01		-1.62E-02	1.43E-01
I-133	529.87	86.30	2.61E+10	2.61E+10	3.59E+09	1.23E+10
XE-133	81.00	38.00	1.92E+01	1.92E+01	-5.90E+00	9.44E+00
CS-134	563.23	8.38	1.72E+00	1.80E-01	7.15E-01	8.08E-01
	569.32	15.43	9.32E-01		3.20E-02	4.38E-01
	604.70	97.60	1.80E-01		-3.54E-01	8.54E-02
	795.84	85.40	2.01E-01		8.73E-02	9.37E-02
	801.93	8.73	1.66E+00		6.17E-01	7.63E-01
CS-135	268.24	16.00	7.27E-01	7.27E-01	5.43E-02	3.51E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	7.33E+00	7.38E-01	1.83E+00	3.57E+00
	163.89	4.61	1.18E+01		3.75E+00	5.72E+00
	176.55	13.56	3.99E+00		-4.00E-01	1.94E+00
	273.65	12.66	4.87E+00		-2.67E-02	2.35E+00
	340.57	48.50	1.53E+00		5.46E-02	7.34E-01

Analysis Report for 1510088-15
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
CS-136	818.50	99.70	7.38E-01	7.38E-01	-2.09E-01	3.36E-01	
	1048.07	79.60	1.03E+00		-3.94E-01	4.60E-01	
	1235.34	19.70	5.74E+00		-1.10E+00	2.62E+00	
CS-137	661.65	85.12	1.66E-01	1.66E-01	-8.20E-02	7.75E-02	
LA-138	788.74	34.00	4.47E-01	2.49E-01	-2.49E-01	2.07E-01	
	1435.80	66.00	2.49E-01		6.85E-02	1.09E-01	
CE-139	165.85	80.35	1.40E-01	1.40E-01	-9.66E-02	6.82E-02	
BA-140	162.64	6.70	8.56E+00	2.92E+00	2.15E+00	4.16E+00	
	304.84	4.50	1.56E+01		7.84E+00	7.52E+00	
	423.70	3.20	2.27E+01		1.45E+00	1.08E+01	
	437.55	2.00	3.46E+01		1.50E+01	1.64E+01	
	537.32	25.00	2.92E+00		8.29E-01	1.37E+00	
LA-140	328.77	20.50	3.23E+00	9.02E-01	-4.27E-01	1.55E+00	
	487.03	45.50	1.50E+00		-5.19E-01	7.06E-01	
	815.85	23.50	3.79E+00		7.19E-01	1.75E+00	
	1596.49	95.49	9.02E-01		1.33E-01	3.84E-01	
CE-141	145.44	48.40	3.83E-01	3.83E-01	-8.30E-02	1.86E-01	
CE-143	57.36	11.80	7.25E+06	4.36E+06	-1.60E+06	3.55E+06	
	293.26	42.00	4.36E+06		7.57E+06	2.12E+06	
	664.55	5.20	3.62E+07		1.12E+07	1.69E+07	
CE-144	133.54	10.80	9.17E-01	9.17E-01	-2.79E-01	4.47E-01	
PM-144	476.78	42.00	3.09E-01	1.57E-01	7.91E-02	1.45E-01	
	618.01	98.60	1.59E-01		-9.93E-03	7.44E-02	
	696.49	99.49	1.57E-01		-2.88E-02	7.28E-02	
PM-145	36.85	21.70	2.28E-01	1.27E-01	-1.14E-03	1.11E-01	
	37.36	39.70	1.27E-01		2.69E-02	6.18E-02	
	42.30	15.10	3.62E-01		-1.07E-01	1.77E-01	
	72.40	2.31	4.48E+00		-7.63E-02	2.21E+00	
PM-146	453.90	39.94	3.03E-01	3.03E-01	9.54E-02	1.43E-01	
	735.90	14.01	1.12E+00		-2.19E-02	5.19E-01	
	747.13	13.10	1.10E+00		8.65E-03	5.09E-01	
ND-147	91.11	28.90	2.73E+00	2.73E+00	3.14E-01	1.34E+00	
	531.02	13.10	7.72E+00		1.12E+00	3.63E+00	
PM-149	285.90	3.10	8.81E+04	8.81E+04	-4.83E+03	4.23E+04	
EU-152	121.78	20.50	4.08E-01	4.08E-01	-2.10E-01	1.99E-01	
	244.69	5.40	2.48E+00		-2.94E-01	1.20E+00	
	344.27	19.13	6.09E-01		-2.12E-02	2.91E-01	
	778.89	9.20	1.64E+00		-1.70E-01	7.58E-01	
	964.01	10.40	2.02E+00		-6.27E-02	9.40E-01	
	1085.78	7.22	2.41E+00		2.12E-01	1.10E+00	
	1112.02	9.60	1.86E+00		-2.50E-02	8.44E-01	
	1407.95	14.94	1.31E+00		4.33E-01	5.88E-01	
	GD-153	97.43	31.30	2.93E-01	2.93E-01	2.30E-02	1.43E-01
		103.18	22.20	4.03E-01		4.12E-03	1.96E-01
EU-154	123.07	40.50	2.07E-01	2.07E-01	-1.07E-01	1.01E-01	
	723.30	19.70	9.44E-01		-9.98E-02	4.45E-01	
	873.19	11.50	1.39E+00		-3.16E-01	6.37E-01	
	996.32	10.30	1.62E+00		5.66E-03	7.41E-01	
	1004.76	17.90	9.18E-01		-9.20E-02	4.18E-01	
EU-155	1274.45	35.50	5.71E-01		5.16E-02	2.59E-01	
	86.50	30.90	3.15E-01	3.15E-01	5.99E-02	1.55E-01	
	105.30	20.70	4.02E-01		-7.59E-02	1.96E-01	
EU-156	811.77	10.40	6.33E+00	6.33E+00	-1.47E+00	2.92E+00	

Analysis Report for 1510088-15
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-156	1153.47	7.20	1.22E+01	6.33E+00	8.48E-01	5.57E+00
	1230.71	8.90	9.84E+00		8.99E-01	4.48E+00
HO-166M	184.41	72.60	1.69E-01	1.69E-01	2.79E-01	8.26E-02
	280.45	29.60	3.65E-01		1.98E-01	1.75E-01
	410.94	11.10	1.14E+00		-7.52E-01	5.44E-01
	711.69	54.10	3.13E-01		2.93E-02	1.47E-01
TM-171	66.72	0.14	6.09E+01	6.09E+01	2.74E+00	2.99E+01
HF-172	81.75	4.52	2.20E+00	8.01E-01	-4.93E-01	1.08E+00
	125.81	11.30	8.01E-01		4.79E-03	3.90E-01
LU-172	181.53	20.60	1.56E+01	7.62E+00	-1.15E+00	7.58E+00
	810.06	16.63	2.59E+01		-9.25E-01	1.20E+01
	912.12	15.25	4.64E+01		5.10E+01	2.20E+01
	1093.66	62.50	7.62E+00		-4.81E+00	3.45E+00
LU-173	100.72	5.24	1.58E+00	5.56E-01	5.91E-02	7.73E-01
	272.11	21.20	5.56E-01		-1.03E-02	2.68E-01
HF-175	343.40	84.00	1.98E-01	1.98E-01	-6.61E-03	9.49E-02
LU-176	88.34	13.30	7.61E-01	1.23E-01	2.87E-01	3.74E-01
	201.83	86.00	1.24E-01		-5.65E-03	5.99E-02
	306.78	94.00	1.23E-01		-6.06E-03	5.92E-02
TA-182	67.75	41.20	2.43E-01	2.43E-01	1.10E-02	1.19E-01
	1121.30	34.90	8.81E-01		8.36E-01	4.12E-01
	1189.05	16.23	1.47E+00		-1.73E-01	6.71E-01
	1221.41	26.98	1.03E+00		-5.85E-02	4.76E-01
	1231.02	11.44	2.13E+00		1.95E-01	9.70E-01
IR-192	308.46	29.68	5.02E-01	3.61E-01	-1.31E-01	2.40E-01
	468.07	48.10	3.61E-01		-1.36E-02	1.71E-01
HG-203	279.19	77.30	2.31E-01	2.31E-01	1.86E-01	1.11E-01
+ BI-207	569.67	* 97.72	1.44E-01	1.44E-01	1.00E-01	6.77E-02
+ TL-208	1063.62	* 74.90	2.24E-01	9.04E-02	4.24E-02	1.02E-01
	583.14	* 30.22	5.88E-01		1.22E+00	2.80E-01
	860.37	* 4.48	8.46E+00		1.86E+00	4.09E+00
BI-210M	2614.66	* 35.85	9.04E-02	2.35E-01	1.60E+00	0.00E+00
	262.00	45.00	2.35E-01		-3.87E-02	1.13E-01
+ PB-210	300.00	23.00	6.44E-01	1.19E+00	1.20E-01	3.12E-01
	46.50	* 4.25	1.19E+00		5.94E-01	5.82E-01
PB-211	404.84	2.90	4.31E+00	4.31E+00	-1.69E+00	2.05E+00
	831.96	2.90	5.21E+00		4.87E-01	2.39E+00
BI-212	727.17	11.80	1.54E+00	1.54E+00	2.64E-01	7.25E-01
	1620.62	2.75	5.28E+00		2.04E+00	2.23E+00
+ PB-212	238.63	* 44.60	4.79E-01	4.79E-01	1.82E+00	2.35E-01
+ BI-214	300.09	3.41	4.34E+00	4.82E-01	8.09E-01	2.11E+00
	609.31	* 46.30	4.82E-01		1.34E+00	2.31E-01
	1120.29	* 15.10	1.42E+00		1.67E+00	6.58E-01
	1764.49	* 15.80	9.54E-01		1.38E+00	4.00E-01
+ PB-214	2204.22	4.98	3.39E+00	4.39E-01	-1.33E-01	1.41E+00
	295.21	* 19.19	8.64E-01		1.12E+00	4.21E-01
RN-219	351.92	* 37.19	4.39E-01	2.02E+00	1.38E+00	2.12E-01
	401.80	6.50	2.02E+00		9.17E-01	9.66E-01
RA-223	323.87	3.88	2.95E+00	2.95E+00	-3.79E-02	1.41E+00
RA-224	240.98	3.95	4.75E+00	4.75E+00	2.00E+01	2.33E+00
RA-225	40.00	31.00	7.44E-01	7.44E-01	-3.52E-01	3.63E-01
+ RA-226	186.21	* 3.28	5.13E+00	5.13E+00	4.88E+00	2.52E+00
TH-227	50.10	8.40	7.48E-01	7.48E-01	-9.17E-04	3.66E-01

Analysis Report for 1510088-15
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TH-227	236.00	11.50	1.46E+00	7.48E-01	2.99E+00	7.13E-01
	256.20	6.30	1.71E+00		3.53E-01	8.25E-01
AC-228	338.32	11.40	1.17E+00	9.22E-01	1.01E+00	5.64E-01
	911.07	27.70	9.22E-01		1.16E+00	4.37E-01
TH-230	969.11	16.60	1.38E+00		1.15E+00	6.50E-01
	48.44	16.90	3.60E-01	3.60E-01	-5.33E-02	1.76E-01
PA-231	62.85	4.60	1.74E+00		1.38E+00	8.53E-01
	67.67	0.37	2.22E+01		1.01E+00	1.09E+01
	283.67	1.60	6.54E+00	5.25E+00	-2.99E+00	3.14E+00
TH-231	302.67	2.30	5.25E+00		6.48E-02	2.52E+00
	25.64	14.70	3.21E-01	3.21E-01	-4.16E-03	1.57E-01
PA-233	84.21	6.40	1.45E+00		8.04E-01	7.13E-01
	311.98	38.60	6.42E-01	6.42E-01	-1.18E-01	3.07E-01
PA-234	131.20	20.40	4.51E-01	4.51E-01	6.99E-02	2.20E-01
	733.99	8.80	1.81E+00		-3.45E-02	8.42E-01
PA-234M	946.00	12.00	1.30E+00		-2.60E-01	5.93E-01
	1001.03	0.92	1.88E+01	1.88E+01	5.85E+00	8.61E+00
+ TH-234	63.29	* 3.80	2.47E+00	2.47E+00	1.53E+00	1.21E+00
U-235	143.76	10.50	8.97E-01	8.97E-01	1.57E-01	4.37E-01
	163.35	4.70	2.09E+00		6.68E-01	1.02E+00
	205.31	4.70	2.37E+00		5.39E-01	1.15E+00
NP-237	86.50	12.60	7.64E-01	7.64E-01	1.45E-01	3.75E-01
NP-239	106.10	22.70	4.97E+03	4.97E+03	-9.39E+02	2.43E+03
	228.18	10.70	1.40E+04		3.26E+02	6.76E+03
	277.60	14.10	1.04E+04		3.05E+03	4.97E+03
AM-241	59.54	35.90	2.11E-01	2.11E-01	-3.43E-02	1.04E-01
AM-243	74.67	66.00	1.68E-01	1.68E-01	6.06E-01	8.28E-02
CM-243	209.75	3.29	3.51E+00	7.64E-01	1.46E+00	1.71E+00
	228.14	10.60	1.03E+00		8.26E-02	4.98E-01
	277.60	14.00	7.64E-01		2.25E-01	3.67E-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 1510088-15
CP5008S03-04

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: CP5008S03-04

Elapsed Live time: 3600
 Elapsed Real Time: 3645

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	15	91
17:	77	97	59	59	52	64	73	79
25:	59	49	48	56	57	47	57	49
33:	58	69	56	63	56	52	64	49
41:	61	63	57	60	90	88	83	57
49:	65	68	76	80	88	67	77	81
57:	78	84	94	93	130	121	129	111
65:	105	74	109	116	82	101	103	101
73:	176	229	226	241	240	126	99	88
81:	88	90	91	111	115	147	117	105
89:	109	98	119	143	117	89	64	70
97:	46	58	77	63	54	67	50	66
105:	74	54	60	75	58	64	62	63
113:	62	68	57	42	57	47	57	49
121:	44	45	49	56	68	50	63	69
129:	55	57	56	65	50	54	59	56
137:	48	54	72	48	40	59	50	65
145:	42	49	50	43	57	48	51	48
153:	52	62	68	49	47	51	51	58
161:	46	47	40	45	57	42	40	37
169:	40	43	51	54	32	49	33	52
177:	37	40	48	32	44	56	49	78
185:	91	77	62	63	46	36	38	52
193:	33	39	33	40	42	36	43	42
201:	37	34	38	36	44	32	34	58
209:	62	51	36	28	45	37	40	47
217:	28	30	37	24	43	31	31	46
225:	36	27	37	30	38	23	31	33
233:	34	33	33	50	114	189	166	88
241:	81	65	37	37	21	25	29	15
249:	32	29	22	33	29	21	23	34
257:	22	21	26	28	19	20	28	29
265:	26	26	25	25	33	39	30	22
273:	14	16	28	22	24	23	22	24
281:	27	27	14	18	15	18	19	27
289:	28	18	13	29	33	66	96	60
297:	27	13	33	31	22	32	26	20
305:	22	20	25	22	15	14	24	12
313:	18	22	12	11	27	18	17	16
321:	23	23	15	13	20	17	28	17
329:	19	23	17	14	20	20	17	24
337:	40	38	34	21	13	11	24	14
345:	15	18	22	19	23	38	124	88
353:	43	21	19	15	10	13	16	18
361:	12	7	17	14	17	15	16	18

369: 11 23 17 8 17 13 10 16

Sample Title: CP5008S03-04

Channel	1	2	3	4	5	6	7	8
377:	15	8	9	14	12	12	12	11
385:	14	8	18	12	17	11	21	18
393:	16	15	16	15	15	18	21	18
401:	10	15	21	14	18	9	16	12
409:	16	14	20	16	15	15	25	20
417:	15	18	19	12	11	17	8	12
425:	23	9	12	15	8	7	12	10
433:	10	7	10	12	17	10	9	16
441:	13	10	11	5	10	8	13	6
449:	12	11	9	11	11	12	16	3
457:	11	16	9	16	12	15	25	19
465:	11	22	11	9	5	13	10	4
473:	8	10	12	10	10	13	12	11
481:	8	5	11	7	11	16	10	10
489:	5	6	8	13	12	10	9	9
497:	11	9	8	6	10	9	15	11
505:	9	7	11	20	24	35	34	22
513:	15	7	16	4	14	9	8	5
521:	7	7	9	9	9	9	11	15
529:	9	9	10	5	6	10	11	5
537:	9	9	11	7	8	7	6	6
545:	8	5	9	5	11	10	5	6
553:	10	9	10	8	2	9	12	10
561:	14	9	11	6	6	8	9	13
569:	12	16	9	10	0	11	12	5
577:	8	7	9	8	18	31	58	32
585:	15	7	6	9	8	12	7	8
593:	7	13	4	7	14	11	10	7
601:	8	2	5	7	8	10	16	49
609:	70	43	27	8	8	14	9	6
617:	11	7	10	9	4	8	10	6
625:	8	3	8	8	12	5	12	12
633:	5	9	7	7	12	2	10	3
641:	6	8	7	7	9	6	4	5
649:	6	7	8	6	9	9	9	5
657:	4	4	10	7	7	6	8	9
665:	7	8	14	9	9	9	5	6
673:	11	5	6	8	8	8	8	11
681:	7	3	8	7	9	7	6	6
689:	7	7	10	5	6	8	8	5
697:	5	9	9	5	8	9	4	6
705:	9	8	9	5	5	9	16	10
713:	8	12	4	8	6	12	9	5
721:	6	13	10	8	10	14	16	6
729:	10	9	4	7	14	7	10	5
737:	2	6	5	8	8	7	2	5
745:	2	5	9	6	6	11	3	6
753:	4	8	3	5	8	6	6	7
761:	4	4	5	10	9	6	14	9
769:	6	6	7	10	9	8	5	5
777:	6	8	5	3	7	3	9	2
785:	8	3	14	4	2	3	3	11
793:	7	5	15	8	6	0	5	9

801: 2 7 3 5 7 3 3 3

Sample Title: CP5008S03-04

Channel	1	2	3	4	5	6	7	8	9
809:	7	13	4	5	9	0	2	9	
817:	6	5	8	1	4	0	6	3	
825:	3	2	5	8	5	4	9	2	
833:	3	3	4	6	6	6	4	5	
841:	7	8	2	4	4	9	4	4	
849:	4	6	7	6	6	3	3	8	
857:	3	4	10	9	9	7	8	3	
865:	7	4	11	1	4	6	9	6	
873:	4	3	4	6	2	8	4	6	
881:	1	5	2	3	3	8	5	5	
889:	5	8	4	6	5	7	1	7	
897:	2	1	5	4	3	5	5	6	
905:	6	4	8	4	12	14	22	27	
913:	13	6	6	2	7	6	3	0	
921:	2	6	3	6	2	4	3	4	
929:	3	3	2	5	6	8	4	5	
937:	4	4	6	5	2	3	1	6	
945:	3	4	4	11	1	3	4	8	
953:	3	7	3	4	4	7	3	3	
961:	4	7	5	9	6	8	7	16	
969:	10	13	7	7	5	3	2	4	
977:	1	5	3	4	5	5	3	5	
985:	6	5	1	1	3	4	2	5	
993:	3	4	3	3	8	3	4	4	
1001:	4	3	8	4	2	3	2	5	
1009:	4	3	4	2	6	3	5	5	
1017:	3	4	1	2	4	5	5	2	
1025:	7	5	4	1	6	5	2	5	
1033:	4	5	8	2	4	6	4	5	
1041:	3	5	2	2	2	3	3	2	
1049:	3	5	4	2	8	2	4	4	
1057:	1	3	3	5	7	1	2	5	
1065:	3	2	5	4	1	5	6	4	
1073:	3	3	4	7	4	3	5	2	
1081:	3	2	1	3	2	5	5	7	
1089:	7	2	3	5	3	5	2	3	
1097:	1	3	6	7	5	2	5	4	
1105:	2	6	2	1	3	3	7	4	
1113:	3	4	4	5	1	6	10	19	
1121:	16	9	6	1	4	2	5	2	
1129:	5	3	6	5	4	5	5	5	
1137:	4	5	1	4	1	5	2	4	
1145:	2	3	8	3	3	7	4	3	
1153:	4	4	8	4	4	4	5	3	
1161:	4	6	1	6	5	3	4	4	
1169:	5	4	4	6	3	5	1	5	
1177:	4	4	3	3	3	7	2	4	
1185:	4	2	6	4	3	6	6	2	
1193:	4	4	4	6	4	4	3	4	
1201:	5	3	5	1	7	3	2	5	
1209:	2	4	5	7	5	7	8	4	
1217:	7	1	7	5	6	4	5	7	
1225:	7	8	5	1	2	8	3	5	

1233: 4 6 2 2 6 2 8 7

Sample Title: CP5008S03-04

Channel	1	2	3	4	5	6	7	8
1241:	5	6	9	4	3	4	1	3
1249:	5	4	3	3	4	1	3	3
1257:	2	5	3	6	3	2	1	6
1265:	3	4	4	4	3	6	5	2
1273:	1	4	3	7	0	6	1	6
1281:	3	6	5	4	4	2	6	2
1289:	6	4	1	1	1	3	2	4
1297:	5	3	3	3	5	3	3	2
1305:	1	2	1	3	3	1	1	3
1313:	1	2	9	2	2	2	4	1
1321:	3	4	4	2	1	1	2	4
1329:	3	1	6	3	6	2	5	4
1337:	1	7	1	2	2	0	2	1
1345:	1	0	1	3	2	3	4	1
1353:	1	1	1	0	6	1	1	3
1361:	0	3	2	2	0	3	0	1
1369:	6	1	1	1	2	2	1	2
1377:	1	3	4	5	1	3	2	0
1385:	2	0	0	1	2	2	1	2
1393:	1	0	1	1	0	2	1	2
1401:	1	1	2	2	3	4	2	6
1409:	2	4	2	1	4	1	2	0
1417:	3	3	2	1	1	4	1	0
1425:	3	4	1	1	2	0	1	4
1433:	3	2	1	2	0	2	2	1
1441:	1	2	1	2	1	0	2	4
1449:	1	3	0	5	1	3	2	3
1457:	1	4	13	48	81	75	30	4
1465:	2	2	2	0	2	1	0	0
1473:	1	3	0	4	0	0	1	1
1481:	2	0	3	1	0	4	0	0
1489:	3	4	0	2	0	2	1	0
1497:	2	2	2	1	3	1	1	1
1505:	0	3	4	1	1	7	2	3
1513:	0	0	3	0	0	3	1	2
1521:	2	0	2	0	0	2	1	1
1529:	1	0	0	1	1	0	1	0
1537:	2	2	1	1	2	0	1	1
1545:	0	0	0	0	0	0	1	2
1553:	0	0	2	0	0	0	2	2
1561:	1	1	2	1	1	0	0	3
1569:	2	1	0	2	0	0	1	0
1577:	1	1	1	2	2	1	0	1
1585:	2	1	1	2	3	1	2	5
1593:	3	1	1	0	0	2	2	1
1601:	1	1	1	0	2	0	0	1
1609:	2	0	2	1	0	0	0	0
1617:	1	1	1	1	3	0	0	1
1625:	2	1	1	0	0	1	3	2
1633:	2	2	1	1	1	1	1	1
1641:	1	1	0	0	1	1	0	0
1649:	1	0	0	1	0	1	1	1
1657:	1	1	1	1	0	2	1	0

1665: 0 0 0 0 0 0 1 0

Sample Title: CP5008S03-04

Channel	1	2	3	4	5	6	7	8	9
1673:	1	0	1	0	0	0	1	1	1
1681:	0	1	0	0	0	1	1	1	0
1689:	0	1	2	0	0	1	1	1	0
1697:	4	2	0	2	1	2	2	2	2
1705:	0	0	1	3	1	0	5	1	1
1713:	0	0	2	0	1	0	2	1	1
1721:	0	1	1	0	2	1	0	0	0
1729:	1	3	2	0	2	0	0	0	0
1737:	1	1	1	1	2	0	1	2	2
1745:	1	0	0	1	1	0	1	0	0
1753:	0	1	0	1	1	1	1	1	1
1761:	1	0	1	6	11	7	2	0	0
1769:	0	1	2	0	1	0	2	0	0
1777:	0	1	0	0	2	3	0	0	0
1785:	0	1	0	0	0	0	1	0	0
1793:	1	1	0	0	0	3	0	1	1
1801:	1	2	1	0	0	1	1	1	1
1809:	0	1	0	0	2	2	0	0	0
1817:	0	1	0	1	3	2	1	2	2
1825:	1	0	1	0	0	1	1	1	1
1833:	2	0	1	1	1	0	1	1	1
1841:	1	0	1	1	0	0	0	1	1
1849:	0	2	1	0	0	0	0	0	0
1857:	0	0	0	1	0	0	1	0	0
1865:	1	1	1	1	1	2	1	1	1
1873:	1	1	0	0	2	0	2	1	1
1881:	0	0	1	0	1	1	1	0	0
1889:	0	0	0	2	2	1	0	1	1
1897:	1	0	0	1	0	2	0	2	2
1905:	0	0	1	0	1	0	1	1	1
1913:	1	0	1	2	0	0	1	1	1
1921:	0	1	1	1	1	1	1	0	0
1929:	0	1	0	0	0	0	1	0	0
1937:	1	0	0	3	0	2	2	1	1
1945:	1	0	0	0	0	0	1	0	0
1953:	1	0	1	0	1	1	0	0	0
1961:	0	1	1	1	0	1	0	0	0
1969:	1	0	1	0	1	1	1	0	0
1977:	1	0	0	1	0	2	0	1	1
1985:	1	2	1	0	1	1	0	1	1
1993:	2	1	1	1	0	0	0	1	1
2001:	0	0	0	2	0	0	2	0	0
2009:	1	0	0	0	1	0	0	0	0
2017:	0	0	1	0	0	0	2	1	1
2025:	1	0	1	1	0	1	0	0	0
2033:	2	0	0	0	1	1	1	1	1
2041:	1	0	2	2	0	2	0	0	0
2049:	0	1	2	1	1	2	0	0	0
2057:	0	2	0	1	0	1	2	2	2
2065:	0	0	0	0	0	0	0	0	0
2073:	1	0	0	2	0	0	0	0	0
2081:	0	0	0	0	1	2	0	0	0
2089:	2	1	1	0	0	0	0	0	0

2097: 0 0 0 0 0 2 0 2

Sample Title: CP5008S03-04

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

2529: 0 0 0 0 0 1 1 1

Sample Title: CP5008S03-04

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

2961: 1 1 0 0 0 1 0 0

Sample Title: CP5008S03-04

Channel	1	2	3	4	5	6	7	8
2969:	1	0	0	0	0	0	1	0
2977:	0	0	0	0	0	0	1	0
2985:	0	1	1	0	0	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	1	0	0	0	1	0	1
3009:	1	0	0	0	0	0	0	0
3017:	0	0	1	0	0	0	0	0
3025:	0	1	1	0	1	0	0	0
3033:	0	0	0	0	0	0	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	0	1	0
3065:	0	1	0	0	0	0	0	0
3073:	0	0	1	0	1	1	0	0
3081:	0	0	0	0	1	0	0	0
3089:	0	0	1	0	0	0	0	0
3097:	0	0	0	0	0	1	0	0
3105:	0	0	1	0	0	1	0	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	0	0	0	0	1	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	1	0	0
3145:	1	0	0	0	0	0	0	0
3153:	0	0	1	0	1	0	0	1
3161:	1	0	0	0	0	1	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	0	0	0	0	0	0
3201:	0	0	1	1	0	0	0	1
3209:	0	0	0	1	0	0	0	1
3217:	0	0	0	0	0	0	0	0
3225:	0	1	0	0	0	0	0	0
3233:	0	1	0	0	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	0	0	0	1
3273:	0	0	0	0	1	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	1	0	1	0	0	0	0
3297:	0	1	0	0	0	0	0	0
3305:	0	1	0	0	0	0	1	0
3313:	0	0	0	0	1	0	0	0
3321:	0	0	0	2	1	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	1
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	1	0	0	0	0	0	0	0
3377:	0	0	0	0	0	0	1	0
3385:	1	0	0	0	0	0	0	0

3393: 0 1 0 0 1 0 0 0

Sample Title: CP5008S03-04

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	1	0	1	1	0
3417:	1	0	1	0	1	1	0	0
3425:	0	0	0	0	0	0	0	0
3433:	1	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:	1	0	0	0	0	0	0	0
3465:	1	0	0	0	0	0	0	1
3473:	0	0	0	1	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	1	2	0
3513:	0	0	0	0	0	1	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	1	0
3537:	0	0	1	0	1	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	1	0	0	0	0
3561:	0	0	2	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	1
3585:	0	0	1	0	0	0	1	0
3593:	0	0	0	0	0	0	0	0
3601:	0	1	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	1	1	0	0
3641:	1	0	0	0	0	0	0	2
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	1	0	0	1
3665:	0	0	0	0	0	0	1	0
3673:	0	0	0	0	0	0	0	1
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	1	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	1	0	0	0	1	1	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	1	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	1	0	0
3785:	0	0	1	1	0	0	1	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	1	1	0	0	1	0
3809:	0	1	1	0	0	0	0	0
3817:	0	0	0	0	0	0	0	1

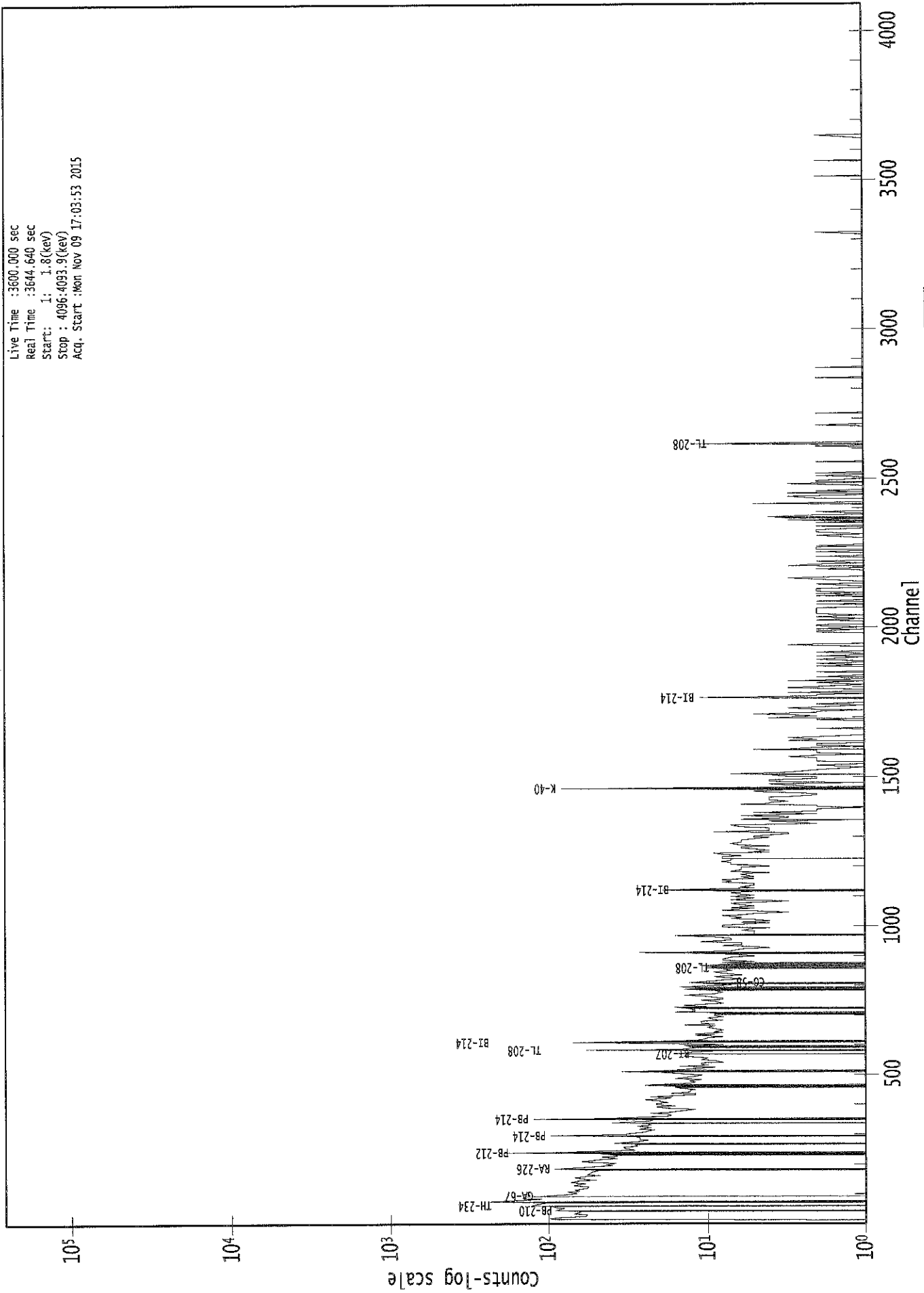
3825: 0 0 0 0 0 0 1 1

Sample Title: CP5008S03-04

Channel								
3833:	0	1	0	0	0	0	0	0
3841:	0	0	0	1	0	0	1	0
3849:	0	1	0	0	0	0	0	1
3857:	0	0	0	0	0	0	0	0
3865:	1	1	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:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	1	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	1	0	0	0	0	0	1
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	1	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	1	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	0	0	0	0	0	0
4009:	0	0	0	0	1	0	0	1
4017:	0	0	0	0	0	0	0	0
4025:	1	0	0	0	0	0	0	1
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	1	0	1	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	1	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000029356.CNF

Live Time :3600.000 sec
Real Time :3644.640 sec
Start: 1: 1.8(keV)
Stop : 4096.4093.9(keV)
Acq. Start :Mon Nov 09 17:03:53 2015



KB
11/10/15Analysis Report for 1510088-16
CP5008S06-07

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-16
Sample Description : CP5008S06-07
Sample Type : SOIL

Sample Size : 5.384E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 9:03:21AM
Acquisition Started : 11/9/2015 5:26:11PM

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) : 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 : 29357

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

Analysis Report for 1510088-16
CP5008S06-07

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 6:26:15PM
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	44.22	44.33	0.0000	0.00
2	76.30	76.39	0.0000	0.00
3	92.70	92.78	0.0000	0.00
4	183.22	183.25	0.0000	0.00
5	186.11	186.14	0.0000	0.00
6	208.71	208.73	0.0000	0.00
7	238.93	238.93	0.0000	0.00
8	242.13	242.12	0.0000	0.00
9	257.69	257.67	0.0000	0.00
10	269.79	269.77	0.0000	0.00
11	276.52	276.49	0.0000	0.00
12	295.30	295.27	0.0000	0.00
13	299.94	299.91	0.0000	0.00
14	328.09	328.04	0.0000	0.00
15	338.11	338.05	0.0000	0.00
16	352.05	351.98	0.0000	0.00
17	403.80	403.71	0.0000	0.00
18	463.68	463.56	0.0000	0.00
19	510.99	510.84	0.0000	0.00
20	583.24	583.06	0.0000	0.00
21	610.04	609.85	0.0000	0.00
22	726.75	726.51	0.0000	0.00
23	795.07	794.79	0.0000	0.00
24	840.46	840.17	0.0000	0.00
25	860.45	860.15	0.0000	0.00
26	911.46	911.14	0.0000	0.00
27	933.85	933.51	0.0000	0.00
28	964.83	964.48	0.0000	0.00
29	969.29	968.94	0.0000	0.00
30	1120.07	1119.67	0.0000	0.00
31	1238.05	1237.60	0.0000	0.00
32	1361.70	1361.21	0.0000	0.00
33	1378.40	1377.90	0.0000	0.00
34	1408.37	1407.87	0.0000	0.00
35	1461.04	1460.52	0.0000	0.00
36	1509.21	1508.68	0.0000	0.00
37	1525.54	1525.00	0.0000	0.00
38	1598.21	1597.65	0.0000	0.00
39	1617.57	1617.00	0.0000	0.00
40	1624.57	1624.00	0.0000	0.00
41	1630.64	1630.07	0.0000	0.00
42	1643.95	1643.38	0.0000	0.00

Analysis Report for 1510088-16
CP5008S06-07

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1648.34	1647.76	0.0000	0.00
44	1691.86	1691.28	0.0000	0.00
45	1729.57	1728.97	0.0000	0.00
46	1764.66	1764.05	0.0000	0.00
47	1847.35	1846.72	0.0000	0.00
48	1863.74	1863.11	0.0000	0.00
49	1985.11	1984.46	0.0000	0.00
50	2103.60	2102.92	0.0000	0.00
51	2119.13	2118.45	0.0000	0.00
52	2203.87	2203.17	0.0000	0.00
53	2251.30	2250.60	0.0000	0.00
54	2298.91	2298.20	0.0000	0.00
55	2333.02	2332.31	0.0000	0.00
56	2614.44	2613.70	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

0913A

Analysis Report for 1510088-16
CP5008S06-07

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 6:26:15PM

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	44.22	43 -	49	44.33	6.40E+01	37.30	4.19E+02	1.33
	2	76.30	72 -	79	76.39	1.10E+03	117.98	1.59E+03	3.74
	3	92.70	90 -	96	92.78	2.53E+02	92.65	1.32E+03	1.52
M	4	183.22	182 -	191	183.25	2.61E+01	25.44	2.07E+02	1.45
m	5	186.11	182 -	191	186.14	1.96E+02	50.48	4.21E+02	1.45
	6	208.71	204 -	212	208.73	8.03E+01	74.52	8.03E+02	1.88
M	7	238.93	235 -	248	238.93	6.20E+02	62.71	3.08E+02	1.41
m	8	242.13	235 -	248	242.12	1.80E+02	46.99	2.69E+02	1.42
	9	257.69	255 -	261	257.67	5.64E+01	48.66	3.91E+02	3.21
	10	269.79	268 -	274	269.77	4.78E+01	52.28	4.68E+02	1.96
	11	276.52	274 -	278	276.49	3.92E+01	40.43	3.30E+02	1.02
M	12	295.30	291 -	305	295.27	3.38E+02	49.32	2.49E+02	1.57
m	13	299.94	291 -	305	299.91	4.96E+01	41.59	2.80E+02	2.00
	14	328.09	324 -	331	328.04	7.03E+01	48.83	3.47E+02	1.91
	15	338.11	333 -	343	338.05	1.68E+02	63.69	4.53E+02	1.86
	16	352.05	348 -	355	351.98	5.57E+02	67.26	3.81E+02	1.34
	17	403.80	401 -	407	403.71	3.42E+01	36.60	2.22E+02	3.85
	18	463.68	460 -	467	463.56	4.54E+01	40.84	2.47E+02	1.33
	19	510.99	507 -	516	510.84	1.56E+02	49.06	2.54E+02	2.12
	20	583.24	579 -	587	583.06	2.57E+02	46.62	1.79E+02	1.61
	21	610.04	607 -	625	609.85	4.66E+02	71.31	3.02E+02	1.90
	22	726.75	722 -	730	726.51	6.10E+01	30.76	1.08E+02	1.97
	23	795.07	793 -	798	794.79	2.53E+01	22.02	7.94E+01	1.74
	24	840.46	833 -	847	840.17	4.15E+01	44.07	1.85E+02	10.12
	25	860.45	856 -	864	860.15	2.67E+01	33.54	1.55E+02	1.93
	26	911.46	908 -	916	911.14	1.63E+02	35.63	9.56E+01	2.43
	27	933.85	930 -	937	933.51	2.73E+01	24.82	8.55E+01	2.59
M	28	964.83	962 -	974	964.48	3.28E+01	19.51	5.49E+01	2.38
m	29	969.29	962 -	974	968.94	1.14E+02	31.50	6.47E+01	2.66
	30	1120.07	1115 -	1123	1119.67	1.21E+02	29.38	5.81E+01	1.72
	31	1238.05	1233 -	1242	1237.60	3.15E+01	32.22	1.31E+02	1.80
	32	1361.70	1357 -	1366	1361.21	1.82E+01	17.86	3.56E+01	5.91
	33	1378.40	1374 -	1381	1377.90	1.69E+01	18.11	4.23E+01	1.84
	34	1408.37	1402 -	1413	1407.87	2.63E+01	26.00	6.93E+01	1.92
	35	1461.04	1455 -	1467	1460.52	6.26E+02	53.66	4.03E+01	2.31
	36	1509.21	1506 -	1513	1508.68	1.28E+01	14.14	2.65E+01	1.12
	37	1525.54	1521 -	1528	1525.00	1.15E+01	9.59	7.07E+00	2.64
	38	1598.21	1596 -	1600	1597.65	1.02E+01	7.09	1.64E+00	1.43
M	39	1617.57	1616 -	1627	1617.00	8.00E+00	0.71	2.00E+00	2.40
m	40	1624.57	1616 -	1627	1624.00	1.00E+01	10.02	2.71E+00	2.41

Analysis Report for 1510088-16

CP5008S06-07

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1630.64	1628 - 1633		1630.07	9.09E+00	7.28	3.82E+00	2.70
M	42	1643.95	1642 - 1650		1643.38	8.83E+00	5.00	1.57E+00	2.11
m	43	1648.34	1642 - 1650		1647.76	7.40E+00	5.74	1.21E+00	3.90
	44	1691.86	1687 - 1694		1691.28	9.96E+00	8.00	4.08E+00	4.58
	45	1729.57	1724 - 1733		1728.97	2.01E+01	14.83	1.99E+01	1.81
	46	1764.66	1758 - 1769		1764.05	7.40E+01	22.09	2.40E+01	2.48
	47	1847.35	1844 - 1850		1846.72	1.34E+01	10.62	1.12E+01	2.37
	48	1863.74	1859 - 1866		1863.11	9.54E+00	9.17	6.92E+00	1.52
	49	1985.11	1981 - 1987		1984.46	6.60E+00	8.03	6.80E+00	3.55
	50	2103.60	2098 - 2108		2102.92	2.30E+01	11.59	5.92E+00	1.85
	51	2119.13	2114 - 2122		2118.45	1.18E+01	10.22	8.50E+00	2.87
	52	2203.87	2200 - 2207		2203.17	1.24E+01	14.00	2.51E+01	2.08
	53	2251.30	2247 - 2253		2250.60	5.00E+00	4.47	0.00E+00	1.70
	54	2298.91	2294 - 2301		2298.20	1.00E+01	6.32	0.00E+00	2.12
	55	2333.02	2328 - 2335		2332.31	7.00E+00	7.21	4.00E+00	2.68
	56	2614.44	2609 - 2618		2613.70	8.30E+01	18.22	0.00E+00	3.08

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 6:26:15PM

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	44.22	43 -	49	6.40E+01	37.30	4.19E+02	3.36E+01
	2	76.30	72 -	79	1.10E+03	117.98	1.59E+03	8.02E+01
	3	92.70	90 -	96	2.53E+02	92.65	1.32E+03	7.15E+01
M	4	183.22	182 -	191	2.61E+01	25.44	2.07E+02	2.37E+01
m	5	186.11	182 -	191	1.96E+02	50.48	4.21E+02	3.37E+01
	6	208.71	204 -	212	8.03E+01	74.52	8.03E+02	5.95E+01
M	7	238.93	235 -	248	6.20E+02	62.71	3.08E+02	2.88E+01
m	8	242.13	235 -	248	1.80E+02	46.99	2.69E+02	2.70E+01
	9	257.69	255 -	261	5.64E+01	48.66	3.91E+02	3.80E+01
	10	269.79	268 -	274	4.78E+01	52.28	4.68E+02	4.14E+01
	11	276.52	274 -	278	3.92E+01	40.43	3.30E+02	3.16E+01
M	12	295.30	291 -	305	3.38E+02	49.32	2.49E+02	2.59E+01

: 00915

Analysis Report for 1510088-16

CP5008S06-07

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	13	299.94	291 -	305	4.96E+01	41.59	2.80E+02	2.75E+01
	14	328.09	324 -	331	7.03E+01	48.83	3.47E+02	3.77E+01
	15	338.11	333 -	343	1.68E+02	63.69	4.53E+02	4.78E+01
	16	352.05	348 -	355	5.57E+02	67.26	3.81E+02	3.94E+01
	17	403.80	401 -	407	3.42E+01	36.60	2.22E+02	2.85E+01
	18	463.68	460 -	467	4.54E+01	40.84	2.47E+02	3.17E+01
	19	510.99	507 -	516	1.56E+02	49.06	2.54E+02	3.47E+01
	20	583.24	579 -	587	2.57E+02	46.62	1.79E+02	2.78E+01
	21	610.04	607 -	625	4.66E+02	71.31	3.02E+02	1.38E+01
	22	726.75	722 -	730	6.10E+01	30.76	1.08E+02	2.18E+01
	23	795.07	793 -	798	2.53E+01	22.02	7.94E+01	1.61E+01
	24	840.46	833 -	847	4.15E+01	44.07	1.85E+02	3.46E+01
	25	860.45	856 -	864	2.67E+01	33.54	1.55E+02	2.62E+01
	26	911.46	908 -	916	1.63E+02	35.63	9.56E+01	2.04E+01
	27	933.85	930 -	937	2.73E+01	24.82	8.55E+01	1.85E+01
M	28	964.83	962 -	974	3.28E+01	19.51	5.49E+01	1.22E+01
m	29	969.29	962 -	974	1.14E+02	31.50	6.47E+01	1.32E+01
	30	1120.07	1115 -	1123	1.21E+02	29.38	5.81E+01	1.60E+01
	31	1238.05	1233 -	1242	3.15E+01	32.22	1.31E+02	2.48E+01
	32	1361.70	1357 -	1366	1.82E+01	17.86	3.56E+01	1.29E+01
	33	1378.40	1374 -	1381	1.69E+01	18.11	4.23E+01	1.33E+01
	34	1408.37	1402 -	1413	2.63E+01	26.00	6.93E+01	1.96E+01
	35	1461.04	1455 -	1467	6.26E+02	53.66	4.03E+01	1.59E+01
	36	1509.21	1506 -	1513	1.28E+01	14.14	2.65E+01	1.00E+01
	37	1525.54	1521 -	1528	1.15E+01	9.59	7.07E+00	5.58E+00
	38	1598.21	1596 -	1600	1.02E+01	7.09	1.64E+00	2.54E+00
M	39	1617.57	1616 -	1627	8.00E+00	0.71	2.00E+00	2.33E+00
m	40	1624.57	1616 -	1627	1.00E+01	10.02	2.71E+00	2.71E+00
	41	1630.64	1628 -	1633	9.09E+00	7.28	3.82E+00	3.35E+00
M	42	1643.95	1642 -	1650	8.83E+00	5.00	1.57E+00	2.06E+00
m	43	1648.34	1642 -	1650	7.40E+00	5.74	1.21E+00	1.81E+00
	44	1691.86	1687 -	1694	9.96E+00	8.00	4.08E+00	4.04E+00
	45	1729.57	1724 -	1733	2.01E+01	14.83	1.99E+01	9.72E+00
	46	1764.66	1758 -	1769	7.40E+01	22.09	2.40E+01	1.14E+01
	47	1847.35	1844 -	1850	1.34E+01	10.62	1.12E+01	6.32E+00
	48	1863.74	1859 -	1866	9.54E+00	9.17	6.92E+00	5.57E+00
	49	1985.11	1981 -	1987	6.60E+00	8.03	6.80E+00	5.07E+00
	50	2103.60	2098 -	2108	2.30E+01	11.59	5.92E+00	5.33E+00
	51	2119.13	2114 -	2122	1.18E+01	10.22	8.50E+00	6.23E+00
	52	2203.87	2200 -	2207	1.24E+01	14.00	2.51E+01	9.94E+00
	53	2251.30	2247 -	2253	5.00E+00	4.47	0.00E+00	0.00E+00
	54	2298.91	2294 -	2301	1.00E+01	6.32	0.00E+00	0.00E+00
	55	2333.02	2328 -	2335	7.00E+00	7.21	4.00E+00	4.03E+00
	56	2614.44	2609 -	2618	8.30E+01	18.22	0.00E+00	0.00E+00

Analysis Report for 1510088-16
CP5008S06-07

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 6:26:15PM

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	44.22	43 -	49	44.33	6.40E+01	37.30	4.19E+02	.....
	2	76.30	72 -	79	76.39	1.10E+03	117.98	1.59E+03	.....
	3	92.70	90 -	96	92.78	2.53E+02	92.65	1.32E+03	GA-67
M	4	183.22	182 -	191	183.25	2.61E+01	25.44	2.07E+02	.....
m	5	186.11	182 -	191	186.14	1.96E+02	50.48	4.21E+02	RA-226
	6	208.71	204 -	212	208.73	8.03E+01	74.52	8.03E+02	GA-67
M	7	238.93	235 -	248	238.93	6.20E+02	62.71	3.08E+02	PB-212
m	8	242.13	235 -	248	242.12	1.80E+02	46.99	2.69E+02	.....
	9	257.69	255 -	261	257.67	5.64E+01	48.66	3.91E+02	.....
	10	269.79	268 -	274	269.77	4.78E+01	52.28	4.68E+02	.....
	11	276.52	274 -	278	276.49	3.92E+01	40.43	3.30E+02	.....
M	12	295.30	291 -	305	295.27	3.38E+02	49.32	2.49E+02	PB-214
m	13	299.94	291 -	305	299.91	4.96E+01	41.59	2.80E+02	BI-210M PB-212 GA-67
	14	328.09	324 -	331	328.04	7.03E+01	48.83	3.47E+02	LA-140
	15	338.11	333 -	343	338.05	1.68E+02	63.69	4.53E+02	AC-228
	16	352.05	348 -	355	351.98	5.57E+02	67.26	3.81E+02	PB-214
	17	403.80	401 -	407	403.71	3.42E+01	36.60	2.22E+02	.....
	18	463.68	460 -	467	463.56	4.54E+01	40.84	2.47E+02	SB-125
	19	510.99	507 -	516	510.84	1.56E+02	49.06	2.54E+02	.....
	20	583.24	579 -	587	583.06	2.57E+02	46.62	1.79E+02	TL-208
	21	610.04	607 -	625	609.85	4.66E+02	71.31	3.02E+02	BI-214
	22	726.75	722 -	730	726.51	6.10E+01	30.76	1.08E+02	BI-212
	23	795.07	793 -	798	794.79	2.53E+01	22.02	7.94E+01	CS-134
	24	840.46	833 -	847	840.17	4.15E+01	44.07	1.85E+02	.....
	25	860.45	856 -	864	860.15	2.67E+01	33.54	1.55E+02	TL-208
	26	911.46	908 -	916	911.14	1.63E+02	35.63	9.56E+01	AC-228 LU-172
	27	933.85	930 -	937	933.51	2.73E+01	24.82	8.55E+01	.....

Analysis Report for 1510088-16
CP5008S06-07

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	28	964.83	962 -	974	964.48	3.28E+01	19.51	5.49E+01	EU-152
m	29	969.29	962 -	974	968.94	1.14E+02	31.50	6.47E+01	AC-228
	30	1120.07	1115 -	1123	1119.67	1.21E+02	29.38	5.81E+01	BI-214 SC-46
	31	1238.05	1233 -	1242	1237.60	3.15E+01	32.22	1.31E+02	CO-56
	32	1361.70	1357 -	1366	1361.21	1.82E+01	17.86	3.56E+01	.....
	33	1378.40	1374 -	1381	1377.90	1.69E+01	18.11	4.23E+01	.....
	34	1408.37	1402 -	1413	1407.87	2.63E+01	26.00	6.93E+01	EU-152
	35	1461.04	1455 -	1467	1460.52	6.26E+02	53.66	4.03E+01	K-40
	36	1509.21	1506 -	1513	1508.68	1.28E+01	14.14	2.65E+01	.....
	37	1525.54	1521 -	1528	1525.00	1.15E+01	9.59	7.07E+00	.....
	38	1598.21	1596 -	1600	1597.65	1.02E+01	7.09	1.64E+00	.....
M	39	1617.57	1616 -	1627	1617.00	8.00E+00	0.71	2.00E+00	.....
m	40	1624.57	1616 -	1627	1624.00	1.00E+01	10.02	2.71E+00	.....
	41	1630.64	1628 -	1633	1630.07	9.09E+00	7.28	3.82E+00	.....
M	42	1643.95	1642 -	1650	1643.38	8.83E+00	5.00	1.57E+00	.....
m	43	1648.34	1642 -	1650	1647.76	7.40E+00	5.74	1.21E+00	.....
	44	1691.86	1687 -	1694	1691.28	9.96E+00	8.00	4.08E+00	SB-124
	45	1729.57	1724 -	1733	1728.97	2.01E+01	14.83	1.99E+01	.....
	46	1764.66	1758 -	1769	1764.05	7.40E+01	22.09	2.40E+01	BI-214
	47	1847.35	1844 -	1850	1846.72	1.34E+01	10.62	1.12E+01	.....
	48	1863.74	1859 -	1866	1863.11	9.54E+00	9.17	6.92E+00	.....
	49	1985.11	1981 -	1987	1984.46	6.60E+00	8.03	6.80E+00	.....
	50	2103.60	2098 -	2108	2102.92	2.30E+01	11.59	5.92E+00	.....
	51	2119.13	2114 -	2122	2118.45	1.18E+01	10.22	8.50E+00	.....
	52	2203.87	2200 -	2207	2203.17	1.24E+01	14.00	2.51E+01	BI-214
	53	2251.30	2247 -	2253	2250.60	5.00E+00	4.47	0.00E+00	.....
	54	2298.91	2294 -	2301	2298.20	1.00E+01	6.32	0.00E+00	.....
	55	2333.02	2328 -	2335	2332.31	7.00E+00	7.21	4.00E+00	.....
	56	2614.44	2609 -	2618	2613.70	8.30E+01	18.22	0.00E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 6:26:15PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
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Analysis Report for 1510088-16
CP5008S06-07

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	1	44.22	6.40E+01	37.30	1.16E-02	1.68E-03
	2	76.30	1.10E+03	117.98	2.74E-02	3.34E-03
	3	92.70	2.53E+02	92.65	2.85E-02	4.30E-03
M	4	183.22	2.61E+01	25.44	2.13E-02	1.66E-03
m	5	186.11	1.96E+02	50.48	2.11E-02	1.65E-03
	6	208.71	8.03E+01	74.52	1.95E-02	1.63E-03
M	7	238.93	6.20E+02	62.71	1.79E-02	1.60E-03
m	8	242.13	1.80E+02	46.99	1.77E-02	1.60E-03
	9	257.69	5.64E+01	48.66	1.70E-02	1.58E-03
	10	269.79	4.78E+01	52.28	1.64E-02	1.57E-03
	11	276.52	3.92E+01	40.43	1.62E-02	1.56E-03
M	12	295.30	3.38E+02	49.32	1.55E-02	1.48E-03
m	13	299.94	4.96E+01	41.59	1.53E-02	1.46E-03
	14	328.09	7.03E+01	48.83	1.44E-02	1.32E-03
	15	338.11	1.68E+02	63.69	1.41E-02	1.28E-03
	16	352.05	5.57E+02	67.26	1.37E-02	1.21E-03
	17	403.80	3.42E+01	36.60	1.25E-02	1.01E-03
	18	463.68	4.54E+01	40.84	1.13E-02	9.46E-04
	19	510.99	1.56E+02	49.06	1.06E-02	8.98E-04
	20	583.24	2.57E+02	46.62	9.58E-03	8.25E-04
	21	610.04	4.66E+02	71.31	9.26E-03	7.98E-04
	22	726.75	6.10E+01	30.76	8.09E-03	7.03E-04
	23	795.07	2.53E+01	22.02	7.53E-03	6.59E-04
	24	840.46	4.15E+01	44.07	7.20E-03	6.30E-04
	25	860.45	2.67E+01	33.54	7.07E-03	6.17E-04
	26	911.46	1.63E+02	35.63	6.74E-03	5.86E-04
	27	933.85	2.73E+01	24.82	6.61E-03	5.75E-04
M	28	964.83	3.28E+01	19.51	6.44E-03	5.59E-04
m	29	969.29	1.14E+02	31.50	6.41E-03	5.57E-04
	30	1120.07	1.21E+02	29.38	5.70E-03	4.80E-04
	31	1238.05	3.15E+01	32.22	5.27E-03	4.83E-04
	32	1361.70	1.82E+01	17.86	4.91E-03	5.14E-04
	33	1378.40	1.69E+01	18.11	4.87E-03	5.07E-04
	34	1408.37	2.63E+01	26.00	4.79E-03	4.95E-04
	35	1461.04	6.26E+02	53.66	4.67E-03	4.73E-04
	36	1509.21	1.28E+01	14.14	4.57E-03	4.53E-04
	37	1525.54	1.15E+01	9.59	4.54E-03	4.46E-04
	38	1598.21	1.02E+01	7.09	4.41E-03	4.16E-04
M	39	1617.57	8.00E+00	0.71	4.38E-03	4.08E-04
m	40	1624.57	1.00E+01	10.02	4.37E-03	4.05E-04
	41	1630.64	9.09E+00	7.28	4.36E-03	4.03E-04
M	42	1643.95	8.83E+00	5.00	4.34E-03	3.97E-04
m	43	1648.34	7.40E+00	5.74	4.34E-03	3.96E-04
	44	1691.86	9.96E+00	8.00	4.27E-03	3.78E-04
	45	1729.57	2.01E+01	14.83	4.23E-03	3.62E-04
	46	1764.66	7.40E+01	22.09	4.19E-03	3.47E-04
	47	1847.35	1.34E+01	10.62	4.10E-03	3.18E-04
	48	1863.74	9.54E+00	9.17	4.09E-03	3.18E-04
	49	1985.11	6.60E+00	8.03	4.00E-03	3.18E-04
	50	2103.60	2.30E+01	11.59	3.95E-03	3.18E-04
	51	2119.13	1.18E+01	10.22	3.95E-03	3.18E-04
	52	2203.87	1.24E+01	14.00	3.93E-03	3.18E-04
	53	2251.30	5.00E+00	4.47	3.93E-03	3.18E-04

Analysis Report for 1510088-16
CP5008S06-07

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	2298.91	1.00E+01	6.32	3.93E-03	3.18E-04
55	2333.02	7.00E+00	7.21	3.93E-03	3.18E-04
56	2614.44	8.30E+01	18.22	4.05E-03	3.18E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 6:26:15PM

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	44.22	6.40E+01	37.30			6.40E+01	3.73E+01
2	76.30	1.10E+03	117.98			1.10E+03	1.18E+02
3	92.70	2.53E+02	92.65	5.70E+01	9.03E+00	1.96E+02	9.31E+01
M 4	183.22	2.61E+01	25.44			2.61E+01	2.54E+01
m 5	186.11	1.96E+02	50.48	4.72E+01	7.97E+00	1.49E+02	5.11E+01
6	208.71	8.03E+01	74.52			8.03E+01	7.45E+01
M 7	238.93	6.20E+02	62.71	2.36E+01	1.35E+01	5.96E+02	6.41E+01
m 8	242.13	1.80E+02	46.99	6.38E+00	3.91E+00	1.74E+02	4.72E+01
9	257.69	5.64E+01	48.66			5.64E+01	4.87E+01
10	269.79	4.78E+01	52.28			4.78E+01	5.23E+01
11	276.52	3.92E+01	40.43			3.92E+01	4.04E+01
M 12	295.30	3.38E+02	49.32	8.57E+00	6.10E+00	3.29E+02	4.97E+01
m 13	299.94	4.96E+01	41.59			4.96E+01	4.16E+01
14	328.09	7.03E+01	48.83	0.00E+00	0.00E+00	7.03E+01	4.88E+01
15	338.11	1.68E+02	63.69			1.68E+02	6.37E+01
16	352.05	5.57E+02	67.26	1.40E+01	5.55E+00	5.43E+02	6.75E+01
17	403.80	3.42E+01	36.60			3.42E+01	3.66E+01
18	463.68	4.54E+01	40.84			4.54E+01	4.08E+01
19	510.99	1.56E+02	49.06	8.41E+01	5.50E+00	7.18E+01	4.94E+01
20	583.24	2.57E+02	46.62	7.32E+00	4.08E+00	2.49E+02	4.68E+01
21	610.04	4.66E+02	71.31	1.30E+01	3.89E+00	4.53E+02	7.14E+01
22	726.75	6.10E+01	30.76			6.10E+01	3.08E+01
23	795.07	2.53E+01	22.02			2.53E+01	2.20E+01
24	840.46	4.15E+01	44.07			4.15E+01	4.41E+01
25	860.45	2.67E+01	33.54			2.67E+01	3.35E+01
26	911.46	1.63E+02	35.63	5.60E+00	3.32E+00	1.58E+02	3.58E+01
27	933.85	2.73E+01	24.82			2.73E+01	2.48E+01

Analysis Report for 1510088-16

CP5008S06-07

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	28	964.83	3.28E+01	19.51			3.28E+01	1.95E+01
m	29	969.29	1.14E+02	31.50			1.14E+02	3.15E+01
	30	1120.07	1.21E+02	29.38	3.93E+00	2.96E+00	1.17E+02	2.95E+01
	31	1238.05	3.15E+01	32.22			3.15E+01	3.22E+01
	32	1361.70	1.82E+01	17.86			1.82E+01	1.79E+01
	33	1378.40	1.69E+01	18.11			1.69E+01	1.81E+01
	34	1408.37	2.63E+01	26.00			2.63E+01	2.60E+01
	35	1461.04	6.26E+02	53.66	1.12E+01	2.55E+00	6.15E+02	5.37E+01
	36	1509.21	1.28E+01	14.14			1.28E+01	1.41E+01
	37	1525.54	1.15E+01	9.59			1.15E+01	9.59E+00
	38	1598.21	1.02E+01	7.09			1.02E+01	7.09E+00
M	39	1617.57	8.00E+00	0.71			8.00E+00	7.07E-01
m	40	1624.57	1.00E+01	10.02			1.00E+01	1.00E+01
	41	1630.64	9.09E+00	7.28			9.09E+00	7.28E+00
M	42	1643.95	8.83E+00	5.00			8.83E+00	5.00E+00
m	43	1648.34	7.40E+00	5.74			7.40E+00	5.74E+00
	44	1691.86	9.96E+00	8.00			9.96E+00	8.00E+00
	45	1729.57	2.01E+01	14.83			2.01E+01	1.48E+01
	46	1764.66	7.40E+01	22.09	4.23E+00	2.21E+00	6.98E+01	2.22E+01
	47	1847.35	1.34E+01	10.62			1.34E+01	1.06E+01
	48	1863.74	9.54E+00	9.17			9.54E+00	9.17E+00
	49	1985.11	6.60E+00	8.03			6.60E+00	8.03E+00
	50	2103.60	2.30E+01	11.59			2.30E+01	1.16E+01
	51	2119.13	1.18E+01	10.22			1.18E+01	1.02E+01
	52	2203.87	1.24E+01	14.00	5.94E-01	1.16E+00	1.18E+01	1.40E+01
	53	2251.30	5.00E+00	4.47			5.00E+00	4.47E+00
	54	2298.91	1.00E+01	6.32			1.00E+01	6.32E+00
	55	2333.02	7.00E+00	7.21			7.00E+00	7.21E+00
	56	2614.44	8.30E+01	18.22	7.38E+00	1.57E+00	7.56E+01	1.83E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 6:26:15PM
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

Analysis Report for 1510088-16

CP5008S06-07

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	1	44.22	6.40E+01	37.30			6.40E+01	3.73E+01
	2	76.30	1.10E+03	117.98			1.10E+03	1.18E+02
	3	92.70	2.53E+02	92.65	5.70E+01	9.03E+00	1.96E+02	9.31E+01
M	4	183.22	2.61E+01	25.44			2.61E+01	2.54E+01
m	5	186.11	1.96E+02	50.48	4.72E+01	7.97E+00	1.49E+02	5.11E+01
	6	208.71	8.03E+01	74.52			8.03E+01	7.45E+01
M	7	238.93	6.20E+02	62.71	2.36E+01	1.35E+01	5.96E+02	6.41E+01
m	8	242.13	1.80E+02	46.99	6.38E+00	3.91E+00	1.74E+02	4.72E+01
	9	257.69	5.64E+01	48.66			5.64E+01	4.87E+01
	10	269.79	4.78E+01	52.28			4.78E+01	5.23E+01
	11	276.52	3.92E+01	40.43			3.92E+01	4.04E+01
M	12	295.30	3.38E+02	49.32	8.57E+00	6.10E+00	3.29E+02	4.97E+01
m	13	299.94	4.96E+01	41.59			4.96E+01	4.16E+01
	14	328.09	7.03E+01	48.83	0.00E+00	0.00E+00	7.03E+01	4.88E+01
	15	338.11	1.68E+02	63.69			1.68E+02	6.37E+01
	16	352.05	5.57E+02	67.26	1.40E+01	5.55E+00	5.43E+02	6.75E+01
	17	403.80	3.42E+01	36.60			3.42E+01	3.66E+01
	18	463.68	4.54E+01	40.84			4.54E+01	4.08E+01
	19	510.99	1.56E+02	49.06	8.41E+01	5.50E+00	7.18E+01	4.94E+01
	20	583.24	2.57E+02	46.62	7.32E+00	4.08E+00	2.49E+02	4.68E+01
	21	610.04	4.66E+02	71.31	1.30E+01	3.89E+00	4.53E+02	7.14E+01
	22	726.75	6.10E+01	30.76			6.10E+01	3.08E+01
	23	795.07	2.53E+01	22.02			2.53E+01	2.20E+01
	24	840.46	4.15E+01	44.07			4.15E+01	4.41E+01
	25	860.45	2.67E+01	33.54			2.67E+01	3.35E+01
	26	911.46	1.63E+02	35.63	5.60E+00	3.32E+00	1.58E+02	3.58E+01
	27	933.85	2.73E+01	24.82			2.73E+01	2.48E+01
M	28	964.83	3.28E+01	19.51			3.28E+01	1.95E+01
m	29	969.29	1.14E+02	31.50			1.14E+02	3.15E+01
	30	1120.07	1.21E+02	29.38	3.93E+00	2.96E+00	1.17E+02	2.95E+01
	31	1238.05	3.15E+01	32.22			3.15E+01	3.22E+01
	32	1361.70	1.82E+01	17.86			1.82E+01	1.79E+01
	33	1378.40	1.69E+01	18.11			1.69E+01	1.81E+01
	34	1408.37	2.63E+01	26.00			2.63E+01	2.60E+01
	35	1461.04	6.26E+02	53.66	1.12E+01	2.55E+00	6.15E+02	5.37E+01
	36	1509.21	1.28E+01	14.14			1.28E+01	1.41E+01
	37	1525.54	1.15E+01	9.59			1.15E+01	9.59E+00
	38	1598.21	1.02E+01	7.09			1.02E+01	7.09E+00
M	39	1617.57	8.00E+00	0.71			8.00E+00	7.07E-01
m	40	1624.57	1.00E+01	10.02			1.00E+01	1.00E+01
	41	1630.64	9.09E+00	7.28			9.09E+00	7.28E+00
M	42	1643.95	8.83E+00	5.00			8.83E+00	5.00E+00
m	43	1648.34	7.40E+00	5.74			7.40E+00	5.74E+00
	44	1691.86	9.96E+00	8.00			9.96E+00	8.00E+00
	45	1729.57	2.01E+01	14.83			2.01E+01	1.48E+01
	46	1764.66	7.40E+01	22.09	4.23E+00	2.21E+00	6.98E+01	2.22E+01
	47	1847.35	1.34E+01	10.62			1.34E+01	1.06E+01
	48	1863.74	9.54E+00	9.17			9.54E+00	9.17E+00
	49	1985.11	6.60E+00	8.03			6.60E+00	8.03E+00
	50	2103.60	2.30E+01	11.59			2.30E+01	1.16E+01
	51	2119.13	1.18E+01	10.22			1.18E+01	1.02E+01
	52	2203.87	1.24E+01	14.00	5.94E-01	1.16E+00	1.18E+01	1.40E+01
	53	2251.30	5.00E+00	4.47			5.00E+00	4.47E+00
	54	2298.91	1.00E+01	6.32			1.00E+01	6.32E+00

Analysis Report for 1510088-16
CP5008S06-07

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
55	2333.02	7.00E+00	7.21			7.00E+00	7.21E+00
56	2614.44	8.30E+01	18.22	7.38E+00	1.57E+00	7.56E+01	1.83E+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	0.991	1460.81 *	10.67	1.72E+01	2.33E+00
GA-67	0.585	93.31 *	35.70	2.62E+02	1.15E+03
		208.95 *	2.24	2.49E+03	1.07E+04
		300.22 *	16.00	2.75E+02	1.22E+03
TL-208	0.995	583.14 *	30.22	1.20E+00	2.48E-01
		860.37 *	4.48	1.18E+00	1.48E+00
		2614.66 *	35.85	7.26E-01	1.85E-01
BI-212	0.744	727.17 *	11.80	8.91E-01	4.56E-01
		1620.62	2.75		
PB-212	0.987	238.63 *	44.60	1.04E+00	1.46E-01
		300.09 *	3.41	1.33E+00	1.12E+00
BI-214	0.950	609.31 *	46.30	1.47E+00	2.65E-01
		1120.29 *	15.10	1.89E+00	5.04E-01
		1764.49 *	15.80	1.47E+00	4.84E-01
		2204.22 *	4.98	8.44E-01	1.00E+00
PB-214	0.998	295.21 *	19.19	1.55E+00	2.76E-01
		351.92 *	37.19	1.48E+00	2.26E-01
RA-226	0.998	186.21 *	3.28	3.00E+00	5.59E+00
AC-228	0.985	338.32 *	11.40	1.45E+00	5.68E-01
		911.07 *	27.70	1.18E+00	2.86E-01
		969.11 *	16.60	1.49E+00	4.32E-01

Analysis Report for 1510088-16

CP5008S06-07

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 6:26:15PM
 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	44.22	1.77793E-02	29.14	
	2	76.30	3.05211E-01	5.37	
M	4	183.22	7.26253E-03	48.64	
m	8	242.13	4.83110E-02	13.56	
	9	257.69	1.56724E-02	43.12	
	10	269.79	1.32698E-02	54.71	
	11	276.52	1.08803E-02	51.61	
	14	328.09	1.95321E-02	34.72	Tol. LA-140
	17	403.80	9.48946E-03	53.57	
	18	463.68	1.26249E-02	44.93	Tol. SB-125
	19	510.99	1.99520E-02	34.37	
	23	795.07	7.02564E-03	43.54	Tol. CS-134
	24	840.46	1.15288E-02	53.09	
	27	933.85	7.56944E-03	45.54	
M	28	964.83	9.12115E-03	29.70	Sum
	31	1238.05	8.75430E-03	51.11	
	32	1361.70	5.05787E-03	49.05	
	33	1378.40	4.68567E-03	53.68	
	34	1408.37	7.31785E-03	49.35	Tol. EU-152
	36	1509.21	3.54701E-03	55.38	
	37	1525.54	3.18519E-03	41.82	
	38	1598.21	2.82828E-03	34.81	
M	39	1617.57	2.22279E-03	4.42	
m	40	1624.57	2.78303E-03	50.03	
	41	1630.64	2.52525E-03	40.04	
M	42	1643.95	2.45204E-03	28.32	
m	43	1648.34	2.05692E-03	38.79	
	44	1691.86	2.76620E-03	40.17	Tol. SB-124
	45	1729.57	5.57407E-03	36.96	Sum
	47	1847.35	3.72807E-03	39.56	Sum
	48	1863.74	2.64957E-03	48.04	
	49	1985.11	1.83333E-03	60.84	
	50	2103.60	6.39957E-03	25.15	S-Esc
	51	2119.13	3.26389E-03	43.50	

: 00924

Analysis Report for 1510088-16
CP5008S06-07

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
53	2251.30	1.38889E-03	44.72		
54	2298.91	2.77778E-03	31.62		
55	2333.02	1.94444E-03	51.51		

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	1.72E+01	2.33E+00
GA-67	0.58	93.31 *	35.70	2.62E+02	1.15E+03
		208.95 *	2.24	2.49E+03	1.07E+04
		300.22 *	16.00	2.75E+02	1.22E+03
TL-208	0.99	583.14 *	30.22	1.20E+00	2.48E-01
		860.37 *	4.48	1.18E+00	1.48E+00
		2614.66 *	35.85	7.26E-01	1.85E-01
BI-212	0.74	727.17 *	11.80	8.91E-01	4.56E-01
		1620.62	2.75		
PB-212	0.98	238.63 *	44.60	1.04E+00	1.46E-01
		300.09 *	3.41	1.33E+00	1.12E+00
BI-214	0.95	609.31 *	46.30	1.47E+00	2.65E-01
		1120.29 *	15.10	1.89E+00	5.04E-01
		1764.49 *	15.80	1.47E+00	4.84E-01
		2204.22 *	4.98	8.44E-01	1.00E+00
PB-214	0.99	295.21 *	19.19	1.55E+00	2.76E-01
		351.92 *	37.19	1.48E+00	2.26E-01
RA-226	0.99	186.21 *	3.28	3.00E+00	5.59E+00
AC-228	0.98	338.32 *	11.40	1.45E+00	5.68E-01
		911.07 *	27.70	1.18E+00	2.86E-01
		969.11 *	16.60	1.49E+00	4.32E-01

Analysis Report for 1510088-16
CP5008S06-07

* = 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
K-40	0.991	1.72E+01	2.33E+00	
GA-67	0.585	2.19E+02	9.32E+02	
TL-208	0.995	8.98E-01	1.47E-01	
BI-212	0.744	8.91E-01	4.56E-01	
PB-212	0.987	1.03E+00	1.45E-01	
BI-214	0.950	1.52E+00	2.06E-01	
PB-214	0.998	1.51E+00	1.75E-01	
RA-226	0.998	3.00E+00	5.59E+00	
AC-228	0.985	1.30E+00	2.20E-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 1510088-16
CP5008S06-07

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 6:26:15PM
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	44.22	1.77793E-02	29.14	
	2	76.30	3.05211E-01	5.37	
M	4	183.22	7.26253E-03	48.64	
m	8	242.13	4.83110E-02	13.56	
	9	257.69	1.56724E-02	43.12	
	10	269.79	1.32698E-02	54.71	
	11	276.52	1.08803E-02	51.61	
	14	328.09	1.95321E-02	34.72	Tol. LA-140
	17	403.80	9.48946E-03	53.57	
	18	463.68	1.26249E-02	44.93	Tol. SB-125
	19	510.99	1.99520E-02	34.37	
	23	795.07	7.02564E-03	43.54	Tol. CS-134
	24	840.46	1.15288E-02	53.09	
	27	933.85	7.56944E-03	45.54	
M	28	964.83	9.12115E-03	29.70	Sum
	31	1238.05	8.75430E-03	51.11	
	32	1361.70	5.05787E-03	49.05	
	33	1378.40	4.68567E-03	53.68	
	34	1408.37	7.31785E-03	49.35	Tol. EU-152
	36	1509.21	3.54701E-03	55.38	
	37	1525.54	3.18519E-03	41.82	
	38	1598.21	2.82828E-03	34.81	
M	39	1617.57	2.22279E-03	4.42	
m	40	1624.57	2.78303E-03	50.03	
	41	1630.64	2.52525E-03	40.04	
M	42	1643.95	2.45204E-03	28.32	
m	43	1648.34	2.05692E-03	38.79	
	44	1691.86	2.76620E-03	40.17	Tol. SB-124
	45	1729.57	5.57407E-03	36.96	Sum
	47	1847.35	3.72807E-03	39.56	Sum
	48	1863.74	2.64957E-03	48.04	
	49	1985.11	1.83333E-03	60.84	
	50	2103.60	6.39957E-03	25.15	S-Esc
	51	2119.13	3.26389E-03	43.50	
	53	2251.30	1.38889E-03	44.72	

Analysis Report for 1510088-16
CP5008S06-07

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
54	2298.91	2.77778E-03	31.62		
55	2333.02	1.94444E-03	51.51		

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	-2.67E-01	7.65E-01	7.65E-01
+	NA-22	1274.54	99.94	1.46E-02	7.93E-02	7.93E-02
+	NA-24	1368.53	99.99	-2.57E+13	9.62E+13	2.43E+14
		2754.09	99.86	4.36E+12		9.62E+13
+	AL-26	1808.65	99.76	2.42E-02	7.00E-02	7.00E-02
+	K-40	1460.81	* 10.67	1.72E+01	1.03E+00	1.03E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.65E-03	5.23E-02	5.23E-02
		78.34	96.00	2.99E-01		7.50E-02
+	SC-46	889.25	99.98	-5.19E-02	9.08E-02	9.08E-02
		1120.51	99.99	3.65E-01		1.86E-01
+	V-48	983.52	99.98	3.41E-02	3.04E-01	3.04E-01
		1312.10	97.50	1.16E-01		3.31E-01
+	CR-51	320.08	9.83	1.77E-01	1.22E+00	1.22E+00
+	MN-54	834.83	99.97	-3.79E-02	8.20E-02	8.20E-02
+	CO-56	846.75	99.96	5.87E-03	9.56E-02	9.56E-02
		1037.75	14.03	1.85E-02		7.76E-01
		1238.25	67.00	1.65E-01		2.31E-01
		1771.40	15.51	8.58E-02		5.39E-01
		2598.48	16.90	5.43E-02		2.92E-01
+	CO-57	122.06	85.51	6.18E-03	5.89E-02	5.89E-02
		136.48	10.60	-3.52E-01		4.62E-01
+	CO-58	810.76	99.40	-1.87E-02	9.50E-02	9.50E-02
+	FE-59	1099.22	56.50	4.88E-02	2.67E-01	2.67E-01
		1291.56	43.20	5.23E-03		3.32E-01
+	CO-60	1173.22	100.00	-1.86E-02	6.94E-02	8.43E-02
		1332.49	100.00	1.05E-02		6.94E-02

Analysis Report for 1510088-16

CP5008S06-07

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZN-65	1115.52		50.75	-2.75E-02	1.61E-01	1.61E-01
+	GA-67	93.31	*	35.70	2.62E+02	1.98E+02	1.98E+02
		208.95	*	2.24	2.49E+03		3.77E+03
		300.22	*	16.00	2.75E+02		7.25E+02
+	SE-75	121.11		16.70	2.73E-02	9.24E-02	3.28E-01
		136.00		59.20	-7.68E-02		9.24E-02
		264.65		59.80	4.88E-03		1.10E-01
		279.53		25.20	4.52E-02		2.69E-01
		400.65		11.40	-3.57E-02		5.33E-01
+	RB-82	776.52		13.00	-4.08E-01	1.28E+00	1.28E+00
+	RB-83	520.41		46.00	-1.61E-02	1.50E-01	1.50E-01
		529.64		30.30	-4.06E-02		2.03E-01
		552.65		16.40	1.49E-01		4.18E-01
+	KR-85	513.99		0.43	-1.97E+01	1.45E+01	1.45E+01
+	SR-85	513.99		99.27	-1.21E-01	8.89E-02	8.89E-02
+	Y-88	898.02		93.40	-1.87E-02	7.93E-02	9.34E-02
		1836.01		99.38	-1.26E-02		7.93E-02
+	NB-93M	16.57		9.43	-8.77E+03	5.43E+03	5.43E+03
+	NB-94	702.63		100.00	-2.95E-02	6.76E-02	6.89E-02
		871.10		100.00	6.58E-03		6.76E-02
+	NB-95	765.79		99.81	4.80E-02	1.47E-01	1.47E-01
+	NB-95M	235.69		25.00	-1.09E+03	1.48E+02	1.48E+02
+	ZR-95	724.18		43.70	1.30E-02	1.74E-01	2.55E-01
		756.72		55.30	1.34E-02		1.74E-01
+	MO-99	181.06		6.20	1.35E+03	1.76E+03	2.96E+03
		739.58		12.80	-3.30E+02		1.76E+03
		778.00		4.50	-7.93E+02		5.20E+03
+	RU-103	497.08		89.00	2.54E-02	1.17E-01	1.17E-01
+	RU-106	621.84		9.80	-2.75E-01	6.66E-01	6.66E-01
+	AG-108M	433.93		89.90	-1.21E-02	5.83E-02	5.83E-02
		614.37		90.40	-8.45E-01		7.34E-02
		722.95		90.50	-9.49E-03		7.52E-02
+	CD-109	88.03		3.72	-1.55E-01	1.80E+00	1.80E+00
+	AG-110M	657.75		93.14	-4.61E-02	7.59E-02	7.59E-02
		677.61		10.53	-6.96E-02		6.57E-01
		706.67		16.46	-1.47E-01		4.82E-01
		763.93		21.98	-2.07E-01		3.38E-01
		884.67		71.63	5.56E-02		1.14E-01
		1384.27		23.94	1.31E-01		3.22E-01
+	CD-113M	263.70		0.02	2.55E+02	2.43E+02	2.43E+02
+	SN-113	255.12		1.93	-1.90E-01	9.60E-02	3.24E+00
		391.69		64.90	-4.21E-02		9.60E-02
+	TE123M	159.00		84.10	-3.11E-02	7.19E-02	7.19E-02
+	SB-124	602.71		97.87	-1.25E-01	1.06E-01	1.06E-01
		645.85		7.26	-2.51E-01		1.24E+00
		722.78		11.10	-1.12E-01		8.89E-01
		1691.02		49.00	8.03E-02		1.88E-01
+	I-125	35.49		6.49	-2.35E+00	5.59E+00	5.59E+00

Analysis Report for 1510088-16
CP5008S06-07

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-125	176.33	6.89	-1.26E-01	1.86E-01	7.67E-01
		427.89	29.33	1.42E-02		1.86E-01
		463.38	10.35	4.93E-01		6.58E-01
		600.56	17.80	-2.62E-01		3.92E-01
		635.90	11.32	-1.85E-01		5.39E-01
+	SB-126	414.70	83.30	-2.35E-01	3.74E-01	3.74E-01
		666.33	99.60	-1.06E-01		4.27E-01
		695.00	99.60	1.43E-01		4.25E-01
		720.50	53.80	-9.72E-02		7.41E-01
+	SN-126	87.57	37.00	-1.49E-02	1.73E-01	1.73E-01
+	SB-127	473.00	25.00	-8.72E-01	7.02E+01	7.11E+01
		685.20	35.70	3.13E+01		7.02E+01
		783.80	14.70	6.23E+01		1.81E+02
+	I-129	29.78	57.00	3.35E-01	1.22E+00	1.22E+00
		33.60	13.20	3.64E-01		2.52E+00
		39.58	7.52	6.20E-01		2.18E+00
+	I-131	284.30	6.05	-1.80E+00	9.42E-01	1.49E+01
		364.48	81.20	-2.68E-01		9.42E-01
		636.97	7.26	-5.21E+00		1.31E+01
		722.89	1.80	-7.77E+00		6.16E+01
+	TE-132	49.72	13.10	8.14E+01	6.26E+01	5.65E+02
		228.16	88.00	2.62E+00		6.26E+01
+	BA-133	81.00	33.00	6.10E-03	8.33E-02	1.28E-01
		302.84	17.80	-1.52E-01		3.00E-01
		356.01	60.00	1.05E-02		8.33E-02
+	I-133	529.87	86.30	-4.65E+09	9.52E+09	9.52E+09
+	XE-133	81.00	38.00	3.80E-01	8.00E+00	8.00E+00
+	CS-134	563.23	8.38	1.38E-01	8.80E-02	7.16E-01
		569.32	15.43	-7.85E-03		3.75E-01
		604.70	97.60	-8.17E-02		8.80E-02
		795.84	85.40	5.90E-02		9.55E-02
		801.93	8.73	-8.28E-02		7.90E-01
+	CS-135	268.24	16.00	-1.24E-01	3.58E-01	3.58E-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	1.73E-01	3.65E-01	3.76E+00
		163.89	4.61	1.30E+00		6.17E+00
		176.55	13.56	-2.21E-01		2.09E+00
		273.65	12.66	-4.33E+00		2.36E+00
		340.57	48.50	-3.86E-01		7.10E-01
		818.50	99.70	-1.20E-01		3.65E-01
		1048.07	79.60	4.80E-02		5.26E-01
		1235.34	19.70	1.02E+00		3.09E+00
+	CS-137	661.65	85.12	-2.53E-02	7.90E-02	7.90E-02
+	LA-138	788.74	34.00	2.22E-01	1.10E-01	2.38E-01
		1435.80	66.00	1.02E-02		1.10E-01
+	CE-139	165.85	80.35	1.87E-02	7.65E-02	7.65E-02
+	BA-140	162.64	6.70	1.69E+00	1.28E+00	4.42E+00

Analysis Report for 1510088-16
CP5008S06-07

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	304.84	4.50	-1.43E+00	1.28E+00	6.22E+00
		423.70	3.20	-4.59E+00		9.09E+00
		437.55	2.00	9.56E+00		1.65E+01
		537.32	25.00	1.27E-01		1.28E+00
+	LA-140	328.77	20.50	2.05E+00	4.59E-01	1.73E+00
		487.03	45.50	-4.47E-02		7.05E-01
		815.85	23.50	-1.05E+00		1.58E+00
		1596.49	95.49	-3.82E-03		4.59E-01
+	CE-141	145.44	48.40	-1.04E-01	2.03E-01	2.03E-01
+	CE-143	57.36	11.80	-3.89E+06	2.31E+06	5.38E+06
		293.26	42.00	1.37E+05		2.31E+06
		664.55	5.20	5.66E+06		1.67E+07
+	CE-144	133.54	10.80	1.01E-01	4.80E-01	4.80E-01
+	PM-144	476.78	42.00	-4.62E-02	6.69E-02	1.32E-01
		618.01	98.60	-2.25E-02		6.69E-02
		696.49	99.49	3.68E-02		7.47E-02
+	PM-145	36.85	21.70	5.69E-01	5.11E-01	9.95E-01
		37.36	39.70	2.92E-01		5.11E-01
		42.30	15.10	1.29E-01		8.21E-01
		72.40	2.31	-1.51E+00		2.02E+00
+	PM-146	453.90	39.94	2.45E-02	1.41E-01	1.41E-01
		735.90	14.01	6.98E-02		4.75E-01
		747.13	13.10	-1.35E-01		5.10E-01
+	ND-147	91.11	28.90	-2.05E+00	1.65E+00	1.65E+00
		531.02	13.10	-5.27E-01		2.87E+00
+	PM-149	285.90	3.10	1.75E+04	4.60E+04	4.60E+04
+	EU-152	121.78	20.50	2.38E-02	2.27E-01	2.27E-01
		244.69	5.40	-2.27E+00		1.07E+00
		344.27	19.13	-7.56E-02		2.75E-01
		778.89	9.20	2.98E-02		7.40E-01
		964.01	10.40	-1.91E+00		9.53E-01
		1085.78	7.22	-4.98E-02		1.03E+00
		1112.02	9.60	3.29E-01		8.17E-01
		1407.95	14.94	2.95E-01		6.50E-01
+	GD-153	97.43	31.30	-9.94E-02	1.56E-01	1.56E-01
		103.18	22.20	-2.48E-01		2.22E-01
+	EU-154	123.07	40.50	2.59E-02	1.15E-01	1.15E-01
		723.30	19.70	-4.39E-02		3.48E-01
		873.19	11.50	-1.74E-01		5.93E-01
		996.32	10.30	-1.97E-01		7.95E-01
		1004.76	17.90	5.24E-02		4.23E-01
		1274.45	35.50	4.05E-02		2.19E-01
+	EU-155	86.50	30.90	-7.75E-02	2.05E-01	2.05E-01
		105.30	20.70	1.14E-01		2.28E-01
+	EU-156	811.77	10.40	4.05E-01	2.97E+00	2.97E+00
		1153.47	7.20	4.08E+00		6.34E+00
		1230.71	8.90	-4.54E-01		4.57E+00
+	HO-166M	184.41	72.60	3.06E-02	9.02E-02	9.02E-02
		280.45	29.60	3.20E-02		1.90E-01

Analysis Report for 1510088-16

CP5008S06-07

<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>
HO-166M	410.94	11.10	3.32E-01	9.02E-02	5.27E-01
	711.69	54.10	4.26E-02		1.37E-01
+ TM-171	66.72	0.14	-5.32E+00	3.66E+01	3.66E+01
+ HF-172	81.75	4.52	-4.98E-01	4.24E-01	9.83E-01
	125.81	11.30	-4.27E-01		4.24E-01
+ LU-172	181.53	20.60	1.78E+00	3.70E+00	7.30E+00
	810.06	16.63	-2.32E+00		1.18E+01
	912.12	15.25	6.32E+01		2.65E+01
	1093.66	62.50	-5.57E-01		3.70E+00
+ LU-173	100.72	5.24	1.47E-01	2.89E-01	8.95E-01
	272.11	21.20	1.98E-01		2.89E-01
+ HF-175	343.40	84.00	-1.38E-02	8.62E-02	8.62E-02
+ LU-176	88.34	13.30	-4.13E-02	5.24E-02	4.81E-01
	201.83	86.00	-4.06E-03		6.08E-02
	306.78	94.00	6.30E-03		5.24E-02
+ TA-182	67.75	41.20	-4.59E-03	1.46E-01	1.46E-01
	1121.30	34.90	7.30E-01		4.88E-01
	1189.05	16.23	1.35E-01		7.33E-01
	1221.41	26.98	4.02E-02		4.39E-01
	1231.02	11.44	5.60E-02		9.88E-01
+ IR-192	308.46	29.68	-2.40E-03	1.50E-01	2.34E-01
	468.07	48.10	-1.74E-03		1.50E-01
+ HG-203	279.19	77.30	1.99E-02	1.28E-01	1.28E-01
+ BI-207	569.67	97.72	-1.21E-03	5.77E-02	5.77E-02
	1063.62	74.90	2.02E-02		9.10E-02
+ TL-208	583.14	* 30.22	1.20E+00	1.15E-01	2.87E-01
	860.37	* 4.48	1.18E+00		2.43E+00
	2614.66	* 35.85	7.26E-01		1.15E-01
+ BI-210M	262.00	45.00	-2.47E-02	1.16E-01	1.16E-01
	300.00	23.00	1.15E-01		2.60E-01
+ PB-210	46.50	4.25	3.22E+00	2.51E+00	2.51E+00
+ PB-211	404.84	2.90	5.51E-01	1.99E+00	1.99E+00
	831.96	2.90	3.67E-01		2.48E+00
+ BI-212	727.17	* 11.80	8.91E-01	6.76E-01	6.76E-01
	1620.62	2.75	1.47E+00		3.06E+00
+ PB-212	238.63	* 44.60	1.04E+00	2.65E-01	2.65E-01
	300.09	* 3.41	1.33E+00		3.50E+00
+ BI-214	609.31	* 46.30	1.47E+00	3.15E-01	3.15E-01
	1120.29	* 15.10	1.89E+00		5.79E-01
	1764.49	* 15.80	1.47E+00		5.64E-01
	2204.22	* 4.98	8.44E-01		1.63E+00
+ PB-214	295.21	* 19.19	1.55E+00	2.27E-01	6.15E-01
	351.92	* 37.19	1.48E+00		2.27E-01
+ RN-219	401.80	6.50	-3.11E-01	8.07E-01	8.07E-01
+ RA-223	323.87	3.88	2.23E-01	1.38E+00	1.38E+00
+ RA-224	240.98	3.95	8.97E+00	2.80E+00	2.80E+00
+ RA-225	40.00	31.00	6.58E-01	2.31E+00	2.31E+00
+ RA-226	186.21	* 3.28	3.00E+00	2.70E+00	2.70E+00

Analysis Report for 1510088-16
CP5008S06-07

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-227	50.10		8.40	1.28E-01	6.46E-01	8.85E-01
		236.00		11.50	-4.75E+00		6.46E-01
		256.20		6.30	-7.56E-01		8.09E-01
+	AC-228	338.32	*	11.40	1.45E+00	3.33E-01	8.54E-01
		911.07	*	27.70	1.18E+00		3.33E-01
		969.11	*	16.60	1.49E+00		6.78E-01
+	TH-230	48.44		16.90	-3.85E-01	4.85E-01	4.85E-01
		62.85		4.60	1.26E+00		1.27E+00
		67.67		0.37	-4.21E-01		1.34E+01
+	PA-231	283.67		1.60	-4.17E-01	2.31E+00	3.46E+00
		302.67		2.30	-1.17E+00		2.31E+00
+	TH-231	25.64		14.70	-1.21E+00	7.16E-01	1.58E+01
		84.21		6.40	6.94E-01		7.16E-01
+	PA-233	311.98		38.60	2.84E-02	3.23E-01	3.23E-01
+	PA-234	131.20		20.40	1.12E-01	2.55E-01	2.55E-01
		733.99		8.80	3.95E-01		7.88E-01
		946.00		12.00	-1.37E-01		6.02E-01
+	PA-234M	1001.03		0.92	-6.07E-01	8.64E+00	8.64E+00
+	TH-234	63.29		3.80	1.52E+00	1.52E+00	1.52E+00
+	U-235	143.76		10.50	1.84E-01	4.78E-01	4.78E-01
		163.35		4.70	4.18E-01		1.09E+00
		205.31		4.70	2.92E-01		1.14E+00
+	NP-237	86.50		12.60	-1.88E-01	4.97E-01	4.97E-01
+	NP-239	106.10		22.70	7.67E+02	2.86E+03	2.86E+03
		228.18		10.70	3.03E+02		7.22E+03
		277.60		14.10	7.29E+02		5.89E+03
+	AM-241	59.54		35.90	6.01E-02	1.54E-01	1.54E-01
+	AM-243	74.67		66.00	-2.18E-01	1.01E-01	1.01E-01
+	CM-243	209.75		3.29	8.81E-01	4.33E-01	1.75E+00
		228.14		10.60	2.23E-02		5.32E-01
		277.60		14.00	5.36E-02		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 1510088-16

CP5008S06-07

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	7.65E-01	7.65E-01	-2.67E-01	3.57E-01
NA-22	1274.54	99.94	7.93E-02	7.93E-02	1.46E-02	3.59E-02
NA-24	1368.53	99.99	2.43E+14	9.62E+13	-2.57E+13	1.07E+14
	2754.09	99.86	9.62E+13		4.36E+12	3.04E+13
AL-26	1808.65	99.76	7.00E-02	7.00E-02	2.42E-02	3.04E-02
+ K-40	1460.81	* 10.67	1.03E+00	1.03E+00	1.72E+01	4.76E-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	5.23E-02	5.23E-02	-1.65E-03	2.54E-02
	78.34	96.00	7.50E-02		2.99E-01	3.68E-02
SC-46	889.25	99.98	9.08E-02	9.08E-02	-5.19E-02	4.18E-02
	1120.51	99.99	1.86E-01		3.65E-01	8.89E-02
V-48	983.52	99.98	3.04E-01	3.04E-01	3.41E-02	1.40E-01
	1312.10	97.50	3.31E-01		1.16E-01	1.50E-01
CR-51	320.08	9.83	1.22E+00	1.22E+00	1.77E-01	5.80E-01
MN-54	834.83	99.97	8.20E-02	8.20E-02	-3.79E-02	3.82E-02
CO-56	846.75	99.96	9.56E-02	9.56E-02	5.87E-03	4.43E-02
	1037.75	14.03	7.76E-01		1.85E-02	3.58E-01
	1238.25	67.00	2.31E-01		1.65E-01	1.09E-01
	1771.40	15.51	5.39E-01		8.58E-02	2.31E-01
	2598.48	16.90	2.92E-01		5.43E-02	1.09E-01
CO-57	122.06	85.51	5.89E-02	5.89E-02	6.18E-03	2.85E-02
	136.48	10.60	4.62E-01		-3.52E-01	2.23E-01
CO-58	810.76	99.40	9.50E-02	9.50E-02	-1.87E-02	4.40E-02
FE-59	1099.22	56.50	2.67E-01	2.67E-01	4.88E-02	1.24E-01
	1291.56	43.20	3.32E-01		5.23E-03	1.52E-01
CO-60	1173.22	100.00	8.43E-02	6.94E-02	-1.86E-02	3.87E-02
	1332.49	100.00	6.94E-02		1.05E-02	3.09E-02
ZN-65	1115.52	50.75	1.61E-01	1.61E-01	-2.75E-02	7.35E-02
+ GA-67	93.31	* 35.70	1.98E+02	1.98E+02	2.62E+02	9.74E+01
	208.95	* 2.24	3.77E+03		2.49E+03	1.84E+03
	300.22	* 16.00	7.25E+02		2.75E+02	3.55E+02
SE-75	121.11	16.70	3.28E-01	9.24E-02	2.73E-02	1.59E-01
	136.00	59.20	9.24E-02		-7.68E-02	4.47E-02
	264.65	59.80	1.10E-01		4.88E-03	5.27E-02
	279.53	25.20	2.69E-01		4.52E-02	1.29E-01
	400.65	11.40	5.33E-01		-3.57E-02	2.51E-01
RB-82	776.52	13.00	1.28E+00	1.28E+00	-4.08E-01	5.96E-01
RB-83	520.41	46.00	1.50E-01	1.50E-01	-1.61E-02	6.97E-02
	529.64	30.30	2.03E-01		-4.06E-02	9.35E-02
	552.65	16.40	4.18E-01		1.49E-01	1.94E-01
KR-85	513.99	0.43	1.45E+01	1.45E+01	-1.97E+01	6.82E+00
SR-85	513.99	99.27	8.89E-02	8.89E-02	-1.21E-01	4.19E-02
Y-88	898.02	93.40	9.34E-02	7.93E-02	-1.87E-02	4.31E-02
	1836.01	99.38	7.93E-02		-1.26E-02	3.39E-02
NB-93M	16.57	9.43	5.43E+03	5.43E+03	-8.77E+03	2.64E+03

Analysis Report for 1510088-16
CP5008S06-07

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	6.89E-02	6.76E-02	-2.95E-02	3.22E-02
	871.10	100.00	6.76E-02		6.58E-03	3.11E-02
NB-95	765.79	99.81	1.47E-01	1.47E-01	4.80E-02	6.88E-02
NB-95M	235.69	25.00	1.48E+02	1.48E+02	-1.09E+03	7.21E+01
ZR-95	724.18	43.70	2.55E-01	1.74E-01	1.30E-02	1.20E-01
	756.72	55.30	1.74E-01		1.34E-02	8.09E-02
MO-99	181.06	6.20	2.96E+03	1.76E+03	1.35E+03	1.43E+03
	739.58	12.80	1.76E+03		-3.30E+02	8.14E+02
	778.00	4.50	5.20E+03		-7.93E+02	2.41E+03
RU-103	497.08	89.00	1.17E-01	1.17E-01	2.54E-02	5.52E-02
RU-106	621.84	9.80	6.66E-01	6.66E-01	-2.75E-01	3.11E-01
AG-108M	433.93	89.90	5.83E-02	5.83E-02	-1.21E-02	2.74E-02
	614.37	90.40	7.34E-02		-8.45E-01	3.44E-02
	722.95	90.50	7.52E-02		-9.49E-03	3.50E-02
CD-109	88.03	3.72	1.80E+00	1.80E+00	-1.55E-01	8.84E-01
AG-110M	657.75	93.14	7.59E-02	7.59E-02	-4.61E-02	3.54E-02
	677.61	10.53	6.57E-01		-6.96E-02	3.05E-01
	706.67	16.46	4.82E-01		-1.47E-01	2.26E-01
	763.93	21.98	3.38E-01		-2.07E-01	1.57E-01
	884.67	71.63	1.14E-01		5.56E-02	5.27E-02
	1384.27	23.94	3.22E-01		1.31E-01	1.43E-01
CD-113M	263.70	0.02	2.43E+02	2.43E+02	2.55E+02	1.17E+02
SN-113	255.12	1.93	3.24E+00	9.60E-02	-1.90E-01	1.55E+00
	391.69	64.90	9.60E-02		-4.21E-02	4.52E-02
TE123M	159.00	84.10	7.19E-02	7.19E-02	-3.11E-02	3.48E-02
SB-124	602.71	97.87	1.06E-01	1.06E-01	-1.25E-01	5.02E-02
	645.85	7.26	1.24E+00		-2.51E-01	5.76E-01
	722.78	11.10	8.89E-01		-1.12E-01	4.14E-01
	1691.02	49.00	1.88E-01		8.03E-02	8.10E-02
I-125	35.49	6.49	5.59E+00	5.59E+00	-2.35E+00	2.71E+00
SB-125	176.33	6.89	7.67E-01	1.86E-01	-1.26E-01	3.71E-01
	427.89	29.33	1.86E-01		1.42E-02	8.75E-02
	463.38	10.35	6.58E-01		4.93E-01	3.12E-01
	600.56	17.80	3.92E-01		-2.62E-01	1.84E-01
	635.90	11.32	5.39E-01		-1.85E-01	2.51E-01
	414.70	83.30	3.74E-01	3.74E-01	-2.35E-01	1.76E-01
SB-126	666.33	99.60	4.27E-01		-1.06E-01	2.00E-01
	695.00	99.60	4.25E-01		1.43E-01	1.99E-01
	720.50	53.80	7.41E-01		-9.72E-02	3.44E-01
SN-126	87.57	37.00	1.73E-01	1.73E-01	-1.49E-02	8.47E-02
SB-127	473.00	25.00	7.11E+01	7.02E+01	-8.72E-01	3.33E+01
	685.20	35.70	7.02E+01		3.13E+01	3.30E+01
	783.80	14.70	1.81E+02		6.23E+01	8.46E+01
I-129	29.78	57.00	1.22E+00	1.22E+00	3.35E-01	5.92E-01
	33.60	13.20	2.52E+00		3.64E-01	1.22E+00
	39.58	7.52	2.18E+00		6.20E-01	1.06E+00
I-131	284.30	6.05	1.49E+01	9.42E-01	-1.80E+00	7.15E+00
	364.48	81.20	9.42E-01		-2.68E-01	4.43E-01
	636.97	7.26	1.31E+01		-5.21E+00	6.08E+00
	722.89	1.80	6.16E+01		-7.77E+00	2.87E+01
TE-132	49.72	13.10	5.65E+02	6.26E+01	8.14E+01	2.74E+02
	228.16	88.00	6.26E+01		2.62E+00	3.01E+01
BA-133	81.00	33.00	1.28E-01	8.33E-02	6.10E-03	6.21E-02

Analysis Report for 1510088-16
CP5008S06-07

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	3.00E-01	8.33E-02	-1.52E-01	1.43E-01
	356.01	60.00	8.33E-02		1.05E-02	3.93E-02
I-133	529.87	86.30	9.52E+09	9.52E+09	-4.65E+09	4.39E+09
XE-133	81.00	38.00	8.00E+00	8.00E+00	3.80E-01	3.87E+00
CS-134	563.23	8.38	7.16E-01	8.80E-02	1.38E-01	3.34E-01
	569.32	15.43	3.75E-01		-7.85E-03	1.75E-01
	604.70	97.60	8.80E-02		-8.17E-02	4.19E-02
	795.84	85.40	9.55E-02		5.90E-02	4.47E-02
	801.93	8.73	7.90E-01		-8.28E-02	3.65E-01
CS-135	268.24	16.00	3.58E-01	3.58E-01	-1.24E-01	1.72E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.76E+00	3.65E-01	1.73E-01	1.82E+00
	163.89	4.61	6.17E+00		1.30E+00	2.99E+00
	176.55	13.56	2.09E+00		-2.21E-01	1.01E+00
	273.65	12.66	2.36E+00		-4.33E+00	1.13E+00
	340.57	48.50	7.10E-01		-3.86E-01	3.40E-01
	818.50	99.70	3.65E-01		-1.20E-01	1.69E-01
	1048.07	79.60	5.26E-01		4.80E-02	2.41E-01
	1235.34	19.70	3.09E+00		1.02E+00	1.45E+00
CS-137	661.65	85.12	7.90E-02	7.90E-02	-2.53E-02	3.70E-02
LA-138	788.74	34.00	2.38E-01	1.10E-01	2.22E-01	1.12E-01
	1435.80	66.00	1.10E-01		1.02E-02	4.88E-02
CE-139	165.85	80.35	7.65E-02	7.65E-02	1.87E-02	3.70E-02
BA-140	162.64	6.70	4.42E+00	1.28E+00	1.69E+00	2.14E+00
	304.84	4.50	6.22E+00		-1.43E+00	2.95E+00
	423.70	3.20	9.09E+00		-4.59E+00	4.26E+00
	437.55	2.00	1.65E+01		9.56E+00	7.79E+00
	537.32	25.00	1.28E+00		1.27E-01	5.98E-01
LA-140	328.77	20.50	1.73E+00	4.59E-01	2.05E+00	8.29E-01
	487.03	45.50	7.05E-01		-4.47E-02	3.31E-01
	815.85	23.50	1.58E+00		-1.05E+00	7.25E-01
	1596.49	95.49	4.59E-01		-3.82E-03	2.04E-01
CE-141	145.44	48.40	2.03E-01	2.03E-01	-1.04E-01	9.83E-02
CE-143	57.36	11.80	5.38E+06	2.31E+06	-3.89E+06	2.60E+06
	293.26	42.00	2.31E+06		1.37E+05	1.12E+06
	664.55	5.20	1.67E+07		5.66E+06	7.85E+06
CE-144	133.54	10.80	4.80E-01	4.80E-01	1.01E-01	2.32E-01
PM-144	476.78	42.00	1.32E-01	6.69E-02	-4.62E-02	6.19E-02
	618.01	98.60	6.69E-02		-2.25E-02	3.12E-02
	696.49	99.49	7.47E-02		3.68E-02	3.49E-02
PM-145	36.85	21.70	9.95E-01	5.11E-01	5.69E-01	4.82E-01
	37.36	39.70	5.11E-01		2.92E-01	2.48E-01
	42.30	15.10	8.21E-01		1.29E-01	3.98E-01
	72.40	2.31	2.02E+00		-1.51E+00	9.79E-01
PM-146	453.90	39.94	1.41E-01	1.41E-01	2.45E-02	6.62E-02
	735.90	14.01	4.75E-01		6.98E-02	2.21E-01
	747.13	13.10	5.10E-01		-1.35E-01	2.37E-01
ND-147	91.11	28.90	1.65E+00	1.65E+00	-2.05E+00	8.07E-01
	531.02	13.10	2.87E+00		-5.27E-01	1.33E+00
PM-149	285.90	3.10	4.60E+04	4.60E+04	1.75E+04	2.20E+04
EU-152	121.78	20.50	2.27E-01	2.27E-01	2.38E-02	1.10E-01

Analysis Report for 1510088-16
CP5008S06-07

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	1.07E+00	2.27E-01	-2.27E+00	5.17E-01
	344.27	19.13	2.75E-01		-7.56E-02	1.31E-01
	778.89	9.20	7.40E-01		2.98E-02	3.43E-01
	964.01	10.40	9.53E-01		-1.91E+00	4.48E-01
	1085.78	7.22	1.03E+00		-4.98E-02	4.69E-01
	1112.02	9.60	8.17E-01		3.29E-01	3.74E-01
	1407.95	14.94	6.50E-01		2.95E-01	2.98E-01
GD-153	97.43	31.30	1.56E-01	1.56E-01	-9.94E-02	7.57E-02
	103.18	22.20	2.22E-01		-2.48E-01	1.08E-01
EU-154	123.07	40.50	1.15E-01	1.15E-01	2.59E-02	5.58E-02
	723.30	19.70	3.48E-01		-4.39E-02	1.62E-01
	873.19	11.50	5.93E-01		-1.74E-01	2.73E-01
	996.32	10.30	7.95E-01		-1.97E-01	3.68E-01
	1004.76	17.90	4.23E-01		5.24E-02	1.94E-01
EU-155	1274.45	35.50	2.19E-01	2.05E-01	4.05E-02	9.94E-02
	86.50	30.90	2.05E-01		-7.75E-02	1.00E-01
EU-156	105.30	20.70	2.28E-01	2.97E+00	1.14E-01	1.11E-01
	811.77	10.40	2.97E+00		4.05E-01	1.38E+00
	1153.47	7.20	6.34E+00		4.08E+00	2.96E+00
HO-166M	1230.71	8.90	4.57E+00	9.02E-02	-4.54E-01	2.11E+00
	184.41	72.60	9.02E-02		3.06E-02	4.39E-02
	280.45	29.60	1.90E-01		3.20E-02	9.13E-02
	410.94	11.10	5.27E-01		3.32E-01	2.50E-01
	711.69	54.10	1.37E-01		4.26E-02	6.44E-02
TM-171	66.72	0.14	3.66E+01	3.66E+01	-5.32E+00	1.78E+01
HF-172	81.75	4.52	9.83E-01	4.24E-01	-4.98E-01	4.76E-01
	125.81	11.30	4.24E-01		-4.27E-01	2.05E-01
LU-172	181.53	20.60	7.30E+00	3.70E+00	1.78E+00	3.53E+00
	810.06	16.63	1.18E+01		-2.32E+00	5.45E+00
	912.12	15.25	2.65E+01		6.32E+01	1.27E+01
	1093.66	62.50	3.70E+00		-5.57E-01	1.70E+00
LU-173	100.72	5.24	8.95E-01	2.89E-01	1.47E-01	4.34E-01
	272.11	21.20	2.89E-01		1.98E-01	1.39E-01
HF-175	343.40	84.00	8.62E-02	8.62E-02	-1.38E-02	4.09E-02
LU-176	88.34	13.30	4.81E-01	5.24E-02	-4.13E-02	2.35E-01
	201.83	86.00	6.08E-02		-4.06E-03	2.93E-02
	306.78	94.00	5.24E-02		6.30E-03	2.49E-02
TA-182	67.75	41.20	1.46E-01	1.46E-01	-4.59E-03	7.07E-02
	1121.30	34.90	4.88E-01		7.30E-01	2.32E-01
	1189.05	16.23	7.33E-01		1.35E-01	3.40E-01
	1221.41	26.98	4.39E-01		4.02E-02	2.04E-01
	1231.02	11.44	9.88E-01		5.60E-02	4.56E-01
IR-192	308.46	29.68	2.34E-01	1.50E-01	-2.40E-03	1.11E-01
	468.07	48.10	1.50E-01		-1.74E-03	7.03E-02
HG-203	279.19	77.30	1.28E-01	1.28E-01	1.99E-02	6.14E-02
BI-207	569.67	97.72	5.77E-02	5.77E-02	-1.21E-03	2.69E-02
	1063.62	74.90	9.10E-02		2.02E-02	4.13E-02
+ TL-208	583.14	*	30.22	1.15E-01	1.20E+00	1.37E-01
	860.37	*	4.48		1.18E+00	1.16E+00
	2614.66	*	35.85		7.26E-01	4.47E-02
BI-210M	262.00	45.00	1.16E-01	1.16E-01	-2.47E-02	5.55E-02
	300.00	23.00	2.60E-01		1.15E-01	1.25E-01
PB-210	46.50	4.25	2.51E+00	2.51E+00	3.22E+00	1.22E+00

Analysis Report for 1510088-16
CP5008S06-07

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	1.99E+00	1.99E+00	5.51E-01	9.42E-01
	831.96	2.90	2.48E+00		3.67E-01	1.15E+00
+ BI-212	727.17 *	11.80	6.76E-01	6.76E-01	8.91E-01	3.18E-01
	1620.62	2.75	3.06E+00		1.47E+00	1.37E+00
+ PB-212	238.63 *	44.60	2.65E-01	2.65E-01	1.04E+00	1.30E-01
	300.09 *	3.41	3.50E+00		1.33E+00	1.71E+00
+ BI-214	609.31 *	46.30	3.15E-01	3.15E-01	1.47E+00	1.53E-01
	1120.29 *	15.10	5.79E-01		1.89E+00	2.68E-01
	1764.49 *	15.80	5.64E-01		1.47E+00	2.54E-01
	2204.22 *	4.98	1.63E+00		8.44E-01	7.17E-01
+ PB-214	295.21 *	19.19	6.15E-01	2.27E-01	1.55E+00	3.01E-01
	351.92 *	37.19	2.27E-01		1.48E+00	1.10E-01
RN-219	401.80	6.50	8.07E-01	8.07E-01	-3.11E-01	3.80E-01
RA-223	323.87	3.88	1.38E+00	1.38E+00	2.23E-01	6.59E-01
RA-224	240.98	3.95	2.80E+00	2.80E+00	8.97E+00	1.37E+00
RA-225	40.00	31.00	2.31E+00	2.31E+00	6.58E-01	1.12E+00
+ RA-226	186.21 *	3.28	2.70E+00	2.70E+00	3.00E+00	1.32E+00
TH-227	50.10	8.40	8.85E-01	6.46E-01	1.28E-01	4.28E-01
	236.00	11.50	6.46E-01		-4.75E+00	3.14E-01
	256.20	6.30	8.09E-01		-7.56E-01	3.87E-01
+ AC-228	338.32 *	11.40	8.54E-01	3.33E-01	1.45E+00	4.15E-01
	911.07 *	27.70	3.33E-01		1.18E+00	1.57E-01
	969.11 *	16.60	6.78E-01		1.49E+00	3.21E-01
TH-230	48.44	16.90	4.85E-01	4.85E-01	-3.85E-01	2.35E-01
	62.85	4.60	1.27E+00		1.26E+00	6.17E-01
	67.67	0.37	1.34E+01		-4.21E-01	6.48E+00
PA-231	283.67	1.60	3.46E+00	2.31E+00	-4.17E-01	1.66E+00
	302.67	2.30	2.31E+00		-1.17E+00	1.10E+00
TH-231	25.64	14.70	1.58E+01	7.16E-01	-1.21E+00	7.65E+00
	84.21	6.40	7.16E-01		6.94E-01	3.47E-01
PA-233	311.98	38.60	3.23E-01	3.23E-01	2.84E-02	1.54E-01
PA-234	131.20	20.40	2.55E-01	2.55E-01	1.12E-01	1.24E-01
	733.99	8.80	7.88E-01		3.95E-01	3.67E-01
	946.00	12.00	6.02E-01		-1.37E-01	2.77E-01
PA-234M	1001.03	0.92	8.64E+00	8.64E+00	-6.07E-01	3.99E+00
TH-234	63.29	3.80	1.52E+00	1.52E+00	1.52E+00	7.41E-01
U-235	143.76	10.50	4.78E-01	4.78E-01	1.84E-01	2.32E-01
	163.35	4.70	1.09E+00		4.18E-01	5.29E-01
	205.31	4.70	1.14E+00		2.92E-01	5.52E-01
NP-237	86.50	12.60	4.97E-01	4.97E-01	-1.88E-01	2.43E-01
NP-239	106.10	22.70	2.86E+03	2.86E+03	7.67E+02	1.39E+03
	228.18	10.70	7.22E+03		3.03E+02	3.48E+03
	277.60	14.10	5.89E+03		7.29E+02	2.83E+03
AM-241	59.54	35.90	1.54E-01	1.54E-01	6.01E-02	7.45E-02
AM-243	74.67	66.00	1.01E-01	1.01E-01	-2.18E-01	4.95E-02
CM-243	209.75	3.29	1.75E+00	4.33E-01	8.81E-01	8.47E-01
	228.14	10.60	5.32E-01		2.23E-02	2.56E-01
	277.60	14.00	4.33E-01		5.36E-02	2.08E-01

Analysis Report for 1510088-16
CP5008S06-07

-
- + = 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: CP5008S06-07

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	1	166
9:	574	1142	1087	436	583	1704	301	128
17:	135	121	119	114	126	129	127	125
25:	109	137	118	123	113	114	103	92
33:	117	102	110	112	104	130	92	144
41:	133	105	103	139	127	147	192	117
49:	100	115	105	105	99	113	106	68
57:	93	99	105	129	95	98	154	173
65:	118	114	110	121	120	120	103	113
73:	126	145	406	194	460	360	88	93
81:	108	108	109	138	128	88	201	206
89:	95	164	107	120	219	144	76	82
97:	62	62	70	81	84	63	61	73
105:	77	99	72	70	81	70	82	66
113:	76	75	83	64	80	61	56	76
121:	65	64	69	67	73	55	68	69
129:	94	92	74	69	77	75	61	53
137:	57	48	70	67	62	78	62	81
145:	62	58	61	71	71	61	61	70
153:	70	60	66	67	77	55	65	49
161:	56	68	54	70	59	59	60	64
169:	61	58	44	61	56	64	55	53
177:	56	54	61	53	61	42	67	61
185:	71	192	102	56	44	55	49	59
193:	43	59	48	62	42	52	59	45
201:	55	49	47	45	48	53	57	44
209:	73	72	45	45	42	40	53	41
217:	41	36	47	45	55	39	54	43
225:	55	41	39	63	52	42	41	51
233:	36	51	36	38	51	225	478	81
241:	90	165	68	44	36	44	35	30
249:	31	31	40	34	40	21	32	36
257:	39	36	48	32	29	29	38	39
265:	46	37	20	39	42	58	48	33
273:	35	27	45	31	64	37	32	45
281:	33	31	30	31	45	32	37	26
289:	29	28	25	26	22	55	213	136
297:	29	38	29	48	36	32	32	23
305:	18	27	15	29	29	27	31	28
313:	30	25	26	24	24	27	20	28
321:	24	32	25	24	27	23	38	52
329:	34	24	22	17	22	25	25	30
337:	33	91	68	27	27	23	23	20
345:	22	26	30	27	21	21	128	400
353:	111	19	20	19	22	17	16	18
361:	21	19	16	15	17	16	18	25

369: 23 21 21 21 22 20 25 28

Sample Title: CP5008S06-07

Channel	1	2	3	4	5	6	7	8
377:	24	14	15	26	29	18	18	9
385:	27	27	21	18	27	21	14	19
393:	21	15	19	17	16	19	16	11
401:	14	21	22	23	27	19	19	18
409:	26	24	20	21	20	13	15	20
417:	14	27	19	20	19	13	16	20
425:	13	15	26	14	19	12	13	20
433:	13	19	12	17	18	25	24	12
441:	11	10	23	18	18	18	16	17
449:	10	19	23	19	17	21	18	11
457:	17	8	18	14	14	19	43	25
465:	21	17	16	14	14	14	13	13
473:	18	17	10	20	9	20	11	14
481:	19	13	14	13	19	10	17	19
489:	12	15	20	12	18	18	13	13
497:	20	14	25	17	8	19	11	10
505:	10	16	10	12	25	65	80	32
513:	25	10	14	10	15	15	14	14
521:	7	13	11	17	9	13	12	7
529:	10	7	12	11	11	15	11	17
537:	12	14	12	9	15	8	10	19
545:	10	10	17	12	15	13	15	8
553:	12	9	4	8	11	18	9	12
561:	13	13	16	15	11	13	13	7
569:	14	12	16	12	14	22	7	14
577:	9	10	4	12	22	37	148	80
585:	14	13	16	9	12	12	14	15
593:	12	11	9	12	20	9	9	17
601:	10	13	8	18	23	6	6	56
609:	236	166	20	6	10	10	12	12
617:	8	10	7	12	6	17	8	11
625:	4	13	14	9	12	6	8	15
633:	11	10	9	6	4	9	10	8
641:	11	5	9	8	10	8	11	6
649:	10	12	11	9	11	16	8	9
657:	10	10	10	8	11	12	13	7
665:	12	16	9	12	7	14	12	5
673:	9	15	11	3	3	11	11	6
681:	7	14	11	11	11	13	15	7
689:	11	10	9	7	9	9	6	9
697:	16	14	8	5	8	12	12	7
705:	16	8	11	10	11	16	13	10
713:	11	7	12	6	9	8	10	9
721:	4	8	10	11	7	14	31	22
729:	8	4	8	12	7	6	12	11
737:	8	9	4	5	6	11	9	8
745:	7	8	12	8	7	6	10	8
753:	5	6	14	9	10	9	5	8
761:	6	8	9	5	8	8	13	20
769:	12	8	13	12	11	10	7	10
777:	6	8	6	8	9	8	6	8
785:	8	21	14	12	8	8	8	5
793:	4	19	16	8	11	7	9	6

801: 8 7 7 8 6 8 6 7

Sample Title: CP5008S06-07

Channel	1	2	3	4	5	6	7	8
809:	7	7	7	11	8	9	11	4
817:	5	4	4	9	11	8	9	7
825:	5	7	4	6	8	7	11	7
833:	7	9	7	12	10	11	12	16
841:	7	6	4	8	11	11	3	8
849:	9	8	7	8	6	6	13	7
857:	10	13	11	20	21	8	6	8
865:	7	5	8	7	4	8	5	5
873:	7	9	8	3	8	11	3	5
881:	8	6	5	14	7	7	7	5
889:	7	4	10	6	10	7	6	8
897:	1	7	10	7	8	9	5	8
905:	7	5	6	4	7	44	74	54
913:	9	8	5	6	5	2	9	7
921:	3	7	11	4	3	4	6	8
929:	5	4	8	9	11	16	14	4
937:	4	8	8	7	9	9	5	6
945:	9	6	11	4	4	7	6	7
953:	7	2	4	4	5	8	7	8
961:	5	7	8	16	26	10	13	42
969:	45	27	8	5	3	0	6	4
977:	8	5	3	7	5	11	9	4
985:	7	2	4	10	3	10	7	13
993:	9	7	4	11	4	11	7	10
1001:	6	8	5	3	9	6	7	1
1009:	6	8	9	6	4	5	6	6
1017:	5	7	8	6	4	5	3	10
1025:	5	6	3	3	9	4	5	6
1033:	5	10	11	4	5	5	7	8
1041:	10	6	7	8	4	8	4	7
1049:	5	9	5	6	2	11	7	6
1057:	8	6	3	4	5	2	5	9
1065:	5	2	3	3	3	8	3	6
1073:	5	6	8	7	9	6	7	7
1081:	4	7	3	5	4	8	4	6
1089:	5	6	6	3	11	6	6	7
1097:	11	6	9	7	11	6	6	10
1105:	8	7	5	5	5	8	13	4
1113:	5	2	3	4	10	8	28	61
1121:	27	5	4	4	5	10	6	7
1129:	9	5	8	3	6	3	9	8
1137:	4	7	4	9	6	7	10	7
1145:	7	9	10	3	7	11	12	8
1153:	9	10	11	9	8	6	5	8
1161:	10	8	5	5	9	7	5	14
1169:	3	8	5	5	7	4	8	5
1177:	5	7	5	12	12	5	9	10
1185:	9	8	9	7	6	10	8	10
1193:	5	6	4	5	3	9	6	7
1201:	8	10	7	9	7	2	4	5
1209:	12	4	5	7	10	9	11	5
1217:	6	11	8	10	7	6	6	7
1225:	6	11	4	11	8	8	6	3

1233: 9 4 6 4 17 28 15 5

Sample Title: CP5008S06-07

Channel	1	2	3	4	5	6	7	8
1241:	4	5	9	11	4	7	6	4
1249:	2	11	10	9	9	7	7	5
1257:	2	5	8	5	9	4	1	5
1265:	8	3	7	5	5	3	5	7
1273:	6	3	5	2	3	4	3	8
1281:	12	6	4	3	5	8	3	8
1289:	7	6	3	6	6	3	6	5
1297:	5	4	6	7	5	1	4	7
1305:	1	10	5	2	2	4	5	5
1313:	4	4	7	3	2	8	3	3
1321:	4	4	2	2	5	3	4	4
1329:	5	4	6	1	3	2	1	2
1337:	2	3	5	0	2	4	3	3
1345:	6	2	3	4	5	4	4	3
1353:	3	7	0	2	1	2	6	5
1361:	6	4	3	5	3	1	3	3
1369:	5	2	0	2	5	2	3	4
1377:	9	12	4	4	0	4	2	4
1385:	5	2	5	3	1	2	2	2
1393:	2	5	2	4	3	4	2	6
1401:	4	4	5	5	2	2	12	12
1409:	4	6	4	3	2	2	5	5
1417:	3	1	3	4	3	1	3	3
1425:	3	5	2	2	5	1	4	8
1433:	1	2	3	1	4	3	2	4
1441:	6	2	1	3	1	2	1	2
1449:	1	4	3	2	3	5	1	5
1457:	3	8	76	241	223	73	9	3
1465:	3	1	0	1	2	3	0	3
1473:	2	1	4	1	1	1	3	3
1481:	1	3	1	1	4	3	1	2
1489:	3	1	1	2	3	1	3	2
1497:	3	1	0	3	3	0	1	1
1505:	1	0	3	3	12	2	2	3
1513:	1	4	2	3	3	2	3	0
1521:	2	1	2	0	5	2	3	0
1529:	0	2	3	3	1	1	1	1
1537:	0	4	2	0	1	4	2	1
1545:	1	1	2	4	4	1	1	1
1553:	3	1	2	2	4	1	2	0
1561:	1	0	1	4	2	1	1	2
1569:	3	1	2	2	0	2	1	1
1577:	2	0	0	4	1	2	5	1
1585:	0	3	4	7	6	1	1	5
1593:	2	2	1	0	6	3	2	0
1601:	0	1	0	1	0	1	3	2
1609:	2	0	2	1	1	2	2	0
1617:	4	1	4	6	4	2	1	4
1625:	1	1	0	0	3	4	3	1
1633:	0	1	3	1	1	3	3	2
1641:	1	0	6	2	0	0	3	1
1649:	2	0	0	0	1	1	0	0
1657:	1	0	0	4	1	3	1	0

1665: 2 0 0 1 3 2 1 2

Sample Title: CP5008S06-07

Channel	1	2	3	4	5	6	7	8
1673:	5	1	0	1	1	1	1	1
1681:	3	0	0	0	2	1	0	1
1689:	3	0	3	0	5	0	0	0
1697:	2	1	0	0	1	4	3	2
1705:	2	1	0	2	1	1	1	1
1713:	1	0	1	1	3	2	2	1
1721:	2	1	1	0	1	2	1	5
1729:	10	5	4	2	0	3	0	1
1737:	1	1	0	1	3	1	1	3
1745:	1	1	2	0	0	0	1	2
1753:	0	0	1	2	1	1	2	1
1761:	0	5	18	30	19	7	1	2
1769:	0	2	1	3	0	1	2	2
1777:	0	0	1	1	0	0	0	1
1785:	3	0	1	1	0	0	0	4
1793:	0	0	1	1	1	0	1	2
1801:	0	1	1	2	2	2	1	3
1809:	1	2	2	0	1	0	2	2
1817:	2	0	2	3	0	2	1	1
1825:	2	0	0	3	1	1	1	5
1833:	1	0	0	1	2	1	1	0
1841:	1	4	1	0	2	6	6	3
1849:	2	0	2	2	4	0	0	1
1857:	1	1	1	1	2	2	2	4
1865:	1	0	0	2	1	1	0	2
1873:	4	1	1	2	0	0	1	0
1881:	1	0	0	2	3	0	0	0
1889:	2	1	1	0	2	1	1	0
1897:	0	3	2	2	1	1	1	0
1905:	3	1	1	0	0	2	0	1
1913:	1	0	0	1	1	0	2	1
1921:	0	0	2	1	0	0	2	2
1929:	2	1	1	1	3	2	3	1
1937:	1	0	3	0	0	1	1	0
1945:	2	0	1	1	2	0	0	3
1953:	1	0	0	2	1	1	1	0
1961:	1	1	0	1	3	2	0	2
1969:	2	0	2	2	0	1	2	0
1977:	0	2	0	0	0	0	2	3
1985:	2	3	0	2	0	0	2	0
1993:	1	1	0	2	0	2	1	1
2001:	0	0	2	3	1	0	2	1
2009:	3	1	1	1	0	1	0	1
2017:	3	0	1	1	0	1	0	2
2025:	0	1	3	2	0	2	0	0
2033:	0	1	2	1	3	2	1	0
2041:	1	1	0	2	1	1	0	0
2049:	3	1	1	1	1	2	1	1
2057:	1	0	0	2	0	0	0	3
2065:	1	1	1	3	0	0	0	0
2073:	1	1	1	1	3	0	1	0
2081:	2	1	1	2	1	0	1	0
2089:	1	1	1	2	0	0	0	0

2097: 0 0 1 3 1 7 5 1

Sample Title: CP5008S06-07

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

2529: 0 0 0 0 0 0 0 0 2

Sample Title: CP5008S06-07

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	1	0	0	0	0	0	3
2545:	1	0	1	0	0	0	1	0
2553:	1	0	0	1	0	0	0	0
2561:	1	2	1	0	1	1	0	0
2569:	0	0	0	0	0	2	0	0
2577:	1	0	0	1	1	0	1	0
2585:	1	1	1	0	0	1	0	0
2593:	0	0	0	0	0	0	1	1
2601:	1	0	1	0	0	1	0	0
2609:	0	2	2	11	19	26	17	5
2617:	1	0	0	0	0	0	0	1
2625:	0	1	0	1	0	1	2	0
2633:	0	0	0	0	0	1	0	0
2641:	0	0	0	0	0	1	0	0
2649:	1	0	0	0	0	0	2	1
2657:	0	1	0	1	0	0	0	0
2665:	0	0	1	0	0	0	0	1
2673:	0	0	0	0	0	1	0	1
2681:	0	0	0	0	0	1	0	1
2689:	0	0	0	1	0	0	0	0
2697:	0	1	1	0	0	0	2	0
2705:	1	1	1	0	0	0	0	0
2713:	0	0	0	0	0	0	1	0
2721:	1	0	0	0	0	0	0	0
2729:	0	0	0	0	1	0	1	0
2737:	0	0	0	1	1	0	0	0
2745:	0	0	0	1	0	0	1	0
2753:	0	0	0	0	0	0	0	0
2761:	0	1	0	0	0	0	0	0
2769:	0	0	0	0	0	0	1	1
2777:	0	0	0	0	1	0	0	0
2785:	0	0	0	0	0	0	1	0
2793:	0	0	0	0	0	0	0	0
2801:	1	0	0	0	0	0	0	1
2809:	0	0	0	0	0	0	1	0
2817:	0	0	0	0	0	0	0	1
2825:	0	0	0	0	0	0	1	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	0	0
2849:	0	0	0	0	1	0	0	0
2857:	1	1	0	0	0	1	1	1
2865:	0	0	1	0	0	1	0	0
2873:	0	1	0	0	0	0	0	0
2881:	0	1	0	1	0	0	0	0
2889:	0	0	0	0	1	3	0	2
2897:	0	0	0	0	0	0	0	0
2905:	1	0	0	1	0	0	0	0
2913:	2	0	0	0	0	0	1	0
2921:	1	0	0	1	0	0	0	0
2929:	1	1	0	0	1	0	0	0
2937:	0	0	1	0	0	0	1	0
2945:	0	0	1	1	0	0	0	0
2953:	0	0	1	0	0	0	0	0

2961: 0 0 0 0 0 0 0 0 0

Sample Title: CP5008S06-07

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

3393: 0 0 0 1 0 0 0 0

Sample Title: CP5008S06-07

Channel	1	2	3	4	5	6	7	8
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	0	0	0
3433:	0	0	1	0	1	0	0	0
3441:	1	0	1	0	0	0	1	0
3449:	0	0	0	0	0	0	0	1
3457:	0	0	0	1	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	1	0	0
3481:	1	0	0	0	0	1	0	0
3489:	0	0	0	0	1	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	1	0	0	1	0	0
3513:	0	0	0	0	0	0	0	0
3521:	1	0	0	1	0	0	0	0
3529:	0	0	0	0	0	1	0	0
3537:	0	0	0	0	0	0	1	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	1	0	0	0	0	0	0
3569:	0	0	0	0	1	0	0	0
3577:	1	0	0	0	0	1	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	1	1	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	1	0
3625:	0	1	0	0	0	0	0	0
3633:	0	0	0	0	0	1	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	1	0	1
3673:	0	1	0	0	0	0	0	1
3681:	0	0	1	0	0	0	0	0
3689:	0	0	0	0	0	1	0	0
3697:	0	1	0	0	0	0	0	1
3705:	0	0	1	0	0	0	0	0
3713:	0	0	0	1	0	0	0	0
3721:	0	0	0	0	1	0	1	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	1	0	0	0	0	0
3761:	0	0	0	0	0	0	1	0
3769:	0	0	0	1	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	1
3793:	0	0	0	0	0	0	0	1
3801:	0	0	0	0	0	0	0	0
3809:	0	0	1	0	0	1	0	0
3817:	0	1	0	0	0	0	2	0

3825: 0 1 0 0 0 0 1 0

Sample Title: CP5008S06-07

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

KCS
11/9/15Analysis Report for 1510088-17
CP5008S09-10

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-17
Sample Description : CP5008S09-10
Sample Type : SOIL

Sample Size : 5.540E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 9:03:49AM
Acquisition Started : 11/9/2015 5:29:25PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3616.3 seconds

Dead Time : 0.45 %

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 : 29358

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

Analysis Report for 1510088-17
CP5008S09-10

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 6:29:43PM
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	24.42	24.66	0.0000	0.00
2	46.72	46.95	0.0000	0.00
3	76.15	76.37	0.0000	0.00
4	87.15	87.36	0.0000	0.00
5	93.35	93.56	0.0000	0.00
6	185.59	185.74	0.0000	0.00
7	217.96	218.10	0.0000	0.00
8	238.79	238.92	0.0000	0.00
9	242.05	242.17	0.0000	0.00
10	270.38	270.49	0.0000	0.00
11	277.47	277.58	0.0000	0.00
12	295.43	295.53	0.0000	0.00
13	300.66	300.76	0.0000	0.00
14	316.09	316.18	0.0000	0.00
15	338.85	338.92	0.0000	0.00
16	351.92	351.99	0.0000	0.00
17	463.98	463.99	0.0000	0.00
18	511.05	511.04	0.0000	0.00
19	583.24	583.19	0.0000	0.00
20	609.53	609.48	0.0000	0.00
21	694.06	693.97	0.0000	0.00
22	702.43	702.33	0.0000	0.00
23	728.05	727.94	0.0000	0.00
24	763.73	763.60	0.0000	0.00
25	785.36	785.22	0.0000	0.00
26	873.80	873.62	0.0000	0.00
27	898.12	897.93	0.0000	0.00
28	911.41	911.22	0.0000	0.00
29	933.96	933.75	0.0000	0.00
30	965.00	964.78	0.0000	0.00
31	969.15	968.93	0.0000	0.00
32	1003.73	1003.49	0.0000	0.00
33	1069.32	1069.06	0.0000	0.00
34	1120.48	1120.20	0.0000	0.00
35	1338.15	1337.77	0.0000	0.00
36	1378.32	1377.93	0.0000	0.00
37	1401.27	1400.87	0.0000	0.00
38	1406.26	1405.86	0.0000	0.00
39	1430.70	1430.29	0.0000	0.00
40	1460.98	1460.55	0.0000	0.00
41	1590.69	1590.22	0.0000	0.00
42	1621.61	1621.13	0.0000	0.00

Analysis Report for 1510088-17
CP5008S09-10

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1729.97	1729.45	0.0000	0.00
44	1764.65	1764.12	0.0000	0.00
45	1847.24	1846.68	0.0000	0.00
46	1874.66	1874.09	0.0000	0.00
47	1944.17	1943.58	0.0000	0.00
48	2103.85	2103.21	0.0000	0.00
49	2176.77	2176.11	0.0000	0.00
50	2204.16	2203.49	0.0000	0.00
51	2211.61	2210.94	0.0000	0.00
52	2248.55	2247.87	0.0000	0.00
53	2364.23	2363.51	0.0000	0.00
54	2614.53	2613.75	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510088-17
CP5008S09-10

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 6:29:43PM

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	24.42	22 -	27	24.66	6.25E+01	69.81	9.21E+02	2.13
2	46.72	44 -	50	46.95	1.27E+02	86.43	1.27E+03	1.19
3	76.15	71 -	83	76.37	1.32E+03	177.73	3.08E+03	3.89
4	87.15	83 -	91	87.36	3.05E+02	124.94	2.22E+03	3.54
5	93.35	91 -	96	93.56	2.06E+02	88.90	1.33E+03	1.80
6	185.59	180 -	189	185.74	2.25E+02	92.54	1.09E+03	1.94
7	217.96	215 -	224	218.10	6.55E+01	78.78	8.47E+02	3.16
M 8	238.79	233 -	248	238.92	8.16E+02	70.43	3.98E+02	1.73
M 9	242.05	233 -	248	242.17	2.03E+02	74.51	4.40E+02	1.89
M 10	270.38	267 -	281	270.49	7.26E+01	49.19	4.02E+02	2.33
m 11	277.47	267 -	281	277.58	6.96E+01	49.63	3.69E+02	2.33
12	295.43	291 -	299	295.53	1.97E+02	66.93	5.71E+02	1.84
13	300.66	299 -	304	300.76	3.75E+01	43.35	3.47E+02	1.51
14	316.09	314 -	319	316.18	3.06E+01	36.88	2.41E+02	2.92
15	338.85	335 -	343	338.92	1.23E+02	60.12	4.78E+02	1.74
16	351.92	347 -	356	351.99	4.64E+02	69.01	4.16E+02	1.56
17	463.98	459 -	469	463.99	6.44E+01	45.09	2.37E+02	1.98
18	511.05	507 -	517	511.04	1.35E+02	49.90	2.64E+02	2.83
19	583.24	577 -	588	583.19	2.54E+02	55.50	2.57E+02	1.87
20	609.53	605 -	614	609.48	3.57E+02	51.88	1.83E+02	2.05
21	694.06	692 -	696	693.97	2.14E+01	20.13	6.93E+01	2.84
22	702.43	697 -	707	702.33	6.21E+01	35.78	1.38E+02	8.18
23	728.05	720 -	735	727.94	6.10E+01	51.42	2.40E+02	2.70
24	763.73	754 -	775	763.60	7.59E+01	63.45	2.88E+02	13.70
25	785.36	781 -	788	785.22	2.67E+01	26.61	1.01E+02	2.17
26	873.80	870 -	878	873.62	3.20E+01	26.40	8.19E+01	6.85
27	898.12	896 -	901	897.93	1.31E+01	16.70	4.59E+01	2.29
28	911.41	905 -	915	911.22	1.55E+02	41.67	1.51E+02	1.90
29	933.96	930 -	937	933.75	2.20E+01	25.77	9.60E+01	1.21
M 30	965.00	963 -	973	964.78	2.94E+01	18.22	5.72E+01	1.87
m 31	969.15	963 -	973	968.93	8.88E+01	30.57	8.89E+01	2.34
32	1003.73	1000 -	1006	1003.49	1.67E+01	21.48	6.27E+01	1.77
33	1069.32	1059 -	1076	1069.06	3.86E+01	46.17	1.79E+02	12.93
34	1120.48	1116 -	1124	1120.20	7.60E+01	27.78	7.20E+01	2.09
35	1338.15	1332 -	1342	1337.77	1.99E+01	21.97	5.01E+01	4.37
36	1378.32	1374 -	1380	1377.93	1.74E+01	18.75	4.92E+01	1.82
37	1401.27	1398 -	1403	1400.87	1.14E+01	12.29	2.13E+01	2.70
38	1406.26	1404 -	1408	1405.86	1.26E+01	11.30	1.68E+01	3.00
39	1430.70	1426 -	1434	1430.29	1.71E+01	15.41	2.38E+01	4.02
40	1460.98	1455 -	1467	1460.55	5.21E+02	52.41	7.80E+01	2.24

Analysis Report for 1510088-17
CP5008S09-10

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1590.69	1583 -	1596	1590.22	2.71E+01	23.13	4.17E+01	7.55
42	1621.61	1615 -	1626	1621.13	1.01E+01	13.56	1.77E+01	2.89
43	1729.97	1725 -	1735	1729.45	2.48E+01	11.76	4.33E+00	1.42
44	1764.65	1760 -	1769	1764.12	6.42E+01	18.17	1.15E+01	2.98
45	1847.24	1842 -	1851	1846.68	1.90E+01	8.72	0.00E+00	3.23
46	1874.66	1871 -	1877	1874.09	1.01E+01	7.76	3.83E+00	4.90
47	1944.17	1940 -	1946	1943.58	8.35E+00	7.23	3.30E+00	1.91
48	2103.85	2099 -	2106	2103.21	9.10E+00	10.39	1.18E+01	2.09
49	2176.77	2171 -	2179	2176.11	8.85E+00	9.62	8.31E+00	1.52
50	2204.16	2199 -	2206	2203.49	1.79E+01	9.80	4.30E+00	1.77
51	2211.61	2208 -	2213	2210.94	6.63E+00	6.40	2.75E+00	2.74
52	2248.55	2245 -	2250	2247.87	4.58E+00	5.74	2.83E+00	2.72
53	2364.23	2359 -	2366	2363.51	1.08E+01	8.25	4.38E+00	3.04
54	2614.53	2607 -	2618	2613.75	7.50E+01	17.32	0.00E+00	2.99

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 6:29:43PM

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	24.42	22 -	27	6.25E+01	69.81	9.21E+02	5.59E+01
2	46.72	44 -	50	1.27E+02	86.43	1.27E+03	6.86E+01
3	76.15	71 -	83	1.32E+03	177.73	3.08E+03	1.33E+02
4	87.15	83 -	91	3.05E+02	124.94	2.22E+03	9.86E+01
5	93.35	91 -	96	2.06E+02	88.90	1.33E+03	6.92E+01
6	185.59	180 -	189	2.25E+02	92.54	1.09E+03	7.20E+01
7	217.96	215 -	224	6.55E+01	78.78	8.47E+02	6.34E+01
M	8	238.79	233 -	8.16E+02	70.43	3.98E+02	3.28E+01
m	9	242.05	233 -	2.03E+02	74.51	4.40E+02	3.45E+01
M	10	270.38	267 -	7.26E+01	49.19	4.02E+02	3.30E+01
m	11	277.47	267 -	6.96E+01	49.63	3.69E+02	3.16E+01
12	295.43	291 -	299	1.97E+02	66.93	5.71E+02	5.00E+01
13	300.66	299 -	304	3.75E+01	43.35	3.47E+02	3.42E+01
14	316.09	314 -	319	3.06E+01	36.88	2.41E+02	2.89E+01

Analysis Report for 1510088-17

CP5008S09-10

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
15	338.85	335 -	343	1.23E+02	60.12	4.78E+02	4.59E+01
16	351.92	347 -	356	4.64E+02	69.01	4.16E+02	4.43E+01
17	463.98	459 -	469	6.44E+01	45.09	2.37E+02	3.46E+01
18	511.05	507 -	517	1.35E+02	49.90	2.64E+02	3.63E+01
19	583.24	577 -	588	2.54E+02	55.50	2.57E+02	3.73E+01
20	609.53	605 -	614	3.57E+02	51.88	1.83E+02	2.92E+01
21	694.06	692 -	696	2.14E+01	20.13	6.93E+01	1.47E+01
22	702.43	697 -	707	6.21E+01	35.78	1.38E+02	2.64E+01
23	728.05	720 -	735	6.10E+01	51.42	2.40E+02	4.03E+01
24	763.73	754 -	775	7.59E+01	63.45	2.88E+02	5.02E+01
25	785.36	781 -	788	2.67E+01	26.61	1.01E+02	2.02E+01
26	873.80	870 -	878	3.20E+01	26.40	8.19E+01	1.96E+01
27	898.12	896 -	901	1.31E+01	16.70	4.59E+01	1.24E+01
28	911.41	905 -	915	1.55E+02	41.67	1.51E+02	2.75E+01
29	933.96	930 -	937	2.20E+01	25.77	9.60E+01	1.97E+01
M	965.00	963 -	973	2.94E+01	18.22	5.72E+01	1.24E+01
m	969.15	963 -	973	8.88E+01	30.57	8.89E+01	1.55E+01
32	1003.73	1000 -	1006	1.67E+01	21.48	6.27E+01	1.63E+01
33	1069.32	1059 -	1076	3.86E+01	46.17	1.79E+02	3.66E+01
34	1120.48	1116 -	1124	7.60E+01	27.78	7.20E+01	1.78E+01
35	1338.15	1332 -	1342	1.99E+01	21.97	5.01E+01	1.65E+01
36	1378.32	1374 -	1380	1.74E+01	18.75	4.92E+01	1.38E+01
37	1401.27	1398 -	1403	1.14E+01	12.29	2.13E+01	8.44E+00
38	1406.26	1404 -	1408	1.26E+01	11.30	1.68E+01	7.23E+00
39	1430.70	1426 -	1434	1.71E+01	15.41	2.38E+01	1.07E+01
40	1460.98	1455 -	1467	5.21E+02	52.41	7.80E+01	2.12E+01
41	1590.69	1583 -	1596	2.71E+01	23.13	4.17E+01	1.70E+01
42	1621.61	1615 -	1626	1.01E+01	13.56	1.77E+01	9.85E+00
43	1729.97	1725 -	1735	2.48E+01	11.76	4.33E+00	5.13E+00
44	1764.65	1760 -	1769	6.42E+01	18.17	1.15E+01	7.02E+00
45	1847.24	1842 -	1851	1.90E+01	8.72	0.00E+00	0.00E+00
46	1874.66	1871 -	1877	1.01E+01	7.76	3.83E+00	3.67E+00
47	1944.17	1940 -	1946	8.35E+00	7.23	3.30E+00	3.57E+00
48	2103.85	2099 -	2106	9.10E+00	10.39	1.18E+01	6.96E+00
49	2176.77	2171 -	2179	8.85E+00	9.62	8.31E+00	6.21E+00
50	2204.16	2199 -	2206	1.79E+01	9.80	4.30E+00	4.08E+00
51	2211.61	2208 -	2213	6.63E+00	6.40	2.75E+00	3.13E+00
52	2248.55	2245 -	2250	4.58E+00	5.74	2.83E+00	3.15E+00
53	2364.23	2359 -	2366	1.08E+01	8.25	4.38E+00	4.09E+00
54	2614.53	2607 -	2618	7.50E+01	17.32	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 1510088-17

CP5008S09-10

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 6:29:43PM

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	24.42	22 -	27	24.66	6.25E+01	69.81	9.21E+02	.....
2	46.72	44 -	50	46.95	1.27E+02	86.43	1.27E+03	PB-210
3	76.15	71 -	83	76.37	1.32E+03	177.73	3.08E+03	.....
4	87.15	83 -	91	87.36	3.05E+02	124.94	2.22E+03	SN-126 NP-237 EU-155 CD-109
5	93.35	91 -	96	93.56	2.06E+02	88.90	1.33E+03	GA-67
6	185.59	180 -	189	185.74	2.25E+02	92.54	1.09E+03	RA-226
7	217.96	215 -	224	218.10	6.55E+01	78.78	8.47E+02	.....
M 8	238.79	233 -	248	238.92	8.16E+02	70.43	3.98E+02	PB-212
m 9	242.05	233 -	248	242.17	2.03E+02	74.51	4.40E+02	.....
M 10	270.38	267 -	281	270.49	7.26E+01	49.19	4.02E+02	.....
m 11	277.47	267 -	281	277.58	6.96E+01	49.63	3.69E+02	CM-243 NP-239
12	295.43	291 -	299	295.53	1.97E+02	66.93	5.71E+02	PB-214
13	300.66	299 -	304	300.76	3.75E+01	43.35	3.47E+02	GA-67 PB-212 BI-210M
14	316.09	314 -	319	316.18	3.06E+01	36.88	2.41E+02	.....
15	338.85	335 -	343	338.92	1.23E+02	60.12	4.78E+02	AC-228
16	351.92	347 -	356	351.99	4.64E+02	69.01	4.16E+02	PB-214
17	463.98	459 -	469	463.99	6.44E+01	45.09	2.37E+02	SB-125
18	511.05	507 -	517	511.04	1.35E+02	49.90	2.64E+02	.....
19	583.24	577 -	588	583.19	2.54E+02	55.50	2.57E+02	TL-208
20	609.53	605 -	614	609.48	3.57E+02	51.88	1.83E+02	BI-214
21	694.06	692 -	696	693.97	2.14E+01	20.13	6.93E+01	SB-126
22	702.43	697 -	707	702.33	6.21E+01	35.78	1.38E+02	NB-94
23	728.05	720 -	735	727.94	6.10E+01	51.42	2.40E+02	BI-212
24	763.73	754 -	775	763.60	7.59E+01	63.45	2.88E+02	AG-110M
25	785.36	781 -	788	785.22	2.67E+01	26.61	1.01E+02	.....
26	873.80	870 -	878	873.62	3.20E+01	26.40	8.19E+01	EU-154
27	898.12	896 -	901	897.93	1.31E+01	16.70	4.59E+01	Y-88
28	911.41	905 -	915	911.22	1.55E+02	41.67	1.51E+02	AC-228 LU-172
29	933.96	930 -	937	933.75	2.20E+01	25.77	9.60E+01	.....
M 30	965.00	963 -	973	964.78	2.94E+01	18.22	5.72E+01	EU-152
m 31	969.15	963 -	973	968.93	8.88E+01	30.57	8.89E+01	AC-228
32	1003.73	1000 -	1006	1003.49	1.67E+01	21.48	6.27E+01	.....
33	1069.32	1059 -	1076	1069.06	3.86E+01	46.17	1.79E+02	.....
34	1120.48	1116 -	1124	1120.20	7.60E+01	27.78	7.20E+01	SC-46

Analysis Report for 1510088-17
CP5008S09-10

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
								BI-214 TA-182
35	1338.15	1332 -	1342	1337.77	1.99E+01	21.97	5.01E+01	.....
36	1378.32	1374 -	1380	1377.93	1.74E+01	18.75	4.92E+01	.....
37	1401.27	1398 -	1403	1400.87	1.14E+01	12.29	2.13E+01	.....
38	1406.26	1404 -	1408	1405.86	1.26E+01	11.30	1.68E+01	.....
39	1430.70	1426 -	1434	1430.29	1.71E+01	15.41	2.38E+01	.....
40	1460.98	1455 -	1467	1460.55	5.21E+02	52.41	7.80E+01	K-40
41	1590.69	1583 -	1596	1590.22	2.71E+01	23.13	4.17E+01	.....
42	1621.61	1615 -	1626	1621.13	1.01E+01	13.56	1.77E+01	BI-212
43	1729.97	1725 -	1735	1729.45	2.48E+01	11.76	4.33E+00	.....
44	1764.65	1760 -	1769	1764.12	6.42E+01	18.17	1.15E+01	BI-214
45	1847.24	1842 -	1851	1846.68	1.90E+01	8.72	0.00E+00	.....
46	1874.66	1871 -	1877	1874.09	1.01E+01	7.76	3.83E+00	.....
47	1944.17	1940 -	1946	1943.58	8.35E+00	7.23	3.30E+00	.....
48	2103.85	2099 -	2106	2103.21	9.10E+00	10.39	1.18E+01	.....
49	2176.77	2171 -	2179	2176.11	8.85E+00	9.62	8.31E+00	.....
50	2204.16	2199 -	2206	2203.49	1.79E+01	9.80	4.30E+00	BI-214
51	2211.61	2208 -	2213	2210.94	6.63E+00	6.40	2.75E+00	.....
52	2248.55	2245 -	2250	2247.87	4.58E+00	5.74	2.83E+00	.....
53	2364.23	2359 -	2366	2363.51	1.08E+01	8.25	4.38E+00	.....
54	2614.53	2607 -	2618	2613.75	7.50E+01	17.32	0.00E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 6:29:43PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	24.42	6.25E+01	69.81	2.01E-03	1.58E-03
2	46.72	1.27E+02	86.43	1.51E-02	1.58E-03
3	76.15	1.32E+03	177.73	2.38E-02	2.13E-03
4	87.15	3.05E+02	124.94	2.44E-02	2.49E-03
5	93.35	2.06E+02	88.90	2.44E-02	2.40E-03
6	185.59	2.25E+02	92.54	1.83E-02	1.42E-03
7	217.96	6.55E+01	78.78	1.63E-02	1.27E-03
M 8	238.79	8.16E+02	70.43	1.52E-02	1.18E-03

Analysis Report for 1510088-17

CP5008S09-10

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	9	242.05	2.03E+02	74.51	1.51E-02	1.17E-03
M	10	270.38	7.26E+01	49.19	1.38E-02	1.04E-03
m	11	277.47	6.96E+01	49.63	1.35E-02	1.00E-03
	12	295.43	1.97E+02	66.93	1.28E-02	9.74E-04
	13	300.66	3.75E+01	43.35	1.26E-02	9.66E-04
	14	316.09	3.06E+01	36.88	1.21E-02	9.44E-04
	15	338.85	1.23E+02	60.12	1.14E-02	9.12E-04
	16	351.92	4.64E+02	69.01	1.11E-02	8.94E-04
	17	463.98	6.44E+01	45.09	8.71E-03	7.65E-04
	18	511.05	1.35E+02	49.90	8.01E-03	7.18E-04
	19	583.24	2.54E+02	55.50	7.14E-03	6.46E-04
	20	609.53	3.57E+02	51.88	6.87E-03	6.20E-04
	21	694.06	2.14E+01	20.13	6.13E-03	5.41E-04
	22	702.43	6.21E+01	35.78	6.07E-03	5.35E-04
	23	728.05	6.10E+01	51.42	5.89E-03	5.14E-04
	24	763.73	7.59E+01	63.45	5.65E-03	4.84E-04
	25	785.36	2.67E+01	26.61	5.51E-03	4.67E-04
	26	873.80	3.20E+01	26.40	5.03E-03	3.94E-04
	27	898.12	1.31E+01	16.70	4.91E-03	3.75E-04
	28	911.41	1.55E+02	41.67	4.85E-03	3.72E-04
	29	933.96	2.20E+01	25.77	4.75E-03	3.68E-04
M	30	965.00	2.94E+01	18.22	4.62E-03	3.62E-04
m	31	969.15	8.88E+01	30.57	4.60E-03	3.61E-04
	32	1003.73	1.67E+01	21.48	4.47E-03	3.55E-04
	33	1069.32	3.86E+01	46.17	4.24E-03	3.43E-04
	34	1120.48	7.60E+01	27.78	4.08E-03	3.33E-04
	35	1338.15	1.99E+01	21.97	3.53E-03	2.88E-04
	36	1378.32	1.74E+01	18.75	3.45E-03	2.82E-04
	37	1401.27	1.14E+01	12.29	3.40E-03	2.78E-04
	38	1406.26	1.26E+01	11.30	3.39E-03	2.78E-04
	39	1430.70	1.71E+01	15.41	3.35E-03	2.74E-04
	40	1460.98	5.21E+02	52.41	3.29E-03	2.69E-04
	41	1590.69	2.71E+01	23.13	3.08E-03	2.50E-04
	42	1621.61	1.01E+01	13.56	3.04E-03	2.45E-04
	43	1729.97	2.48E+01	11.76	2.90E-03	2.29E-04
	44	1764.65	6.42E+01	18.17	2.86E-03	2.24E-04
	45	1847.24	1.90E+01	8.72	2.77E-03	2.13E-04
	46	1874.66	1.01E+01	7.76	2.74E-03	2.13E-04
	47	1944.17	8.35E+00	7.23	2.67E-03	2.13E-04
	48	2103.85	9.10E+00	10.39	2.54E-03	2.13E-04
	49	2176.77	8.85E+00	9.62	2.48E-03	2.13E-04
	50	2204.16	1.79E+01	9.80	2.46E-03	2.13E-04
	51	2211.61	6.63E+00	6.40	2.46E-03	2.13E-04
	52	2248.55	4.58E+00	5.74	2.43E-03	2.13E-04
	53	2364.23	1.08E+01	8.25	2.36E-03	2.13E-04
	54	2614.53	7.50E+01	17.32	2.24E-03	2.13E-04

Analysis Report for 1510088-17

CP5008S09-10

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 6:29:43PM

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	24.42	6.25E+01	69.81			6.25E+01	6.98E+01
2	46.72	1.27E+02	86.43	5.28E+01	1.09E+01	7.42E+01	8.71E+01
3	76.15	1.32E+03	177.73			1.32E+03	1.78E+02
4	87.15	3.05E+02	124.94			3.05E+02	1.25E+02
5	93.35	2.06E+02	88.90	9.04E+01	2.62E+01	1.16E+02	9.27E+01
6	185.59	2.25E+02	92.54	3.93E+01	6.56E+00	1.85E+02	9.28E+01
7	217.96	6.55E+01	78.78			6.55E+01	7.88E+01
M 8	238.79	8.16E+02	70.43	1.34E+01	2.14E+00	8.03E+02	7.05E+01
m 9	242.05	2.03E+02	74.51	2.69E+00	1.46E+00	2.00E+02	7.45E+01
M 10	270.38	7.26E+01	49.19			7.26E+01	4.92E+01
m 11	277.47	6.96E+01	49.63			6.96E+01	4.96E+01
12	295.43	1.97E+02	66.93			1.97E+02	6.69E+01
13	300.66	3.75E+01	43.35			3.75E+01	4.33E+01
14	316.09	3.06E+01	36.88			3.06E+01	3.69E+01
15	338.85	1.23E+02	60.12			1.23E+02	6.01E+01
16	351.92	4.64E+02	69.01	3.99E+00	4.73E+00	4.60E+02	6.92E+01
17	463.98	6.44E+01	45.09			6.44E+01	4.51E+01
18	511.05	1.35E+02	49.90	5.78E+01	4.60E+00	7.72E+01	5.01E+01
19	583.24	2.54E+02	55.50	5.96E+00	3.46E+00	2.48E+02	5.56E+01
20	609.53	3.57E+02	51.88	6.71E+00	3.44E+00	3.50E+02	5.20E+01
21	694.06	2.14E+01	20.13			2.14E+01	2.01E+01
22	702.43	6.21E+01	35.78			6.21E+01	3.58E+01
23	728.05	6.10E+01	51.42			6.10E+01	5.14E+01
24	763.73	7.59E+01	63.45			7.59E+01	6.35E+01
25	785.36	2.67E+01	26.61			2.67E+01	2.66E+01
26	873.80	3.20E+01	26.40			3.20E+01	2.64E+01
27	898.12	1.31E+01	16.70			1.31E+01	1.67E+01
28	911.41	1.55E+02	41.67	2.32E+00	2.73E+00	1.52E+02	4.18E+01
29	933.96	2.20E+01	25.77			2.20E+01	2.58E+01
M 30	965.00	2.94E+01	18.22			2.94E+01	1.82E+01
m 31	969.15	8.88E+01	30.57			8.88E+01	3.06E+01
32	1003.73	1.67E+01	21.48			1.67E+01	2.15E+01
33	1069.32	3.86E+01	46.17			3.86E+01	4.62E+01
34	1120.48	7.60E+01	27.78	2.00E+00	2.20E+00	7.40E+01	2.79E+01
35	1338.15	1.99E+01	21.97			1.99E+01	2.20E+01

Analysis Report for 1510088-17

CP5008S09-10

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
36	1378.32	1.74E+01	18.75			1.74E+01	1.88E+01
37	1401.27	1.14E+01	12.29			1.14E+01	1.23E+01
38	1406.26	1.26E+01	11.30			1.26E+01	1.13E+01
39	1430.70	1.71E+01	15.41			1.71E+01	1.54E+01
40	1460.98	5.21E+02	52.41	2.36E+00	1.83E+00	5.19E+02	5.24E+01
41	1590.69	2.71E+01	23.13			2.71E+01	2.31E+01
42	1621.61	1.01E+01	13.56			1.01E+01	1.36E+01
43	1729.97	2.48E+01	11.76			2.48E+01	1.18E+01
44	1764.65	6.42E+01	18.17	1.45E+00	1.16E+00	6.28E+01	1.82E+01
45	1847.24	1.90E+01	8.72			1.90E+01	8.72E+00
46	1874.66	1.01E+01	7.76			1.01E+01	7.76E+00
47	1944.17	8.35E+00	7.23			8.35E+00	7.23E+00
48	2103.85	9.10E+00	10.39			9.10E+00	1.04E+01
49	2176.77	8.85E+00	9.62			8.85E+00	9.62E+00
50	2204.16	1.79E+01	9.80			1.79E+01	9.80E+00
51	2211.61	6.63E+00	6.40			6.63E+00	6.40E+00
52	2248.55	4.58E+00	5.74			4.58E+00	5.74E+00
53	2364.23	1.08E+01	8.25			1.08E+01	8.25E+00
54	2614.53	7.50E+01	17.32	2.66E+00	1.22E+00	7.23E+01	1.74E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 6:29:43PM
 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	24.42	6.25E+01	69.81			6.25E+01	6.98E+01
2	46.72	1.27E+02	86.43	5.28E+01	1.09E+01	7.42E+01	8.71E+01
3	76.15	1.32E+03	177.73			1.32E+03	1.78E+02
4	87.15	3.05E+02	124.94			3.05E+02	1.25E+02
5	93.35	2.06E+02	88.90	9.04E+01	2.62E+01	1.16E+02	9.27E+01
6	185.59	2.25E+02	92.54	3.93E+01	6.56E+00	1.85E+02	9.28E+01
7	217.96	6.55E+01	78.78			6.55E+01	7.88E+01
M	8	238.79	8.16E+02	1.34E+01	2.14E+00	8.03E+02	7.05E+01
m	9	242.05	2.03E+02	2.69E+00	1.46E+00	2.00E+02	7.45E+01

Analysis Report for 1510088-17

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	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	10	270.38	7.26E+01	49.19			7.26E+01	4.92E+01
m	11	277.47	6.96E+01	49.63			6.96E+01	4.96E+01
	12	295.43	1.97E+02	66.93			1.97E+02	6.69E+01
	13	300.66	3.75E+01	43.35			3.75E+01	4.33E+01
	14	316.09	3.06E+01	36.88			3.06E+01	3.69E+01
	15	338.85	1.23E+02	60.12			1.23E+02	6.01E+01
	16	351.92	4.64E+02	69.01	3.99E+00	4.73E+00	4.60E+02	6.92E+01
	17	463.98	6.44E+01	45.09			6.44E+01	4.51E+01
	18	511.05	1.35E+02	49.90	5.78E+01	4.60E+00	7.72E+01	5.01E+01
	19	583.24	2.54E+02	55.50	5.96E+00	3.46E+00	2.48E+02	5.56E+01
	20	609.53	3.57E+02	51.88	6.71E+00	3.44E+00	3.50E+02	5.20E+01
	21	694.06	2.14E+01	20.13			2.14E+01	2.01E+01
	22	702.43	6.21E+01	35.78			6.21E+01	3.58E+01
	23	728.05	6.10E+01	51.42			6.10E+01	5.14E+01
	24	763.73	7.59E+01	63.45			7.59E+01	6.35E+01
	25	785.36	2.67E+01	26.61			2.67E+01	2.66E+01
	26	873.80	3.20E+01	26.40			3.20E+01	2.64E+01
	27	898.12	1.31E+01	16.70			1.31E+01	1.67E+01
	28	911.41	1.55E+02	41.67	2.32E+00	2.73E+00	1.52E+02	4.18E+01
	29	933.96	2.20E+01	25.77			2.20E+01	2.58E+01
M	30	965.00	2.94E+01	18.22			2.94E+01	1.82E+01
m	31	969.15	8.88E+01	30.57			8.88E+01	3.06E+01
	32	1003.73	1.67E+01	21.48			1.67E+01	2.15E+01
	33	1069.32	3.86E+01	46.17			3.86E+01	4.62E+01
	34	1120.48	7.60E+01	27.78	2.00E+00	2.20E+00	7.40E+01	2.79E+01
	35	1338.15	1.99E+01	21.97			1.99E+01	2.20E+01
	36	1378.32	1.74E+01	18.75			1.74E+01	1.88E+01
	37	1401.27	1.14E+01	12.29			1.14E+01	1.23E+01
	38	1406.26	1.26E+01	11.30			1.26E+01	1.13E+01
	39	1430.70	1.71E+01	15.41			1.71E+01	1.54E+01
	40	1460.98	5.21E+02	52.41	2.36E+00	1.83E+00	5.19E+02	5.24E+01
	41	1590.69	2.71E+01	23.13			2.71E+01	2.31E+01
	42	1621.61	1.01E+01	13.56			1.01E+01	1.36E+01
	43	1729.97	2.48E+01	11.76			2.48E+01	1.18E+01
	44	1764.65	6.42E+01	18.17	1.45E+00	1.16E+00	6.28E+01	1.82E+01
	45	1847.24	1.90E+01	8.72			1.90E+01	8.72E+00
	46	1874.66	1.01E+01	7.76			1.01E+01	7.76E+00
	47	1944.17	8.35E+00	7.23			8.35E+00	7.23E+00
	48	2103.85	9.10E+00	10.39			9.10E+00	1.04E+01
	49	2176.77	8.85E+00	9.62			8.85E+00	9.62E+00
	50	2204.16	1.79E+01	9.80			1.79E+01	9.80E+00
	51	2211.61	6.63E+00	6.40			6.63E+00	6.40E+00
	52	2248.55	4.58E+00	5.74			4.58E+00	5.74E+00
	53	2364.23	1.08E+01	8.25			1.08E+01	8.25E+00
	54	2614.53	7.50E+01	17.32	2.66E+00	1.22E+00	7.23E+01	1.74E+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 1510088-17
CP5008S09-10

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	2.00E+01	2.64E+00
GA-67	0.568	93.31 *	35.70	1.75E+02	7.77E+02
		208.95	2.24		
		300.22 *	16.00	2.45E+02	1.11E+03
CD-109	0.882	88.03 *	3.72	4.77E+00	2.04E+00
SN-126	0.972	87.57 *	37.00	4.57E-01	1.93E-01
EU-155	0.321	86.50 *	30.90	5.54E-01	2.34E-01
		105.30	20.70		
TL-208	0.886	583.14 *	30.22	1.56E+00	3.77E-01
		860.37	4.48		
		2614.66 *	35.85	1.22E+00	3.15E-01
PB-210	0.992	46.50 *	4.25	1.57E+00	1.85E+00
BI-212	0.878	727.17 *	11.80	1.19E+00	1.01E+00
		1620.62 *	2.75	1.64E+00	2.20E+00
PB-212	0.992	238.63 *	44.60	1.60E+00	1.88E-01
		300.09 *	3.41	1.18E+00	1.37E+00
BI-214	0.994	609.31 *	46.30	1.49E+00	2.59E-01
		1120.29 *	15.10	1.63E+00	6.28E-01
		1764.49 *	15.80	1.88E+00	5.66E-01
		2204.22 *	4.98	1.97E+00	1.10E+00
PB-214	0.997	295.21 *	19.19	1.08E+00	3.78E-01
		351.92 *	37.19	1.52E+00	2.59E-01
RA-226	0.940	186.21 *	3.28	4.18E+00	7.94E+00
AC-228	0.982	338.32 *	11.40	1.28E+00	6.34E-01
		911.07 *	27.70	1.54E+00	4.37E-01
		969.11 *	16.60	1.57E+00	5.56E-01
NP-237	0.936	86.50 *	12.60	1.34E+00	5.68E-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 1510088-17
CP5008S09-10

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 6:29:43PM
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	24.42	1.73545E-02	55.87		
3	76.15	3.66452E-01	6.74		
7	217.96	1.82004E-02	60.12		
m 9	242.05	5.55791E-02	18.62		
M 10	270.38	2.01802E-02	33.85		
m 11	277.47	1.93374E-02	35.65	Tol.	NP-239 CM-243
14	316.09	8.50257E-03	60.24		
17	463.98	1.79015E-02	34.98	Tol.	SB-125
18	511.05	2.14340E-02	32.47		
21	694.06	5.93254E-03	47.13		
22	702.43	1.72424E-02	28.82	Sum	
24	763.73	2.10808E-02	41.80	Tol.	AG-110M
25	785.36	7.41342E-03	49.85		
26	873.80	8.89650E-03	41.22	Tol.	EU-154
27	898.12	3.62654E-03	63.97	Tol.	Y-88
29	933.96	6.11111E-03	58.56		
M 30	965.00	8.15586E-03	31.03	Tol.	EU-152
32	1003.73	4.62963E-03	64.45		
33	1069.32	1.07248E-02	59.80		
35	1338.15	5.53704E-03	55.10	Sum	
36	1378.32	4.83796E-03	53.84		
37	1401.27	3.15657E-03	54.07		
38	1406.26	3.49868E-03	44.87		
39	1430.70	4.75575E-03	45.01		
41	1590.69	7.54051E-03	42.60		
43	1729.97	6.89815E-03	23.67	Sum	
45	1847.24	5.27778E-03	22.94		
46	1874.66	2.80093E-03	38.49		
47	1944.17	2.31944E-03	43.28		
48	2103.85	2.52778E-03	57.10	S-Esc	
49	2176.77	2.45726E-03	54.36		
51	2211.61	1.84028E-03	48.33		
52	2248.55	1.27315E-03	62.67		
53	2364.23	3.00214E-03	38.15		

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 1510088-17
CP5008S09-10

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	2.64E+00
GA-67	0.56	93.31 *	35.70	1.75E+02	7.77E+02
		208.95	2.24		
		300.22 *	16.00	2.45E+02	1.11E+03
CD-109	0.88	88.03 *	3.72	4.77E+00	2.04E+00
SN-126	0.97	87.57 *	37.00	4.57E-01	1.93E-01
EU-155	0.32	86.50 *	30.90	5.54E-01	2.34E-01
		105.30	20.70		
TL-208	0.88	583.14 *	30.22	1.56E+00	3.77E-01
		860.37	4.48		
		2614.66 *	35.85	1.22E+00	3.15E-01
PB-210	0.99	46.50 *	4.25	1.57E+00	1.85E+00
BI-212	0.87	727.17 *	11.80	1.19E+00	1.01E+00
		1620.62 *	2.75	1.64E+00	2.20E+00
PB-212	0.99	238.63 *	44.60	1.60E+00	1.88E-01
		300.09 *	3.41	1.18E+00	1.37E+00
BI-214	0.99	609.31 *	46.30	1.49E+00	2.59E-01
		1120.29 *	15.10	1.63E+00	6.28E-01
		1764.49 *	15.80	1.88E+00	5.66E-01
		2204.22 *	4.98	1.97E+00	1.10E+00
PB-214	0.99	295.21 *	19.19	1.08E+00	3.78E-01
		351.92 *	37.19	1.52E+00	2.59E-01
RA-226	0.94	186.21 *	3.28	4.18E+00	7.94E+00
AC-228	0.98	338.32 *	11.40	1.28E+00	6.34E-01
		911.07 *	27.70	1.54E+00	4.37E-01
		969.11 *	16.60	1.57E+00	5.56E-01
NP-237	0.93	86.50 *	12.60	1.34E+00	5.68E-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 1510088-17
CP5008S09-10

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	0.996	2.00E+01	2.64E+00	
GA-67	0.568	1.24E+02	5.37E+02	
? CD-109	0.882	4.77E+00	2.04E+00	
? SN-126	0.972	4.57E-01	1.93E-01	
? EU-155	0.321	5.54E-01	2.34E-01	
TL-208	0.886	1.36E+00	2.42E-01	
PB-210	0.992	1.57E+00	1.85E+00	
BI-212	0.878	1.27E+00	9.17E-01	
PB-212	0.992	1.58E+00	1.86E-01	
BI-214	0.994	1.58E+00	2.16E-01	
PB-214	0.997	1.38E+00	2.13E-01	
RA-226	0.940	4.18E+00	7.94E+00	
AC-228	0.982	1.49E+00	3.02E-01	
? NP-237	0.936	1.34E+00	5.68E-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 1510088-17
CP5008S09-10

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 6:29:43PM
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	24.42	1.73545E-02	55.87		
3	76.15	3.66452E-01	6.74		
7	217.96	1.82004E-02	60.12		
m 9	242.05	5.55791E-02	18.62		
M 10	270.38	2.01802E-02	33.85		
m 11	277.47	1.93374E-02	35.65	Tol.	NP-239 CM-243
14	316.09	8.50257E-03	60.24		
17	463.98	1.79015E-02	34.98	Tol.	SB-125
18	511.05	2.14340E-02	32.47		
21	694.06	5.93254E-03	47.13		
22	702.43	1.72424E-02	28.82	Sum	
24	763.73	2.10808E-02	41.80	Tol.	AG-110M
25	785.36	7.41342E-03	49.85		
26	873.80	8.89650E-03	41.22	Tol.	EU-154
27	898.12	3.62654E-03	63.97	Tol.	Y-88
29	933.96	6.11111E-03	58.56		
M 30	965.00	8.15586E-03	31.03	Tol.	EU-152
32	1003.73	4.62963E-03	64.45		
33	1069.32	1.07248E-02	59.80		
35	1338.15	5.53704E-03	55.10	Sum	
36	1378.32	4.83796E-03	53.84		
37	1401.27	3.15657E-03	54.07		
38	1406.26	3.49868E-03	44.87		
39	1430.70	4.75575E-03	45.01		
41	1590.69	7.54051E-03	42.60		
43	1729.97	6.89815E-03	23.67	Sum	
45	1847.24	5.27778E-03	22.94		
46	1874.66	2.80093E-03	38.49		
47	1944.17	2.31944E-03	43.28		
48	2103.85	2.52778E-03	57.10	S-Esc	
49	2176.77	2.45726E-03	54.36		
51	2211.61	1.84028E-03	48.33		
52	2248.55	1.27315E-03	62.67		
53	2364.23	3.00214E-03	38.15		

Analysis Report for 1510088-17
CP5008S09-10

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

NUCLIDE MDA REPORT

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

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
+	BE-7	477.59	10.42	1.97E-01	1.22E+00	1.22E+00
+	NA-22	1274.54	99.94	-3.62E-02	1.28E-01	1.28E-01
+	NA-24	1368.53	99.99	-2.06E+14	2.25E+14	4.31E+14
		2754.09	99.86	3.64E+13		2.25E+14
+	AL-26	1808.65	99.76	2.51E-02	7.26E-02	7.26E-02
+	K-40	1460.81	* 10.67	2.00E+01	1.75E+00	1.75E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	7.04E-03	7.78E-02	7.78E-02
		78.34	96.00	2.96E-01		1.01E-01
+	SC-46	889.25	99.98	-2.68E-02	1.12E-01	1.12E-01
		1120.51	99.99	3.30E-01		2.18E-01
+	V-48	983.52	99.98	1.33E-01	4.12E-01	4.12E-01
		1312.10	97.50	1.04E-01		4.90E-01
+	CR-51	320.08	9.83	2.97E-01	1.60E+00	1.60E+00
+	MN-54	834.83	99.97	-9.89E-03	1.06E-01	1.06E-01
+	CO-56	846.75	99.96	-1.04E-01	1.18E-01	1.18E-01
		1037.75	14.03	1.12E-01		9.71E-01
		1238.25	67.00	1.85E-01		3.37E-01
		1771.40	15.51	-4.08E-02		6.47E-01
		2598.48	16.90	8.44E-02		5.11E-01
+	CO-57	122.06	85.51	-2.53E-02	6.77E-02	6.77E-02
		136.48	10.60	-9.00E-02		5.65E-01
+	CO-58	810.76	99.40	-2.43E-02	1.40E-01	1.40E-01
+	FE-59	1099.22	56.50	-2.71E-02	3.15E-01	3.15E-01
		1291.56	43.20	-2.45E-01		4.03E-01
+	CO-60	1173.22	100.00	4.89E-02	1.19E-01	1.29E-01
		1332.49	100.00	-1.32E-02		1.19E-01
+	ZN-65	1115.52	50.75	-4.71E-02	2.38E-01	2.38E-01
+	GA-67	93.31	* 35.70	1.75E+02	2.28E+02	2.28E+02
		208.95	2.24	4.18E+03		3.49E+03
		300.22	* 16.00	2.45E+02		4.64E+02
+	SE-75	121.11	16.70	-2.17E-01	1.13E-01	3.81E-01

Analysis Report for 1510088-17
CP5008S09-10

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)	
	SE-75	136.00	59.20	-2.33E-02	1.13E-01	1.13E-01
		264.65	59.80	2.91E-02		1.41E-01
		279.53	25.20	-2.87E-02		3.78E-01
		400.65	11.40	2.82E-01		8.45E-01
+	RB-82	776.52	13.00	2.79E-01	1.66E+00	1.66E+00
+	RB-83	520.41	46.00	1.14E-01	2.37E-01	2.37E-01
		529.64	30.30	-6.08E-02		3.54E-01
		552.65	16.40	-1.02E-01		5.46E-01
+	KR-85	513.99	0.43	1.94E+01	2.57E+01	2.57E+01
+	SR-85	513.99	99.27	1.19E-01	1.58E-01	1.58E-01
+	Y-88	898.02	93.40	-3.87E-02	1.01E-01	1.16E-01
		1836.01	99.38	3.63E-02		1.01E-01
+	NB-93M	16.57	9.43	6.41E+00	8.57E+01	8.57E+01
+	NB-94	702.63	100.00	9.58E-02	1.09E-01	1.09E-01
		871.10	100.00	1.84E-03		1.10E-01
+	NB-95	765.79	99.81	5.44E-02	1.99E-01	1.99E-01
+	NB-95M	235.69	25.00	7.65E+02	2.59E+02	2.59E+02
+	ZR-95	724.18	43.70	-5.66E-04	2.53E-01	3.28E-01
		756.72	55.30	1.11E-01		2.53E-01
+	MO-99	181.06	6.20	-2.39E+01	2.37E+03	3.43E+03
		739.58	12.80	6.19E+01		2.37E+03
		778.00	4.50	3.21E+02		6.54E+03
+	RU-103	497.08	89.00	3.22E-02	1.60E-01	1.60E-01
+	RU-106	621.84	9.80	-1.98E-01	8.03E-01	8.03E-01
+	AG-108M	433.93	89.90	1.96E-02	8.52E-02	8.52E-02
		614.37	90.40	9.80E-03		1.13E-01
		722.95	90.50	-1.12E-01		1.02E-01
+	CD-109	88.03	* 3.72	4.77E+00	3.14E+00	3.14E+00
+	AG-110M	657.75	93.14	-1.36E-02	9.59E-02	9.59E-02
		677.61	10.53	-4.72E-01		7.93E-01
		706.67	16.46	-2.67E-02		6.41E-01
		763.93	21.98	-4.34E-01		4.63E-01
		884.67	71.63	8.22E-02		1.48E-01
		1384.27	23.94	5.84E-02		4.77E-01
+	CD-113M	263.70	0.02	5.05E+01	3.02E+02	3.02E+02
+	SN-113	255.12	1.93	3.52E-01	1.51E-01	4.48E+00
		391.69	64.90	5.87E-02		1.51E-01
+	TE123M	159.00	84.10	-2.67E-02	8.27E-02	8.27E-02
+	SB-124	602.71	97.87	2.47E-02	1.31E-01	1.31E-01
		645.85	7.26	2.08E-01		1.63E+00
		722.78	11.10	-1.32E+00		1.20E+00
		1691.02	49.00	0.00E+00		2.27E-01
+	I-125	35.49	6.49	-3.59E+00	3.39E+00	3.39E+00
+	SB-125	176.33	6.89	2.13E-01	2.70E-01	8.92E-01
		427.89	29.33	-1.73E-02		2.70E-01
		463.38	10.35	3.66E-01		8.52E-01
		600.56	17.80	2.13E-01		5.21E-01
		635.90	11.32	3.01E-01		8.71E-01

Analysis Report for 1510088-17
CP5008S09-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-4.29E-01	5.55E-01	5.85E-01
		666.33	99.60	-1.54E-01		5.55E-01
		695.00	99.60	2.30E-01		5.83E-01
		720.50	53.80	-6.04E-02		9.80E-01
+	SN-126	87.57	* 37.00	4.57E-01	3.00E-01	3.00E-01
+	SB-127	473.00	25.00	2.80E+01	9.74E+01	1.15E+02
		685.20	35.70	5.52E+01		9.74E+01
		783.80	14.70	1.71E+02		2.39E+02
+	I-129	29.78	57.00	1.18E-01	4.92E-01	4.92E-01
		33.60	13.20	-6.11E-01		1.36E+00
		39.58	7.52	1.73E-01		1.69E+00
+	I-131	284.30	6.05	2.15E+00	1.52E+00	1.90E+01
		364.48	81.20	7.30E-01		1.52E+00
		636.97	7.26	8.32E+00		2.16E+01
		722.89	1.80	-9.17E+01		8.33E+01
+	TE-132	49.72	13.10	-2.27E+02	7.98E+01	6.37E+02
		228.16	88.00	1.03E+01		7.98E+01
+	BA-133	81.00	33.00	-8.63E-01	1.69E-01	1.94E-01
		302.84	17.80	-3.57E-02		4.53E-01
		356.01	60.00	3.65E-02		1.69E-01
+	I-133	529.87	86.30	-2.89E+09	1.68E+10	1.68E+10
+	XE-133	81.00	38.00	-5.38E+01	1.21E+01	1.21E+01
+	CS-134	563.23	8.38	4.04E-01	1.07E-01	1.14E+00
		569.32	15.43	-7.16E-02		5.75E-01
		604.70	97.60	2.59E-02		1.07E-01
		795.84	85.40	8.15E-02		1.28E-01
		801.93	8.73	-7.30E-01		1.05E+00
+	CS-135	268.24	16.00	9.51E-02	4.88E-01	4.88E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	3.34E-01	5.73E-01	4.41E+00
		163.89	4.61	6.53E-02		6.76E+00
		176.55	13.56	-6.35E-03		2.41E+00
		273.65	12.66	-1.86E+00		3.45E+00
		340.57	48.50	2.39E+00		1.15E+00
		818.50	99.70	8.63E-02		5.73E-01
		1048.07	79.60	1.37E-01		7.67E-01
		1235.34	19.70	2.56E+00		4.79E+00
+	CS-137	661.65	85.12	1.70E-02	1.08E-01	1.08E-01
+	LA-138	788.74	34.00	-5.24E-03	1.35E-01	3.02E-01
		1435.80	66.00	-1.38E-02		1.35E-01
+	CE-139	165.85	80.35	-1.93E-02	8.11E-02	8.11E-02
+	BA-140	162.64	6.70	4.44E-01	1.92E+00	4.87E+00
		304.84	4.50	2.54E+00		9.39E+00
		423.70	3.20	4.30E+00		1.49E+01
		437.55	2.00	1.56E+01		2.38E+01
		537.32	25.00	2.36E-01		1.92E+00
+	LA-140	328.77	20.50	1.73E+00	6.13E-01	2.36E+00

Analysis Report for 1510088-17
CP5008S09-10

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
LA-140	487.03	45.50	4.36E-01	6.13E-01	1.05E+00
	815.85	23.50	-3.06E-01		2.51E+00
	1596.49	95.49	1.17E-01		6.13E-01
+ CE-141	145.44	48.40	-6.31E-02	2.35E-01	2.35E-01
+ CE-143	57.36	11.80	-3.50E+06	2.97E+06	8.44E+06
	293.26	42.00	6.43E+06		2.97E+06
	664.55	5.20	2.26E+07		2.34E+07
+ CE-144	133.54	10.80	-1.48E-01	5.62E-01	5.62E-01
+ PM-144	476.78	42.00	1.46E-01	8.91E-02	2.22E-01
	618.01	98.60	1.33E-02		8.91E-02
	696.49	99.49	-4.02E-03		1.01E-01
+ PM-145	36.85	21.70	-2.05E-01	3.56E-01	6.51E-01
	37.36	39.70	1.37E-01		3.56E-01
	42.30	15.10	2.28E-01		7.33E-01
	72.40	2.31	-4.76E+00		3.88E+00
+ PM-146	453.90	39.94	1.15E-01	2.09E-01	2.09E-01
	735.90	14.01	-3.62E-02		6.40E-01
	747.13	13.10	4.51E-02		6.59E-01
+ ND-147	91.11	28.90	-8.26E-01	2.02E+00	2.02E+00
	531.02	13.10	-3.15E+00		4.75E+00
+ PM-149	285.90	3.10	1.32E+04	5.81E+04	5.81E+04
+ EU-152	121.78	20.50	-9.74E-02	2.61E-01	2.61E-01
	244.69	5.40	-2.02E-01		1.63E+00
	344.27	19.13	-6.01E-02		3.91E-01
	778.89	9.20	4.53E-02		9.31E-01
	964.01	10.40	-1.90E-01		1.25E+00
	1085.78	7.22	8.02E-02		1.46E+00
	1112.02	9.60	1.94E-01		1.20E+00
	1407.95	14.94	-1.88E-01		7.35E-01
+ GD-153	97.43	31.30	5.41E-02	1.88E-01	1.88E-01
	103.18	22.20	-1.96E-01		2.58E-01
+ EU-154	123.07	40.50	4.32E-02	1.38E-01	1.38E-01
	723.30	19.70	-5.18E-01		4.71E-01
	873.19	11.50	1.52E-01		9.14E-01
	996.32	10.30	1.73E-01		9.68E-01
	1004.76	17.90	-2.47E-02		5.55E-01
	1274.45	35.50	-1.00E-01		3.55E-01
+ EU-155	86.50	* 30.90	5.54E-01	2.73E-01	3.64E-01
	105.30	20.70	1.49E-01		2.73E-01
+ EU-156	811.77	10.40	-1.86E+00	4.06E+00	4.06E+00
	1153.47	7.20	2.38E+00		7.96E+00
	1230.71	8.90	7.07E-01		7.21E+00
+ HO-166M	184.41	72.60	2.15E-01	1.07E-01	1.07E-01
	280.45	29.60	2.56E-02		2.56E-01
	410.94	11.10	1.32E-01		7.45E-01
	711.69	54.10	-8.58E-03		1.74E-01
+ TM-171	66.72	0.14	-5.77E+01	5.50E+01	5.50E+01
+ HF-172	81.75	4.52	-6.42E+00	5.15E-01	1.44E+00
	125.81	11.30	-3.03E-01		5.15E-01

Analysis Report for 1510088-17
CP5008S09-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	-1.33E+01	4.77E+00	8.53E+00
		810.06	16.63	3.36E+00		1.79E+01
		912.12	15.25	8.40E+01		3.61E+01
		1093.66	62.50	9.87E-01		4.77E+00
+	LU-173	100.72	5.24	-3.79E-01	3.91E-01	1.04E+00
		272.11	21.20	4.06E-02		3.91E-01
+	HF-175	343.40	84.00	-1.87E-02	1.29E-01	1.29E-01
+	LU-176	88.34	13.30	8.00E-01	7.44E-02	5.96E-01
		201.83	86.00	-9.28E-02		8.16E-02
		306.78	94.00	-2.45E-02		7.44E-02
+	TA-182	67.75	41.20	1.96E-02	2.17E-01	2.17E-01
		1121.30	34.90	6.20E-01		5.68E-01
		1189.05	16.23	8.58E-02		9.49E-01
		1221.41	26.98	-2.57E-01		5.57E-01
		1231.02	11.44	-2.69E-01		1.55E+00
+	IR-192	308.46	29.68	-9.57E-02	2.21E-01	3.14E-01
		468.07	48.10	3.23E-02		2.21E-01
+	HG-203	279.19	77.30	6.78E-02	1.65E-01	1.65E-01
+	BI-207	569.67	97.72	-3.58E-03	8.60E-02	8.60E-02
		1063.62	74.90	5.85E-02		1.52E-01
+	TL-208	583.14	* 30.22	1.56E+00	1.42E-01	4.90E-01
		860.37	4.48	8.92E-01		2.34E+00
		2614.66	* 35.85	1.22E+00		1.42E-01
+	BI-210M	262.00	45.00	1.94E-02	1.56E-01	1.56E-01
		300.00	23.00	-1.20E+00		3.57E-01
+	PB-210	46.50	* 4.25	1.57E+00	3.03E+00	3.03E+00
+	PB-211	404.84	2.90	-3.44E-01	2.78E+00	2.78E+00
		831.96	2.90	-1.98E+00		3.17E+00
+	BI-212	727.17	* 11.80	1.19E+00	1.63E+00	1.63E+00
		1620.62	* 2.75	1.64E+00		3.63E+00
+	PB-212	238.63	* 44.60	1.60E+00	3.46E-01	3.46E-01
		300.09	* 3.41	1.18E+00		2.24E+00
+	BI-214	609.31	* 46.30	1.49E+00	2.65E-01	2.65E-01
		1120.29	* 15.10	1.63E+00		8.54E-01
		1764.49	* 15.80	1.88E+00		5.23E-01
		2204.22	* 4.98	1.97E+00		1.20E+00
+	PB-214	295.21	* 19.19	1.08E+00	3.03E-01	5.66E-01
		351.92	* 37.19	1.52E+00		3.03E-01
+	RN-219	401.80	6.50	1.04E-01	1.23E+00	1.23E+00
+	RA-223	323.87	3.88	-1.60E+00	1.90E+00	1.90E+00
+	RA-224	240.98	3.95	2.21E+01	3.79E+00	3.79E+00
+	RA-225	40.00	31.00	1.87E-01	1.82E+00	1.82E+00
+	RA-226	186.21	* 3.28	4.18E+00	3.35E+00	3.35E+00
+	TH-227	50.10	8.40	-3.57E-01	1.00E+00	1.00E+00
		236.00	11.50	3.33E+00		1.13E+00
		256.20	6.30	2.40E-01		1.14E+00
+	AC-228	338.32	* 11.40	1.28E+00	5.86E-01	9.85E-01
		911.07	* 27.70	1.54E+00		5.86E-01

Analysis Report for 1510088-17
CP5008S09-10

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.57E+00	5.86E-01	9.54E-01
+	TH-230	48.44		16.90	5.51E-01	5.70E-01	5.70E-01
		62.85		4.60	2.02E+00		1.81E+00
		67.67		0.37	1.80E+00		1.99E+01
+	PA-231	283.67		1.60	4.98E-01	3.49E+00	4.40E+00
		302.67		2.30	-2.74E-01		3.49E+00
+	TH-231	25.64		14.70	7.19E-01	1.03E+00	3.62E+00
		84.21		6.40	-2.26E+00		1.03E+00
+	PA-233	311.98		38.60	-1.97E-01	4.19E-01	4.19E-01
+	PA-234	131.20		20.40	2.41E-01	2.98E-01	2.98E-01
		733.99		8.80	-7.34E-02		1.05E+00
		946.00		12.00	7.21E-02		7.54E-01
+	PA-234M	1001.03		0.92	-1.10E+00	1.19E+01	1.19E+01
+	TH-234	63.29		3.80	4.52E-01	2.15E+00	2.15E+00
+	U-235	143.76		10.50	-3.70E-02	5.42E-01	5.42E-01
		163.35		4.70	1.16E-02		1.20E+00
		205.31		4.70	-2.06E+00		1.54E+00
+	NP-237	86.50	*	12.60	1.34E+00	8.82E-01	8.82E-01
+	NP-239	106.10		22.70	1.59E+03	3.40E+03	3.40E+03
		228.18		10.70	1.19E+03		9.21E+03
		277.60		14.10	6.31E+03		7.79E+03
+	AM-241	59.54		35.90	-1.94E-01	2.23E-01	2.23E-01
+	AM-243	74.67		66.00	3.11E-01	1.60E-01	1.60E-01
+	CM-243	209.75		3.29	2.48E+00	5.72E-01	2.41E+00
		228.14		10.60	8.79E-02		6.78E-01
		277.60		14.00	4.63E-01		5.72E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

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

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Analysis Report for 1510088-17
CP5008S09-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	1.22E+00	1.22E+00	1.97E-01	5.78E-01
NA-22	1274.54	99.94	1.28E-01	1.28E-01	-3.62E-02	5.91E-02
NA-24	1368.53	99.99	4.31E+14	2.25E+14	-2.06E+14	1.95E+14
	2754.09	99.86	2.25E+14		3.64E+13	7.98E+13
AL-26	1808.65	99.76	7.26E-02	7.26E-02	2.51E-02	2.98E-02
+ K-40	1460.81	* 10.67	1.75E+00	1.75E+00	2.00E+01	8.25E-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	7.78E-02	7.78E-02	7.04E-03	3.80E-02
	78.34	96.00	1.01E-01		2.96E-01	4.98E-02
SC-46	889.25	99.98	1.12E-01	1.12E-01	-2.68E-02	5.13E-02
	1120.51	99.99	2.18E-01		3.30E-01	1.03E-01
V-48	983.52	99.98	4.12E-01	4.12E-01	1.33E-01	1.90E-01
	1312.10	97.50	4.90E-01		1.04E-01	2.24E-01
CR-51	320.08	9.83	1.60E+00	1.60E+00	2.97E-01	7.66E-01
MN-54	834.83	99.97	1.06E-01	1.06E-01	-9.89E-03	4.93E-02
CO-56	846.75	99.96	1.18E-01	1.18E-01	-1.04E-01	5.44E-02
	1037.75	14.03	9.71E-01		1.12E-01	4.45E-01
	1238.25	67.00	3.37E-01		1.85E-01	1.59E-01
	1771.40	15.51	6.47E-01		-4.08E-02	2.68E-01
	2598.48	16.90	5.11E-01		8.44E-02	1.91E-01
CO-57	122.06	85.51	6.77E-02	6.77E-02	-2.53E-02	3.28E-02
	136.48	10.60	5.65E-01		-9.00E-02	2.74E-01
CO-58	810.76	99.40	1.40E-01	1.40E-01	-2.43E-02	6.55E-02
FE-59	1099.22	56.50	3.15E-01	3.15E-01	-2.71E-02	1.44E-01
	1291.56	43.20	4.03E-01		-2.45E-01	1.82E-01
CO-60	1173.22	100.00	1.29E-01	1.19E-01	4.89E-02	5.97E-02
	1332.49	100.00	1.19E-01		-1.32E-02	5.41E-02
ZN-65	1115.52	50.75	2.38E-01	2.38E-01	-4.71E-02	1.09E-01
+ GA-67	93.31	* 35.70	2.28E+02	2.28E+02	1.75E+02	1.12E+02
	208.95	2.24	3.49E+03		4.18E+03	1.70E+03
	300.22	* 16.00	4.64E+02		2.45E+02	2.23E+02
SE-75	121.11	16.70	3.81E-01	1.13E-01	-2.17E-01	1.85E-01
	136.00	59.20	1.13E-01		-2.33E-02	5.46E-02
	264.65	59.80	1.41E-01		2.91E-02	6.77E-02
	279.53	25.20	3.78E-01		-2.87E-02	1.82E-01
	400.65	11.40	8.45E-01		2.82E-01	4.03E-01
RB-82	776.52	13.00	1.66E+00	1.66E+00	2.79E-01	7.70E-01
RB-83	520.41	46.00	2.37E-01	2.37E-01	1.14E-01	1.12E-01
	529.64	30.30	3.54E-01		-6.08E-02	1.67E-01
	552.65	16.40	5.46E-01		-1.02E-01	2.54E-01
KR-85	513.99	0.43	2.57E+01	2.57E+01	1.94E+01	1.23E+01
SR-85	513.99	99.27	1.58E-01	1.58E-01	1.19E-01	7.58E-02
Y-88	898.02	93.40	1.16E-01	1.01E-01	-3.87E-02	5.30E-02
	1836.01	99.38	1.01E-01		3.63E-02	4.23E-02
NB-93M	16.57	9.43	8.57E+01	8.57E+01	6.41E+00	4.17E+01
NB-94	702.63	100.00	1.09E-01	1.09E-01	9.58E-02	5.17E-02
	871.10	100.00	1.10E-01		1.84E-03	5.16E-02
NB-95	765.79	99.81	1.99E-01	1.99E-01	5.44E-02	9.33E-02
NB-95M	235.69	25.00	2.59E+02	2.59E+02	7.65E+02	1.27E+02
ZR-95	724.18	43.70	3.28E-01	2.53E-01	-5.66E-04	1.54E-01
	756.72	55.30	2.53E-01		1.11E-01	1.18E-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)	
MO-99	181.06	6.20	3.43E+03	2.37E+03	-2.39E+01	1.66E+03	
	739.58	12.80	2.37E+03		6.19E+01	1.10E+03	
	778.00	4.50	6.54E+03		3.21E+02	3.01E+03	
RU-103	497.08	89.00	1.60E-01	1.60E-01	3.22E-02	7.56E-02	
RU-106	621.84	9.80	8.03E-01	8.03E-01	-1.98E-01	3.72E-01	
AG-108M	433.93	89.90	8.52E-02	8.52E-02	1.96E-02	4.04E-02	
	614.37	90.40	1.13E-01		9.80E-03	5.34E-02	
	722.95	90.50	1.02E-01		-1.12E-01	4.74E-02	
+ CD-109	88.03	*	3.72	3.14E+00	3.14E+00	4.77E+00	1.55E+00
AG-110M	657.75	93.14	9.59E-02	9.59E-02	-1.36E-02	4.46E-02	
	677.61	10.53	7.93E-01		-4.72E-01	3.66E-01	
	706.67	16.46	6.41E-01		-2.67E-02	3.00E-01	
	763.93	21.98	4.63E-01		-4.34E-01	2.15E-01	
	884.67	71.63	1.48E-01		8.22E-02	6.84E-02	
	1384.27	23.94	4.77E-01		5.84E-02	2.14E-01	
	263.70	0.02	3.02E+02		3.02E+02	5.05E+01	1.45E+02
SN-113	255.12	1.93	4.48E+00	1.51E-01	3.52E-01	2.16E+00	
TE123M	391.69	64.90	1.51E-01	8.27E-02	5.87E-02	7.19E-02	
	159.00	84.10	8.27E-02		-2.67E-02	4.01E-02	
	602.71	97.87	1.31E-01		1.31E-01	2.47E-02	6.18E-02
SB-124	645.85	7.26	1.63E+00	1.63E+00	2.08E-01	7.60E-01	
	722.78	11.10	1.20E+00		-1.32E+00	5.61E-01	
	1691.02	49.00	2.27E-01		0.00E+00	9.51E-02	
	35.49	6.49	3.39E+00		3.39E+00	-3.59E+00	1.65E+00
SB-125	176.33	6.89	8.92E-01	2.70E-01	2.13E-01	4.32E-01	
	427.89	29.33	2.70E-01		-1.73E-02	1.28E-01	
	463.38	10.35	8.52E-01		3.66E-01	4.05E-01	
	600.56	17.80	5.21E-01		2.13E-01	2.45E-01	
	635.90	11.32	8.71E-01		3.01E-01	4.10E-01	
	414.70	83.30	5.85E-01		5.55E-01	-4.29E-01	2.79E-01
SB-126	666.33	99.60	5.55E-01	5.55E-01	-1.54E-01	2.60E-01	
	695.00	99.60	5.83E-01		2.30E-01	2.73E-01	
	720.50	53.80	9.80E-01		-6.04E-02	4.55E-01	
	87.57	*	37.00		3.00E-01	3.00E-01	4.57E-01	1.48E-01
SN-126	473.00	25.00	1.15E+02	9.74E+01	2.80E+01	5.45E+01	
	685.20	35.70	9.74E+01		5.52E+01	4.59E+01	
	783.80	14.70	2.39E+02		1.71E+02	1.12E+02	
I-129	29.78	57.00	4.92E-01	4.92E-01	1.18E-01	2.39E-01	
	33.60	13.20	1.36E+00		-6.11E-01	6.58E-01	
	39.58	7.52	1.69E+00		1.73E-01	8.21E-01	
I-131	284.30	6.05	1.90E+01	1.52E+00	2.15E+00	9.12E+00	
	364.48	81.20	1.52E+00		7.30E-01	7.24E-01	
	636.97	7.26	2.16E+01		8.32E+00	1.02E+01	
	722.89	1.80	8.33E+01		-9.17E+01	3.89E+01	
TE-132	49.72	13.10	6.37E+02	7.98E+01	-2.27E+02	3.10E+02	
	228.16	88.00	7.98E+01		1.03E+01	3.86E+01	
BA-133	81.00	33.00	1.94E-01	1.69E-01	-8.63E-01	9.49E-02	
	302.84	17.80	4.53E-01		-3.57E-02	2.18E-01	
	356.01	60.00	1.69E-01		3.65E-02	8.15E-02	
I-133	529.87	86.30	1.68E+10	1.68E+10	-2.89E+09	7.92E+09	
XE-133	81.00	38.00	1.21E+01	1.21E+01	-5.38E+01	5.92E+00	
CS-134	563.23	8.38	1.14E+00	1.07E-01	4.04E-01	5.40E-01	
	569.32	15.43	5.75E-01		-7.16E-02	2.71E-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-134	604.70	97.60	1.07E-01	1.07E-01	2.59E-02	5.09E-02
	795.84	85.40	1.28E-01		8.15E-02	6.00E-02
	801.93	8.73	1.05E+00		-7.30E-01	4.86E-01
CS-135	268.24	16.00	4.88E-01	4.88E-01	9.51E-02	2.36E-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	4.41E+00	5.73E-01	3.34E-01	2.14E+00
	163.89	4.61	6.76E+00		6.53E-02	3.27E+00
	176.55	13.56	2.41E+00		-6.35E-03	1.16E+00
	273.65	12.66	3.45E+00		-1.86E+00	1.66E+00
	340.57	48.50	1.15E+00		2.39E+00	5.59E-01
	818.50	99.70	5.73E-01		8.63E-02	2.68E-01
	1048.07	79.60	7.67E-01		1.37E-01	3.54E-01
	1235.34	19.70	4.79E+00	2.56E+00	2.26E+00	
CS-137	661.65	85.12	1.08E-01	1.08E-01	1.70E-02	5.06E-02
LA-138	788.74	34.00	3.02E-01	1.35E-01	-5.24E-03	1.41E-01
	1435.80	66.00	1.35E-01		-1.38E-02	5.90E-02
CE-139	165.85	80.35	8.11E-02	8.11E-02	-1.93E-02	3.92E-02
BA-140	162.64	6.70	4.87E+00	1.92E+00	4.44E-01	2.36E+00
	304.84	4.50	9.39E+00		2.54E+00	4.51E+00
	423.70	3.20	1.49E+01		4.30E+00	7.09E+00
	437.55	2.00	2.38E+01		1.56E+01	1.13E+01
	537.32	25.00	1.92E+00		2.36E-01	9.07E-01
LA-140	328.77	20.50	2.36E+00	6.13E-01	1.73E+00	1.14E+00
	487.03	45.50	1.05E+00		4.36E-01	4.96E-01
	815.85	23.50	2.51E+00		-3.06E-01	1.17E+00
	1596.49	95.49	6.13E-01		1.17E-01	2.70E-01
CE-141	145.44	48.40	2.35E-01	2.35E-01	-6.31E-02	1.14E-01
CE-143	57.36	11.80	8.44E+06	2.97E+06	-3.50E+06	4.13E+06
	293.26	42.00	2.97E+06		6.43E+06	1.44E+06
	664.55	5.20	2.34E+07		2.26E+07	1.10E+07
CE-144	133.54	10.80	5.62E-01	5.62E-01	-1.48E-01	2.73E-01
PM-144	476.78	42.00	2.22E-01	8.91E-02	1.46E-01	1.05E-01
	618.01	98.60	8.91E-02		1.33E-02	4.16E-02
	696.49	99.49	1.01E-01		-4.02E-03	4.71E-02
PM-145	36.85	21.70	6.51E-01	3.56E-01	-2.05E-01	3.16E-01
	37.36	39.70	3.56E-01		1.37E-01	1.73E-01
	42.30	15.10	7.33E-01		2.28E-01	3.57E-01
	72.40	2.31	3.88E+00		-4.76E+00	1.91E+00
PM-146	453.90	39.94	2.09E-01	2.09E-01	1.15E-01	9.92E-02
	735.90	14.01	6.40E-01		-3.62E-02	2.97E-01
	747.13	13.10	6.59E-01		4.51E-02	3.05E-01
ND-147	91.11	28.90	2.02E+00	2.02E+00	-8.26E-01	9.90E-01
	531.02	13.10	4.75E+00		-3.15E+00	2.24E+00
PM-149	285.90	3.10	5.81E+04	5.81E+04	1.32E+04	2.79E+04
EU-152	121.78	20.50	2.61E-01	2.61E-01	-9.74E-02	1.27E-01
	244.69	5.40	1.63E+00		-2.02E-01	7.90E-01
	344.27	19.13	3.91E-01		-6.01E-02	1.87E-01
	778.89	9.20	9.31E-01		4.53E-02	4.30E-01
	964.01	10.40	1.25E+00		-1.90E-01	5.89E-01
	1085.78	7.22	1.46E+00		8.02E-02	6.71E-01
	1112.02	9.60	1.20E+00	1.94E-01	5.51E-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-152	1407.95	14.94	7.35E-01	2.61E-01	-1.88E-01	3.31E-01
GD-153	97.43	31.30	1.88E-01	1.88E-01	5.41E-02	9.15E-02
	103.18	22.20	2.58E-01		-1.96E-01	1.25E-01
EU-154	123.07	40.50	1.38E-01	1.38E-01	4.32E-02	6.70E-02
	723.30	19.70	4.71E-01		-5.18E-01	2.19E-01
	873.19	11.50	9.14E-01		1.52E-01	4.25E-01
	996.32	10.30	9.68E-01		1.73E-01	4.44E-01
	1004.76	17.90	5.55E-01		-2.47E-02	2.54E-01
	1274.45	35.50	3.55E-01		-1.00E-01	1.64E-01
+ EU-155	86.50	* 30.90	3.64E-01	2.73E-01	5.54E-01	1.80E-01
	105.30	20.70	2.73E-01		1.49E-01	1.33E-01
EU-156	811.77	10.40	4.06E+00	4.06E+00	-1.86E+00	1.89E+00
	1153.47	7.20	7.96E+00		2.38E+00	3.70E+00
	1230.71	8.90	7.21E+00		7.07E-01	3.37E+00
HO-166M	184.41	72.60	1.07E-01	1.07E-01	2.15E-01	5.23E-02
	280.45	29.60	2.56E-01		2.56E-02	1.24E-01
	410.94	11.10	7.45E-01		1.32E-01	3.56E-01
	711.69	54.10	1.74E-01		-8.58E-03	8.12E-02
TM-171	66.72	0.14	5.50E+01	5.50E+01	-5.77E+01	2.69E+01
HF-172	81.75	4.52	1.44E+00	5.15E-01	-6.42E+00	7.04E-01
	125.81	11.30	5.15E-01		-3.03E-01	2.50E-01
LU-172	181.53	20.60	8.53E+00	4.77E+00	-1.33E+01	4.13E+00
	810.06	16.63	1.79E+01		3.36E+00	8.35E+00
	912.12	15.25	3.61E+01		8.40E+01	1.73E+01
	1093.66	62.50	4.77E+00		9.87E-01	2.18E+00
LU-173	100.72	5.24	1.04E+00	3.91E-01	-3.79E-01	5.05E-01
	272.11	21.20	3.91E-01		4.06E-02	1.89E-01
HF-175	343.40	84.00	1.29E-01	1.29E-01	-1.87E-02	6.19E-02
LU-176	88.34	13.30	5.96E-01	7.44E-02	8.00E-01	2.93E-01
	201.83	86.00	8.16E-02		-9.28E-02	3.95E-02
	306.78	94.00	7.44E-02		-2.45E-02	3.56E-02
TA-182	67.75	41.20	2.17E-01	2.17E-01	1.96E-02	1.06E-01
	1121.30	34.90	5.68E-01		6.20E-01	2.68E-01
	1189.05	16.23	9.49E-01		8.58E-02	4.39E-01
	1221.41	26.98	5.57E-01		-2.57E-01	2.57E-01
	1231.02	11.44	1.55E+00		-2.69E-01	7.22E-01
IR-192	308.46	29.68	3.14E-01	2.21E-01	-9.57E-02	1.50E-01
	468.07	48.10	2.21E-01		3.23E-02	1.05E-01
HG-203	279.19	77.30	1.65E-01	1.65E-01	6.78E-02	7.99E-02
BI-207	569.67	97.72	8.60E-02	8.60E-02	-3.58E-03	4.04E-02
	1063.62	74.90	1.52E-01		5.85E-02	7.00E-02
+ TL-208	583.14	* 30.22	4.90E-01	1.42E-01	1.56E+00	2.37E-01
	860.37	4.48	2.34E+00		8.92E-01	1.09E+00
	2614.66	* 35.85	1.42E-01		1.22E+00	4.84E-02
BI-210M	262.00	45.00	1.56E-01	1.56E-01	1.94E-02	7.53E-02
	300.00	23.00	3.57E-01		-1.20E+00	1.72E-01
+ PB-210	46.50	* 4.25	3.03E+00	3.03E+00	1.57E+00	1.48E+00
PB-211	404.84	2.90	2.78E+00	2.78E+00	-3.44E-01	1.33E+00
	831.96	2.90	3.17E+00		-1.98E+00	1.47E+00
+ BI-212	727.17	* 11.80	1.63E+00	1.63E+00	1.19E+00	7.86E-01
	1620.62	* 2.75	3.63E+00		1.64E+00	1.60E+00
+ PB-212	238.63	* 44.60	3.46E-01	3.46E-01	1.60E+00	1.70E-01
	300.09	* 3.41	2.24E+00		1.18E+00	1.08E+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)
+	BI-214	609.31	*	46.30	2.65E-01	2.65E-01	1.49E+00	1.27E-01
		1120.29	*	15.10	8.54E-01		1.63E+00	3.97E-01
		1764.49	*	15.80	5.23E-01		1.88E+00	2.21E-01
		2204.22	*	4.98	1.20E+00		1.97E+00	4.51E-01
+	PB-214	295.21	*	19.19	5.66E-01	3.03E-01	1.08E+00	2.75E-01
		351.92	*	37.19	3.03E-01		1.52E+00	1.47E-01
	RN-219	401.80		6.50	1.23E+00	1.23E+00	1.04E-01	5.88E-01
	RA-223	323.87		3.88	1.90E+00	1.90E+00	-1.60E+00	9.08E-01
	RA-224	240.98		3.95	3.79E+00	3.79E+00	2.21E+01	1.86E+00
	RA-225	40.00		31.00	1.82E+00	1.82E+00	1.87E-01	8.85E-01
+	RA-226	186.21	*	3.28	3.35E+00	3.35E+00	4.18E+00	1.65E+00
		TH-227	50.10		8.40	1.00E+00	1.00E+00	-3.57E-01	4.89E-01
		236.00		11.50	1.13E+00		3.33E+00	5.52E-01
		256.20		6.30	1.14E+00		2.40E-01	5.52E-01
+	AC-228	338.32	*	11.40	9.85E-01	5.86E-01	1.28E+00	4.78E-01
		911.07	*	27.70	5.86E-01		1.54E+00	2.79E-01
		969.11	*	16.60	9.54E-01		1.57E+00	4.53E-01
	TH-230	48.44		16.90	5.70E-01	5.70E-01	5.51E-01	2.78E-01
		62.85		4.60	1.81E+00		2.02E+00	8.87E-01
		67.67		0.37	1.99E+01		1.80E+00	9.71E+00
	PA-231	283.67		1.60	4.40E+00	3.49E+00	4.98E-01	2.11E+00
		302.67		2.30	3.49E+00		-2.74E-01	1.68E+00
	TH-231	25.64		14.70	3.62E+00	1.03E+00	7.19E-01	1.76E+00
		84.21		6.40	1.03E+00		-2.26E+00	5.03E-01
	PA-233	311.98		38.60	4.19E-01	4.19E-01	-1.97E-01	2.01E-01
	PA-234	131.20		20.40	2.98E-01	2.98E-01	2.41E-01	1.45E-01
		733.99		8.80	1.05E+00		-7.34E-02	4.90E-01
		946.00		12.00	7.54E-01		7.21E-02	3.45E-01
	PA-234M	1001.03		0.92	1.19E+01	1.19E+01	-1.10E+00	5.52E+00
	TH-234	63.29		3.80	2.15E+00	2.15E+00	4.52E-01	1.05E+00
	U-235	143.76		10.50	5.42E-01	5.42E-01	-3.70E-02	2.63E-01
		163.35		4.70	1.20E+00		1.16E-02	5.82E-01
		205.31		4.70	1.54E+00		-2.06E+00	7.47E-01
+	NP-237	86.50	*	12.60	8.82E-01	8.82E-01	1.34E+00	4.35E-01
		NP-239	106.10		22.70	3.40E+03	3.40E+03	1.59E+03	1.65E+03
		228.18		10.70	9.21E+03		1.19E+03	4.46E+03
		277.60		14.10	7.79E+03		6.31E+03	3.76E+03
	AM-241	59.54		35.90	2.23E-01	2.23E-01	-1.94E-01	1.09E-01
	AM-243	74.67		66.00	1.60E-01	1.60E-01	3.11E-01	7.86E-02
	CM-243	209.75		3.29	2.41E+00	5.72E-01	2.48E+00	1.17E+00
		228.14		10.60	6.78E-01		8.79E-02	3.28E-01
		277.60		14.00	5.72E-01		4.63E-01	2.76E-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 1510088-17
CP5008S09-10

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: CP5008S09-10

Elapsed Live time: 3600

Elapsed Real Time: 3616

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	13	203	180	165	144	105	87	97	
17:	89	88	87	77	76	84	87	88	
25:	101	95	68	81	80	87	84	82	
33:	85	80	58	73	84	79	101	89	
41:	92	96	93	80	100	103	178	106	
49:	100	95	93	87	113	114	130	115	
57:	125	130	115	142	139	122	168	216	
65:	128	113	147	130	151	119	131	157	
73:	160	171	436	276	466	493	137	106	
81:	118	108	100	127	177	105	202	241	
89:	129	185	151	132	229	179	104	76	
97:	79	80	84	87	65	68	75	87	
105:	82	102	83	79	83	79	79	69	
113:	84	77	101	68	69	79	72	65	
121:	77	71	67	77	93	67	79	74	
129:	104	100	72	78	86	64	74	65	
137:	77	70	61	75	66	71	76	75	
145:	73	56	73	71	76	74	56	76	
153:	66	83	81	66	70	75	54	68	
161:	54	67	68	50	60	53	60	57	
169:	51	58	58	57	63	61	74	65	
177:	55	51	52	59	57	64	71	59	
185:	74	154	132	56	46	62	59	48	
193:	51	68	51	43	59	68	53	55	
201:	61	42	45	55	36	61	68	54	
209:	77	80	45	51	44	46	41	62	
217:	54	64	50	43	46	49	43	37	
225:	46	45	46	44	37	34	49	54	
233:	31	52	49	49	57	205	514	173	
241:	81	132	104	35	32	34	35	32	
249:	38	30	36	32	37	40	38	32	
257:	31	37	37	34	33	28	26	39	
265:	34	40	20	36	30	62	53	36	
273:	31	35	30	35	55	50	40	34	
281:	29	21	34	33	27	21	37	19	
289:	30	26	29	27	27	37	118	147	
297:	41	30	26	45	56	23	32	29	
305:	30	22	29	28	19	17	33	19	
313:	26	23	35	30	27	24	12	23	
321:	32	24	20	30	18	23	29	45	
329:	43	36	23	26	19	31	26	18	
337:	26	72	99	37	28	30	26	24	
345:	19	19	16	28	28	21	82	286	
353:	143	20	28	20	28	24	22	16	
361:	17	27	26	27	23	20	13	15	

369: 19 17 26 18 17 22 23 29

Sample Title: CP5008S09-10

Channel	1	2	3	4	5	6	7	8
377:	19	17	24	21	13	18	22	17
385:	18	15	23	25	24	24	22	23
393:	25	19	14	13	16	24	16	23
401:	17	20	23	20	24	16	23	17
409:	23	22	33	19	13	20	16	23
417:	20	23	26	20	21	18	19	19
425:	21	17	23	16	10	13	19	14
433:	19	12	19	16	14	19	14	23
441:	25	12	11	13	17	11	13	14
449:	18	15	13	16	24	12	19	23
457:	15	10	11	15	17	12	29	29
465:	13	14	20	17	6	16	18	15
473:	13	22	18	17	16	20	19	14
481:	10	14	13	18	16	21	12	16
489:	17	7	13	10	12	22	17	11
497:	15	11	12	10	10	17	14	13
505:	17	14	6	17	25	38	55	41
513:	24	21	14	14	12	15	13	21
521:	14	13	11	6	12	16	17	15
529:	15	11	12	8	14	12	17	17
537:	6	13	14	12	13	13	16	19
545:	9	20	8	7	11	9	9	10
553:	7	7	12	4	13	6	20	13
561:	14	14	13	21	13	17	8	16
569:	14	9	16	8	12	10	10	11
577:	13	11	15	17	12	40	135	92
585:	12	13	11	12	7	11	7	12
593:	14	14	9	9	11	12	13	7
601:	14	12	22	9	6	14	15	34
609:	141	164	37	16	12	9	12	8
617:	15	9	11	4	10	6	10	8
625:	5	8	6	16	6	9	10	7
633:	13	11	7	18	13	14	15	12
641:	13	8	8	14	7	9	5	11
649:	8	5	8	9	5	8	10	6
657:	11	3	4	7	19	12	12	8
665:	14	17	8	7	7	8	12	11
673:	11	9	9	6	4	7	7	12
681:	4	8	12	15	13	12	14	16
689:	14	6	7	10	15	9	17	5
697:	7	12	8	11	13	17	17	17
705:	11	13	5	8	10	11	9	13
713:	9	8	10	16	10	11	6	9
721:	8	8	5	6	13	16	23	22
729:	10	11	12	11	11	9	7	8
737:	6	5	12	11	6	7	6	9
745:	4	9	6	11	7	6	7	8
753:	5	4	7	10	13	15	10	10
761:	8	8	11	10	8	5	10	20
769:	13	16	5	13	10	8	6	11
777:	7	7	5	5	6	7	9	9
785:	12	17	12	5	9	13	9	5
793:	8	11	24	6	11	7	7	6

801: 7 5 11 8 6 9 15 15

Sample Title: CP5008S09-10

Channel	1	2	3	4	5	6	7	8	9
809:	3	10	9	7	10	11	8	10	
817:	4	8	14	9	14	5	9	6	
825:	9	3	7	10	9	9	6	4	
833:	8	11	3	12	11	9	11	9	
841:	8	11	13	7	5	4	6	4	
849:	11	8	9	10	3	6	6	5	
857:	4	4	4	15	15	13	7	5	
865:	11	7	5	11	8	6	14	8	
873:	13	8	6	5	10	3	3	9	
881:	5	11	5	7	6	8	8	4	
889:	2	3	6	7	5	8	3	4	
897:	8	11	8	3	2	6	9	11	
905:	7	4	9	6	11	32	86	53	
913:	11	6	5	4	7	8	7	4	
921:	6	8	4	4	7	9	8	5	
929:	5	7	7	9	9	18	7	4	
937:	9	3	6	8	4	6	8	4	
945:	3	8	5	5	5	6	4	8	
953:	6	6	6	2	4	6	14	7	
961:	6	9	6	16	22	13	8	30	
969:	48	29	4	6	5	6	5	8	
977:	4	3	5	9	3	4	12	3	
985:	9	5	7	4	5	5	2	2	
993:	5	2	9	5	9	4	8	11	
1001:	5	5	7	12	7	1	2	7	
1009:	4	8	7	6	6	3	7	3	
1017:	12	9	4	8	10	7	5	3	
1025:	11	9	8	8	10	3	5	10	
1033:	6	8	8	5	8	3	9	7	
1041:	2	3	6	9	5	11	4	9	
1049:	6	3	11	6	4	3	8	6	
1057:	8	5	7	6	3	7	14	5	
1065:	10	5	4	5	10	8	6	6	
1073:	8	10	11	3	5	8	7	11	
1081:	4	6	7	5	11	3	2	8	
1089:	5	5	7	6	6	6	3	7	
1097:	4	3	6	8	10	4	11	5	
1105:	5	3	6	4	6	9	9	4	
1113:	9	6	4	4	9	7	16	21	
1121:	34	13	4	4	4	9	8	7	
1129:	8	6	5	5	0	5	4	8	
1137:	3	4	5	9	12	3	11	5	
1145:	5	4	8	8	4	9	6	4	
1153:	8	11	12	9	5	10	9	3	
1161:	7	4	7	9	10	3	5	4	
1169:	4	9	8	4	6	13	8	6	
1177:	10	4	6	9	5	10	5	4	
1185:	8	11	8	11	7	3	4	8	
1193:	7	8	10	8	6	10	9	6	
1201:	10	5	7	5	4	5	7	4	
1209:	5	6	6	10	9	9	6	11	
1217:	7	5	12	9	8	5	5	3	
1225:	6	12	10	5	12	12	10	9	

1233: 9 9 9 11 17 29 11 5

Sample Title: CP5008S09-10

Channel	1	2	3	4	5	6	7	8
1241:	9	11	8	4	5	6	3	4
1249:	4	6	8	5	6	8	5	8
1257:	4	4	4	7	7	6	1	4
1265:	4	7	4	2	2	5	5	7
1273:	3	6	7	5	3	4	6	12
1281:	4	5	6	11	5	7	3	2
1289:	4	3	3	2	3	6	4	6
1297:	3	8	1	3	5	3	3	4
1305:	5	3	6	4	5	2	4	6
1313:	5	6	0	5	2	3	5	2
1321:	3	4	6	4	4	4	9	5
1329:	2	4	4	4	3	3	3	8
1337:	9	3	3	5	3	1	1	3
1345:	4	1	3	4	2	3	5	2
1353:	1	5	2	4	2	2	4	4
1361:	2	3	5	1	6	4	3	3
1369:	5	1	2	5	6	5	4	4
1377:	9	13	6	1	3	4	1	2
1385:	4	3	3	5	1	3	1	1
1393:	3	3	4	3	1	2	1	6
1401:	6	6	1	3	6	5	6	1
1409:	2	3	2	0	4	3	5	1
1417:	3	4	1	3	7	3	3	5
1425:	3	2	3	3	6	4	5	4
1433:	1	1	0	1	1	2	2	2
1441:	3	1	3	3	0	4	2	6
1449:	0	2	1	0	2	3	3	3
1457:	1	8	55	192	216	68	4	5
1465:	2	1	2	4	0	0	2	2
1473:	3	1	1	0	1	2	3	0
1481:	2	2	4	2	1	1	1	2
1489:	2	0	1	1	4	2	1	4
1497:	4	3	3	2	2	3	2	1
1505:	1	3	1	3	6	3	6	5
1513:	2	3	0	2	3	1	1	1
1521:	1	1	3	3	3	2	2	2
1529:	2	0	3	3	1	2	0	2
1537:	2	2	2	2	3	0	1	0
1545:	0	0	0	1	0	2	3	0
1553:	1	3	2	4	0	3	2	1
1561:	1	0	0	1	1	3	0	1
1569:	2	1	0	0	1	1	2	1
1577:	2	4	2	3	3	3	4	2
1585:	1	2	7	6	4	5	6	4
1593:	3	3	1	0	0	2	1	5
1601:	2	1	1	0	1	0	1	1
1609:	0	2	0	1	0	1	1	0
1617:	1	0	4	3	4	1	2	1
1625:	2	0	1	1	1	4	1	1
1633:	3	2	0	4	1	3	1	1
1641:	1	3	2	1	2	1	0	2
1649:	1	3	0	3	1	2	0	0
1657:	1	0	0	1	3	2	2	0

1665: 3 3 2 2 0 1 1 0

Sample Title: CP5008S09-10

Channel	1	2	3	4	5	6	7	8
1673:	1	2	1	2	0	1	1	2
1681:	0	0	0	0	3	0	1	1
1689:	3	1	0	0	2	0	1	1
1697:	0	2	0	3	1	1	3	2
1705:	2	1	0	1	2	1	1	2
1713:	0	0	1	4	4	3	0	1
1721:	0	0	1	1	0	1	1	4
1729:	13	4	1	1	1	1	0	0
1737:	2	1	1	1	1	1	0	0
1745:	0	1	1	2	1	0	0	1
1753:	2	0	0	0	0	1	0	0
1761:	1	2	18	22	17	7	1	2
1769:	0	2	1	0	0	2	0	2
1777:	0	1	1	1	2	0	0	0
1785:	1	1	0	2	1	0	1	1
1793:	0	0	3	1	0	1	0	1
1801:	1	1	0	2	2	0	1	0
1809:	0	0	2	0	0	0	0	2
1817:	1	1	1	0	1	1	2	0
1825:	0	3	1	1	0	0	0	2
1833:	1	1	1	1	2	1	0	1
1841:	0	0	1	2	4	0	6	2
1849:	2	2	0	0	0	3	2	0
1857:	0	1	2	0	1	0	0	0
1865:	2	1	1	2	1	0	0	4
1873:	0	2	2	4	0	1	1	1
1881:	3	0	2	2	1	0	1	1
1889:	0	0	0	0	1	1	0	0
1897:	1	3	1	1	1	0	0	1
1905:	0	1	2	1	1	1	0	1
1913:	1	2	1	1	0	3	1	0
1921:	0	0	1	0	1	0	0	2
1929:	2	0	2	0	1	1	3	1
1937:	1	1	0	1	1	0	2	4
1945:	2	0	0	0	2	0	0	0
1953:	1	2	1	0	1	0	1	1
1961:	2	0	2	2	0	1	0	0
1969:	0	0	0	0	1	2	1	0
1977:	1	1	0	4	0	0	1	1
1985:	0	0	0	2	0	0	0	4
1993:	0	0	0	0	1	1	2	0
2001:	2	1	2	0	0	2	1	1
2009:	3	0	4	3	0	0	1	0
2017:	2	1	0	0	0	1	3	1
2025:	0	0	0	1	0	2	1	2
2033:	0	1	0	1	1	1	1	1
2041:	2	1	1	1	0	0	0	2
2049:	1	0	0	1	0	2	2	0
2057:	0	1	0	0	0	1	0	0
2065:	1	1	0	1	0	0	0	1
2073:	4	0	1	2	2	0	1	0
2081:	2	2	0	0	1	1	1	0
2089:	0	2	2	0	0	2	0	1

2097: 1 1 0 1 0 3 5 3

Sample Title: CP5008S09-10

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

2529: 0 0 0 1 0 0 0 0

Sample Title: CP5008S09-10

Channel	1	2	3	4	5	6	7	8
2537:	0	0	1	0	0	1	1	0
2545:	2	0	0	2	0	0	0	0
2553:	0	1	0	0	1	0	0	0
2561:	0	0	0	0	1	0	0	0
2569:	0	0	0	0	0	1	0	0
2577:	1	0	0	0	0	0	1	0
2585:	0	1	0	0	2	0	0	0
2593:	0	0	0	0	1	0	1	0
2601:	0	1	0	0	1	0	0	1
2609:	1	0	0	6	23	23	16	4
2617:	1	0	0	0	0	1	0	0
2625:	1	0	0	0	0	0	0	0
2633:	0	1	0	0	0	0	0	0
2641:	1	0	1	0	0	0	1	0
2649:	0	0	0	0	1	0	0	0
2657:	0	0	0	0	1	0	0	0
2665:	1	0	0	0	0	1	0	1
2673:	0	0	0	0	1	0	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	1	0	0
2705:	0	0	1	0	1	0	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	0	1	0	2	0
2729:	0	0	1	0	0	1	0	2
2737:	0	0	0	0	0	0	0	1
2745:	0	0	1	0	1	0	0	1
2753:	0	0	0	0	0	0	0	0
2761:	0	1	0	0	0	0	0	1
2769:	0	0	0	1	0	0	0	0
2777:	0	0	0	0	0	1	0	0
2785:	0	0	0	1	2	1	0	0
2793:	0	0	1	0	0	0	0	0
2801:	0	0	0	0	1	0	0	0
2809:	0	0	0	1	0	1	1	0
2817:	0	0	0	0	0	1	0	0
2825:	0	1	0	0	0	0	2	0
2833:	0	0	1	0	0	0	0	0
2841:	0	0	0	1	0	0	0	0
2849:	1	0	1	0	0	0	0	0
2857:	0	0	0	1	0	0	0	1
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	0	0
2881:	1	0	0	0	0	0	0	0
2889:	0	0	0	1	0	0	1	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	1	0	0	0	0	0
2913:	0	0	2	0	0	0	0	0
2921:	0	0	0	1	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	0	1	0	0	0
2945:	0	0	0	0	0	0	1	0
2953:	0	0	0	0	1	0	0	0

2961: 0 0 0 0 0 0 0 0

Sample Title: CP5008S09-10

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

3393: 0 0 0 0 0 1 0 1

Sample Title: CP5008S09-10

Channel	1	2	3	4	5	6	7	8
3401:	0	0	0	1	0	0	0	0
3409:	0	0	0	1	0	0	0	2
3417:	0	1	0	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	0	0	0	0	0
3449:	0	0	0	1	0	0	0	0
3457:	0	0	0	0	0	0	0	1
3465:	0	0	0	0	0	0	0	2
3473:	0	1	0	1	0	1	0	0
3481:	0	0	0	1	0	1	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	1	0	0	0	0	0
3505:	0	0	0	0	0	0	1	0
3513:	0	0	0	0	1	0	0	0
3521:	0	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:	0	0	0	0	0	0	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	1	0
3577:	0	0	0	0	0	0	0	0
3585:	1	0	0	1	0	0	0	0
3593:	1	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	1	0	0	0	0
3617:	1	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	1	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	1	0
3665:	0	0	0	0	0	0	0	1
3673:	0	0	0	0	1	1	0	0
3681:	0	0	0	0	0	1	0	0
3689:	0	0	0	1	0	0	1	0
3697:	0	0	0	0	0	1	1	1
3705:	0	0	1	0	2	2	0	0
3713:	0	0	0	0	0	0	0	1
3721:	0	0	1	0	0	0	0	0
3729:	0	0	0	1	0	0	2	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	2	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	1	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	1	0	0
3793:	0	0	0	0	1	0	0	0
3801:	0	0	1	0	0	0	0	0
3809:	0	0	0	0	0	0	1	1
3817:	0	1	1	0	0	2	0	0

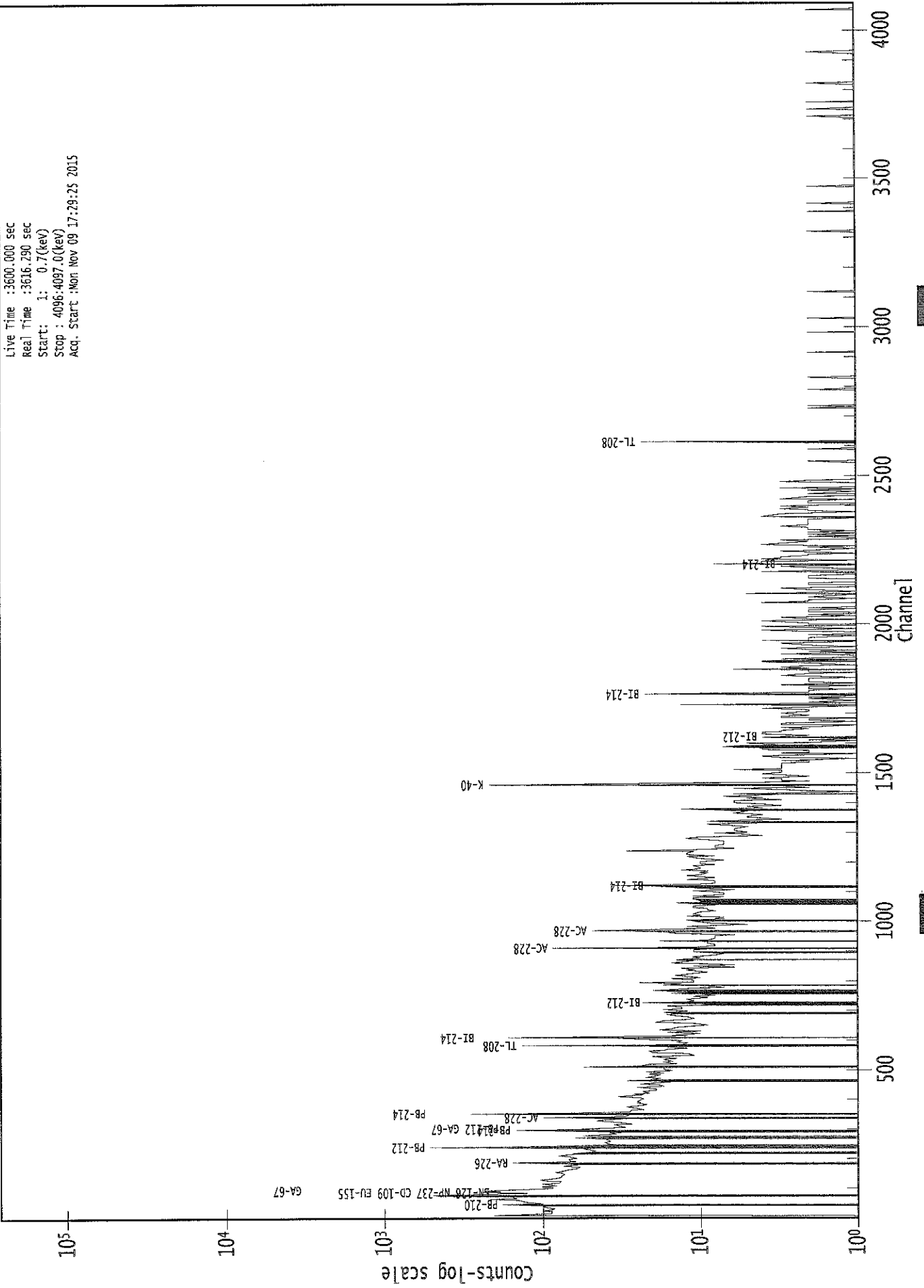
3825: 0 0 0 0 0 0 0 0

Sample Title: CP5008S09-10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	1	0	0	0	1
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	0
3865:	0	0	1	1	0	0	0	0
3873:	1	0	0	0	0	0	1	0
3881:	0	1	0	0	0	0	0	1
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	1	0	0	0	0	0	1
3921:	0	1	1	0	0	0	0	2
3929:	0	0	0	1	0	0	1	0
3937:	0	0	0	0	0	0	0	0
3945:	0	1	0	0	0	1	0	0
3953:	0	1	0	0	0	1	0	0
3961:	0	0	0	0	0	1	0	0
3969:	0	0	1	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	1	0	0	0	0	0	0	0
3993:	1	1	0	0	0	0	0	0
4001:	1	0	0	0	0	1	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	1	0	1	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	1	0	0	0	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	2	0	0
4073:	0	1	0	0	0	0	0	0
4081:	0	1	0	0	1	0	0	0
4089:	0	0	0	0	0	0	0	0

0000029358.CNF

Live Time : 3600.000 sec
Real Time : 3616.290 sec
Start : 1: 0.7(kev)
Stop : 4096.4097.0(kev)
Acq. Start : Mon Nov 09 17:29:25 2015



Analysis Report for 1510088-18
CP5008S12-13

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-18
Sample Description : CP5008S12-13
Sample Type : SOIL

Sample Size : 5.345E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 9:04:15AM
Acquisition Started : 11/9/2015 6:05:34PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3653.0 seconds

Dead Time : 1.45 %

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 : 29360

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

Analysis Report for 1510088-18
CP5008S12-13

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 7:06:28PM
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	62.99	62.25	0.0000	0.00
2	76.03	75.30	0.0000	0.00
3	87.27	86.54	0.0000	0.00
4	92.95	92.23	0.0000	0.00
5	106.63	105.91	0.0000	0.00
6	239.46	238.80	0.0000	0.00
7	338.54	337.92	0.0000	0.00
8	352.17	351.55	0.0000	0.00
9	462.65	462.09	0.0000	0.00
10	511.16	510.62	0.0000	0.00
11	563.92	563.41	0.0000	0.00
12	584.01	583.50	0.0000	0.00
13	609.57	609.07	0.0000	0.00
14	634.01	633.53	0.0000	0.00
15	721.16	720.72	0.0000	0.00
16	727.72	727.28	0.0000	0.00
17	860.61	860.25	0.0000	0.00
18	911.69	911.35	0.0000	0.00
19	969.26	968.95	0.0000	0.00
20	1001.54	1001.25	0.0000	0.00
21	1034.45	1034.18	0.0000	0.00
22	1079.91	1079.66	0.0000	0.00
23	1088.52	1088.28	0.0000	0.00
24	1121.61	1121.39	0.0000	0.00
25	1155.21	1155.00	0.0000	0.00
26	1165.22	1165.01	0.0000	0.00
27	1312.11	1312.00	0.0000	0.00
28	1346.68	1346.58	0.0000	0.00
29	1369.85	1369.77	0.0000	0.00
30	1461.36	1461.33	0.0000	0.00
31	1524.00	1524.02	0.0000	0.00
32	1576.20	1576.24	0.0000	0.00
33	1608.35	1608.42	0.0000	0.00
34	1688.89	1689.01	0.0000	0.00
35	1765.34	1765.51	0.0000	0.00
36	1915.54	1915.80	0.0000	0.00
37	1952.84	1953.13	0.0000	0.00
38	2319.15	2319.70	0.0000	0.00
39	2615.10	2615.87	0.0000	0.00

Analysis Report for 1510088-18
CP5008S12-13

? = Adjacent peak noted
Errors quoted at 2.00sigma

Analysis Report for 1510088-18
CP5008S12-13

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 7:06:28PM

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	62.99	59 -	66	62.25	1.61E+02	95.27	1.41E+03	3.97
2	76.03	70 -	81	75.30	7.22E+02	145.29	2.27E+03	3.83
M 3	87.27	82 -	103	86.54	1.92E+02	98.16	1.45E+03	3.13
m 4	92.95	82 -	103	92.23	2.44E+02	97.28	1.23E+03	3.13
5	106.63	103 -	110	105.91	8.33E+01	71.75	7.99E+02	3.11
6	239.46	233 -	244	238.80	6.16E+02	89.80	6.93E+02	2.18
7	338.54	332 -	343	337.92	1.37E+02	57.20	3.36E+02	2.79
8	352.17	347 -	357	351.55	2.54E+02	56.83	2.90E+02	2.55
9	462.65	456 -	468	462.09	6.35E+01	41.77	1.75E+02	2.98
10	511.16	504 -	517	510.62	1.21E+02	46.07	1.81E+02	4.38
11	563.92	561 -	566	563.41	3.24E+01	21.31	6.32E+01	3.07
12	584.01	577 -	590	583.50	1.41E+02	48.17	1.91E+02	2.91
13	609.57	602 -	613	609.07	1.58E+02	47.62	2.07E+02	2.28
14	634.01	628 -	641	633.53	4.26E+01	37.03	1.35E+02	1.24
M 15	721.16	714 -	733	720.72	1.86E+01	25.63	8.39E+01	3.09
m 16	727.72	714 -	733	727.28	3.88E+01	26.24	8.72E+01	3.09
17	860.61	854 -	864	860.25	3.44E+01	26.67	7.52E+01	4.55
18	911.69	907 -	915	911.35	6.38E+01	27.94	8.03E+01	2.15
19	969.26	963 -	974	968.95	6.94E+01	30.00	7.71E+01	1.89
20	1001.54	997 -	1006	1001.25	3.63E+01	19.77	3.55E+01	2.11
21	1034.45	1025 -	1041	1034.18	3.61E+01	30.70	7.38E+01	10.22
22	1079.91	1076 -	1084	1079.66	1.69E+01	19.77	5.01E+01	3.03
23	1088.52	1085 -	1092	1088.28	1.74E+01	18.22	4.33E+01	4.69
24	1121.61	1116 -	1129	1121.39	4.20E+01	32.47	1.00E+02	7.33
25	1155.21	1151 -	1159	1155.00	1.74E+01	22.36	6.33E+01	1.92
26	1165.22	1160 -	1170	1165.01	2.85E+01	23.85	6.10E+01	4.65
M 27	1312.11	1309 -	1326	1312.00	1.48E+01	11.40	1.80E+01	3.22
28	1346.68	1341 -	1357	1346.58	2.62E+01	21.66	3.76E+01	8.79
29	1369.85	1363 -	1374	1369.77	1.21E+01	13.86	1.78E+01	0.92
30	1461.36	1455 -	1465	1461.33	2.47E+02	35.23	3.57E+01	3.06
31	1524.00	1520 -	1527	1524.02	1.51E+01	9.17	3.76E+00	3.91
32	1576.20	1572 -	1579	1576.24	9.40E+00	10.39	1.12E+01	2.81
33	1608.35	1604 -	1612	1608.42	6.78E+00	7.50	4.44E+00	6.39
34	1688.89	1686 -	1692	1689.01	7.61E+00	6.95	2.78E+00	1.08
35	1765.34	1761 -	1769	1765.51	1.48E+01	14.33	2.23E+01	1.28
36	1915.54	1911 -	1919	1915.80	1.00E+01	6.32	0.00E+00	1.25
37	1952.84	1948 -	1957	1953.13	9.58E+00	8.54	4.83E+00	5.89
38	2319.15	2315 -	2324	2319.70	1.00E+01	11.79	1.20E+01	4.30
39	2615.10	2611 -	2619	2615.87	3.80E+01	12.33	0.00E+00	2.56

Analysis Report for 1510088-18

CP5008S12-13

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 : 11/9/2015 7:06:28PM

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	62.99	59 -	66	1.61E+02	95.27	1.41E+03	7.55E+01
2	76.03	70 -	81	7.22E+02	145.29	2.27E+03	1.11E+02
M 3	87.27	82 -	103	1.92E+02	98.16	1.45E+03	6.27E+01
m 4	92.95	82 -	103	2.44E+02	97.28	1.23E+03	5.76E+01
5	106.63	103 -	110	8.33E+01	71.75	7.99E+02	5.70E+01
6	239.46	233 -	244	6.16E+02	89.80	6.93E+02	6.15E+01
7	338.54	332 -	343	1.37E+02	57.20	3.36E+02	4.29E+01
8	352.17	347 -	357	2.54E+02	56.83	2.90E+02	3.87E+01
9	462.65	456 -	468	6.35E+01	41.77	1.75E+02	3.17E+01
10	511.16	504 -	517	1.21E+02	46.07	1.81E+02	3.33E+01
11	563.92	561 -	566	3.24E+01	21.31	6.32E+01	1.48E+01
12	584.01	577 -	590	1.41E+02	48.17	1.91E+02	3.44E+01
13	609.57	602 -	613	1.58E+02	47.62	2.07E+02	3.33E+01
14	634.01	628 -	641	4.26E+01	37.03	1.35E+02	2.85E+01
M 15	721.16	714 -	733	1.86E+01	25.63	8.39E+01	1.51E+01
m 16	727.72	714 -	733	3.88E+01	26.24	8.72E+01	1.54E+01
17	860.61	854 -	864	3.44E+01	26.67	7.52E+01	1.97E+01
18	911.69	907 -	915	6.38E+01	27.94	8.03E+01	1.88E+01
19	969.26	963 -	974	6.94E+01	30.00	7.71E+01	2.05E+01
20	1001.54	997 -	1006	3.63E+01	19.77	3.55E+01	1.29E+01
21	1034.45	1025 -	1041	3.61E+01	30.70	7.38E+01	2.32E+01
22	1079.91	1076 -	1084	1.69E+01	19.77	5.01E+01	1.48E+01
23	1088.52	1085 -	1092	1.74E+01	18.22	4.33E+01	1.33E+01
24	1121.61	1116 -	1129	4.20E+01	32.47	1.00E+02	2.45E+01
25	1155.21	1151 -	1159	1.74E+01	22.36	6.33E+01	1.71E+01
26	1165.22	1160 -	1170	2.85E+01	23.85	6.10E+01	1.75E+01
M 27	1312.11	1309 -	1326	1.48E+01	11.40	1.80E+01	6.97E+00
28	1346.68	1341 -	1357	2.62E+01	21.66	3.76E+01	1.57E+01
29	1369.85	1363 -	1374	1.21E+01	13.86	1.78E+01	9.85E+00
30	1461.36	1455 -	1465	2.47E+02	35.23	3.57E+01	1.31E+01
31	1524.00	1520 -	1527	1.51E+01	9.17	3.76E+00	3.99E+00

Analysis Report for 1510088-18

CP5008S12-13

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	1576.20	1572 -	1579	9.40E+00	10.39	1.12E+01	6.90E+00
33	1608.35	1604 -	1612	6.78E+00	7.50	4.44E+00	4.44E+00
34	1688.89	1686 -	1692	7.61E+00	6.95	2.78E+00	3.47E+00
35	1765.34	1761 -	1769	1.48E+01	14.33	2.23E+01	9.93E+00
36	1915.54	1911 -	1919	1.00E+01	6.32	0.00E+00	0.00E+00
37	1952.84	1948 -	1957	9.58E+00	8.54	4.83E+00	4.84E+00
38	2319.15	2315 -	2324	1.00E+01	11.79	1.20E+01	8.18E+00
39	2615.10	2611 -	2619	3.80E+01	12.33	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 7:06:28PM

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	62.99	59 -	66	62.25	1.61E+02	95.27	1.41E+03	TH-230
								TH-234
							
M 3	76.03	70 -	81	75.30	7.22E+02	145.29	2.27E+03	SN-126
	87.27	82 -	103	86.54	1.92E+02	98.16	1.45E+03	CD-109
								NP-237
								EU-155
m 4	92.95	82 -	103	92.23	2.44E+02	97.28	1.23E+03	GA-67
	106.63	103 -	110	105.91	8.33E+01	71.75	7.99E+02	NP-239
	239.46	233 -	244	238.80	6.16E+02	89.80	6.93E+02	PB-212
	338.54	332 -	343	337.92	1.37E+02	57.20	3.36E+02	AC-228
	352.17	347 -	357	351.55	2.54E+02	56.83	2.90E+02	PB-214
	462.65	456 -	468	462.09	6.35E+01	41.77	1.75E+02	SB-125
	511.16	504 -	517	510.62	1.21E+02	46.07	1.81E+02	.....
	563.92	561 -	566	563.41	3.24E+01	21.31	6.32E+01	CS-134
	584.01	577 -	590	583.50	1.41E+02	48.17	1.91E+02	TL-208
	609.57	602 -	613	609.07	1.58E+02	47.62	2.07E+02	BI-214
	634.01	628 -	641	633.53	4.26E+01	37.03	1.35E+02	.....

Analysis Report for 1510088-18

CP5008S12-13

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	15	721.16	714 -	733	720.72	1.86E+01	25.63	8.39E+01	SB-126
m	16	727.72	714 -	733	727.28	3.88E+01	26.24	8.72E+01	BI-212
	17	860.61	854 -	864	860.25	3.44E+01	26.67	7.52E+01	TL-208
	18	911.69	907 -	915	911.35	6.38E+01	27.94	8.03E+01	LU-172 AC-228
	19	969.26	963 -	974	968.95	6.94E+01	30.00	7.71E+01	AC-228
	20	1001.54	997 -	1006	1001.25	3.63E+01	19.77	3.55E+01	PA-234M
	21	1034.45	1025 -	1041	1034.18	3.61E+01	30.70	7.38E+01	.....
	22	1079.91	1076 -	1084	1079.66	1.69E+01	19.77	5.01E+01	.....
	23	1088.52	1085 -	1092	1088.28	1.74E+01	18.22	4.33E+01	.....
	24	1121.61	1116 -	1129	1121.39	4.20E+01	32.47	1.00E+02	TA-182
	25	1155.21	1151 -	1159	1155.00	1.74E+01	22.36	6.33E+01	.....
	26	1165.22	1160 -	1170	1165.01	2.85E+01	23.85	6.10E+01	.....
M	27	1312.11	1309 -	1326	1312.00	1.48E+01	11.40	1.80E+01	V-48
	28	1346.68	1341 -	1357	1346.58	2.62E+01	21.66	3.76E+01	.....
	29	1369.85	1363 -	1374	1369.77	1.21E+01	13.86	1.78E+01	.....
	30	1461.36	1455 -	1465	1461.33	2.47E+02	35.23	3.57E+01	K-40
	31	1524.00	1520 -	1527	1524.02	1.51E+01	9.17	3.76E+00	.....
	32	1576.20	1572 -	1579	1576.24	9.40E+00	10.39	1.12E+01	.....
	33	1608.35	1604 -	1612	1608.42	6.78E+00	7.50	4.44E+00	.....
	34	1688.89	1686 -	1692	1689.01	7.61E+00	6.95	2.78E+00	.....
	35	1765.34	1761 -	1769	1765.51	1.48E+01	14.33	2.23E+01	BI-214
	36	1915.54	1911 -	1919	1915.80	1.00E+01	6.32	0.00E+00	.....
	37	1952.84	1948 -	1957	1953.13	9.58E+00	8.54	4.83E+00	.....
	38	2319.15	2315 -	2324	2319.70	1.00E+01	11.79	1.20E+01	.....
	39	2615.10	2611 -	2619	2615.87	3.80E+01	12.33	0.00E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 7:06:28PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	62.99	1.61E+02	95.27	2.33E-02	1.76E-03
	2	76.03	7.22E+02	145.29	2.13E-02	1.69E-03
M	3	87.27	1.92E+02	98.16	1.97E-02	1.64E-03
m	4	92.95	2.44E+02	97.28	1.90E-02	1.62E-03

Analysis Report for 1510088-18
CP5008S12-13

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
5	106.63	8.33E+01	71.75	1.74E-02	1.57E-03
6	239.46	6.16E+02	89.80	9.39E-03	9.84E-04
7	338.54	1.37E+02	57.20	6.86E-03	7.95E-04
8	352.17	2.54E+02	56.83	6.61E-03	7.80E-04
9	462.65	6.35E+01	41.77	5.08E-03	6.32E-04
10	511.16	1.21E+02	46.07	4.61E-03	5.61E-04
11	563.92	3.24E+01	21.31	4.18E-03	4.84E-04
12	584.01	1.41E+02	48.17	4.04E-03	4.54E-04
13	609.57	1.58E+02	47.62	3.87E-03	4.17E-04
14	634.01	4.26E+01	37.03	3.73E-03	3.81E-04
M	15	721.16	1.86E+01	3.28E-03	3.07E-04
m	16	727.72	3.88E+01	3.25E-03	3.03E-04
17	860.61	3.44E+01	26.67	2.76E-03	2.29E-04
18	911.69	6.38E+01	27.94	2.61E-03	2.06E-04
19	969.26	6.94E+01	30.00	2.46E-03	1.99E-04
20	1001.54	3.63E+01	19.77	2.38E-03	1.95E-04
21	1034.45	3.61E+01	30.70	2.31E-03	1.90E-04
22	1079.91	1.69E+01	19.77	2.22E-03	1.85E-04
23	1088.52	1.74E+01	18.22	2.20E-03	1.83E-04
24	1121.61	4.20E+01	32.47	2.14E-03	1.79E-04
25	1155.21	1.74E+01	22.36	2.08E-03	1.75E-04
26	1165.22	2.85E+01	23.85	2.07E-03	1.74E-04
M	27	1312.11	1.48E+01	1.85E-03	2.10E-04
28	1346.68	2.62E+01	21.66	1.81E-03	2.13E-04
29	1369.85	1.21E+01	13.86	1.78E-03	2.08E-04
30	1461.36	2.47E+02	35.23	1.68E-03	1.89E-04
31	1524.00	1.51E+01	9.17	1.62E-03	1.76E-04
32	1576.20	9.40E+00	10.39	1.58E-03	1.65E-04
33	1608.35	6.78E+00	7.50	1.55E-03	1.58E-04
34	1688.89	7.61E+00	6.95	1.49E-03	1.42E-04
35	1765.34	1.48E+01	14.33	1.43E-03	1.26E-04
36	1915.54	1.00E+01	6.32	1.34E-03	1.11E-04
37	1952.84	9.58E+00	8.54	1.32E-03	1.11E-04
38	2319.15	1.00E+01	11.79	1.16E-03	1.11E-04
39	2615.10	3.80E+01	12.33	1.07E-03	1.11E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 7:06:28PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

: 00996

Analysis Report for 1510088-18
CP5008S12-13

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	62.99	1.61E+02	95.27	5.38E+01	9.34E+00	1.07E+02	9.57E+01
	2	76.03	7.22E+02	145.29			7.22E+02	1.45E+02
M	3	87.27	1.92E+02	98.16			1.92E+02	9.82E+01
m	4	92.95	2.44E+02	97.28	5.44E+01	8.36E+00	1.90E+02	9.76E+01
	5	106.63	8.33E+01	71.75			8.33E+01	7.17E+01
	6	239.46	6.16E+02	89.80	1.09E+01	6.39E+00	6.05E+02	9.00E+01
	7	338.54	1.37E+02	57.20			1.37E+02	5.72E+01
	8	352.17	2.54E+02	56.83	8.07E+00	5.01E+00	2.46E+02	5.70E+01
	9	462.65	6.35E+01	41.77			6.35E+01	4.18E+01
	10	511.16	1.21E+02	46.07	4.21E+01	4.92E+00	7.93E+01	4.63E+01
	11	563.92	3.24E+01	21.31			3.24E+01	2.13E+01
	12	584.01	1.41E+02	48.17			1.41E+02	4.82E+01
	13	609.57	1.58E+02	47.62	5.16E+00	1.63E+00	1.52E+02	4.77E+01
	14	634.01	4.26E+01	37.03			4.26E+01	3.70E+01
M	15	721.16	1.86E+01	25.63			1.86E+01	2.56E+01
m	16	727.72	3.88E+01	26.24			3.88E+01	2.62E+01
	17	860.61	3.44E+01	26.67			3.44E+01	2.67E+01
	18	911.69	6.38E+01	27.94	1.01E+00	2.85E+00	6.28E+01	2.81E+01
	19	969.26	6.94E+01	30.00			6.94E+01	3.00E+01
	20	1001.54	3.63E+01	19.77	5.63E-01	2.30E+00	3.57E+01	1.99E+01
	21	1034.45	3.61E+01	30.70			3.61E+01	3.07E+01
	22	1079.91	1.69E+01	19.77			1.69E+01	1.98E+01
	23	1088.52	1.74E+01	18.22			1.74E+01	1.82E+01
	24	1121.61	4.20E+01	32.47			4.20E+01	3.25E+01
	25	1155.21	1.74E+01	22.36			1.74E+01	2.24E+01
	26	1165.22	2.85E+01	23.85			2.85E+01	2.38E+01
M	27	1312.11	1.48E+01	11.40			1.48E+01	1.14E+01
	28	1346.68	2.62E+01	21.66			2.62E+01	2.17E+01
	29	1369.85	1.21E+01	13.86			1.21E+01	1.39E+01
	30	1461.36	2.47E+02	35.23			2.47E+02	3.52E+01
	31	1524.00	1.51E+01	9.17			1.51E+01	9.17E+00
	32	1576.20	9.40E+00	10.39			9.40E+00	1.04E+01
	33	1608.35	6.78E+00	7.50			6.78E+00	7.50E+00
	34	1688.89	7.61E+00	6.95			7.61E+00	6.95E+00
	35	1765.34	1.48E+01	14.33	1.11E-01	9.77E-01	1.47E+01	1.44E+01
	36	1915.54	1.00E+01	6.32			1.00E+01	6.32E+00
	37	1952.84	9.58E+00	8.54			9.58E+00	8.54E+00
	38	2319.15	1.00E+01	11.79			1.00E+01	1.18E+01
	39	2615.10	3.80E+01	12.33	1.20E+00	1.02E+00	3.68E+01	1.24E+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 1510088-18

CP5008S12-13

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 7:06:28PM
 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	62.99	1.61E+02	95.27	5.38E+01	9.34E+00	1.07E+02	9.57E+01
	2	76.03	7.22E+02	145.29			7.22E+02	1.45E+02
M	3	87.27	1.92E+02	98.16			1.92E+02	9.82E+01
m	4	92.95	2.44E+02	97.28	5.44E+01	8.36E+00	1.90E+02	9.76E+01
	5	106.63	8.33E+01	71.75			8.33E+01	7.17E+01
	6	239.46	6.16E+02	89.80	1.09E+01	6.39E+00	6.05E+02	9.00E+01
	7	338.54	1.37E+02	57.20			1.37E+02	5.72E+01
	8	352.17	2.54E+02	56.83	8.07E+00	5.01E+00	2.46E+02	5.70E+01
	9	462.65	6.35E+01	41.77			6.35E+01	4.18E+01
	10	511.16	1.21E+02	46.07	4.21E+01	4.92E+00	7.93E+01	4.63E+01
	11	563.92	3.24E+01	21.31			3.24E+01	2.13E+01
	12	584.01	1.41E+02	48.17			1.41E+02	4.82E+01
	13	609.57	1.58E+02	47.62	5.16E+00	1.63E+00	1.52E+02	4.77E+01
	14	634.01	4.26E+01	37.03			4.26E+01	3.70E+01
M	15	721.16	1.86E+01	25.63			1.86E+01	2.56E+01
m	16	727.72	3.88E+01	26.24			3.88E+01	2.62E+01
	17	860.61	3.44E+01	26.67			3.44E+01	2.67E+01
	18	911.69	6.38E+01	27.94	1.01E+00	2.85E+00	6.28E+01	2.81E+01
	19	969.26	6.94E+01	30.00			6.94E+01	3.00E+01
	20	1001.54	3.63E+01	19.77	5.63E-01	2.30E+00	3.57E+01	1.99E+01
	21	1034.45	3.61E+01	30.70			3.61E+01	3.07E+01
	22	1079.91	1.69E+01	19.77			1.69E+01	1.98E+01
	23	1088.52	1.74E+01	18.22			1.74E+01	1.82E+01
	24	1121.61	4.20E+01	32.47			4.20E+01	3.25E+01
	25	1155.21	1.74E+01	22.36			1.74E+01	2.24E+01
	26	1165.22	2.85E+01	23.85			2.85E+01	2.38E+01
M	27	1312.11	1.48E+01	11.40			1.48E+01	1.14E+01
	28	1346.68	2.62E+01	21.66			2.62E+01	2.17E+01
	29	1369.85	1.21E+01	13.86			1.21E+01	1.39E+01
	30	1461.36	2.47E+02	35.23			2.47E+02	3.52E+01
	31	1524.00	1.51E+01	9.17			1.51E+01	9.17E+00
	32	1576.20	9.40E+00	10.39			9.40E+00	1.04E+01
	33	1608.35	6.78E+00	7.50			6.78E+00	7.50E+00
	34	1688.89	7.61E+00	6.95			7.61E+00	6.95E+00
	35	1765.34	1.48E+01	14.33	1.11E-01	9.77E-01	1.47E+01	1.44E+01
	36	1915.54	1.00E+01	6.32			1.00E+01	6.32E+00
	37	1952.84	9.58E+00	8.54			9.58E+00	8.54E+00
	38	2319.15	1.00E+01	11.79			1.00E+01	1.18E+01
	39	2615.10	3.80E+01	12.33	1.20E+00	1.02E+00	3.68E+01	1.24E+01

Analysis Report for 1510088-18
CP5008S12-13

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

<i>Nuclide Name</i>	<i>Id Confidence</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Activity Uncertainty</i>
K-40	0.953	1460.81 *	10.67	1.93E+01	3.53E+00
GA-67	0.359	93.31 *	35.70	3.84E+02	1.69E+03
		208.95	2.24		
		300.22	16.00		
CD-109	0.911	88.03 *	3.72	3.86E+00	2.01E+00
SN-126	0.986	87.57 *	37.00	3.70E-01	1.92E-01
EU-155	0.326	86.50 *	30.90	4.49E-01	2.32E-01
		105.30	20.70		
TL-208	0.934	583.14 *	30.22	1.63E+00	5.83E-01
		860.37 *	4.48	3.91E+00	3.05E+00
		2614.66 *	35.85	1.35E+00	4.73E-01
BI-212	0.741	727.17 *	11.80	1.42E+00	9.70E-01
		1620.62	2.75		
PB-212	0.800	238.63 *	44.60	2.03E+00	3.70E-01
		300.09	3.41		
BI-214	0.652	609.31 *	46.30	1.19E+00	3.95E-01
		1120.29	15.10		
		1764.49 *	15.80	9.14E-01	8.94E-01
		2204.22	4.98		
PB-214	0.419	295.21	19.19		
		351.92 *	37.19	1.41E+00	3.66E-01
AC-228	0.967	338.32 *	11.40	2.46E+00	1.07E+00
		911.07 *	27.70	1.22E+00	5.54E-01
		969.11 *	16.60	2.39E+00	1.05E+00
PA-234M	0.959	1001.03 *	0.92	2.29E+01	1.29E+01
TH-234	0.985	63.29 *	3.80	1.70E+00	1.52E+00
NP-237	0.910	86.50 *	12.60	1.09E+00	5.62E-01

Analysis Report for 1510088-18
CP5008S12-13

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 7:06:28PM
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	76.03	2.00665E-01	10.06		
5	106.63	2.31300E-02	43.08	Tol.	NP-239
9	462.65	1.76490E-02	32.87	Tol.	SB-125
10	511.16	2.20250E-02	29.21		
11	563.92	9.00174E-03	32.88	Tol.	CS-134
14	634.01	1.18359E-02	43.45		
M 15	721.16	5.16781E-03	68.87	Tol.	SB-126
21	1034.45	1.00285E-02	42.51		
22	1079.91	4.70569E-03	58.34	Sum	
23	1088.52	4.82194E-03	52.48	Sum	
24	1121.61	1.16727E-02	38.63	Tol.	TA-182
25	1155.21	4.82426E-03	64.36		
26	1165.22	7.91902E-03	41.83		
M 27	1312.11	4.09739E-03	38.65	Sum	
28	1346.68	7.27469E-03	41.35		
29	1369.85	3.35979E-03	57.28		
31	1524.00	4.19935E-03	30.31	Sum	
32	1576.20	2.61111E-03	55.28		
33	1608.35	1.88272E-03	55.33		
34	1688.89	2.11420E-03	45.63		
36	1915.54	2.77778E-03	31.62		
37	1952.84	2.66204E-03	44.58		
38	2319.15	2.77778E-03	58.95		

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 1510088-18
CP5008S12-13

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.95	1460.81	*	10.67	1.93E+01	3.53E+00
GA-67	0.35	93.31	*	35.70	3.84E+02	1.69E+03
		208.95		2.24		
		300.22		16.00		
		88.03	*	3.72	3.86E+00	2.01E+00
SN-126	0.98	87.57	*	37.00	3.70E-01	1.92E-01
EU-155	0.32	86.50	*	30.90	4.49E-01	2.32E-01
		105.30		20.70		
TL-208	0.93	583.14	*	30.22	1.63E+00	5.83E-01
		860.37	*	4.48	3.91E+00	3.05E+00
		2614.66	*	35.85	1.35E+00	4.73E-01
BI-212	0.74	727.17	*	11.80	1.42E+00	9.70E-01
		1620.62		2.75		
PB-212	0.80	238.63	*	44.60	2.03E+00	3.70E-01
		300.09		3.41		
BI-214	0.65	609.31	*	46.30	1.19E+00	3.95E-01
		1120.29		15.10		
		1764.49	*	15.80	9.14E-01	8.94E-01
		2204.22		4.98		
PB-214	0.41	295.21		19.19		
		351.92	*	37.19	1.41E+00	3.66E-01
AC-228	0.96	338.32	*	11.40	2.46E+00	1.07E+00
		911.07	*	27.70	1.22E+00	5.54E-01
		969.11	*	16.60	2.39E+00	1.05E+00
		1001.03	*	0.92	2.29E+01	1.29E+01
TH-234	0.98	63.29	*	3.80	1.70E+00	1.52E+00
NP-237	0.91	86.50	*	12.60	1.09E+00	5.62E-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 1510088-18

CP5008S12-13

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.953	1.93E+01	3.53E+00	
GA-67	0.359	3.84E+02	1.69E+03	
? CD-109	0.911	3.86E+00	2.01E+00	
? SN-126	0.986	3.70E-01	1.92E-01	
? EU-155	0.326	4.49E-01	2.32E-01	
TL-208	0.934	1.49E+00	3.65E-01	
BI-212	0.741	1.42E+00	9.70E-01	
PB-212	0.800	2.03E+00	3.70E-01	
BI-214	0.652	1.15E+00	3.61E-01	
PB-214	0.419	1.41E+00	3.66E-01	
AC-228	0.967	1.65E+00	4.45E-01	
PA-234M	0.959	2.29E+01	1.29E+01	
TH-234	0.985	1.70E+00	1.52E+00	
? NP-237	0.910	1.09E+00	5.62E-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 1510088-18
CP5008S12-13

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 7:06:28PM
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	76.03	2.00665E-01	10.06		
5	106.63	2.31300E-02	43.08	Tol.	NP-239
9	462.65	1.76490E-02	32.87	Tol.	SB-125
10	511.16	2.20250E-02	29.21		
11	563.92	9.00174E-03	32.88	Tol.	CS-134
14	634.01	1.18359E-02	43.45		
M 15	721.16	5.16781E-03	68.87	Tol.	SB-126
21	1034.45	1.00285E-02	42.51		
22	1079.91	4.70569E-03	58.34	Sum	
23	1088.52	4.82194E-03	52.48	Sum	
24	1121.61	1.16727E-02	38.63	Tol.	TA-182
25	1155.21	4.82426E-03	64.36		
26	1165.22	7.91902E-03	41.83		
M 27	1312.11	4.09739E-03	38.65	Sum	
28	1346.68	7.27469E-03	41.35		
29	1369.85	3.35979E-03	57.28		
31	1524.00	4.19935E-03	30.31	Sum	
32	1576.20	2.61111E-03	55.28		
33	1608.35	1.88272E-03	55.33		
34	1688.89	2.11420E-03	45.63		
36	1915.54	2.77778E-03	31.62		
37	1952.84	2.66204E-03	44.58		
38	2319.15	2.77778E-03	58.95		

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 1510088-18
CP5008S12-13

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	4.29E-01	2.10E+00	2.10E+00
+	NA-22	1274.54	99.94	8.95E-02	2.46E-01	2.46E-01
+	NA-24	1368.53	99.99	-1.90E+14	1.47E+14	6.16E+14
		2754.09	99.86	0.00E+00		1.47E+14
+	AL-26	1808.65	99.76	2.67E-02	1.74E-01	1.74E-01
+	K-40	1460.81	* 10.67	1.93E+01	2.26E+00	2.26E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-3.05E-03	9.61E-02	9.61E-02
		78.34	96.00	3.14E-01		1.26E-01
+	SC-46	889.25	99.98	2.33E-02	2.23E-01	2.23E-01
		1120.51	99.99	2.26E-01		3.49E-01
+	V-48	983.52	99.98	3.75E-01	8.26E-01	8.26E-01
		1312.10	97.50	4.70E-02		8.53E-01
+	CR-51	320.08	9.83	-8.21E-02	2.70E+00	2.70E+00
+	MN-54	834.83	99.97	4.26E-02	2.07E-01	2.07E-01
+	CO-56	846.75	99.96	-6.50E-02	2.14E-01	2.14E-01
		1037.75	14.03	-2.07E-01		1.77E+00
		1238.25	67.00	2.95E-01		5.17E-01
		1771.40	15.51	-1.12E-01		1.26E+00
		2598.48	16.90	-2.74E-01		7.56E-01
+	CO-57	122.06	85.51	-2.07E-02	1.18E-01	1.18E-01
		136.48	10.60	-5.00E-01		1.05E+00
+	CO-58	810.76	99.40	1.35E-02	2.43E-01	2.43E-01
+	FE-59	1099.22	56.50	2.64E-01	5.70E-01	5.70E-01
		1291.56	43.20	1.09E-01		7.82E-01
+	CO-60	1173.22	100.00	-3.51E-02	1.87E-01	2.12E-01
		1332.49	100.00	-3.79E-02		1.87E-01
+	ZN-65	1115.52	50.75	1.25E-02	4.88E-01	4.88E-01
+	GA-67	93.31	* 35.70	3.84E+02	6.52E+02	6.52E+02
		208.95	2.24	4.07E+02		5.38E+03
		300.22	16.00	-1.19E+02		8.40E+02
+	SE-75	121.11	16.70	1.71E-01	2.08E-01	6.80E-01
		136.00	59.20	-1.16E-01		2.08E-01
		264.65	59.80	-2.23E-01		2.31E-01
		279.53	25.20	-1.32E-01		5.89E-01
		400.65	11.40	-3.76E-01		1.55E+00
+	RB-82	776.52	13.00	-4.53E-01	3.25E+00	3.25E+00
+	RB-83	520.41	46.00	-8.85E-02	3.95E-01	3.95E-01
		529.64	30.30	1.32E-01		6.40E-01
		552.65	16.40	3.59E-01		1.26E+00
+	KR-85	513.99	0.43	4.62E+01	4.32E+01	4.32E+01
+	SR-85	513.99	99.27	2.84E-01	2.65E-01	2.65E-01

Analysis Report for 1510088-18
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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	1.80E-04	1.65E-01	2.23E-01
		1836.01	99.38	-5.02E-03		1.65E-01
+	NB-93M	16.57	9.43	9.99E-01	4.90E-01	4.90E-01
+	NB-94	702.63	100.00	-4.90E-02	1.68E-01	1.68E-01
		871.10	100.00	5.40E-02		1.78E-01
+	NB-95	765.79	99.81	2.70E-02	3.47E-01	3.47E-01
+	NB-95M	235.69	25.00	2.75E+01	3.93E+02	3.93E+02
+	ZR-95	724.18	43.70	3.86E-01	4.22E-01	6.37E-01
		756.72	55.30	3.41E-02		4.22E-01
+	MO-99	181.06	6.20	-6.21E+03	4.36E+03	6.32E+03
		739.58	12.80	-1.88E+03		4.36E+03
		778.00	4.50	-5.25E+03		1.35E+04
+	RU-103	497.08	89.00	1.29E-01	2.81E-01	2.81E-01
+	RU-106	621.84	9.80	4.66E-01	1.64E+00	1.64E+00
+	AG-108M	433.93	89.90	3.34E-02	1.55E-01	1.55E-01
		614.37	90.40	-1.21E-02		2.27E-01
		722.95	90.50	4.47E-02		2.10E-01
+	CD-109	88.03	*	3.72	3.86E+00	6.48E+00
+	AG-110M	657.75	93.14	-1.10E-02	2.00E-01	2.00E-01
		677.61	10.53	1.47E-01		1.61E+00
		706.67	16.46	6.20E-01		1.21E+00
		763.93	21.98	-3.09E-01		8.80E-01
		884.67	71.63	6.30E-02		2.71E-01
		1384.27	23.94	6.34E-02		7.96E-01
+	CD-113M	263.70	0.02	-5.20E+02	4.96E+02	4.96E+02
+	SN-113	255.12	1.93	2.76E+00	2.45E-01	7.34E+00
		391.69	64.90	7.37E-02		2.45E-01
+	TE123M	159.00	84.10	1.23E-02	1.55E-01	1.55E-01
+	SB-124	602.71	97.87	5.32E-03	2.36E-01	2.36E-01
		645.85	7.26	-1.52E+00		2.91E+00
		722.78	11.10	-1.51E+00		2.31E+00
		1691.02	49.00	0.00E+00		4.45E-01
+	I-125	35.49	6.49	-4.86E-01	1.21E+00	1.21E+00
+	SB-125	176.33	6.89	-4.29E-01	4.85E-01	1.57E+00
		427.89	29.33	-2.18E-03		4.85E-01
		463.38	10.35	8.78E-01		1.44E+00
		600.56	17.80	1.67E-01		9.41E-01
		635.90	11.32	8.94E-01		1.51E+00
+	SB-126	414.70	83.30	-1.96E-01	8.89E-01	9.72E-01
		666.33	99.60	-7.07E-01		8.89E-01
		695.00	99.60	1.85E-01		1.06E+00
		720.50	53.80	-6.00E-01		2.00E+00
+	SN-126	87.57	*	37.00	3.70E-01	6.21E-01
+	SB-127	473.00	25.00	8.01E+00	1.39E+02	1.83E+02
		685.20	35.70	-7.17E+01		1.39E+02
		783.80	14.70	2.48E+02		4.34E+02
+	I-129	29.78	57.00	-5.60E-02	9.07E-02	9.07E-02
		33.60	13.20	-1.66E-01		4.02E-01

Analysis Report for 1510088-18
CP5008S12-13

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	-7.00E-01	9.07E-02	7.68E-01
+	I-131	284.30	6.05	1.62E+00	2.62E+00	3.38E+01
		364.48	81.20	2.90E-01		2.62E+00
		636.97	7.26	2.17E+01		3.78E+01
		722.89	1.80	-1.05E+02		1.60E+02
+	TE-132	49.72	13.10	4.26E+02	1.37E+02	5.34E+02
		228.16	88.00	7.46E+00		1.37E+02
+	BA-133	81.00	33.00	-2.60E-01	3.12E-01	3.44E-01
		302.84	17.80	-6.52E-01		7.17E-01
		356.01	60.00	-1.83E-02		3.12E-01
+	I-133	529.87	86.30	6.37E+09	3.10E+10	3.10E+10
+	XE-133	81.00	38.00	-1.62E+01	2.15E+01	2.15E+01
+	CS-134	563.23	8.38	-3.11E-01	2.03E-01	1.93E+00
		569.32	15.43	3.35E-01		1.04E+00
		604.70	97.60	-1.68E-02		2.03E-01
		795.84	85.40	1.49E-01		2.29E-01
		801.93	8.73	2.72E-01		2.21E+00
+	CS-135	268.24	16.00	1.88E-01	7.93E-01	7.93E-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	-2.72E+00	8.41E-01	7.59E+00
		163.89	4.61	3.73E-01		1.30E+01
		176.55	13.56	-1.18E+00		4.29E+00
		273.65	12.66	3.77E+00		5.73E+00
		340.57	48.50	1.55E+00		1.71E+00
		818.50	99.70	-3.83E-01		8.41E-01
		1048.07	79.60	-5.32E-02		1.09E+00
		1235.34	19.70	2.04E+00		7.34E+00
+	CS-137	661.65	85.12	1.05E-01	2.03E-01	2.03E-01
+	LA-138	788.74	34.00	-1.84E-02	2.99E-01	5.33E-01
		1435.80	66.00	1.28E-01		2.99E-01
+	CE-139	165.85	80.35	3.38E-02	1.59E-01	1.59E-01
+	BA-140	162.64	6.70	3.00E+00	3.15E+00	9.45E+00
		304.84	4.50	6.35E+00		1.60E+01
		423.70	3.20	-9.64E+00		2.34E+01
		437.55	2.00	-1.39E+01		3.85E+01
		537.32	25.00	-9.94E-01		3.15E+00
+	LA-140	328.77	20.50	9.08E-01	1.06E+00	3.67E+00
		487.03	45.50	4.44E-02		1.67E+00
		815.85	23.50	2.41E+00		4.28E+00
		1596.49	95.49	1.93E-01		1.06E+00
+	CE-141	145.44	48.40	1.10E-01	4.39E-01	4.39E-01
+	CE-143	57.36	11.80	-4.13E+06	4.44E+06	8.15E+06
		293.26	42.00	4.14E+06		4.44E+06
		664.55	5.20	-9.50E+06		3.64E+07
+	CE-144	133.54	10.80	-1.22E-01	1.01E+00	1.01E+00
+	PM-144	476.78	42.00	1.52E-01	1.77E-01	3.71E-01
		618.01	98.60	8.13E-03		1.77E-01

Analysis Report for 1510088-18
CP5008S12-13

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-144	696.49	99.49	-5.55E-02	1.77E-01	1.79E-01
+	PM-145	36.85	21.70	-8.80E-02	1.43E-01	2.54E-01
		37.36	39.70	1.22E-02		1.43E-01
		42.30	15.10	1.79E-01		4.21E-01
		72.40	2.31	3.42E-01		5.01E+00
+	PM-146	453.90	39.94	-6.41E-02	3.08E-01	3.08E-01
		735.90	14.01	-2.17E-01		1.17E+00
		747.13	13.10	6.45E-02		1.27E+00
+	ND-147	91.11	28.90	6.22E+00	2.99E+00	2.99E+00
		531.02	13.10	1.87E+00		8.70E+00
+	PM-149	285.90	3.10	4.20E+03	1.04E+05	1.04E+05
+	EU-152	121.78	20.50	-7.96E-02	4.54E-01	4.54E-01
		244.69	5.40	-8.72E-01		2.60E+00
		344.27	19.13	-2.64E-02		6.48E-01
		778.89	9.20	-7.37E-01		1.89E+00
		964.01	10.40	1.02E-01		2.17E+00
		1085.78	7.22	5.06E-02		2.91E+00
		1112.02	9.60	4.13E-01		2.16E+00
		1407.95	14.94	3.26E-01		1.13E+00
+	GD-153	97.43	31.30	-1.17E-01	3.24E-01	3.24E-01
		103.18	22.20	-3.49E-02		4.37E-01
+	EU-154	123.07	40.50	-9.69E-02	2.29E-01	2.29E-01
		723.30	19.70	2.07E-01		9.73E-01
		873.19	11.50	-3.07E-01		1.50E+00
		996.32	10.30	3.13E-02		2.04E+00
		1004.76	17.90	-1.22E-01		1.13E+00
		1274.45	35.50	2.48E-01		6.81E-01
+	EU-155	86.50	* 30.90	4.49E-01	4.36E-01	7.53E-01
		105.30	20.70	2.01E-01		4.36E-01
+	EU-156	811.77	10.40	-1.53E+00	7.02E+00	7.02E+00
		1153.47	7.20	1.54E-01		1.47E+01
		1230.71	8.90	-1.22E+00		1.28E+01
+	HO-166M	184.41	72.60	1.28E-01	1.70E-01	1.70E-01
		280.45	29.60	1.01E-02		4.22E-01
		410.94	11.10	-6.03E-01		1.23E+00
		711.69	54.10	-2.89E-02		3.16E-01
+	TM-171	66.72	0.14	-2.11E+00	6.67E+01	6.67E+01
+	HF-172	81.75	4.52	-7.39E+00	8.51E-01	2.39E+00
		125.81	11.30	-5.94E-01		8.51E-01
+	LU-172	181.53	20.60	-9.19E+00	9.18E+00	1.58E+01
		810.06	16.63	1.68E+00		3.01E+01
		912.12	15.25	6.87E+01		5.10E+01
		1093.66	62.50	-6.06E-01		9.18E+00
+	LU-173	100.72	5.24	-3.39E+00	6.53E-01	1.71E+00
		272.11	21.20	4.58E-01		6.53E-01
+	HF-175	343.40	84.00	-8.22E-03	2.15E-01	2.15E-01
+	LU-176	88.34	13.30	1.09E+00	1.22E-01	8.23E-01
		201.83	86.00	1.67E-02		1.37E-01
		306.78	94.00	-4.87E-02		1.22E-01

Analysis Report for 1510088-18

CP5008S12-13

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TA-182	67.75	41.20	-8.50E-03	2.67E-01	2.67E-01
		1121.30	34.90	4.41E-01		9.26E-01
		1189.05	16.23	4.90E-01		1.85E+00
		1221.41	26.98	1.70E-01		1.10E+00
		1231.02	11.44	-2.64E-01		2.76E+00
+	IR-192	308.46	29.68	-1.16E-01	3.67E-01	5.04E-01
		468.07	48.10	-1.06E-02		3.67E-01
+	HG-203	279.19	77.30	-5.76E-02	2.58E-01	2.58E-01
+	BI-207	569.67	97.72	5.14E-02	1.60E-01	1.60E-01
		1063.62	74.90	-1.02E-02		2.68E-01
+	TL-208	583.14	* 30.22	1.63E+00	2.44E-01	8.24E-01
		860.37	* 4.48	3.91E+00		4.79E+00
		2614.66	* 35.85	1.35E+00		2.44E-01
+	BI-210M	262.00	45.00	6.32E-02	2.60E-01	2.60E-01
		300.00	23.00	7.23E-01		6.54E-01
+	PB-210	46.50	4.25	3.04E-01	1.59E+00	1.59E+00
+	PB-211	404.84	2.90	1.76E+00	5.20E+00	5.20E+00
		831.96	2.90	1.23E+00		6.37E+00
+	BI-212	727.17	* 11.80	1.42E+00	2.84E+00	2.84E+00
		1620.62	2.75	1.25E+00		6.88E+00
+	PB-212	238.63	* 44.60	2.03E+00	4.25E-01	4.25E-01
		300.09	3.41	4.88E+00		4.41E+00
+	BI-214	609.31	* 46.30	1.19E+00	5.46E-01	5.46E-01
		1120.29	15.10	1.15E+00		1.77E+00
		1764.49	* 15.80	9.14E-01		1.41E+00
		2204.22	4.98	1.71E+00		3.90E+00
+	PB-214	295.21	19.19	5.86E-01	4.64E-01	7.82E-01
		351.92	* 37.19	1.41E+00		4.64E-01
+	RN-219	401.80	6.50	1.66E-01	2.31E+00	2.31E+00
+	RA-223	323.87	3.88	-1.51E-01	3.23E+00	3.23E+00
+	RA-224	240.98	3.95	2.36E+01	5.31E+00	5.31E+00
+	RA-225	40.00	31.00	-7.76E-01	8.52E-01	8.52E-01
+	RA-226	186.21	3.28	3.00E+00	3.84E+00	3.84E+00
+	TH-227	50.10	8.40	6.77E-01	8.48E-01	8.48E-01
		236.00	11.50	1.19E-01		1.70E+00
		256.20	6.30	2.28E-01		1.83E+00
+	AC-228	338.32	* 11.40	2.46E+00	7.94E-01	1.59E+00
		911.07	* 27.70	1.22E+00		7.94E-01
		969.11	* 16.60	2.39E+00		1.50E+00
+	TH-230	48.44	16.90	2.38E-01	4.12E-01	4.12E-01
		62.85	4.60	1.55E+00		1.92E+00
		67.67	0.37	-7.77E-01		2.45E+01
+	PA-231	283.67	1.60	-3.98E-01	5.51E+00	7.75E+00
		302.67	2.30	-5.02E+00		5.51E+00
+	TH-231	25.64	14.70	-1.07E-02	3.59E-01	3.59E-01
		84.21	6.40	-4.89E+00		1.59E+00
+	PA-233	311.98	38.60	-2.52E-01	6.48E-01	6.48E-01
+	PA-234	131.20	20.40	2.86E-01	4.91E-01	4.91E-01

Analysis Report for 1510088-18
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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	-4.96E-01	4.91E-01	1.83E+00
		946.00	12.00	2.79E-01		1.48E+00
+	PA-234M	1001.03	* 0.92	2.29E+01	1.85E+01	1.85E+01
+	TH-234	63.29	* 3.80	1.70E+00	2.48E+00	2.48E+00
+	U-235	143.76	10.50	5.18E-01	1.03E+00	1.03E+00
		163.35	4.70	6.62E-02		2.30E+00
		205.31	4.70	-9.17E-02		2.56E+00
+	NP-237	86.50	* 12.60	1.09E+00	1.82E+00	1.82E+00
+	NP-239	106.10	22.70	2.52E+03	5.47E+03	5.47E+03
		228.18	10.70	1.47E+03		1.58E+04
		277.60	14.10	-5.37E+03		1.23E+04
+	AM-241	59.54	35.90	-6.11E-02	2.33E-01	2.33E-01
+	AM-243	74.67	66.00	6.74E-01	1.86E-01	1.86E-01
+	CM-243	209.75	3.29	-7.20E-01	8.95E-01	3.78E+00
		228.14	10.60	6.31E-02		1.16E+00
		277.60	14.00	-3.92E-01		8.95E-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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59	10.42	2.10E+00	2.10E+00	4.29E-01	9.93E-01
	NA-22	1274.54	99.94	2.46E-01	2.46E-01	8.95E-02	1.13E-01
	NA-24	1368.53	99.99	6.16E+14	1.47E+14	-1.90E+14	2.65E+14
		2754.09	99.86	1.47E+14		0.00E+00	0.00E+00
	AL-26	1808.65	99.76	1.74E-01	1.74E-01	2.67E-02	7.37E-02
+	K-40	1460.81	* 10.67	2.26E+00	2.26E+00	1.93E+01	1.02E+00

Analysis Report for 1510088-18
CP5008S12-13

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	9.61E-02	9.61E-02	-3.05E-03	4.71E-02
	78.34	96.00	1.26E-01		3.14E-01	6.21E-02
SC-46	889.25	99.98	2.23E-01	2.23E-01	2.33E-02	1.02E-01
	1120.51	99.99	3.49E-01		2.26E-01	1.63E-01
V-48	983.52	99.98	8.26E-01	8.26E-01	3.75E-01	3.81E-01
	1312.10	97.50	8.53E-01		4.70E-02	3.83E-01
CR-51	320.08	9.83	2.70E+00	2.70E+00	-8.21E-02	1.29E+00
MN-54	834.83	99.97	2.07E-01	2.07E-01	4.26E-02	9.65E-02
CO-56	846.75	99.96	2.14E-01	2.14E-01	-6.50E-02	9.81E-02
	1037.75	14.03	1.77E+00		-2.07E-01	8.07E-01
	1238.25	67.00	5.17E-01		2.95E-01	2.39E-01
	1771.40	15.51	1.26E+00		-1.12E-01	5.18E-01
	2598.48	16.90	7.56E-01		-2.74E-01	2.39E-01
CO-57	122.06	85.51	1.18E-01	1.18E-01	-2.07E-02	5.75E-02
	136.48	10.60	1.05E+00		-5.00E-01	5.10E-01
CO-58	810.76	99.40	2.43E-01	2.43E-01	1.35E-02	1.12E-01
FE-59	1099.22	56.50	5.70E-01	5.70E-01	2.64E-01	2.59E-01
	1291.56	43.20	7.82E-01		1.09E-01	3.52E-01
CO-60	1173.22	100.00	2.12E-01	1.87E-01	-3.51E-02	9.66E-02
	1332.49	100.00	1.87E-01		-3.79E-02	8.29E-02
ZN-65	1115.52	50.75	4.88E-01	4.88E-01	1.25E-02	2.25E-01
+ GA-67	93.31	* 35.70	6.52E+02	6.52E+02	3.84E+02	3.23E+02
	208.95	2.24	5.38E+03		4.07E+02	2.61E+03
	300.22	16.00	8.40E+02		-1.19E+02	4.05E+02
SE-75	121.11	16.70	6.80E-01	2.08E-01	1.71E-01	3.31E-01
	136.00	59.20	2.08E-01		-1.16E-01	1.01E-01
	264.65	59.80	2.31E-01		-2.23E-01	1.11E-01
	279.53	25.20	5.89E-01		-1.32E-01	2.84E-01
	400.65	11.40	1.55E+00		-3.76E-01	7.39E-01
RB-82	776.52	13.00	3.25E+00	3.25E+00	-4.53E-01	1.51E+00
RB-83	520.41	46.00	3.95E-01	3.95E-01	-8.85E-02	1.85E-01
	529.64	30.30	6.40E-01		1.32E-01	3.02E-01
	552.65	16.40	1.26E+00		3.59E-01	5.94E-01
KR-85	513.99	0.43	4.32E+01	4.32E+01	4.62E+01	2.06E+01
SR-85	513.99	99.27	2.65E-01	2.65E-01	2.84E-01	1.27E-01
Y-88	898.02	93.40	2.23E-01	1.65E-01	1.80E-04	1.02E-01
	1836.01	99.38	1.65E-01		-5.02E-03	6.53E-02
NB-93M	16.57	9.43	4.90E-01	4.90E-01	9.99E-01	2.38E-01
NB-94	702.63	100.00	1.68E-01	1.68E-01	-4.90E-02	7.83E-02
	871.10	100.00	1.78E-01		5.40E-02	8.21E-02
NB-95	765.79	99.81	3.47E-01	3.47E-01	2.70E-02	1.62E-01
NB-95M	235.69	25.00	3.93E+02	3.93E+02	2.75E+01	1.92E+02
ZR-95	724.18	43.70	6.37E-01	4.22E-01	3.86E-01	3.00E-01
	756.72	55.30	4.22E-01		3.41E-02	1.95E-01
MO-99	181.06	6.20	6.32E+03	4.36E+03	-6.21E+03	3.07E+03
	739.58	12.80	4.36E+03		-1.88E+03	2.02E+03
	778.00	4.50	1.35E+04		-5.25E+03	6.26E+03
RU-103	497.08	89.00	2.81E-01	2.81E-01	1.29E-01	1.32E-01
RU-106	621.84	9.80	1.64E+00	1.64E+00	4.66E-01	7.64E-01
AG-108M	433.93	89.90	1.55E-01	1.55E-01	3.34E-02	7.37E-02
	614.37	90.40	2.27E-01		-1.21E-02	1.08E-01
	722.95	90.50	2.10E-01		4.47E-02	9.87E-02

Analysis Report for 1510088-18
CP5008S12-13

	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	6.48E+00	6.48E+00	3.86E+00
	AG-110M	657.75		93.14	2.00E-01	2.00E-01	-1.10E-02
		677.61		10.53	1.61E+00		1.47E-01
		706.67		16.46	1.21E+00		6.20E-01
		763.93		21.98	8.80E-01		-3.09E-01
		884.67		71.63	2.71E-01		6.30E-02
		1384.27		23.94	7.96E-01		6.34E-02
	CD-113M	263.70		0.02	4.96E+02	4.96E+02	-5.20E+02
	SN-113	255.12		1.93	7.34E+00	2.45E-01	2.76E+00
		391.69		64.90	2.45E-01		7.37E-02
	TE123M	159.00		84.10	1.55E-01	1.55E-01	1.23E-02
	SB-124	602.71		97.87	2.36E-01	2.36E-01	5.32E-03
		645.85		7.26	2.91E+00		-1.52E+00
		722.78		11.10	2.31E+00		-1.51E+00
		1691.02		49.00	4.45E-01		0.00E+00
	I-125	35.49		6.49	1.21E+00	1.21E+00	-4.86E-01
	SB-125	176.33		6.89	1.57E+00	4.85E-01	-4.29E-01
		427.89		29.33	4.85E-01		-2.18E-03
		463.38		10.35	1.44E+00		8.78E-01
		600.56		17.80	9.41E-01		1.67E-01
		635.90		11.32	1.51E+00		8.94E-01
	SB-126	414.70		83.30	9.72E-01	8.89E-01	-1.96E-01
		666.33		99.60	8.89E-01		-7.07E-01
		695.00		99.60	1.06E+00		1.85E-01
		720.50		53.80	2.00E+00		-6.00E-01
+	SN-126	87.57	*	37.00	6.21E-01	6.21E-01	3.70E-01
	SB-127	473.00		25.00	1.83E+02	1.39E+02	8.01E+00
		685.20		35.70	1.39E+02		-7.17E+01
		783.80		14.70	4.34E+02		2.48E+02
	I-129	29.78		57.00	9.07E-02	9.07E-02	-5.60E-02
		33.60		13.20	4.02E-01		-1.66E-01
		39.58		7.52	7.68E-01		-7.00E-01
	I-131	284.30		6.05	3.38E+01	2.62E+00	1.62E+00
		364.48		81.20	2.62E+00		2.90E-01
		636.97		7.26	3.78E+01		2.17E+01
		722.89		1.80	1.60E+02		-1.05E+02
	TE-132	49.72		13.10	5.34E+02	1.37E+02	4.26E+02
		228.16		88.00	1.37E+02		7.46E+00
	BA-133	81.00		33.00	3.44E-01	3.12E-01	-2.60E-01
		302.84		17.80	7.17E-01		-6.52E-01
		356.01		60.00	3.12E-01		-1.83E-02
	I-133	529.87		86.30	3.10E+10	3.10E+10	6.37E+09
	XE-133	81.00		38.00	2.15E+01	2.15E+01	-1.62E+01
	CS-134	563.23		8.38	1.93E+00	2.03E-01	-3.11E-01
		569.32		15.43	1.04E+00		3.35E-01
		604.70		97.60	2.03E-01		-1.68E-02
		795.84		85.40	2.29E-01		1.49E-01
		801.93		8.73	2.21E+00		2.72E-01
	CS-135	268.24		16.00	7.93E-01	7.93E-01	1.88E-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	7.59E+00	8.41E-01	-2.72E+00

Analysis Report for 1510088-18

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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	1.30E+01	8.41E-01	3.73E-01	6.30E+00
	176.55	13.56	4.29E+00		-1.18E+00	2.08E+00
	273.65	12.66	5.73E+00		3.77E+00	2.77E+00
	340.57	48.50	1.71E+00		1.55E+00	8.26E-01
	818.50	99.70	8.41E-01		-3.83E-01	3.84E-01
	1048.07	79.60	1.09E+00		-5.32E-02	4.85E-01
	1235.34	19.70	7.34E+00	2.04E+00	3.40E+00	
CS-137	661.65	85.12	2.03E-01	2.03E-01	1.05E-01	9.51E-02
LA-138	788.74	34.00	5.33E-01	2.99E-01	-1.84E-02	2.48E-01
	1435.80	66.00	2.99E-01		1.28E-01	1.33E-01
CE-139	165.85	80.35	1.59E-01	1.59E-01	3.38E-02	7.73E-02
BA-140	162.64	6.70	9.45E+00	3.15E+00	3.00E+00	4.60E+00
	304.84	4.50	1.60E+01		6.35E+00	7.69E+00
	423.70	3.20	2.34E+01		-9.64E+00	1.11E+01
	437.55	2.00	3.85E+01		-1.39E+01	1.82E+01
	537.32	25.00	3.15E+00		-9.94E-01	1.47E+00
LA-140	328.77	20.50	3.67E+00	1.06E+00	9.08E-01	1.76E+00
	487.03	45.50	1.67E+00		4.44E-02	7.84E-01
	815.85	23.50	4.28E+00		2.41E+00	1.98E+00
	1596.49	95.49	1.06E+00		1.93E-01	4.58E-01
CE-141	145.44	48.40	4.39E-01	4.39E-01	1.10E-01	2.14E-01
CE-143	57.36	11.80	8.15E+06	4.44E+06	-4.13E+06	3.99E+06
	293.26	42.00	4.44E+06		4.14E+06	2.15E+06
	664.55	5.20	3.64E+07		-9.50E+06	1.69E+07
CE-144	133.54	10.80	1.01E+00	1.01E+00	-1.22E-01	4.91E-01
PM-144	476.78	42.00	3.71E-01	1.77E-01	1.52E-01	1.76E-01
	618.01	98.60	1.77E-01		8.13E-03	8.30E-02
	696.49	99.49	1.79E-01		-5.55E-02	8.36E-02
PM-145	36.85	21.70	2.54E-01	1.43E-01	-8.80E-02	1.24E-01
	37.36	39.70	1.43E-01		1.22E-02	7.00E-02
	42.30	15.10	4.21E-01		1.79E-01	2.06E-01
	72.40	2.31	5.01E+00		3.42E-01	2.47E+00
PM-146	453.90	39.94	3.08E-01	3.08E-01	-6.41E-02	1.45E-01
	735.90	14.01	1.17E+00		-2.17E-01	5.44E-01
	747.13	13.10	1.27E+00		6.45E-02	5.90E-01
ND-147	91.11	28.90	2.99E+00	2.99E+00	6.22E+00	1.47E+00
	531.02	13.10	8.70E+00		1.87E+00	4.10E+00
PM-149	285.90	3.10	1.04E+05	1.04E+05	4.20E+03	5.00E+04
EU-152	121.78	20.50	4.54E-01	4.54E-01	-7.96E-02	2.21E-01
	244.69	5.40	2.60E+00		-8.72E-01	1.26E+00
	344.27	19.13	6.48E-01		-2.64E-02	3.09E-01
	778.89	9.20	1.89E+00		-7.37E-01	8.78E-01
	964.01	10.40	2.17E+00		1.02E-01	1.01E+00
	1085.78	7.22	2.91E+00		5.06E-02	1.33E+00
	1112.02	9.60	2.16E+00		4.13E-01	9.89E-01
	1407.95	14.94	1.13E+00		3.26E-01	4.89E-01
		97.43	31.30		3.24E-01	3.24E-01	-1.17E-01	1.59E-01
GD-153	103.18	22.20	4.37E-01		-3.49E-02	2.13E-01
EU-154	123.07	40.50	2.29E-01	2.29E-01	-9.69E-02	1.12E-01
	723.30	19.70	9.73E-01		2.07E-01	4.57E-01
	873.19	11.50	1.50E+00		-3.07E-01	6.90E-01
	996.32	10.30	2.04E+00		3.13E-02	9.43E-01
	1004.76	17.90	1.13E+00		-1.22E-01	5.19E-01

Analysis Report for 1510088-18

CP5008S12-13

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	6.81E-01	2.29E-01	2.48E-01	3.12E-01
+	EU-155	86.50 *	30.90	7.53E-01	4.36E-01	4.49E-01	3.73E-01
		105.30	20.70	4.36E-01		2.01E-01	2.13E-01
	EU-156	811.77	10.40	7.02E+00	7.02E+00	-1.53E+00	3.23E+00
		1153.47	7.20	1.47E+01		1.54E-01	6.81E+00
		1230.71	8.90	1.28E+01		-1.22E+00	5.91E+00
	HO-166M	184.41	72.60	1.70E-01	1.70E-01	1.28E-01	8.30E-02
		280.45	29.60	4.22E-01		1.01E-02	2.03E-01
		410.94	11.10	1.23E+00		-6.03E-01	5.87E-01
		711.69	54.10	3.16E-01		-2.89E-02	1.48E-01
	TM-171	66.72	0.14	6.67E+01	6.67E+01	-2.11E+00	3.27E+01
	HF-172	81.75	4.52	2.39E+00	8.51E-01	-7.39E+00	1.17E+00
		125.81	11.30	8.51E-01		-5.94E-01	4.14E-01
	LU-172	181.53	20.60	1.58E+01	9.18E+00	-9.19E+00	7.69E+00
		810.06	16.63	3.01E+01		1.68E+00	1.40E+01
		912.12	15.25	5.10E+01		6.87E+01	2.41E+01
		1093.66	62.50	9.18E+00		-6.06E-01	4.20E+00
	LU-173	100.72	5.24	1.71E+00	6.53E-01	-3.39E+00	8.32E-01
		272.11	21.20	6.53E-01		4.58E-01	3.15E-01
	HF-175	343.40	84.00	2.15E-01	2.15E-01	-8.22E-03	1.03E-01
	LU-176	88.34	13.30	8.23E-01	1.22E-01	1.09E+00	4.04E-01
		201.83	86.00	1.37E-01		1.67E-02	6.64E-02
		306.78	94.00	1.22E-01		-4.87E-02	5.82E-02
	TA-182	67.75	41.20	2.67E-01	2.67E-01	-8.50E-03	1.31E-01
		1121.30	34.90	9.26E-01		4.41E-01	4.32E-01
		1189.05	16.23	1.85E+00		4.90E-01	8.54E-01
		1221.41	26.98	1.10E+00		1.70E-01	5.05E-01
		1231.02	11.44	2.76E+00		-2.64E-01	1.28E+00
	IR-192	308.46	29.68	5.04E-01	3.67E-01	-1.16E-01	2.40E-01
		468.07	48.10	3.67E-01		-1.06E-02	1.73E-01
	HG-203	279.19	77.30	2.58E-01	2.58E-01	-5.76E-02	1.24E-01
	BI-207	569.67	97.72	1.60E-01	1.60E-01	5.14E-02	7.54E-02
		1063.62	74.90	2.68E-01		-1.02E-02	1.23E-01
+	TL-208	583.14 *	30.22	8.24E-01	2.44E-01	1.63E+00	3.96E-01
		860.37 *	4.48	4.79E+00		3.91E+00	2.24E+00
		2614.66 *	35.85	2.44E-01		1.35E+00	7.28E-02
	BI-210M	262.00	45.00	2.60E-01	2.60E-01	6.32E-02	1.25E-01
		300.00	23.00	6.54E-01		7.23E-01	3.16E-01
	PB-210	46.50	4.25	1.59E+00	1.59E+00	3.04E-01	7.77E-01
	PB-211	404.84	2.90	5.20E+00	5.20E+00	1.76E+00	2.49E+00
		831.96	2.90	6.37E+00		1.23E+00	2.96E+00
+	BI-212	727.17 *	11.80	2.84E+00	2.84E+00	1.42E+00	1.37E+00
		1620.62	2.75	6.88E+00		1.25E+00	2.99E+00
+	PB-212	238.63 *	44.60	4.25E-01	4.25E-01	2.03E+00	2.08E-01
		300.09	3.41	4.41E+00		4.88E+00	2.13E+00
+	BI-214	609.31 *	46.30	5.46E-01	5.46E-01	1.19E+00	2.63E-01
		1120.29	15.10	1.77E+00		1.15E+00	8.26E-01
		1764.49 *	15.80	1.41E+00		9.14E-01	6.19E-01
		2204.22	4.98	3.90E+00		1.71E+00	1.63E+00
+	PB-214	295.21	19.19	7.82E-01	4.64E-01	5.86E-01	3.78E-01
		351.92 *	37.19	4.64E-01		1.41E+00	2.24E-01
	RN-219	401.80	6.50	2.31E+00	2.31E+00	1.66E-01	1.11E+00
	RA-223	323.87	3.88	3.23E+00	3.23E+00	-1.51E-01	1.55E+00

Analysis Report for 1510088-18
CP5008S12-13

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	5.31E+00	5.31E+00	2.36E+01	2.60E+00
RA-225	40.00	31.00	8.52E-01	8.52E-01	-7.76E-01	4.16E-01
RA-226	186.21	3.28	3.84E+00	3.84E+00	3.00E+00	1.87E+00
TH-227	50.10	8.40	8.48E-01	8.48E-01	6.77E-01	4.15E-01
	236.00	11.50	1.70E+00		1.19E-01	8.32E-01
	256.20	6.30	1.83E+00		2.28E-01	8.81E-01
+ AC-228	338.32 *	11.40	1.59E+00	7.94E-01	2.46E+00	7.72E-01
	911.07 *	27.70	7.94E-01		1.22E+00	3.71E-01
	969.11 *	16.60	1.50E+00		2.39E+00	7.06E-01
TH-230	48.44	16.90	4.12E-01	4.12E-01	2.38E-01	2.02E-01
	62.85	4.60	1.92E+00		1.55E+00	9.43E-01
	67.67	0.37	2.45E+01		-7.77E-01	1.20E+01
PA-231	283.67	1.60	7.75E+00	5.51E+00	-3.98E-01	3.73E+00
	302.67	2.30	5.51E+00		-5.02E+00	2.65E+00
TH-231	25.64	14.70	3.59E-01	3.59E-01	-1.07E-02	1.75E-01
	84.21	6.40	1.59E+00		-4.89E+00	7.78E-01
PA-233	311.98	38.60	6.48E-01	6.48E-01	-2.52E-01	3.09E-01
PA-234	131.20	20.40	4.91E-01	4.91E-01	2.86E-01	2.40E-01
	733.99	8.80	1.83E+00		-4.96E-01	8.46E-01
	946.00	12.00	1.48E+00		2.79E-01	6.75E-01
+ PA-234M	1001.03 *	0.92	1.85E+01	1.85E+01	2.29E+01	8.39E+00
+ TH-234	63.29 *	3.80	2.48E+00	2.48E+00	1.70E+00	1.22E+00
U-235	143.76	10.50	1.03E+00	1.03E+00	5.18E-01	5.01E-01
	163.35	4.70	2.30E+00		6.62E-02	1.12E+00
	205.31	4.70	2.56E+00		-9.17E-02	1.24E+00
+ NP-237	86.50 *	12.60	1.82E+00	1.82E+00	1.09E+00	9.04E-01
NP-239	106.10	22.70	5.47E+03	5.47E+03	2.52E+03	2.67E+03
	228.18	10.70	1.58E+04		1.47E+03	7.66E+03
	277.60	14.10	1.23E+04		-5.37E+03	5.91E+03
AM-241	59.54	35.90	2.33E-01	2.33E-01	-6.11E-02	1.14E-01
AM-243	74.67	66.00	1.86E-01	1.86E-01	6.74E-01	9.15E-02
CM-243	209.75	3.29	3.78E+00	8.95E-01	-7.20E-01	1.84E+00
	228.14	10.60	1.16E+00		6.31E-02	5.63E-01
	277.60	14.00	8.95E-01		-3.92E-01	4.31E-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 1510088-18
CP5008S12-13

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: CP5008S12-13

Elapsed Live time: 3600

Elapsed Real Time: 3653

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	22	100
17:	100	73	63	78	71	62	76	62
25:	53	66	71	55	46	68	56	46
33:	55	69	61	60	57	59	62	63
41:	79	65	63	70	112	88	87	74
49:	66	77	82	77	85	69	75	83
57:	82	95	77	117	117	121	131	104
65:	109	89	90	108	116	83	108	137
73:	162	209	230	283	243	120	97	92
81:	93	88	93	107	99	144	127	96
89:	119	78	130	138	129	83	70	65
97:	64	63	54	66	59	55	49	58
105:	84	66	77	55	46	48	49	55
113:	63	59	54	63	58	63	54	59
121:	48	59	48	55	43	45	60	58
129:	53	68	61	55	53	61	48	48
137:	58	64	59	57	60	80	47	65
145:	50	52	52	58	35	52	38	52
153:	54	48	46	50	53	51	57	40
161:	61	44	49	58	43	40	38	44
169:	46	44	37	43	32	33	50	50
177:	40	28	46	39	44	41	45	55
185:	67	82	50	42	55	38	50	41
193:	42	49	30	46	37	53	34	29
201:	33	40	49	37	48	35	38	36
209:	50	51	43	35	41	33	48	55
217:	32	54	40	38	37	30	37	29
225:	38	34	41	30	39	28	42	34
233:	34	36	31	46	113	255	185	78
241:	48	59	47	31	18	31	21	33
249:	20	26	28	26	25	21	29	27
257:	27	24	25	22	17	28	26	28
265:	27	14	20	28	39	38	29	30
273:	31	26	28	19	23	31	21	24
281:	27	18	29	33	23	16	26	24
289:	23	27	20	22	22	47	63	49
297:	32	22	22	42	23	18	20	13
305:	25	16	16	18	16	16	10	15
313:	16	18	13	11	28	14	21	17
321:	20	14	17	16	21	18	28	21
329:	21	21	18	16	16	27	26	20
337:	39	50	37	24	21	16	13	10
345:	16	21	10	17	22	51	93	102
353:	47	20	14	13	10	13	14	15
361:	14	23	14	24	11	18	12	17

369: 18 19 18 14 16 13 15 10

Sample Title: CP5008S12-13

Channel	15	16	13	16	18	4	17	10
377:	15	16	13	16	18	4	17	10
385:	8	14	17	11	8	9	11	13
393:	18	19	23	9	16	18	22	9
401:	22	17	26	17	17	19	18	18
409:	15	15	10	9	12	13	16	19
417:	12	12	8	12	16	11	14	11
425:	11	14	11	13	15	15	19	15
433:	14	14	11	11	6	13	12	10
441:	16	10	13	13	10	12	13	6
449:	14	4	12	5	11	11	6	8
457:	11	12	9	11	11	20	19	16
465:	8	10	11	5	8	12	8	11
473:	7	18	8	16	13	11	14	12
481:	6	19	6	7	10	9	2	12
489:	7	11	5	10	9	15	9	10
497:	8	14	8	10	10	8	10	4
505:	9	11	13	19	23	30	27	21
513:	12	16	7	10	10	2	10	12
521:	11	13	7	8	17	9	9	7
529:	9	13	5	12	11	14	6	7
537:	8	5	5	6	11	7	9	12
545:	5	8	8	9	11	5	8	9
553:	9	16	16	13	14	9	11	8
561:	5	17	10	20	10	2	7	14
569:	8	8	11	6	21	3	8	9
577:	8	8	7	7	16	39	48	48
585:	13	18	6	6	10	3	8	8
593:	10	8	5	9	13	8	14	7
601:	8	13	10	4	8	8	25	36
609:	70	47	25	11	4	9	11	9
617:	8	8	8	5	9	14	5	5
625:	5	5	4	2	9	4	7	6
633:	21	9	6	7	11	7	6	7
641:	8	5	4	11	6	2	3	10
649:	8	9	11	10	3	7	9	9
657:	11	7	14	8	9	6	8	9
665:	6	4	8	2	4	6	8	9
673:	8	3	8	6	12	5	4	6
681:	7	6	7	2	5	5	4	8
689:	6	9	10	10	3	10	7	8
697:	15	4	4	5	7	8	12	11
705:	7	7	4	8	9	11	5	10
713:	5	4	10	9	6	6	5	10
721:	11	9	6	6	6	9	18	10
729:	9	7	5	12	4	6	4	5
737:	7	4	8	8	6	6	4	8
745:	3	12	7	6	6	5	4	8
753:	5	3	4	8	8	7	7	3
761:	5	8	5	7	7	9	5	12
769:	7	8	13	3	11	11	6	2
777:	7	5	6	7	6	6	4	7
785:	10	12	7	6	2	6	8	2
793:	4	11	8	10	6	9	7	8

801: 2 2 13 7 5 9 6 5

Sample Title: CP5008S12-13

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	4	3	5	12	5	4	3	5
817:	3	8	6	3	3	3	7	4
825:	3	1	8	5	2	6	8	2
833:	6	11	4	12	5	7	9	6
841:	5	7	1	5	4	5	7	4
849:	3	4	3	7	4	6	2	6
857:	5	7	9	13	8	5	11	0
865:	4	4	9	3	7	6	3	2
873:	9	4	4	5	3	7	4	6
881:	2	5	7	4	6	4	6	5
889:	1	5	5	6	3	5	2	3
897:	4	2	6	7	6	4	3	4
905:	5	5	5	1	8	15	33	22
913:	13	6	1	7	2	6	3	9
921:	2	3	7	0	6	7	3	5
929:	2	8	4	7	6	7	6	5
937:	6	1	1	6	4	5	2	4
945:	7	6	3	6	4	2	2	5
953:	4	4	2	5	4	2	7	5
961:	6	7	1	11	6	6	8	13
969:	24	13	10	1	10	5	0	3
977:	1	3	6	4	6	5	3	3
985:	6	11	4	3	8	3	3	6
993:	5	9	2	3	0	3	12	10
1001:	5	6	3	4	7	4	0	6
1009:	6	5	3	4	3	1	7	3
1017:	4	3	2	4	2	3	5	3
1025:	4	4	1	6	4	10	4	4
1033:	1	3	5	5	4	6	8	3
1041:	1	1	3	5	1	3	2	1
1049:	3	5	1	3	5	6	0	3
1057:	3	6	6	7	2	2	5	2
1065:	11	2	3	6	4	5	3	4
1073:	6	0	4	1	3	10	4	9
1081:	4	6	4	1	5	3	8	4
1089:	8	3	6	2	3	2	6	3
1097:	5	4	5	5	3	1	3	1
1105:	3	3	1	2	5	5	4	6
1113:	5	6	2	4	7	3	10	11
1121:	13	9	7	3	3	9	2	7
1129:	4	4	3	7	3	6	4	5
1137:	3	6	3	4	5	6	4	4
1145:	1	2	3	3	3	5	5	2
1153:	6	12	9	4	5	5	1	4
1161:	5	4	4	8	6	10	4	7
1169:	5	2	4	5	4	7	1	5
1177:	3	4	4	7	3	2	6	5
1185:	6	7	2	4	5	6	6	6
1193:	8	6	3	5	4	0	7	7
1201:	5	5	4	3	6	2	8	4
1209:	4	10	6	3	3	6	1	3
1217:	2	6	3	7	7	4	4	6
1225:	7	6	4	7	5	5	5	3

1233: 5 12 6 5 4 9 4 3

Sample Title: CP5008S12-13

Channel	1	2	3	4	5	6	7	8	9
1241:	4	5	3	4	2	3	2	6	
1249:	6	6	4	8	1	4	2	4	
1257:	3	7	6	2	3	7	2	6	
1265:	5	5	1	6	1	5	5	4	
1273:	4	9	2	3	4	5	3	4	
1281:	4	3	3	3	5	3	3	4	
1289:	6	1	1	3	5	4	1	3	
1297:	2	1	5	5	7	4	1	2	
1305:	2	2	4	2	1	0	6	6	
1313:	6	0	1	5	1	2	6	4	
1321:	2	1	3	3	3	2	1	3	
1329:	3	6	2	1	2	0	2	2	
1337:	3	3	4	0	1	3	4	5	
1345:	5	6	1	2	2	1	4	3	
1353:	2	2	3	1	0	3	0	4	
1361:	1	1	1	2	2	3	2	1	
1369:	0	0	3	0	7	0	1	3	
1377:	5	0	5	3	2	3	1	1	
1385:	2	2	2	1	1	1	0	5	
1393:	0	0	1	1	2	0	1	3	
1401:	1	1	1	0	3	2	0	4	
1409:	2	2	2	0	1	1	1	2	
1417:	0	2	0	2	3	4	0	2	
1425:	2	0	3	0	3	0	2	0	
1433:	2	1	4	4	2	2	3	3	
1441:	1	1	0	2	2	1	4	0	
1449:	0	2	0	2	0	3	2	1	
1457:	3	4	13	51	78	72	32	9	
1465:	0	1	2	2	3	0	0	1	
1473:	1	1	0	3	0	0	0	4	
1481:	1	2	2	1	6	2	1	1	
1489:	0	1	0	0	1	1	2	1	
1497:	2	2	1	1	2	0	1	0	
1505:	2	1	0	1	2	1	3	1	
1513:	1	0	0	2	2	1	0	1	
1521:	1	1	4	4	3	3	0	0	
1529:	0	1	3	1	0	0	1	1	
1537:	1	3	3	0	2	1	1	1	
1545:	0	0	1	0	2	1	1	0	
1553:	1	1	0	2	0	2	2	0	
1561:	1	2	2	1	1	1	0	2	
1569:	1	3	1	2	0	3	0	4	
1577:	2	4	0	0	1	4	0	0	
1585:	1	1	0	1	2	3	2	2	
1593:	3	0	4	0	3	0	1	0	
1601:	2	1	0	0	2	1	0	0	
1609:	1	3	2	0	1	0	1	5	
1617:	2	1	1	2	1	4	2	2	
1625:	0	2	0	0	1	2	1	0	
1633:	1	0	2	0	1	2	2	1	
1641:	1	2	2	3	0	0	3	0	
1649:	0	0	0	1	1	0	1	0	
1657:	0	0	1	1	0	2	0	0	

1665: 3 1 3 3 1 1 1 0

Sample Title: CP5008S12-13

Channel	1	2	3	4	5	6	7	8
1673:	0	0	0	1	1	1	0	2
1681:	0	1	0	2	0	1	1	0
1689:	5	1	1	0	0	0	0	0
1697:	0	0	0	2	1	0	0	1
1705:	2	2	1	0	1	0	0	1
1713:	0	0	1	1	0	2	1	3
1721:	1	1	2	0	0	0	0	2
1729:	0	3	1	1	0	0	1	2
1737:	0	0	1	1	1	4	1	2
1745:	0	1	1	1	0	2	1	0
1753:	1	1	1	2	2	1	0	3
1761:	0	1	2	5	4	10	2	2
1769:	0	2	0	0	0	0	1	0
1777:	0	0	1	0	2	0	0	0
1785:	0	0	1	0	1	1	0	0
1793:	1	0	0	0	0	1	0	0
1801:	1	1	0	1	1	0	1	3
1809:	0	1	2	0	1	0	1	1
1817:	0	2	1	0	0	0	1	2
1825:	1	1	0	0	1	0	0	2
1833:	0	0	0	0	0	0	1	1
1841:	1	1	1	0	1	0	2	0
1849:	1	0	0	0	0	0	1	0
1857:	0	0	1	0	1	0	0	0
1865:	1	2	0	0	0	1	2	0
1873:	0	0	0	1	1	0	0	1
1881:	0	3	0	0	2	1	0	0
1889:	1	0	1	0	0	2	0	1
1897:	0	0	0	0	0	1	0	0
1905:	0	1	1	0	0	0	0	0
1913:	0	1	5	1	1	2	0	0
1921:	0	1	1	0	1	2	2	0
1929:	2	0	0	1	0	0	0	2
1937:	1	0	1	1	0	0	0	1
1945:	0	0	1	0	1	2	1	0
1953:	3	1	3	1	0	0	1	1
1961:	0	1	1	0	4	0	1	1
1969:	0	1	1	0	2	1	0	0
1977:	0	1	1	1	1	1	1	2
1985:	1	0	0	1	1	1	0	0
1993:	0	0	1	1	2	1	0	0
2001:	1	2	0	1	0	0	1	0
2009:	0	0	2	1	1	0	1	0
2017:	1	2	0	0	0	1	0	0
2025:	0	0	0	0	0	0	1	0
2033:	0	1	0	1	0	1	1	1
2041:	0	1	1	1	0	1	1	2
2049:	0	0	0	1	1	3	1	0
2057:	0	0	1	0	1	0	0	1
2065:	0	0	0	1	0	0	0	0
2073:	1	1	1	0	0	1	3	0
2081:	3	1	0	2	2	0	1	0
2089:	2	2	0	0	0	2	1	0

2097: 0 1 1 1 0 0 1 1

Sample Title: CP5008S12-13

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

2529: 0 1 0 0 1 0 0 0

Sample Title: CP5008S12-13

Channel	1	2	3	4	5	6	7	8
2537:	0	1	0	0	1	0	0	2
2545:	0	1	1	0	0	0	0	0
2553:	1	0	0	1	0	0	0	1
2561:	1	0	0	1	0	0	0	1
2569:	0	1	0	0	0	0	0	1
2577:	0	0	1	0	0	1	0	1
2585:	0	0	1	1	0	0	1	0
2593:	0	0	1	0	0	0	0	0
2601:	0	0	0	0	0	0	1	0
2609:	0	0	0	1	2	3	6	12
2617:	11	3	0	0	0	0	0	0
2625:	1	0	0	0	0	0	0	0
2633:	0	0	0	0	0	1	0	0
2641:	1	0	0	1	0	0	0	0
2649:	1	0	0	0	0	0	0	1
2657:	0	1	1	0	0	0	0	1
2665:	0	0	1	1	0	0	0	0
2673:	0	0	1	1	0	0	0	1
2681:	0	0	0	0	0	1	0	0
2689:	0	1	1	0	0	0	0	0
2697:	1	0	0	0	1	0	0	0
2705:	0	1	0	0	0	0	0	0
2713:	0	0	0	0	0	0	0	1
2721:	1	0	0	0	1	0	0	2
2729:	0	0	0	0	0	2	0	0
2737:	0	0	0	0	0	2	0	0
2745:	1	0	0	0	0	0	0	0
2753:	0	0	0	0	0	0	0	0
2761:	0	0	0	0	0	0	1	0
2769:	0	0	1	0	0	0	0	0
2777:	0	1	0	0	1	0	1	0
2785:	0	0	0	0	0	0	0	0
2793:	0	0	0	0	0	0	0	1
2801:	0	0	0	0	0	0	1	1
2809:	0	0	0	0	1	0	0	0
2817:	0	0	0	0	2	0	0	0
2825:	1	0	0	0	1	0	0	1
2833:	0	0	0	0	0	0	0	0
2841:	0	1	0	0	0	0	0	0
2849:	0	1	0	0	0	0	0	0
2857:	0	1	0	0	0	0	0	0
2865:	0	0	0	0	0	0	0	1
2873:	0	0	0	1	0	0	0	1
2881:	1	0	0	2	1	0	0	0
2889:	0	0	0	0	0	0	0	1
2897:	0	0	0	0	1	0	1	0
2905:	0	0	0	0	0	0	0	0
2913:	0	1	1	0	0	0	0	0
2921:	0	1	0	0	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	0	0
2953:	0	0	0	1	0	1	0	0

2961: 0 0 0 0 0 1 0 0

Sample Title: CP5008S12-13

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

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP5008S12-13

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	1	0
3409:	0	0	0	0	0	1	0	0
3417:	0	0	0	0	0	0	0	0
3425:	1	0	0	1	0	0	0	0
3433:	0	0	0	1	0	0	0	0
3441:	1	0	0	0	0	1	0	0
3449:	0	0	0	1	0	1	1	0
3457:	0	0	0	0	0	1	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	1	0	0	1	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	1	0	1	0	0	0	0	0
3505:	0	1	0	0	0	1	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	1
3537:	0	0	0	0	1	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	1	0	0	0	0	0	1	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	1	0	0	0
3585:	0	0	0	1	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	1	0
3617:	0	0	1	0	0	1	0	0
3625:	0	0	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	0	0	0
3657:	0	1	1	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	1	0	0	0	0	0	1
3681:	0	0	0	0	0	0	0	0
3689:	1	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	1	1	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	1	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	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	1	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	1	0	0	0
3793:	0	0	1	0	0	0	0	1
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

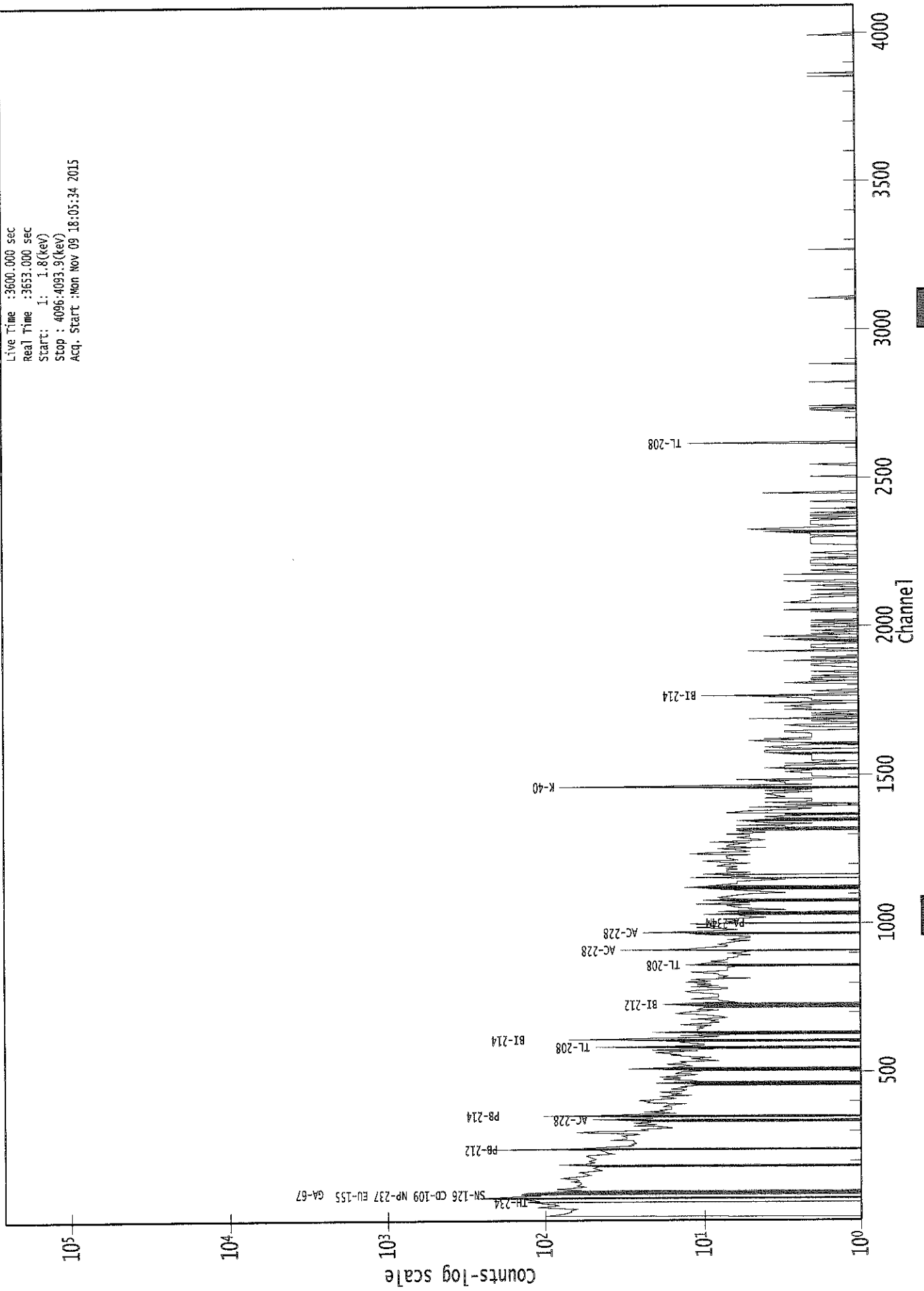
3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP5008S12-13

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	1	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	2	0	0	0	0
3857:	0	0	0	0	0	0	2	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	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	1	0	1	0	0
3913:	0	0	0	0	0	0	0	0
3921:	1	0	1	0	0	0	0	0
3929:	0	0	0	0	0	0	0	1
3937:	0	0	0	1	0	0	0	1
3945:	0	1	0	0	0	0	0	1
3953:	0	0	0	0	0	0	0	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	2	0
3993:	0	0	1	1	0	0	0	0
4001:	0	0	0	1	0	0	1	1
4009:	0	0	1	0	0	0	1	0
4017:	0	0	0	0	0	1	1	0
4025:	0	0	0	0	0	1	0	0
4033:	0	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	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

0000029360.CNF

Live Time : 3600.000 sec
Real Time : 3653.000 sec
Start : 1: 1.8(keV)
Stop : 4096.4083.9(keV)
Acq. Start : Mon Nov 09 18:05:34 2015



Analysis Report for 1510088-19
CP5008S14-15

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-19
Sample Description : CP5008S14-15
Sample Type : SOIL

Sample Size : 5.727E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 9:04:44AM
Acquisition Started : 11/9/2015 6:26:58PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.2 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 8 - 4096
Identification Energy Tolerance : 1.000 keV

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

Sample Number : 29362

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

Analysis Report for 1510088-19
CP5008S14-15

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 7:27:02PM
 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	47.02	47.13	0.0000	0.00
2	63.84	63.94	0.0000	0.00
3	76.34	76.43	0.0000	0.00
4	105.31	105.38	0.0000	0.00
5	129.12	129.18	0.0000	0.00
6	185.99	186.01	0.0000	0.00
7	238.83	238.83	0.0000	0.00
8	242.07	242.07	0.0000	0.00
9	295.39	295.36	0.0000	0.00
10	300.18	300.14	0.0000	0.00
11	338.82	338.76	0.0000	0.00
12	352.00	351.94	0.0000	0.00
13	410.51	410.42	0.0000	0.00
14	463.47	463.35	0.0000	0.00
15	511.17	511.03	0.0000	0.00
16	583.46	583.28	0.0000	0.00
17	609.39	609.20	0.0000	0.00
18	727.34	727.09	0.0000	0.00
19	769.67	769.41	0.0000	0.00
20	786.30	786.03	0.0000	0.00
21	794.82	794.54	0.0000	0.00
22	860.35	860.04	0.0000	0.00
23	910.74	910.41	0.0000	0.00
24	964.69	964.34	0.0000	0.00
25	969.01	968.66	0.0000	0.00
26	1121.10	1120.69	0.0000	0.00
27	1238.80	1238.35	0.0000	0.00
28	1297.04	1296.57	0.0000	0.00
29	1333.99	1333.51	0.0000	0.00
30	1369.27	1368.77	0.0000	0.00
31	1384.73	1384.23	0.0000	0.00
32	1450.54	1450.02	0.0000	0.00
33	1461.00	1460.47	0.0000	0.00
34	1505.03	1504.49	0.0000	0.00
35	1509.51	1508.98	0.0000	0.00
36	1584.86	1584.30	0.0000	0.00
37	1589.32	1588.76	0.0000	0.00
38	1621.30	1620.73	0.0000	0.00
39	1630.18	1629.61	0.0000	0.00
40	1667.14	1666.56	0.0000	0.00
41	1764.83	1764.22	0.0000	0.00
42	1825.99	1825.37	0.0000	0.00

Analysis Report for 1510088-19
CP5008S14-15

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1847.05	1846.42	0.0000	0.00
44	1878.89	1878.26	0.0000	0.00
45	1887.09	1886.45	0.0000	0.00
46	2055.27	2054.60	0.0000	0.00
47	2103.41	2102.74	0.0000	0.00
48	2118.64	2117.96	0.0000	0.00
49	2204.33	2203.63	0.0000	0.00
50	2232.28	2231.58	0.0000	0.00
51	2294.44	2293.73	0.0000	0.00
52	2300.60	2299.89	0.0000	0.00
53	2614.11	2613.37	0.0000	0.00
54	2936.75	2936.00	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510088-19

CP5008S14-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 7:27:02PM

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	47.02	45 -	50	47.13	1.53E+02	89.94	1.50E+03	1.29
2	63.84	60 -	68	63.94	2.16E+02	116.12	1.94E+03	1.70
3	76.34	72 -	83	76.43	9.26E+02	165.59	2.93E+03	3.69
4	105.31	103 -	107	105.38	5.56E+01	59.36	7.35E+02	1.84
5	129.12	126 -	132	129.18	7.69E+01	69.77	8.28E+02	1.96
6	185.99	182 -	190	186.01	2.45E+02	85.05	9.61E+02	1.53
M 7	238.83	234 -	247	238.83	8.08E+02	72.28	3.95E+02	1.55
m 8	242.07	234 -	247	242.07	1.54E+02	51.42	3.45E+02	1.56
M 9	295.39	292 -	305	295.36	2.75E+02	47.75	2.91E+02	1.66
m 10	300.18	292 -	305	300.14	6.09E+01	38.73	2.65E+02	1.82
11	338.82	336 -	343	338.76	2.16E+02	52.92	3.21E+02	2.02
12	352.00	348 -	355	351.94	4.30E+02	59.53	3.04E+02	1.35
13	410.51	407 -	414	410.42	3.71E+01	42.94	2.80E+02	1.58
14	463.47	458 -	468	463.35	8.19E+01	48.00	2.62E+02	2.04
15	511.17	506 -	516	511.03	1.67E+02	54.92	3.12E+02	2.23
16	583.46	579 -	588	583.28	2.78E+02	50.12	2.00E+02	1.84
17	609.39	604 -	611	609.20	3.38E+02	47.71	1.57E+02	1.67
18	727.34	723 -	731	727.09	3.04E+01	37.94	2.03E+02	1.74
19	769.67	765 -	774	769.41	3.42E+01	36.36	1.68E+02	4.90
20	786.30	783 -	790	786.03	4.37E+01	26.15	8.66E+01	3.64
21	794.82	791 -	798	794.54	4.16E+01	28.98	1.13E+02	1.48
22	860.35	856 -	865	860.04	5.04E+01	34.94	1.47E+02	2.66
23	910.74	899 -	916	910.41	2.09E+02	55.78	2.05E+02	1.67
M 24	964.69	955 -	975	964.34	3.80E+01	25.46	7.40E+01	2.65
m 25	969.01	955 -	975	968.66	1.29E+02	31.56	5.59E+01	2.65
26	1121.10	1116 -	1127	1120.69	7.75E+01	35.33	1.09E+02	2.62
27	1238.80	1235 -	1243	1238.35	4.14E+01	29.70	1.05E+02	1.28
28	1297.04	1292 -	1301	1296.57	2.35E+01	24.12	6.90E+01	4.52
29	1333.99	1329 -	1339	1333.51	2.58E+01	19.89	4.03E+01	1.96
M 30	1369.27	1366 -	1391	1368.77	1.73E+01	10.92	1.82E+01	2.48
m 31	1384.73	1366 -	1391	1384.23	1.46E+01	11.54	1.30E+01	2.49
32	1450.54	1445 -	1456	1450.02	3.01E+01	14.56	9.71E+00	9.49
33	1461.00	1457 -	1466	1460.47	7.68E+02	56.45	1.95E+01	2.37
M 34	1505.03	1503 -	1513	1504.49	8.08E+00	5.74	7.16E+00	2.83
m 35	1509.51	1503 -	1513	1508.98	1.49E+01	13.42	1.70E+01	2.83
M 36	1584.86	1583 -	1597	1584.30	6.79E+00	5.48	6.00E+00	3.24
m 37	1589.32	1583 -	1597	1588.76	2.63E+01	16.12	2.40E+01	2.63
38	1621.30	1617 -	1625	1620.73	1.30E+01	13.00	1.80E+01	4.33
39	1630.18	1626 -	1632	1629.61	1.39E+01	10.62	1.03E+01	1.87
40	1667.14	1664 -	1668	1666.56	5.79E+00	5.85	2.43E+00	1.72

: 01030

Analysis Report for 1510088-19

CP5008S14-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1764.83	1760 - 1770		1764.22	7.35E+01	23.27	3.30E+01	2.50
42	1825.99	1822 - 1828		1825.37	7.22E+00	6.95	3.56E+00	2.63
43	1847.05	1843 - 1850		1846.42	8.69E+00	9.17	8.62E+00	1.14
44	1878.89	1874 - 1880		1878.26	5.64E+00	6.34	2.71E+00	2.07
45	1887.09	1883 - 1889		1886.45	6.31E+00	6.65	3.38E+00	2.82
46	2055.27	2051 - 2058		2054.60	1.00E+01	6.32	0.00E+00	4.65
47	2103.41	2099 - 2106		2102.74	1.90E+01	8.72	0.00E+00	2.04
48	2118.64	2114 - 2121		2117.96	1.20E+01	9.80	8.00E+00	2.13
49	2204.33	2200 - 2208		2203.63	1.43E+01	13.30	1.94E+01	2.70
50	2232.28	2228 - 2234		2231.58	6.31E+00	6.65	3.38E+00	2.68
51	2294.44	2290 - 2296		2293.73	1.17E+01	9.19	6.67E+00	2.75
52	2300.60	2297 - 2303		2299.89	1.00E+01	7.76	4.00E+00	1.15
53	2614.11	2608 - 2617		2613.37	1.20E+02	22.74	5.33E+00	3.56
54	2936.75	2932 - 2938		2936.00	5.00E+00	4.47	0.00E+00	2.98

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 7:27:02PM

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	47.02	45 -	50	1.53E+02	89.94	1.50E+03	7.11E+01
2	63.84	60 -	68	2.16E+02	116.12	1.94E+03	9.23E+01
3	76.34	72 -	83	9.26E+02	165.59	2.93E+03	1.27E+02
4	105.31	103 -	107	5.56E+01	59.36	7.35E+02	4.72E+01
5	129.12	126 -	132	7.69E+01	69.77	8.28E+02	5.55E+01
6	185.99	182 -	190	2.45E+02	85.05	9.61E+02	6.50E+01
M 7	238.83	234 -	247	8.08E+02	72.28	3.95E+02	3.27E+01
m 8	242.07	234 -	247	1.54E+02	51.42	3.45E+02	3.05E+01
M 9	295.39	292 -	305	2.75E+02	47.75	2.91E+02	2.80E+01
m 10	300.18	292 -	305	6.09E+01	38.73	2.65E+02	2.67E+01
11	338.82	336 -	343	2.16E+02	52.92	3.21E+02	3.62E+01
12	352.00	348 -	355	4.30E+02	59.53	3.04E+02	3.51E+01
13	410.51	407 -	414	3.71E+01	42.94	2.80E+02	3.38E+01
14	463.47	458 -	468	8.19E+01	48.00	2.62E+02	3.65E+01

: 01031

Analysis Report for 1510088-19

CP5008S14-15

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
15	511.17	506 -	516	1.67E+02	54.92	3.12E+02	3.98E+01
16	583.46	579 -	588	2.78E+02	50.12	2.00E+02	3.08E+01
17	609.39	604 -	611	3.38E+02	47.71	1.57E+02	2.50E+01
18	727.34	723 -	731	3.04E+01	37.94	2.03E+02	2.98E+01
19	769.67	765 -	774	3.42E+01	36.36	1.68E+02	1.82E+01
20	786.30	783 -	790	4.37E+01	26.15	8.66E+01	1.86E+01
21	794.82	791 -	798	4.16E+01	28.98	1.13E+02	2.13E+01
22	860.35	856 -	865	5.04E+01	34.94	1.47E+02	2.62E+01
23	910.74	899 -	916	2.09E+02	55.78	2.05E+02	1.74E+01
M	24	955 -	975	3.80E+01	25.46	7.40E+01	1.41E+01
m	25	955 -	975	1.29E+02	31.56	5.59E+01	1.23E+01
	26	1116 -	1127	7.75E+01	35.33	1.09E+02	2.52E+01
	27	1235 -	1243	4.14E+01	29.70	1.05E+02	2.20E+01
	28	1292 -	1301	2.35E+01	24.12	6.90E+01	1.82E+01
	29	1329 -	1339	2.58E+01	19.89	4.03E+01	1.41E+01
M	30	1366 -	1391	1.73E+01	10.92	1.82E+01	7.01E+00
m	31	1366 -	1391	1.46E+01	11.54	1.30E+01	5.93E+00
	32	1445 -	1456	3.01E+01	14.56	9.71E+00	7.86E+00
	33	1457 -	1466	7.68E+02	56.45	1.95E+01	8.78E+00
M	34	1503 -	1513	8.08E+00	5.74	7.16E+00	4.40E+00
m	35	1503 -	1513	1.49E+01	13.42	1.70E+01	6.78E+00
M	36	1583 -	1597	6.79E+00	5.48	6.00E+00	4.03E+00
m	37	1583 -	1597	2.63E+01	16.12	2.40E+01	8.05E+00
	38	1617 -	1625	1.30E+01	13.00	1.80E+01	8.89E+00
	39	1626 -	1632	1.39E+01	10.62	1.03E+01	6.22E+00
	40	1664 -	1668	5.79E+00	5.85	2.43E+00	2.74E+00
	41	1760 -	1770	7.35E+01	23.27	3.30E+01	1.29E+01
	42	1822 -	1828	7.22E+00	6.95	3.56E+00	3.62E+00
	43	1843 -	1850	8.69E+00	9.17	8.62E+00	5.77E+00
	44	1874 -	1880	5.64E+00	6.34	2.71E+00	3.46E+00
	45	1883 -	1889	6.31E+00	6.65	3.38E+00	3.58E+00
	46	2051 -	2058	1.00E+01	6.32	0.00E+00	0.00E+00
	47	2099 -	2106	1.90E+01	8.72	0.00E+00	0.00E+00
	48	2114 -	2121	1.20E+01	9.80	8.00E+00	5.70E+00
	49	2200 -	2208	1.43E+01	13.30	1.94E+01	9.00E+00
	50	2228 -	2234	6.31E+00	6.65	3.38E+00	3.58E+00
	51	2290 -	2296	1.17E+01	9.19	6.67E+00	5.06E+00
	52	2297 -	2303	1.00E+01	7.76	4.00E+00	3.70E+00
	53	2608 -	2617	1.20E+02	22.74	5.33E+00	4.91E+00
	54	2932 -	2938	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

Analysis Report for 1510088-19
CP5008S14-15

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 7:27:02PM

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	47.02	45 -	50	47.13	1.53E+02	89.94	1.50E+03	PB-210
2	63.84	60 -	68	63.94	2.16E+02	116.12	1.94E+03	TH-234 TH-230
3	76.34	72 -	83	76.43	9.26E+02	165.59	2.93E+03	.....
4	105.31	103 -	107	105.38	5.56E+01	59.36	7.35E+02	EU-155 NP-239
5	129.12	126 -	132	129.18	7.69E+01	69.77	8.28E+02	.....
6	185.99	182 -	190	186.01	2.45E+02	85.05	9.61E+02	RA-226
M 7	238.83	234 -	247	238.83	8.08E+02	72.28	3.95E+02	PB-212
m 8	242.07	234 -	247	242.07	1.54E+02	51.42	3.45E+02	.....
M 9	295.39	292 -	305	295.36	2.75E+02	47.75	2.91E+02	PB-214
m 10	300.18	292 -	305	300.14	6.09E+01	38.73	2.65E+02	GA-67 PB-212 BI-210M
11	338.82	336 -	343	338.76	2.16E+02	52.92	3.21E+02	AC-228
12	352.00	348 -	355	351.94	4.30E+02	59.53	3.04E+02	PB-214
13	410.51	407 -	414	410.42	3.71E+01	42.94	2.80E+02	HO-166M
14	463.47	458 -	468	463.35	8.19E+01	48.00	2.62E+02	SB-125
15	511.17	506 -	516	511.03	1.67E+02	54.92	3.12E+02	.....
16	583.46	579 -	588	583.28	2.78E+02	50.12	2.00E+02	TL-208
17	609.39	604 -	611	609.20	3.38E+02	47.71	1.57E+02	BI-214
18	727.34	723 -	731	727.09	3.04E+01	37.94	2.03E+02	BI-212
19	769.67	765 -	774	769.41	3.42E+01	36.36	1.68E+02	.....
20	786.30	783 -	790	786.03	4.37E+01	26.15	8.66E+01	.....
21	794.82	791 -	798	794.54	4.16E+01	28.98	1.13E+02	.....
22	860.35	856 -	865	860.04	5.04E+01	34.94	1.47E+02	TL-208
23	910.74	899 -	916	910.41	2.09E+02	55.78	2.05E+02	AC-228
M 24	964.69	955 -	975	964.34	3.80E+01	25.46	7.40E+01	EU-152
m 25	969.01	955 -	975	968.66	1.29E+02	31.56	5.59E+01	AC-228
26	1121.10	1116 -	1127	1120.69	7.75E+01	35.33	1.09E+02	TA-182 SC-46 BI-214
27	1238.80	1235 -	1243	1238.35	4.14E+01	29.70	1.05E+02	CO-56
28	1297.04	1292 -	1301	1296.57	2.35E+01	24.12	6.90E+01	.....
29	1333.99	1329 -	1339	1333.51	2.58E+01	19.89	4.03E+01	.....
M 30	1369.27	1366 -	1391	1368.77	1.73E+01	10.92	1.82E+01	NA-24
m 31	1384.73	1366 -	1391	1384.23	1.46E+01	11.54	1.30E+01	AG-110M
32	1450.54	1445 -	1456	1450.02	3.01E+01	14.56	9.71E+00	.....
33	1461.00	1457 -	1466	1460.47	7.68E+02	56.45	1.95E+01	K-40
M 34	1505.03	1503 -	1513	1504.49	8.08E+00	5.74	7.16E+00	.....
m 35	1509.51	1503 -	1513	1508.98	1.49E+01	13.42	1.70E+01	.....

Analysis Report for 1510088-19
CP5008S14-15

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	36	1584.86	1583 -	1597	1584.30	6.79E+00	5.48	6.00E+00	.....
m	37	1589.32	1583 -	1597	1588.76	2.63E+01	16.12	2.40E+01	.....
	38	1621.30	1617 -	1625	1620.73	1.30E+01	13.00	1.80E+01	BI-212
	39	1630.18	1626 -	1632	1629.61	1.39E+01	10.62	1.03E+01	.....
	40	1667.14	1664 -	1668	1666.56	5.79E+00	5.85	2.43E+00	.....
	41	1764.83	1760 -	1770	1764.22	7.35E+01	23.27	3.30E+01	BI-214
	42	1825.99	1822 -	1828	1825.37	7.22E+00	6.95	3.56E+00	.....
	43	1847.05	1843 -	1850	1846.42	8.69E+00	9.17	8.62E+00	.....
	44	1878.89	1874 -	1880	1878.26	5.64E+00	6.34	2.71E+00	.....
	45	1887.09	1883 -	1889	1886.45	6.31E+00	6.65	3.38E+00	.....
	46	2055.27	2051 -	2058	2054.60	1.00E+01	6.32	0.00E+00	.....
	47	2103.41	2099 -	2106	2102.74	1.90E+01	8.72	0.00E+00	.....
	48	2118.64	2114 -	2121	2117.96	1.20E+01	9.80	8.00E+00	.....
	49	2204.33	2200 -	2208	2203.63	1.43E+01	13.30	1.94E+01	BI-214
	50	2232.28	2228 -	2234	2231.58	6.31E+00	6.65	3.38E+00	.....
	51	2294.44	2290 -	2296	2293.73	1.17E+01	9.19	6.67E+00	.....
	52	2300.60	2297 -	2303	2299.89	1.00E+01	7.76	4.00E+00	.....
	53	2614.11	2608 -	2617	2613.37	1.20E+02	22.74	5.33E+00	TL-208
	54	2936.75	2932 -	2938	2936.00	5.00E+00	4.47	0.00E+00	.....

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 7:27:02PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	47.02	1.53E+02	89.94	1.38E-02	1.68E-03
	2	63.84	2.16E+02	116.12	2.40E-02	2.11E-03
	3	76.34	9.26E+02	165.59	2.74E-02	3.35E-03
	4	105.31	5.56E+01	59.36	2.80E-02	3.73E-03
	5	129.12	7.69E+01	69.77	2.60E-02	2.78E-03
	6	185.99	2.45E+02	85.05	2.11E-02	1.65E-03
M	7	238.83	8.08E+02	72.28	1.79E-02	1.60E-03
m	8	242.07	1.54E+02	51.42	1.77E-02	1.60E-03
M	9	295.39	2.75E+02	47.75	1.55E-02	1.48E-03
m	10	300.18	6.09E+01	38.73	1.53E-02	1.46E-03
	11	338.82	2.16E+02	52.92	1.41E-02	1.27E-03

Analysis Report for 1510088-19
CP5008S14-15

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	12	352.00	4.30E+02	59.53	1.37E-02	1.21E-03
	13	410.51	3.71E+01	42.94	1.23E-02	1.00E-03
	14	463.47	8.19E+01	48.00	1.13E-02	9.47E-04
	15	511.17	1.67E+02	54.92	1.06E-02	8.98E-04
	16	583.46	2.78E+02	50.12	9.58E-03	8.25E-04
	17	609.39	3.38E+02	47.71	9.27E-03	7.98E-04
	18	727.34	3.04E+01	37.94	8.09E-03	7.03E-04
	19	769.67	3.42E+01	36.36	7.73E-03	6.76E-04
	20	786.30	4.37E+01	26.15	7.60E-03	6.65E-04
	21	794.82	4.16E+01	28.98	7.53E-03	6.60E-04
	22	860.35	5.04E+01	34.94	7.07E-03	6.18E-04
	23	910.74	2.09E+02	55.78	6.75E-03	5.87E-04
M	24	964.69	3.80E+01	25.46	6.44E-03	5.59E-04
m	25	969.01	1.29E+02	31.56	6.42E-03	5.57E-04
	26	1121.10	7.75E+01	35.33	5.70E-03	4.79E-04
	27	1238.80	4.14E+01	29.70	5.27E-03	4.83E-04
	28	1297.04	2.35E+01	24.12	5.09E-03	5.10E-04
	29	1333.99	2.58E+01	19.89	4.98E-03	5.26E-04
M	30	1369.27	1.73E+01	10.92	4.89E-03	5.11E-04
m	31	1384.73	1.46E+01	11.54	4.85E-03	5.05E-04
	32	1450.54	3.01E+01	14.56	4.70E-03	4.78E-04
	33	1461.00	7.68E+02	56.45	4.67E-03	4.73E-04
M	34	1505.03	8.08E+00	5.74	4.58E-03	4.55E-04
m	35	1509.51	1.49E+01	13.42	4.57E-03	4.53E-04
M	36	1584.86	6.79E+00	5.48	4.44E-03	4.22E-04
m	37	1589.32	2.63E+01	16.12	4.43E-03	4.20E-04
	38	1621.30	1.30E+01	13.00	4.38E-03	4.07E-04
	39	1630.18	1.39E+01	10.62	4.36E-03	4.03E-04
	40	1667.14	5.79E+00	5.85	4.31E-03	3.88E-04
	41	1764.83	7.35E+01	23.27	4.18E-03	3.47E-04
	42	1825.99	7.22E+00	6.95	4.12E-03	3.22E-04
	43	1847.05	8.69E+00	9.17	4.10E-03	3.18E-04
	44	1878.89	5.64E+00	6.34	4.07E-03	3.18E-04
	45	1887.09	6.31E+00	6.65	4.07E-03	3.18E-04
	46	2055.27	1.00E+01	6.32	3.97E-03	3.18E-04
	47	2103.41	1.90E+01	8.72	3.95E-03	3.18E-04
	48	2118.64	1.20E+01	9.80	3.95E-03	3.18E-04
	49	2204.33	1.43E+01	13.30	3.93E-03	3.18E-04
	50	2232.28	6.31E+00	6.65	3.93E-03	3.18E-04
	51	2294.44	1.17E+01	9.19	3.93E-03	3.18E-04
	52	2300.60	1.00E+01	7.76	3.93E-03	3.18E-04
	53	2614.11	1.20E+02	22.74	4.05E-03	3.18E-04
	54	2936.75	5.00E+00	4.47	4.37E-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

Analysis Report for 1510088-19

CP5008S14-15

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 7:27:02PM

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	47.02	1.53E+02	89.94	6.46E+01	1.16E+01	8.82E+01	9.07E+01	
2	63.84	2.16E+02	116.12	4.34E+01	1.15E+01	1.73E+02	1.17E+02	
3	76.34	9.26E+02	165.59			9.26E+02	1.66E+02	
4	105.31	5.56E+01	59.36			5.56E+01	5.94E+01	
5	129.12	7.69E+01	69.77			7.69E+01	6.98E+01	
6	185.99	2.45E+02	85.05	4.72E+01	7.97E+00	1.97E+02	8.54E+01	
M	7	238.83	8.08E+02	72.28	2.36E+01	1.35E+01	7.85E+02	7.35E+01
m	8	242.07	1.54E+02	51.42	6.38E+00	3.91E+00	1.48E+02	5.16E+01
M	9	295.39	2.75E+02	47.75	8.57E+00	6.10E+00	2.66E+02	4.81E+01
m	10	300.18	6.09E+01	38.73			6.09E+01	3.87E+01
11	338.82	2.16E+02	52.92			2.16E+02	5.29E+01	
12	352.00	4.30E+02	59.53	1.40E+01	5.55E+00	4.16E+02	5.98E+01	
13	410.51	3.71E+01	42.94			3.71E+01	4.29E+01	
14	463.47	8.19E+01	48.00			8.19E+01	4.80E+01	
15	511.17	1.67E+02	54.92	8.41E+01	5.50E+00	8.29E+01	5.52E+01	
16	583.46	2.78E+02	50.12	7.32E+00	4.08E+00	2.71E+02	5.03E+01	
17	609.39	3.38E+02	47.71	1.30E+01	3.89E+00	3.25E+02	4.79E+01	
18	727.34	3.04E+01	37.94			3.04E+01	3.79E+01	
19	769.67	3.42E+01	36.36			3.42E+01	3.64E+01	
20	786.30	4.37E+01	26.15			4.37E+01	2.62E+01	
21	794.82	4.16E+01	28.98			4.16E+01	2.90E+01	
22	860.35	5.04E+01	34.94			5.04E+01	3.49E+01	
23	910.74	2.09E+02	55.78	5.60E+00	3.32E+00	2.04E+02	5.59E+01	
M	24	964.69	3.80E+01	25.46		3.80E+01	2.55E+01	
m	25	969.01	1.29E+02	31.56		1.29E+02	3.16E+01	
26	1121.10	7.75E+01	35.33	3.93E+00	2.96E+00	7.35E+01	3.55E+01	
27	1238.80	4.14E+01	29.70			4.14E+01	2.97E+01	
28	1297.04	2.35E+01	24.12			2.35E+01	2.41E+01	
29	1333.99	2.58E+01	19.89			2.58E+01	1.99E+01	
M	30	1369.27	1.73E+01	10.92		1.73E+01	1.09E+01	
m	31	1384.73	1.46E+01	11.54		1.46E+01	1.15E+01	
32	1450.54	3.01E+01	14.56			3.01E+01	1.46E+01	
33	1461.00	7.68E+02	56.45	1.12E+01	2.55E+00	7.57E+02	5.65E+01	
M	34	1505.03	8.08E+00	5.74		8.08E+00	5.74E+00	
m	35	1509.51	1.49E+01	13.42		1.49E+01	1.34E+01	
M	36	1584.86	6.79E+00	5.48		6.79E+00	5.48E+00	
m	37	1589.32	2.63E+01	16.12		2.63E+01	1.61E+01	
38	1621.30	1.30E+01	13.00			1.30E+01	1.30E+01	
39	1630.18	1.39E+01	10.62			1.39E+01	1.06E+01	
40	1667.14	5.79E+00	5.85			5.79E+00	5.85E+00	
41	1764.83	7.35E+01	23.27	4.23E+00	2.21E+00	6.93E+01	2.34E+01	
42	1825.99	7.22E+00	6.95			7.22E+00	6.95E+00	
43	1847.05	8.69E+00	9.17			8.69E+00	9.17E+00	
44	1878.89	5.64E+00	6.34			5.64E+00	6.34E+00	

Analysis Report for 1510088-19

CP5008S14-15

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
45	1887.09	6.31E+00	6.65			6.31E+00	6.65E+00
46	2055.27	1.00E+01	6.32			1.00E+01	6.32E+00
47	2103.41	1.90E+01	8.72			1.90E+01	8.72E+00
48	2118.64	1.20E+01	9.80			1.20E+01	9.80E+00
49	2204.33	1.43E+01	13.30	5.94E-01	1.16E+00	1.37E+01	1.34E+01
50	2232.28	6.31E+00	6.65			6.31E+00	6.65E+00
51	2294.44	1.17E+01	9.19			1.17E+01	9.19E+00
52	2300.60	1.00E+01	7.76			1.00E+01	7.76E+00
53	2614.11	1.20E+02	22.74	7.38E+00	1.57E+00	1.13E+02	2.28E+01
54	2936.75	5.00E+00	4.47			5.00E+00	4.47E+00

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 7:27:02PM
 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	47.02	1.53E+02	89.94	6.46E+01	1.16E+01	8.82E+01	9.07E+01
2	63.84	2.16E+02	116.12	4.34E+01	1.15E+01	1.73E+02	1.17E+02
3	76.34	9.26E+02	165.59			9.26E+02	1.66E+02
4	105.31	5.56E+01	59.36			5.56E+01	5.94E+01
5	129.12	7.69E+01	69.77			7.69E+01	6.98E+01
6	185.99	2.45E+02	85.05	4.72E+01	7.97E+00	1.97E+02	8.54E+01
M	7	238.83	8.08E+02	2.36E+01	1.35E+01	7.85E+02	7.35E+01
m	8	242.07	1.54E+02	6.38E+00	3.91E+00	1.48E+02	5.16E+01
M	9	295.39	2.75E+02	8.57E+00	6.10E+00	2.66E+02	4.81E+01
m	10	300.18	6.09E+01			6.09E+01	3.87E+01
11	338.82	2.16E+02	52.92			2.16E+02	5.29E+01
12	352.00	4.30E+02	59.53	1.40E+01	5.55E+00	4.16E+02	5.98E+01
13	410.51	3.71E+01	42.94			3.71E+01	4.29E+01
14	463.47	8.19E+01	48.00			8.19E+01	4.80E+01
15	511.17	1.67E+02	54.92	8.41E+01	5.50E+00	8.29E+01	5.52E+01
16	583.46	2.78E+02	50.12	7.32E+00	4.08E+00	2.71E+02	5.03E+01
17	609.39	3.38E+02	47.71	1.30E+01	3.89E+00	3.25E+02	4.79E+01
18	727.34	3.04E+01	37.94			3.04E+01	3.79E+01

Analysis Report for 1510088-19

CP5008S14-15

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
19	769.67	3.42E+01	36.36			3.42E+01	3.64E+01
20	786.30	4.37E+01	26.15			4.37E+01	2.62E+01
21	794.82	4.16E+01	28.98			4.16E+01	2.90E+01
22	860.35	5.04E+01	34.94			5.04E+01	3.49E+01
23	910.74	2.09E+02	55.78	5.60E+00	3.32E+00	2.04E+02	5.59E+01
M 24	964.69	3.80E+01	25.46			3.80E+01	2.55E+01
m 25	969.01	1.29E+02	31.56			1.29E+02	3.16E+01
26	1121.10	7.75E+01	35.33	3.93E+00	2.96E+00	7.35E+01	3.55E+01
27	1238.80	4.14E+01	29.70			4.14E+01	2.97E+01
28	1297.04	2.35E+01	24.12			2.35E+01	2.41E+01
29	1333.99	2.58E+01	19.89			2.58E+01	1.99E+01
M 30	1369.27	1.73E+01	10.92			1.73E+01	1.09E+01
m 31	1384.73	1.46E+01	11.54			1.46E+01	1.15E+01
32	1450.54	3.01E+01	14.56			3.01E+01	1.46E+01
33	1461.00	7.68E+02	56.45	1.12E+01	2.55E+00	7.57E+02	5.65E+01
M 34	1505.03	8.08E+00	5.74			8.08E+00	5.74E+00
m 35	1509.51	1.49E+01	13.42			1.49E+01	1.34E+01
M 36	1584.86	6.79E+00	5.48			6.79E+00	5.48E+00
m 37	1589.32	2.63E+01	16.12			2.63E+01	1.61E+01
38	1621.30	1.30E+01	13.00			1.30E+01	1.30E+01
39	1630.18	1.39E+01	10.62			1.39E+01	1.06E+01
40	1667.14	5.79E+00	5.85			5.79E+00	5.85E+00
41	1764.83	7.35E+01	23.27	4.23E+00	2.21E+00	6.93E+01	2.34E+01
42	1825.99	7.22E+00	6.95			7.22E+00	6.95E+00
43	1847.05	8.69E+00	9.17			8.69E+00	9.17E+00
44	1878.89	5.64E+00	6.34			5.64E+00	6.34E+00
45	1887.09	6.31E+00	6.65			6.31E+00	6.65E+00
46	2055.27	1.00E+01	6.32			1.00E+01	6.32E+00
47	2103.41	1.90E+01	8.72			1.90E+01	8.72E+00
48	2118.64	1.20E+01	9.80			1.20E+01	9.80E+00
49	2204.33	1.43E+01	13.30	5.94E-01	1.16E+00	1.37E+01	1.34E+01
50	2232.28	6.31E+00	6.65			6.31E+00	6.65E+00
51	2294.44	1.17E+01	9.19			1.17E+01	9.19E+00
52	2300.60	1.00E+01	7.76			1.00E+01	7.76E+00
53	2614.11	1.20E+02	22.74	7.38E+00	1.57E+00	1.13E+02	2.28E+01
54	2936.75	5.00E+00	4.47			5.00E+00	4.47E+00

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1510088-19
CP5008S14-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.994	1460.81 *	10.67	1.99E+01	2.54E+00
TL-208	0.969	583.14 *	30.22	1.23E+00	2.51E-01
		860.37 *	4.48	2.08E+00	1.46E+00
		2614.66 *	35.85	1.02E+00	2.21E-01
PB-210	0.957	46.50 *	4.25	1.98E+00	2.05E+00
BI-212	0.982	727.17 *	11.80	4.18E-01	5.23E-01
		1620.62 *	2.75	1.42E+00	1.42E+00
PB-212	0.994	238.63 *	44.60	1.29E+00	1.67E-01
		300.09 *	3.41	1.53E+00	9.84E-01
BI-214	0.977	609.31 *	46.30	9.94E-01	1.69E-01
		1120.29 *	15.10	1.12E+00	5.48E-01
		1764.49 *	15.80	1.37E+00	4.77E-01
		2204.22 *	4.98	9.17E-01	8.97E-01
PB-214	0.997	295.21 *	19.19	1.18E+00	2.41E-01
		351.92 *	37.19	1.07E+00	1.80E-01
RA-226	0.992	186.21 *	3.28	3.74E+00	7.04E+00
AC-228	0.983	338.32 *	11.40	1.76E+00	4.60E-01
		911.07 *	27.70	1.43E+00	4.11E-01
		969.11 *	16.60	1.58E+00	4.12E-01
TH-234	0.952	63.29 *	3.80	2.49E+00	1.69E+00

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 7:27:02PM
 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	76.34	2.57202E-01	8.94		
4	105.31	1.54429E-02	53.38	Tol.	EU-155 NP-239
5	129.12	2.13694E-02	45.34		
m 8	242.07	4.10342E-02	17.46		
13	410.51	1.03045E-02	57.88	Tol.	HO-166M

Analysis Report for 1510088-19
CP5008S14-15

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
14	463.47	2.27465E-02	29.31		
15	511.17	2.30363E-02	33.28		
19	769.67	9.51036E-03	53.10	Sum	
20	786.30	1.21328E-02	29.94		
21	794.82	1.15533E-02	34.84	Sum	
M 24	964.69	1.05514E-02	33.51	Tol.	EU-152
27	1238.80	1.15100E-02	35.84		
28	1297.04	6.53257E-03	51.29		
29	1333.99	7.17693E-03	38.50		
M 30	1369.27	4.79826E-03	31.61	Tol.	NA-24
m 31	1384.73	4.05844E-03	39.50	Tol.	AG-110M
32	1450.54	8.37302E-03	24.15		
M 34	1505.03	2.24486E-03	35.54		
m 35	1509.51	4.13654E-03	45.05		
M 36	1584.86	1.88498E-03	40.36		
m 37	1589.32	7.30347E-03	30.66		
39	1630.18	3.85234E-03	38.28		
40	1667.14	1.60714E-03	50.58		
42	1825.99	2.00617E-03	48.09		
43	1847.05	2.41453E-03	52.72		
44	1878.89	1.56746E-03	56.22	Sum	
45	1887.09	1.75347E-03	52.69		
46	2055.27	2.77778E-03	31.62		
47	2103.41	5.27778E-03	22.94	S-Esc	
48	2118.64	3.33333E-03	40.82		
50	2232.28	1.75347E-03	52.69		
51	2294.44	3.24074E-03	39.40		
52	2300.60	2.77778E-03	38.81		
54	2936.75	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

Analysis Report for 1510088-19
 CP5008S14-15

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *		10.67	1.99E+01	2.54E+00
TL-208	0.96	583.14 *		30.22	1.23E+00	2.51E-01
		860.37 *		4.48	2.08E+00	1.46E+00
		2614.66 *		35.85	1.02E+00	2.21E-01
PB-210	0.95	46.50 *		4.25	1.98E+00	2.05E+00
BI-212	0.98	727.17 *		11.80	4.18E-01	5.23E-01
		1620.62 *		2.75	1.42E+00	1.42E+00
PB-212	0.99	238.63 *		44.60	1.29E+00	1.67E-01
		300.09 *		3.41	1.53E+00	9.84E-01
BI-214	0.97	609.31 *		46.30	9.94E-01	1.69E-01
		1120.29 *		15.10	1.12E+00	5.48E-01
		1764.49 *		15.80	1.37E+00	4.77E-01
		2204.22 *		4.98	9.17E-01	8.97E-01
PB-214	0.99	295.21 *		19.19	1.18E+00	2.41E-01
		351.92 *		37.19	1.07E+00	1.80E-01
RA-226	0.99	186.21 *		3.28	3.74E+00	7.04E+00
AC-228	0.98	338.32 *		11.40	1.76E+00	4.60E-01
		911.07 *		27.70	1.43E+00	4.11E-01
		969.11 *		16.60	1.58E+00	4.12E-01
TH-234	0.95	63.29 *		3.80	2.49E+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

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.994	1.99E+01	2.54E+00	
TL-208	0.969	1.12E+00	1.65E-01	
PB-210	0.957	1.98E+00	2.05E+00	
BI-212	0.982	5.37E-01	4.90E-01	
PB-212	0.994	1.30E+00	1.65E-01	
BI-214	0.977	1.04E+00	1.51E-01	
PB-214	0.997	1.11E+00	1.44E-01	

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Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
RA-226	0.992	3.74E+00	7.04E+00	
AC-228	0.983	1.58E+00	2.46E-01	
TH-234	0.952	2.49E+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

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 7:27:02PM
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	76.34	2.57202E-01	8.94		
4	105.31	1.54429E-02	53.38	Tol.	EU-155 NP-239
5	129.12	2.13694E-02	45.34		
m 8	242.07	4.10342E-02	17.46		
13	410.51	1.03045E-02	57.88	Tol.	HO-166M
14	463.47	2.27465E-02	29.31		
15	511.17	2.30363E-02	33.28		
19	769.67	9.51036E-03	53.10	Sum	
20	786.30	1.21328E-02	29.94		
21	794.82	1.15533E-02	34.84	Sum	
M 24	964.69	1.05514E-02	33.51	Tol.	EU-152
27	1238.80	1.15100E-02	35.84		
28	1297.04	6.53257E-03	51.29		
29	1333.99	7.17693E-03	38.50		
M 30	1369.27	4.79826E-03	31.61	Tol.	NA-24
m 31	1384.73	4.05844E-03	39.50	Tol.	AG-110M
32	1450.54	8.37302E-03	24.15		
M 34	1505.03	2.24486E-03	35.54		
m 35	1509.51	4.13654E-03	45.05		
M 36	1584.86	1.88498E-03	40.36		
m 37	1589.32	7.30347E-03	30.66		
39	1630.18	3.85234E-03	38.28		
40	1667.14	1.60714E-03	50.58		
42	1825.99	2.00617E-03	48.09		
43	1847.05	2.41453E-03	52.72		
44	1878.89	1.56746E-03	56.22	Sum	
45	1887.09	1.75347E-03	52.69		
46	2055.27	2.77778E-03	31.62		
47	2103.41	5.27778E-03	22.94	S-Esc	
48	2118.64	3.33333E-03	40.82		
50	2232.28	1.75347E-03	52.69		
51	2294.44	3.24074E-03	39.40		
52	2300.60	2.77778E-03	38.81		
54	2936.75	1.38889E-03	44.72		

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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	-1.90E-01	7.14E-01	7.14E-01
+	NA-22	1274.54	99.94	1.76E-02	7.34E-02	7.34E-02
+	NA-24	1368.53	99.99	9.00E+13	9.47E+13	2.94E+14
		2754.09	99.86	-2.14E+13		9.47E+13
+	AL-26	1808.65	99.76	1.23E-02	5.76E-02	5.76E-02
+	K-40	1460.81	* 10.67	1.99E+01	6.28E-01	6.28E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-2.91E-02	4.75E-02	4.75E-02
		78.34	96.00	2.59E-01		7.11E-02
+	SC-46	889.25	99.98	-7.72E-02	8.19E-02	8.19E-02
		1120.51	99.99	1.41E-01		1.48E-01
+	V-48	983.52	99.98	-2.20E-02	2.95E-01	2.95E-01
		1312.10	97.50	6.16E-02		3.11E-01
+	CR-51	320.08	9.83	-4.10E-02	1.10E+00	1.10E+00
+	MN-54	834.83	99.97	-4.69E-02	7.05E-02	7.05E-02
+	CO-56	846.75	99.96	-1.62E-02	9.51E-02	9.51E-02
		1037.75	14.03	-1.84E-01		6.03E-01
		1238.25	67.00	2.13E-01		2.23E-01
		1771.40	15.51	-9.42E-02		4.48E-01
		2598.48	16.90	2.55E-02		1.88E-01
+	CO-57	122.06	85.51	1.44E-02	5.54E-02	5.54E-02
		136.48	10.60	9.77E-02		4.88E-01
+	CO-58	810.76	99.40	6.11E-03	9.09E-02	9.09E-02
+	FE-59	1099.22	56.50	1.28E-01	2.59E-01	2.59E-01
		1291.56	43.20	-4.07E-02		2.73E-01
+	CO-60	1173.22	100.00	2.29E-02	7.27E-02	8.18E-02
		1332.49	100.00	-9.40E-03		7.27E-02
+	ZN-65	1115.52	50.75	1.40E-02	1.73E-01	1.73E-01
+	GA-67	93.31	35.70	1.83E+02	1.66E+02	1.66E+02
		208.95	2.24	3.17E+03		2.51E+03
		300.22	16.00	1.16E+02		3.46E+02
+	SE-75	121.11	16.70	5.64E-03	9.04E-02	3.13E-01

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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	8.13E-02	9.04E-02
		264.65	59.80	-2.22E-02	9.04E-02
		279.53	25.20	1.21E-01	2.57E-01
		400.65	11.40	-2.10E-01	5.42E-01
+	RB-82	776.52	13.00	1.69E-01	1.25E+00
+	RB-83	520.41	46.00	-5.47E-02	1.36E-01
		529.64	30.30	-8.43E-03	2.24E-01
		552.65	16.40	-1.70E-02	3.81E-01
+	KR-85	513.99	0.43	-1.13E+01	1.51E+01
+	SR-85	513.99	99.27	-6.95E-02	9.30E-02
+	Y-88	898.02	93.40	-1.32E-02	5.59E-02
		1836.01	99.38	-6.60E-03	5.59E-02
+	NB-93M	16.57	9.43	-6.95E+03	5.33E+03
+	NB-94	702.63	100.00	2.33E-03	6.85E-02
		871.10	100.00	7.37E-03	6.85E-02
+	NB-95	765.79	99.81	4.74E-02	1.54E-01
+	NB-95M	235.69	25.00	-1.10E+03	1.54E+02
+	ZR-95	724.18	43.70	5.62E-02	1.78E-01
		756.72	55.30	1.07E-02	1.78E-01
+	MO-99	181.06	6.20	2.17E+02	1.87E+03
		739.58	12.80	5.02E+02	1.87E+03
		778.00	4.50	4.75E+03	5.61E+03
+	RU-103	497.08	89.00	-2.35E-02	9.38E-02
+	RU-106	621.84	9.80	-2.88E-01	6.40E-01
+	AG-108M	433.93	89.90	1.23E-02	5.79E-02
		614.37	90.40	-2.35E-01	6.77E-02
		722.95	90.50	2.33E-02	7.81E-02
+	CD-109	88.03	3.72	2.01E+00	1.70E+00
+	AG-110M	657.75	93.14	2.79E-02	8.12E-02
		677.61	10.53	6.42E-02	7.06E-01
		706.67	16.46	8.27E-02	4.70E-01
		763.93	21.98	1.04E-01	3.56E-01
		884.67	71.63	-1.93E-02	9.73E-02
		1384.27	23.94	-1.64E-01	2.90E-01
+	CD-113M	263.70	0.02	3.25E+01	1.99E+02
+	SN-113	255.12	1.93	1.21E+00	9.26E-02
		391.69	64.90	4.22E-02	9.26E-02
+	TE123M	159.00	84.10	2.43E-02	6.75E-02
+	SB-124	602.71	97.87	-1.75E-02	9.00E-02
		645.85	7.26	-1.75E-01	1.19E+00
		722.78	11.10	2.76E-01	9.25E-01
		1691.02	49.00	-4.54E-03	1.77E-01
+	I-125	35.49	6.49	3.34E+00	5.51E+00
+	SB-125	176.33	6.89	6.43E-02	1.69E-01
		427.89	29.33	-4.18E-02	1.69E-01
		463.38	10.35	3.48E-01	6.11E-01
		600.56	17.80	5.28E-03	3.68E-01
		635.90	11.32	1.76E-01	5.92E-01

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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>
+	SB-126	414.70	83.30	-8.97E-02	3.87E-01	3.87E-01
		666.33	99.60	-1.44E-01		4.24E-01
		695.00	99.60	-2.54E-02		4.06E-01
		720.50	53.80	5.73E-01		7.87E-01
+	SN-126	87.57	37.00	1.93E-01	1.63E-01	1.63E-01
+	SB-127	473.00	25.00	1.14E+01	6.46E+01	6.69E+01
		685.20	35.70	2.99E+01		6.46E+01
		783.80	14.70	-7.34E+00		1.72E+02
+	I-129	29.78	57.00	-6.92E-01	1.10E+00	1.10E+00
		33.60	13.20	-1.31E+00		2.35E+00
		39.58	7.52	2.86E-01		2.09E+00
+	I-131	284.30	6.05	1.13E+00	9.52E-01	1.36E+01
		364.48	81.20	1.25E-01		9.52E-01
		636.97	7.26	-2.81E-01		1.47E+01
		722.89	1.80	1.92E+01		6.42E+01
+	TE-132	49.72	13.10	1.79E+02	6.19E+01	5.68E+02
		228.16	88.00	5.91E+01		6.19E+01
+	BA-133	81.00	33.00	3.17E-02	8.66E-02	1.22E-01
		302.84	17.80	-2.14E-01		2.90E-01
		356.01	60.00	1.51E-02		8.66E-02
+	I-133	529.87	86.30	2.70E+09	1.10E+10	1.10E+10
+	XE-133	81.00	38.00	1.99E+00	7.68E+00	7.68E+00
+	CS-134	563.23	8.38	9.45E-02	7.58E-02	6.73E-01
		569.32	15.43	-4.41E-03		3.45E-01
		604.70	97.60	2.23E-03		7.58E-02
		795.84	85.40	5.03E-02		9.79E-02
		801.93	8.73	6.95E-03		8.08E-01
+	CS-135	268.24	16.00	1.23E-01	3.37E-01	3.37E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	-8.15E-02	3.73E-01	3.52E+00
		163.89	4.61	5.51E-01		5.59E+00
		176.55	13.56	-3.31E-01		1.91E+00
		273.65	12.66	-1.05E+00		2.30E+00
		340.57	48.50	-2.95E-01		7.36E-01
		818.50	99.70	1.84E-02		3.73E-01
		1048.07	79.60	-8.10E-02		4.79E-01
		1235.34	19.70	-8.60E-01		2.91E+00
+	CS-137	661.65	85.12	-1.37E-03	8.43E-02	8.43E-02
+	LA-138	788.74	34.00	7.15E-02	1.17E-01	2.21E-01
		1435.80	66.00	4.18E-02		1.17E-01
+	CE-139	165.85	80.35	2.18E-02	6.90E-02	6.90E-02
+	BA-140	162.64	6.70	1.75E+00	1.06E+00	4.04E+00
		304.84	4.50	9.56E-01		6.22E+00
		423.70	3.20	1.16E+00		9.26E+00
		437.55	2.00	-7.06E+00		1.47E+01
		537.32	25.00	-3.70E-01		1.06E+00
+	LA-140	328.77	20.50	1.30E+00	4.51E-01	1.65E+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	2.62E-01	4.51E-01	6.96E-01	
	815.85	23.50	-4.45E-01		1.59E+00	
	1596.49	95.49	0.00E+00		4.51E-01	
+ CE-141	145.44	48.40	1.33E-01	2.04E-01	2.04E-01	
+ CE-143	57.36	11.80	-3.01E+06	2.06E+06	5.31E+06	
	293.26	42.00	-1.23E+06		2.06E+06	
	664.55	5.20	-2.33E+06		1.66E+07	
+ CE-144	133.54	10.80	-1.10E-01	4.48E-01	4.48E-01	
+ PM-144	476.78	42.00	-3.29E-02	7.11E-02	1.24E-01	
	618.01	98.60	1.84E-02		7.11E-02	
	696.49	99.49	1.73E-02		7.25E-02	
+ PM-145	36.85	21.70	-2.36E-01	4.82E-01	9.39E-01	
	37.36	39.70	-1.21E-01		4.82E-01	
	42.30	15.10	-5.23E-02		8.19E-01	
	72.40	2.31	2.36E-01		2.12E+00	
+ PM-146	453.90	39.94	2.68E-02	1.27E-01	1.27E-01	
	735.90	14.01	-3.16E-01		4.61E-01	
	747.13	13.10	-1.17E-01		4.72E-01	
+ ND-147	91.11	28.90	-4.18E-01	1.65E+00	1.65E+00	
	531.02	13.10	1.83E+00		3.14E+00	
+ PM-149	285.90	3.10	2.33E+04	4.18E+04	4.18E+04	
+ EU-152	121.78	20.50	5.53E-02	2.14E-01	2.14E-01	
	244.69	5.40	-2.57E+00		9.11E-01	
	344.27	19.13	1.13E-01		2.62E-01	
	778.89	9.20	2.13E-01		7.57E-01	
	964.01	10.40	-2.53E+00		9.01E-01	
	1085.78	7.22	-3.12E-01		1.04E+00	
	1112.02	9.60	4.27E-02		8.27E-01	
	1407.95	14.94	1.43E-01		4.94E-01	
	97.43	31.30	5.23E-02		1.55E-01	1.55E-01
	103.18	22.20	-3.87E-02		2.17E-01	
+ EU-154	123.07	40.50	7.30E-02	1.09E-01	1.09E-01	
	723.30	19.70	1.08E-01		3.61E-01	
	873.19	11.50	-3.82E-01		5.46E-01	
	996.32	10.30	1.47E-01		7.41E-01	
	1004.76	17.90	3.95E-03		3.63E-01	
+ EU-155	1274.45	35.50	4.87E-02	1.90E-01	2.03E-01	
	86.50	30.90	-1.77E-01		1.90E-01	
	105.30	20.70	8.79E-02		2.25E-01	
+ EU-156	811.77	10.40	-1.39E+00	2.66E+00	2.66E+00	
	1153.47	7.20	-4.35E-02		5.60E+00	
	1230.71	8.90	-1.22E+00		4.18E+00	
+ HO-166M	184.41	72.60	2.03E-02	8.62E-02	8.62E-02	
	280.45	29.60	8.53E-02		1.81E-01	
	410.94	11.10	4.71E-01		5.34E-01	
	711.69	54.10	8.02E-02		1.32E-01	
+ TM-171	66.72	0.14	-9.14E+00	3.41E+01	3.41E+01	
+ HF-172	81.75	4.52	-7.43E-01	3.91E-01	9.01E-01	
	125.81	11.30	5.92E-02		3.91E-01	

Analysis Report for 1510088-19
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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	5.13E-01	3.57E+00	6.97E+00
		810.06	16.63	7.59E-01		1.13E+01
		912.12	15.25	7.00E+01		2.69E+01
		1093.66	62.50	-1.24E+00		3.57E+00
+	LU-173	100.72	5.24	2.38E-01	2.81E-01	8.74E-01
		272.11	21.20	1.02E-01		2.81E-01
+	HF-175	343.40	84.00	1.32E-02	8.44E-02	8.44E-02
+	LU-176	88.34	13.30	5.36E-01	4.99E-02	4.52E-01
		201.83	86.00	-3.07E-02		5.81E-02
		306.78	94.00	7.98E-03		4.99E-02
+	TA-182	67.75	41.20	-8.13E-02	1.33E-01	1.33E-01
		1121.30	34.90	4.87E-01		4.04E-01
		1189.05	16.23	4.35E-03		6.67E-01
		1221.41	26.98	2.43E-01		4.65E-01
		1231.02	11.44	-6.13E-01		8.84E-01
+	IR-192	308.46	29.68	1.63E-02	1.37E-01	2.17E-01
		468.07	48.10	-6.84E-03		1.37E-01
+	HG-203	279.19	77.30	4.26E-02	1.16E-01	1.16E-01
+	BI-207	569.67	97.72	-6.78E-04	5.30E-02	5.30E-02
		1063.62	74.90	7.73E-03		1.12E-01
+	TL-208	583.14	* 30.22	1.23E+00	1.47E-01	2.96E-01
		860.37	* 4.48	2.08E+00		2.29E+00
		2614.66	* 35.85	1.02E+00		1.47E-01
+	BI-210M	262.00	45.00	7.90E-03	1.04E-01	1.04E-01
		300.00	23.00	8.18E-02		2.45E-01
+	PB-210	46.50	* 4.25	1.98E+00	3.34E+00	3.34E+00
+	PB-211	404.84	2.90	7.98E-01	1.84E+00	1.84E+00
		831.96	2.90	1.09E+00		2.37E+00
+	BI-212	727.17	* 11.80	4.18E-01	8.58E-01	8.58E-01
		1620.62	* 2.75	1.42E+00		2.23E+00
+	PB-212	238.63	* 44.60	1.29E+00	2.55E-01	2.55E-01
		300.09	* 3.41	1.53E+00		3.28E+00
+	BI-214	609.31	* 46.30	9.94E-01	1.66E-01	1.66E-01
		1120.29	* 15.10	1.12E+00		8.19E-01
		1764.49	* 15.80	1.37E+00		5.89E-01
		2204.22	* 4.98	9.17E-01		1.41E+00
+	PB-214	295.21	* 19.19	1.18E+00	1.92E-01	5.81E-01
		351.92	* 37.19	1.07E+00		1.92E-01
+	RN-219	401.80	6.50	3.77E-02	8.26E-01	8.26E-01
+	RA-223	323.87	3.88	-4.72E-02	1.32E+00	1.32E+00
+	RA-224	240.98	3.95	1.03E+01	2.73E+00	2.73E+00
+	RA-225	40.00	31.00	3.04E-01	2.22E+00	2.22E+00
+	RA-226	186.21	* 3.28	3.74E+00	2.57E+00	2.57E+00
+	TH-227	50.10	8.40	2.77E-01	6.65E-01	8.82E-01
		236.00	11.50	-4.73E+00		6.65E-01
		256.20	6.30	-3.53E-01		7.74E-01
+	AC-228	338.32	* 11.40	1.76E+00	5.73E-01	6.13E-01
		911.07	* 27.70	1.43E+00		5.73E-01

Analysis Report for 1510088-19
CP5008S14-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.58E+00	5.73E-01	9.10E-01
+	TH-230	48.44		16.90	-3.87E-01	4.92E-01	4.92E-01
		62.85		4.60	1.88E+00		1.30E+00
		67.67		0.37	-7.45E+00		1.21E+01
+	PA-231	283.67		1.60	2.61E-01	2.23E+00	3.13E+00
		302.67		2.30	-1.64E+00		2.23E+00
+	TH-231	25.64		14.70	-9.51E-01	6.56E-01	1.40E+01
		84.21		6.40	4.59E-01		6.56E-01
+	PA-233	311.98		38.60	-1.17E-01	2.78E-01	2.78E-01
+	PA-234	131.20		20.40	7.60E-02	2.26E-01	2.26E-01
		733.99		8.80	-1.75E-01		7.46E-01
		946.00		12.00	1.17E-01		6.27E-01
+	PA-234M	1001.03		0.92	5.14E+00	8.05E+00	8.05E+00
+	TH-234	63.29	*	3.80	2.49E+00	2.73E+00	2.73E+00
+	U-235	143.76		10.50	-1.25E-01	4.59E-01	4.59E-01
		163.35		4.70	4.33E-01		9.97E-01
		205.31		4.70	3.75E-01		1.09E+00
+	NP-237	86.50		12.60	-4.29E-01	4.61E-01	4.61E-01
+	NP-239	106.10		22.70	1.54E+03	2.85E+03	2.85E+03
		228.18		10.70	6.84E+03		7.17E+03
		277.60		14.10	2.41E+03		5.50E+03
+	AM-241	59.54		35.90	4.53E-02	1.48E-01	1.48E-01
+	AM-243	74.67		66.00	-1.84E-01	9.60E-02	9.60E-02
+	CM-243	209.75		3.29	1.18E-01	3.99E-01	1.70E+00
		228.14		10.60	4.98E-01		5.22E-01
		277.60		14.00	1.75E-01		3.99E-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

1048A

Analysis Report for 1510088-19
CP5008S14-15

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	7.14E-01	7.14E-01	-1.90E-01	3.34E-01
NA-22	1274.54	99.94	7.34E-02	7.34E-02	1.76E-02	3.32E-02
NA-24	1368.53	99.99	2.94E+14	9.47E+13	9.00E+13	1.32E+14
	2754.09	99.86	9.47E+13		-2.14E+13	2.99E+13
AL-26	1808.65	99.76	5.76E-02	5.76E-02	1.23E-02	2.45E-02
+ K-40	1460.81	* 10.67	6.28E-01	6.28E-01	1.99E+01	2.78E-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	4.75E-02	4.75E-02	-2.91E-02	2.30E-02
	78.34	96.00	7.11E-02		2.59E-01	3.49E-02
SC-46	889.25	99.98	8.19E-02	8.19E-02	-7.72E-02	3.76E-02
	1120.51	99.99	1.48E-01		1.41E-01	6.99E-02
V-48	983.52	99.98	2.95E-01	2.95E-01	-2.20E-02	1.36E-01
	1312.10	97.50	3.11E-01		6.16E-02	1.41E-01
CR-51	320.08	9.83	1.10E+00	1.10E+00	-4.10E-02	5.20E-01
MN-54	834.83	99.97	7.05E-02	7.05E-02	-4.69E-02	3.26E-02
CO-56	846.75	99.96	9.51E-02	9.51E-02	-1.62E-02	4.43E-02
	1037.75	14.03	6.03E-01		-1.84E-01	2.74E-01
	1238.25	67.00	2.23E-01		2.13E-01	1.05E-01
	1771.40	15.51	4.48E-01		-9.42E-02	1.88E-01
	2598.48	16.90	1.88E-01		2.55E-02	5.94E-02
CO-57	122.06	85.51	5.54E-02	5.54E-02	1.44E-02	2.69E-02
	136.48	10.60	4.88E-01		9.77E-02	2.37E-01
CO-58	810.76	99.40	9.09E-02	9.09E-02	6.11E-03	4.21E-02
FE-59	1099.22	56.50	2.59E-01	2.59E-01	1.28E-01	1.20E-01
	1291.56	43.20	2.73E-01		-4.07E-02	1.23E-01
CO-60	1173.22	100.00	8.18E-02	7.27E-02	2.29E-02	3.76E-02
	1332.49	100.00	7.27E-02		-9.40E-03	3.27E-02
ZN-65	1115.52	50.75	1.73E-01	1.73E-01	1.40E-02	7.98E-02
GA-67	93.31	35.70	1.66E+02	1.66E+02	1.83E+02	8.13E+01
	208.95	2.24	2.51E+03		3.17E+03	1.21E+03
	300.22	16.00	3.46E+02		1.16E+02	1.66E+02
SE-75	121.11	16.70	3.13E-01	9.04E-02	5.64E-03	1.52E-01
	136.00	59.20	9.75E-02		8.13E-02	4.73E-02
	264.65	59.80	9.04E-02		-2.22E-02	4.31E-02
	279.53	25.20	2.57E-01		1.21E-01	1.23E-01
	400.65	11.40	5.42E-01		-2.10E-01	2.56E-01
RB-82	776.52	13.00	1.25E+00	1.25E+00	1.69E-01	5.84E-01
RB-83	520.41	46.00	1.36E-01	1.36E-01	-5.47E-02	6.34E-02
	529.64	30.30	2.24E-01		-8.43E-03	1.05E-01
	552.65	16.40	3.81E-01		-1.70E-02	1.76E-01
KR-85	513.99	0.43	1.51E+01	1.51E+01	-1.13E+01	7.18E+00
SR-85	513.99	99.27	9.30E-02	9.30E-02	-6.95E-02	4.41E-02
Y-88	898.02	93.40	9.12E-02	5.59E-02	-1.32E-02	4.22E-02
	1836.01	99.38	5.59E-02		-6.60E-03	2.26E-02
NB-93M	16.57	9.43	5.33E+03	5.33E+03	-6.95E+03	2.59E+03
NB-94	702.63	100.00	6.91E-02	6.85E-02	2.33E-03	3.24E-02
	871.10	100.00	6.85E-02		7.37E-03	3.17E-02
NB-95	765.79	99.81	1.54E-01	1.54E-01	4.74E-02	7.28E-02
NB-95M	235.69	25.00	1.54E+02	1.54E+02	-1.10E+03	7.50E+01
ZR-95	724.18	43.70	2.61E-01	1.78E-01	5.62E-02	1.23E-01
	756.72	55.30	1.78E-01		1.07E-02	8.30E-02

Analysis Report for 1510088-19
CP5008S14-15

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	2.79E+03	1.87E+03	2.17E+02	1.35E+03
	739.58	12.80	1.87E+03		5.02E+02	8.74E+02
	778.00	4.50	5.61E+03		4.75E+03	2.62E+03
RU-103	497.08	89.00	9.38E-02	9.38E-02	-2.35E-02	4.36E-02
RU-106	621.84	9.80	6.40E-01	6.40E-01	-2.88E-01	2.99E-01
AG-108M	433.93	89.90	5.79E-02	5.79E-02	1.23E-02	2.73E-02
	614.37	90.40	6.77E-02		-2.35E-01	3.17E-02
	722.95	90.50	7.81E-02		2.33E-02	3.67E-02
CD-109	88.03	3.72	1.70E+00	1.70E+00	2.01E+00	8.31E-01
AG-110M	657.75	93.14	8.12E-02	8.12E-02	2.79E-02	3.82E-02
	677.61	10.53	7.06E-01		6.42E-02	3.32E-01
	706.67	16.46	4.70E-01		8.27E-02	2.21E-01
	763.93	21.98	3.56E-01		1.04E-01	1.67E-01
	884.67	71.63	9.73E-02		-1.93E-02	4.47E-02
	1384.27	23.94	2.90E-01		-1.64E-01	1.28E-01
CD-113M	263.70	0.02	1.99E+02	1.99E+02	3.25E+01	9.50E+01
SN-113	255.12	1.93	3.19E+00	9.26E-02	1.21E+00	1.53E+00
TE123M	391.69	64.90	9.26E-02	6.75E-02	4.22E-02	4.37E-02
	159.00	84.10	6.75E-02		2.43E-02	3.26E-02
	602.71	97.87	9.00E-02		9.00E-02	-1.75E-02	4.22E-02
SB-124	645.85	7.26	1.19E+00	9.00E-02	-1.75E-01	5.55E-01
	722.78	11.10	9.25E-01		2.76E-01	4.34E-01
	1691.02	49.00	1.77E-01		-4.54E-03	7.62E-02
	35.49	6.49	5.51E+00		5.51E+00	3.34E+00	2.67E+00
I-125	176.33	6.89	7.10E-01	1.69E-01	6.43E-02	3.43E-01
	427.89	29.33	1.69E-01		-4.18E-02	7.93E-02
	463.38	10.35	6.11E-01		3.48E-01	2.90E-01
	600.56	17.80	3.68E-01		5.28E-03	1.73E-01
	635.90	11.32	5.92E-01		1.76E-01	2.78E-01
	414.70	83.30	3.87E-01		3.87E-01	-8.97E-02	1.83E-01
SB-126	666.33	99.60	4.24E-01	3.87E-01	-1.44E-01	2.00E-01
	695.00	99.60	4.06E-01		-2.54E-02	1.90E-01
	720.50	53.80	7.87E-01		5.73E-01	3.69E-01
	87.57	37.00	1.63E-01		1.63E-01	1.93E-01	7.96E-02
SB-127	473.00	25.00	6.69E+01	6.46E+01	1.14E+01	3.13E+01
	685.20	35.70	6.46E+01		2.99E+01	3.03E+01
	783.80	14.70	1.72E+02		-7.34E+00	8.07E+01
I-129	29.78	57.00	1.10E+00	1.10E+00	-6.92E-01	5.31E-01
	33.60	13.20	2.35E+00		-1.31E+00	1.14E+00
	39.58	7.52	2.09E+00		2.86E-01	1.01E+00
I-131	284.30	6.05	1.36E+01	9.52E-01	1.13E+00	6.49E+00
	364.48	81.20	9.52E-01		1.25E-01	4.49E-01
	636.97	7.26	1.47E+01		-2.81E-01	6.90E+00
	722.89	1.80	6.42E+01		1.92E+01	3.01E+01
TE-132	49.72	13.10	5.68E+02	6.19E+01	1.79E+02	2.76E+02
	228.16	88.00	6.19E+01		5.91E+01	2.99E+01
BA-133	81.00	33.00	1.22E-01	8.66E-02	3.17E-02	5.93E-02
	302.84	17.80	2.90E-01		-2.14E-01	1.38E-01
	356.01	60.00	8.66E-02		1.51E-02	4.11E-02
I-133	529.87	86.30	1.10E+10	1.10E+10	2.70E+09	5.13E+09
XE-133	81.00	38.00	7.68E+00	7.68E+00	1.99E+00	3.72E+00
CS-134	563.23	8.38	6.73E-01	7.58E-02	9.45E-02	3.14E-01
	569.32	15.43	3.45E-01		-4.41E-03	1.60E-01

Analysis Report for 1510088-19

CP5008S14-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	604.70	97.60	7.58E-02	7.58E-02	2.23E-03	3.59E-02
	795.84	85.40	9.79E-02		5.03E-02	4.61E-02
	801.93	8.73	8.08E-01		6.95E-03	3.76E-01
CS-135	268.24	16.00	3.37E-01	3.37E-01	1.23E-01	1.62E-01
	1131.51	22.50	1.00E+26		1.00E+26	1.00E+20
@ I-135	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	3.52E+00	3.73E-01	-8.15E-02	1.70E+00
	163.89	4.61	5.59E+00		5.51E-01	2.70E+00
	176.55	13.56	1.91E+00		-3.31E-01	9.24E-01
	273.65	12.66	2.30E+00		-1.05E+00	1.10E+00
	340.57	48.50	7.36E-01		-2.95E-01	3.54E-01
	818.50	99.70	3.73E-01		1.84E-02	1.73E-01
	1048.07	79.60	4.79E-01		-8.10E-02	2.19E-01
	1235.34	19.70	2.91E+00		-8.60E-01	1.36E+00
CS-137	661.65	85.12	8.43E-02	8.43E-02	-1.37E-03	3.98E-02
LA-138	788.74	34.00	2.21E-01	1.17E-01	7.15E-02	1.04E-01
	1435.80	66.00	1.17E-01		4.18E-02	5.26E-02
CE-139	165.85	80.35	6.90E-02	6.90E-02	2.18E-02	3.33E-02
BA-140	162.64	6.70	4.04E+00	1.06E+00	1.75E+00	1.95E+00
	304.84	4.50	6.22E+00		9.56E-01	2.96E+00
	423.70	3.20	9.26E+00		1.16E+00	4.36E+00
	437.55	2.00	1.47E+01		-7.06E+00	6.90E+00
	537.32	25.00	1.06E+00		-3.70E-01	4.91E-01
LA-140	328.77	20.50	1.65E+00	4.51E-01	1.30E+00	7.88E-01
	487.03	45.50	6.96E-01		2.62E-01	3.27E-01
	815.85	23.50	1.59E+00		-4.45E-01	7.35E-01
	1596.49	95.49	4.51E-01		0.00E+00	2.01E-01
CE-141	145.44	48.40	2.04E-01	2.04E-01	1.33E-01	9.93E-02
CE-143	57.36	11.80	5.31E+06	2.06E+06	-3.01E+06	2.56E+06
	293.26	42.00	2.06E+06		-1.23E+06	9.94E+05
	664.55	5.20	1.66E+07		-2.33E+06	7.82E+06
CE-144	133.54	10.80	4.48E-01	4.48E-01	-1.10E-01	2.17E-01
PM-144	476.78	42.00	1.24E-01	7.11E-02	-3.29E-02	5.78E-02
	618.01	98.60	7.11E-02		1.84E-02	3.35E-02
	696.49	99.49	7.25E-02		1.73E-02	3.40E-02
PM-145	36.85	21.70	9.39E-01	4.82E-01	-2.36E-01	4.56E-01
	37.36	39.70	4.82E-01		-1.21E-01	2.34E-01
	42.30	15.10	8.19E-01		-5.23E-02	3.98E-01
	72.40	2.31	2.12E+00		2.36E-01	1.03E+00
PM-146	453.90	39.94	1.27E-01	1.27E-01	2.68E-02	5.97E-02
	735.90	14.01	4.61E-01		-3.16E-01	2.15E-01
	747.13	13.10	4.72E-01		-1.17E-01	2.19E-01
ND-147	91.11	28.90	1.65E+00	1.65E+00	-4.18E-01	8.10E-01
	531.02	13.10	3.14E+00		1.83E+00	1.47E+00
PM-149	285.90	3.10	4.18E+04	4.18E+04	2.33E+04	2.00E+04
EU-152	121.78	20.50	2.14E-01	2.14E-01	5.53E-02	1.03E-01
	244.69	5.40	9.11E-01		-2.57E+00	4.37E-01
	344.27	19.13	2.62E-01		1.13E-01	1.24E-01
	778.89	9.20	7.57E-01		2.13E-01	3.53E-01
	964.01	10.40	9.01E-01		-2.53E+00	4.24E-01
	1085.78	7.22	1.04E+00		-3.12E-01	4.76E-01
	1112.02	9.60	8.27E-01		4.27E-02	3.81E-01

Analysis Report for 1510088-19

CP5008S14-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
EU-152	1407.95	14.94	4.94E-01	2.14E-01	1.43E-01	2.22E-01	
GD-153	97.43	31.30	1.55E-01	1.55E-01	5.23E-02	7.51E-02	
	103.18	22.20	2.17E-01		-3.87E-02	1.05E-01	
EU-154	123.07	40.50	1.09E-01	1.09E-01	7.30E-02	5.31E-02	
	723.30	19.70	3.61E-01		1.08E-01	1.70E-01	
	873.19	11.50	5.46E-01		-3.82E-01	2.51E-01	
	996.32	10.30	7.41E-01		1.47E-01	3.43E-01	
	1004.76	17.90	3.63E-01		3.95E-03	1.65E-01	
	1274.45	35.50	2.03E-01		4.87E-02	9.19E-02	
EU-155	86.50	30.90	1.90E-01	1.90E-01	-1.77E-01	9.32E-02	
	105.30	20.70	2.25E-01		8.79E-02	1.10E-01	
EU-156	811.77	10.40	2.66E+00	2.66E+00	-1.39E+00	1.23E+00	
	1153.47	7.20	5.60E+00		-4.35E-02	2.61E+00	
	1230.71	8.90	4.18E+00		-1.22E+00	1.93E+00	
HO-166M	184.41	72.60	8.62E-02	8.62E-02	2.03E-02	4.19E-02	
	280.45	29.60	1.81E-01		8.53E-02	8.70E-02	
	410.94	11.10	5.34E-01		4.71E-01	2.54E-01	
	711.69	54.10	1.32E-01		8.02E-02	6.21E-02	
TM-171	66.72	0.14	3.41E+01	3.41E+01	-9.14E+00	1.65E+01	
HF-172	81.75	4.52	9.01E-01	3.91E-01	-7.43E-01	4.36E-01	
	125.81	11.30	3.91E-01		5.92E-02	1.90E-01	
LU-172	181.53	20.60	6.97E+00	3.57E+00	5.13E-01	3.37E+00	
	810.06	16.63	1.13E+01		7.59E-01	5.24E+00	
	912.12	15.25	2.69E+01		7.00E+01	1.30E+01	
	1093.66	62.50	3.57E+00		-1.24E+00	1.64E+00	
LU-173	100.72	5.24	8.74E-01	2.81E-01	2.38E-01	4.24E-01	
	272.11	21.20	2.81E-01		1.02E-01	1.35E-01	
HF-175	343.40	84.00	8.44E-02	8.44E-02	1.32E-02	4.01E-02	
LU-176	88.34	13.30	4.52E-01	4.99E-02	5.36E-01	2.21E-01	
	201.83	86.00	5.81E-02		-3.07E-02	2.80E-02	
	306.78	94.00	4.99E-02		7.98E-03	2.37E-02	
TA-182	67.75	41.20	1.33E-01	1.33E-01	-8.13E-02	6.42E-02	
	1121.30	34.90	4.04E-01		4.87E-01	1.91E-01	
	1189.05	16.23	6.67E-01		4.35E-03	3.09E-01	
	1221.41	26.98	4.65E-01		2.43E-01	2.18E-01	
	1231.02	11.44	8.84E-01		-6.13E-01	4.06E-01	
IR-192	308.46	29.68	2.17E-01	1.37E-01	1.63E-02	1.03E-01	
	468.07	48.10	1.37E-01		-6.84E-03	6.39E-02	
HG-203	279.19	77.30	1.16E-01	1.16E-01	4.26E-02	5.55E-02	
BI-207	569.67	97.72	5.30E-02	5.30E-02	-6.78E-04	2.46E-02	
	1063.62	74.90	1.12E-01		7.73E-03	5.18E-02	
+ TL-208	583.14	*	30.22	2.96E-01	1.47E-01	1.23E+00	1.42E-01
	860.37	*	4.48	2.29E+00		2.08E+00	1.09E+00
	2614.66	*	35.85	1.47E-01		1.02E+00	6.11E-02
BI-210M	262.00		45.00	1.04E-01	1.04E-01	7.90E-03	4.96E-02
	300.00		23.00	2.45E-01		8.18E-02	1.18E-01
+ PB-210	46.50	*	4.25	3.34E+00	3.34E+00	1.98E+00	1.64E+00
PB-211	404.84		2.90	1.84E+00	1.84E+00	7.98E-01	8.73E-01
	831.96		2.90	2.37E+00		1.09E+00	1.10E+00
+ BI-212	727.17	*	11.80	8.58E-01	8.58E-01	4.18E-01	4.10E-01
	1620.62	*	2.75	2.23E+00		1.42E+00	9.69E-01
+ PB-212	238.63	*	44.60	2.55E-01	2.55E-01	1.29E+00	1.25E-01
	300.09	*	3.41	3.28E+00		1.53E+00	1.60E+00

Analysis Report for 1510088-19
CP5008S14-15

	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	1.66E-01	1.66E-01	9.94E-01	7.90E-02
		1120.29 *		15.10	8.19E-01		1.12E+00	3.89E-01
		1764.49 *		15.80	5.89E-01		1.37E+00	2.68E-01
		2204.22 *		4.98	1.41E+00		9.17E-01	6.12E-01
+	PB-214	295.21 *		19.19	5.81E-01	1.92E-01	1.18E+00	2.85E-01
		351.92 *		37.19	1.92E-01		1.07E+00	9.24E-02
	RN-219	401.80		6.50	8.26E-01	8.26E-01	3.77E-02	3.91E-01
	RA-223	323.87		3.88	1.32E+00	1.32E+00	-4.72E-02	6.29E-01
	RA-224	240.98		3.95	2.73E+00	2.73E+00	1.03E+01	1.34E+00
	RA-225	40.00		31.00	2.22E+00	2.22E+00	3.04E-01	1.08E+00
+	RA-226	186.21 *		3.28	2.57E+00	2.57E+00	3.74E+00	1.26E+00
	TH-227	50.10		8.40	8.82E-01	6.65E-01	2.77E-01	4.28E-01
		236.00		11.50	6.65E-01		-4.73E+00	3.24E-01
		256.20		6.30	7.74E-01		-3.53E-01	3.71E-01
+	AC-228	338.32 *		11.40	6.13E-01	5.73E-01	1.76E+00	2.96E-01
		911.07 *		27.70	5.73E-01		1.43E+00	2.77E-01
		969.11 *		16.60	9.10E-01		1.58E+00	4.39E-01
	TH-230	48.44		16.90	4.92E-01	4.92E-01	-3.87E-01	2.39E-01
		62.85		4.60	1.30E+00		1.88E+00	6.33E-01
		67.67		0.37	1.21E+01		-7.45E+00	5.88E+00
	PA-231	283.67		1.60	3.13E+00	2.23E+00	2.61E-01	1.50E+00
		302.67		2.30	2.23E+00		-1.64E+00	1.06E+00
	TH-231	25.64		14.70	1.40E+01	6.56E-01	-9.51E-01	6.78E+00
		84.21		6.40	6.56E-01		4.59E-01	3.18E-01
	PA-233	311.98		38.60	2.78E-01	2.78E-01	-1.17E-01	1.32E-01
	PA-234	131.20		20.40	2.26E-01	2.26E-01	7.60E-02	1.10E-01
		733.99		8.80	7.46E-01		-1.75E-01	3.48E-01
		946.00		12.00	6.27E-01		1.17E-01	2.91E-01
	PA-234M	1001.03		0.92	8.05E+00	8.05E+00	5.14E+00	3.71E+00
+	TH-234	63.29 *		3.80	2.73E+00	2.73E+00	2.49E+00	1.35E+00
	U-235	143.76		10.50	4.59E-01	4.59E-01	-1.25E-01	2.22E-01
		163.35		4.70	9.97E-01		4.33E-01	4.82E-01
		205.31		4.70	1.09E+00		3.75E-01	5.26E-01
	NP-237	86.50		12.60	4.61E-01	4.61E-01	-4.29E-01	2.26E-01
	NP-239	106.10		22.70	2.85E+03	2.85E+03	1.54E+03	1.39E+03
		228.18		10.70	7.17E+03		6.84E+03	3.46E+03
		277.60		14.10	5.50E+03		2.41E+03	2.64E+03
	AM-241	59.54		35.90	1.48E-01	1.48E-01	4.53E-02	7.18E-02
	AM-243	74.67		66.00	9.60E-02	9.60E-02	-1.84E-01	4.70E-02
	CM-243	209.75		3.29	1.70E+00	3.99E-01	1.18E-01	8.22E-01
		228.14		10.60	5.22E-01		4.98E-01	2.52E-01
		277.60		14.00	3.99E-01		1.75E-01	1.92E-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

Analysis Report for 1510088-19
CP5008S14-15

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: CP5008S14-15

Elapsed Live time: 3600

Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	160
9:	547	1151	1041	446	586	1662	301	132
17:	159	129	124	125	117	131	113	112
25:	116	106	102	109	109	97	95	122
33:	112	93	117	124	119	106	127	131
41:	125	132	128	130	115	160	239	138
49:	108	142	111	97	93	126	78	98
57:	94	83	120	103	123	118	174	214
65:	113	136	118	85	124	122	129	139
73:	161	149	372	238	441	367	113	103
81:	116	100	92	136	128	103	194	174
89:	101	182	114	141	261	160	86	86
97:	61	71	96	84	64	71	73	77
105:	102	103	68	81	77	67	82	73
113:	85	83	89	95	75	71	62	61
121:	77	70	69	65	65	55	68	67
129:	94	82	66	59	58	65	74	75
137:	83	76	60	73	72	62	58	96
145:	79	61	79	63	69	65	79	44
153:	59	71	70	65	73	64	59	53
161:	52	48	59	72	58	49	58	49
169:	48	57	45	44	60	58	59	58
177:	51	47	49	54	56	53	66	62
185:	77	190	117	56	55	49	56	49
193:	56	52	39	49	60	65	51	59
201:	49	49	45	47	62	48	55	44
209:	102	72	42	37	60	54	36	42
217:	50	40	41	45	38	52	42	63
225:	43	55	50	47	53	54	33	50
233:	49	38	51	53	43	298	557	116
241:	87	136	55	28	38	37	25	41
249:	35	41	34	32	47	41	23	35
257:	39	32	35	39	30	30	22	30
265:	26	34	24	30	42	66	42	32
273:	38	38	36	39	43	42	37	40
281:	33	31	23	29	32	41	28	25
289:	25	24	39	24	19	42	167	131
297:	36	30	27	59	48	20	30	30
305:	21	28	21	20	31	24	26	26
313:	25	16	26	37	17	26	23	20
321:	25	25	29	25	34	22	29	57
329:	36	16	35	26	27	24	22	20
337:	39	112	100	27	29	36	13	26
345:	21	21	16	23	22	20	99	293
353:	81	26	18	19	23	34	25	22
361:	23	24	19	17	21	15	15	22

369: 20 31 21 25 25 19 20 18

Sample Title: CP5008S14-15

377:	25	22	26	15	26	15	29	24
385:	25	21	22	21	14	27	9	22
393:	20	17	15	22	23	23	14	22
401:	28	17	18	24	26	22	17	16
409:	32	38	14	22	24	14	18	15
417:	29	28	28	16	21	14	22	15
425:	26	14	15	17	16	18	18	15
433:	18	27	15	16	14	16	24	25
441:	16	22	20	19	17	13	18	15
449:	20	18	13	19	12	20	15	13
457:	14	12	19	17	12	21	39	28
465:	19	17	18	11	11	13	9	16
473:	17	15	13	14	12	15	15	21
481:	11	14	16	13	17	22	15	17
489:	14	13	13	22	10	13	14	12
497:	10	11	13	16	15	9	11	18
505:	17	13	18	16	16	59	87	52
513:	14	20	16	12	15	16	20	6
521:	9	8	13	18	16	13	12	13
529:	16	14	13	12	15	7	7	13
537:	8	15	7	15	12	10	15	11
545:	11	18	14	12	11	11	4	14
553:	15	9	9	12	7	5	15	15
561:	15	15	15	14	9	11	11	9
569:	10	10	19	17	10	9	14	13
577:	11	11	9	12	12	45	151	97
585:	15	16	12	9	11	11	12	14
593:	10	11	12	13	17	16	11	11
601:	7	12	12	10	14	10	13	37
609:	206	120	7	9	11	8	15	12
617:	13	16	11	13	7	10	13	8
625:	6	10	12	9	14	13	8	10
633:	10	15	6	11	13	9	18	9
641:	12	14	14	11	8	7	13	7
649:	5	6	11	15	7	9	9	11
657:	9	17	20	7	14	13	11	11
665:	15	16	6	11	15	14	16	15
673:	9	10	14	9	13	9	18	7
681:	11	9	16	13	5	11	15	8
689:	5	10	9	8	18	11	4	8
697:	11	12	12	11	9	15	8	8
705:	15	9	12	13	16	9	9	15
713:	8	12	5	7	14	8	11	10
721:	11	15	6	7	12	17	34	24
729:	10	10	12	12	9	4	12	5
737:	11	7	13	15	11	7	10	7
745:	5	8	6	7	11	10	7	12
753:	7	6	12	16	11	10	7	12
761:	7	9	16	14	5	10	12	21
769:	17	13	11	16	8	5	10	12
777:	8	10	10	11	10	5	3	13
785:	18	11	15	9	11	7	6	10
793:	9	17	30	11	7	8	7	9

801: 11 9 11 8 6 9 10 7

Sample Title: CP5008S14-15

Channel	1	2	3	4	5	6	7	8
809:	6	6	13	7	6	5	10	10
817:	7	7	7	7	9	10	9	4
825:	11	7	8	3	6	12	8	6
833:	8	9	9	9	3	8	13	10
841:	15	7	7	8	10	7	5	14
849:	10	10	7	6	12	5	4	8
857:	12	4	15	24	19	15	8	10
865:	9	8	8	12	11	7	5	9
873:	4	5	7	6	8	8	6	9
881:	5	4	5	9	9	3	9	6
889:	8	4	7	5	15	8	9	9
897:	6	6	5	10	6	5	4	14
905:	8	9	7	5	10	39	106	52
913:	13	8	6	5	7	6	11	8
921:	4	3	7	8	4	6	8	9
929:	10	2	9	10	12	9	9	3
937:	8	9	5	7	11	3	10	7
945:	6	3	8	12	10	6	8	9
953:	6	7	4	8	3	8	12	12
961:	8	5	8	22	23	9	11	45
969:	51	30	8	8	9	8	3	2
977:	7	5	5	9	9	5	8	7
985:	9	1	9	8	10	10	4	3
993:	9	5	12	6	4	6	10	8
1001:	9	6	3	7	5	1	5	2
1009:	4	6	9	5	7	6	6	11
1017:	8	5	7	7	4	3	7	4
1025:	2	7	5	8	7	5	5	4
1033:	7	4	2	2	4	11	6	4
1041:	6	7	8	4	6	7	7	13
1049:	2	4	0	7	6	10	10	5
1057:	7	4	11	8	5	8	6	11
1065:	12	7	7	9	4	8	3	8
1073:	5	4	11	5	5	5	12	13
1081:	5	4	7	5	12	6	2	7
1089:	7	6	8	7	9	2	7	8
1097:	12	7	9	9	7	9	6	8
1105:	6	5	4	10	3	8	7	8
1113:	6	9	6	8	4	7	24	32
1121:	25	4	4	9	7	6	2	4
1129:	3	11	5	3	8	9	4	2
1137:	6	6	5	6	6	8	8	7
1145:	8	9	7	9	9	5	6	7
1153:	8	9	16	10	10	7	5	9
1161:	10	5	8	1	10	7	5	9
1169:	8	4	3	6	12	6	10	4
1177:	1	3	7	6	5	10	5	5
1185:	3	8	6	8	10	5	10	7
1193:	14	7	5	10	8	6	9	6
1201:	9	10	4	8	6	10	7	10
1209:	5	8	7	8	6	12	7	8
1217:	4	4	9	11	10	12	15	10
1225:	7	9	8	6	4	4	13	5

1233: 6 6 10 11 8 25 12 11

Sample Title: CP5008S14-15

Channel	1	2	3	4	5	6	7	8
1241:	6	5	6	3	8	10	8	6
1249:	7	5	4	9	12	5	9	7
1257:	9	4	4	3	7	5	4	4
1265:	1	5	8	8	0	6	6	5
1273:	6	5	1	3	4	1	6	5
1281:	7	4	6	7	3	7	7	2
1289:	7	3	3	5	2	7	7	9
1297:	7	9	3	4	5	1	5	6
1305:	2	3	7	4	8	2	2	7
1313:	8	2	2	2	3	5	4	5
1321:	5	8	2	7	7	4	6	0
1329:	2	4	6	9	2	3	2	5
1337:	6	6	1	4	4	2	2	5
1345:	4	4	2	1	6	2	5	4
1353:	0	2	3	5	1	1	5	5
1361:	4	4	4	3	3	1	5	4
1369:	9	3	2	1	3	5	3	5
1377:	8	6	5	2	1	2	2	7
1385:	1	3	4	7	5	2	1	0
1393:	5	4	0	6	2	4	3	6
1401:	1	4	2	2	2	1	8	8
1409:	3	3	1	4	1	1	2	4
1417:	4	2	2	5	4	2	2	1
1425:	1	1	3	5	1	3	3	4
1433:	3	6	3	3	6	4	4	1
1441:	2	4	3	2	0	6	4	5
1449:	1	4	3	4	4	1	3	0
1457:	0	16	99	279	279	84	13	6
1465:	1	1	2	0	3	3	0	3
1473:	2	1	1	1	2	4	0	3
1481:	1	3	4	2	1	2	0	2
1489:	1	2	2	2	1	2	3	3
1497:	0	2	1	5	0	2	2	5
1505:	0	3	3	4	7	4	1	3
1513:	0	1	0	3	1	1	3	3
1521:	2	1	0	6	4	1	2	1
1529:	1	3	3	0	1	1	3	4
1537:	1	2	2	3	1	1	3	5
1545:	0	2	1	0	5	0	0	4
1553:	2	1	0	2	3	1	0	2
1561:	0	0	2	1	2	1	0	1
1569:	0	4	0	0	3	1	3	0
1577:	1	3	0	3	3	2	1	5
1585:	2	3	5	7	12	4	3	5
1593:	7	4	2	1	1	2	0	1
1601:	1	1	2	1	1	3	1	1
1609:	1	1	0	0	1	4	0	2
1617:	0	3	3	4	5	1	4	2
1625:	0	2	2	2	2	5	6	0
1633:	1	1	0	2	1	2	4	3
1641:	1	0	3	1	1	0	0	2
1649:	2	0	1	1	2	0	1	1
1657:	1	3	2	0	1	1	0	0

1665: 0 3 4 0 1 2 1 0

Sample Title: CP5008S14-15

Channel	1	2	3	4	5	6	7	8
1673:	1	3	2	1	3	2	1	1
1681:	1	2	2	0	3	0	5	1
1689:	2	1	1	1	0	2	1	2
1697:	2	2	1	2	1	1	2	0
1705:	0	1	2	1	0	0	3	1
1713:	0	2	2	1	0	1	0	0
1721:	1	2	1	1	1	1	4	3
1729:	3	3	2	2	0	2	3	0
1737:	0	2	1	1	0	3	1	1
1745:	0	2	1	0	1	1	2	0
1753:	0	1	2	1	4	1	1	2
1761:	2	2	18	31	21	9	1	1
1769:	1	2	1	0	0	2	1	1
1777:	2	1	3	1	1	0	1	2
1785:	0	1	4	0	0	0	0	1
1793:	2	1	1	1	2	2	0	0
1801:	0	2	1	1	1	2	1	3
1809:	2	0	1	0	0	2	0	1
1817:	0	1	0	1	0	0	1	1
1825:	2	3	2	0	1	1	0	1
1833:	2	0	0	1	0	2	0	2
1841:	1	0	0	2	2	0	5	2
1849:	2	0	2	1	2	1	1	2
1857:	3	1	1	0	1	0	0	0
1865:	1	1	2	0	0	1	0	1
1873:	0	0	0	0	1	3	3	0
1881:	1	1	0	0	2	2	3	1
1889:	0	0	0	1	1	0	3	1
1897:	0	0	3	1	1	3	1	0
1905:	0	1	1	1	1	1	1	1
1913:	0	1	2	0	0	1	0	1
1921:	1	0	1	3	0	0	1	4
1929:	2	4	1	3	0	4	1	1
1937:	2	2	1	0	0	2	1	1
1945:	0	0	0	1	4	0	1	0
1953:	0	1	1	2	0	1	1	1
1961:	0	1	0	0	0	4	0	0
1969:	3	1	0	0	2	2	0	0
1977:	1	2	0	0	1	2	0	0
1985:	2	4	0	3	1	2	0	1
1993:	0	0	1	0	2	1	0	0
2001:	1	0	0	1	0	0	0	1
2009:	1	1	1	1	2	0	0	0
2017:	0	0	1	2	0	1	0	2
2025:	0	0	1	1	1	2	1	0
2033:	1	0	0	1	0	0	1	0
2041:	0	0	0	0	0	0	0	2
2049:	0	0	0	0	3	3	1	1
2057:	2	0	0	2	0	1	0	1
2065:	1	2	0	0	1	1	1	0
2073:	0	2	1	1	1	0	1	1
2081:	0	0	0	1	1	0	0	1
2089:	0	1	0	1	2	0	1	1

2097: 1 0 0 2 2 2 7 5

Sample Title: CP5008S14-15

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

2529: 0 0 0 0 0 1 0 0

Sample Title: CP5008S14-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	0	0	0	0	1	2
2545:	0	0	0	0	1	0	1	2
2553:	0	0	0	0	1	2	0	0
2561:	0	0	0	0	0	0	0	1
2569:	0	0	0	0	0	1	0	0
2577:	0	0	0	0	0	0	0	0
2585:	0	1	0	0	0	0	0	1
2593:	1	1	0	0	0	0	0	0
2601:	0	0	0	0	0	1	1	0
2609:	2	2	6	21	33	33	24	2
2617:	0	0	0	1	0	1	0	0
2625:	0	0	1	2	0	1	1	0
2633:	2	0	1	1	1	0	0	0
2641:	0	3	1	0	0	0	0	2
2649:	0	1	0	1	0	0	0	0
2657:	0	0	0	0	0	0	0	0
2665:	0	0	1	0	1	0	0	0
2673:	0	0	0	0	0	1	0	1
2681:	0	0	0	0	0	1	0	0
2689:	0	0	1	0	0	1	0	2
2697:	0	0	0	2	0	0	0	2
2705:	0	2	2	0	0	0	0	1
2713:	0	0	1	1	1	0	0	1
2721:	2	0	0	0	1	0	0	0
2729:	1	0	0	1	0	0	0	1
2737:	0	0	0	0	0	0	1	0
2745:	1	0	0	0	0	1	0	0
2753:	0	0	0	0	0	0	1	0
2761:	0	0	0	0	0	0	0	0
2769:	1	0	0	0	0	0	1	1
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	1	0	1	1
2793:	1	0	0	0	0	0	1	0
2801:	0	1	0	0	0	1	1	0
2809:	1	0	0	0	1	0	0	1
2817:	0	1	1	0	2	1	0	0
2825:	1	0	0	1	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	1	0	0	0	0	1
2849:	1	0	1	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	1	0	1	0	0	0	0	0
2873:	0	0	1	0	0	0	0	0
2881:	0	0	0	0	1	0	0	0
2889:	0	0	1	0	0	1	0	0
2897:	1	0	0	1	1	0	0	0
2905:	0	0	0	0	0	0	1	0
2913:	0	1	0	0	0	1	0	1
2921:	0	0	1	1	0	0	0	0
2929:	0	0	0	0	0	0	2	1
2937:	2	0	0	0	0	0	0	0
2945:	1	0	0	0	0	0	0	0
2953:	0	0	0	0	0	0	1	0

2961: 0 2 0 1 0 0 0 0

Sample Title: CP5008S14-15

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

Sample Title: CP5008S14-15

Channel	1	2	3	4	5	6	7	8
3401:	0	0	2	1	0	0	0	0
3409:	0	0	0	1	0	0	1	0
3417:	0	0	0	0	0	0	0	1
3425:	1	0	0	0	0	0	0	0
3433:	0	0	0	1	0	0	0	1
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	1	2	0	0	0
3457:	0	0	0	1	0	0	0	0
3465:	1	0	0	3	0	0	0	0
3473:	0	0	0	0	0	0	1	0
3481:	0	1	1	0	1	0	0	1
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	1	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:	0	0	0	1	0	0	0	0
3545:	1	1	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:	0	0	0	0	2	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	1	0	1	0	1	0	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:	1	0	0	0	0	0	0	0
3641:	0	0	1	0	0	0	0	1
3649:	0	0	0	0	0	0	0	1
3657:	0	0	0	0	0	0	0	1
3665:	1	0	0	0	0	0	1	0
3673:	0	0	0	0	0	1	0	1
3681:	0	1	0	0	0	1	0	0
3689:	0	1	0	0	0	0	0	0
3697:	0	0	0	1	1	0	1	0
3705:	0	0	0	0	1	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	1	0	0	0	0	0	0	0
3729:	0	0	0	1	0	0	0	0
3737:	0	0	1	0	0	0	0	0
3745:	0	0	0	0	1	0	0	0
3753:	0	1	0	0	0	0	0	0
3761:	1	0	0	0	0	0	0	0
3769:	0	1	0	1	0	0	0	0
3777:	0	0	1	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	1	0	0	0	0	0
3801:	0	0	0	1	0	0	0	1
3809:	0	0	0	0	0	0	0	1
3817:	0	1	0	0	0	0	0	0

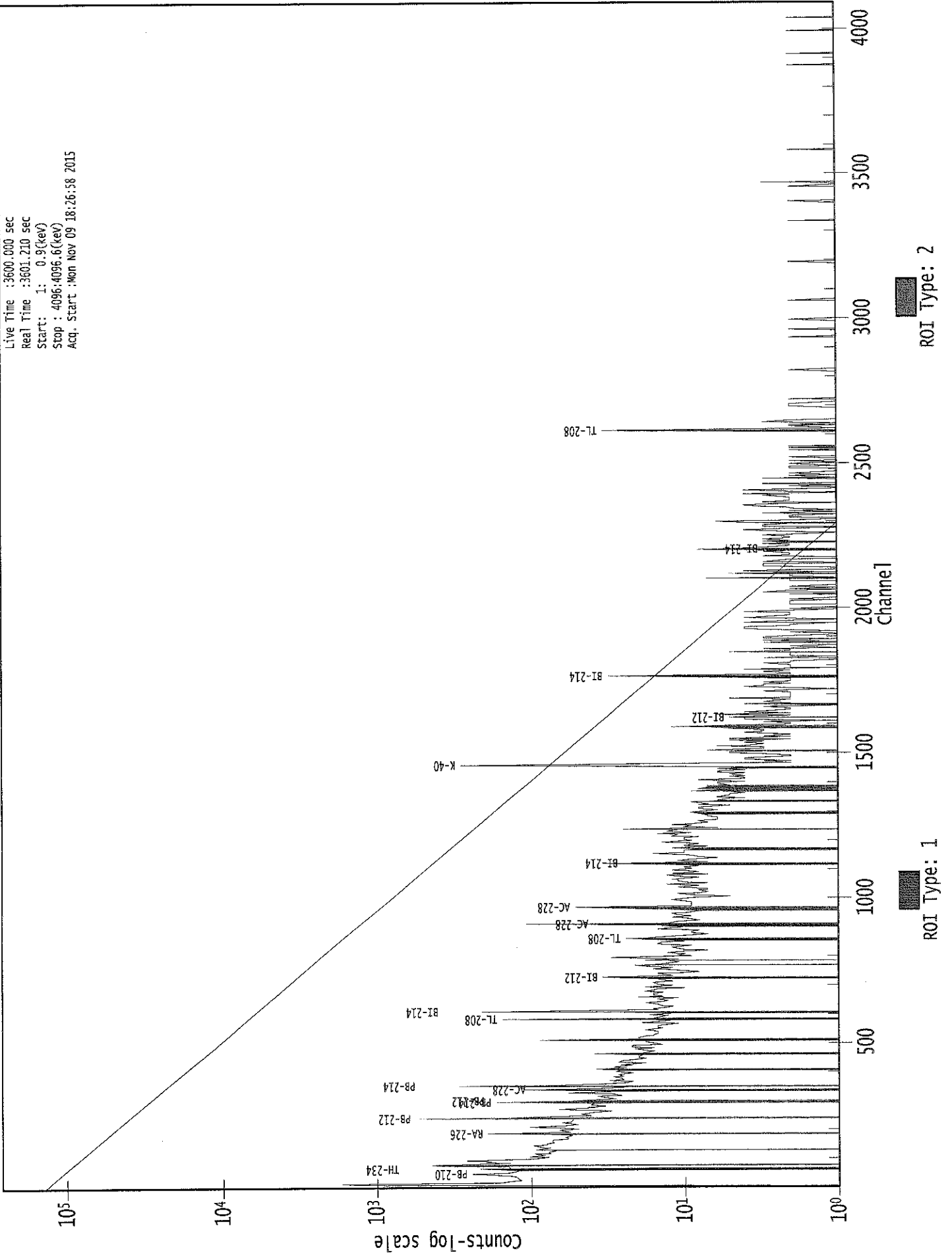
3825: 0 0 1 0 0 0 1 0

Sample Title: CP5008S14-15

Channel	1	2	3	4	5	6	7	8
3833:	1	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	1	0
3849:	1	0	0	0	0	1	1	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	1	0	2	0	0	0	0	0
3881:	0	1	0	0	0	1	0	0
3889:	0	0	0	0	0	0	0	1
3897:	0	0	0	1	0	0	0	0
3905:	1	0	1	0	0	0	0	0
3913:	2	0	0	1	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	1	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	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	0	0	1
4009:	0	1	0	0	0	0	0	1
4017:	0	1	0	0	0	0	0	0
4025:	0	0	0	1	0	0	0	0
4033:	0	0	0	0	0	2	1	1
4041:	0	0	0	0	0	1	0	0
4049:	0	0	0	0	1	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	1	0	0	1	0
4073:	0	0	0	0	0	0	0	1
4081:	0	0	0	1	0	0	0	0
4089:	0	0	0	0	0	0	2	0

0000029362.CNF

Live Time : 3600.000 sec
Real Time : 3601.210 sec
Start : 1: 0.9(keV)
Stop : 4096.4096.6(keV)
Acq. Start : Mon Nov 09 18:26:58 2015



Analysis Report for 1510088-20
CP50089S17-18

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510088-20
Sample Description : CP50089S17-18
Sample Type : SOIL

Sample Size : 5.834E+02 grams
Facility : Countroom

Sample Taken On : 10/8/2015 9:05:13AM
Acquisition Started : 11/9/2015 6:30:06PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3617.0 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 : 29363

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/10/15

Analysis Report for 1510088-20
CP50089S17-18

PEAK LOCATE REPORT

Peak Locate Performed on : 11/9/2015 7:30:24PM
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	46.62	46.85	0.0000	0.00
2	63.54	63.76	0.0000	0.00
3	75.97	76.19	0.0000	0.00
4	88.08	88.28	0.0000	0.00
5	149.25	149.42	0.0000	0.00
6	185.72	185.88	0.0000	0.00
7	198.78	198.93	0.0000	0.00
8	209.64	209.79	0.0000	0.00
9	238.83	238.96	0.0000	0.00
10	242.05	242.17	0.0000	0.00
11	270.09	270.20	0.0000	0.00
12	295.27	295.37	0.0000	0.00
13	300.53	300.63	0.0000	0.00
14	338.74	338.82	0.0000	0.00
15	342.11	342.18	0.0000	0.00
16	352.11	352.18	0.0000	0.00
17	408.41	408.45	0.0000	0.00
18	462.75	462.77	0.0000	0.00
19	511.31	511.30	0.0000	0.00
20	580.00	579.96	0.0000	0.00
21	583.24	583.20	0.0000	0.00
22	606.08	606.02	0.0000	0.00
23	609.44	609.38	0.0000	0.00
24	727.45	727.34	0.0000	0.00
25	756.30	756.18	0.0000	0.00
26	795.41	795.26	0.0000	0.00
27	860.40	860.23	0.0000	0.00
28	911.44	911.25	0.0000	0.00
29	969.27	969.05	0.0000	0.00
30	1018.92	1018.68	0.0000	0.00
31	1041.51	1041.26	0.0000	0.00
32	1120.36	1120.07	0.0000	0.00
33	1153.39	1153.09	0.0000	0.00
34	1263.18	1262.83	0.0000	0.00
35	1288.74	1288.39	0.0000	0.00
36	1377.79	1377.40	0.0000	0.00
37	1408.33	1407.93	0.0000	0.00
38	1461.03	1460.61	0.0000	0.00
39	1497.09	1496.66	0.0000	0.00
40	1588.62	1588.15	0.0000	0.00
41	1764.46	1763.93	0.0000	0.00
42	1802.89	1802.34	0.0000	0.00

Analysis Report for 1510088-20
CP50089S17-18

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1811.55	1811.00	0.0000	0.00
44	1846.88	1846.32	0.0000	0.00
45	2022.81	2022.20	0.0000	0.00
46	2058.55	2057.93	0.0000	0.00
47	2102.85	2102.21	0.0000	0.00
48	2141.89	2141.24	0.0000	0.00
49	2157.22	2156.56	0.0000	0.00
50	2192.50	2191.83	0.0000	0.00
51	2383.28	2382.57	0.0000	0.00
52	2614.41	2613.63	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510088-20
CP50089S17-18

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 7:30:24PM

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	46.62	44 -	50	46.85	1.44E+02	84.72	1.21E+03	2.14
2	63.54	60 -	67	63.76	2.15E+02	110.80	1.91E+03	1.40
3	75.97	71 -	83	76.19	1.01E+03	180.55	3.36E+03	3.99
4	88.08	86 -	91	88.28	1.76E+02	89.89	1.47E+03	1.73
5	149.25	147 -	152	149.42	5.25E+01	61.98	7.27E+02	2.33
6	185.72	180 -	190	185.88	2.32E+02	92.73	1.02E+03	1.84
7	198.78	196 -	202	198.93	7.26E+01	58.93	5.81E+02	4.96
8	209.64	207 -	213	209.79	6.72E+01	59.01	5.78E+02	1.91
M 9	238.83	235 -	246	238.96	8.41E+02	73.59	4.19E+02	1.89
m 10	242.05	235 -	246	242.17	1.47E+02	71.19	3.53E+02	1.89
11	270.09	266 -	274	270.20	8.53E+01	61.43	5.31E+02	1.92
12	295.27	290 -	298	295.37	2.31E+02	61.09	4.32E+02	1.98
13	300.53	299 -	305	300.63	5.85E+01	46.31	3.49E+02	2.06
M 14	338.74	334 -	345	338.82	1.70E+02	42.30	2.31E+02	1.85
m 15	342.11	334 -	345	342.18	3.47E+01	40.46	1.94E+02	1.99
16	352.11	347 -	356	352.18	4.13E+02	62.39	3.20E+02	1.64
17	408.41	404 -	412	408.45	4.55E+01	43.62	2.63E+02	2.59
18	462.75	458 -	466	462.77	5.37E+01	40.20	2.15E+02	1.97
19	511.31	507 -	518	511.30	1.35E+02	56.32	3.27E+02	2.38
M 20	580.00	578 -	588	579.96	2.32E+01	23.90	8.67E+01	2.18
m 21	583.24	578 -	588	583.20	2.29E+02	38.95	1.11E+02	1.96
M 22	606.08	605 -	618	606.02	1.64E+01	9.22	1.45E+01	2.11
m 23	609.44	605 -	618	609.38	2.62E+02	38.33	6.69E+01	2.04
24	727.45	724 -	730	727.34	5.84E+01	28.42	1.03E+02	2.15
25	756.30	752 -	762	756.18	3.09E+01	36.93	1.66E+02	2.85
26	795.41	792 -	800	795.26	4.55E+01	28.52	9.29E+01	1.89
27	860.40	856 -	865	860.23	4.28E+01	27.66	8.43E+01	1.93
28	911.44	906 -	916	911.25	1.25E+02	40.16	1.48E+02	2.14
29	969.27	966 -	973	969.05	6.46E+01	35.67	1.47E+02	1.80
30	1018.92	1017 -	1022	1018.68	1.51E+01	13.71	2.77E+01	2.03
31	1041.51	1039 -	1044	1041.26	1.48E+01	15.91	3.84E+01	3.31
32	1120.36	1114 -	1124	1120.07	3.08E+01	36.29	1.58E+02	1.96
33	1153.39	1149 -	1156	1153.09	2.43E+01	21.35	5.94E+01	4.97
34	1263.18	1259 -	1267	1262.83	2.96E+01	17.94	3.08E+01	2.06
35	1288.74	1284 -	1296	1288.39	2.92E+01	25.74	6.17E+01	7.11
36	1377.79	1375 -	1380	1377.40	1.66E+01	12.57	1.88E+01	1.54
37	1408.33	1406 -	1410	1407.93	9.10E+00	9.55	1.18E+01	2.68
38	1461.03	1455 -	1466	1460.61	5.32E+02	49.60	4.07E+01	2.06
39	1497.09	1493 -	1501	1496.66	1.91E+01	11.68	9.83E+00	2.88
40	1588.62	1586 -	1590	1588.15	8.55E+00	11.22	2.09E+01	1.86

Analysis Report for 1510088-20
 CP50089S17-18

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1764.46	1760 - 1769		1763.93	4.22E+01	15.56	1.15E+01	1.98
42	1802.89	1798 - 1805		1802.34	8.20E+00	7.48	3.60E+00	3.48
43	1811.55	1808 - 1813		1811.00	7.00E+00	5.29	0.00E+00	2.99
44	1846.88	1842 - 1850		1846.32	9.50E+00	9.82	9.00E+00	1.10
45	2022.81	2019 - 2024		2022.20	5.00E+00	4.47	0.00E+00	2.31
46	2058.55	2055 - 2060		2057.93	7.67E+00	6.71	2.67E+00	1.99
47	2102.85	2098 - 2106		2102.21	1.40E+01	7.48	0.00E+00	2.01
48	2141.89	2137 - 2144		2141.24	1.21E+01	8.49	3.71E+00	4.08
49	2157.22	2153 - 2159		2156.56	6.38E+00	6.65	3.25E+00	1.09
50	2192.50	2189 - 2194		2191.83	4.42E+00	5.74	3.17E+00	1.07
51	2383.28	2379 - 2386		2382.57	6.31E+00	6.93	3.38E+00	1.09
52	2614.41	2608 - 2619		2613.63	7.58E+01	18.76	6.30E+00	2.32

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/9/2015 7:30:24PM

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	46.62	44 -	50	1.44E+02	84.72	1.21E+03	6.68E+01
2	63.54	60 -	67	2.15E+02	110.80	1.91E+03	8.78E+01
3	75.97	71 -	83	1.01E+03	180.55	3.36E+03	1.39E+02
4	88.08	86 -	91	1.76E+02	89.89	1.47E+03	7.06E+01
5	149.25	147 -	152	5.25E+01	61.98	7.27E+02	4.95E+01
6	185.72	180 -	190	2.32E+02	92.73	1.02E+03	7.20E+01
7	198.78	196 -	202	7.26E+01	58.93	5.81E+02	4.64E+01
8	209.64	207 -	213	6.72E+01	59.01	5.78E+02	4.66E+01
M 9	238.83	235 -	246	8.41E+02	73.59	4.19E+02	3.37E+01
m 10	242.05	235 -	246	1.47E+02	71.19	3.53E+02	3.09E+01
11	270.09	266 -	274	8.53E+01	61.43	5.31E+02	4.82E+01
12	295.27	290 -	298	2.31E+02	61.09	4.32E+02	4.36E+01
13	300.53	299 -	305	5.85E+01	46.31	3.49E+02	3.59E+01
M 14	338.74	334 -	345	1.70E+02	42.30	2.31E+02	2.50E+01
m 15	342.11	334 -	345	3.47E+01	40.46	1.94E+02	2.29E+01
16	352.11	347 -	356	4.13E+02	62.39	3.20E+02	3.89E+01

Analysis Report for 1510088-20

CP50089S17-18

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	17	408.41	404 -	412	4.55E+01	43.62	2.63E+02	3.41E+01
	18	462.75	458 -	466	5.37E+01	40.20	2.15E+02	3.08E+01
	19	511.31	507 -	518	1.35E+02	56.32	3.27E+02	4.22E+01
M	20	580.00	578 -	588	2.32E+01	23.90	8.67E+01	1.53E+01
m	21	583.24	578 -	588	2.29E+02	38.95	1.11E+02	1.73E+01
M	22	606.08	605 -	618	1.64E+01	9.22	1.45E+01	6.26E+00
m	23	609.44	605 -	618	2.62E+02	38.33	6.69E+01	1.35E+01
	24	727.45	724 -	730	5.84E+01	28.42	1.03E+02	1.97E+01
	25	756.30	752 -	762	3.09E+01	36.93	1.66E+02	2.89E+01
	26	795.41	792 -	800	4.55E+01	28.52	9.29E+01	2.07E+01
	27	860.40	856 -	865	4.28E+01	27.66	8.43E+01	2.00E+01
	28	911.44	906 -	916	1.25E+02	40.16	1.48E+02	2.74E+01
	29	969.27	966 -	973	6.46E+01	35.67	1.47E+02	2.62E+01
	30	1018.92	1017 -	1022	1.51E+01	13.71	2.77E+01	9.28E+00
	31	1041.51	1039 -	1044	1.48E+01	15.91	3.84E+01	1.14E+01
	32	1120.36	1114 -	1124	3.08E+01	36.29	1.58E+02	2.84E+01
	33	1153.39	1149 -	1156	2.43E+01	21.35	5.94E+01	1.56E+01
	34	1263.18	1259 -	1267	2.96E+01	17.94	3.08E+01	1.17E+01
	35	1288.74	1284 -	1296	2.92E+01	25.74	6.17E+01	1.92E+01
	36	1377.79	1375 -	1380	1.66E+01	12.57	1.88E+01	7.87E+00
	37	1408.33	1406 -	1410	9.10E+00	9.55	1.18E+01	6.09E+00
	38	1461.03	1455 -	1466	5.32E+02	49.60	4.07E+01	1.50E+01
	39	1497.09	1493 -	1501	1.91E+01	11.68	9.83E+00	6.38E+00
	40	1588.62	1586 -	1590	8.55E+00	11.22	2.09E+01	7.88E+00
	41	1764.46	1760 -	1769	4.22E+01	15.56	1.15E+01	7.03E+00
	42	1802.89	1798 -	1805	8.20E+00	7.48	3.60E+00	3.96E+00
	43	1811.55	1808 -	1813	7.00E+00	5.29	0.00E+00	0.00E+00
	44	1846.88	1842 -	1850	9.50E+00	9.82	9.00E+00	6.29E+00
	45	2022.81	2019 -	2024	5.00E+00	4.47	0.00E+00	0.00E+00
	46	2058.55	2055 -	2060	7.67E+00	6.71	2.67E+00	3.11E+00
	47	2102.85	2098 -	2106	1.40E+01	7.48	0.00E+00	0.00E+00
	48	2141.89	2137 -	2144	1.21E+01	8.49	3.71E+00	3.98E+00
	49	2157.22	2153 -	2159	6.38E+00	6.65	3.25E+00	3.56E+00
	50	2192.50	2189 -	2194	4.42E+00	5.74	3.17E+00	3.22E+00
	51	2383.28	2379 -	2386	6.31E+00	6.93	3.38E+00	3.92E+00
	52	2614.41	2608 -	2619	7.58E+01	18.76	6.30E+00	5.73E+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 1510088-20
 CP50089S17-18

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/9/2015 7:30:24PM

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	46.62	44 -	50	46.85	1.44E+02	84.72	1.21E+03	PB-210	
2	63.54	60 -	67	63.76	2.15E+02	110.80	1.91E+03	TH-234 TH-230	
3	75.97	71 -	83	76.19	1.01E+03	180.55	3.36E+03	.....
4	88.08	86 -	91	88.28	1.76E+02	89.89	1.47E+03	CD-109 LU-176 SN-126	
5	149.25	147 -	152	149.42	5.25E+01	61.98	7.27E+02	.....
6	185.72	180 -	190	185.88	2.32E+02	92.73	1.02E+03	RA-226	
7	198.78	196 -	202	198.93	7.26E+01	58.93	5.81E+02	.....
8	209.64	207 -	213	209.79	6.72E+01	59.01	5.78E+02	CM-243 GA-67	
M	9	238.83	235 -	246	238.96	8.41E+02	73.59	4.19E+02	PB-212
m	10	242.05	235 -	246	242.17	1.47E+02	71.19	3.53E+02	.....
	11	270.09	266 -	274	270.20	8.53E+01	61.43	5.31E+02	.....
	12	295.27	290 -	298	295.37	2.31E+02	61.09	4.32E+02	PB-214
	13	300.53	299 -	305	300.63	5.85E+01	46.31	3.49E+02	GA-67 PB-212 BI-210M
M	14	338.74	334 -	345	338.82	1.70E+02	42.30	2.31E+02	AC-228
m	15	342.11	334 -	345	342.18	3.47E+01	40.46	1.94E+02	.....
	16	352.11	347 -	356	352.18	4.13E+02	62.39	3.20E+02	PB-214
	17	408.41	404 -	412	408.45	4.55E+01	43.62	2.63E+02	.....
	18	462.75	458 -	466	462.77	5.37E+01	40.20	2.15E+02	SB-125
	19	511.31	507 -	518	511.30	1.35E+02	56.32	3.27E+02	.....
M	20	580.00	578 -	588	579.96	2.32E+01	23.90	8.67E+01	.....
m	21	583.24	578 -	588	583.20	2.29E+02	38.95	1.11E+02	TL-208
M	22	606.08	605 -	618	606.02	1.64E+01	9.22	1.45E+01	.....
m	23	609.44	605 -	618	609.38	2.62E+02	38.33	6.69E+01	BI-214
	24	727.45	724 -	730	727.34	5.84E+01	28.42	1.03E+02	BI-212
	25	756.30	752 -	762	756.18	3.09E+01	36.93	1.66E+02	ZR-95
	26	795.41	792 -	800	795.26	4.55E+01	28.52	9.29E+01	CS-134
	27	860.40	856 -	865	860.23	4.28E+01	27.66	8.43E+01	TL-208
	28	911.44	906 -	916	911.25	1.25E+02	40.16	1.48E+02	AC-228 LU-172
	29	969.27	966 -	973	969.05	6.46E+01	35.67	1.47E+02	AC-228
	30	1018.92	1017 -	1022	1018.68	1.51E+01	13.71	2.77E+01	.....
	31	1041.51	1039 -	1044	1041.26	1.48E+01	15.91	3.84E+01	.....
	32	1120.36	1114 -	1124	1120.07	3.08E+01	36.29	1.58E+02	BI-214 SC-46 TA-182

Analysis Report for 1510088-20
 CP50089S17-18

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
33	1153.39	1149 -	1156	1153.09	2.43E+01	21.35	5.94E+01	EU-156
34	1263.18	1259 -	1267	1262.83	2.96E+01	17.94	3.08E+01	.....
35	1288.74	1284 -	1296	1288.39	2.92E+01	25.74	6.17E+01	.....
36	1377.79	1375 -	1380	1377.40	1.66E+01	12.57	1.88E+01	.....
37	1408.33	1406 -	1410	1407.93	9.10E+00	9.55	1.18E+01	EU-152
38	1461.03	1455 -	1466	1460.61	5.32E+02	49.60	4.07E+01	K-40
39	1497.09	1493 -	1501	1496.66	1.91E+01	11.68	9.83E+00	.....
40	1588.62	1586 -	1590	1588.15	8.55E+00	11.22	2.09E+01	.....
41	1764.46	1760 -	1769	1763.93	4.22E+01	15.56	1.15E+01	BI-214
42	1802.89	1798 -	1805	1802.34	8.20E+00	7.48	3.60E+00	.....
43	1811.55	1808 -	1813	1811.00	7.00E+00	5.29	0.00E+00	.....
44	1846.88	1842 -	1850	1846.32	9.50E+00	9.82	9.00E+00	.....
45	2022.81	2019 -	2024	2022.20	5.00E+00	4.47	0.00E+00	.....
46	2058.55	2055 -	2060	2057.93	7.67E+00	6.71	2.67E+00	.....
47	2102.85	2098 -	2106	2102.21	1.40E+01	7.48	0.00E+00	.....
48	2141.89	2137 -	2144	2141.24	1.21E+01	8.49	3.71E+00	.....
49	2157.22	2153 -	2159	2156.56	6.38E+00	6.65	3.25E+00	.....
50	2192.50	2189 -	2194	2191.83	4.42E+00	5.74	3.17E+00	.....
51	2383.28	2379 -	2386	2382.57	6.31E+00	6.93	3.38E+00	.....
52	2614.41	2608 -	2619	2613.63	7.58E+01	18.76	6.30E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/9/2015 7:30:24PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	46.62	1.44E+02	84.72	1.51E-02	1.58E-03
2	63.54	2.15E+02	110.80	2.16E-02	1.72E-03
3	75.97	1.01E+03	180.55	2.37E-02	2.13E-03
4	88.08	1.76E+02	89.89	2.44E-02	2.52E-03
5	149.25	5.25E+01	61.98	2.10E-02	1.60E-03
6	185.72	2.32E+02	92.73	1.83E-02	1.42E-03
7	198.78	7.26E+01	58.93	1.75E-02	1.36E-03
8	209.64	6.72E+01	59.01	1.68E-02	1.31E-03
M 9	238.83	8.41E+02	73.59	1.52E-02	1.18E-03
m 10	242.05	1.47E+02	71.19	1.51E-02	1.17E-03

Analysis Report for 1510088-20
CP50089S17-18

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	11	270.09	8.53E+01	61.43	1.38E-02	1.04E-03
	12	295.27	2.31E+02	61.09	1.28E-02	9.74E-04
	13	300.53	5.85E+01	46.31	1.26E-02	9.67E-04
M	14	338.74	1.70E+02	42.30	1.14E-02	9.12E-04
m	15	342.11	3.47E+01	40.46	1.13E-02	9.08E-04
	16	352.11	4.13E+02	62.39	1.11E-02	8.93E-04
	17	408.41	4.55E+01	43.62	9.73E-03	8.21E-04
	18	462.75	5.37E+01	40.20	8.73E-03	7.66E-04
	19	511.31	1.35E+02	56.32	8.01E-03	7.18E-04
M	20	580.00	2.32E+01	23.90	7.17E-03	6.49E-04
m	21	583.24	2.29E+02	38.95	7.14E-03	6.46E-04
M	22	606.08	1.64E+01	9.22	6.90E-03	6.23E-04
m	23	609.44	2.62E+02	38.33	6.87E-03	6.20E-04
	24	727.45	5.84E+01	28.42	5.89E-03	5.14E-04
	25	756.30	3.09E+01	36.93	5.69E-03	4.90E-04
	26	795.41	4.55E+01	28.52	5.45E-03	4.59E-04
	27	860.40	4.28E+01	27.66	5.10E-03	4.05E-04
	28	911.44	1.25E+02	40.16	4.85E-03	3.72E-04
	29	969.27	6.46E+01	35.67	4.60E-03	3.61E-04
	30	1018.92	1.51E+01	13.71	4.41E-03	3.52E-04
	31	1041.51	1.48E+01	15.91	4.33E-03	3.48E-04
	32	1120.36	3.08E+01	36.29	4.08E-03	3.33E-04
	33	1153.39	2.43E+01	21.35	3.98E-03	3.27E-04
	34	1263.18	2.96E+01	17.94	3.69E-03	3.04E-04
	35	1288.74	2.92E+01	25.74	3.64E-03	2.98E-04
	36	1377.79	1.66E+01	12.57	3.45E-03	2.82E-04
	37	1408.33	9.10E+00	9.55	3.39E-03	2.77E-04
	38	1461.03	5.32E+02	49.60	3.29E-03	2.69E-04
	39	1497.09	1.91E+01	11.68	3.23E-03	2.64E-04
	40	1588.62	8.55E+00	11.22	3.09E-03	2.50E-04
	41	1764.46	4.22E+01	15.56	2.86E-03	2.24E-04
	42	1802.89	8.20E+00	7.48	2.81E-03	2.18E-04
	43	1811.55	7.00E+00	5.29	2.80E-03	2.17E-04
	44	1846.88	9.50E+00	9.82	2.77E-03	2.13E-04
	45	2022.81	5.00E+00	4.47	2.60E-03	2.13E-04
	46	2058.55	7.67E+00	6.71	2.57E-03	2.13E-04
	47	2102.85	1.40E+01	7.48	2.54E-03	2.13E-04
	48	2141.89	1.21E+01	8.49	2.51E-03	2.13E-04
	49	2157.22	6.38E+00	6.65	2.50E-03	2.13E-04
	50	2192.50	4.42E+00	5.74	2.47E-03	2.13E-04
	51	2383.28	6.31E+00	6.93	2.35E-03	2.13E-04
	52	2614.41	7.58E+01	18.76	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 1510088-20
CP50089S17-18

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/9/2015 7:30:24PM

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	46.62	1.44E+02	84.72	5.28E+01	1.09E+01	9.10E+01	8.54E+01
2	63.54	2.15E+02	110.80	5.52E+01	2.05E+01	1.59E+02	1.13E+02
3	75.97	1.01E+03	180.55			1.01E+03	1.81E+02
4	88.08	1.76E+02	89.89	1.52E+01	5.37E+00	1.61E+02	9.00E+01
5	149.25	5.25E+01	61.98			5.25E+01	6.20E+01
6	185.72	2.32E+02	92.73	3.93E+01	6.56E+00	1.93E+02	9.30E+01
7	198.78	7.26E+01	58.93			7.26E+01	5.89E+01
8	209.64	6.72E+01	59.01			6.72E+01	5.90E+01
M	9	238.83	8.41E+02	1.34E+01	2.14E+00	8.28E+02	7.36E+01
m	10	242.05	1.47E+02	2.69E+00	1.46E+00	1.44E+02	7.12E+01
	11	270.09	8.53E+01			8.53E+01	6.14E+01
	12	295.27	2.31E+02			2.31E+02	6.11E+01
	13	300.53	5.85E+01			5.85E+01	4.63E+01
M	14	338.74	1.70E+02	42.30		1.70E+02	4.23E+01
m	15	342.11	3.47E+01	40.46		3.47E+01	4.05E+01
	16	352.11	4.13E+02	62.39	3.99E+00	4.09E+02	6.26E+01
	17	408.41	4.55E+01	43.62		4.55E+01	4.36E+01
	18	462.75	5.37E+01	40.20		5.37E+01	4.02E+01
M	19	511.31	1.35E+02	56.32	5.78E+01	7.69E+01	5.65E+01
m	20	580.00	2.32E+01	23.90		2.32E+01	2.39E+01
	21	583.24	2.29E+02	38.95	5.96E+00	2.23E+02	3.91E+01
M	22	606.08	1.64E+01	9.22		1.64E+01	9.22E+00
m	23	609.44	2.62E+02	38.33	6.71E+00	2.55E+02	3.85E+01
	24	727.45	5.84E+01	28.42		5.84E+01	2.84E+01
	25	756.30	3.09E+01	36.93		3.09E+01	3.69E+01
	26	795.41	4.55E+01	28.52		4.55E+01	2.85E+01
	27	860.40	4.28E+01	27.66		4.28E+01	2.77E+01
	28	911.44	1.25E+02	40.16	2.32E+00	2.73E+00	1.23E+02
	29	969.27	6.46E+01	35.67		6.46E+01	3.57E+01
	30	1018.92	1.51E+01	13.71		1.51E+01	1.37E+01
	31	1041.51	1.48E+01	15.91		1.48E+01	1.59E+01
	32	1120.36	3.08E+01	36.29	2.00E+00	2.20E+00	2.88E+01
	33	1153.39	2.43E+01	21.35		2.43E+01	2.14E+01
	34	1263.18	2.96E+01	17.94		2.96E+01	1.79E+01
	35	1288.74	2.92E+01	25.74		2.92E+01	2.57E+01
	36	1377.79	1.66E+01	12.57		1.66E+01	1.26E+01
	37	1408.33	9.10E+00	9.55		9.10E+00	9.55E+00
	38	1461.03	5.32E+02	49.60	2.36E+00	1.83E+00	5.29E+02
	39	1497.09	1.91E+01	11.68		1.91E+01	1.17E+01
	40	1588.62	8.55E+00	11.22		8.55E+00	1.12E+01
	41	1764.46	4.22E+01	15.56	1.45E+00	1.16E+00	4.08E+01
	42	1802.89	8.20E+00	7.48		8.20E+00	7.48E+00
	43	1811.55	7.00E+00	5.29		7.00E+00	5.29E+00
	44	1846.88	9.50E+00	9.82		9.50E+00	9.82E+00

Analysis Report for 1510088-20

CP50089S17-18

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
45	2022.81	5.00E+00	4.47			5.00E+00	4.47E+00
46	2058.55	7.67E+00	6.71			7.67E+00	6.71E+00
47	2102.85	1.40E+01	7.48			1.40E+01	7.48E+00
48	2141.89	1.21E+01	8.49			1.21E+01	8.49E+00
49	2157.22	6.38E+00	6.65			6.38E+00	6.65E+00
50	2192.50	4.42E+00	5.74			4.42E+00	5.74E+00
51	2383.28	6.31E+00	6.93			6.31E+00	6.93E+00
52	2614.41	7.58E+01	18.76	2.66E+00	1.22E+00	7.32E+01	1.88E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/9/2015 7:30:24PM
 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	46.62	1.44E+02	84.72	5.28E+01	1.09E+01	9.10E+01	8.54E+01
2	63.54	2.15E+02	110.80	5.52E+01	2.05E+01	1.59E+02	1.13E+02
3	75.97	1.01E+03	180.55			1.01E+03	1.81E+02
4	88.08	1.76E+02	89.89	1.52E+01	5.37E+00	1.61E+02	9.00E+01
5	149.25	5.25E+01	61.98			5.25E+01	6.20E+01
6	185.72	2.32E+02	92.73	3.93E+01	6.56E+00	1.93E+02	9.30E+01
7	198.78	7.26E+01	58.93			7.26E+01	5.89E+01
8	209.64	6.72E+01	59.01			6.72E+01	5.90E+01
M 9	238.83	8.41E+02	73.59	1.34E+01	2.14E+00	8.28E+02	7.36E+01
m 10	242.05	1.47E+02	71.19	2.69E+00	1.46E+00	1.44E+02	7.12E+01
11	270.09	8.53E+01	61.43			8.53E+01	6.14E+01
12	295.27	2.31E+02	61.09			2.31E+02	6.11E+01
13	300.53	5.85E+01	46.31			5.85E+01	4.63E+01
M 14	338.74	1.70E+02	42.30			1.70E+02	4.23E+01
m 15	342.11	3.47E+01	40.46			3.47E+01	4.05E+01
16	352.11	4.13E+02	62.39	3.99E+00	4.73E+00	4.09E+02	6.26E+01
17	408.41	4.55E+01	43.62			4.55E+01	4.36E+01
18	462.75	5.37E+01	40.20			5.37E+01	4.02E+01
19	511.31	1.35E+02	56.32	5.78E+01	4.60E+00	7.69E+01	5.65E+01
M 20	580.00	2.32E+01	23.90			2.32E+01	2.39E+01

Analysis Report for 1510088-20

CP50089S17-18

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	21	583.24	2.29E+02	38.95	5.96E+00	3.46E+00	2.23E+02	3.91E+01
M	22	606.08	1.64E+01	9.22			1.64E+01	9.22E+00
m	23	609.44	2.62E+02	38.33	6.71E+00	3.44E+00	2.55E+02	3.85E+01
	24	727.45	5.84E+01	28.42			5.84E+01	2.84E+01
	25	756.30	3.09E+01	36.93			3.09E+01	3.69E+01
	26	795.41	4.55E+01	28.52			4.55E+01	2.85E+01
	27	860.40	4.28E+01	27.66			4.28E+01	2.77E+01
	28	911.44	1.25E+02	40.16	2.32E+00	2.73E+00	1.23E+02	4.03E+01
	29	969.27	6.46E+01	35.67			6.46E+01	3.57E+01
	30	1018.92	1.51E+01	13.71			1.51E+01	1.37E+01
	31	1041.51	1.48E+01	15.91			1.48E+01	1.59E+01
	32	1120.36	3.08E+01	36.29	2.00E+00	2.20E+00	2.88E+01	3.64E+01
	33	1153.39	2.43E+01	21.35			2.43E+01	2.14E+01
	34	1263.18	2.96E+01	17.94			2.96E+01	1.79E+01
	35	1288.74	2.92E+01	25.74			2.92E+01	2.57E+01
	36	1377.79	1.66E+01	12.57			1.66E+01	1.26E+01
	37	1408.33	9.10E+00	9.55			9.10E+00	9.55E+00
	38	1461.03	5.32E+02	49.60	2.36E+00	1.83E+00	5.29E+02	4.96E+01
	39	1497.09	1.91E+01	11.68			1.91E+01	1.17E+01
	40	1588.62	8.55E+00	11.22			8.55E+00	1.12E+01
	41	1764.46	4.22E+01	15.56	1.45E+00	1.16E+00	4.08E+01	1.56E+01
	42	1802.89	8.20E+00	7.48			8.20E+00	7.48E+00
	43	1811.55	7.00E+00	5.29			7.00E+00	5.29E+00
	44	1846.88	9.50E+00	9.82			9.50E+00	9.82E+00
	45	2022.81	5.00E+00	4.47			5.00E+00	4.47E+00
	46	2058.55	7.67E+00	6.71			7.67E+00	6.71E+00
	47	2102.85	1.40E+01	7.48			1.40E+01	7.48E+00
	48	2141.89	1.21E+01	8.49			1.21E+01	8.49E+00
	49	2157.22	6.38E+00	6.65			6.38E+00	6.65E+00
	50	2192.50	4.42E+00	5.74			4.42E+00	5.74E+00
	51	2383.28	6.31E+00	6.93			6.31E+00	6.93E+00
	52	2614.41	7.58E+01	18.76	2.66E+00	1.22E+00	7.32E+01	1.88E+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 1510088-20
CP50089S17-18

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.992	1460.81 *	10.67	1.94E+01	2.45E+00
CD-109	1.000	88.03 *	3.72	2.39E+00	1.37E+00
SN-126	0.960	87.57 *	37.00	2.29E-01	1.30E-01
TL-208	0.994	583.14 *	30.22	1.33E+00	2.62E-01
		860.37 *	4.48	2.42E+00	1.57E+00
		2614.66 *	35.85	1.17E+00	3.21E-01
PB-210	0.998	46.50 *	4.25	1.83E+00	1.73E+00
BI-212	0.760	727.17 *	11.80	1.08E+00	5.35E-01
		1620.62	2.75		
PB-212	0.992	238.63 *	44.60	1.57E+00	1.85E-01
		300.09 *	3.41	1.75E+00	1.39E+00
BI-214	0.931	609.31 *	46.30	1.03E+00	1.81E-01
		1120.29 *	15.10	6.03E-01	7.62E-01
		1764.49 *	15.80	1.16E+00	4.54E-01
		2204.22	4.98		
PB-214	0.996	295.21 *	19.19	1.21E+00	3.32E-01
		351.92 *	37.19	1.28E+00	2.21E-01
RA-226	0.962	186.21 *	3.28	4.13E+00	7.82E+00
AC-228	0.982	338.32 *	11.40	1.68E+00	4.39E-01
		911.07 *	27.70	1.18E+00	3.96E-01
		969.11 *	16.60	1.09E+00	6.07E-01
TH-234	0.990	63.29 *	3.80	2.49E+00	1.77E+00

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 7:30:24PM
 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	75.97	2.80589E-01	8.94		
5	149.25	1.45827E-02	59.03		
7	198.78	2.01630E-02	40.60		
8	209.64	1.86759E-02	43.88	Tol.	GA-67 CM-243
m 10	242.05	3.99620E-02	24.75		
11	270.09	2.36831E-02	36.02		

Analysis Report for 1510088-20
 CP50089S17-18

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	15	342.11	9.63238E-03	58.34	Sum
	17	408.41	1.26350E-02	47.95	
	18	462.75	1.49103E-02	37.45	
	19	511.31	2.13576E-02	36.75	
M	20	580.00	6.44266E-03	51.52	
M	22	606.08	4.55426E-03	28.12	
	25	756.30	8.58674E-03	59.73	
	26	795.41	1.26479E-02	31.32	Sum
	30	1018.92	4.20498E-03	45.29	
	31	1041.51	4.10948E-03	53.76	
	33	1153.39	6.75154E-03	43.93	Tol. EU-156
	34	1263.18	8.22839E-03	30.28	Sum
	35	1288.74	8.09722E-03	44.15	
	36	1377.79	4.60470E-03	37.91	
	37	1408.33	2.52778E-03	52.49	Tol. EU-152
	39	1497.09	5.30093E-03	30.61	
	40	1588.62	2.37573E-03	65.62	Sum
	42	1802.89	2.27778E-03	45.63	
	43	1811.55	1.94444E-03	37.80	Sum
	44	1846.88	2.63889E-03	51.70	Sum
	45	2022.81	1.38889E-03	44.72	
	46	2058.55	2.12963E-03	43.75	
	47	2102.85	3.88889E-03	26.73	S-Esc
	48	2141.89	3.37302E-03	34.94	
	49	2157.22	1.77083E-03	52.17	
	50	2192.50	1.22685E-03	65.03	
	51	2383.28	1.75347E-03	54.88	

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	2.45E+00

Analysis Report for 1510088-20
CP50089S17-18

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CD-109	1.00	88.03 *	3.72	2.39E+00	1.37E+00
SN-126	0.96	87.57 *	37.00	2.29E-01	1.30E-01
TL-208	0.99	583.14 *	30.22	1.33E+00	2.62E-01
		860.37 *	4.48	2.42E+00	1.57E+00
		2614.66 *	35.85	1.17E+00	3.21E-01
PB-210	0.99	46.50 *	4.25	1.83E+00	1.73E+00
BI-212	0.76	727.17 *	11.80	1.08E+00	5.35E-01
		1620.62	2.75		
PB-212	0.99	238.63 *	44.60	1.57E+00	1.85E-01
		300.09 *	3.41	1.75E+00	1.39E+00
BI-214	0.93	609.31 *	46.30	1.03E+00	1.81E-01
		1120.29 *	15.10	6.03E-01	7.62E-01
		1764.49 *	15.80	1.16E+00	4.54E-01
		2204.22	4.98		
PB-214	0.99	295.21 *	19.19	1.21E+00	3.32E-01
		351.92 *	37.19	1.28E+00	2.21E-01
RA-226	0.96	186.21 *	3.28	4.13E+00	7.82E+00
AC-228	0.98	338.32 *	11.40	1.68E+00	4.39E-01
		911.07 *	27.70	1.18E+00	3.96E-01
		969.11 *	16.60	1.09E+00	6.07E-01
TH-234	0.99	63.29 *	3.80	2.49E+00	1.77E+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	0.992	1.94E+01	2.45E+00
?	CD-109	1.000	2.39E+00	1.37E+00
?	SN-126	0.960	2.29E-01	1.30E-01
	TL-208	0.994	1.29E+00	2.02E-01
	PB-210	0.998	1.83E+00	1.73E+00
	BI-212	0.760	1.08E+00	5.35E-01

Analysis Report for 1510088-20
CP50089S17-18

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
PB-212	0.992	1.57E+00	1.84E-01	
BI-214	0.931	1.03E+00	1.65E-01	
PB-214	0.996	1.26E+00	1.84E-01	
RA-226	0.962	4.13E+00	7.82E+00	
AC-228	0.982	1.34E+00	2.65E-01	
TH-234	0.990	2.49E+00	1.77E+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 1510088-20
CP50089S17-18

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/9/2015 7:30:24PM
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	75.97	2.80589E-01	8.94		
5	149.25	1.45827E-02	59.03		
7	198.78	2.01630E-02	40.60		
8	209.64	1.86759E-02	43.88	Tol.	GA-67 CM-243
m 10	242.05	3.99620E-02	24.75		
11	270.09	2.36831E-02	36.02		
m 15	342.11	9.63238E-03	58.34	Sum	
17	408.41	1.26350E-02	47.95		
18	462.75	1.49103E-02	37.45		
19	511.31	2.13576E-02	36.75		
M 20	580.00	6.44266E-03	51.52		
M 22	606.08	4.55426E-03	28.12		
25	756.30	8.58674E-03	59.73		
26	795.41	1.26479E-02	31.32	Sum	
30	1018.92	4.20498E-03	45.29		
31	1041.51	4.10948E-03	53.76		
33	1153.39	6.75154E-03	43.93	Tol.	EU-156
34	1263.18	8.22839E-03	30.28	Sum	
35	1288.74	8.09722E-03	44.15		
36	1377.79	4.60470E-03	37.91		
37	1408.33	2.52778E-03	52.49	Tol.	EU-152
39	1497.09	5.30093E-03	30.61		
40	1588.62	2.37573E-03	65.62	Sum	
42	1802.89	2.27778E-03	45.63		
43	1811.55	1.94444E-03	37.80	Sum	
44	1846.88	2.63889E-03	51.70	Sum	
45	2022.81	1.38889E-03	44.72		
46	2058.55	2.12963E-03	43.75		
47	2102.85	3.88889E-03	26.73	S-Esc	
48	2141.89	3.37302E-03	34.94		
49	2157.22	1.77083E-03	52.17		
50	2192.50	1.22685E-03	65.03		
51	2383.28	1.75347E-03	54.88		

Analysis Report for 1510088-20
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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

	<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
+	BE-7	477.59	10.42	2.87E-01	1.18E+00	1.18E+00
+	NA-22	1274.54	99.94	3.23E-02	1.21E-01	1.21E-01
+	NA-24	1368.53	99.99	-5.76E+12	2.90E+14	4.22E+14
		2754.09	99.86	9.65E+13		2.90E+14
+	AL-26	1808.65	99.76	-4.59E-03	8.65E-02	8.65E-02
+	K-40	1460.81	* 10.67	1.94E+01	1.22E+00	1.22E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-2.40E-03	7.25E-02	7.25E-02
		78.34	96.00	1.33E-01		8.90E-02
+	SC-46	889.25	99.98	4.93E-02	1.15E-01	1.15E-01
		1120.51	99.99	1.80E-01		1.90E-01
+	V-48	983.52	99.98	-7.87E-02	3.58E-01	3.58E-01
		1312.10	97.50	-3.08E-01		4.30E-01
+	CR-51	320.08	9.83	-4.05E-01	1.48E+00	1.48E+00
+	MN-54	834.83	99.97	6.07E-03	1.09E-01	1.09E-01
+	CO-56	846.75	99.96	8.13E-03	1.10E-01	1.10E-01
		1037.75	14.03	8.89E-02		9.32E-01
		1238.25	67.00	7.93E-02		2.94E-01
		1771.40	15.51	-1.61E-02		5.81E-01
		2598.48	16.90	3.01E-02		4.19E-01
+	CO-57	122.06	85.51	1.53E-02	6.39E-02	6.39E-02
		136.48	10.60	-1.21E-01		5.35E-01
+	CO-58	810.76	99.40	-4.03E-02	1.17E-01	1.17E-01
+	FE-59	1099.22	56.50	-8.70E-02	3.12E-01	3.12E-01
		1291.56	43.20	-5.22E-03		4.31E-01
+	CO-60	1173.22	100.00	4.98E-02	1.05E-01	1.18E-01
		1332.49	100.00	-1.84E-02		1.05E-01
+	ZN-65	1115.52	50.75	2.92E-02	2.49E-01	2.49E-01
+	GA-67	93.31	35.70	2.85E+02	1.81E+02	1.81E+02
		208.95	2.24	2.49E+03		3.09E+03
		300.22	16.00	-1.68E+03		4.60E+02
+	SE-75	121.11	16.70	8.05E-02	1.08E-01	3.61E-01

Analysis Report for 1510088-20
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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	2.82E-02	1.08E-01	1.08E-01
		264.65	59.80	-5.87E-02		1.24E-01
		279.53	25.20	9.77E-02		3.25E-01
		400.65	11.40	6.39E-02		7.62E-01
+	RB-82	776.52	13.00	-4.03E-01	1.59E+00	1.59E+00
+	RB-83	520.41	46.00	-1.19E-01	1.93E-01	1.93E-01
		529.64	30.30	-2.44E-02		3.11E-01
		552.65	16.40	3.12E-02		6.17E-01
+	KR-85	513.99	0.43	2.14E+01	2.49E+01	2.49E+01
+	SR-85	513.99	99.27	1.32E-01	1.53E-01	1.53E-01
+	Y-88	898.02	93.40	-1.60E-02	8.64E-02	1.05E-01
		1836.01	99.38	9.04E-03		8.64E-02
+	NB-93M	16.57	9.43	6.93E+01	8.52E+01	8.52E+01
+	NB-94	702.63	100.00	-8.97E-03	8.66E-02	9.06E-02
		871.10	100.00	1.16E-02		8.66E-02
+	NB-95	765.79	99.81	7.50E-02	1.95E-01	1.95E-01
+	NB-95M	235.69	25.00	2.53E+01	2.43E+02	2.43E+02
+	ZR-95	724.18	43.70	3.00E-02	2.62E-01	3.43E-01
		756.72	55.30	1.54E-01		2.62E-01
+	MO-99	181.06	6.20	-1.53E+03	2.25E+03	3.08E+03
		739.58	12.80	-6.81E+02		2.25E+03
		778.00	4.50	-5.26E+03		6.46E+03
+	RU-103	497.08	89.00	1.33E-02	1.51E-01	1.51E-01
+	RU-106	621.84	9.80	8.03E-02	8.37E-01	8.37E-01
+	AG-108M	433.93	89.90	-1.10E-03	8.61E-02	8.61E-02
		614.37	90.40	-5.66E-01		9.68E-02
		722.95	90.50	2.08E-02		1.06E-01
+	CD-109	88.03	3.72	2.39E+00	2.15E+00	2.15E+00
+	AG-110M	657.75	93.14	-6.23E-02	8.68E-02	8.68E-02
		677.61	10.53	9.14E-02		8.40E-01
		706.67	16.46	-5.50E-02		5.94E-01
		763.93	21.98	-1.61E-01		4.66E-01
		884.67	71.63	-5.34E-02		1.15E-01
		1384.27	23.94	4.02E-02		4.37E-01
+	CD-113M	263.70	0.02	-8.79E+01	2.72E+02	2.72E+02
+	SN-113	255.12	1.93	-4.89E-02	1.35E-01	4.23E+00
		391.69	64.90	2.96E-02		1.35E-01
+	TE123M	159.00	84.10	-1.06E-02	7.57E-02	7.57E-02
+	SB-124	602.71	97.87	1.56E-02	1.07E-01	1.07E-01
		645.85	7.26	-4.28E-01		1.61E+00
		722.78	11.10	2.46E-01		1.25E+00
		1691.02	49.00	4.37E-02		2.05E-01
+	I-125	35.49	6.49	7.65E-01	3.40E+00	3.40E+00
+	SB-125	176.33	6.89	1.51E-01	2.54E-01	8.19E-01
		427.89	29.33	-1.17E-01		2.54E-01
		463.38	10.35	2.01E-01		8.03E-01
		600.56	17.80	-5.33E-02		4.18E-01
		635.90	11.32	-1.83E-01		6.75E-01

Analysis Report for 1510088-20
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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	-1.55E-01	4.71E-01	5.09E-01
		666.33	99.60	-1.49E-01		4.71E-01
		695.00	99.60	-2.44E-02		5.52E-01
		720.50	53.80	3.45E-01		1.07E+00
+	SN-126	87.57	* 37.00	2.29E-01	2.06E-01	2.06E-01
+	SB-127	473.00	25.00	6.50E+00	8.11E+01	1.06E+02
		685.20	35.70	-3.12E+01		8.11E+01
		783.80	14.70	4.86E+01		2.21E+02
+	I-129	29.78	57.00	-1.59E-01	4.70E-01	4.70E-01
		33.60	13.20	8.74E-02		1.37E+00
		39.58	7.52	-4.72E-01		1.51E+00
+	I-131	284.30	6.05	-5.53E+00	1.36E+00	1.69E+01
		364.48	81.20	1.06E-02		1.36E+00
		636.97	7.26	1.33E+00		1.76E+01
		722.89	1.80	1.71E+01		8.70E+01
+	TE-132	49.72	13.10	6.92E+01	7.61E+01	6.29E+02
		228.16	88.00	-5.42E+01		7.61E+01
+	BA-133	81.00	33.00	-9.77E-01	1.50E-01	1.88E-01
		302.84	17.80	4.38E-01		4.23E-01
		356.01	60.00	-2.56E-02		1.50E-01
+	I-133	529.87	86.30	-1.20E+09	1.53E+10	1.53E+10
+	XE-133	81.00	38.00	-6.12E+01	1.18E+01	1.18E+01
+	CS-134	563.23	8.38	3.59E-02	8.50E-02	9.64E-01
		569.32	15.43	4.10E-02		5.34E-01
		604.70	97.60	-5.29E-03		8.50E-02
		795.84	85.40	1.39E-01		1.29E-01
		801.93	8.73	-2.68E-01		8.37E-01
+	CS-135	268.24	16.00	4.18E-01	4.67E-01	4.67E-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	1.42E+00	4.67E-01	4.13E+00
		163.89	4.61	1.65E+00		6.45E+00
		176.55	13.56	-3.65E-01		2.19E+00
		273.65	12.66	-3.88E-01		3.22E+00
		340.57	48.50	2.37E+00		1.07E+00
		818.50	99.70	-9.64E-02		4.67E-01
		1048.07	79.60	1.40E-02		6.64E-01
		1235.34	19.70	1.90E+00		4.22E+00
+	CS-137	661.65	85.12	1.64E-02	9.66E-02	9.66E-02
+	LA-138	788.74	34.00	6.48E-02	1.34E-01	2.65E-01
		1435.80	66.00	-4.12E-02		1.34E-01
+	CE-139	165.85	80.35	2.25E-02	7.97E-02	7.97E-02
+	BA-140	162.64	6.70	-2.46E+00	1.58E+00	4.50E+00
		304.84	4.50	-6.90E-01		8.46E+00
		423.70	3.20	-4.38E+00		1.34E+01
		437.55	2.00	6.03E-01		2.13E+01
		537.32	25.00	-3.19E-01		1.58E+00
+	LA-140	328.77	20.50	1.80E+00	6.47E-01	2.23E+00

Analysis Report for 1510088-20
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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	-2.34E-01	6.47E-01	9.04E-01
		815.85	23.50	3.29E-01		2.18E+00
		1596.49	95.49	3.98E-01		6.47E-01
+	CE-141	145.44	48.40	3.85E-02	2.20E-01	2.20E-01
+	CE-143	57.36	11.80	1.87E+06	2.82E+06	7.67E+06
		293.26	42.00	5.99E+06		2.82E+06
		664.55	5.20	6.20E+06		1.99E+07
+	CE-144	133.54	10.80	3.56E-03	5.30E-01	5.30E-01
+	PM-144	476.78	42.00	1.54E-01	8.52E-02	2.13E-01
		618.01	98.60	1.44E-02		8.52E-02
		696.49	99.49	-1.78E-02		9.61E-02
+	PM-145	36.85	21.70	1.07E-01	3.30E-01	6.32E-01
		37.36	39.70	-2.99E-01		3.30E-01
		42.30	15.10	2.48E-01		6.84E-01
		72.40	2.31	-2.02E+00		3.67E+00
+	PM-146	453.90	39.94	-7.93E-02	1.80E-01	1.80E-01
		735.90	14.01	2.44E-01		6.17E-01
		747.13	13.10	-2.93E-03		6.64E-01
+	ND-147	91.11	28.90	8.97E-01	1.84E+00	1.84E+00
		531.02	13.10	1.00E-01		4.25E+00
+	PM-149	285.90	3.10	1.44E+04	5.31E+04	5.31E+04
+	EU-152	121.78	20.50	5.90E-02	2.46E-01	2.46E-01
		244.69	5.40	2.88E-02		1.38E+00
		344.27	19.13	-8.46E-01		3.42E-01
		778.89	9.20	-2.95E-01		9.26E-01
		964.01	10.40	5.23E-01		1.21E+00
		1085.78	7.22	5.76E-01		1.48E+00
		1112.02	9.60	-1.37E-01		1.12E+00
		1407.95	14.94	1.32E-01		6.26E-01
+	GD-153	97.43	31.30	-1.82E-01	1.76E-01	1.76E-01
		103.18	22.20	-2.27E-01		2.28E-01
+	EU-154	123.07	40.50	-5.50E-02	1.23E-01	1.23E-01
		723.30	19.70	9.62E-02		4.90E-01
		873.19	11.50	2.09E-02		7.60E-01
		996.32	10.30	-2.32E-01		7.26E-01
		1004.76	17.90	5.41E-02		5.72E-01
		1274.45	35.50	8.94E-02		3.34E-01
+	EU-155	86.50	30.90	8.76E-02	2.26E-01	2.26E-01
		105.30	20.70	-5.76E-02		2.32E-01
+	EU-156	811.77	10.40	9.64E-01	3.77E+00	3.77E+00
		1153.47	7.20	4.44E+00		7.15E+00
		1230.71	8.90	1.82E+00		6.86E+00
+	HO-166M	184.41	72.60	1.57E-01	9.60E-02	9.60E-02
		280.45	29.60	2.13E-02		2.23E-01
		410.94	11.10	-1.45E-01		6.77E-01
		711.69	54.10	-6.91E-02		1.59E-01
+	TM-171	66.72	0.14	6.41E-01	5.19E+01	5.19E+01
+	HF-172	81.75	4.52	-3.12E+00	4.63E-01	1.45E+00
		125.81	11.30	-2.09E-01		4.63E-01

Analysis Report for 1510088-20
CP50089S17-18

	<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>
+	LU-172	181.53	20.60	-1.42E+01	4.50E+00	7.62E+00
		810.06	16.63	-1.11E+01		1.43E+01
		912.12	15.25	7.07E+01		3.22E+01
		1093.66	62.50	-1.50E+00		4.50E+00
+	LU-173	100.72	5.24	3.15E-01	3.84E-01	9.71E-01
		272.11	21.20	3.82E-01		3.84E-01
+	HF-175	343.40	84.00	-2.51E-01	1.13E-01	1.13E-01
+	LU-176	88.34	13.30	1.38E-01	6.93E-02	5.34E-01
		201.83	86.00	-9.99E-03		7.72E-02
		306.78	94.00	-1.32E-02		6.93E-02
+	TA-182	67.75	41.20	-6.70E-03	2.02E-01	2.02E-01
		1121.30	34.90	4.61E-01		5.02E-01
		1189.05	16.23	4.73E-02		8.60E-01
		1221.41	26.98	1.05E-01		5.54E-01
		1231.02	11.44	2.16E-01		1.49E+00
+	IR-192	308.46	29.68	2.61E-02	1.99E-01	2.91E-01
		468.07	48.10	6.05E-02		1.99E-01
+	HG-203	279.19	77.30	4.87E-02	1.42E-01	1.42E-01
+	BI-207	569.67	97.72	5.83E-02	8.70E-02	8.70E-02
		1063.62	74.90	5.22E-02		1.36E-01
+	TL-208	583.14	* 30.22	1.33E+00	2.49E-01	3.80E-01
		860.37	* 4.48	2.42E+00		2.41E+00
		2614.66	* 35.85	1.17E+00		2.49E-01
+	BI-210M	262.00	45.00	-3.80E-02	1.40E-01	1.40E-01
		300.00	23.00	-1.19E+00		3.25E-01
+	PB-210	46.50	* 4.25	1.83E+00	2.81E+00	2.81E+00
+	PB-211	404.84	2.90	-1.92E-01	2.50E+00	2.50E+00
		831.96	2.90	-3.44E-01		3.25E+00
+	BI-212	727.17	* 11.80	1.08E+00	7.80E-01	7.80E-01
		1620.62	2.75	1.00E+00		3.62E+00
+	PB-212	238.63	* 44.60	1.57E+00	2.43E-01	2.43E-01
		300.09	* 3.41	1.75E+00		2.23E+00
+	BI-214	609.31	* 46.30	1.03E+00	2.60E-01	2.60E-01
		1120.29	* 15.10	6.03E-01		1.25E+00
		1764.49	* 15.80	1.16E+00		4.97E-01
		2204.22	4.98	1.26E+00		2.17E+00
+	PB-214	295.21	* 19.19	1.21E+00	2.54E-01	4.70E-01
		351.92	* 37.19	1.28E+00		2.54E-01
+	RN-219	401.80	6.50	5.28E-02	1.11E+00	1.11E+00
+	RA-223	323.87	3.88	-1.35E+00	1.76E+00	1.76E+00
+	RA-224	240.98	3.95	1.95E+01	3.44E+00	3.44E+00
+	RA-225	40.00	31.00	-5.10E-01	1.64E+00	1.64E+00
+	RA-226	186.21	* 3.28	4.13E+00	3.19E+00	3.19E+00
+	TH-227	50.10	8.40	1.08E-01	9.83E-01	9.83E-01
		236.00	11.50	1.09E-01		1.05E+00
		256.20	6.30	-4.39E-01		1.05E+00
+	AC-228	338.32	* 11.40	1.68E+00	5.55E-01	9.51E-01
		911.07	* 27.70	1.18E+00		5.55E-01

Analysis Report for 1510088-20
CP50089S17-18

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.09E+00	5.55E-01	9.27E-01
+	TH-230	48.44		16.90	-2.16E-01	5.32E-01	5.32E-01
		62.85		4.60	3.00E+00		1.77E+00
		67.67		0.37	-6.13E-01		1.85E+01
+	PA-231	283.67		1.60	-1.28E+00	3.25E+00	3.91E+00
		302.67		2.30	3.37E+00		3.25E+00
+	TH-231	25.64		14.70	-9.06E-01	9.89E-01	3.41E+00
		84.21		6.40	8.92E-02		9.89E-01
+	PA-233	311.98		38.60	-7.34E-02	3.76E-01	3.76E-01
+	PA-234	131.20		20.40	7.38E-03	2.62E-01	2.62E-01
		733.99		8.80	1.55E-02		9.31E-01
		946.00		12.00	-3.81E-01		7.42E-01
+	PA-234M	1001.03		0.92	3.40E+00	1.05E+01	1.05E+01
+	TH-234	63.29	*	3.80	2.49E+00	2.87E+00	2.87E+00
+	U-235	143.76		10.50	-4.50E-02	4.97E-01	4.97E-01
		163.35		4.70	2.93E-01		1.14E+00
		205.31		4.70	4.11E-02		1.39E+00
+	NP-237	86.50		12.60	2.12E-01	5.47E-01	5.47E-01
+	NP-239	106.10		22.70	1.61E+03	3.02E+03	3.02E+03
		228.18		10.70	-6.27E+03		8.81E+03
		277.60		14.10	3.75E+03		6.88E+03
+	AM-241	59.54		35.90	1.22E-02	2.00E-01	2.00E-01
+	AM-243	74.67		66.00	3.61E-01	1.48E-01	1.48E-01
+	CM-243	209.75		3.29	1.05E+00	4.99E-01	2.11E+00
		228.14		10.60	-4.56E-01		6.41E-01
		277.60		14.00	2.72E-01		4.99E-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

: 01088

Analysis Report for 1510088-20
CP50089S17-18

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	1.18E+00	1.18E+00	2.87E-01	5.59E-01
NA-22	1274.54	99.94	1.21E-01	1.21E-01	3.23E-02	5.55E-02
NA-24	1368.53	99.99	4.22E+14	2.90E+14	-5.76E+12	1.90E+14
	2754.09	99.86	2.90E+14		9.65E+13	1.12E+14
AL-26	1808.65	99.76	8.65E-02	8.65E-02	-4.59E-03	3.70E-02
+ K-40	1460.81	* 10.67	1.22E+00	1.22E+00	1.94E+01	5.61E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	7.25E-02	7.25E-02	-2.40E-03	3.54E-02
	78.34	96.00	8.90E-02		1.33E-01	4.38E-02
SC-46	889.25	99.98	1.15E-01	1.15E-01	4.93E-02	5.30E-02
	1120.51	99.99	1.90E-01		1.80E-01	8.96E-02
V-48	983.52	99.98	3.58E-01	3.58E-01	-7.87E-02	1.64E-01
	1312.10	97.50	4.30E-01		-3.08E-01	1.95E-01
CR-51	320.08	9.83	1.48E+00	1.48E+00	-4.05E-01	7.07E-01
MN-54	834.83	99.97	1.09E-01	1.09E-01	6.07E-03	5.07E-02
CO-56	846.75	99.96	1.10E-01	1.10E-01	8.13E-03	5.06E-02
	1037.75	14.03	9.32E-01		8.89E-02	4.28E-01
	1238.25	67.00	2.94E-01		7.93E-02	1.38E-01
	1771.40	15.51	5.81E-01		-1.61E-02	2.38E-01
	2598.48	16.90	4.19E-01		3.01E-02	1.48E-01
CO-57	122.06	85.51	6.39E-02	6.39E-02	1.53E-02	3.10E-02
	136.48	10.60	5.35E-01		-1.21E-01	2.59E-01
CO-58	810.76	99.40	1.17E-01	1.17E-01	-4.03E-02	5.40E-02
FE-59	1099.22	56.50	3.12E-01	3.12E-01	-8.70E-02	1.44E-01
	1291.56	43.20	4.31E-01		-5.22E-03	1.97E-01
CO-60	1173.22	100.00	1.18E-01	1.05E-01	4.98E-02	5.46E-02
	1332.49	100.00	1.05E-01		-1.84E-02	4.76E-02
ZN-65	1115.52	50.75	2.49E-01	2.49E-01	2.92E-02	1.15E-01
GA-67	93.31	35.70	1.81E+02	1.81E+02	2.85E+02	8.88E+01
	208.95	2.24	3.09E+03		2.49E+03	1.50E+03
	300.22	16.00	4.60E+02		-1.68E+03	2.21E+02
SE-75	121.11	16.70	3.61E-01	1.08E-01	8.05E-02	1.75E-01
	136.00	59.20	1.08E-01		2.82E-02	5.26E-02
	264.65	59.80	1.24E-01		-5.87E-02	5.97E-02
	279.53	25.20	3.25E-01		9.77E-02	1.56E-01
	400.65	11.40	7.62E-01		6.39E-02	3.62E-01
RB-82	776.52	13.00	1.59E+00	1.59E+00	-4.03E-01	7.39E-01
RB-83	520.41	46.00	1.93E-01	1.93E-01	-1.19E-01	9.03E-02
	529.64	30.30	3.11E-01		-2.44E-02	1.46E-01
	552.65	16.40	6.17E-01		3.12E-02	2.90E-01
KR-85	513.99	0.43	2.49E+01	2.49E+01	2.14E+01	1.19E+01
SR-85	513.99	99.27	1.53E-01	1.53E-01	1.32E-01	7.34E-02
Y-88	898.02	93.40	1.05E-01	8.64E-02	-1.60E-02	4.77E-02
	1836.01	99.38	8.64E-02		9.04E-03	3.54E-02
NB-93M	16.57	9.43	8.52E+01	8.52E+01	6.93E+01	4.15E+01
NB-94	702.63	100.00	9.06E-02	8.66E-02	-8.97E-03	4.24E-02
	871.10	100.00	8.66E-02		1.16E-02	3.98E-02
NB-95	765.79	99.81	1.95E-01	1.95E-01	7.50E-02	9.15E-02
NB-95M	235.69	25.00	2.43E+02	2.43E+02	2.53E+01	1.19E+02
ZR-95	724.18	43.70	3.43E-01	2.62E-01	3.00E-02	1.62E-01
	756.72	55.30	2.62E-01		1.54E-01	1.23E-01

Analysis Report for 1510088-20
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
MO-99	181.06	6.20	3.08E+03	2.25E+03	-1.53E+03	1.49E+03
	739.58	12.80	2.25E+03		-6.81E+02	1.04E+03
	778.00	4.50	6.46E+03		-5.26E+03	2.98E+03
RU-103	497.08	89.00	1.51E-01	1.51E-01	1.33E-02	7.11E-02
RU-106	621.84	9.80	8.37E-01	8.37E-01	8.03E-02	3.91E-01
AG-108M	433.93	89.90	8.61E-02	8.61E-02	-1.10E-03	4.10E-02
	614.37	90.40	9.68E-02		-5.66E-01	4.56E-02
	722.95	90.50	1.06E-01		2.08E-02	4.97E-02
+ CD-109	88.03	* 3.72	2.15E+00	2.15E+00	2.39E+00	1.06E+00
AG-110M	657.75	93.14	8.68E-02	8.68E-02	-6.23E-02	4.02E-02
	677.61	10.53	8.40E-01		9.14E-02	3.91E-01
	706.67	16.46	5.94E-01		-5.50E-02	2.78E-01
	763.93	21.98	4.66E-01		-1.61E-01	2.18E-01
	884.67	71.63	1.15E-01		-5.34E-02	5.20E-02
	1384.27	23.94	4.37E-01		4.02E-02	1.95E-01
CD-113M	263.70	0.02	2.72E+02	2.72E+02	-8.79E+01	1.30E+02
SN-113	255.12	1.93	4.23E+00	1.35E-01	-4.89E-02	2.04E+00
	391.69	64.90	1.35E-01		2.96E-02	6.41E-02
TE123M	159.00	84.10	7.57E-02	7.57E-02	-1.06E-02	3.66E-02
SB-124	602.71	97.87	1.07E-01	1.07E-01	1.56E-02	4.96E-02
	645.85	7.26	1.61E+00		-4.28E-01	7.51E-01
	722.78	11.10	1.25E+00		2.46E-01	5.88E-01
	1691.02	49.00	2.05E-01		4.37E-02	8.52E-02
I-125	35.49	6.49	3.40E+00	3.40E+00	7.65E-01	1.65E+00
SB-125	176.33	6.89	8.19E-01	2.54E-01	1.51E-01	3.96E-01
	427.89	29.33	2.54E-01		-1.17E-01	1.21E-01
	463.38	10.35	8.03E-01		2.01E-01	3.82E-01
	600.56	17.80	4.18E-01		-5.33E-02	1.95E-01
	635.90	11.32	6.75E-01		-1.83E-01	3.14E-01
SB-126	414.70	83.30	5.09E-01	4.71E-01	-1.55E-01	2.41E-01
	666.33	99.60	4.71E-01		-1.49E-01	2.19E-01
	695.00	99.60	5.52E-01		-2.44E-02	2.58E-01
	720.50	53.80	1.07E+00		3.45E-01	5.03E-01
+ SN-126	87.57	* 37.00	2.06E-01	2.06E-01	2.29E-01	1.01E-01
SB-127	473.00	25.00	1.06E+02	8.11E+01	6.50E+00	5.02E+01
	685.20	35.70	8.11E+01		-3.12E+01	3.79E+01
	783.80	14.70	2.21E+02		4.86E+01	1.03E+02
I-129	29.78	57.00	4.70E-01	4.70E-01	-1.59E-01	2.28E-01
	33.60	13.20	1.37E+00		8.74E-02	6.68E-01
	39.58	7.52	1.51E+00		-4.72E-01	7.35E-01
I-131	284.30	6.05	1.69E+01	1.36E+00	-5.53E+00	8.12E+00
	364.48	81.20	1.36E+00		1.06E-02	6.48E-01
	636.97	7.26	1.76E+01		1.33E+00	8.22E+00
	722.89	1.80	8.70E+01		1.71E+01	4.08E+01
TE-132	49.72	13.10	6.29E+02	7.61E+01	6.92E+01	3.07E+02
	228.16	88.00	7.61E+01		-5.42E+01	3.68E+01
BA-133	81.00	33.00	1.88E-01	1.50E-01	-9.77E-01	9.20E-02
	302.84	17.80	4.23E-01		4.38E-01	2.03E-01
	356.01	60.00	1.50E-01		-2.56E-02	7.22E-02
I-133	529.87	86.30	1.53E+10	1.53E+10	-1.20E+09	7.16E+09
XE-133	81.00	38.00	1.18E+01	1.18E+01	-6.12E+01	5.77E+00
CS-134	563.23	8.38	9.64E-01	8.50E-02	3.59E-02	4.53E-01
	569.32	15.43	5.34E-01		4.10E-02	2.51E-01

Analysis Report for 1510088-20
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
CS-134	604.70	97.60	8.50E-02	8.50E-02	-5.29E-03	3.98E-02	
	795.84	85.40	1.29E-01		1.39E-01	6.07E-02	
	801.93	8.73	8.37E-01		-2.68E-01	3.81E-01	
CS-135	268.24	16.00	4.67E-01	4.67E-01	4.18E-01	2.26E-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	
@ I-135	1678.03	9.54	1.00E+26	1.00E+26	1.00E+26	1.00E+20	
	153.22	7.46	4.13E+00		4.67E-01	1.42E+00	2.00E+00
	163.89	4.61	6.45E+00			1.65E+00	3.12E+00
176.55	13.56	2.19E+00	-3.65E-01	1.06E+00			
CS-136	273.65	12.66	3.22E+00	4.67E-01	-3.88E-01	1.55E+00	
	340.57	48.50	1.07E+00		2.37E+00	5.19E-01	
	818.50	99.70	4.67E-01		-9.64E-02	2.16E-01	
	1048.07	79.60	6.64E-01		1.40E-02	3.04E-01	
	1235.34	19.70	4.22E+00		1.90E+00	1.98E+00	
	661.65	85.12	9.66E-02		9.66E-02	1.64E-02	4.51E-02
	788.74	34.00	2.65E-01		1.34E-01	6.48E-02	1.23E-01
1435.80	66.00	1.34E-01	1.34E-01	-4.12E-02	5.93E-02		
CE-139	165.85	80.35	7.97E-02	7.97E-02	2.25E-02	3.85E-02	
BA-140	162.64	6.70	4.50E+00	1.58E+00	-2.46E+00	2.18E+00	
	304.84	4.50	8.46E+00		-6.90E-01	4.05E+00	
	423.70	3.20	1.34E+01		-4.38E+00	6.38E+00	
	437.55	2.00	2.13E+01		6.03E-01	1.01E+01	
	537.32	25.00	1.58E+00		-3.19E-01	7.35E-01	
LA-140	328.77	20.50	2.23E+00	6.47E-01	1.80E+00	1.07E+00	
	487.03	45.50	9.04E-01		-2.34E-01	4.26E-01	
	815.85	23.50	2.18E+00		3.29E-01	1.01E+00	
	1596.49	95.49	6.47E-01		3.98E-01	2.89E-01	
CE-141	145.44	48.40	2.20E-01	2.20E-01	3.85E-02	1.06E-01	
CE-143	57.36	11.80	7.67E+06	2.82E+06	1.87E+06	3.74E+06	
	293.26	42.00	2.82E+06		5.99E+06	1.37E+06	
	664.55	5.20	1.99E+07		6.20E+06	9.30E+06	
CE-144	133.54	10.80	5.30E-01	5.30E-01	3.56E-03	2.57E-01	
PM-144	476.78	42.00	2.13E-01	8.52E-02	1.54E-01	1.01E-01	
	618.01	98.60	8.52E-02		1.44E-02	3.98E-02	
	696.49	99.49	9.61E-02		-1.78E-02	4.50E-02	
PM-145	36.85	21.70	6.32E-01	3.30E-01	1.07E-01	3.07E-01	
	37.36	39.70	3.30E-01		-2.99E-01	1.61E-01	
	42.30	15.10	6.84E-01		2.48E-01	3.33E-01	
	72.40	2.31	3.67E+00		-2.02E+00	1.81E+00	
PM-146	453.90	39.94	1.80E-01	1.80E-01	-7.93E-02	8.49E-02	
	735.90	14.01	6.17E-01		2.44E-01	2.87E-01	
	747.13	13.10	6.64E-01		-2.93E-03	3.08E-01	
ND-147	91.11	28.90	1.84E+00	1.84E+00	8.97E-01	9.03E-01	
	531.02	13.10	4.25E+00		1.00E-01	1.99E+00	
PM-149	285.90	3.10	5.31E+04	5.31E+04	1.44E+04	2.55E+04	
EU-152	121.78	20.50	2.46E-01	2.46E-01	5.90E-02	1.19E-01	
	244.69	5.40	1.38E+00		2.88E-02	6.66E-01	
	344.27	19.13	3.42E-01		-8.46E-01	1.63E-01	
	778.89	9.20	9.26E-01		-2.95E-01	4.29E-01	
	964.01	10.40	1.21E+00		5.23E-01	5.70E-01	
	1085.78	7.22	1.48E+00		5.76E-01	6.82E-01	
	1112.02	9.60	1.12E+00		-1.37E-01	5.18E-01	

Analysis Report for 1510088-20
CP50089S17-18

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	6.26E-01	2.46E-01	1.32E-01	2.79E-01
GD-153	97.43	31.30	1.76E-01	1.76E-01	-1.82E-01	8.57E-02
	103.18	22.20	2.28E-01		-2.27E-01	1.11E-01
EU-154	123.07	40.50	1.23E-01	1.23E-01	-5.50E-02	5.98E-02
	723.30	19.70	4.90E-01		9.62E-02	2.30E-01
	873.19	11.50	7.60E-01		2.09E-02	3.49E-01
	996.32	10.30	7.26E-01		-2.32E-01	3.25E-01
	1004.76	17.90	5.72E-01		5.41E-02	2.64E-01
	1274.45	35.50	3.34E-01		8.94E-02	1.54E-01
EU-155	86.50	30.90	2.26E-01	2.26E-01	8.76E-02	1.11E-01
	105.30	20.70	2.32E-01		-5.76E-02	1.13E-01
EU-156	811.77	10.40	3.77E+00	3.77E+00	9.64E-01	1.75E+00
	1153.47	7.20	7.15E+00		4.44E+00	3.31E+00
	1230.71	8.90	6.86E+00		1.82E+00	3.20E+00
HO-166M	184.41	72.60	9.60E-02	9.60E-02	1.57E-01	4.67E-02
	280.45	29.60	2.23E-01		2.13E-02	1.07E-01
	410.94	11.10	6.77E-01		-1.45E-01	3.22E-01
	711.69	54.10	1.59E-01		-6.91E-02	7.43E-02
TM-171	66.72	0.14	5.19E+01	5.19E+01	6.41E-01	2.54E+01
HF-172	81.75	4.52	1.45E+00	4.63E-01	-3.12E+00	7.07E-01
	125.81	11.30	4.63E-01		-2.09E-01	2.25E-01
LU-172	181.53	20.60	7.62E+00	4.50E+00	-1.42E+01	3.68E+00
	810.06	16.63	1.43E+01		-1.11E+01	6.58E+00
	912.12	15.25	3.22E+01		7.07E+01	1.54E+01
	1093.66	62.50	4.50E+00		-1.50E+00	2.06E+00
LU-173	100.72	5.24	9.71E-01	3.84E-01	3.15E-01	4.71E-01
	272.11	21.20	3.84E-01		3.82E-01	1.86E-01
HF-175	343.40	84.00	1.13E-01	1.13E-01	-2.51E-01	5.42E-02
LU-176	88.34	13.30	5.34E-01	6.93E-02	1.38E-01	2.62E-01
	201.83	86.00	7.72E-02		-9.99E-03	3.74E-02
	306.78	94.00	6.93E-02		-1.32E-02	3.31E-02
TA-182	67.75	41.20	2.02E-01	2.02E-01	-6.70E-03	9.87E-02
	1121.30	34.90	5.02E-01		4.61E-01	2.36E-01
	1189.05	16.23	8.60E-01		4.73E-02	3.96E-01
	1221.41	26.98	5.54E-01		1.05E-01	2.56E-01
	1231.02	11.44	1.49E+00		2.16E-01	6.96E-01
IR-192	308.46	29.68	2.91E-01	1.99E-01	2.61E-02	1.39E-01
	468.07	48.10	1.99E-01		6.05E-02	9.40E-02
HG-203	279.19	77.30	1.42E-01	1.42E-01	4.87E-02	6.83E-02
BI-207	569.67	97.72	8.70E-02	8.70E-02	5.83E-02	4.11E-02
	1063.62	74.90	1.36E-01		5.22E-02	6.24E-02
+ TL-208	583.14	* 30.22	3.80E-01	2.49E-01	1.33E+00	1.82E-01
	860.37	* 4.48	2.41E+00		2.42E+00	1.13E+00
	2614.66	* 35.85	2.49E-01		1.17E+00	1.03E-01
BI-210M	262.00	45.00	1.40E-01	1.40E-01	-3.80E-02	6.71E-02
	300.00	23.00	3.25E-01		-1.19E+00	1.57E-01
+ PB-210	46.50	* 4.25	2.81E+00	2.81E+00	1.83E+00	1.38E+00
PB-211	404.84	2.90	2.50E+00	2.50E+00	-1.92E-01	1.19E+00
	831.96	2.90	3.25E+00		-3.44E-01	1.51E+00
+ BI-212	727.17	* 11.80	7.80E-01	7.80E-01	1.08E+00	3.65E-01
	1620.62	2.75	3.62E+00		1.00E+00	1.60E+00
+ PB-212	238.63	* 44.60	2.43E-01	2.43E-01	1.57E+00	1.19E-01
	300.09	* 3.41	2.23E+00		1.75E+00	1.07E+00

Analysis Report for 1510088-20
CP50089S17-18

	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	2.60E-01	2.60E-01	1.03E+00	1.24E-01
		1120.29 *		15.10	1.25E+00		6.03E-01	5.97E-01
		1764.49 *		15.80	4.97E-01		1.16E+00	2.10E-01
		2204.22		4.98	2.17E+00		1.26E+00	9.45E-01
+	PB-214	295.21 *		19.19	4.70E-01	2.54E-01	1.21E+00	2.28E-01
		351.92 *		37.19	2.54E-01		1.28E+00	1.23E-01
	RN-219	401.80		6.50	1.11E+00	1.11E+00	5.28E-02	5.26E-01
	RA-223	323.87		3.88	1.76E+00	1.76E+00	-1.35E+00	8.40E-01
	RA-224	240.98		3.95	3.44E+00	3.44E+00	1.95E+01	1.69E+00
	RA-225	40.00		31.00	1.64E+00	1.64E+00	-5.10E-01	7.95E-01
+	RA-226	186.21 *		3.28	3.19E+00	3.19E+00	4.13E+00	1.56E+00
	TH-227	50.10		8.40	9.83E-01	9.83E-01	1.08E-01	4.79E-01
		236.00		11.50	1.05E+00		1.09E-01	5.14E-01
		256.20		6.30	1.05E+00		-4.39E-01	5.05E-01
+	AC-228	338.32 *		11.40	9.51E-01	5.55E-01	1.68E+00	4.62E-01
		911.07 *		27.70	5.55E-01		1.18E+00	2.65E-01
		969.11 *		16.60	9.27E-01		1.09E+00	4.41E-01
	TH-230	48.44		16.90	5.32E-01	5.32E-01	-2.16E-01	2.60E-01
		62.85		4.60	1.77E+00		3.00E+00	8.65E-01
		67.67		0.37	1.85E+01		-6.13E-01	9.04E+00
	PA-231	283.67		1.60	3.91E+00	3.25E+00	-1.28E+00	1.87E+00
		302.67		2.30	3.25E+00		3.37E+00	1.56E+00
	TH-231	25.64		14.70	3.41E+00	9.89E-01	-9.06E-01	1.66E+00
		84.21		6.40	9.89E-01		8.92E-02	4.83E-01
	PA-233	311.98		38.60	3.76E-01	3.76E-01	-7.34E-02	1.79E-01
	PA-234	131.20		20.40	2.62E-01	2.62E-01	7.38E-03	1.27E-01
		733.99		8.80	9.31E-01		1.55E-02	4.32E-01
		946.00		12.00	7.42E-01		-3.81E-01	3.40E-01
	PA-234M	1001.03		0.92	1.05E+01	1.05E+01	3.40E+00	4.82E+00
+	TH-234	63.29 *		3.80	2.87E+00	2.87E+00	2.49E+00	1.41E+00
	U-235	143.76		10.50	4.97E-01	4.97E-01	-4.50E-02	2.41E-01
		163.35		4.70	1.14E+00		2.93E-01	5.54E-01
		205.31		4.70	1.39E+00		4.11E-02	6.74E-01
	NP-237	86.50		12.60	5.47E-01	5.47E-01	2.12E-01	2.68E-01
	NP-239	106.10		22.70	3.02E+03	3.02E+03	1.61E+03	1.47E+03
		228.18		10.70	8.81E+03		-6.27E+03	4.26E+03
		277.60		14.10	6.88E+03		3.75E+03	3.31E+03
	AM-241	59.54		35.90	2.00E-01	2.00E-01	1.22E-02	9.77E-02
	AM-243	74.67		66.00	1.48E-01	1.48E-01	3.61E-01	7.27E-02
	CM-243	209.75		3.29	2.11E+00	4.99E-01	1.05E+00	1.02E+00
		228.14		10.60	6.41E-01		-4.56E-01	3.10E-01
		277.60		14.00	4.99E-01		2.72E-01	2.40E-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 1510088-20
CP50089S17-18

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: CP50089S17-18

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:	5	167	151	151	122	83	101	103	
17:	101	88	99	80	75	81	83	95	
25:	73	89	81	87	95	75	81	80	
33:	96	73	90	93	88	74	68	83	
41:	104	78	87	75	101	126	155	116	
49:	101	73	107	116	117	86	109	105	
57:	120	98	123	102	122	134	158	247	
65:	154	129	123	127	128	128	132	154	
73:	140	187	435	282	386	380	121	124	
81:	118	126	104	153	141	107	193	198	
89:	116	160	139	105	238	181	88	81	
97:	62	84	77	91	77	69	52	64	
105:	64	93	70	78	68	65	83	79	
113:	84	69	82	83	68	64	70	71	
121:	82	66	61	72	60	71	88	58	
129:	84	91	65	63	74	82	70	72	
137:	72	64	66	67	72	72	48	82	
145:	66	58	62	68	78	80	65	63	
153:	59	85	78	62	65	48	77	56	
161:	51	58	55	60	57	69	59	55	
169:	48	61	60	56	72	61	60	47	
177:	60	57	48	47	55	51	64	54	
185:	71	141	104	47	64	45	46	46	
193:	64	42	36	43	56	54	61	43	
201:	57	49	37	50	48	56	37	49	
209:	71	74	40	44	41	34	44	45	
217:	56	45	37	40	42	43	60	50	
225:	36	38	53	48	45	37	41	47	
233:	49	51	31	53	60	176	500	186	
241:	73	107	64	31	26	24	30	37	
249:	36	35	39	39	39	29	26	44	
257:	30	37	29	38	36	25	25	26	
265:	24	28	33	31	32	62	70	35	
273:	34	26	39	26	34	46	32	26	
281:	26	24	26	21	28	25	26	23	
289:	32	16	28	25	31	32	132	129	
297:	37	17	31	49	48	24	26	30	
305:	25	26	19	22	19	26	26	20	
313:	20	15	26	28	23	21	21	15	
321:	22	28	23	22	22	23	27	51	
329:	30	34	22	33	26	22	31	22	
337:	23	65	110	35	19	34	20	18	
345:	14	15	16	17	23	27	62	230	
353:	125	26	27	20	13	18	19	26	
361:	13	24	12	18	20	19	17	23	

369: 20 17 25 17 15 16 25 20

Sample Title: CP50089S17-18

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	13	24	15	18	17	21	20	19
385:	17	30	17	14	22	16	20	19
393:	20	14	22	20	17	20	20	20
401:	20	16	16	16	19	20	17	24
409:	23	31	14	13	14	15	22	24
417:	15	8	27	18	17	21	22	15
425:	22	9	17	12	25	15	17	22
433:	21	16	20	18	15	15	20	15
441:	11	12	17	13	11	25	14	15
449:	15	20	12	10	11	17	18	20
457:	11	15	19	8	13	16	37	31
465:	15	7	15	16	14	16	10	10
473:	13	23	23	15	13	18	21	16
481:	12	15	11	9	13	12	16	18
489:	8	11	14	16	14	13	9	14
497:	14	15	17	14	9	14	6	16
505:	16	15	14	11	23	47	67	43
513:	19	20	12	11	16	15	11	8
521:	11	4	6	9	15	10	12	8
529:	13	13	12	10	10	10	12	9
537:	12	7	6	10	8	14	14	6
545:	13	10	9	11	8	18	12	13
553:	9	14	6	12	14	12	14	9
561:	13	13	19	16	8	4	11	10
569:	14	17	13	15	15	7	16	7
577:	10	7	8	20	12	38	117	84
585:	25	7	13	6	14	10	13	12
593:	12	5	9	12	13	9	8	7
601:	15	7	11	5	2	13	9	29
609:	125	114	21	10	12	11	11	13
617:	10	6	12	8	10	6	9	15
625:	6	13	6	7	8	8	13	4
633:	5	11	11	6	9	10	7	11
641:	11	13	5	16	6	14	11	9
649:	6	10	11	11	7	16	3	6
657:	7	9	8	9	12	14	9	6
665:	9	9	9	6	9	8	7	11
673:	7	10	10	4	5	7	14	10
681:	12	4	12	12	6	12	12	9
689:	13	12	12	9	12	8	15	13
697:	9	8	9	11	14	12	13	3
705:	5	16	14	12	12	9	13	5
713:	10	9	7	11	11	11	9	13
721:	13	11	9	8	10	15	31	31
729:	10	5	8	3	8	10	8	11
737:	7	10	6	7	7	6	14	5
745:	6	11	8	10	6	13	8	6
753:	7	14	16	16	8	9	11	9
761:	10	8	8	9	8	12	13	17
769:	15	8	11	10	11	11	8	10
777:	4	4	7	9	8	11	12	6
785:	11	16	3	8	9	9	10	4
793:	10	16	24	12	10	7	5	4

801: 4 6 3 2 10 10 8 6

Sample Title: CP50089S17-18

Channel	1	2	3	4	5	6	7	8	9
809:	6	4	10	6	7	10	12	5	
817:	7	4	8	5	7	6	9	9	
825:	3	6	5	6	7	9	7	7	
833:	9	10	10	15	9	8	6	15	
841:	6	3	8	6	5	9	6	7	
849:	4	6	5	7	8	6	4	5	
857:	8	10	7	15	17	4	9	5	
865:	5	3	8	5	7	2	12	7	
873:	9	3	8	4	7	6	4	7	
881:	5	8	8	4	1	2	4	6	
889:	8	7	7	11	5	8	5	2	
897:	5	8	6	6	3	7	3	8	
905:	7	8	2	4	8	34	66	44	
913:	10	9	6	8	4	7	3	5	
921:	12	10	4	3	3	7	7	5	
929:	7	2	3	8	11	10	7	6	
937:	4	4	4	6	6	3	5	8	
945:	8	5	9	3	3	9	12	6	
953:	5	3	7	3	3	3	5	7	
961:	7	6	11	12	25	12	10	32	
969:	47	21	5	7	4	4	11	7	
977:	4	6	12	4	2	11	7	2	
985:	2	9	5	3	5	2	4	5	
993:	2	3	3	6	2	3	6	4	
1001:	6	10	4	11	7	4	7	6	
1009:	9	6	9	6	2	3	10	0	
1017:	2	9	9	4	4	1	5	4	
1025:	5	8	8	6	7	3	7	5	
1033:	9	2	6	3	8	7	0	10	
1041:	9	7	7	1	5	8	3	6	
1049:	1	9	8	7	7	3	12	6	
1057:	10	3	9	5	3	9	5	8	
1065:	4	10	2	4	2	9	6	6	
1073:	6	6	5	3	3	10	9	2	
1081:	8	4	5	9	6	14	2	7	
1089:	4	5	3	4	7	6	11	3	
1097:	9	8	7	6	7	6	8	7	
1105:	9	8	3	12	5	7	3	6	
1113:	11	6	8	5	6	11	13	25	
1121:	18	8	6	4	8	5	6	5	
1129:	7	6	10	8	3	4	4	8	
1137:	3	3	3	5	9	10	6	8	
1145:	4	3	2	7	2	4	11	6	
1153:	10	8	10	3	3	5	10	8	
1161:	6	5	3	9	8	5	10	3	
1169:	7	7	10	7	8	5	9	4	
1177:	5	5	13	3	9	7	4	6	
1185:	10	11	8	4	6	4	10	4	
1193:	5	6	8	7	10	7	3	7	
1201:	3	7	9	5	6	3	10	7	
1209:	7	5	1	5	7	8	7	8	
1217:	8	4	9	9	6	3	7	14	
1225:	8	2	7	10	11	9	9	10	

1233: 11 8 13 11 15 11 9 7

Sample Title: CP50089S17-18

Channel	1	2	3	4	5	6	7	8	9
1241:	10	5	13	6	4	7	11	4	
1249:	6	8	9	8	3	9	7	5	
1257:	4	2	2	3	8	11	5	6	
1265:	4	5	1	2	4	7	7	4	
1273:	1	8	5	4	2	6	6	3	
1281:	8	9	2	4	9	7	8	3	
1289:	4	3	8	3	2	4	4	1	
1297:	3	5	5	5	5	7	4	1	
1305:	2	6	4	2	2	3	2	4	
1313:	5	5	4	4	3	10	5	3	
1321:	3	3	3	4	4	4	4	2	
1329:	6	0	3	4	5	5	5	1	
1337:	4	4	1	1	2	1	1	1	
1345:	6	4	8	2	2	3	3	5	
1353:	4	2	2	2	3	5	5	2	
1361:	4	7	2	3	2	0	4	4	
1369:	4	6	2	4	2	2	0	5	
1377:	6	11	3	1	3	3	2	2	
1385:	6	3	3	1	4	2	3	1	
1393:	3	2	6	3	1	3	1	4	
1401:	6	1	4	3	2	1	5	5	
1409:	4	0	2	0	1	2	6	1	
1417:	1	4	4	2	2	2	0	3	
1425:	0	3	1	7	8	3	3	2	
1433:	1	4	1	1	4	1	2	1	
1441:	1	1	3	6	1	1	0	5	
1449:	2	1	2	4	0	3	2	3	
1457:	3	6	59	170	236	55	11	3	
1465:	2	2	0	0	0	0	1	1	
1473:	0	2	0	3	0	4	1	1	
1481:	2	2	1	0	1	1	3	2	
1489:	1	1	1	0	0	0	6	3	
1497:	8	1	3	2	1	1	1	1	
1505:	0	2	1	2	6	3	2	4	
1513:	3	1	1	0	2	1	0	1	
1521:	0	0	2	1	1	2	1	1	
1529:	2	1	3	2	3	1	2	0	
1537:	0	0	2	0	2	0	0	2	
1545:	0	0	0	1	0	1	2	0	
1553:	0	1	0	2	1	0	0	1	
1561:	0	2	1	1	1	1	3	2	
1569:	0	2	0	2	1	3	1	2	
1577:	1	0	3	2	2	3	4	2	
1585:	1	2	3	7	6	1	4	8	
1593:	7	1	3	1	2	0	2	0	
1601:	1	0	2	1	1	2	3	2	
1609:	2	2	2	3	2	1	1	2	
1617:	1	3	2	2	2	1	3	4	
1625:	1	3	1	2	1	2	2	0	
1633:	3	2	4	0	2	1	1	1	
1641:	1	2	1	0	1	0	0	1	
1649:	1	1	1	1	2	2	1	2	
1657:	0	1	0	1	3	1	1	4	

1665: 1 1 2 2 1 1 2 1

Sample Title: CP50089S17-18

Channel	1	2	3	4	5	6	7	8
1673:	2	1	1	2	0	1	0	2
1681:	2	2	1	0	2	0	0	2
1689:	1	0	0	0	2	1	2	0
1697:	1	0	0	0	1	0	0	1
1705:	0	0	0	0	2	1	1	0
1713:	1	0	0	1	1	1	2	1
1721:	2	0	0	3	0	1	2	4
1729:	4	2	0	1	0	0	2	0
1737:	1	1	2	1	0	0	0	1
1745:	3	1	0	3	0	2	0	1
1753:	0	1	1	1	1	3	0	0
1761:	2	2	8	19	11	3	1	1
1769:	1	1	1	2	0	0	0	1
1777:	0	1	1	1	0	0	0	0
1785:	0	2	2	1	2	0	1	0
1793:	1	1	1	0	0	0	1	0
1801:	2	2	1	4	0	1	0	0
1809:	0	3	1	3	0	0	0	0
1817:	1	1	0	0	2	0	0	1
1825:	0	0	0	1	0	3	1	2
1833:	2	1	0	0	0	0	1	0
1841:	1	0	2	2	0	1	6	1
1849:	2	0	1	0	0	0	1	1
1857:	2	0	1	1	0	2	1	0
1865:	0	0	1	0	1	0	0	0
1873:	3	1	2	0	1	1	1	0
1881:	1	1	0	2	2	1	2	1
1889:	1	2	1	0	1	0	0	1
1897:	0	1	3	0	1	0	0	2
1905:	1	0	0	2	0	1	0	3
1913:	0	0	0	3	1	0	0	1
1921:	0	1	0	0	1	0	1	0
1929:	1	1	0	2	3	1	2	0
1937:	1	1	0	0	0	1	1	1
1945:	0	3	0	1	2	1	0	1
1953:	0	1	0	2	4	1	1	2
1961:	1	0	0	0	0	0	1	1
1969:	2	0	1	3	0	1	0	0
1977:	0	0	0	1	1	1	0	1
1985:	1	2	0	3	0	0	0	1
1993:	1	1	0	0	0	0	1	0
2001:	0	0	0	0	1	0	1	0
2009:	2	1	3	1	1	2	0	1
2017:	0	0	0	0	1	2	2	0
2025:	0	0	1	1	1	3	1	0
2033:	5	2	0	2	1	1	0	0
2041:	0	0	1	0	1	0	0	1
2049:	1	0	1	3	0	0	1	1
2057:	1	3	3	0	0	2	1	2
2065:	1	0	1	0	2	0	0	1
2073:	0	0	0	1	1	2	1	1
2081:	0	0	1	2	0	0	0	1
2089:	0	2	1	2	1	0	0	0

2097: 0 0 0 0 5 5 1 2

Sample Title: CP50089S17-18

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

2529: 0 0 0 1 0 1 0 1

Sample Title: CP50089S17-18

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	0	0	0	0	0	0
2545:	1	0	0	0	0	0	0	0
2553:	1	0	0	1	0	0	0	0
2561:	0	1	0	1	3	1	0	0
2569:	0	0	1	1	0	0	0	0
2577:	1	0	0	0	0	0	0	0
2585:	1	1	0	0	0	0	0	0
2593:	0	0	0	0	0	1	0	1
2601:	0	0	0	0	1	0	0	0
2609:	1	3	0	5	26	26	11	4
2617:	2	1	0	1	0	0	0	0
2625:	1	0	0	0	0	0	0	0
2633:	0	1	0	0	2	0	0	0
2641:	1	0	0	0	1	1	0	0
2649:	0	0	0	1	1	0	0	0
2657:	0	1	0	0	1	0	1	0
2665:	0	0	0	0	0	1	0	0
2673:	1	0	0	0	0	0	1	0
2681:	0	0	0	0	0	0	0	0
2689:	0	1	0	1	0	0	0	0
2697:	0	0	0	0	0	1	0	0
2705:	0	0	0	0	0	0	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	0	1	0	0	0
2729:	0	0	0	0	0	0	1	0
2737:	1	0	0	1	0	2	1	0
2745:	0	0	0	0	0	0	0	1
2753:	1	2	0	0	0	0	0	0
2761:	1	0	0	1	0	1	0	0
2769:	1	0	2	1	0	0	0	1
2777:	0	0	0	1	0	0	0	0
2785:	0	1	0	0	0	0	1	0
2793:	0	2	1	1	0	0	0	0
2801:	1	1	0	0	0	0	0	1
2809:	0	0	0	0	1	1	0	0
2817:	0	0	0	0	1	0	0	0
2825:	1	1	0	0	0	0	0	0
2833:	0	1	0	1	1	0	0	0
2841:	0	1	0	0	0	0	0	0
2849:	0	0	0	1	0	0	0	0
2857:	0	1	1	0	0	0	0	2
2865:	1	2	1	0	0	0	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	1	0	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	2	0	0	0	0	0
2905:	0	2	0	1	0	0	0	0
2913:	1	1	0	0	0	1	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	1	0	0	0	1	0
2937:	0	0	0	1	0	0	0	0
2945:	0	0	0	0	1	0	0	0
2953:	0	0	0	0	0	0	0	0

2961: 2 0 0 1 1 0 0 0

Sample Title: CP50089S17-18

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

Sample Title: CP50089S17-18

Channel	1	2	3	4	5	6	7	8
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	1	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	1	0	0	0	0	0	0	0
3441:	0	0	0	0	1	0	0	0
3449:	0	0	0	2	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	2	1	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	1	0	0	0	1	0	0	0
3489:	0	0	1	1	0	1	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	1	1	0
3513:	0	0	0	0	0	0	0	1
3521:	1	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	1	2	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	1	0	0	0	0	0
3569:	1	0	0	0	0	0	0	0
3577:	0	0	2	0	0	0	0	0
3585:	0	1	0	0	0	0	0	0
3593:	0	0	0	0	0	1	0	0
3601:	0	0	0	1	1	1	0	0
3609:	0	0	0	0	0	0	0	0
3617:	1	0	0	0	0	0	0	1
3625:	0	0	0	0	0	0	1	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	1	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	1	0	0	0	0
3681:	0	0	1	0	0	0	0	1
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	1	0
3713:	0	0	0	1	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	1	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	1	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	1	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	1	0	0	0	0
3801:	0	0	0	0	0	1	0	0
3809:	1	0	0	0	0	0	0	1
3817:	0	0	0	0	0	0	0	0

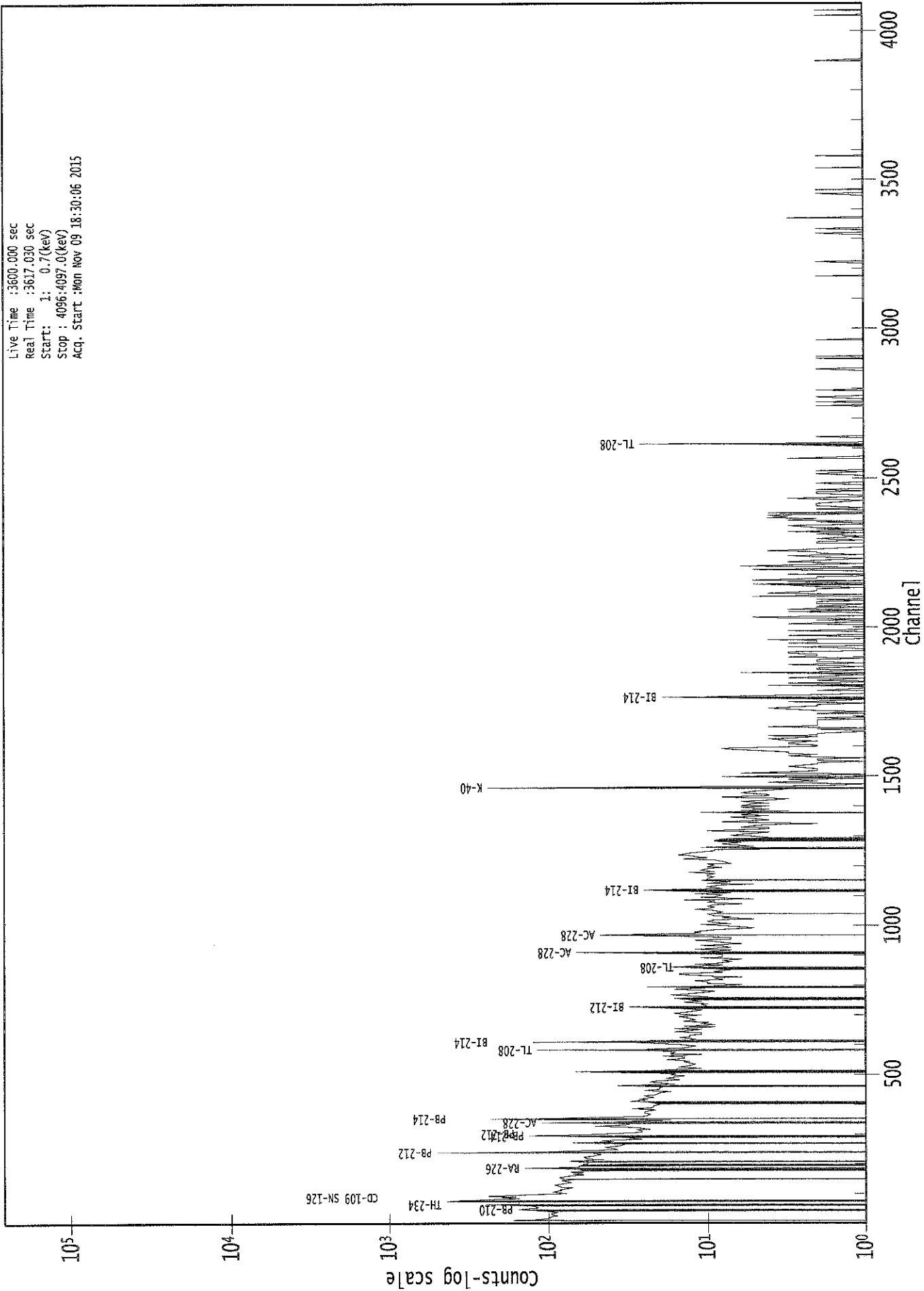
3825: 0 0 1 0 0 0 0 0

Sample Title: CP50089S17-18

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

0000029363.CNF

Live Time :3600.000 sec
Real Time :3617.030 sec
Start: 1: 0.7(kev)
Stop : 4096.4097.0(kev)
Acq. Start :Mon Nov 09 18:30:06 2015



 ***** GENIE QUALITY ASSURANCE *****

✓
1119

Last Results Report
 11/9/15 6:05:56 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D000000004B.QCK

Detector: GE4
 Geometry: <None>
 Certificate: <None>
 Sample ID: QA Background Ch
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 11/9/15 5:50:26 AM
 Measurement Date: 11/9/15 5:50:27 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 915.8 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE4 [SD: 8.7352E+000+/-163.68]	1.5133E+000	-4.4122E-002
Trend Test: The last	9 samples exhibit a bias trend.	< : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

✓
1119

Last Results Report
 11/9/15 6:05:38 AM

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: 11/9/15 5:50:20 AM
 Measurement Date: 11/9/15 5:50:22 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 903.6 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE3 [SD: 2.2871E+003+/-1496.0]	1.7080E+003	-3.8711E-001 < : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 11/9/15 6:05:29 AM

1009

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: 11/9/15 5:50:14 AM
 Measurement Date: 11/9/15 5:50:15 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	4.4344E+000	-4.2111E-001
[SD: 4.5526E+000+/- 0.280]		< : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 11/9/15 6:05:21 AM

11/9

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D000000001B.QCK

Detector: GE1
 Geometry: <None>
 Certificate: <None>
 Sample ID: QA Background Ch
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 11/9/15 5:50:07 AM
 Measurement Date: 11/9/15 5:50:09 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	2.0333E+000	-1.5908E-001
[SD: 2.3025E+000+/- 1.692]		< : : : >
Trend Test: The last	9 samples exhibit a bias trend.	

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 11/9/15 5:36:24 AM

1119

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D000000004GAW-14C.QCK

Detector: GE4
 Geometry: <None>
 Certificate: GAW-14
 Sample ID: QA Calibration C
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 10/1/14 12:00:00 AM
 Measurement Date: 11/9/15 5:20:14 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 958.6 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >			
Peak centroid 59.54 keV Boundary Limits: [5.800E+001, 6.100E+001]	5.8768E+001	<	:	:	>
Peak centroid 661.65 keV Boundary Limits: [6.600E+002, 6.630E+002]	6.6108E+002	<	:	:	>
Peak centroid 1332.49 keV Boundary Limits: [1.331E+003, 1.334E+003]	1.3322E+003	<	:	:	>
Peak centroid 1836.1 keV Boundary Limits: [1.834E+003, 1.838E+003] Trend Test: The last 9 samples exhibit a bias trend.	1.8361E+003	<	:	:	>
Peak FWHM Am-241 Boundary Limits: [5.000E-001, 3.000E+000]	2.2287E+000	<	:	:	>
Peak FWHM Cs-137 Boundary Limits: [5.000E-001, 3.000E+000]	2.7059E+000	<	:	:	>
Peak FWHM Co-60 Boundary Limits: [5.000E-001, 3.000E+000]	2.9628E+000	<	:	:	>
Peak FWHM Y-88 Boundary Limits: [5.000E-001, 3.500E+000] Trend Test: The last 9 samples exhibit a bias trend.	3.0641E+000	<	:	:	>
Decay corrected activity Boundary Limits: [1.200E-001, 1.816E-001] Trend Test: The last 9 samples exhibit a bias trend.	1.2370E+005	<	:	:	>
Decay corrected activity Boundary Limits: [4.918E-002, 7.377E-002]	6.4324E+004	<	:	:	>

Decay corrected activity 9.6134E+004
Boundary Limits: [7.892E-002, 1.184E-001] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

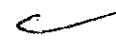
Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >

Decay corrected activity 2.0628E+005
Boundary Limits: [1.695E-001, 2.543E-001] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 11/9/15 7:35:16 AM


 1119

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: 11/9/15 7:19:26 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 936.9 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]	6.0000E+001	<	:	:	>
Peak centroid 661.65 keV Boundary Limits: [6.600E+002, 6.640E+002]	6.6162E+002	<	:	:	>
Peak centroid 1332.49 ke Boundary Limits: [1.331E+003, 1.334E+003]	1.3323E+003	<	:	:	>
Peak centroid 1836.1 keV Boundary Limits: [1.833E+003, 1.838E+003]	1.8356E+003	<	:	:	>
Peak FWHM Am-241 Boundary Limits: [5.000E-001, 3.000E+000]	1.4766E+000	<	:	:	>
Peak FWHM Cs-137 Boundary Limits: [5.000E-001, 3.000E+000]	2.0029E+000	<	:	:	>
Peak FWHM Co-60 Boundary Limits: [5.000E-001, 3.000E+000]	2.2979E+000	<	:	:	>
Peak FWHM Y-88 Boundary Limits: [5.000E-001, 3.000E+000]	2.6001E+000	<	:	:	>
Decay corrected activity Boundary Limits: [1.223E-001, 1.834E-001]	1.7808E+005	<	:	:	>
Decay corrected activity Boundary Limits: [4.969E-002, 7.453E-002] Trend Test: The last 9 samples exhibit a bias trend.	6.5396E+004	<	:	:	>
Decay corrected activity	9.7188E+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	2.0646E+005	
Boundary Limits: [1.713E-001, 2.569E-001]		< : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 11/9/15 5:35:35 AM

1115

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D000000002GAS-1401C.QC

Detector: GE2
 Geometry: <None>
 Certificate: GAS-1401
 Sample ID: QA Calibration C
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 10/1/14 12:00:00 AM
 Measurement Date: 11/9/15 5:19:57 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 926.5 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >			
Peak centroid 59.54keV	6.0000E+001				
Boundary Limits: [5.800E+001, 6.100E+001]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak centroid 661.65 keV	6.6150E+002				
Boundary Limits: [6.600E+002, 6.640E+002]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak centroid 1332.49 ke	1.3322E+003				
Boundary Limits: [1.331E+003, 1.334E+003]		<	:	:	>
Peak centroid 1836.1 keV	1.8355E+003				
Boundary Limits: [1.834E+003, 1.838E+003]		<	:	:	>
Peak FWHM Am-241	1.3298E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak FWHM Cs-137	2.1672E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak FWHM Co-60	2.2216E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Peak FWHM Y-88	2.6185E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Decay corrected activity	1.5495E+005				
Boundary Limits: [1.224E-001, 1.836E-001]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					

Decay corrected activity 6.3689E+004
Boundary Limits: [4.971E-002, 7.457E-002] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >

Decay corrected activity	1.0397E+005	
Boundary Limits: [7.978E-002, 1.197E-001]		< : : : >
Trend Test: The last	9 samples exhibit a bias trend.	

Decay corrected activity	2.2859E+005	
Boundary Limits: [1.714E-001, 2.571E-001]		< : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 11/9/15 5:35:25 AM

✓
 11109

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000001GAF-14C.QCK

Detector: GE1
 Geometry: <None>
 Certificate: GAF-14
 Sample ID: QA Calibration C
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 10/1/14 12:00:00 AM
 Measurement Date: 11/9/15 5:19:47 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 924.4 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >			
Peak centroid 59.54 keV Boundary Limits: [5.800E+001, 6.100E+001]	6.0189E+001	<	:	:	>
Peak centroid 661.65 keV Boundary Limits: [6.600E+002, 6.630E+002] Trend Test: The last 9 samples exhibit a bias trend.	6.6200E+002	<	:	:	>
Peak centroid 1332.49 keV Boundary Limits: [1.331E+003, 1.334E+003] Trend Test: The last 9 samples exhibit a bias trend.	1.3327E+003	<	:	:	>
Peak centroid 1836.01 keV Boundary Limits: [1.834E+003, 1.838E+003]	1.8362E+003	<	:	:	>
Peak FWHM Am-241 Boundary Limits: [5.000E-001, 3.000E+000]	1.0488E+000	<	:	:	>
Peak FWHM Cs-137 Boundary Limits: [5.000E-001, 3.000E+000] Trend Test: The last 9 samples exhibit a bias trend.	1.5732E+000	<	:	:	>
Peak FWHM Co-60 Boundary Limits: [5.000E-001, 3.000E+000] Trend Test: The last 9 samples exhibit a bias trend.	2.1058E+000	<	:	:	>
Peak FWHM Y-90 Boundary Limits: [5.000E-001, 3.000E+000]	2.3049E+000	<	:	:	>
Decay corrected activity Boundary Limits: [1.170E-002, 1.754E-002]	1.4699E+004	<	:	:	>
Decay corrected activity	6.2225E+003				

Boundary Limits: [4.716E-003, 7.075E-003] < : : : >

Decay corrected activity 1.0515E+004
Boundary Limits: [7.572E-003, 1.136E-002] < : : : >

Parameter Description Value Deviation/Flags
[Mean +/- Std. Dev.] < LU : SD : UD : BS >

Decay corrected activity 2.0051E+004
Boundary Limits: [1.626E-002, 2.440E-002] < : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)